PORTABLE DOCUMENT FORMAT CERTIFICATION

The electronic copy of the Voluntary Remediation Program Status Report No. 9, Former Automatic Sprinkler, Swainsboro, Emanuel County, Georgia, HSI No 10268 as provided on this CD is complete and identical to the paper copy and free of viruses to the best of our knowledge.

Amec Foster Wheeler Environment & Infrastructure, Inc.

Gregory J. Wrenn, P.E.
Project Manager

Voluntary Remediation Program Status Report No. 9

Former Automatic Sprinkler Site
162 East Meadowlake Parkway
Swainsboro, Emanuel County, Georgia
HSI Site No. 10268

Prepared for:	Scott Figgie LLC 34407 DuPont Boulevard, Suite 6, Frankfort, DE 19945
Date:	August, 2016
Prepared by:	Amec Foster Wheeler Environment & Infrastructure, Inc. 1075 Big Shanty Road NW, Suite 100, Kennesaw, Georgia 30144
Project No.:	6125080149

August 23, 2016

Mr. David Brownlee
Georgia Environmental Protection Division
Response and Remediation Program
2 Martin Luther King Jr. Drive, Suite 1462 East Tower
Atlanta, Georgia 30334

Subject: **Voluntary Remediation Plan Status Report No. 9**
Former Automatic Sprinkler Site, Swainsboro, Georgia
HSI Site No. 10268

Dear Mr. Brownlee:

Amec Foster Wheeler Environment & Infrastructure, Inc. is pleased to provide Georgia Environmental Protection Division with the attached Status Report No. 9 for Voluntary Remediation Program activities for the Former Automatic Sprinkler Site in Swainsboro, Emanuel County, Georgia (HSI Site No. 10268). The report covers the activities conducted between January 2016 and July 2016.

Should you have any questions, please contact us at (770) 421-3400.

Sincerely,
Amec Foster Wheeler Environment & Infrastructure, Inc.

Tanya R. Kinnard, CHMM
Senior Professional

Gregory J. Wrenn, P.E.
Associate/Project Manager

Attachment: VRP Status Report No. 9

cc: Stuart Rixman, Scott Figgie LLC
Troy Chute, Scott Figgie LLC
Anita Bucci, Kongsberg Automotive
Jack Bareford, Swainsboro Emanuel County Joint Development Authority

Environment & Infrastructure
1075 BIG SHANTY ROAD NW
SUITE 100
KENNESAW, GA 30144 USA
O (770) 421 3400
F (770) 421 3486
amecfw.com

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1.0 PE Certification

"I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Gregory J. Wrenn, Georgia P.E. #25565
Printed Name and GA PE Number

August 23, 2016
Date

Signature and Stamp

2.0 Introduction and Background

This Voluntary Remediation Program (VRP) Semi-Annual Status Report No. 9 (Status Report) was prepared for the Former Automatic Sprinkler Site (site), Hazardous Site Inventory (HSI) No.10268. The Georgia Environmental Protection Division (EPD) letter, dated February 24, 2012, accepted the site into the VRP and requested submittal of semi-annual VRP status reports. This ninth Status Report covers the activities conducted subsequent to those described in Semi-Annual Status Report No. 8 submitted to the EPD on February 16, 2016.

The site is located at 162 East Meadowlake Parkway, Swainsboro, Georgia. Figure 1 shows the site location. Figure 2 presents the site layout, existing monitoring well locations, and previous surface water sampling locations. This 6.91-acre property is part of a larger industrial development located southeast of the center of Swainsboro. East Meadowlake Parkway forms the northern boundary of the site. Approximately 47 acres of undeveloped land are located north of the site and East Meadowlake Parkway. A publicly owned wastewater treatment plant is located to the northwest. A manufacturing facility occupies property to the east. Space Place Road and another industrial facility (Space Place) are located to the south.

Before 1967, the property was agricultural or lightly wooded land. The property was initially developed by Automatic Sprinkler Corporation of America (ASCOA), a subsidiary of Figgie International, Inc. Figgie International changed its name to Scott Technologies, Inc. (STI). STI Properties, Inc. was the affiliate of Scott Technologies with responsibility for its real estate operations. Due to an organizational change, Scott Figgie LLC is now the legal entity responsible for addressing the historical subsurface environmental issues related to the Former Automatic Sprinkler Site. Scott Figgie has engaged GSF Management Company (GSF) to manage the remediation of that site on its behalf.

The operation at 162 East Meadowlake Parkway reportedly began in 1967 and continued until approximately 1992. In 1994, the property ownership was transferred to the Swainsboro-Emanuel County Joint Development Authority. The Swainsboro-Emanuel County Joint Development Authority currently owns the property and leases the facility to Kongsberg Automotive. Kongsberg Automotive manufactures engine parts at the facility.

Early environmental investigations (1997 through 2000) were focused on metal (lead and zinc) impacts to soils. Soils with lead and zinc impacts were excavated and disposed of properly. Confirmation sampling indicated that the formerly metal-impacted areas complied with Type 3 Risk Reduction Standards (RRS). However, during the course of the investigations, chlorinated volatile organic compounds (VOCs) were detected in the subsurface. The VOC impacts have been the primary focus of the subsequent environmental work at the site. A summary of applicable RRS is included as Table 1. The environmental history of the site is summarized as follows:

- The site was used for manufacturing fire control components from 1967 to 1992.
- The site was listed on the Georgia Hazardous Site Inventory (HSI) in June 1994.
- Figgie Properties conveyed the property to the Swainsboro-Emmanuel County Joint Development Authority in November 1994.
- A Consent Order for assessment/remediation of the site under the Georgia Hazardous Site Response Act (HSRA) was executed between Georgia EPD and Figgie Properties in October 1997.

- Assessment and remediation activities were conducted between 1998 and 2002, including the removal of metal-impacted soil, and two short-term multi-phase extraction events, which removed VOCs in soil vapor and groundwater from a small isolated "hot spot" around MW-8.
- A Corrective Action Plan (CAP) containing contaminant transport modeling and proposing to address VOC-impacted groundwater via monitored natural attenuation (MNA) was submitted to EPD in December 2002. BIOCHLOR (an EPA model for predicting potential chlorinated VOC concentrations over time and distance) was used to evaluate the fate and transport of VOCs in groundwater. The U.S. Environmental Protection Agency (EPA) MNA Screening Matrix screening score indicated "strong evidence for natural anaerobic biodegradation of chlorinated constituents."
- EPD approved MNA as a potentially appropriate corrective action in August 2003 and requested continued MNA monitoring to evaluate trends in contaminant concentrations.
- MNA demonstration monitoring was conducted between 2003 and 2010.
- In February 2011, based upon the predicted 74-year MNA remedial period, the HSRA program requested evaluation of corrective action enhancements to reduce the clean-up time.
- In April 2011, STI submitted the VRP Application in order to enroll in the Georgia Voluntary Remediation Program. An EPD comment letter dated September 8, 2011 requesting additional information resulted in a VRP Application Addendum submitted by STI on November 14, 2011. EPD letters dated February 24, 2012 accepted STI into the VRP and put forth comments to be addressed during implementation of the VRP.
- VRP Status Report No. 1 and responses to EPD comments (February 24, 2012) were submitted to EPD on August 23, 2012.
- EPD issued comments on the VRP Status Report No. 1 in correspondence dated December 27, 2012.
- VRP Status Report No. 2 and responses to EPD comments (December 27, 2012) were submitted to EPD on February 20, 2013.
- EPD issued comments on VRP Status Report No. 2 in correspondence dated April 9, 2013.
- A 24-hour high vacuum extraction (HVE) event was conducted beginning on April 30, 2013 using MW-8 and MW-19 as extraction wells. Approximately 1,600 gallons of fluid were recovered during the HVE event. The extracted fluids were treated on-site using an air stripper and then transported to the Swainsboro publicly owned treatment works (POTW) for disposal following confirmation of treatment to acceptable levels.
- VRP Status Report No. 3, which addressed EPD comments dated April 9, 2013, was submitted to EPD on August 14, 2013.
- EPD issued comments on VRP Status Report No. 3 in correspondence dated September 13, 2013.
- VRP Status Report No. 4, which addressed EPD comments dated September 13, 2013, was submitted to EPD on February 20, 2014.
- EPD issued comments on VRP Status Report No. 4 in correspondence dated May 23, 2014.
- A 24-hour HVE event was conducted beginning on July 8, 2014 using MW-8 and MW-19 as extraction wells. Approximately 1,250 gallons of fluid were recovered during the HVE event. The extracted fluids were treated on-site using activated carbon and then transported to the Swainsboro POTW for disposal following confirmation of treatment to acceptable levels.
- VRP Status Report No. 5, which addressed EPD comments dated May 23, 2014, was submitted to EPD on August 19, 2014.
- EPD issued comments on VRP Status Report No. 5 in correspondence dated December 4, 2014.

- EPD Status Report No. 6, which addressed EPD comments dated December 4, 2014, was submitted to EPD on February 23, 2015.
- EPD issued comments on VRP Status Report No. 6 in correspondence dated July 27, 2015.
- VRP Status Report No. 7 was submitted to EPD on August 20, 2015.
- A response to the EPD comments on VRP Status Report No. 6 was submitted on September 28, 2015.
- A 24-hour high vacuum extraction (HVE) event was conducted beginning on November 10, 2015 using MW-8 and MW-19 as extraction wells. Approximately 1,300 gallons of fluid were recovered during the HVE event. The extracted fluids were treated on-site using activated carbon and then transported to the Swainsboro publicly owned treatment works (POTW) for disposal following confirmation of treatment to acceptable levels.
- VRP Status Report No. 8 was submitted to EPD on February 16, 2016.
- A biodegradation study consisting of sampling and analysis of dechlorinating bacteria and a key reductive dehalogenase genes study was conducted on March 17, 2016 using groundwater samples collected from wells MW-8 and MW-19.
- A 24-hour HVE event was conducted beginning on May 16, 2016 using MW-8 and MW-19 as extraction wells. Approximately 975 gallons of fluid were recovered during the HVE event. The extracted fluids were treated on-site using activated carbon and then transported to the Swainsboro POTW for disposal following confirmation of treatment to acceptable levels.
- EPD issued comments on VRP Status Report No. 8 in correspondence dated June 14, 2016.
- EPD comments dated June 14, 2016 are addressed in Status Report No 9 including revised logs in Appendix A.

3.0 Work Performed During Reporting Period

The activities currently identified to be conducted at the Former Automatic Sprinkler Site under the VRP are outlined in the VRP Application and VRP Application Addendum, dated April 29, 2011, and November 14, 2011, respectively, and the EPD VRP approval and comment letters dated February 24, 2012. Two additional voluntary remediation activities (not specified in the VRP Application or VRP Application Addendum) were conducted during this reporting period. The first was a biodegradation evaluation consisting of quantitation of dechlorinating bacteria and key reductive dehalogenase genes which was conducted on March 17, 2016 using groundwater samples collected from wells MW-8 and MW-19. The second activity was a HVE event conducted in May 2016 to address the area of higher VOC concentrations around monitoring wells MW-8 and MW-19. A routine semi-annual groundwater and surface water sampling event was conducted at the site in June 2016.

3.1 Financial Assurance Update

Documentation of financial assurance for implementation of the VRP at the site was submitted to EPD on May 30, 2012. The financial assurance mechanism is an irrevocable letter of credit for $525,000, which is well in excess of the $190,000 estimated cost to implement the VRP submitted in the VRP Application Addendum. The letter of credit automatically renews each year on March 25. The current estimated cost to complete VRP implementation is included as Table 2. The estimate contains a contingency cost allowance for conducting additional HVE events (that were not part of the approved VRP). The current estimated cost for continued VRP implementation is $72,180. Based upon the current site data, the financial assurance appears sufficient for completion of the VRP implementation at the site.

3.2 Groundwater and Surface Water Sampling

Groundwater and surface water sampling was conducted on June 15-16, 2016. Prior to collecting groundwater samples, the depth to water was measured in the site monitoring wells. The depth to water measurements and corresponding groundwater elevations for this gauging event, as well as historical gauging data dating back to 2008, are summarized on Table 3. The June 2016 groundwater elevations in the shallow zone averaged approximately 0.60 feet lower in elevation than those measured during the December 2015 sampling event. The measured groundwater elevations in the wells screened in the deep zone averaged approximately 0.74 feet lower in elevation than those measured in December 2015. Shallow zone potentiometric surface maps for June 2016 and December 2015 are presented as Figures 3a and 3b, respectively. The shallow zone potentiometric surface maps continue to show groundwater flow generally to be northeast, which is consistent with historical data. Deep zone potentiometric surface maps for June 2016 and December 2015 are presented as Figures 4a and 4b, respectively. Groundwater flow in the deep zone is generally to the east, and is consistent with historical data.

Groundwater samples were collected from shallow zone monitoring wells MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9/9R, MW-11, MW-15, MW-18, MW-19, MW-20, and MW-21 in June 2016. A groundwater sample was also collected from deep zone monitoring well MW-20D. A groundwater sample was not collected from MW-12 during the June 2016 sampling event. MW-12

could not be located and was thought to be covered by sediment washed over the well location from a recent storm at the site.

Low flow/low stress purging methodology employing a peristaltic pump was used to purge and sample the monitoring wells in general accordance with USEPA Region 4 Science and Ecosystem Support Division (SESD) Groundwater Sampling Procedure SESDPROC-301-R3 (March 2013). The samples were collected using a peristaltic pump by means of the "soda-straw" method as described in SESD 4.3.1.2.7. The groundwater samples were analyzed for site-specific VOCs using USEPA Method 8260B and ethane, ethene, and methane using USEPA Method SOP-RSK 175. Appendix A contains copies of groundwater sampling logs. It should be noted that, in accordance with EPD's June 14, 2016 comment letter, sampling logs from the prior sampling event have been revised to address the items referenced and are also included in Appendix A.

The analytical results for the June 2016 groundwater sampling event are summarized on Table 4, along with historical analytical results. It should be noted that additional samples for VOC analysis were collected from MW-8 and MW-19 in March 2016 as part of the biodegradation study. Constituent concentrations were similar to prior results, with generally stable or decreasing trends. Appendix B shows concentrations versus time trends for monitoring wells with historical detections of VOCs at concentrations exceeding the RRS. Figure 5 shows the results of the June 2016 event and the interpreted extent of detected VOCs in groundwater. Figure 5a shows the results of the June 2016 event and the interpreted extent of total VOCs greater than 0.01 mg/L. No VOCs were reported above their method detection limits in monitoring well MW-20D during the June 2016 sampling event, thus indicating vertical delineation. VOCs were not detected in off-site monitoring wells. Laboratory analytical reports are provided in Appendix C.

The sampling results from MW-8 showed a decrease in concentrations of TCE, 1,1-DCE, 1,1-DCA, cis-1,2-DCE, and 1,1,1-TCA in comparison to the December 2015 sampling event. Vinyl Chloride in MW-8 showed a slight increase in concentration compared to the December 2015 sampling event. Overall, MW-8 trend graphs show a decreasing trend for TCE, 1,1-DCE, cis-1,2-DCE, and VC. In MW-19, TCE and cis-1,2-DCE concentrations show a slight increase compared to the December 2015 groundwater sampling event, but overall, concentrations have decreased steadily since 2014 sampling events. Plot A and plot B versions were created for the MW-19 trend graphs. Plot A trend graphs continue to show all data collected whereas Plot B trend graphs show a more realistic trend graph omitting some anomalous data, which appear to be a result of induced flow of higher concentration groundwater into MW-19 following the July 2014 HVE event. Other VOCs in MW-19 show generally decreasing trends over the same time period, with some fluctuations.

Surface water samples SW-5 and SW-6 were collected from the unnamed tributary of Hughes Prong (which serves as the nearest discharge boundary for shallow groundwater) as well as the drainage ditch along the eastern property boundary. This unnamed tributary is approximately 530 feet down gradient of MW-8. Surface water samples SW-2 and SW-4 were collected from the drainage ditch downgradient of the culvert that flows beneath Meadowlake Parkway, but prior to the point where the ditch discharges to the unnamed tributary of Hughes Prong. The surface water sample locations are shown on Figure 6. It is thought that these locations are more representative of groundwater to surface water discharge than surface water samples collected from the low-lying area immediately east of the site, which does not have a clearly defined channel and is more likely

a groundwater recharge area. The surface water samples were analyzed for site-specific VOCs using USEPA Method 8260B. The groundwater and surface water samples were packaged in ice and transported by Amec Foster Wheeler personnel under chain-of-custody protocol to the laboratory, Analytical Environmental Services (AES) in Atlanta, Georgia. The laboratory analytical report is provided in Appendix C.

As shown on Table 5, all surface water sample results from the June 2016 sampling event were below the detection limits for all analyzed constituents. This is consistent with past results. The analytical results for surface water samples are summarized on Figure 6.

3.3 High Vacuum Extraction Event

In accordance with the recommendations in the previous Status Report, a 24-hour HVE event was conducted at the site using monitoring wells MW-8 and MW-19 as extraction wells. The HVE event was conducted by Brown Remediation, Inc. with Amec Foster Wheeler oversight. The extraction was conducted with drop tubes initially set approximately 2-3 feet into water. A vacuum of approximately 9 inches of mercury was applied to each well to extract vapors and entrained liquids. The drop tubes were lowered as the water level dropped during the event to maintain fluid recovery and to induce a cone of depression, thus increasing the zone of influence. The fluid level in MW-8 drew down 2.75 feet, and the fluid level in MW-19 drew down 7.81 feet at the completion of the event. Water levels in monitoring wells surrounding MW-8 and MW-19 dropped by 0.19 feet (MW-18) and 0.02 feet (MW-21) over the course of the event. Vacuum influence was gauged in the same wells, but no vacuum influence was observed. Based upon organic vapor analyzer (OVA) readings collected over the 24-hour extraction period, approximately 212 pounds of vapor phase chlorinated compounds were removed during the event. The extracted fluids were directed through an air/water separator and extracted vapors were directed through a mobile thermal oxidizer for treatment, as part of the contractor's normal process, prior to emission to the atmosphere.

A total of approximately 975 gallons of water was recovered during the event. The extracted water was pumped from the vacuum truck tank through activated carbon for treatment, temporarily stored in an on-site tanker truck, sampled, and transported to the Swainsboro publicly owned treatment works (POTW) for disposal following the confirmation of treatment to acceptable limits. A sample of the activated carbon treated effluent was collected and submitted to TestAmerica Laboratory in Savannah, Georgia for 24-hour turnaround time for VOCs by EPA method 8260B. The HVE extracted water was reported below the detection limit for the constituents of concern for the site. The laboratory results for the activated carbon effluent sample are included in Appendix C. The HVE contractor report is presented in Appendix D.

3.4 Microbial Study

Groundwater samples were collected on March 17, 2016 from wells MW-8 and MW-19 and submitted to Microbial Insights for CENSUS™ quantitation of dechlorinating bacteria and key reductive dehalogenase genes known to be involved in the anaerobic biodegradation of TCE and associated daughter compounds (cis-1,2-DCE and vinyl chloride). The concentrations of dehalococcoides bacteria and key reductive dehalogenase genes, in conjunction with high methane concentrations, indicate favorable conditions for reductive dechlorination; reductive

dechlorination is likely occurring under existing site conditions in both MW-8 and MW-19. The Microbial Insights report is presented in Appendix E.

4.0 Groundwater Modeling Update

The groundwater fate and transport BIOCHLOR model was not updated as part of this Status Report. In the three primary monitoring wells used for model calibration (MW-8, MW-15, and MW-20), VOC concentrations continue to correlate reasonably well to the previous model predictions. The BIOCHLOR model will be updated after the upcoming November/December 2016 sampling event.

5.0 Conclusions

The June 2016 groundwater flow direction is consistent with previous data. No chlorinated VOC impacts were detected in the deeper zone, no surface water impacts were detected, and the shallow groundwater VOC plume appears to be generally degrading and shrinking. Down gradient monitoring wells MW-9R and MW-11 are non-detect for those VOCs at the property line. Down gradient offsite monitoring wells MW-15 and MW-7 are also non-detect for those VOCs. The land surrounding the site is industrial or undeveloped and is supplied with public water. Therefore, no complete pathways for exposure to contaminants are present. Vapor intrusion modeling does not indicate that the VOCs in groundwater pose a risk to on-site structures. The data does not suggest that revisions to the conceptual site model are necessary.

The groundwater analytical data continues to support MNA as an appropriate corrective action for the site. The BIOCHLOR predictions do not indicate that contaminants will affect the nearest point of exposure (POE), the unnamed tributary of Hughes Prong. The previous BIOCHLOR predictions indicate an estimated cleanup timeframe of approximately 74 years before MNA will reduce on-site concentrations to drinking water levels. Contaminant concentrations exceeding drinking water levels appear confined to a portion of the Former Automatic Sprinkler Site.

A Uniform Environmental Covenant (UEC) will be executed for the property to prohibit the use of groundwater. It is anticipated that the UEC will be submitted for public review during the next six months and will be in place by the end of the 5-year VRP implementation period. Additional HVE events or other remediation enhancements to reduce contaminant mass, to limit the potential for off-site contaminant migration, and to help accelerate the cleanup timeframe continue to be considered. An additional HVE event is planned for October 2016. The next routine groundwater and surface water sampling event will be conducted in the November/December 2016 timeframe. It is anticipated that a VRP Compliance Status Report (CSR), inclusive of the monitoring results from the next sampling event, will be submitted in February 2017. An updated milestone schedule for VRP implementation activities is included as Figure 7.

6.0 Professional Hours Services this Period

Amec Foster Wheeler Environment & Infrastructure, Inc. has provided 220.3 professional service hours for VRP implementation from January 23, 2016 through July 22, 2016. The registered professional engineer responsible for implementation of the VRP at this site is Mr. Gregory Wrenn. Mr. Wrenn has personally charged 51 labor hours to the project to direct and review the various aspects of implementation of the VRP during this reporting period. Table 6 shows a monthly summary of hours invoiced and a description of services for this reporting period.

TABLES

Former Automatic Sprinkler Site
Swainsboro, GA

Table 1
Summary of Delineation Criteria and Cleanup Standards

August 2016

Soil Constituents	Delineation Criteria	Type 3 Surface Soil Cleanup Value	Type 3 Subsurface Soil Cleanup Value	RRS Data Source
	mg/kg	mg/kg	mg/kg	
Arsenic	20	38	41	Type 3, Jan 2000 CAP
Barium	1000	1000	1000	Type 3, Jan 2000 CAP
Cadmium	2	39	39	Type 3, Jan 2000 CAP
Chromium	100	110	1200	Type 3, Jan 2000 CAP
Copper	100	1500	1500	Type 3, Jan 2000 CAP
Lead	75	400	400	{Revised per HSRA Rule Change}
Mercury	0.5	17	17	Type 3, Jan 2000 CAP
Nickel	50	420	420	Type 3, Jan 2000 CAP
Silver	2	10	10	Type 3, Jan 2000 CAP
Vanadium	100	100	100	Type 3, Jan 2000 CAP
Zinc	100	2800	2800	Type 3, Jan 2000 CAP
1,1,1-Trichloroethane	20	20	20	Type 3, VRP Appl Addendum, Appendix C
1,1,2,2-Tetrachloroethane	0.13	0.5	0.5	Type 3, VRP Appl Addendum, Appendix C
1,1,2-Trichloroethane	0.5	0.5	0.5	Type 3, VRP Appl Addendum, Appendix C
1,1-Dichloroethene	0.7	0.7	0.7	Type 3, VRP Appl Addendum, Appendix C
1,2-Dichloroethane	0.5	0.5	0.5	Type 3, VRP Appl Addendum, Appendix C
cis-1,2-Dichloroethene	7	7	7	Type 3, VRP Appl Addendum, Appendix C
Trichloroethene	0.5	0.5	0.5	Type 3, VRP Appl Addendum, Appendix C
Vinyl Chloride	0.2	0.2	0.2	Type 3, VRP Appl Addendum, Appendix C
Groundwater Constituents	**Delineation Critieria mg/L**	**Groundwater Cleanup Value mg/L**		
Cadmium	0.005	0.005		Type 3, Jan 2000 CAP
Chromium	0.1	0.1		Type 3, Jan 2000 CAP
Copper	1.3	1.3		Type 3, Jan 2000 CAP
Lead	0.015	0.015		Type 3, Jan 2000 CAP
Zinc	2	2		Type 3, Jan 2000 CAP
Mercury	0.002	0.002		Type 3, Jan 2000 CAP
1,1,1-Trichloroethane	0.2	13		Type 4, VRP Appl Addendum, Appendix C
1,1,2,2-Tetrachloroethane	0.001	0.005		Type 3 {Reporting Limit}, VRP Addendum, Appendix C
1,1,2-Trichloroethane	0.005	0.005		Type 3, VRP Appl Addendum, Appendix C
1,1-Dichloroethene	0.007	0.52		Type 4, VRP Appl Addendum, Appendix C
1,2-Dichloroethane	0.005	0.005		Type 3, VRP Appl Addendum, Appendix C
cis-1,2-Dichloroethene	0.07	0.2		Type 4, VRP Appl Addendum, Appendix C
Trichloroethene	0.005	0.0052		Type 4, VRP Appl Addendum, Appendix C
Vinyl Chloride	0.002	0.0033		Type 4, VRP Appl Addendum, Appendix C

mg/kg milligrams per kilogram
mg/L milligrams per liter

Revised by: LMS 7-26-12
Checked by: MKB 7-27-12

Table 2
ESTIMATED COST FOR VRP IMPLEMENTATION
FORMER AUTOMATIC SPRINKLER, SWAINSBORO, GEORGIA

Task #	Task Description	Quantity	Unit	Unit Cost	Total	Notes
1.0	**Annual Sampling, Reporting, Inspections, & Maintenance**					
	1.1 Semi-Annual Groundwater Sampling					
	Labor	2	event	$3,000	$6,000	Assumes 3 days/event, 2-man crew
	Laboratory Analytical	22	ea	$280	$6,160	VOCs, hydrogen, methane, ethane
	Rental Equipment	2	event	$800	$1,600	ethene
	Mobilization/Demobilization/Travel Expenses/Supplies	2	event	$1,200	$2,400	
	1.2 Semi-Annual Surface Water Sampling					
	Labor	2	event	$500	$1,000	Assumes 1 day/event, 2-man crew
	Laboratory Analytical	4	ea	$80	$320	VOCs
	Expenses/Supplies	2	ea	$100	$200	
	1.3 Reporting	2	ea	$8,500	$17,000	
	1.4 Other Costs (covenant, inspections, EPD comments/invoices)	1	ea	$2,500	$2,500	
	SUBTOTAL - Annual Costs				**$37,180**	
2.0	**Supplemental Hi-Vacuum Remediation Events**	2	ea	$15,000	**$30,000**	
3.0	**Post-Implementation Compliance Status Report**	1	ea	$20,000	**$20,000**	

Year	Cost Description	Task 1	Task 2	Task 3	Yearly Cost
2016	Annual Costs + HVR Events	$37,180	$15,000		$52,180
2017	CSR			$20,000	$20,000
	TOTAL PROJECTED COST				**$72,180**

Prepared by: TRK 8/10/2016
Checked by: GJW 8/10/2016

The cost opinion is provided for budgetary purposes. Actual scope of work and costs may vary as additional information and formal cost estimates are obtained.

Table 3
Summary of Groundwater Elevations June 2008 Through June 2016

Well ID	TOC Elevation (FT MSL)	Depth to Water 6/4/2008 (FT BTOC)	Groundwater Elevation 6/4/2008 (FT MSL)	Depth to Water 4/14/2009 (FT BTOC)	Groundwater Elevation 4/14/2009 (FT MSL)	Depth to Water 9/17/2009 (FT BTOC)	Groundwater Elevation 9/17/2009 (FT MSL)	Depth to Water 11/30/2009 (FT BTOC)	Groundwater Elevation 11/30/2009 (FT MSL)	Depth to Water 5/17/2010 (FT BTOC)	Groundwater Elevation 5/17/2010 (FT MSL)	Depth to Water 11/18/2010 (FT BTOC)	Groundwater Elevation 11/18/2010 (FT MSL)	Depth to Water 5/30/2012 (FT BTOC)	Groundwater Elevation 5/30/2012 (FT MSL)	Depth to Water 12/13/2012 (FT BTOC)	Groundwater Elevation 12/13/2012 (FT MSL)
Shallow Aquifer																	
MW-1	292.71	NM	NM	6.49	286.22	10.68	282.03	9.62	283.09	9.21	283.50	11.56	281.15	NM	NM	12.63	280.08
MW-2	285.70	6.11	279.59	4.64	281.06	5.53	280.17	4.90	280.80	4.93	280.77	6.29	279.41	5.14	280.56	6.14	279.56
MW-3	281.17	3.30	277.87	1.86	279.31	2.70	278.47	2.35	278.82	2.31	278.86	3.58	277.59	2.31	278.86	3.03	278.14
MW-4	281.84	2.40	279.44	0.92	280.92	1.87	279.97	1.50	280.34	1.61	280.23	2.81	279.03	1.71	280.13	3.11	278.73
MW-5	286.71	6.57	280.14	4.00[1]	282.71	6.22	280.49	6.29	280.42	6.18	280.53	7.86	278.85	*6.65	280.06	8.42	278.29
MW-6	281.00	4.51	276.49	2.52	278.48	4.34	276.66	3.85	277.15	3.68	277.32	5.04	275.96	4.40	276.60	5.32	275.68
MW-7	281.33	4.19	277.14	2.56	278.77	3.48	277.85	2.99	278.34	2.83	278.50	4.21	277.12	2.71	278.62	3.33	278.00
MW-8	281.28	3.69	277.59	1.82	279.46	3.24	278.04	2.73	278.55	2.64	278.64	3.96	277.32	2.13	279.15	3.20	278.08
MW-9R	278.31	3.70	274.61	1.74	276.57	3.41	274.90	3.00	275.31	2.25	276.06	4.40	273.91	2.51	275.80	3.16	275.15
MW-10	289.37	6.89	282.48	2.54	286.83	6.17	283.20	5.42	283.95	5.30	284.07	7.76	281.61	4.28	285.09	7.15	282.22
MW-11	281.77	4.50	277.27	3.11	278.66	4.06	277.71	3.58	278.19	3.39	278.38	4.75	277.02	3.27	278.50	3.93	277.84
MW-12	288.04	4.62	283.42	0.97	287.07	4.34	283.70	3.50	284.54	3.57	284.47	5.94	282.10	2.85	285.19	5.04	283.00
MW-15	280.22	6.87	273.35	6.04	274.18	6.63	273.59	6.36	273.86	6.30	273.92	7.12	273.10	6.47	273.75	7.05	273.17
MW-18	281.27	NI	NI	NI	NI	3.55	277.72	2.64	278.63	2.87	278.40	4.16	277.11	2.64	278.63	3.43	277.84
MW-19	281.80	NI	NI	NI	NI	4.13	277.67	3.23	278.57	3.00	278.80	2.81	278.99	*3.27	278.53	3.64	278.16
MW-20	282.99	NI	NI	NI	NI	5.15	277.84	4.77	278.22	4.53	278.46	5.78	277.21	4.45	278.54	5.24	277.75
MW-21	284.12	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	*4.96	279.16	5.44	278.68
Deep Aquifer																	
MW-1D	282.95	8.34	274.61	7.14	275.81	7.55	275.40	7.35	275.60	7.53	275.42	7.71	275.24	7.91	275.04	8.04	274.91
MW-2D	280.01	8.70	271.31	7.50	272.51	8.02	271.99	7.96	272.05	8.11	271.90	8.26	271.75	8.47	271.54	8.74	271.27
MW-16D	279.91	6.30	273.61	4.70	275.21	5.66	274.25	5.93	273.98	5.85	274.06	5.45	274.46	6.32	273.59	6.54	273.37
MW-20D	281.21	NI	NI	NI	NI	6.59	274.62	6.08	275.13	7.35	273.86	6.79	274.42	7.57	273.64	7.19	274.02

Notes:

BTOC: Below top of casing
FT MSL: Feet mean sea level
NM: not measured
NI = Not Installed

[1] Water level measurement collected on 4/15/2009

* Water level measurements collected on 5/31/2012

Table 3
Summary of Groundwater Elevations June 2008 Through June 2016

Well ID	TOC Elevation (FT MSL)	Depth to Water 6/5/2013 (FT BTOC)	Groundwater Elevation 6/5/2013 (FT MSL)	Depth to Water 12/3/2013 (FT BTOC)	Groundwater Elevation 12/3/2013 (FT MSL)	Depth to Water 6/2/2014 (FT BTOC)	Groundwater Elevation 6/2/2014 (FT MSL)	Depth to Water 12/1/2014 (FT BTOC)	Groundwater Elevation 12/1/2014 (FT MSL)	Depth to Water 6/16/2015 (FT BTOC)	Groundwater Elevation 6/16/2015 (FT MSL)	Depth to Water 12/7/2015 (FT BTOC)	Groundwater Elevation 12/7/2015 (FT MSL)	Depth to Water 6/14/2016 (FT BTOC)	Groundwater Elevation 6/14/2016 (FT MSL)
Shallow Aquifer															
MW-1	292.71	9.74	282.97	10.58	282.13	8.82	283.89	9.61	283.10	8.66	284.05	8.40	284.31	9.24	283.47
MW-2	285.70	5.83	279.87	4.91	280.79	4.94	280.76	4.88	280.82	5.21	280.49	4.50	281.20	5.34	280.36
MW-3	281.17	2.98	278.19	2.70	278.47	2.51	278.66	2.98	278.19	2.87	278.30	2.32	278.85	3.02	278.15
MW-4	281.84	2.25	279.59	2.02	279.82	1.40	280.44	2.43	279.41	1.55	280.29	1.30	280.54	1.79	280.05
MW-5	286.71	6.49	280.22	7.51	279.20	5.78	280.93	7.29	279.42	5.58	281.13	5.63	281.08	6.21	280.50
MW-6	281.00	4.16	276.84	4.72	276.28	3.59	277.41	4.69	276.31	3.41	277.59	3.50	277.50	3.78	277.22
MW-7	281.33	3.50	277.83	3.24	278.09	3.53	277.80	3.50	277.83	3.75	277.58	2.90	278.43	2.90	278.43
MW-8	281.28	3.36	277.92	3.05	278.23	3.06	278.22	3.21	278.07	3.40	277.88	2.62	278.66	3.44	277.84
MW-9R	278.31	3.00	275.31	3.48	274.83	2.70	275.61	3.14	275.17	2.84	275.47	2.50	275.81	2.70	275.61
MW-10	289.37	6.47	282.90	6.65	282.72	5.46	283.91	5.48	283.89	5.05	284.32	4.19	285.18	5.49	283.88
MW-11	281.77	4.10	277.67	3.79	277.98	3.95	277.82	4.11	277.66	4.30	277.47	3.54	278.23	4.33	277.44
MW-12	288.04	4.71	283.33	4.51	283.53	3.62	284.42	3.33	284.71	3.28	284.76	2.32	285.72	NM	NM
MW-15	280.22	6.59	273.63	6.72	273.50	6.31	273.91	6.19	274.03	6.37	273.85	6.27	273.95	6.41	273.81
MW-18	281.27	3.17	278.10	3.11	278.16	3.01	278.26	3.33	277.94	3.30	277.97	2.72	278.55	3.35	277.92
MW-19	281.80	3.83	277.97	3.45	278.35	3.49	278.31	3.65	278.15	3.92	277.88	3.04	278.76	3.92	277.88
MW-20	282.99	5.18	277.81	5.08	277.91	5.04	277.95	5.25	277.74	5.15	277.84	4.73	278.26	5.25	277.74
MW-21	284.12	5.46	278.66	4.96	279.16	4.86	279.26	5.26	278.86	5.26	278.86	4.66	279.46	5.25	278.87
Deep Aquifer															
MW-1D	282.95	8.17	274.78	8.01	274.94	7.95	275.00	7.80	275.15	8.00	274.95	7.54	275.41	7.80	275.15
MW-2D	280.01	8.83	271.18	7.61	272.40	8.07	271.94	8.24	271.77	8.14	271.87	7.87	272.14	8.27	271.74
MW-16D	279.91	5.85	274.06	5.52	274.39	5.50	274.41	6.88	273.03	5.39	274.52	4.86	275.05	5.83	274.08
MW-20D	281.21	7.31	273.90	6.65	274.56	6.75	274.46	7.44	273.77	6.80	274.41	5.61	275.60	6.94	274.27

Notes: **Notes:**

BTOC: Belc BTOC: Below top of casing
FT MSL: Fe FT MSL: Feet mean sea level
NM: not me NM: not measured
NI = Not Ins NI = Not Installed
[1] Water leve [1] Water level measurement collected on 4/15/2009
* Water leve * Water level measurements collected on 5/31/2012

Prepared by: MHA 6/28/2016
Checked by: NJM 7/7/2016

Former Automatic Sprinkler Site
Swainsboro, GA

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

August 2016

Sample Location		MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-4	MW-4
Date Sampled	TYPE 3/4 RRS mg/L	Jul-98	Dec-00	Dec-03	May-04	Nov-04	May-05	Jun-06	Dec-06	May-07	Jun-08	Apr-09	Dec-09	Dec-09	May-10	Nov-10	Jun-16	Jul-98	Dec-00	Dec-03	May-04	Nov-04
														DUP-2								
VOCs (mg/L)																						
Chloroethane	---	0.015	<0.010	0.0096	0.0034	0.0038	0.0028	0.0013	0.0011	0.0018	<0.001	0.0014	0.0011	<0.001	0.002	0.0009 J	<0.010	0.029	0.022	0.040	0.0024	0.021
1,1,2,2-Tetrachloroethane	0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	NA	<0.005	<0.001	<0.001	<0.001
1,1,1-Trichloroethane	13	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	ND	<0.005	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	NA	<0.005	<0.001	<0.001	<0.001
Trichloroethylene	0.0052	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	ND	<0.005	<0.001	<0.001	<0.001
1,1-Dichloroethene	0.52	0.006	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	ND	<0.005	<0.001	<0.001	<0.001
1,1-Dichloroethane	---	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	0.018	<0.005	<0.001	<0.001	<0.001
1,2-Dichloroethane	0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	NA	<0.005	<0.001	<0.001	<0.001
cis -1,2-Dichloroethene	0.2	ND	<0.005	<0.001	<0.001	<0.001	0.0014	<0.001	0.00091 J	<0.001	0.00094 J	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	ND	<0.005	<0.001	<0.001	<0.001
trans -1,2-Dichloroethene	---	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	NA	<0.005	<0.001	<0.001	<0.001
Vinyl Chloride	0.0033	**0.140**	**0.052**	**0.022**	**0.024**	**0.027**	**0.027**	**0.014**	**0.020**	**0.021**	**0.0173**	**0.0168**	**0.0094**	**0.0093**	**0.0172**	**0.0104**	**0.0057**	**0.300**	**0.093**	**0.058**	**0.018**	**0.045**
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	NA	5.94	5.7	5.64	5.51	5.28	5.37	5.63	5.57	5.54	5.85	6.04	6.04	5.7	6.21	5.57	NA	6.37	6.24	6.12	6.16
Specific Conductance (mS/cm)	---	NA	0.14	0.19	0.197	0.222	0.212	0.208	0.199	0.263	0.222	0.239	0.421	0.421	0.278	0.255	0.121	NA	0.21	0.33	0.183	0.376
Temperature (deg. C)	---	NA	16.94	19.3	19.94	21.48	22.53	24.65	21.99	24.24	26.59	19.17	20.45	20.45	22.38	22.98	25.06	NA	17.91	18.22	21	20.3
Dissolved Oxygen (mg/L)	---	NA	0.00	0.48	0.34	0.78	0.62	0.40	0.43	0.42	0.50	0.34	0.27	0.27	0.23	0.48	0.20	NA	0.00	0.24	0.12	0.76
ORP (mV)	---	NA	-13.00	-17.6	-29.7	12.9	53.5	87.9	30.3	0.4	-35.3	-10.8	-60.1	-60.1	-7.2	-72.3	18.6	NA	-32.00	-43.1	-110	-59.9
Turbidity (NTU)	---	NA	6.40	45	24.1	12.8	13.7	5	1.6	8.5	4.1	4	32.2	32.2	67.2	30.8	4.57	NA	5.40	12.5	8	10.0
Iron II (mg/L)	---	NA	4.80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.40	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	13.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.60	NA	NA	NA
Chloride	---	NA	4.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.70	NA	NA	NA
Nitrate	---	NA	<0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA
Sulfate	---	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.10	NA	NA	NA
Total Alkalinity	---	NA	74.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	120.00	NA	NA	NA
Total Sulfide	---	NA	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	NA	0.001	0.0012	0.00081	0.0014	0.0013	0.0012	0.00084	0.000890	0.001300	0.000450	0.000210	0.000660	0.0004 J	0.00039	<0.007	NA	0.0026	0.0027	0.001	0.0019
Ethane	---	NA	<0.000005	0.000009	0.000014	0.000065	0.000130	0.000052	0.000033	0.000050	0.000180	0.000021	<0.00001	0.000140	0.000009 J	0.000018	<0.009	NA	<0.000005	<0.000005	<0.000005	<0.000005
Methane	---	NA	9.10	7.6	7.7	9.4	7.2	9.2	8.3	6.7	8.2	7.4	5.8	13.0	4.2 J	7.6	6.7	NA	8.10	8.3	5.6	5.0
Hydrogen (nmol/L)	---	NA	<0.030	2.7	3.9	1.6	1.4	3.0	27.0	1.7	2.2	1.1	1.5	NA	2.0	1.2		NA	0.16	2.6	2.7	1.2

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Former Automatic Sprinkler Site
Swainsboro, GA

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

August 2016

Sample Location		MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
Date Sampled	TYPE 3/4 RRS mg/L	May-05	Jun-06	Dec-06	May-07	Jun-08	Apr-09	Dec-09	May-10	Nov-10	May-12	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Oct-98	Dec-00	Dec-03
VOCs (mg/L)																						
Chloroethane	---	0.0045	0.003	0.0029	0.0034	0.0029	<0.001	0.0014	0.0016	0.0013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	ND	<0.010	<0.001
1,1,2,2-Tetrachloroethane	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.001
1,1,1-Trichloroethane	13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.001
1,1,2-Trichloroethane	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.001
Trichloroethylene	0.0052	0.0016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.001
1,1-Dichloroethene	0.52	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	0.015	0.015
1,1-Dichloroethane	---	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	0.015	0.011
1,2-Dichloroethane	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.001
cis -1,2-Dichloroethene	0.2	0.0021	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.001
trans -1,2-Dichloroethene	---	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.001
Vinyl Chloride	0.0033	**0.037**	**0.031**	**0.040**	**0.042**	**0.034**	**0.0047**	**0.022**	**0.0288**	**0.0241**	**0.028**	**0.024**	0.0031	**0.036**	**0.02**	**0.028**	**0.020**	**0.018**	**0.0077**	ND	<0.010	<0.001
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	6.13	6.18	6.18	6.12	5.54	6.73	6.65	5.89	5.97	6.18	6.16	6.3	6.19	5.72	6.01	6.18	6.27	6.34	NA	4.84	4.95
Specific Conductance (mS/cm)	---	0.452	0.437	0.391	0.474	0.422	0.237	0.402	0.401	0.349	0.447	0.416	0.156	0.463	0.478	0.406	0.414	0.360	0.264	NA	0.03	0.03
Temperature (deg. C)	---	24.86	25.03	20.35	23.66	25.95	18.54	21.78	24.8	23.35	25.46	18.26	23.47	21.94	26.81	21.91	26.24	20.23	26.05	NA	18.50	18.83
Dissolved Oxygen (mg/L)	---	0.57	0.32	0.39	1.19	0.53	1.23	0.28	0.27	0.80	0.30	0.96	1.52	3.78	0.73	0.31	0.46	0.47	0.19	NA	0.00	0.51
ORP (mV)	---	-49.5	-37.1	-214.8	-71.8	-36.2	-39.6	-82.9	-33.5	-325.1	-56.6	-18.4	-3.8	-63	-27.4	-66.8	-59.9	-45.4	-51.6	NA	210.00	234.10
Turbidity (NTU)	---	0.0	4.5	6.5	2.3	2.2	6.0	16.2	-3.2	14.2	3.0	9.1	8.3	0.0	0.7	2.80	5.70	2.70	1.97	NA	0.00	39.50
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.80	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.20	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.60	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.70	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	0.0016	0.0019	0.0016	0.0014	0.0012	0.00012	0.00054	0.00074 J	0.00076	NA	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	0.000016	0.000009
Ethane	---	<0.00001	<0.00001	<0.00001	<0.00001	0.00001	0.000004J	<0.00001	0.000004 J	0.000008 J	NA	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	NA	<0.000005	<0.000005
Methane	---	7.4	9.5	7.9	9.7	11.0	0.68	5.9	7.9 J	4.5	NA	6.0	1.7	6.2	3.8	5.9	7.0	5.9	4.5	NA	0.52	0.63
Hydrogen (nmol/L)	---	7.7	3.8	2.0	2.7	4.8	3.0	25.0	2.6	2.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.030	1.2

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

Sample Location		MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5
Date Sampled	TYPE 3/4 RRS mg/L	May-04	Nov-04	May-05	Jun-06	Dec-06	May-07	Jun-08	Apr-09	Dec-09	May-10	Nov-10	May-12	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16
VOCs (mg/L)																					
Chloroethane	---	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,2,2-Tetrachloroethane	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	0.0052	0.001	<0.001	0.0022	0.0011	0.0020	0.0011	0.0013	0.0012	0.0011	<0.001	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.52	0.013	0.011	0.011	0.0081	0.0098	0.0087	0.0074	0.0068	0.0071	0.0051	0.0045	0.0064	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	---	0.0096	0.0077	0.0075	0.0069	0.0065	0.0054	0.0053	0.0045	0.0046	0.0032	0.0028	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis -1,2-Dichloroethene	0.2	<0.001	<0.001	0.0016	<0.001	0.0012	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans -1,2-Dichloroethene	---	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	0.0033	<0.001	<0.001	<0.001	<0.001	0.00035 J	0.00033J	0.00026 J	<0.001	0.0003J	0.00088 J	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
SVOCs (mg/L)																					
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N:A
Field Parameters																					
pH (std. Units)	---	4.99	4.67	4.75	5.08	4.90	4.80	4.95	5.00	4.93	4.72	4.88	4.57	4.95	4.56	5.01	4.72	4.38	4.75	4.98	4.50
Specific Conductance (mS/cm)	---	0.033	0.036	0.033	0.035	0.037	0.08	0.036	0.03	0.071	0.044	0.036	0.042	0.15	0.079	0.037	0.037	0.045	0.043	0.031	0.034
Temperature (deg. C)	---	21.65	22.97	20.25	21.96	20.87	20.22	21.54	18.4	21.61	19.17	22.69	21.23	19.86	19.98	21.28	21.2	20.94	22.13	20.56	21.51
Dissolved Oxygen (mg/L)	---	0.32	0.19	0.38	0.28	0.28	0.29	0.52	0.23	0.51	0.17	0.33	0.96	2.83	0.59	3.99	0.57	0.41	1.40	0.76	0.28
ORP (mV)	---	133.2	130.9	200.8	135.1	171.5	175.1	-77.9	180	195.6	207.6	213.5	205.2	180.4	81.7	233.4	161.5	267.2	206.7	162.6	247.6
Turbidity (NTU)	---	1.4	0.0	0	3.5	4.1	5.2	1.8	0.0	0.0	4.0	3.0	5.7	7.9	1.8	8.6	1.2	7.41	9.71	9.60	323
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N:A
Geochemical Natural Attenuation Parameters (mg/L)																					
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	0.000011	0.000011	0.000009	0.000008 J	0.000006 J	0.000007J	0.000012	0.000006J	0.000065	0.000011 J	0.000007 J	NA	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Ethane	---	0.0000024 J	0.0000061	0.000004	0.000002 J	0.000002 J	0.000005J	0.000006 J	0.000004J	0.000008J	0.000015 J	0.000002 J	NA	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Methane	---	0.56	0.83	0.57	0.51	0.4	0.28	0.24	0.2	0.27	0.21 J	0.048	NA	0.059	0.053	0.078	0.054	0.09	0.260	0.150	0.320
Hydrogen (nmol/L)	---	1.7	1.6	2.3	7.2	11	4	15	7.7	11.0	8.8	3.9	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Former Automatic Sprinkler Site
Swainsboro, GA

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

August 2016

Sample Location		MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6
Date Sampled	TYPE 3/4 RRS mg/L	Oct-98	Dec-00	Dec-03	May-04	Nov-04	May-05	Jun-06	Dec-06	May-07	Jun-08	Apr-09	Sep-09	Dec-09	May-10	Nov-10	Nov-10	May-12	Dec-12	Jun-13	Dec-13	Jun-14
VOCs (mg/L)																						
Chloroethane	---	0.002	<0.010	0.014	0.0032	<0.001	0.0072	0.002	0.0016	0.0017	0.0013	<0.001	0.0017	0.001	<0.001	0.0012	0.0012	<0.01	<0.010	<0.010	<0.010	<0.010
1,1,2,2-Tetrachloroethane	0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	13	ND	<0.005	<0.001	<0.001	0.0016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	0.0052	ND	<0.005	0.0036	<0.001	**0.0079**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.52	ND	<0.005	0.0022	<0.001	0.0048	0.0017	<0.001	<0.001	0.0010	<0.001	0.00060J	<0.001	<0.001	0.0014	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	---	ND	<0.005	0.0011	0.0018	0.0021	0.0036	0.0014	0.0020	0.0028	0.0023	0.0016	0.0015	0.0013	0.002	0.0015	0.0015	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane	0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005
cis -1,2-Dichloroethene	0.2	ND	<0.005	0.0018	<0.001	0.0045	0.0029	0.00090 J	0.0012	0.0014	0.0014	0.0010	0.0015	0.0012	0.0014	0.0016	0.0019	<0.005	<0.005	<0.005	<0.005	<0.005
trans -1,2-Dichloroethene	---	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	0.0033	**0.010**	<0.010	**0.010**	**0.0096**	**0.0092**	**0.0094**	**0.0055**	**0.0051**	**0.0065**	**0.0052**	**0.0035**	**0.0054**	**0.0035**	0.0028	**0.0043**	**0.0044**	**0.0036**	0.003	<0.002	<0.002	<0.002
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	NA	6.14	5.84	5.81	5.81	5.84	5.54	5.82	5.85	4.91	5.98	5.84	5.84	5.56	5.56	5.56	5.78	5.85	5.70	5.90	4.93
Specific Conductance (mS/cm)	---	NA	0.12	0.18	0.167	0.182	0.15	0.152	0.160	0.191	0.152	0.231	0.192	0.211	0.156	0.169	0.169	0.169	0.188	0.195	0.157	0.146
Temperature (deg. C)	---	NA	17.27	20.83	24.92	23.92	24.64	27.16	22.16	23.75	27.25	20.24	31.27	21.83	24.00	25.56	25.56	28.05	21.69	25.53	23.19	27.11
Dissolved Oxygen (mg/L)	---	NA	0.00	0.26	0.07	0.35	0.64	0.4	0.24	0.42	0.41	1.73	0.28	0.39	0.82	0.52	0.52	0.21	0.93	0.48	0.21	0.28
ORP (mV)	---	NA	-92.00	-11.6	-78.8	-22.0	-6.0	30.3	-216.5	-39.4	292.7	4.9	-12.7	-7.7	-1.6	-387.7	-387.7	-6.6	-8.7	-83.6	-33.2	-23.8
Turbidity (NTU)	---	NA	0.00	7.3	2.4	5.6	4.9	3.5	4.5	2.2	0.7	3.5	6.1	8.0	11.5	11.5	11.5	4.6	7.3	2.1	9.2	8.47
Iron II (mg/L)	---	NA	4.60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	3.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	3.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	<0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	65.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	NA	0.00014	0.00043	0.00016	0.00029	0.00013	0.0002	0.000066	0.000068	0.00011	0.000038	0.000092	0.000042	0.000053 J	0.000084	0.000084	NA	<0.007	<0.007	<0.007	<0.007
Ethane	---	NA	<0.000005	<0.000005	<0.000005	0.000011	<0.00001	<0.000010	<0.00001	0.000006J	0.000009J	0.000006J	0.000003J	0.000002J	0.000006 J	0.000003 J	0.000003	NA	<0.009	<0.009	<0.009	<0.009
Methane	---	NA	6.10	5.9	3.8	5.4	3.7	4.6	5.1	2.9	3.2	3.8	1.8	1.2	2.8 J	3.4	3.4	NA	3.4	2.2	3.5	1.8
Hydrogen (nmol/L)	---	NA	1.20	2.2	2.4	4.1	3.3	3.8	1.7	3.2	2.8	0.71	330	18	5.2	2.6	2.6	NA	NA	NA	NA	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

Sample Location		MW-6	MW-6	MW-6	MW-6	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
Date Sampled	TYPE 3/4 RRS mg/L	Dec-14	Jun-15	Dec-15	Jun-16	May-12	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Oct-98	Jul-00	Dec-00	Apr-01	Dec-03	Dec-03 Dup	May-04	May-04 Dup
VOCs (mg/L)																						
Chloroethane	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.041	<1	<0.1	0.046	0.38	0.37	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.001	<0.5	<0.05	<0.002	<0.050	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	13	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**53**	6.2	0.67	2.5	1.3	1.3	0.75	0.95
1,1,2-Trichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.052**	<0.5	<0.05	<0.002	<0.050	<0.05	<0.05	<0.05
Trichloroethylene	0.0052	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**140**	**14**	**1**	**4**	**2.4**	2.4	**1.6**	**1.8**
1,1-Dichloroethene	0.52	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**45**	**8.7**	**0.9**	**2.3**	**2.4**	**2.2**	**1.2**	**1.3**
1,1-Dichloroethane	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.94	<0.5	0.13	0.17	0.28	0.27	0.17	0.2
1,2-Dichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.03**	<0.5	<0.05	<0.002	<0.050	<0.05	<0.05	<0.050
cis -1,2-Dichloroethene	0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**4.5**	**4.5**	**1.1**	**1.4**	**2.3**	**2.1**	**2.1**	**2.3**
trans -1,2-Dichloroethene	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.5	<0.05	NA	<0.050	<0.05	<0.05	<0.05
Vinyl Chloride	0.0033	**0.0042**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.93**	**1.6**	**0.99**	**0.37**	**1.8**	**1.8**	**0.73**	**0.85**
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	
Field Parameters																						
pH (std. Units)	---	5.40	5.83	5.92	5.74	5.06	5.18	5.05	5.28	4.67	4.61	5.19	5.52	5.45	NA	NA	6.04	5.23	6.09	NA	5.81	NA
Specific Conductance (mS/cm)	---	0.142	0.180	0.215	0.149	0.057	0.082	0.170	0.196	0.157	0.086	0.097	0.075	0.083	NA	NA	0.17	0.14	0.48	NA	0.33	NA
Temperature (deg. C)	---	23.85	27.72	22.61	26.82	20.63	16.08	18.95	17.20	20.83	17.76	22.09	16.99	21.31	NA	NA	17.02	NA	18.53	NA	20.95	NA
Dissolved Oxygen (mg/L)	---	0.22	0.30	0.66	0.22	0.24	0.68	0.58	0.23	0.32	2.25	0.71	0.35	0.27	NA	NA	0.00	NA	0.24	NA	0.33	NA
ORP (mV)	---	-101.8	-18.5	-6.0	-17.9	131.9	224.2	-37.0	52.4	4.9	260.40	52.1	108.0	34.1	NA	NA	-49.00	NA	-47.4	NA	-70	NA
Turbidity (NTU)	---	8.63	4.9	0	5.88	60.8	161.4	7.3	455.9	7.6	10.20	5.3	7.0	4.15	NA	NA	10.50	NA	6.7	NA	0.5	NA
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.00	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.00	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.00	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.90	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	59.00	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.16	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	<0.007	<0.007	<0.007	<0.007	NA	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	NA	0.23	NA	0.32	NS	0.11	0.12
Ethane	---	<0.009	<0.009	<0.009	<0.009	NA	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	NA	NA	0.00	NA	0.00022	NS	0.00072	0.0013
Methane	---	2.1	2.8	3.8	4.1	NA	0.17	0.94	0.95	1.3	0.006	1.1	0.81	0.650	NA	NA	7.70	NA	7.3	NS	7.7	11
Hydrogen (nmol/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.03	NA	2	NS	1.6	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

Sample Location		MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
Date Sampled	TYPE 3/4 RRS mg/L	Nov-04	May-05	May-05 Dup	Jun-06	Jun-06 Dup	Dec-06	Dec-06 Dup	May-07	May-07 DUP	Jun-08	Jun-08 Dup	Oct-08	Oct-08 Dup	Apr-09	Apr-09 DUP	Sep-09	Sep-09 DUP	Dec-09	May-10	DUP-1	Nov-10
VOCs (mg/L)																						
Chloroethane	---	0.04	<0.1	0.03	<0.050	0.025 J	<0.020	0.02	<0.020	<0.020	<0.1	<0.05	<0.025	<0.025	<0.005	<0.005	0.0595	0.0556	<0.01	0.0134	<0.025	0.0905
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.1	<0.001	<0.050	<0.025	<0.02	<0.02	<0.02	<0.02	<0.1	<0.05	<0.025	<0.025	<0.005	<0.005	<0.04	<0.025	<0.01	<0.01	<0.025	<0.02
1,1,1-Trichloroethane	13	2.0	1.9	1.9	2.2	1.7	0.55	0.65	0.74	0.87	5.55	5.27	0.217	0.194	0.32	0.32	1.1	0.802	0.296	1.1	0.96	1.65
1,1,2-Trichloroethane	0.005	<0.025	<0.1	0.0019	<0.050	<0.025	<0.020	<0.020	<0.02	<0.02	<0.1	<0.05	<0.025	<0.025	<0.005	<0.005	<0.0400	<0.0250	<0.01	<0.01	<0.025	<0.02
Trichloroethylene	0.0052	**3.3**	**4.6**	**4.7**	**5.3**	**4.4**	**0.71**	**0.8**	**1.3**	**1.6**	**11.9**	**11.1**	**0.532**	**0.529**	**0.577**	**0.594**	**1.54**	**1.05**	**0.396**	**1.87**	**1.68**	**3.56**
1,1-Dichloroethene	0.52	**3.6**	**3.3**	**3.5**	**4.9**	**3.2**	**2.1**	**2.3**	**1.7**	**1.9**	**8.34**	**7.86**	**0.567**	**0.541**	**0.611**	**0.587**	**3.17**	**2.26**	**1.17**	**1.99**	**1.75**	**4.19**
1,1-Dichloroethane	---	0.19	0.23	0.24	0.28	0.23	0.18	0.19	0.15	0.18	0.43	0.428	0.0797	0.0834	0.0442	0.0472	0.397	0.38	0.0789	0.128	0.127	0.252
1,2-Dichloroethane	0.005	<0.025	<0.1	<0.001	<0.050	<0.025	<0.020	<0.020	<0.020	<0.020	<0.100	<0.05	<0.025	<0.025	<0.005	<0.005	<0.0400	<0.0250	<0.01	<0.01	<0.025	<0.02
cis -1,2-Dichloroethene	0.2	**3.6**	**2.7**	**3**	**4.2**	**3.4**	**3.4**	**3.7**	**1.9**	**2.2**	**5.86**	**5.66**	**0.875**	**0.815**	**0.808**	**0.783**	**4.19**	**3.36**	**1.82**	**2.02**	**1.87**	**4.1**
trans -1,2-Dichloroethene	---	<0.025	<0.1	0.01	<0.050	<0.025	<0.020	<0.020	<0.020	<0.020	<0.100	<0.05	<0.025	<0.025	0.0051	0.0064	<0.0400	<0.0250	<0.01	<0.01	<0.025	<0.02
Vinyl Chloride	0.0033	**0.73**	**1.1**	**1.2**	**1.4**	**0.89**	**0.81**	**0.78**	**0.69**	**0.67**	**1.32**	**1.22**	**0.421**	**0.372**	**0.219**	**0.23**	**2.4**	**2.09**	**0.589**	**0.902**	**0.802**	**1.89**
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA		NA		NA		NA		NA		NA		<0.0200	<0.0200	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	6.14	5.88	5.88	5.75	5.75	5.86	5.86	5.76	5.76	5.72	5.72	NA	NA	6.41	NA	5.87	5.87	6.40	5.94	5.94	5.67
Specific Conductance (mS/cm)	---	0.524	0.384	0.384	0.419	0.419	0.403	0.403	0.371	0.371	0.489	0.489	NA	NA	0.29	NA	0.482	0.482	0.442	0.400	0.40	0.404
Temperature (deg. C)	---	20.71	19.16	19.16	21.15	21.15	19.27	19.27	19.54	19.54	24.25	24.25	NA	NA	17.77	NA	24.82	24.82	19.80	20.16	20.16	21.70
Dissolved Oxygen (mg/L)	---	0.65	0.93	0.93	0.46	0.46	0.33	0.33	0.88	0.88	0.61	0.61	NA	NA	0.3	NA	0.08	0.08	0.31	0.22	0.22	0.48
ORP (mV)	---	-82.2	-19.1	-19.1	-12.1	-12.1	-45.2	-45.2	-8.5	-8.5	-131.4	-131.4	NA	NA	7.4	NA	-14.6	-14.6	-100.7	8.0	8.0	-428.8
Turbidity (NTU)	---	5.6	4.9	4.9	3.9	3.9	1.7	1.7	4.5	4.5	4	4	NA	NA	0.1	NA	5.3	5.3	4.6	20.1	20.1	0
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	9.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	76	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	0.053	0.054	NA	0.13	0.13	0.051	0.064	0.046	0.063	0.062	0.057	NA	NA	0.0021	0.0045	0.074	0.08	0.016	0.023 J	0.048	0.078
Ethane	---	0.0014	0.0012	NA	0.0038	0.0037	0.0018	0.003	0.0021	0.0042	0.0025	0.0024	NA	NA	0.00013	0.00032	0.0018	0.0019	0.00093	0.00077 J	0.003	0.00072
Methane	---	4.1	8	NA	12	12	4.3	7.1	7.7	9.6	8.2	11	NA	NA	0.42	1.2	4.1	4.4	2.4	3.0 J	12.0	1.7
Hydrogen (nmol/L)	---	2.0	1.2	NA	0.87	NA	18	NA	1.2	NA	7.3	NA	NA	NA	2.8	0.0019	56	61	1.5	2.1	NA	0.92

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

Sample Location		MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
Date Sampled	TYPE 3/4 RRS mg/L	Nov-10	May-12	Dec-12	Dec-12	Jun-13	Jun-13	Dec-13	Dec-13	Jun-14	Jun-14	Sep-14	Nov-14	Dec-14	Dec-14	Jun-15	Jun-15	Dec-15	Dec-15	Mar-16	Jun-16	Jun-16
		DUP-1			DUP-1		DUP-1		Dup-1		Dup-1				DUP-1		Dup-1		Dup-1			Dup-1
VOCs (mg/L)																						
Chloroethane	---	0.0632	<0.01	0.025	0.026	<0.010	<0.010	0.067	0.078	0.016	0.016	0.013	NA	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,2,2-Tetrachloroethane	0.005	<0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	13	1.36	0.740	2.5	2.6	0.470	0.520	0.74	0.79	0.49	0.55	3.90	1.20	4.60	4.80	0.29	0.26	3.00	2.90	0.77	0.17	0.17
1,1,2-Trichloroethane	0.005	<0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	0.0052	**2.99**	**1.5**	**4.6**	**4.8**	**0.73**	**0.82**	**1.5**	**1.6**	**1.5**	**1.7**	**8.6**	**1.9**	**9.7**	**9.6**	**0.41**	**0.39**	**4.6**	**5.1**	**1.9**	**0.46**	**0.49**
1,1-Dichloroethene	0.52	**3.21**	**2.2**	**6.2**	**6.5**	**1.9**	**1.9**	**2.1**	**2.2**	**1.1**	**1.2**	**5.3**	**3.2**	**4.3**	**4.3**	**0.94**	**0.91**	**2.9**	**2.8**	**1.3**	**0.72**	**0.70**
1,1-Dichloroethane	---	0.247	0.170	0.250	0.250	0.110	0.110	0.28	0.28	0.12	0.12	0.17	0.18	0.034	0.042	0.11	0.110	0.065	0.051	0.066	0.050	0.051
1,2-Dichloroethane	0.005	<0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis -1,2-Dichloroethene	0.2	**3.54**	**2.7**	**7.0**	**7.1**	**2.1**	**2.0**	**2.2**	**2.2**	**1.5**	**1.5**	**3.4**	**2.8**	**0.370**	**0.400**	**1.20**	**1.00**	**1.10**	**1.10**	**1.30**	**0.76**	**0.74**
trans -1,2-Dichloroethene	---	<0.02	<0.005	**8.6**	**9.1**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	0.0033	**1.56**	**0.47**	**2.1**	**2.2**	**0.86**	**0.82**	**2.6**	**2.6**	**0.90**	**0.99**	**0.78**	**0.89**	**0.100**	**0.160**	**0.640**	**0.590**	**0.350**	**0.330**	**0.580**	**0.40**	**0.40**
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	5.67	6.02	6.05	6.05	5.41	5.41	6.01	NA	5.76	NA	5.64	NA	6.12	NA	6.00	NA	6.07	NA	NA	6.24	NA
Specific Conductance (mS/cm)	---	0.404	0.499	0.669	0.669	0.288	0.288	0.311	NA	0.320	NA	0.27	NA	0.407	NA	0.353	NA	0.390	NA	NA	0.319	NA
Temperature (deg. C)	---	21.70	23.12	17.50	17.50	20.19	20.19	19.98	NA	21.93	NA	25.22	NA	18.72	NA	24.66	NA	21.51	NA	NA	23.88	NA
Dissolved Oxygen (mg/L)	---	0.48	0.85	2.22	2.22	0.53	0.53	3.89	NA	0.87	NA	1.37	NA	0.44	NA	0.62	NA	0.18	NA	NA	0.76	NA
ORP (mV)	---	-428.8	4.5	-52.6	-52.6	-32.8	-32.8	-21.7	NA	-65.4	NA	-3.6	NA	-25.5	NA	-30.1	NA	79.8	NA	NA	-10.2	NA
Turbidity (NTU)	---	0	10.1	7.4	7.4	2.7	2.7	5.3	NA	3.84	NA	5.76	NA	5.10	NA	4.1	NA	0.2	NA	NA	4.61	NA
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	0.078	NA	0.067	0.067	0.01	0.014	0.049	NA	0.024	0.023	<0.007	NA	<0.007	<0.007	<0.007	<0.007	0.0085	0.0078	0.0089	0.0086	0.0086
Ethane	---	0.00072	NA	<0.009	<0.009	<0.009	<0.009	<0.0090	NA	<0.009	<0.009	0.02	NA	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Methane	---	1.7	NA	6.4	6.4	7.9	8	6.8	NA	4.8	4	6.5	NA	0.440	0.410	4.40	4.30	3.40	3.10	6.50	2.50	2.50
Hydrogen (nmol/L)	---	0.92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

Sample Location		MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R	MW-9/9R
Date Sampled	TYPE 3/4 RRS mg/L	Oct-98	Dec-00	May-04	Nov-04	May-05	Jun-06	Dec-06	May-07	Jun-08	Apr-09	Sep-09	Dec-09	May-10	Nov-10	May-12	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15
VOCs (mg/L)																						
Chloroethane	---	ND	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,2,2-Tetrachloroethane	0.005	ND	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	13	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	0.005	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	0.0052	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.52	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	---	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane	0.005	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis -1,2-Dichloroethene	0.2	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans -1,2-Dichloroethene	---	NA	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	0.0033	0.003	<0.010	<0.001	0.0021	0.0013	0.00067 J	0.00056 J	0.00066J	0.0014	<0.001	<0.001	0.00068J	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	NA	6.51	6.33	6.34	6.26	6.26	6.39	6.29	6.21	6.52	6.56	6.52	6.44	6.04	6.33	6.37	6.37	6.33	6.05	5.93	6.34
Specific Conductance (mS/cm)	---	NA	0.24	0.328	0.459	0.484	0.413	0.384	0.396	0.415	0.306	0.294	0.351	0.186	0.227	0.323	0.216	0.337	0.402	0.316	0.609	0.317
Temperature (deg. C)	---	NA	15.77	24.44	20.82	23.91	25.2	18.71	21.52	23.54	18.35	27.1	19.88	23.55	22.06	24.91	18.99	21.54	20.49	26.07	20.44	26.55
Dissolved Oxygen (mg/L)	---	NA	0	3.85	0.22	4.07	0.41	0.37	0.34	0.41	2.85	0.21	1.12	4.8	0.86	0.82	3.31	1.49	0.24	0.37	0.42	0.40
ORP (mV)	---	NA	-62	31	-53.9	-113.1	-12.5	-52.9	-86.2	-128.6	34.6	28.6	-31.4	110	202.1	30.5	46.0	-27.4	-25.0	-27.8	-90.5	-3.9
Turbidity (NTU)	---	NA	0.7	0	3.8	1.1	0	3.8	0.3	0	10.6	0.3	2	9.7	4.6	4.12	8.3	9.6	9.2	8.07	8.63	8.7
Iron II (mg/L)	---	NA	6.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	4.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	<0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	NA	0	0.000053	0.00033	0.00018	0.00023	0.00017	0.000078	0.00014	0.000009J	0.000002J	0.000042	0.000025 J	0.000041	NA	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Ethane	---	NA	<0.000005	0.0000054	0.000032	0.00001	0.000008 J	0.000006 J	0.000008J	0.000019	<0.00001	0.000027	0.000002J	<0.00001	0.000004 J	NA	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Methane	---	NA	2	0.48	2.5	1	1.5	0.74	1.1	2	0.087	0.062	0.094	0.0081 J	0.21	NA	0.084	0.24	1.8	0.2	0.10	0.38
Hydrogen (nmol/L)	---	NA	0.38	4501	0.71	1.1	1.5	2.1	3.7	1.4	0.65	210	28	14	0.8	NA	NA	NA	NA	NA	NA	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Former Automatic Sprinkler Site
Swainsboro, GA

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

August 2016

Sample Location		MW-9/9R	MW-9/9R	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11
Date Sampled	TYPE 3/4 RRS mg/L	Dec-15	Jun-16	Oct-98	Dec-00	Dec-03	May-04	Dec-04	May-05	Jun-06	Jun-13	Jun-14	Oct-98	Dec-00	Dec-03	May-04	Dec-04	May-05	Jun-06	Dec-06	May-07	Jun-08
VOCs (mg/L)																						
Chloroethane	---	<0.010	<0.010	ND	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	NA	ND	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	NA	<0.005	<0.001	<0.002	<0.001	<0.001	<0.001	<0.005	NA	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,1-Trichloroethane	13	<0.005	<0.005	ND	<0.005	<0.001	<0.003	<0.001	<0.001	<0.001	<0.005	NA	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	0.005	<0.005	<0.005	NA	<0.005	<0.001	<0.004	<0.001	<0.001	<0.001	<0.005	NA	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichloroethylene	0.0052	<0.005	<0.005	0.002	<0.005	<0.001	<0.005	<0.001	0.001	0.00057 J	<0.005	NA	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	0.52	<0.005	<0.005	ND	<0.005	0.0017	0.0014	<0.001	<0.001	0.00099 J	<0.005	NA	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	---	<0.005	<0.005	0.003	<0.005	0.0023	0.0024	0.0012	0.0015	0.0015	<0.005	NA	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	0.005	<0.005	<0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	NA	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis -1,2-Dichloroethene	0.2	<0.005	<0.005	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	NA	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00083 J
trans -1,2-Dichloroethene	---	<0.005	<0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	NA	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vinyl Chloride	0.0033	<0.002	<0.002	ND	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	NA	ND	<0.010	<0.001	<0.001	<0.001	<0.001	0.00036 J	<0.001	<0.001	<0.001
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	6.39	6.55	NA	4.98	5.37	5.22	5.20	4.74	4.44	5.07	3.38	NA	5.18	5.54	5.51	5.41	5.44	4.28	5.16	5.2	4.2
Specific Conductance (mS/cm)	---	0.233	0.269	NA	0.04	0.05	0.038	0.048	0.039	0.038	0.051	0.053	NA	0.43	0.06	0.06	0.06	0.058	0.111	0.044	0.047	0.1
Temperature (deg. C)	---	20.54	24.72	NA	14.36	16.48	19.22	18.05	19.63	19.02	17.11	19.78	NA	8.47	10.95	21.2	14.54	18.48	20.2	11.85	18.55	20.49
Dissolved Oxygen (mg/L)	---	0.63	23.9	NA	0.00	0.38	0.33	0.21	0.48	0.58	0.55	0.49	NA	0.00	0.27	0.36	0.19	0.45	0.39	0.29	0.33	0.53
ORP (mV)	---	71.1	67.6	NA	-35.00	2.8	61.2	5.9	103.0	36.2	119.7	38.5	NA	137.00	141.7	90.1	85.9	72.1	290.6	-221.7	200.6	462.2
Turbidity (NTU)	---	8.6	2.96	NA	0.20	0.7	3.5	2.0	0.0	2.3	101.6	7.77	NA	4.50	10.3	10.8	2.5	5.8	8.6	5.5	5.4	1.5
Iron II (mg/L)	---	NA	NA	NA	2.80	NA	NA	NA	NA	NA	NA	NA	NA	2.60	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	2.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	2.40	NA	NA	NA	1.2	NA	NA	NA	NA	6.30	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	2.80	NA	NA	NA	2.5	NA	NA	NA	NA	4.50	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	<0.05	NA	NA	NA	<0.10	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	4.10	NA	NA	NA	<1.0	NA	NA	NA	NA	1.70	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	11.00	NA	NA	NA	7.5	NA	NA	NA	NA	9.00	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	<0.1	NA	NA	NA	<0.10	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	<0.007	<0.007	NA	<0.000005	<0.000005	0.000004 J	<0.000005	<0.00001	<0.00001	NA	NA	NA	0.00040	0.000092	0.000025	0.00019	0.00012	0.00017	0.000008 J	0.000032	0.000015
Ethane	---	<0.009	<0.009	NA	<0.000005	<0.000005	0.0000021 J	0.000018	0.000005	0.000002 J	NA	NA	NA	<0.000005	<0.000005	<0.000005	0.0000018 J	<0.00001	0.000003 J	<0.00001	<0.00001	0.000002 J
Methane	---	0.17	0.17	NA	0.08	0.3	0.16	0.18	0.15	0.22	NA	NA	NA	0.07	0.16	0.15	0.30	0.38	0.14	0.084	0.450	0.100
Hydrogen (nmol/L)	---	NA	NA	NA	0.28	1.1	1.8	0.63	1.2	24	NA	NA	NA	<0.030	0.94	1.3	1.4	1.1	4.4	1.4	1.2	1.3

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

Sample Location		MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12
Date Sampled	TYPE 3/4 RRS mg/L	Apr-09	Dec-09	May-10	Nov-10	May-12	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Oct-98	Dec-00	May-04	Dec-04	May-05	Jun-06	Apr-09	Dec-09
VOCs (mg/L)																						
Chloroethane	---	<0.001	<0.001	<0.001	<0.001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	ND	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2,2-Tetrachloroethane	0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,1-Trichloroethane	13	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichloroethylene	0.0052	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	0.52	0.0016	<0.001	0.0016	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	---	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis -1,2-Dichloroethene	0.2	0.0026	<0.001	0.0028	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
trans -1,2-Dichloroethene	---	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vinyl Chloride	0.0033	0.00095J	0.00031J	0.0025	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	<0.0200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	5.62	5.51	5.17	5.21	5.09	4.93	4.85	5.52	5.33	4.69	5.19	5.49	5.04	NA	4.97	4.98	5.07	4.94	4.97	5.15	5.47
Specific Conductance (mS/cm)	---	0.038	0.038	0.06	0.059	0.047	0.185	0.101	0.056	0.061	0.112	0.052	0.052	0.03	NA	0.02	0.027	0.03	0.028	0.026	0.033	0.029
Temperature (deg. C)	---	15.61	14.14	20.18	17.22	22.36	14.32	20.97	14.82	21.37	16.39	23.38	13.45	23.56	NA	15.32	19.62	18.38	19.31	21.4	17.26	17.66
Dissolved Oxygen (mg/L)	---	0.19	0.20	0.13	0.40	1.10	3.15	0.94	4.75	0.65	0.67	0.70	0.40	0.13	NA	2.80	2.46	4.20	2.23	3.06	3.05	3.47
ORP (mV)	---	92.5	143.3	115.2	156.0	190.1	264.6	58.7	155.9	136.1	279.1	168.7	119.0	206.5	NA	280.00	160	269.0	275.5	325.6	144.1	246.9
Turbidity (NTU)	---	3.7	29.5	9.1	8.8	9.04	9.8	3.1	3.9	6.51	11.9	3.6	5	17.0	NA	1.20	2.5	10.2	10	11.7	7.7	7.5
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.40	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.10	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.40	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	0.00021	0.000042	0.00075 J	0.000042	NA	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	0.00003	0.0000085	0.0000081	<0.00001	<0.00001	NA	NA
Ethane	---	0.000003J	<0.00001	0.000008 J	0.000004 J	NA	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	NA	<0.000005	<0.000005	<0.000005	<0.00001	<0.00001	NA	NA
Methane	---	0.34	0.037	0.430 J	0.0064	NA	0.004	0.052	0.11	0.74	0.007	0.62	0.29	0.11	NA	0.01	0.0034	0.0059	0.0022	0.000086	NA	NA
Hydrogen (nmol/L)	---	19	6.9	1.7	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.030	NA	0.58	1.5	1.7	NA	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

Sample Location		MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15
Date Sampled	TYPE 3/4 RRS mg/L	May-10	Nov-10	May-12	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-99	Dec-00	Jun-06	Dec-06	May-07	Jun-08	Apr-09	Dec-09	May-10	Nov-10	May-12
VOCs (mg/L)																						
Chloroethane	---	<0.001	<0.001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010
1,1,2,2-Tetrachloroethane	0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
1,1,1-Trichloroethane	13	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.0050	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
1,1,2-Trichloroethane	0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
Trichloroethylene	0.0052	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.0050	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
1,1-Dichloroethene	0.52	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.0050	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
1,1-Dichloroethane	---	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.0050	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
1,2-Dichloroethane	0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
cis -1,2-Dichloroethene	0.2	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.0050	<0.001	<0.001	0.0011	0.0011	<0.001	<0.001	<0.001	<0.001	<0.005
trans -1,2-Dichloroethene	---	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	<0.0050	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
Vinyl Chloride	0.0033	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	<0.01	0.0012	0.0022	0.0014	0.0012	0.00045J	<0.001	0.0015	0.0015	<0.002
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0211	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	5.09	5.05	4.79	5.45	4.73	5.23	2.93	4.75	4.66	5.07	NA	6.47	5.92	6.06	6.06	5.25	5.96	5.80	6.07	5.81	5.45
Specific Conductance (mS/cm)	---	0.032	0.026	0.031	0.029	0.57	0.026	0.041	0.036	0.031	0.034	NA	0.23	0.251	0.243	0.375	0.193	0.109	0.072	0.243	0.197	0.047
Temperature (deg. C)	---	18.48	19.9	20.94	15.27	19.33	19.19	20.11	18.67	21.16	20.30	NA	17.29	26.5	20.68	22.36	24.42	19.2	17.94	21.82	23.77	25.66
Dissolved Oxygen (mg/L)	---	1.41	5.40	1.39	6.89	1.91	1.42	0.90	3.59	0.82	0.60	NA	0.00	0.35	0.28	0.4	0.35	1.22	0.74	0.19	0.42	0.44
ORP (mV)	---	283.9	-175.3	307.4	215.3	237.0	75.9	53.4	33.7	262.9	208.0	NA	-62.0	4.8	-262.9	-48.7	33.6	45.8	28.3	-33.9	-319.2	61.9
Turbidity (NTU)	---	14.3	82.9	41.9	80.8	8.6	8.4	4.5	5.04	5.1	0.0	NA	1.0	0	0.9	0	0.2	9.7	2.7	4.8	1.8	2.68
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.50	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	NA	NA	NA	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	0.0002	0.000088	0.000033	0.00009	0.000049	0.000004J	0.000004J	0.000053 J	0.000024	NA
Ethane	---	NA	NA	NA	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	NA	0.00011	0.00002	0.000046	0.000095	0.000028	0.000014	<0.00001	0.000055 J	0.000006 J	NA
Methane	---	NA	NA	NA	<0.004	<0.004	<0.004	<0.004	<0.004	0.06	0.039	NA	9.4	8.8	8.5	8.6	6.2	2.4	0.54	7.7 J	1.9	NA
Hydrogen (nmol/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	2.5	3	3.1	69	0.62	11.0	2.2	1.8	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Former Automatic Sprinkler Site
Swainsboro, GA

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

August 2016

Sample Location		MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-16D	MW-16D	MW-16D	MW-16D	MW-16D	MW-16D	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18
Date Sampled	TYPE 3/4 RRS mg/L	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	May-07	Jun-08	Apr-09	Dec-09	May-10	Nov-10	Sep-09	Dec-09	May-10	Nov-10	May-12	Dec-12	Jun-13
VOCs (mg/L)																						
Chloroethane	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0011	0.0012	<0.001	<0.001	<0.010	<0.010	<0.010
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	13	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
Trichloroethylene	0.0052	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.52	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0025	0.0022	0.0019	0.0019	<0.005	<0.005	<0.005
1,1-Dichloroethane	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00085J	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
1,2-Dichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
cis -1,2-Dichloroethene	0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0021	0.0019	0.0013	0.0020	<0.005	<0.005	<0.005
trans -1,2-Dichloroethene	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
Vinyl Chloride	0.0033	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.0051**	**0.0038**	**0.0035**	**0.0038**	**0.0033**	0.0028	0.0032
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	5.97	6.07	5.96	5.84	5.10	5.70	5.95	5.22	11.1	9.79	12.09	11.51	11.48	12.67	5.32	5.76	5.70	5.63	5.72	5.91	5.58
Specific Conductance (mS/cm)	---	0.198	0.219	0.11	0.136	0.074	0.082	0.172	0.044	0.444	0.294	4.56	0.705	1.58	1.581	0.173	0.221	0.361	0.276	0.355	0.354	0.291
Temperature (deg. C)	---	19.8	21.32	21.78	24.38	21.64	25.56	23.14	24.98	20.73	21.83	19.82	18.18	20.54	16.99	28.05	20.6	23.25	23.11	24.61	20.48	23.55
Dissolved Oxygen (mg/L)	---	0.70	0.39	0.42	0.38	0.49	0.34	0.35	0.13	0.71	0.75	4.64	5.95	5.89	5.47	0.28	0.29	0.45	0.63	1.2	0.78	0.5
ORP (mV)	---	-20.8	-41.5	20.7	-41.7	-95.6	40.2	-32	151.5	138.9	272.3	-55.9	-59.2	120.4	6.5	138.9	-30.8	12.5	-313.2	6.9	0.4	-39.1
Turbidity (NTU)	---	8.0	4.3	7.1	3.8	2.00	4.90	0.00	1.71	12	5.8	6.2	18.9	2.6	12.6	9.7	10.1	21.4	6.9	7.49	7.1	4.4
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	NA	NA	NA	NA	NA	0.00066	0.00045	0.00065 J	0.00028	NA	<0.007	<0.007
Ethane	---	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	NA	NA	NA	NA	NA	NA	0.00033	0.0015	0.00099 J	0.00063	NA	<0.009	<0.009
Methane	---	7.5	6.9	5.3	3.5	0.58	3.3	4.9	2.2	NA	NA	NA	NA	NA	NA	3.7	3.8	2.5 J	3.8	NA	6.8	7.2
Hydrogen (nmol/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27	5.8	0.98	7.2	NA	NA	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

Sample Location		MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19
Date Sampled	TYPE 3/4 RRS mg/L	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Sep-09	Dec-09	May-10	DUP-2	Nov-10	May-12	Dec-12	Jun-13	Dec-13	Jun-14	Sep-14	Nov-14	Dec-14	Jun-15	Dec-15
VOCs (mg/L)																						
Chloroethane	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.659	0.314	0.735	0.727	0.344	0.31	0.28	1.3	0.340	0.270	0.022	NA	0.180	0.027	0.014
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.020	<0.020	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	13	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0501	0.0486	<0.005	<0.005	<0.005	0.033	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.020	<0.020	<0.020	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	0.0052	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0172 J**	**0.0171 J**	**0.0961**	**0.550**	**0.20**	**0.14**	**0.280**	**0.450**	**4.10**	**4.20**	**1.10**	**0.89**	**0.50**
1,1-Dichloroethene	0.52	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0118	0.0044 J	0.123	0.123	0.0682	0.500	0.12	0.45	0.200	0.270	**2.00**	**2.90**	**0.59**	**0.59**	0.27
1,1-Dichloroethane	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0381	0.0129	0.264	0.258	0.0212	0.050	0.018	0.21	0.012	0.044	0.018	0.035	0.046	0.015	0.0069
1,2-Dichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0019J	<0.005	<0.020	<0.020	.0011 J	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis -1,2-Dichloroethene	0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0243	0.007	0.196	0.186	0.0543	**0.4**	0.11	**0.65**	0.087	**0.220**	**0.250**	**0.740**	0.180	0.190	0.070
trans -1,2-Dichloroethene	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.020	<0.020	<0.005	<0.005	<0.005	0.011	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	0.0033	**0.0038**	0.0029	0.003	<0.002	<0.002	<0.002	**0.502**	**0.113**	**2.02**	**2.01**	**0.198**	**0.83**	**0.33**	**2.9**	**0.300**	**0.420**	**0.120**	**0.370**	**0.240**	**0.490**	**0.052**
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	5.72	5.61	5.51	5.61	5.72	5.94	5.85	6.19	5.66	5.66	6.27	5.55	5.87	5.85	6.3	5.73	5.36	NA	4.77	5.21	5.77
Specific Conductance (mS/cm)	---	0.241	0.239	0.28	0.218	0.188	0.266	0.408	0.413	0.477	0.477	0.374	0.315	0.364	0.434	0.397	0.338	0.176	NA	0.141	0.180	0.193
Temperature (deg. C)	---	21.47	24.74	21.9	26.69	22.66	24.75	23.76	17.84	18.52	18.52	18.54	20.36	16.78	17.61	18.42	20.72	26	NA	19.65	22.14	18.45
Dissolved Oxygen (mg/L)	---	0.12	0.72	0.25	0.56	0.39	0.70	0.26	0.26	0.27	0.27	0.44	1.3	0.70	0.37	4.06	0.35	0.43	NA	0.29	0.28	0.31
ORP (mV)	---	8.6	-36.6	-21.4	27.0	14.6	0.3	-36.6	-49.2	-14.0	-14.0	-12.1	36.4	-22.8	-28.4	-38.8	16.6	130.3	NA	-61.3	119.1	23.1
Turbidity (NTU)	---	8.2	2.23	2.23	4.2	3.1	5.62	6.3	9.7	10.0	10.0	23.0	33.0	9.3	33.6	8.6	3.2	45	NA	7.43	6.1	44.0
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.78	0.37	0.99 J	1.4	0.77	NA	0.47	0.37	0.38	0.26	0.028	NA	0.065	0.130	0.095
Ethane	---	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	0.022	0.014	0.049 J	0.1	0.029	NA	0.081	0.063	0.041	0.037	<0.009	NA	0.01	0.015	0.0099
Methane	---	6.9	4.1	7.1	5.3	5.9	6.2	3.7	1.4	6.9 J	15	5.8	NA	7.0	5.3	5.4	4.8	0.9	NA	1.2	2.2	2.0
Hydrogen (nmol/L)	---	NA	NA	NA	NA	NA		11	26	0.97	NA	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Former Automatic Sprinkler Site
Swainsboro, GA

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

August 2016

Sample Location		MW-19	MW-19	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20D	MW-20D	MW-20D	MW-20D	MW-20D
Date Sampled	TYPE 3/4 RRS mg/L	Mar-16	Jun-16	Sep-09	Dec-09	Dec-09	May-10	Nov-10	May-12	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Sep-09	Dec-09	May-10	Nov-10	May-12
						DUP-1																
VOCs (mg/L)																						
Chloroethane	---	0.083	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.010
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005
1,1,1-Trichloroethane	13	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0053	<0.001	<0.001	<0.001	<0.005
1,1,2-Trichloroethane	0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005
Trichloroethylene	0.0052	**0.37**	**0.68**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.012**	<0.001	<0.001	<0.001	<0.005
1,1-Dichloroethene	0.52	0.23	0.33	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0191	<0.001	<0.001	<0.001	<0.005
1,1-Dichloroethane	---	0.026	0.007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00099 J	<0.001	<0.001	<0.001	<0.005
1,2-Dichloroethane	0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005
cis -1,2-Dichloroethene	0.2	0.092	0.110	0.0016	0.0032	0.0031	0.0027	0.0020	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0152	<0.001	<0.001	<0.001	<0.005
trans -1,2-Dichloroethene	---	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005
Vinyl Chloride	0.0033	**0.330**	**0.061**	**0.0102**	**0.0115**	**0.0116**	**0.0083**	**0.0067**	**0.0068**	**0.0051**	<0.002	**0.0046**	**0.0048**	**0.0037**	**0.0039**	**0.0055**	**0.0042**	**0.0071**	<0.001	<0.001	<0.001	<0.002
SVOCs (mg/L)																						
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																						
pH (std. Units)	---	5.77	5.74	5.67	5.87	5.87	4.93	5.62	5.66	5.95	5.62	5.76	5.77	5.81	5.57	5.83	5.70	6.14	5.80	4.95	4.36	4.38
Specific Conductance (mS/cm)	---	0.193	0.165	0.306	0.311	0.311	0.326	0.313	0.294	0.459	0.369	0.274	0.328	0.305	0.329	0.331	0.25	0.145	0.084	0.053	0.043	0.050
Temperature (deg. C)	---	18.45	20.87	24.03	18.94	18.94	19.8	20.8	22.50	18.65	20.28	20.38	24.10	16.87	24.26	19.98	22.15	23.21	19.25	21.2	20.83	22.27
Dissolved Oxygen (mg/L)	---	0.31	0.74	0.37	0.35	0.35	0.29	0.48	0.83	2.15	0.53	0.09	1.38	0.5	0.7	0.37	0.18	1.79	2.08	2.09	0.41	1.01
ORP (mV)	---	23.1	82.6	7.5	-23.3	-23.3	44.1	64.9	6.1	-58.9	-42.5	-23.4	17.3	6.7	1.9	-3	9.7	40.2	181.5	262.6	-305.3	266.7
Turbidity (NTU)	---	44.0	30.9	9.5	14.1	14.1	3.9	9.8	3.85	12.6	2.9	16.7	1.27	10.1	46.7	7	0.86	364.3	73.8	5.6	200.1	9.40
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																						
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	0.300	0.040	0.0022	0.0019	0.0054	0.00081 J	0.00048	NA	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	NA	NA	NA	NA
Ethane	---	0.034	<0.009	0.00082	0.0005	0.0021	0.00019 J	0.00014	NA	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	NA	NA	NA	NA	NA
Methane	---	5.6	1.8	7.3	4.4	13	7.2 J	5	NA	5.8	8.9	6.1	5.4	3.2	4.9	5.9	6.6	NA	NA	NA	NA	NA
Hydrogen (nmol/L)	---	NA	NA	5.4	1.1	NA	0.93	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Table 4: Summary of VOCs, Field Measurements, and MNA Parameters (1998-2016)

Sample Location		MW-20D	MW-20D	MW-20D	MW-20D	MW-20D	MW-20D	MW-20D	MW-20D	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21
Date Sampled	TYPE 3/4 RRS mg/L	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	May-12	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16
VOCs (mg/L)																		
Chloroethane	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	13	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	0.0052	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.52	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis -1,2-Dichloroethene	0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans -1,2-Dichloroethene	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	0.0033	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.0075**	**0.005**	**0.0071**	**0.0082**	**0.006**	<0.002	0.0025	0.0027	**0.0062**
SVOCs (mg/L)																		
1,4-Dioxane (p-Dioxane)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																		
pH (std. Units)	---	4.84	4.43	5.12	4.55	4.44	4.51	4.62	4.74	5.93	6.05	5.95	6.42	5.04	5.95	5.76	6.09	6.18
Specific Conductance (mS/cm)	---	0.153	0.093	0.051	0.048	0.062	0.053	0.049	0.044	0.398	0.472	0.476	0.462	0.424	0.342	0.175	0.269	0.416
Temperature (deg. C)	---	19.69	20.98	21.04	23.57	18.52	23.44	18.73	21.66	20.98	17.32	18.03	17.64	21.62	18.39	21.24	18.28	21.41
Dissolved Oxygen (mg/L)	---	2.11	0.76	5.27	1.9	0.79	1.12	0.57	1.39	1.79	0.71	2.46	4.18	0.32	0.42	0.29	0.42	0.81
ORP (mV)	---	241.8	143.9	4.04	229.3	230.1	330.9	275	254.5	-20.6	-34.5	-50.2	-27	-6.7	-88.8	23.2	-31.8	-1.0
Turbidity (NTU)	---	19.7	9.7	9.0	9.5	7.09	4.5	8.0	13.1	25.8	7.7	2.2	9	6.37	9.90	6.20	4.90	5.06
Iron II (mg/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Geochemical Natural Attenuation Parameters (mg/L)																		
Iron II	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Sulfide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene	---	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Ethane	---	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	NA	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Methane	---	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0077	NA	7.1	7.5	8.4	3.4	2.3	3.2	5.5	7.3
Hydrogen (nmol/L)	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Bold concentrations exceed Risk Reduction Standards

NA - Data not available or not analyzed

ND - Non Detect

J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the detection limit or if the concentration reported is estimated due to other QC reasons.

Prepared by: MHA 6/28/2016

Checked by: NJM7/7/2016

Table 5
Summary of Surface Water Analytical Results

Sample Location	SW-1	SW-2											SW-3
Date Sampled	4/13/2009	4/13/2009	5/17/2010	5/30/2012	12/13/2012	6/6/2013	12/5/2013	6/5/2014	12/3/2014	6/18/2015	12/9/2015	6/16/2016	4/13/2009
VOCs (mg/L)													
Chloroethane	<0.001	<0.001	<0.001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.001
1,1,2,2-Tetrachloroethane	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001
1,1,1-Trichloroethane	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001
1,1,2-Trichloroethane	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001
Trichloroethylene	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001
1,1-Dichloroethene	<0.001	<0.001	0.0006[J]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001
1,1-Dichloroethane	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001
1,2-Dichloroethane	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001
cis -1,2-Dichloroethene	0.00096[J]	<0.001	0.00098[J]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001
trans -1,2-Dichloroethene	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001
Vinyl Chloride	0.00044[J]	0.00048[J]	0.00042[J]	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001

Notes:
J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the method detection limit. Concentration reported is estimated
NA = not analyzed

Table 5
Summary of Surface Water Analytical Results

Sample Location	SW-4									
Date Sampled	5/17/2010	5/30/2012	12/13/2012	6/6/2013	12/5/2013	6/5/2014	12/3/2014	6/18/2015	12/9/2015	6/16/2016
VOCs (mg/L)										
Chloroethane	<0.001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,2,2-Tetrachloroethane	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis -1,2-Dichloroethene	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans -1,2-Dichloroethene	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

Notes:
J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the method detection limit. Concentration reported is estimated
NA = not analyzed

Table 5
Summary of Surface Water Analytical Results

Sample Location	SW-5									SW-6								
Date Sampled	5/30/2012	12/13/2012	6/6/2013	12/5/2013	6/5/2014	12/3/2014	6/18/2015	12/9/2015	6/16/2016	5/30/2012	12/13/2012	6/6/2013	12/5/2013	6/5/2014	12/3/2014	6/18/2015	12/9/2015	6/16/2016
VOCs (mg/L)																		
Chloroethane	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,2,2-Tetrachloroethane	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis -1,2-Dichloroethene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans -1,2-Dichloroethene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

Prepared by: MHA 6/29/2016
Checked by: NJM 7/7/2016

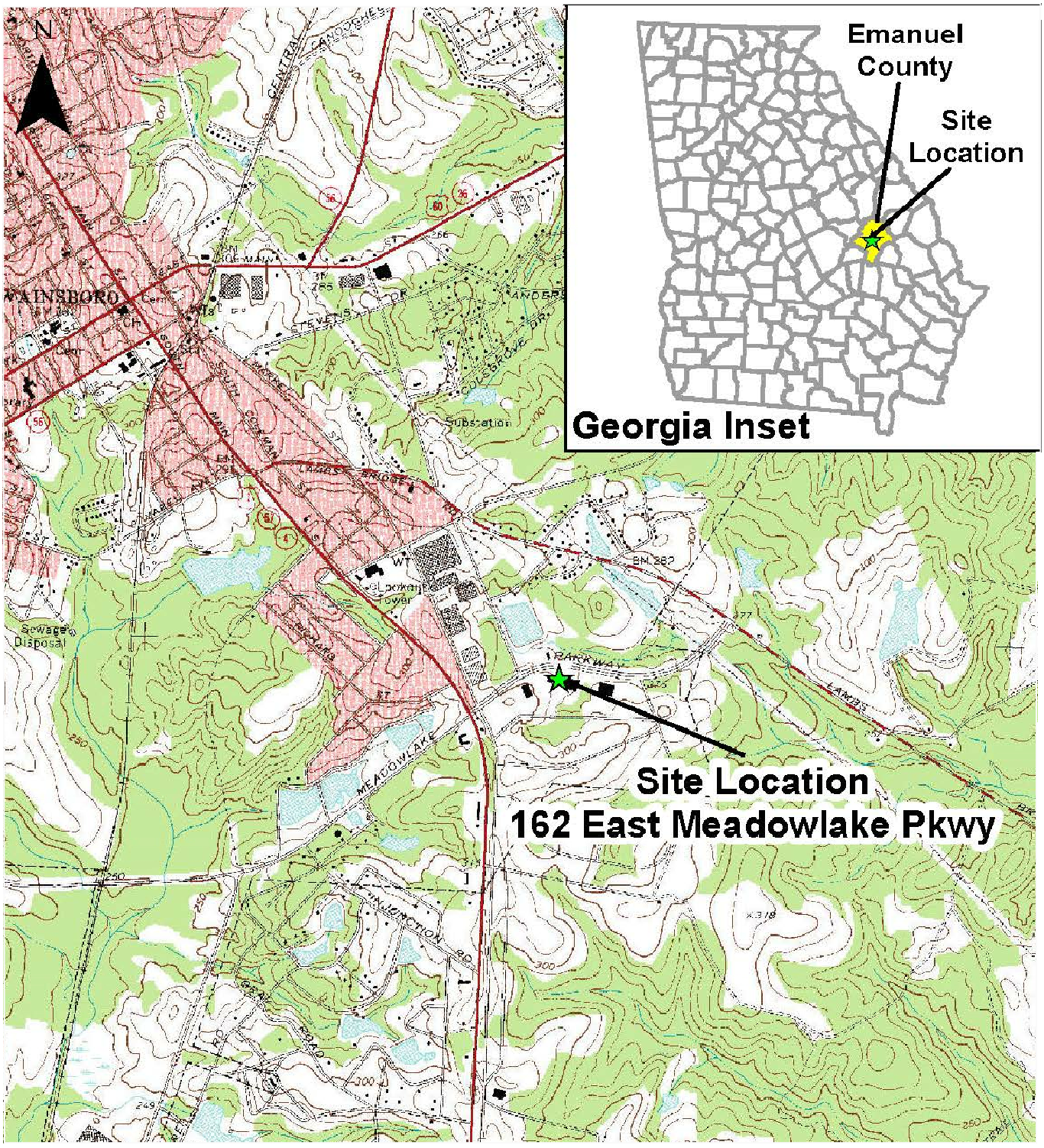
Notes:
J - Qualification flags were placed on values that were below the laboratory reporting limit but greater than the method detection limit. Concentration reported is estimated
NA = not analyzed

TABLE 6: SUMMARY OF HOURS INVOICED AND DESCRIPTION OF SERVICES

	Hours Invoiced	Billing Period	Invoice #	Description of Services
Gregory J. Wrenn, P.E.	6	1/23/2016-02/19/2016	H081002955	Finalize February 2016 VRP Progress Report. Evaluate path forward for execution of environmental covenant, future site remediation, and completion of VRP Compliance Status Report.
Total Project Hours for Billing Period	26.9		2/25/2016	
Gregory J. Wrenn, P.E.	11.5	2/20/2016-3/25/2016	H081003006	Prepare summary of historical HVR events. Coordinate and install bio-trap samplers to evaluate microbial populations and strains. Coordinate HVR event for mid-May 2016, and prepare summary e-mail of path forward for Emanuel County Joint Development Authority.
Total Project Hours for Billing Period	25		4/1/2016	
Gregory J. Wrenn, P.E.	10.0	3/26/2016-4/22/2016	H081003049	Coordinate groundwater/surface water sampling event. MNA bio-trap sampling evaluation, sample analysis, and field sampling equipment. Prepare revised draft Environmental Covenant. Coordinate HVR event for mid-May 2016.
Total Project Hours for Billing Period	10		4/28/2016	
Gregory J. Wrenn, P.E.	8	4/23/2016-5/20/2016	H081003080	Evaluate results of bio-trap sampling event. Submit revised draft environmental covenant to Emanuel County Development Authority. Coordinate/conduct HVR event.
Total Project Hours for Billing Period	32.3		5/26/2016	
Gregory J. Wrenn, P.E.	10.0	5/21/2016-6/17/2016	H081003115	Coordinate and conduct groundwater and surface water monitoring event. Review HVR contractor report. Review EPD comment letter dated June 14, 2016. Communications with Emanuel County Development Authority regarding draft environmental covenant and potential shut down of property tenant (Kongsberg Automotive) operations.
Total Project Hours for Billing Period	84.3		6/21/2016	
Gregory J. Wrenn, P.E.	5.5	6/8/2016-7/22/2016	H081003155	Travel expenses, equipment rental, and lab analysis for groundwater/surface water sampling event. Data management and preparation of VRP Progress Report No. 9. Submit draft UEC to EPD for review.
Total Project Hours for Billing Period	41.8		8/1/2016	
Total Hours for PE Gregory J. Wrenn	**51.0**			
Total Project Hours	**220.3**			

Prepared by: MHA 8/6/2016
Checked by: GJW 8/10/2016

FIGURES



Source: USGS 7.5 Minute Topographic Quadrangle, Swainsboro Quad

FORMER AUTOMATIC SPRINKLER SITE
162 E. MEADOWLAKE PKWY
SWAINSBORO, GA

amec foster wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

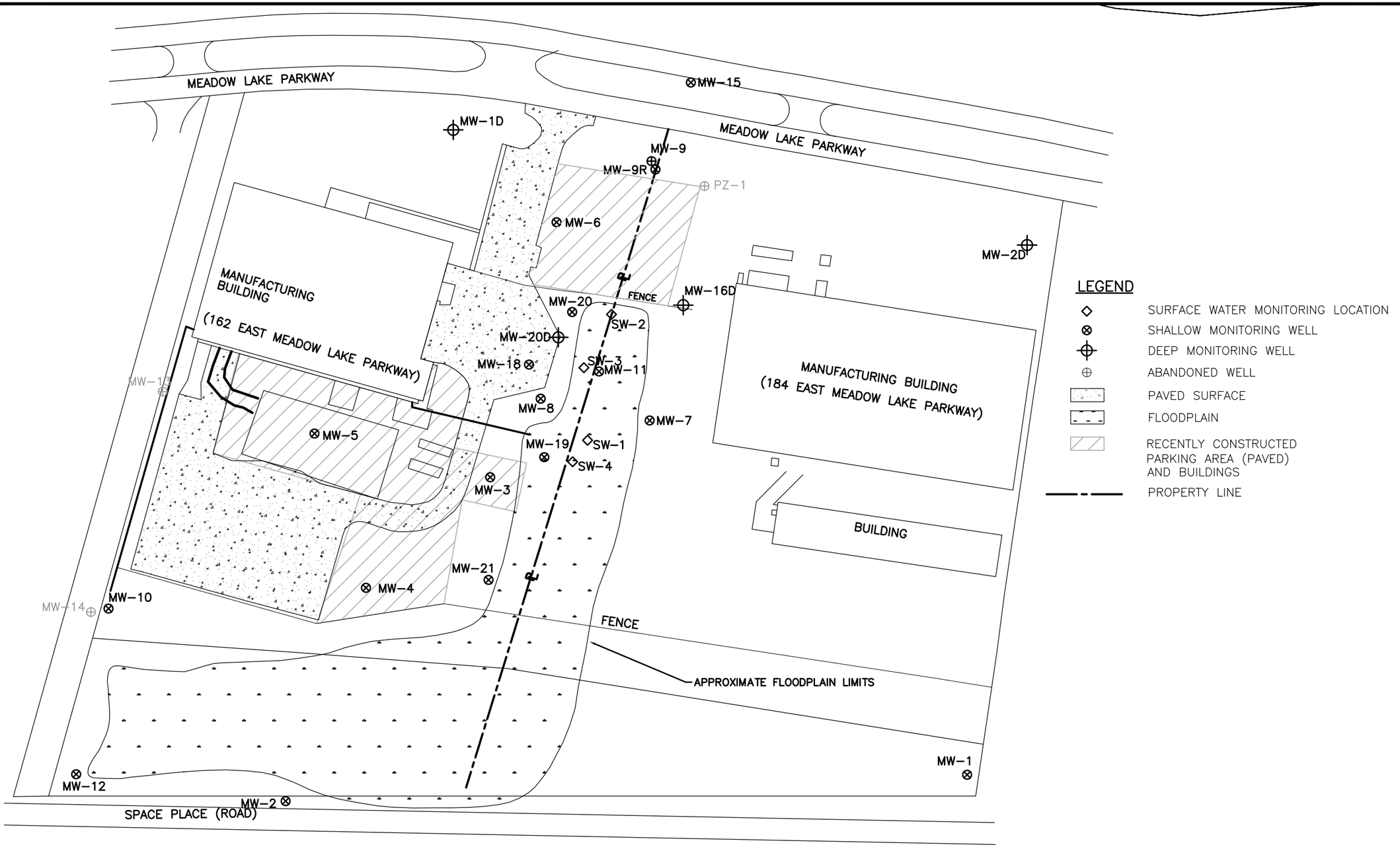
SITE LOCATION MAP

JOB NO. 6125-08-0149 FIGURE 1

PREPARED BY/DATE

CHECKED BY/DATE

J:\STI\JUNE 2015\FIG 2-SITE LAYOUT MAP.dwg - Layout1 08/19/2015 11:39am Tonya.Gladstone



SCALE IN FEET

0 100 200

SOURCE: BASE MAP EMCON, 12/98 AND 6/99. GIS, AND ESRI WEBMAP SERVICE.

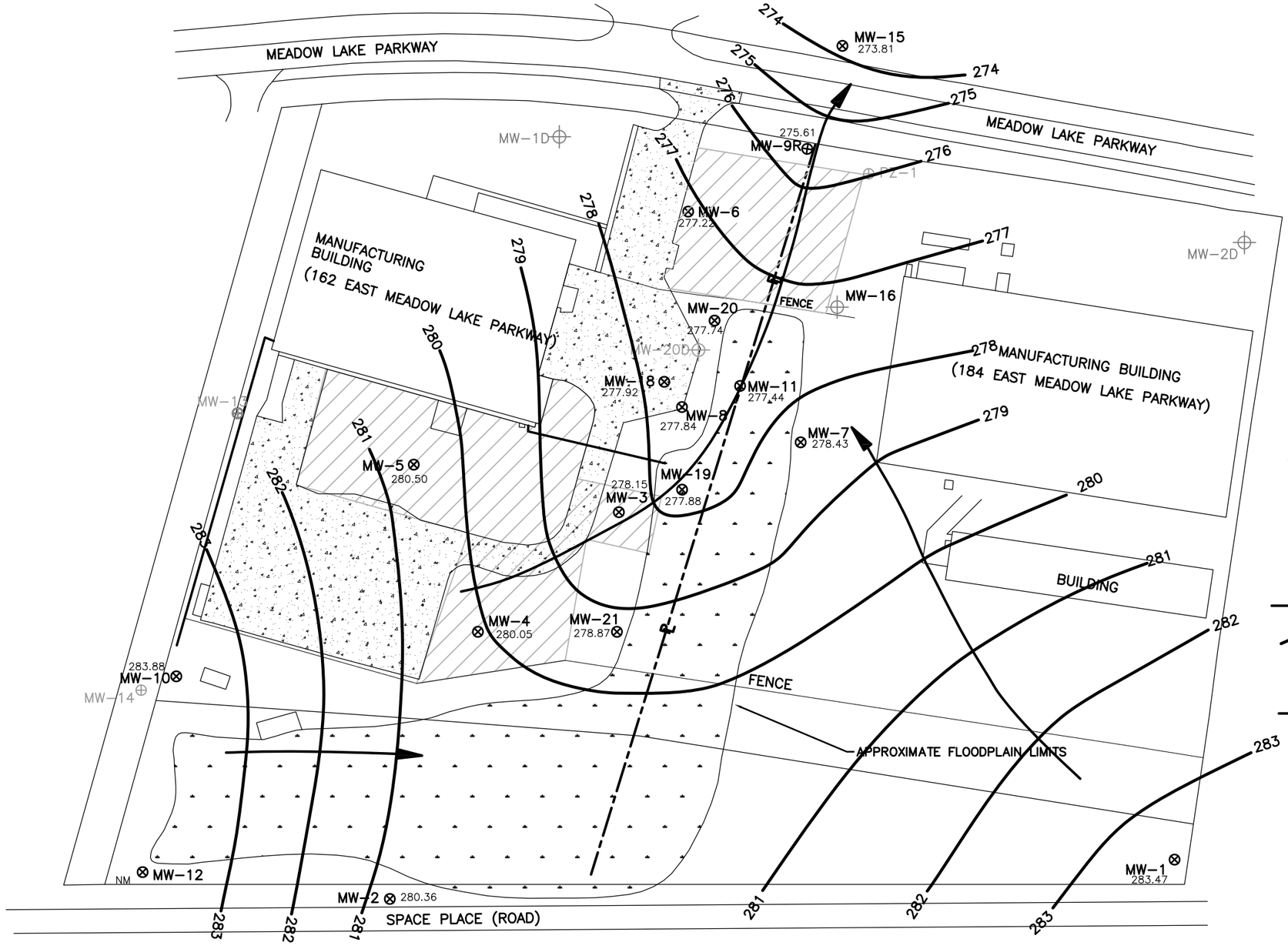
FORMER AUTOMATIC SPRINKLER SITE
162 EAST MEADOWLAKE PKWY
SWAINSBORO, GEORGIA

amec foster wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

FIGURE 2
SITE LAYOUT MAP

JOB NO. 6125-08-0149

PREPARED BY/DATE MHA 6/22/2012
CHECKED BY/DATE RPR 6/26/2012



LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- ABANDONED WELL
- PAVED SURFACE
- FLOODPLAIN
- RECENTLY CONSTRUCTED PARKING AREA (PAVED) AND BUILDINGS
- PROPERTY LINE
- 282 POTENTIOMETRIC CONTOUR (FT MSL)
- 283.47 GROUNDWATER SURFACE ELEVATION (FT MSL)
- NM NOT MEASURED
- DIRECTION OF GROUNDWATER FLOW

SCALE IN FEET

0 100 200

SOURCE: BASE MAP EMCON, 12/98 AND 6/99

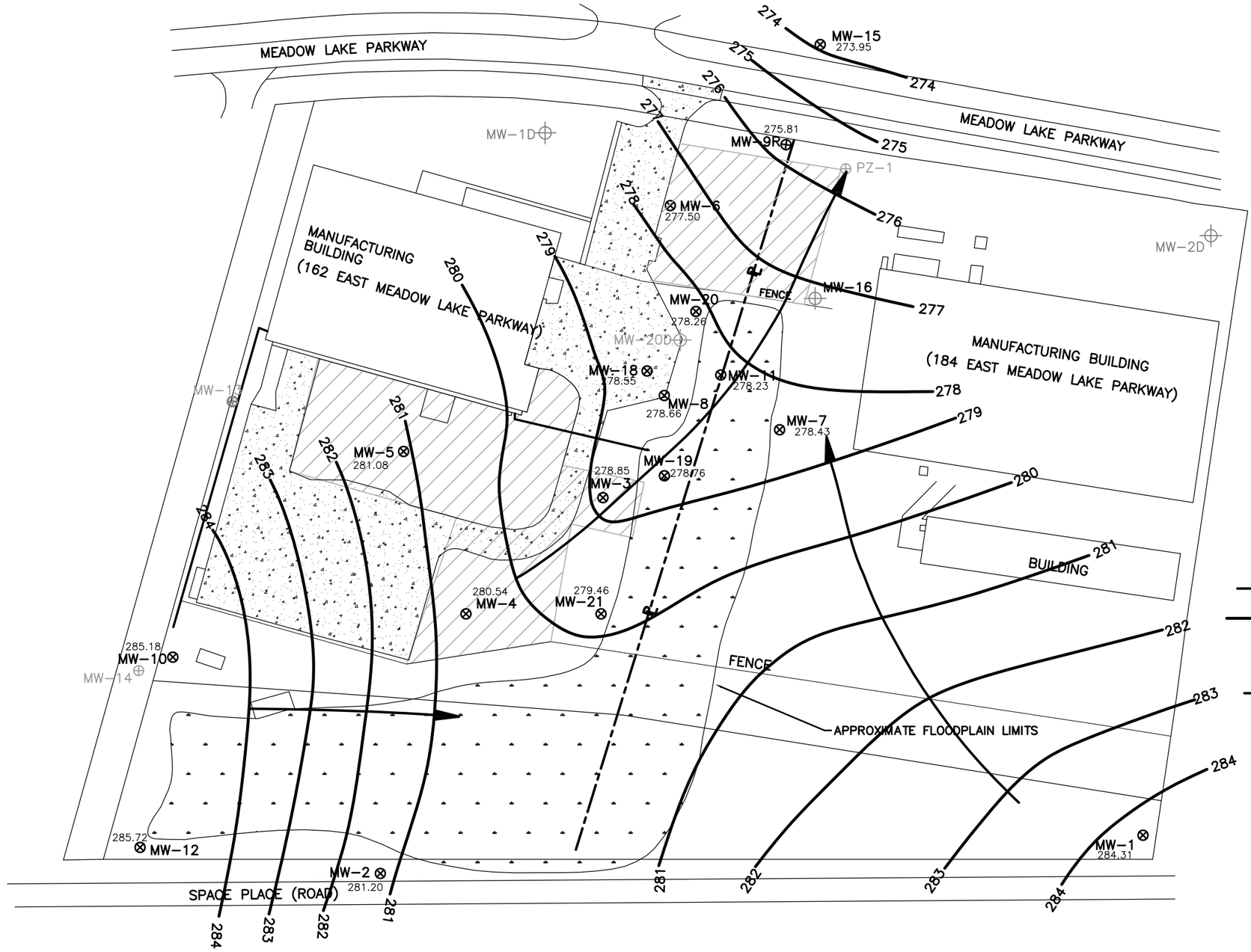
FORMER AUTOMATIC SPRINKLER SITE
162 EAST MEADOWLAKE PKWY
SWAINSBORO, GEORGIA

amec foster wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

FIGURE 3a
SHALLOW ZONE
POTENTIOMETRIC SURFACE MAP
JUNE 2016

JOB NO. 6125-08-0149

PREPARED BY/DATE MHA 6/29/2016
CHECKED BY/DATE TRK 6/29/2016



SCALE IN FEET

0 100 200

SOURCE: BASE MAP EMCON, 12/98 AND 6/99

LEGEND

- ⊗ SHALLOW MONITORING WELL
- ⊕ DEEP MONITORING WELL
- ⊕ ABANDONED WELL
- PAVED SURFACE
- FLOODPLAIN
- RECENTLY CONSTRUCTED PARKING AREA (PAVED) AND BUILDINGS
- PROPERTY LINE
- 282 POTENTIOMETRIC CONTOUR (FT MSL)
- 283.10 GROUNDWATER SURFACE ELEVATION (FT MSL)
- NM NOT MEASURED
- DIRECTION OF GROUNDWATER FLOW

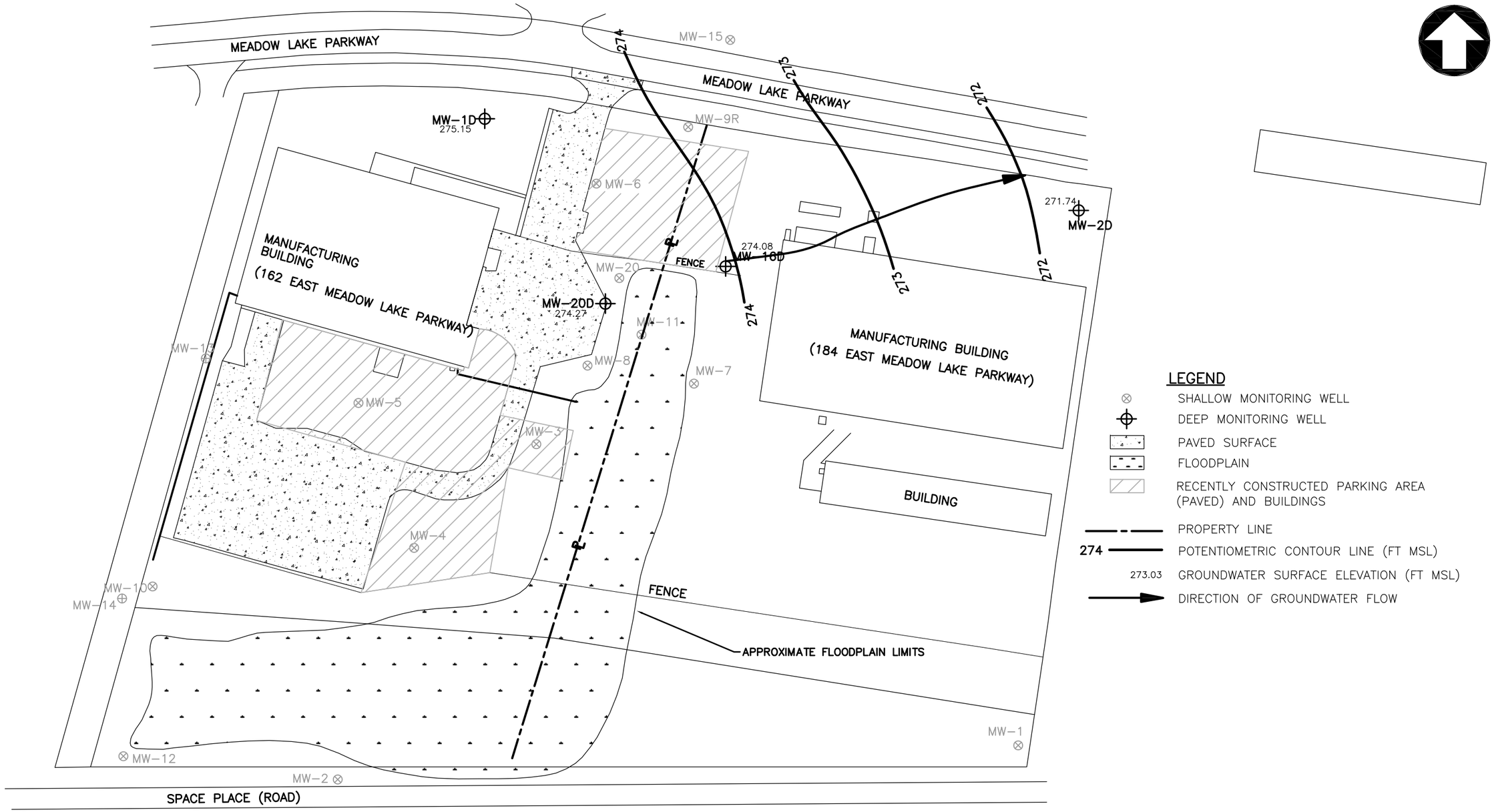
FORMER AUTOMATIC SPRINKLER SITE
162 EAST MEADOWLAKE PKWY
SWAINSBORO, GEORGIA

amec foster wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

FIGURE 3b
SHALLOW ZONE
POTENTIOMETRIC SURFACE MAP
DECEMBER 2015

JOB NO. 6125-08-0149

PREPARED BY/DATE MHA 8/6/2015
CHECKED BY/DATE TRK 8/6/2015



SCALE IN FEET

0 100 200

SOURCE: EMCON, 12/98 AND 6/99

FORMER AUTOMATIC SPRINKLER SITE
162 EAST MEADOWLAKE PKWY
SWAINSBORO, GEORGIA

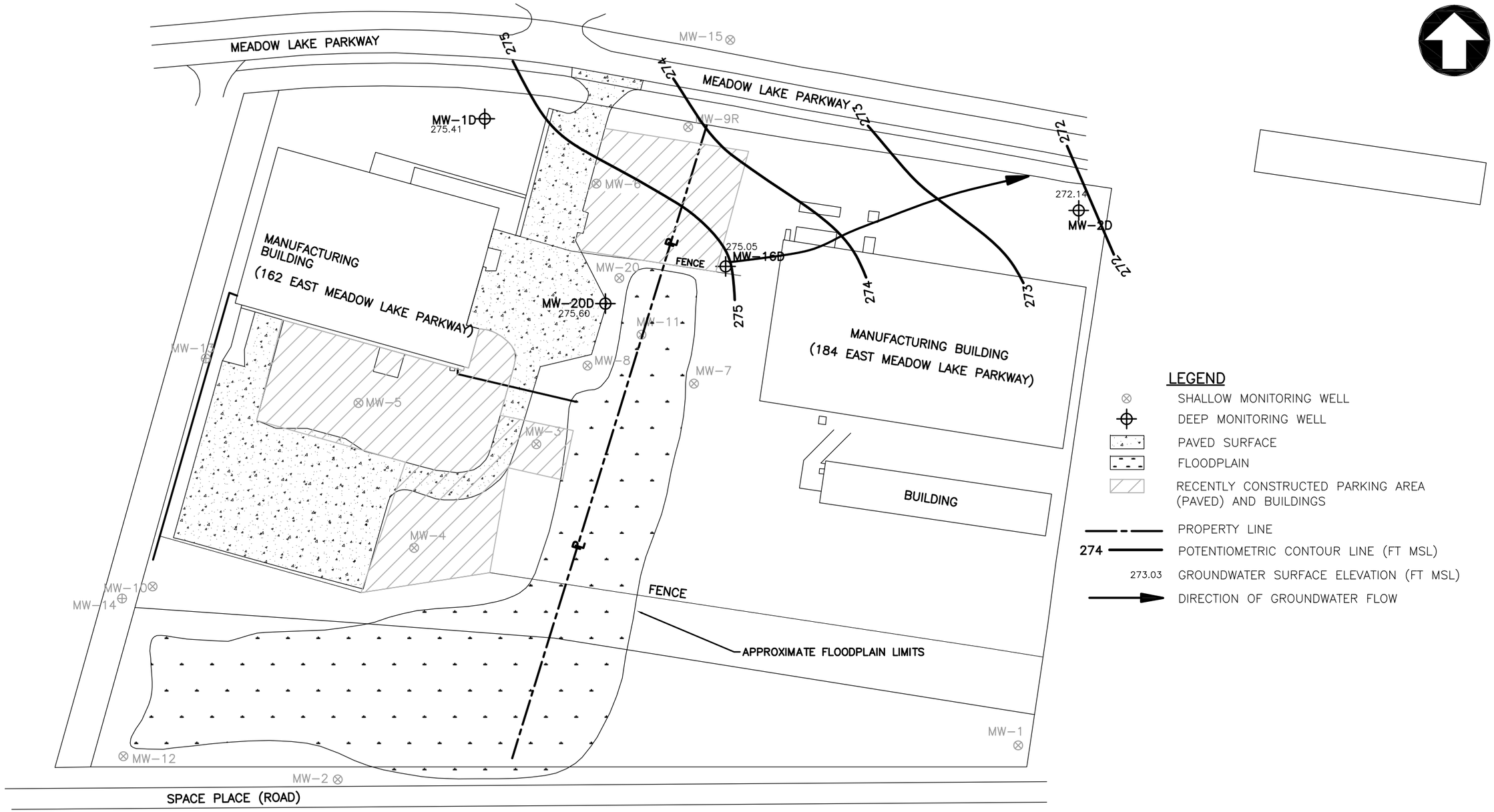
amec foster wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

FIGURE 4a
DEEP ZONE
POTENTIOMETRIC SURFACE MAP
JUNE 2016

JOB NO. 6125-08-0149

PREPARED BY/DATE MHA 6/29/2016
CHECKED BY/DATE TRK 6/29/2016

J:\STI\JAN 2016\FIG 4a-DEEP ZONE POT SURF-DEC 2015.dwg - Layout1 07/05/2016 10:17am Tonya.gladstone



SCALE IN FEET

0 100 200

SOURCE: EMCON, 12/98 AND 6/99

FORMER AUTOMATIC SPRINKLER SITE
162 EAST MEADOWLAKE PKWY
SWAINSBORO, GEORGIA

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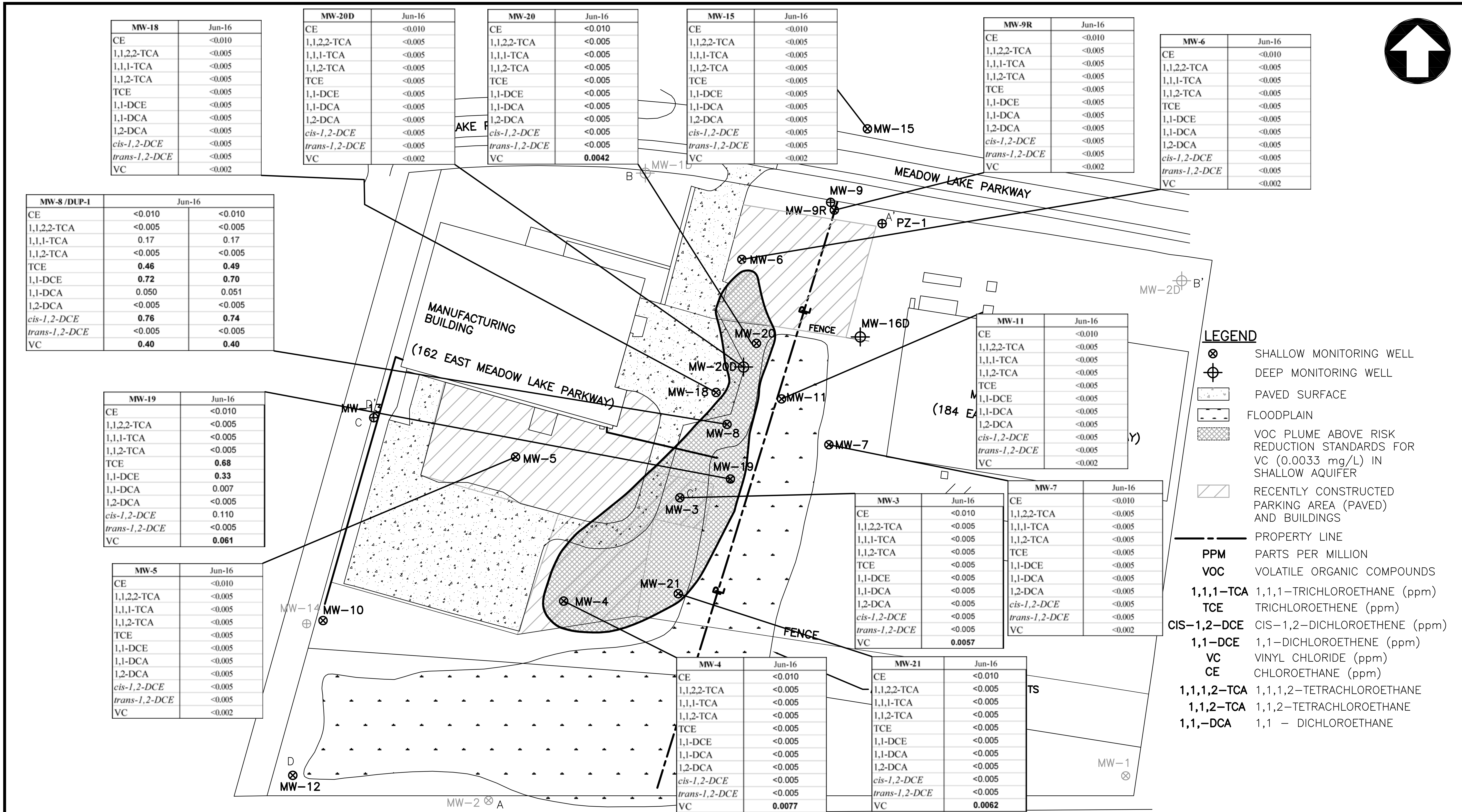
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

FIGURE 4b
DEEP ZONE
POTENTIOMETRIC SURFACE MAP
DECEMBER 2015

JOB NO. 6125-08-0149

PREPARED BY/DATE MHA 1/12/2016
CHECKED BY/DATE TRK 1/12/2016

J:\STI\JUNE 2016\FIG 5-VOC CONCEN IN GW-JUNE2016.dwg - Layout1 06/30/2016 4:01pm tonya.gladstone



MW-18	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-20D	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-20	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.0042**

MW-15	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-9R	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-6	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-8 /DUP-1	Jun-16	
CE	<0.010	<0.010
1,1,2,2-TCA	<0.005	<0.005
1,1,1-TCA	0.17	0.17
1,1,2-TCA	<0.005	<0.005
TCE	**0.46**	**0.49**
1,1-DCE	**0.72**	**0.70**
1,1-DCA	0.050	0.051
1,2-DCA	<0.005	<0.005
cis-1,2-DCE	**0.76**	**0.74**
trans-1,2-DCE	<0.005	<0.005
VC	**0.40**	**0.40**

MW-19	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	**0.68**
1,1-DCE	**0.33**
1,1-DCA	0.007
1,2-DCA	<0.005
cis-1,2-DCE	0.110
trans-1,2-DCE	<0.005
VC	**0.061**

MW-5	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-11	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-3	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.0057**

MW-7	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-4	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.0077**

MW-21	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.0062**

SOURCE: BASE MAP EMCON, 12/98 AND 6/99. NEW SURVEYED POINTS, MW-3, 4, 5, 18, 19, 20 AND 20D, SEPTEMBER 22, 2009.

FORMER AUTOMATIC SPRINKLER SITE
162 EAST MEADOWLAKE PKWY
SWAINSBORO, GEORGIA

amec foster wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

FIGURE 5
VOC CONCENTRATIONS IN GROUNDWATER
JUNE 2016

JOB NO. 6125-08-0149

PREPARED BY/DATE MHA 6/29/2016
CHECKED BY/DATE TRK 6/29/2016

J:\STI\JUNE 2016\FIG 5-VOC CONCEN IN GW-JUNE2016.dwg - Layout1 08/22/2016 1:55pm huan.pham

MW-18	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-20D	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-20	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.0042**

MW-15	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-9R	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-6	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-8 /DUP-1	Jun-16	
CE	<0.010	<0.010
1,1,2,2-TCA	<0.005	<0.005
1,1,1-TCA	0.17	0.17
1,1,2-TCA	<0.005	<0.005
TCE	**0.46**	**0.49**
1,1-DCE	**0.72**	**0.70**
1,1-DCA	0.050	0.051
1,2-DCA	<0.005	<0.005
cis-1,2-DCE	**0.76**	**0.74**
trans-1,2-DCE	<0.005	<0.005
VC	**0.40**	**0.40**

MW-19	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	**0.68**
1,1-DCE	**0.33**
1,1-DCA	0.007
1,2-DCA	<0.005
cis-1,2-DCE	0.110
trans-1,2-DCE	<0.005
VC	**0.061**

MW-5	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-11	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-3	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.0057**

MW-7	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-4	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.0077**

MW-21	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.0062**

MW-15
MW-1D
B
B'
MEADOW LAKE PARKWAY
MW-9
MW-9R
A'
PZ-1
MW-6
MW-2D
MANUFACTURING BUILDING
(162 EAST MEADOW LAKE PARKWAY)
FENCE
MW-16D
MW-20
MW-20D
MW-18
MW-11
MW-13
C
MW-8
MW-19
MW-7
MW-5
C'
MW-3
MW-21
MW-14
MW-10
MW-4
FENCE
D
MW-12
MW-2
A
MW-1

LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- PAVED SURFACE
- FLOODPLAIN
- TOTAL VOC PLUME ABOVE 0.01mg/L IN SHALLOW AQUIFER
- RECENTLY CONSTRUCTED PARKING AREA (PAVED) AND BUILDINGS
- PROPERTY LINE

PPM	PARTS PER MILLION
VOC	VOLATILE ORGANIC COMPOUNDS
1,1,1-TCA	1,1,1-TRICHLOROETHANE (ppm)
TCE	TRICHLOROETHENE (ppm)
CIS-1,2-DCE	CIS-1,2-DICHLOROETHENE (ppm)
1,1-DCE	1,1-DICHLOROETHENE (ppm)
VC	VINYL CHLORIDE (ppm)
CE	CHLOROETHANE (ppm)
1,1,1,2-TCA	1,1,1,2-TETRACHLOROETHANE
1,1,2-TCA	1,1,2-TETRACHLOROETHANE
1,1,-DCA	1,1 - DICHLOROETHANE

SCALE IN FEET

0 100 200

SOURCE: BASE MAP EMCON, 12/98 AND 6/99. NEW SURVEYED POINTS, MW-3, 4, 5, 18, 19, 20 AND 20D, SEPTEMBER 22, 2009.

FORMER AUTOMATIC SPRINKLER SITE
162 EAST MEADOWLAKE PKWY
SWAINSBORO, GEORGIA

amec foster wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

FIGURE 5a
VOC CONCENTRATIONS GREATER THAN 0.01mg/L IN GROUNDWATER
JUNE 2016

JOB NO. 6125-08-0149

PREPARED BY/DATE MHA 6/29/2016
CHECKED BY/DATE TRK 6/29/2016

SW-2	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

SW-6	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

SW-5	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

SW-4	Jun-16
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

LEGEND

- SURFACE WATER MONITORING LOCATION
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- ABANDONED WELL
- FLOODPLAIN

SCALE IN FEET

0 200 400

SOURCE: BASE MAP EMCON, 12/98 AND 6/99. GIS, AND ESRI WEBMAP SERVICE.

FORMER AUTOMATIC SPRINKLER SITE
162 EAST MEADOWLAKE PKWY
SWAINSBORO, GEORGIA

amec foster wheeler
AMEC Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

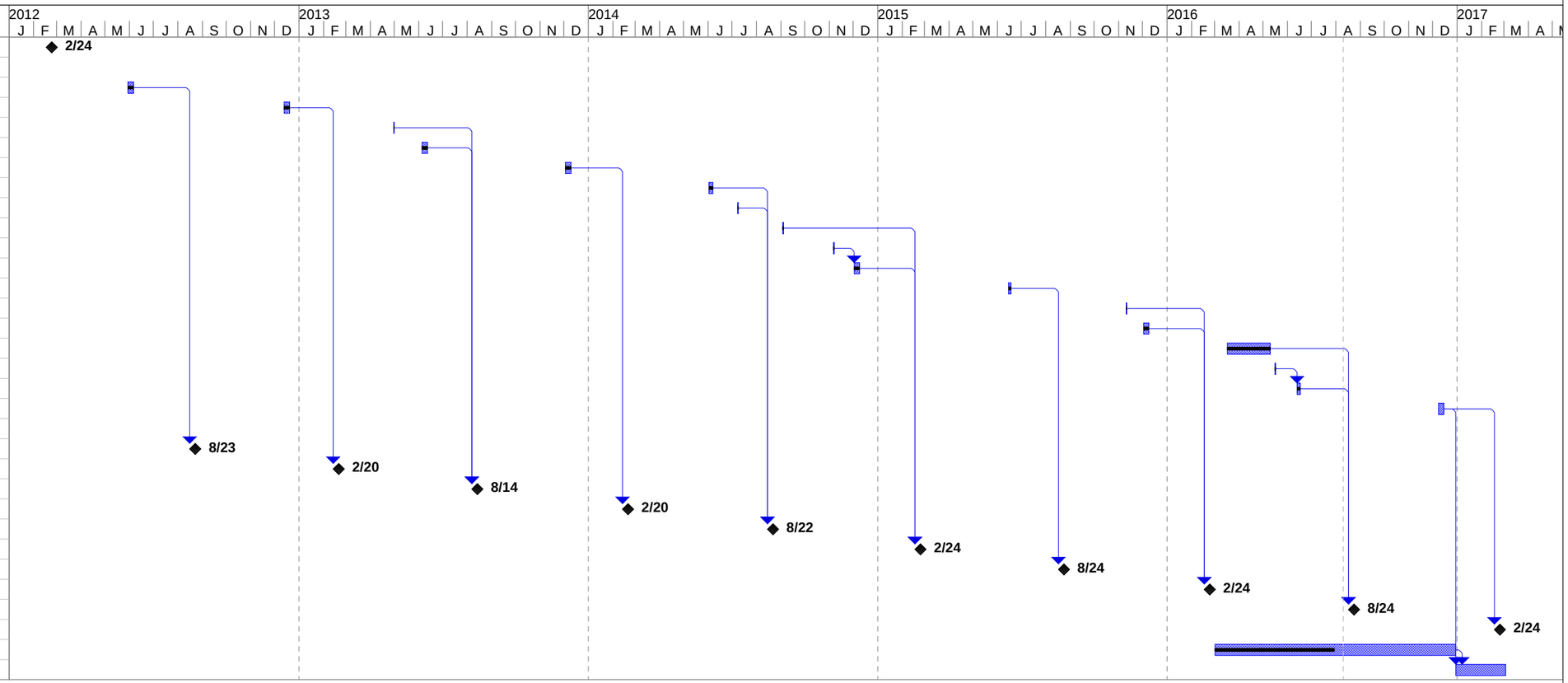
FIGURE 6
SURFACE WATER ANALYTICAL RESULTS
JUNE 2016

JOB NO. 6125080149

PREPARED BY/DATE MHA 6/29/2016
CHECKED BY/DATE TRK 6/29/2016

FIGURE 7
UPDATED SCHEDULE FOR VRP IMPLEMENTATION
FORMER AUTOMATIC SPRINKLER SITE, SWAINSBORO, GA

ID	Task Name
1	EPD approves VRP Application and Remediation Plan
2	**VRP Field Activities**
3	Semi-Annual Sampling Event 1
4	Semi-Annual Sampling Event 2
5	**HVR Event**
6	Semi-Annual Sampling Event 3
7	Semi-Annual Sampling Event 4
8	Semi-Annual Sampling Event 5
9	**HVR Event**
10	Interim Sampling Event
11	Interim Sampling Event
12	Semi-Annual Sampling Event 6
13	Semi-Annual Sampling Event 7
14	**HVR Event**
15	Semi-Annual Sampling Event 8
16	Biodegradation Evaluation Sampling/Analysis
17	**HVR Event**
18	Semi-Annual Sampling Event 9
19	Semi-Annual Sampling Event 10
20	**Submit Semi-Annual Status Report**
21	Submit Semi-Annual Status Report 1
22	Submit Semi-Annual Status Report 2
23	Submit Semi-Annual Status Report 3
24	Submit Semi-Annual Status Report 4
25	Submit Semi-Annual Status Report 5
26	Submit Semi-Annual Status Report 6
27	Submit Semi-Annual Status Report 7
28	Submit Semi-Annual Status Report 8
29	Submit Semi-Annual Status Report 9
30	Submit Semi-Annual Status Report 10
31	Implement Restrictive Covenant
32	Preparation and Submittal of Post-Remediation CSR



Project: STI Swainsboro VRP Schedul
Date: Wed 8/10/16

Task	Project Summary	Inactive Summary	Manual Summary	External Milestone
Split	External Tasks	Manual Task	Start-only	Progress
Milestone	External Milestone	Duration-only	Finish-only	Deadline
Summary	Inactive Milestone	Manual Summary Rollup	External Tasks	

APPENDIX A

WELL PURGING/GROUNDWATER SAMPLING LOGS

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-15-16
MONITORING WELL TYPE: ✓ Standard __ Compliance __ Background __ Extraction
WELL ID: MW-6-0616
WELL MATERIAL: ✓ PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic - "Soda Straw method"

DUP./REP. OF: NA

Intake Depth: 10'
Screen Length = 10'
Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2
DEPTH TO WATER: 3.78 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 13.30
WATER COLUMN HEIGHT: 9.52
PURGE VOLUME: 1.55 x 3 = 4.6 or Low Flow
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 7:45	0	1.88	13.5	5.44	0.138	25.12	42.3	300 (10')	3.95
7:50	6.5	0.26	-3.0	5.55	0.142	25.40	21.8	300	4.05
7:55	0.9	0.21	-17.1	5.69	0.149	26.06	10.1	300	4.06
8:00	1.3	0.21	-17.8	5.72	0.149	26.46	7.69	300	4.06
8:05	1.7	0.22	-17.9	5.74	0.149	26.82	5.88	300	4.06
8:08-	Parameters	Stable-	Sample						

NOTES: Teflon lined tubing used for Sampling

SAMPLE DATE: 6-15-16
SAMPLE TIME: 8:08

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	4	HCL		VOCs & Gasses

GENERAL INFORMATION			
WEATHER:	Sunny & Hot 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AES Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	Matt B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-15-16
MONITORING WELL TYPE: ✓Standard __ Compliance __Background __Extraction
WELL ID: MW-9R
WELL MATERIAL: ✓PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic "Soda Straw method"

DUP./REP. OF: NA

Intake Depth: ~~NA~~ 6'
Screen length 10'
Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2"
DEPTH TO WATER: 2.70' GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 11.75
WATER COLUMN HEIGHT: 9.05
PURGE VOLUME: 0.163 x 9.05 x 3 = 4.43 or LOW FLOW
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial:								( )	
08:05	0.00	10.03	-8.0	6.43	0.301	23.19	33.2	200 mL	2.69
0810	0.25	2.18	4.8	6.40	0.287	23.68	22.5	200 mL	2.49
0815	0.50	14.2	16.4	~~34.05~~	0.287	24.10	17.7	200 mL	2.49
~~0820~~	~~0.75~~	~~21.3~~	~~34.2~~	6.41					
0820	0.75	21.3	34.2	6.47	0.275	24.41	11.1	200 mL	2.49
0825	1.00	30.5	50.8	6.51	0.265	24.57	10.5	200 mL	2.49
0830	1.25	30.0	61.2	6.54	0.264	24.64	6.11	200 mL	2.49
0835	1.50	24.2	67.8	6.54	0.264	24.64	4.57	200mL	2.49
0840	1.75	24.0	68.0	6.54	0.273	24.65	3.39	200mL	2.49
0845	2.00	23.9	67.6	6.55	0.269	24.72	2.96	200mL	2.49
	SAMPLED at 0850								

NOTES: Teflon lined tubing used for Sampling

SAMPLE DATE: 6-15-16
SAMPLE TIME: 08:50

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
VOA Vial	4	HCl		VOCs & Dissolved Gases

GENERAL INFORMATION			
WEATHER:	Sunny & Hot (>90°)		
SHIPPED VIA:	Drop off		
SHIPPED TO:	AFS		
SAMPLER: Matt Bowers		OBSERVER: Jeff Moore	

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-15-16
MONITORING WELL TYPE: ✓ Standard __ Compliance __ Background __ Extraction
WELL ID: MW-15-0616
WELL MATERIAL: ✓ PVC __ SS __ OTHER
SAMPLE METHOD: peristaltic - 1" Solo Straw method"

DUP./REP. OF: NA

Intake Depth: 7.5'
Screen Length = 5'

Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2
DEPTH TO WATER: 6.41 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 10.03
WATER COLUMN HEIGHT: 3.62
PURGE VOLUME: 0.59 x 3 = 1.7 or Low Flow
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 8:30	0	0.47	152.4	5.23	0.031	25.54	4.50	275 (7.5)	6.30
8:35	0.3	0.23	153.8	5.08	0.033	25.37	3.61	275	6.49
8:40	0.6	0.18	156.1	5.15	0.037	25.20	2.40	275	6.55
8:45	1.1	0.16	151.8	5.19	0.041	25.05	2.50	275	6.57
8:50	1.6	0.15	152.8	5.20	0.042	25.01	1.75	275	6.57
8:55	2.1	0.13	151.5	5.22	0.044	24.98	1.71	275	6.57
8:58-	Parameters	Stable -	Sample						

NOTES: Teflon lined tubing used for sampling

SAMPLE DATE: 6-15-16
SAMPLE TIME: 8:58

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	4	HCL		VOCs & Gases

GENERAL INFORMATION			
WEATHER:	Sunny & Hot 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AFS Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	Matt B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-15-16
MONITORING WELL TYPE: ✓Standard __ Compliance __Background __Extraction
WELL ID: MW-20-0616
WELL MATERIAL: ✓ PVC __ SS __OTHER
SAMPLE METHOD: peristaltic-"Soda Straw method"

DUP./REP. OF: NA

Intake Depth: 10'
Screen Length = 10'

Arrived at: NA
Initial PID = NA
Bailing PID = N/A

WELL DIAMETER: 2
DEPTH TO WATER: 5.25 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 15.49
WATER COLUMN HEIGHT: 10.24
PURGE VOLUME: 1.67 x 3 = 5 or Low Flow
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 9:28	0	1.30	3.0	5.85	0.291	22.33	8.78	250 (10')	4.85
9:33	0.4	0.28	36.0	5.25	0.287	22.16	4.77	250	4.85
9:38	0.8	0.18	20.3	5.50	0.265	22.19	3.15	250	4.86
9:43	1.1	0.18	14.1	5.59	0.256	22.16	1.45	250	4.86
9:48	1.5	0.16	9.9	5.66	0.249	22.14	1.26	250	4.86
9:53	1.9	0.20	8.8	5.68	0.249	22.18	0.93	250	4.86
9:58	2.3	0.18	9.7	5.70	0.250	22.15	0.86	250	4.86
10:00- Parameters Stable- Sample									

NOTES: Teflon lined tubing used for sampling
Heavy Rain Last night

SAMPLE DATE: 6-15-16
SAMPLE TIME: 10:00

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	4	HCL		VOCs & Gases

GENERAL INFORMATION			
WEATHER:	Sunny & Hot 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AES Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	Matt B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 06-15-16
MONITORING WELL TYPE: ✓Standard __ Compliance __Background __Extraction
WELL ID: MW-20D
WELL MATERIAL: ✓PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic "Soda Straw method"

DUP./REP. OF: NA
Intake Depth: ~~NA~~ 29'
Screen length = 10'
Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2"
DEPTH TO WATER: 6.94 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 34.64
WATER COLUMN HEIGHT: 27.70
PURGE VOLUME: 13.55 or LOW FLOW
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 0920	0.00	3.28	252.5	4.78	0.045	21.23	192	120 (ml)	8.42
0925	0.15	3.17	266.3	4.77	0.045	21.34	67.9	120 mL	8.91
0930	0.25	2.34	256.3	4.76	0.044	21.24	27.3	120 mL	9.69
0935	0.40	1.80	256.1	4.75	0.044	21.25	14.7	100 mL	10.48
0940	0.50	1.70	253.1	4.76	0.044	21.35	14.1	100 mL	11.27
0945	0.60	1.58	253.3	4.75	0.044	21.68	16.9	100 mL	11.74
0950	0.75	1.51	253.3	4.75	0.044	21.78	13.4	100 mL	12.13
0955	1.0	1.44	254.7	4.74	0.044	21.77	13.4	100mL	12.52
1000	1.1	1.42	254.6	4.74	0.044	21.76	13.1	100mL	12.93
1005	1.2	1.40	254.5	4.74	0.044	21.82	13.2	100mL	13.40
1010	1.25	1.39	254.5	4.74	0.044	21.66	13.1	100mL	13.73
SAMPLED AT			10:15						

NOTES: Teflon lined tubing used for Sampling

SAMPLE DATE: 6-15-16
SAMPLE TIME: 10:15

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
VOA VIAL	4	HCl		VOCs + Gases

GENERAL INFORMATION			
WEATHER:	Sunny + Hot >90°		
SHIPPED VIA:	DROP OFF		
SHIPPED TO:	AES		
SAMPLER:	Matt Bauer	OBSERVER:	Jeff Moore

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-15-16
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: mw-11-0616
WELL MATERIAL: ✓ PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic - "Soda Straw method"

DUP./REP. OF: NA

Intake Depth: 5.5'
Screen length = 4.75'

Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2
DEPTH TO WATER: 4.33 (yesterday) GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 7.96
WATER COLUMN HEIGHT: 3.63
PURGE VOLUME: 0.6 x 3 = 1.8

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 10:55	0	0.63	180.2	5.14	0.029	23.35	21.9	250 (5.5)	3.54
11:00	0.4	0.43	191.4	5.11	0.029	23.41	17.9	250	3.54
11:05	0.8	0.24	199.1	5.08	0.029	23.41	17.9	250	3.54
11:10	1.2	0.15	202.9	5.05	0.029	23.47	17.5	250	3.54
11:15	1.6	0.12	205.2	5.04	0.030	23.57	17.4	250	3.54
11:20	2	0.13	206.5	5.04	0.030	23.56	17.0	250	3.54
11:23	Parameters	Stable-	Sample-	Could not get turbidity			<10		

NOTES: Teflon lined tubing used for Sampling
Area is full of standing water due to heavy rain last night

SAMPLE DATE: 6-15-16
SAMPLE TIME: 11:23

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	4	HCL		VOCs & Gasses

GENERAL INFORMATION			
WEATHER:	Sunny Hot 96°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AES Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	Matt B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE ~~10~~ 06-15-16
MONITORING WELL TYPE: X Standard __ Compliance __Background __Extraction
WELL ID: MW-18
WELL MATERIAL: X PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic "Soda Straw method"

DUP./REP. OF: NA

Intake Depth: 8'
Screen Length = 10'
Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2"
DEPTH TO WATER: 3.35 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 14.44
WATER COLUMN HEIGHT: 11.09
PURGE VOLUME: 5.42 or LOW FLOW
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: ~~0:00~~								( )	2.71
10:55	0.00	4.51	-25.7	5.95	0.262	24.54	21.1	100 mL	2.82
11:00	0.1	2.75	-27.4	5.96	0.266	24.42	6.62	100 mL	2.85
11 05	0.25	1.26	3.6	5.96	0.267	24.37	6.05	100 mL	2.85
11 10	0.50	0.84	1.8	5.96	0.266	24.47	6.00	100 mL	2.85
11 15	0.70	0.80	0.3	5.96	0.266	24.56	5.90	100 mL	2.85
11 20	0.85	0.76	0.4	5.96	0.265	24.52	5.71	100 mL	2.85
11 25	1.00	0.72	0.4	5.95	0.265	24.62	5.67	100 mL	2.85
11:30	1.20	0.70	0.3	5.94	0.266	24.75	5.62	100 mL	2.85
	SAMPLED at			11:35					

NOTES: Teflon lined tubing used for sampling

SAMPLE DATE: 06-15-16
SAMPLE TIME: 11:35

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
VOA VIALS	4	HCl		VOCs + Gases

GENERAL INFORMATION			
WEATHER:	Hot and Sunny		
SHIPPED VIA:	DROP OFF		
SHIPPED TO:	TES Lab.		
SAMPLER:	Matt Barnes	OBSERVER:	Jeff Moore

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-15-16
MONITORING WELL TYPE: ✓Standard __ Compliance __Background __Extraction
WELL ID: MW-7-0616
WELL MATERIAL: ✓ PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic - "Soda Straw method"

DUP./REP. OF: NA

Intake Depth: 7'
Screen length = 4.6'

Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2
DEPTH TO WATER: 2.90 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 10.07
WATER COLUMN HEIGHT: 7.17
PURGE VOLUME: 1.2 x 3 = 3.6 or Low Flow
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 12:45	0	2.76	48.1	5.53	0.079	21.03	7.74	250 (7')	3.45
12:50	0.4	0.33	56.0	5.16	0.077	21.14	4.38	250	3.50
12:55	0.8	0.27	47.4	5.26	0.078	21.26	4.44	250	3.51
1:00	1.2	0.27	37.5	5.36	0.080	21.31	3.91	250	3.51
1:05	1.6	0.29	36.2	5.40	0.081	21.32	4.04	250	3.51
1:10	2	0.27	35.3	5.42	0.082	21.41	3.95	250	3.51
1:15	2.4	0.27	34.1	5.45	0.083	21.31	4.15	250	3.51
1:18 - Parameters Stable - Sample									

NOTES: Teflon lined tubing used for sampling
Area is Swampy Due to heavy rain last night

SAMPLE DATE: 6-15-16
SAMPLE TIME: 1:18

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	4	HCL		VOCs & Gases

GENERAL INFORMATION

WEATHER:	Sunny & Hot 65° 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AES Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	Matt B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 06-15-16
MONITORING WELL TYPE: X Standard __ Compliance __ Background __ Extraction
WELL ID: MW-8
WELL MATERIAL: X PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic "Soda Straw Method"

DUP./REP. OF: DUP-01-0616

Intake Depth: 7'
Screen length = 10'
Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2"
DEPTH TO WATER: 3.44 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 8.51
WATER COLUMN HEIGHT: 5.07
PURGE VOLUME: 0.47 or LOW FLOW
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial:								( )	
1255	0.00	3.30	-10.5	6.25	0.320	23.77	14.9	100ml	2.75
1300	0.2	1.17	-10.3	6.26	0.319	24.02	9.20	100mL	2.75
1305	0.4	0.81	-10.1	6.26	0.319	24.04	5.68	100mL	2.75
1310	0.6	0.78	-10.2	6.25	0.319	23.69	4.91	100mL	2.75
1315	0.75	0.72	-10.5	6.25	0.318	23.68	4.84	100mL	2.75
1320	1.0	0.76	-10.2	6.24	0.319	23.88	4.61	100mL	2.75
	SAMPLED AT 1325								

NOTES: Teflon lined tubing used for sampling

SAMPLE DATE: 06-15-16
SAMPLE TIME: 1325

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
VOA VIAL	8	HCl		VOCs + Ethers

GENERAL INFORMATION			
WEATHER:	Hot, Clear Sunny		
SHIPPED VIA:	DROP OFF		
SHIPPED TO:	MES		
SAMPLER:	Matt Baren	OBSERVER:	Jeff Moore

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-16-16
MONITORING WELL TYPE: ✓ Standard __ Compliance __ Background __ Extraction
WELL ID: MW-3-0616
WELL MATERIAL: ✓ PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic "Solo Straw method"

DUP./REP. OF: NA

Intake Depth: 10'
Screen length = 10'

Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2
DEPTH TO WATER: 3.02 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 15.85
WATER COLUMN HEIGHT: 12.83
PURGE VOLUME: 2.09 x 3 = 6.27 or Low Flow
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 8:21	0	0.84	31.8	5.54	0.142	24.66	33.8	250 (10)	2.65
8:26	0.4	0.99	33.4	5.69	0.069	24.91	50.6	250	2.86
8:31	0.6	1.10	57.7	5.55	0.054	25.12	29.1	225	2.89
8:36	1	0.57	38.8	5.54	0.073	25.09	19.6	225	2.89
8:41	1.3	0.35	31.4	5.52	0.090	25.07	13.5	225	2.89
8:46	1.6	0.28	24.2	5.58	0.105	25.06	8.26	225	2.90
8:51	1.9	0.24	22.9	5.58	0.111	25.04	6.72	225	2.90
8:56	2.2	0.22	19.0	5.57	0.120	25.07	4.76	225	2.90
9:01	2.5	0.20	18.6	5.57	0.121	25.06	4.57	225	2.90
9:04-	Parameters Stable- Sample								

NOTES: Teflon lined tubing used for Sampling
Heavy Rain yesterday

SAMPLE DATE: 6-16-16
SAMPLE TIME: 9:04

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	4	HCL		VOCs & Gases

GENERAL INFORMATION			
WEATHER:	Sunny 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	TES Atlanta		
SAMPLER:	Jeff Maue	OBSERVER:	MGH B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 06-16-16
MONITORING WELL TYPE: V Standard __ Compliance __Background __Extraction
WELL ID: MW-19
WELL MATERIAL: V PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic "Soda Straw Method"

DUP./REP. OF: NA

Intake Depth: 10'
Screen length = 10'
Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2"
DEPTH TO WATER: 3.92 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 16.65
WATER COLUMN HEIGHT: 12.73
PURGE VOLUME: 6.02 or Low Flow
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 0820	0.00	6.01	68.8	5.78	0.169	20.88	125	120 (ml)	3.31
0825	0.20	1.46	75.8	5.76	0.166	20.83	48.4	120 ml	3.42
0830	0.35	1.23	76.4	5.75	0.165	20.85	36.6	120 ml	3.42
0835	0.50	1.02	82.0	5.73	0.164	20.83	32.2	120ml	3.42
0840	0.60	0.79	80.0	5.73	0.164	20.86	30.6	120ml	3.42
0845	0.75	0.75	83.6	5.73	0.164	20.86	31.4	120ml	3.42
0900	1.25	0.72	81.4	5.74	0.164	20.86	31.5	120ml	3.42
0905	1.40	0.74	82.6	5.74	0.165	20.87	30.9	120ml	3.42
SAMPLED AT 0910									

NOTES: Turbidity would not go below 30. from pump and probe Teflon tubing used for sampling

SAMPLE DATE: 06-16-16
SAMPLE TIME: 0910

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40mL	4	HCl		Bases + VOCs

GENERAL INFORMATION			
WEATHER:	Hot, Sunny >90°		
SHIPPED VIA:	Drop-off		
SHIPPED TO:	AES		
SAMPLER: Matt Bauer		OBSERVER: Jeff Moore	

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-16-16
MONITORING WELL TYPE: ✓ Standard __ Compliance __Background __Extraction
WELL ID: MW-4-0616
WELL MATERIAL: ✓ PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic - "Soda Straw method"

DUP./REP. OF: NA

Intake Depth: 8'
Screen length: 10'

Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2"
DEPTH TO WATER: 1.79 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 15.00
WATER COLUMN HEIGHT: 13.21
PURGE VOLUME: 2.15 x 3 = 6.5 or Low Flow
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 9:27	0	1.81	-51.5	6.22	0.261	26.27	7.37	200 (8')	2.09
9:32	0.2	0.28	-57.6	6.32	0.265	26.10	5.29	200	2.33
9:37	0.5	0.22	-61.9	6.37	0.265	26.06	3.78	200	2.56
9:42	0.7	0.14	-58.5	6.38	0.264	26.24	2.97	150	2.56
9:47	1	0.16	-53.3	6.37	0.264	26.20	2.61	150	2.60
9:52	1.3	0.17	-52.2	6.35	0.263	26.09	2.13	150	2.61
9:57	1.6	0.19	-51.6	6.34	0.264	26.05	1.97	150	2.61
10:00	Parameters	Stable -	Sample						

NOTES: reflux lined tubing used for sampling

SAMPLE DATE: 6-16-16
SAMPLE TIME: 10:00

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40mL	4	HCL		VOCs & Gases

GENERAL INFORMATION			
WEATHER:	Sunny 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AES Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	MATT B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 06-16-16
MONITORING WELL TYPE: X Standard __ Compliance __ Background __ Extraction
WELL ID: MW-21
WELL MATERIAL: X PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic Soda Straw Method

DUP./REP. OF: NA

Intake Depth: 11
Screen Length = 10'
Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2"
DEPTH TO WATER: 5.25 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 17.74
WATER COLUMN HEIGHT: 12.49
PURGE VOLUME: 6.10 or LOW FLOW
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 0930	0.00	3.64	-10.9	6.20	0.414	21.34	26.1	100 (ml)	5.71
0935	0.20	1.74	-3.2	6.20	0.414	21.21	7.88	100 ml	5.71
0940	0.35	0.93	0.6	6.19	0.415	21.29	6.57	100 ml	5.71
0945	0.50	0.89	-0.1	6.19	0.416	21.26	5.65	100 ml	5.71
0950	0.65	0.85	-0.4	6.19	0.416	21.35	4.93	100 ml	5.71
0955	0.75	0.84	-0.6	6.19	0.416	21.40	5.17	100 ml	5.71
1000	0.90	0.81	-1.0	6.18	0.416	21.41	5.06	100 ml	5.71
SAMPLED AT 1005									

NOTES: Teflon lined tubing used for sampling

SAMPLE DATE: 6-16-16
SAMPLE TIME: 1005

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40ml	4	HCl		VOC + Gases

GENERAL INFORMATION			
WEATHER:	Hot, Sunny > 90°		
SHIPPED VIA:	Drop off		
SHIPPED TO:	AES		
SAMPLER: Matt Bowen		OBSERVER: Jeff Moore	

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-16-16
MONITORING WELL TYPE: ✓Standard __ Compliance __Background __Extraction
WELL ID: MW-5-0616-
WELL MATERIAL: ✓ PVC __ SS __ OTHER
SAMPLE METHOD: Peristaltic - "Sucks straw method"

DUP./REP. OF: NA

Intake Depth: 12'
Screen length = 9.7'

Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: 2
DEPTH TO WATER: 6.21 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 18.10
WATER COLUMN HEIGHT: 11.89
PURGE VOLUME: 1.9 x 3 = 5.8 or Low Flow
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 10:31	0	2.76	167.1	5.09	0.037	21.54	>1000	250 (12')	6.40
10:36	0.5	0.36	250.5	3.64	0.034	21.43	771	250	6.45
10:41	0.75	0.29	255.6	3.71	0.033	21.40	375	250	6.45
10:46	1.1	0.26	254.2	4.21	0.033	21.40	381	250	6.47
10:51	1.4	0.29	255.7	4.40	0.034	21.45	364	250	6.48
10:56	1.75	0.27	250.3	4.47	0.034	21.49	368	250	6.48
11:01	2.1	0.28	247.6	4.50	0.034	21.51	323	250	6.48
11:04 - Parameters Stable - Sample - Could not get turbidity down									

NOTES: Teflon lined tubing used for sampling

SAMPLE DATE: 6-16-16
SAMPLE TIME: 11:04

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	4	HCL		VOCs & Gases

GENERAL INFORMATION

WEATHER:	Sunny 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AFS Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	Matt B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-16-16
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction Surface Water
WELL ID: SW-2-0616
WELL MATERIAL: __ PVC __ SS ✓ OTHER
SAMPLE METHOD: Grab

DUP./REP. OF: DUP-02-0616

Intake Depth: Surface

Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: NA
DEPTH TO WATER: NA GRAB (x) COMPOSITE ( )
TOTAL DEPTH: NA
WATER COLUMN HEIGHT: NA
PURGE VOLUME: NA

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 0730	0.00	3.60	235.1	6.74	0.036	24.17	8.02	—(NA)	Surface Water

NOTES:

SAMPLE DATE: 6-16-16
SAMPLE TIME: 7:30 DUP-02-0616 @ 12:00

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	4	HCL		VOCs DUP-02

GENERAL INFORMATION

WEATHER:	Sunny, 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AES Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	Matt B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-16-16
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction Surface water
WELL ID: SW-4-0616
WELL MATERIAL: __ PVC __ SS ✓ OTHER
SAMPLE METHOD: Grab

DUP./REP. OF: NA

Intake Depth: Surface

WELL DIAMETER: NA
DEPTH TO WATER: NA GRAB (x) COMPOSITE ( )
TOTAL DEPTH: NA
WATER COLUMN HEIGHT: NA
PURGE VOLUME: NA

Arrived at: NA
Initial PID = NA
Bailing PID = NA

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 07:40	NA	4.73	222.5	5.14	0.034	24.17	7.92	NA ( )	Surface Water

NOTES:

SAMPLE DATE: 6-16-16
SAMPLE TIME: 07:40

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	2	HCL		VOCs

GENERAL INFORMATION			
WEATHER:	Sunny, Hot 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AES Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	Matt B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SW-5-0616

DATE 6-16-16
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction Surface water
WELL ID: ~~SW-4-0616~~ SW-5-0616
WELL MATERIAL: __ PVC __ SS ✓ OTHER
SAMPLE METHOD: Grab

DUP./REP. OF: NA

Intake Depth: NA

Arrived at: NA
Initial PID = NA
Bailing PID = NA

WELL DIAMETER: NA
DEPTH TO WATER: NA GRAB (x) COMPOSITE ( )
TOTAL DEPTH: NA
WATER COLUMN HEIGHT: NA
PURGE VOLUME: NA

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 07:50	NA	4.48	111.3	5.79	0.084	24.44	19.3	NA)	NA

NOTES:

SAMPLE DATE: 6-16-16
SAMPLE TIME: 07:56

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	2	HCL		VOCs

GENERAL INFORMATION			
WEATHER:	Sunny 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AES Atlanta		
SAMPLER:	Jeff Moore	OBSERVER:	matt B

PROJECT NAME: STI
Swainesboro, GA

FIELD SAMPLING REPORT

Project Number: 6125080149

Amec Foster Wheeler
1075 Big Shanty Road Kennesaw, GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

DATE 6-16-16
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction Surface Water
WELL ID: SW-6-0616
WELL MATERIAL: __ PVC __ SS ✓ OTHER
SAMPLE METHOD: Grab

DUP./REP. OF: NA
Intake Depth: NA

WELL DIAMETER: NA
DEPTH TO WATER: NA GRAB (x) COMPOSITE ( )
TOTAL DEPTH: NA
WATER COLUMN HEIGHT: NA
PURGE VOLUME: NA

Arrived at: NA
Initial PID = NA
Bailing PID = NA

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 08:00	NA	4.42	103.8	5.97	0.085	24.47	19.8	NA	NA

NOTES:

SAMPLE DATE: 6-16-16
SAMPLE TIME: 08:00

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
40 mL	2	HCl		VOCs

GENERAL INFORMATION			
WEATHER:	Sunny, 95°		
SHIPPED VIA:	Dropoff		
SHIPPED TO:	AES Atlanta		
SAMPLER:	Jeff Moure	OBSERVER:	Matt B

APPENDIX A

RESPONSE TO COMMENTS

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: SFC Swainsboro

Well ID: MW-4

Field Sampling Personnel: B. Woodyka

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Depth to Screen ~~below MP~~ bgs: 5.00 ~~1.00~~ Top of screen; 15.00 ~~14.80~~ Bottom of screen

Pump Intake at (ft. below MP): 8

Purging Device (Pump Type): peristaltic
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/8/15	1025	1.40											Total Depth = 15.00' bTOC
	1035	1.80	150	6.26	0.325	27.9	1.38	19.97	-23.6	< 0.5			
	1040	2.30	150	6.27	0.327	24.4	1.21	19.86	-31.3				
	1045	2.40	100	6.27	0.334	18.5	0.78	20.11	-38.7				
	1050	2.40	100	6.26	0.340	12.6	0.50	19.95	-44.5	0.5			
	1055	2.30	100	6.28	0.343	10.8	0.50	19.67	-45.4				
	1100	2.30	100	6.28	0.346	7.7	0.47	19.81	-44.8				
	1105	2.25	100	6.27	0.348	8.2	0.60	19.79	-47.1	1.0			
	1110	2.25	100	6.27	0.351	5.6	0.64	19.93	-46.5				
	1115	2.25	100	6.28	0.356	3.8	0.46	20.07	-48.5				
	1120	2.20	100	6.27	0.358	5.8	0.49	20.25	-44.5				
	1125	2.20	100	6.27	0.360	2.7	0.47	20.23	-45.1	1.5			
	1130												sample time
													Sample material: Teflon lined
													"Soda Straw Method" Tubing

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~<20~~ NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STL Shrewsbury

Well ID: MW-5

Field Sampling Personnel: B. Lodewyk

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Depth to Screen ~~below MP~~: 7.9 (~~5.78~~) Top of screen; 17.60 (~~17.46~~) Bottom of screen

Pump Intake at (ft. below MP): 12'

Purging Device (Pump Type): peristaltic
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/9/15	0920	5.78											
	0920	5.90	150	4.88	0.028	19.7	1.69	20.43	284.4	<0.5			Total Depth = 17.96' btoc
	0925	6.10	150	4.87	0.028	17.4	1.50	20.41	276.6				
	0930	6.10	100	4.88	0.028	17.5	1.44	20.42	273.0				
	0935	6.05	100	4.89	0.028	15.0	1.24	20.27	259.2	0.5			
	0940	6.05	100	4.91	0.028	13.5	1.27	20.29	229.3				
	0945	6.05	100	4.93	0.029	11.0	1.15	20.35	209.8	1.0			
	0950	6.05	100	4.93	0.030	11.1	1.05	20.41	195.3				
	0955	6.03	100	4.93	0.030	11.5	0.94	20.41	192.1				
	1000	6.03	100	4.94	0.030	10.7	0.88	20.47	185.7				
	1005	6.03	~~100~~	4.95	0.031	10.9	0.72	20.49	171.1	2.0			
	1010	6.03	100	4.96	0.031	10.8	0.80	20.52	168.2				
	1015	6.03	100	4.97	0.031	10.2	0.78	20.52	169.1				
	1020	6.03	100	4.98	0.031	9.6	0.76	20.56	162.6	3.0			
	1025												sample time
													Sample material: Teflon lined tubing w/ soda straw method

Notes:
Note when "Stabilization" has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
~~<20~~ <10 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STL

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW-6-1208 2015

Field Sampling Personnel: GAZZO

Depth to Screen ~~below MP~~ bgs: 3.3 Top of screen 13.4 Bottom of screen

Pump Intake at (ft. below MP): 10'

Purging Device (Pump Type): _____
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

DTW 3.50
DTB 13.22
WV 1.6
WVx3 4.9

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	GHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/8/15	0920	3.50	150	5.98	.236	40	2.98	21.36	4.9	-	-		TOtal Depth = 13.22' bTOC
	0925	3.61	150	5.96	.217	19	.99	22.14	-4.5	.2			
	0930	3.65	150	5.94	.217	6	.91	22.49	-5	.4			.000264 mL in 1 foot of water
	0935	3.65	150	5.94	.216	1	.74	22.65	-7	.6			
	0940	3.67	150	5.93	.216	0	.68	22.65	-6	.8			
	0945	3.67	150	5.92	.215	0	.67	22.60	-6	1.0			.000264 x 150 x 5 > .2
	0950	3.68	150	5.92	.215	0	.66	22.61	-6	1.2			
				SAMPLE TIME			0950						Sample time
													Sample material: Teflon lined Tubing
													"Soda Straw Method"

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~<20~~ NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

DTW 2.90
DTB 9.85
WVX1 1:2
WVX3 3.5
Column 6.95

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STL

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW7
Field Sampling Personnel: GH/ZO

Depth to Screen ~~below MP~~ BGS: 1.9 Top of screen 6.5 Bottom of screen

Pump Intake at (ft. below MP): 7'
Purging Device (Pump Type):
(e.g. Dedicated pump, peristaltic pump, Bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. ~~Volume~~ Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/9/5	1220	3.30	300	5.55	.069	21	4.64	16.48	147	—			Total Depth = 9.85' BTOC
	1225	3.30	300	5.47	.069	19	1.35	16.37	158	.40			DTW After
	1230	3.31	300	5.50	.072	13	.45	16.77	125	.80			Flow cell is full
	1235	3.31	300	5.50	.072	13	.45	16.78	124	1.20			3.30
	1240	3.31	300	5.51	.072	12	.38	16.92	116	1.60			
	1245	3.31	300	5.53	.075	9	.36	16.99	108	2.00			
	1250	3.31	300	5.52	.075	7	.35	16.99	108	2.40			
													Sample Time
													1250
													Sample Material: Teflon lined Tubing
													"Soda Straw method"

Notes:
Note when "Stabilization" has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~<20~~ NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STI Swainsboro

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW-8

Field Sampling Personnel: B. Hodnett

Depth to Screen ~~below MP~~: 1.5 Top of screen 11.51 Bottom of screen

Pump Intake at (ft. below MP): 7

Purging Device (Pump Type): peristaltic

(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/9/15	1355	2.70											Total Depth = 11.51' bTOC
	1410	2.85	150	6.15	0.435	5.4	1.16	21.63	-74.4	20.5			
	1415	2.90	150	6.16	0.433	3.7	0.58	21.58	-82.7				
	1420	2.90	100	6.15	0.421	1.8	0.28	21.24	-85.7	0.5			
	1425	2.90	100	6.13	0.411	1.2	0.23	21.40	-85.1				
	1430	2.90	100	6.10	0.401	0.7	0.20	21.48	-82.2	1.0			
	1435	2.90	100	6.08	0.395	0.2	0.19	21.53	81.4				
	1440	2.90	100	6.07	0.390	0.2	0.18	21.51	-79.8				
	1445												Sample plus duplicate
													Sample Material: Teflon lined Tubing
													"Soda Straw method"

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
~~<20~~ <10 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STI Swainsboro

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW-9R

Field Sampling Personnel: B. Cupchyk

Depth to Screen ~~below MP~~ bgs: ~~1.0~~ 1.50 (Top) of screen 11.50 (Bottom) of screen

Pump Intake at (ft. below MP): 6

Purging Device (Pump Type): peristaltic
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft.	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/8/15	0900	~~2.30~~ 2.32								0.5			purged 0.5 gallons
	0920	2.75	150	6.36	0.232	2.1	1.83	20.66	77.1				Total Depth = 11.57' bTOC
	0925	2.85	150	6.39	0.233	4.4	0.87	20.66	75.9				
	0930	2.90	100	6.38	0.232	2.7	0.77	20.72	76.1				
	0935	2.95	100	6.38	0.231	5.0	1.02	20.64	77.8				
	0940	2.95	100	6.38	0.231	5.8	0.76	20.60	77.7				
	0945	2.95	100	6.37	0.230	6.5	0.64	20.61	78.1				
	0950	2.95	100	6.38	0.231	6.8	0.65	20.57	73.8	1.0			
	0955	2.95	100	6.39	0.233	8.6	0.63	20.54	71.1				
	1000												sample time
													Sample material: Teflon lined Tubing
													"Soda Straw Method"

Notes:

Note when "Stabilization" has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):

- ±0.1 for pH
- ±10 mV for redox
- ±3% for specific cond.
- ±10% for DO
- <10 ~~<20~~ NTUs for turbidity
- NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

DTW 3.54
DTB 7.78
wv x1 .72
wv x3 3.16
column 4.24

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STI

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW11

Depth to Screen ~~below MP~~ bgs: 0.75 of screen Top; 5.50 of screen Bottom

Field Sampling Personnel: Cuzzo

Pump Intake at (ft. below MP): 5.5'

Purging Device (Pump Type): (e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.) [peristaltic pump circled]

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
11/9/15	11:10	~~3.5~~ 3.54	350	5.10	.038	55	3.66	1434	203	—			Total Depth = 7.78' bTOC
	1115	3.58	350	5.15	.038	50	3.28	1418	191	.46			
	1120	3.58	350	5.38	.042	25	1.53	13.79	140	.92			
	1125	3.58	350	5.38	.042	20	1.45	13.77	138	1.38			
	1130	3.58	350	5.44	.046	12	1.30	13.62	129	1.84			
	1135	3.58	350	5.43	.051	9	.70	13.49	121	2.30			
	1140	3.58	350	5.43	.051	7	.74	13.50	118	2.76			
	1145	3.58	350	5.48	.051	7	.47	13.46	117	3.22			
	1150	3.58	350	5.49	.052	5	.41	13.47	117	3.68			
	1155	3.58	350	5.49	.052	5	.40	13.45	119	4.14			
													1150 Sample Time
													Sample Material: Teflon lined Tubing
													"Soda Straw Method"

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
- ±0.1 for pH
- ±10 mV for redox
- ±3% for specific cond.
- ±10% for DO
- <10 ~~<20~~ NTUs for turbidity
- NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

DTW 2.32
DTB 6.93
WVX: .78
WVX3 2.4

Location: STF

Well ID: MW12

Field Sampling Personnel: GA220

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Depth to Screen ~~below MP~~: 2.50 Top of screen 7.50 Bottom of screen

Pump Intake at (ft. below MP): 3.5'

Purging Device (Pump Type):
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time	Depth to Water Below MP	Purge Rate	pH	Spec Cond.	Turbidity	DO Flow cell	Temp.	Redox Potential	Cum. ~~Volume~~ Purged	CHEMetrics DO	Hach Ferrous Iron	Comments
	24 hr	ft	mL/min	pH units	mS/cm	NTUs	mg/L	°C	mV	gallons	mg/L (low)	mg/L	Total
12/8/10	1025	2.81	100	5.41	.043	16	2.35	19.51	138	-			Depth = 6.93' BTOC
	1030	2.86	100	5.26	.037	17	1.60	19.36	171	.13			DTW After The
	1035	2.91	100	5.15	.035	11	.93	19.50	200	.26			Flow cell was
	1040	2.92	100	5.12	.034	6	.87	19.61	203	.39			Full (2.81)
	1045	2.92	100	5.11	.034	5	.63	20.05	206	.52			
	1050	2.93	100	5.08	.034	0	.61	20.24	207	.65			
	1055	2.93	100	5.08	.034	0	.60	20.27	207	.78			
	1100	2.94	100	5.07	.034	0	.60	20.30	208	.91			
													Sample Time
													1100
													Sample Material: Teflon lined Tubing "Soda straw method"

otes:
ote when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):

- ±0.1 for pH
- ±10 mV for redox
- ±3% for specific cond.
- ±10% for DO
- <10 ~~<20~~ NTUs for turbidity
- NA for temperature

stabilization does not occur within 2 hours, contact Site Manager for action.
well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

DTW 6.27
DTB 9.82
WVX1 . 6
WVX3 1.81

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STI

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW 15

Depth to Screen ~~Below MP~~: 5.00 of screen Top 10.00 of screen Bottom

Field Sampling Personnel: GB200

Pump Intake at (ft. below MP): 7.5'

Purging Device (Pump Type): _____
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
11/8/16	1130	6.48	~~0.01~~ 100	6.01	.108	0	1.08	22.85	-11	—			Total Depth = 9.82 btoc
	1135	6.51	100	6.00	.111	0	.67	22.70	-22	.13			TW After The
	1140	6.51	100	5.98	.125	0	.56	22.84	-27	.26			Flow cell Filled
	1145	6.53	250	5.99	.135	0	.46	22.81	-27	.39			is 6.48
	1150	6.55	250	5.97	.196	0	.41	22.75	-29	.52			
	1155	6.60	250	5.96	.154	0	.39	22.83	-30	.65			There was Good
	1200	6.60	250	5.96	.161	0	.39	22.14	-32	.78			Recharge At 15 min.
	1205	6.61	250	5.96	.171	0	.36	23.11	-31	.91			I increased the Purge
	1210	6.60	250	5.96	.171	0	.36	23.13	-31	1.04			Rate.
	1215	6.60	250	5.95	.172	0	.35	23.14	-32	1.17			
													Sample Time
													1215
													Sample material: Teflon lined Tubing
													"Soda Straw method"

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~<20~~ NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STI Swainsboro

Well ID: MW-18

Field Sampling Personnel: B Hodges

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Depth to Screen ~~below MP~~ bgs: 5.00 Top of screen; 15.00 / 14.19 Bottom of screen

Pump Intake at (ft. below MP): 8'

Purging Device (Pump Type): peristaltic
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/8/15	1400	2.70											Total Depth = 14.19 btoc
	1415	2.90	150	5.78	0.198	3.2	1.02	22.76	34.5	< 0.5			
	1420	3.00	150	5.77	0.198	2.2	0.67	22.73	32.1				
	1425	3.00	100	5.72	0.197	1.9	0.54	22.65	29.7	0.5			
	1430	3.00	100	5.73	0.195	2.7	0.58	22.61	25.4				
	1435	3.00	100	5.73	0.193	3.1	0.40	22.74	20.4				
	1440	3.00	100	5.73	0.193	2.9	0.53	22.73	19.9	1.0			
	1445	2.97	100	5.73	0.192	2.4	0.41	22.74	18.1				
	1450	2.95	100	5.72	0.189	2.8	0.40	22.70	16.3				
	1455	2.95	100	5.72	0.188	3.1	0.39	22.66	14.6	2.0			
	1500												sample time
													Sample Material: Teflon lined Tubing
													"Soda Straw method"

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~>20~~ NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: SRS Swamsboro

Well ID: MW-19

Field Sampling Personnel: D. Upchurch

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Depth to Screen ~~below MP~~ bgs: 5.00 (1.00) of screen Top; 15.00 (10.42) of screen Bottom

Pump Intake at (ft. below MP): 10'

Purging Device (Pump Type): peristaltic
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/9/15	1040	3.15											Total Depth = 16.42' TOC
	1055	3.60	150	5.29	0.106	92.3	1.19	18.51	229.0	<0.5			
	1100	3.65	100	5.34	0.111	93.2	0.74	18.31	164.3				
	1105	3.65	100	5.48	0.121	91.1	0.65	18.36	111.0	0.5			
	1110	3.65	100	5.58	0.132	88.8	0.53	18.29	79.7				
	1115	3.60	100	5.61	0.137	87.3	0.52	18.27	71.4				
	1120	3.60	100	5.65	0.145	82.8	0.63	18.15	58.4	1.0			
	1125	3.60	100	5.69	0.156	82.4	0.52	18.03	47.0				
	1130	3.57	100	5.70	0.157	75.5	0.41	17.98	41.6				
	1135	3.57	100	5.71	0.160	74.0	0.42	18.00	40.9	2.0			
	1140	3.55	100	5.72	0.164	69.4	0.43	18.01	36.4				
	1145	3.55	100	5.72	0.166	68.3	0.43	18.01	35.2				
	1150	3.55	100	5.73	0.168	66.3	0.41	18.00	34.4				
	1155	~~3.55~~	100	5.73	0.170	65.2	0.37	18.08	34.7				
	~~1200~~ 1200	3.55	100	5.74	0.174	62.7	0.39	18.07	31.5	3.0			
	1205	3.55	100	5.74	0.175	60.4	0.41	18.13	32.7				
	1210	3.55	100	5.74	0.178	59.1	0.35	18.17	30.7				
	1215	3.55	100	5.75	0.180	57.2	0.34	18.21	28.6	3.5			
	1220	3.55	100	5.76	0.183	51.1	0.33	18.22	25.2				
	1225	3.55	100	5.76	0.186	51.6	0.33	18.25	24.7				
	1230	3.55	100	5.76	0.187	51.2	0.35	18.27	24.8				
	1235	3.55	100	5.76	0.188	50.0	0.32	18.27	24.1	4.0			

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~<20~~ NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STC Swainsboro

Well ID: MW-19

Field Sampling Personnel: B. Goodale

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Depth to Screen ~~below MP~~ bgs: 5.00 (Top) of screen; 15.00 (Bottom) of screen

Pump Intake at (ft. below MP): 10'

Purging Device (Pump Type): peristaltic
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/9/15	1240	3.55	100	5.77	0.191	45.4	0.39	18.39	22.4	4.0			
	1245	3.55	100	5.77	0.191	46.3	0.32	18.40	22.7				
	1250	3.55	100	5.77	0.192	41.3	0.33	18.44	23.1				
	1255	3.55	100	5.77	0.193	44.0	0.31	18.45	23.1				
	1300												sample time
													Sample material: Teflon lined Tubing
													"Soda Straw method"

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~≈20~~ NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

PTW 4.73
DTB 16.24
WVX1 #2
WVX3 5.8

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STI

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW20

Field Sampling Personnel: GWW

Depth to Screen ~~Below MP~~ bgs: 4.50 Top of screen 14.50 Bottom of screen

Pump Intake at (ft. below MP): 10'

Purging Device (Pump Type): S
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
7/8/15	1410	5.01	350	5.88	.346	54	3.14	20.36	14	—			Total Depth = 16.24' bgs
	1415	5.01	350	5.86	.350	41	.80	20.24	10	.46			
	1420	5.03	350	5.86	.351	32	.55	20.10	4	.92			
	1425	5.05	350	5.84	.348	25	.45	20.01	-1	1.38			
	1430	5.04	350	5.84	.340	18	.41	20.00	-2	1.84			
	1435	5.05	350	5.84	.335	17	.39	19.97	-3	2.30			
	1440	5.05	350	5.83	.331	9	.37	19.98	-3	2.76			
	1445	5.05	350	5.83	.331	7	.37	19.98	-3	3.22			Sample time
													Sample material: Teflon lined Tubing
													"Soda straw method"

otes:
ote when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~<20~~ NTUs for turbidity
NA for temperature

stabilization does not occur within 2 hours, contact Site Manager for action.
well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

DTW 5.61
DTB 34.40
WV X1 4.99
WV X3 14.97
Column 28.79'

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STL

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW20 D

Field Sampling Personnel: GA ZRO

Depth to Screen ~~below MP~~: 25.00 of screen (Top) 35.00 of screen (Bottom)

Pump Intake at (ft. below MP): 29'

Purging Device (Pump Type): ~~(circled)~~
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/9/11	0915	6.61	~~447~~	6.47	.209	16	5.14	17.28	191	—			Total Depth = 34.40' bTOC
	0920	7.33	150	5.10	.083	12	1.70	18.09	177	.2			DTW IS 6.61
	0925	8.14	150	4.78	.060	10	1.00	18.31	174	.4			Before the First Reading.
	0930	9.20	150	4.66	.053	9	.74	18.73	191	.6			
	0935	10.22	150	4.63	.051	9	.61	18.91	232	.8			
	0940	11.06	150	4.61	.050	9	.54	19.08	248	1.00			Type III well
	0945	11.73	150	4.63	.050	9	.51	19.15	261	1.20			
	0950	12.74	150	4.66	.049	9	.49	19.15	270	1.40			2" PVC well.
	0955	13.41	150	4.64	.049	9	.50	19.20	274	1.60			
	1000	13.80	150	4.63	.049	8	.53	19.12	274	1.80			
	1005	14.33	150	4.62	.049	8	.57	18.72	275	2.00			
	1010	15.07	150	4.62	.049	8	.57	18.73	275	2.20			well has very poor recharge.
													I Purged the well Dry and Sampled other well while This well Recharged then I took the Sample
		Sample Time		1425									
													I Removed 3 to 5 Gal of water.
													Sample Material: Teflon lined Tubing "Soda Straw Method"

Notes:
Note when "Stabilization" has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
~~20~~ <10 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STC Swainsboro

Well ID: MW-21

Field Sampling Personnel: B. Godwin

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Depth to Screen ~~below MP:~~ bgs 4.90 ~~2.54~~ of screen Top; 14.80 ~~11.54~~ of screen Bottom

Pump Intake at (ft. below MP): 11

Purging Device (Pump Type): peristaltic
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/8/15	1150	4.75											Total Depth = 17.54' bTOC
	1200	4.85	150	6.21	0.056	21.2	2.92	18.46	53.5	20.5			
	1205	4.85	100	5.96	0.105	24.0	1.19	18.16	41.2				
	1210	4.85	100	5.97	0.113	20.3	0.98	18.12	32.9				
	1215	4.85	100	6.00	0.132	15.8	0.91	18.23	16.3	0.5			
	1220	4.85	100	6.03	0.164	13.7	0.73	18.23	1.7				
	1225	4.85	100	6.05	0.189	11.3	0.52	18.19	~~4.3~~ -9.0	1.0			ORP -9.0
	1230	4.85	100	6.06	0.214	7.2	0.67	18.16	-15.5				
	1235	4.85	100	6.07	0.233	8.4	0.62	18.17	-21.0				
	1240	4.85	100	6.07	0.241	6.4	0.63	18.18	-23.2				
	1245	4.85	100	6.08	0.255	5.2	0.60	18.19	-26.6	2.0			
	1250	4.85	100	6.08	0.266	4.6	0.50	18.26	-29.7				
	1255	4.85	100	6.09	0.269	4.8	0.46	18.24	-31.0				
	1300	4.85	100	6.09	0.269	4.9	0.42	18.25	-31.8				
	1305												sample time
													Sample material: Teflon lined Tubing
													"soda straw method"

otes:
ote when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings): ±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~<20~~ NTUs for turbidity
NA for temperature

stabilization does not occur within 2 hours, contact Site Manager for action.
well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STL

Identify Measuring Point (MP): _____
(e.g. Top of Casing)

page ___ of ___

Well ID: SW2

Field Sampling Personnel: GH220

Depth to Screen below MP: _____ of screen (Top) _____ of screen (Bottom)

Pump Intake at (ft. below MP): _____

Purging Device (Pump Type): _____
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time	Depth to Water Below MP	Purge Rate	pH	Spec Cond.	Turbidity	DO Flow cell	Temp.	Redox Potential	Cum. Volume Purged	CHEMetrics DO	Hach Ferrous Iron	Comments
	24 hr	ft	mL/min	pH units	mS/cm	NTUs	mg/L	°C	mV	gallons	mg/L (low)	mg/L	
12/9/15	1420	—		5.58	.058	1085	4.19	12.92	101	—			

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings): ±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<20 ~~<20~~ NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: SWS

Well ID: SW4

Field Sampling Personnel: GHW

Identify Measuring Point (MP): _____
(e.g. Top of Casing)

Depth to Screen below MP: _____ of screen (Top) _____ of screen (Bottom)

Pump Intake at (ft. below MP): _____

Purging Device (Pump Type): _____
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons	CHEMetrics DO mg/L (low)	Hach Ferrous Iron mg/L	Comments
12/9/10	1400			5.66	.060	130	6.07	12.41	71.5				
													Sample Time
													1410

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
~~±20~~ <10 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STL

Identify Measuring Point (MP): _____
(e.g. Top of Casing)

Well ID: SW5

Field Sampling Personnel: GA220

Depth to Screen below MP: _____ of screen Top _____ of screen Bottom

Pump Intake at (ft. below MP): _____

Purging Device (Pump Type): _____
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time	Depth to Water Below MP	Purge Rate	pH	Spec Cond.	Turbidity	DO Flow cell	Temp.	Redox Potential	Cum. Volume Purged	CHEMetrics DO	Hach Ferrous Iron	Comments
	24 hr	ft	mL/min	pH units	mS/cm	NTUs	mg/L	°C	mV	gallons	mg/L (low)	mg/L	
12/9/11	1500			6.25	.097	326	6	13.56	89				

Notes:
Note when "Stabilization" has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):
±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
~~<20~~ <10 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action."
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: STL

Identify Measuring Point (MP): _____
(e.g. Top of Casing)

Well ID: SW 6

Field Sampling Personnel: CAZO

Depth to Screen below MP: _____ of screen (Top) _____ of screen (Bottom)

Pump Intake at (ft. below MP): _____

Purging Device (Pump Type): _____
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time	Depth to Water Below MP	Purge Rate	pH	Spec Cond.	Turbidity	DO Flow cell	Temp.	Redox Potential	Cum. ~~Volume~~ Purged	~~CHEM~~Metrics DO	Hach Ferrous Iron	Comments
	24 hr	ft	mL/min	pH units	mS/cm	NTUs	mg/L	°C	mV	gallons	mg/L (low)	mg/L	
12/9/15	1520			6.38	.099	490	3.19	13.30	65				

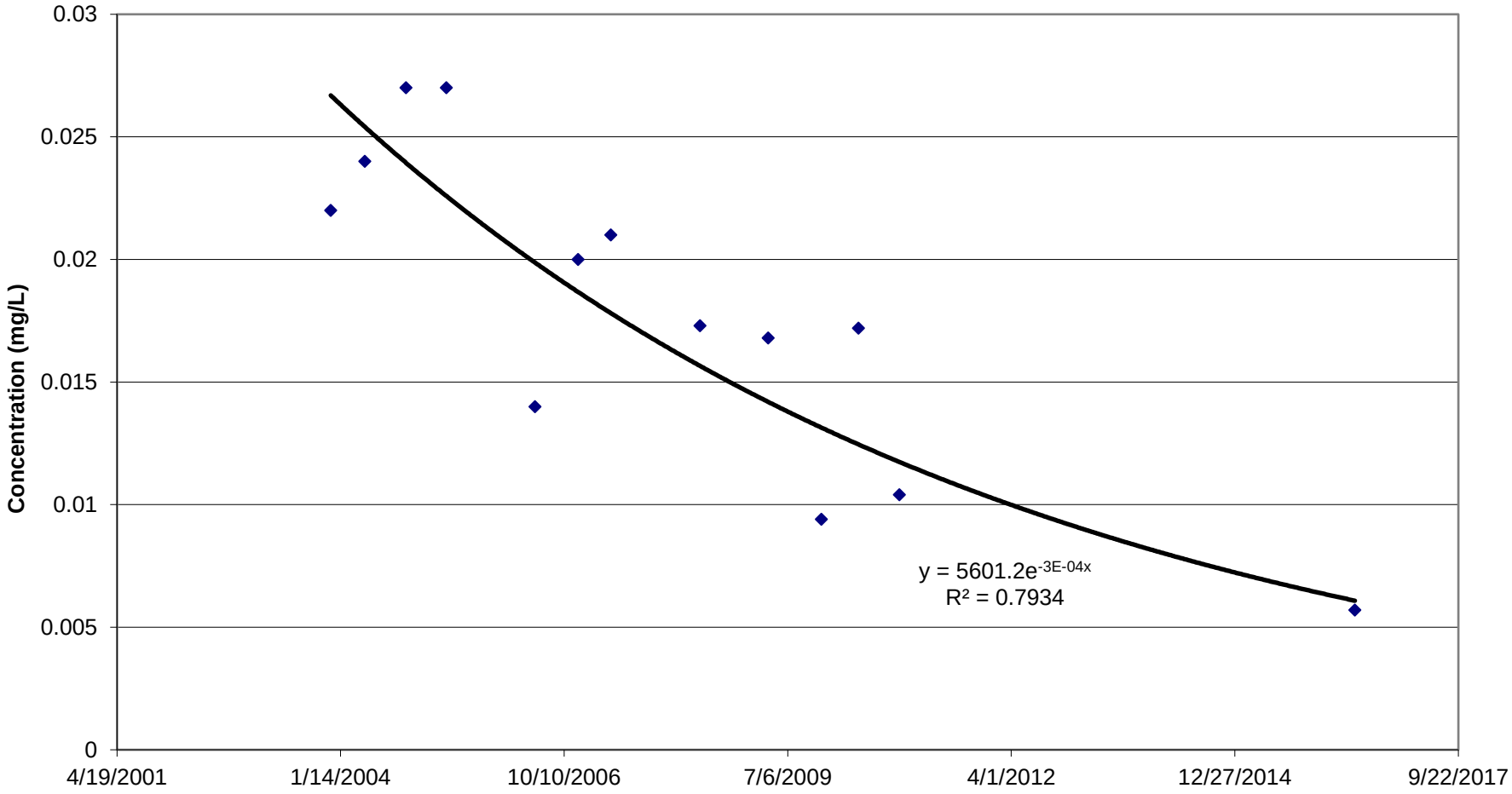
Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings): ±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<10 ~~<20~~ NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

APPENDIX B

VOC CONCENTRATION TREND GRAPHS

MW-3 Vinyl Chloride Concentration Versus Time Trend Plot



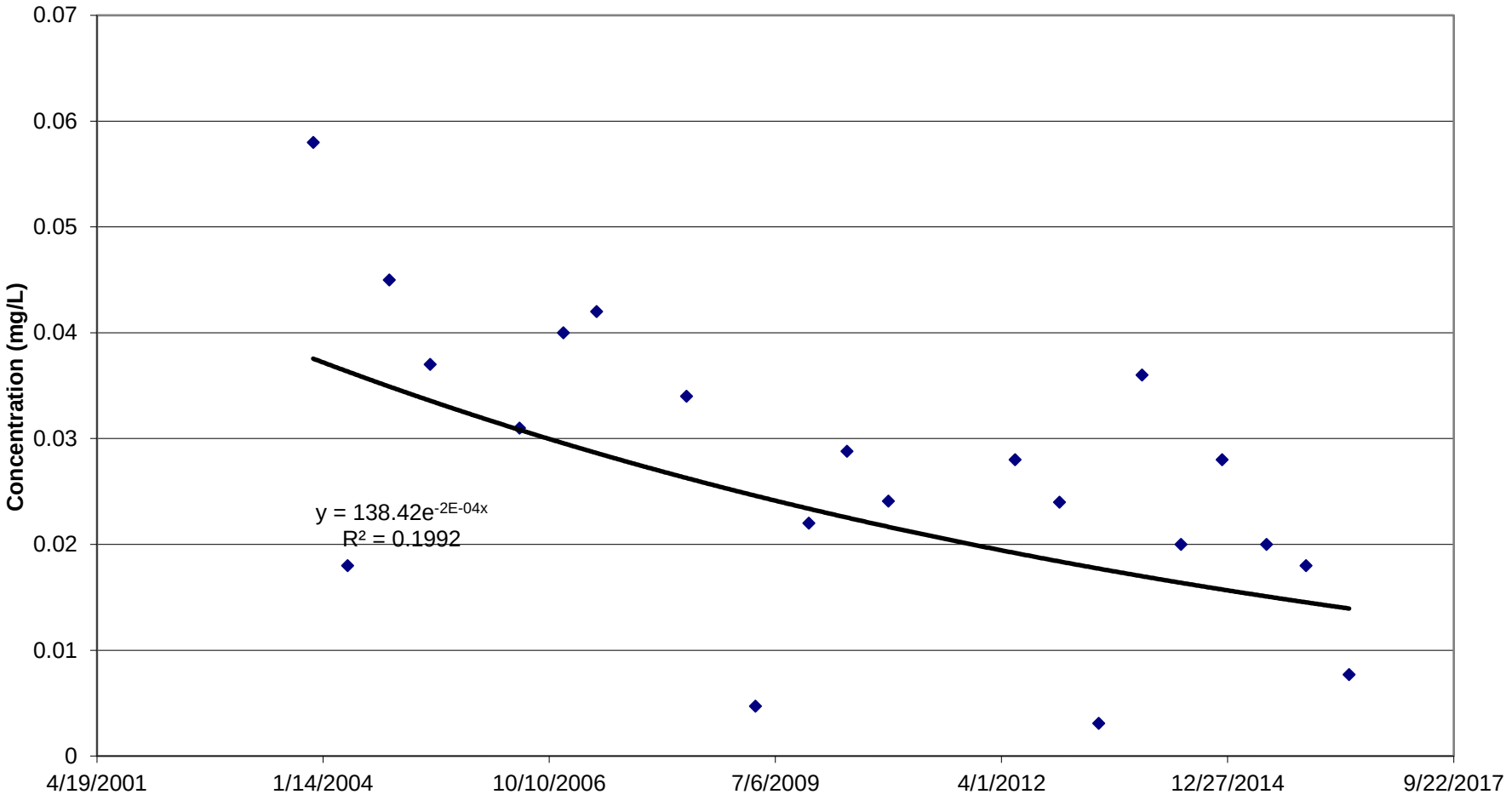
trend starts with Dec03 data point

PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 08/10/2016

Former Automatic Sprinkler Site
Swainsboro, GA

August 2016

MW-4 Vinyl Chloride Concentration Versus Time Trend Plot



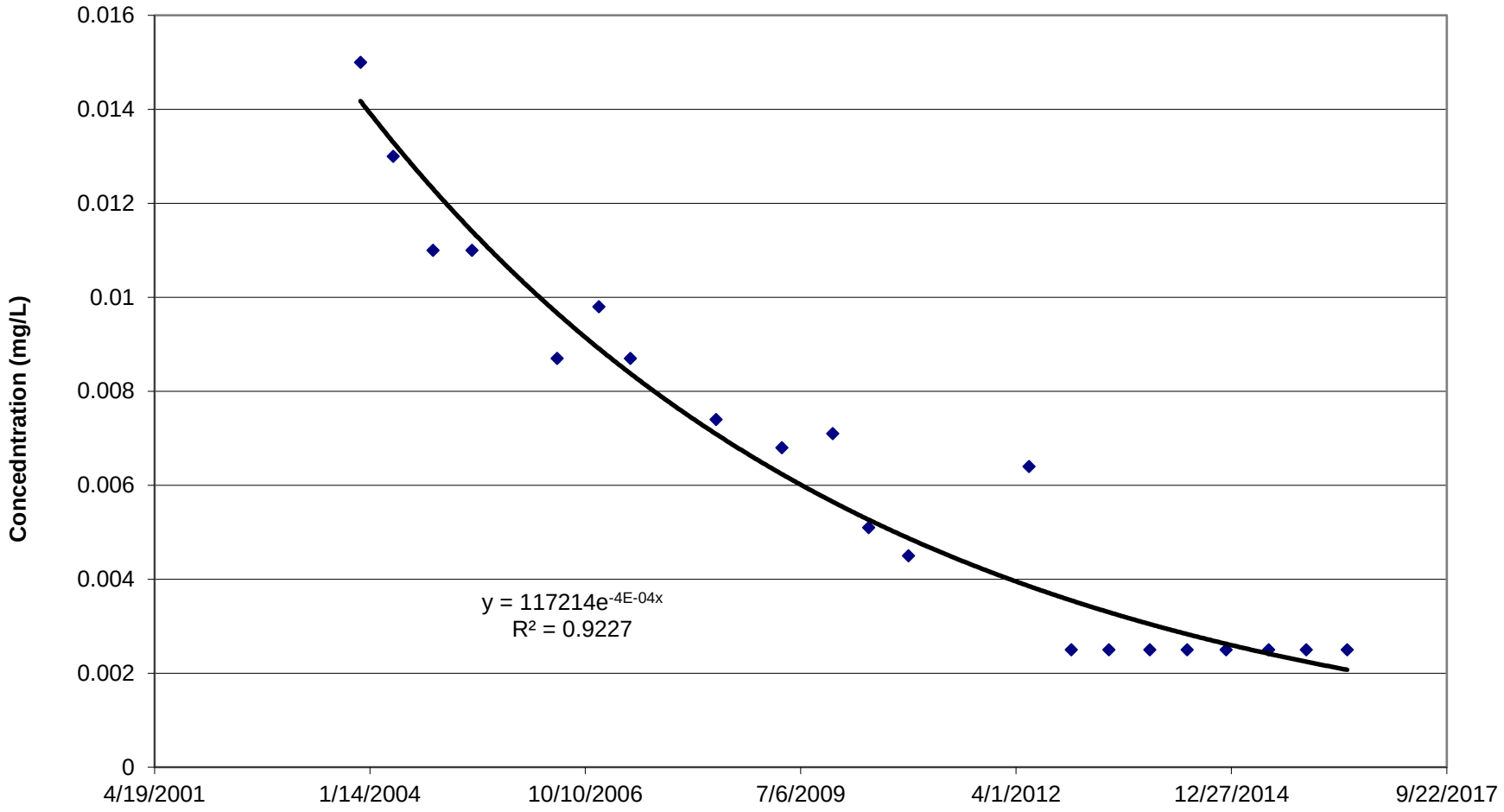
trend starts with Dec03 data point

PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 8/10/2016

Former Automatic Sprinkler Site
Swainsboro, GA

August 2016

MW-5 1,1-Dichloroethene Concentration Versus Time Trend Plot



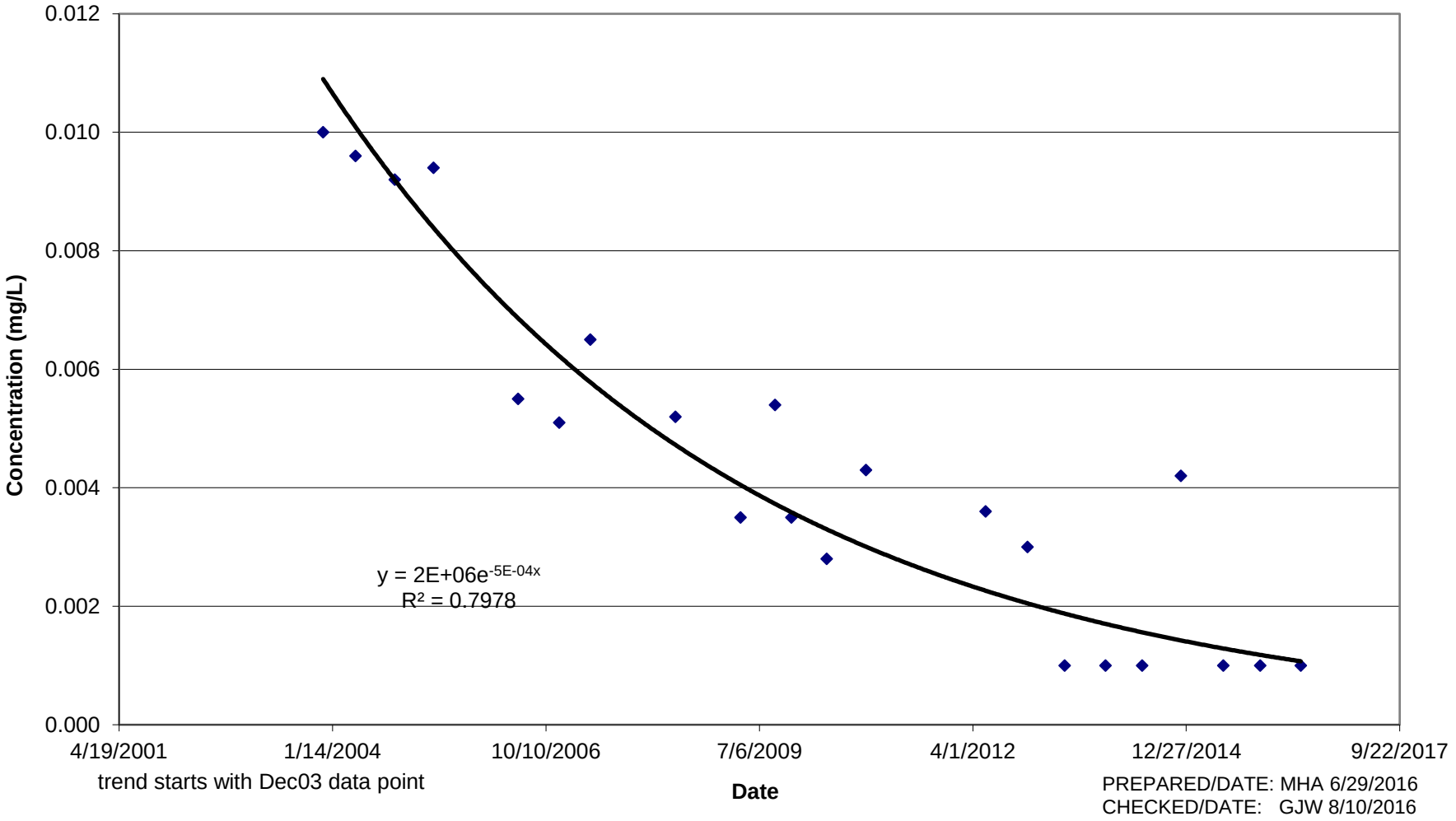
half detection limit value represents
below result limit results

PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 8/10/2016

Former Automatic Sprinkler Site
Swainsboro, GA

February 2016

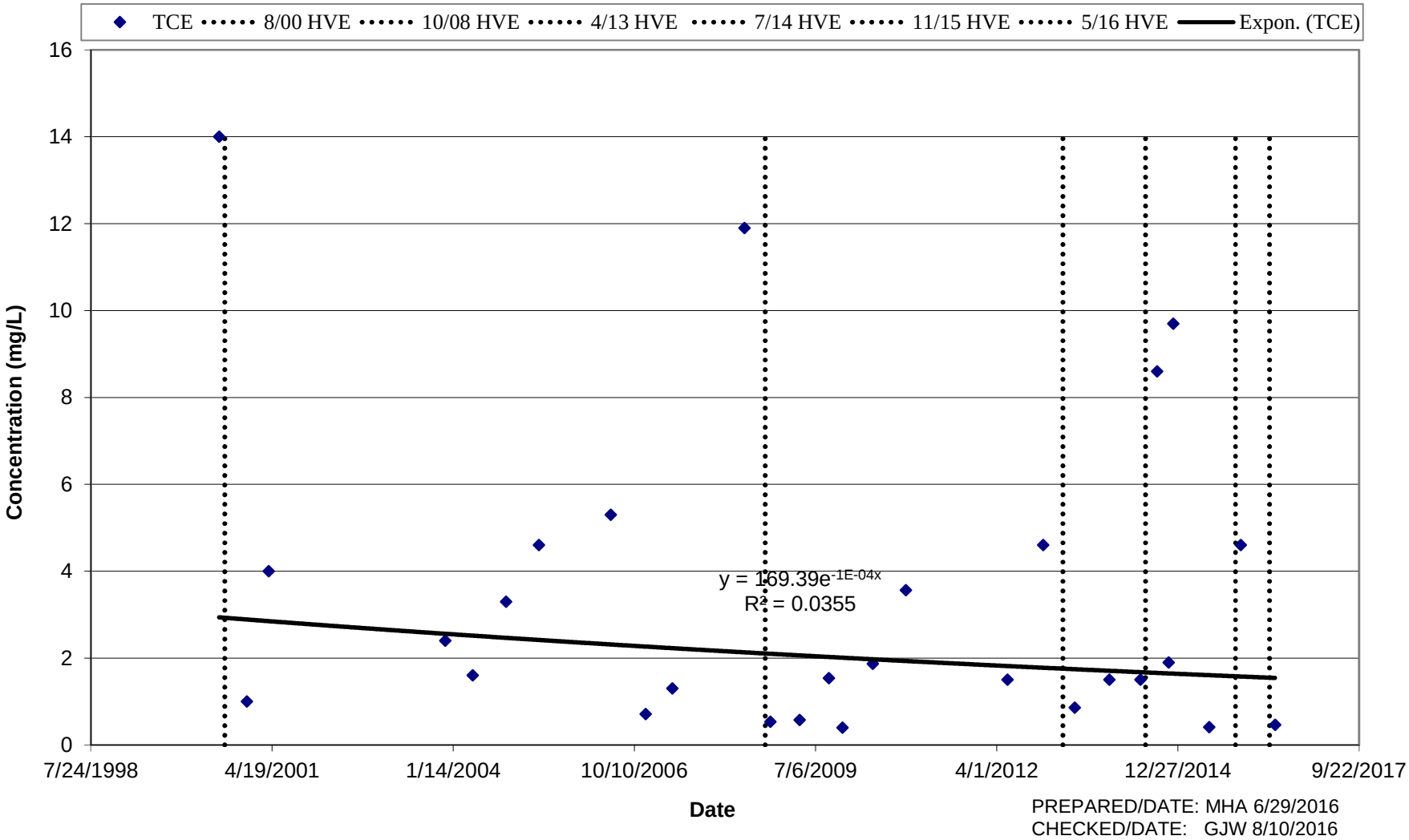
MW-6 Vinyl Chloride Concentration Versus Time Trend Plot



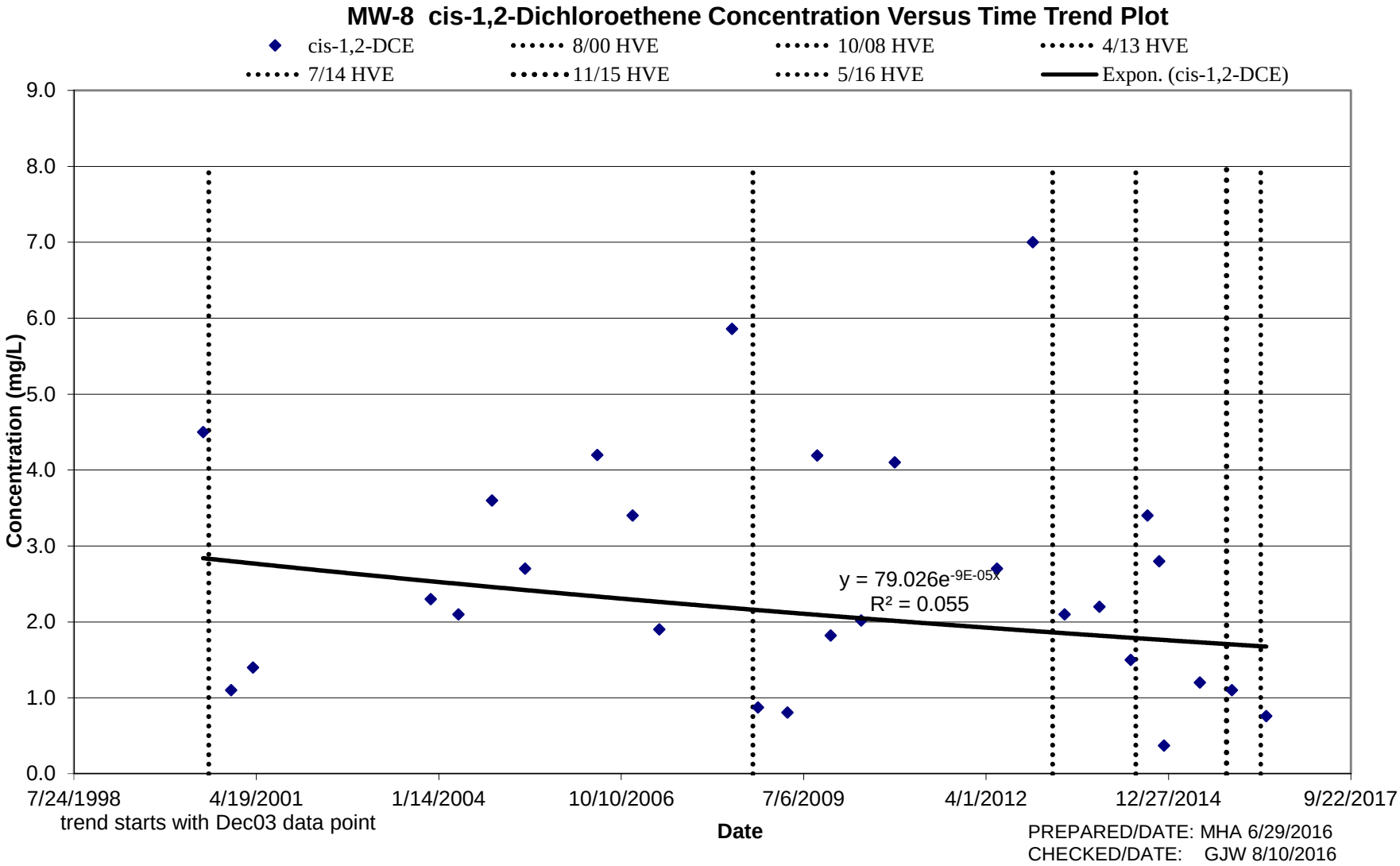
trend starts with Dec03 data point

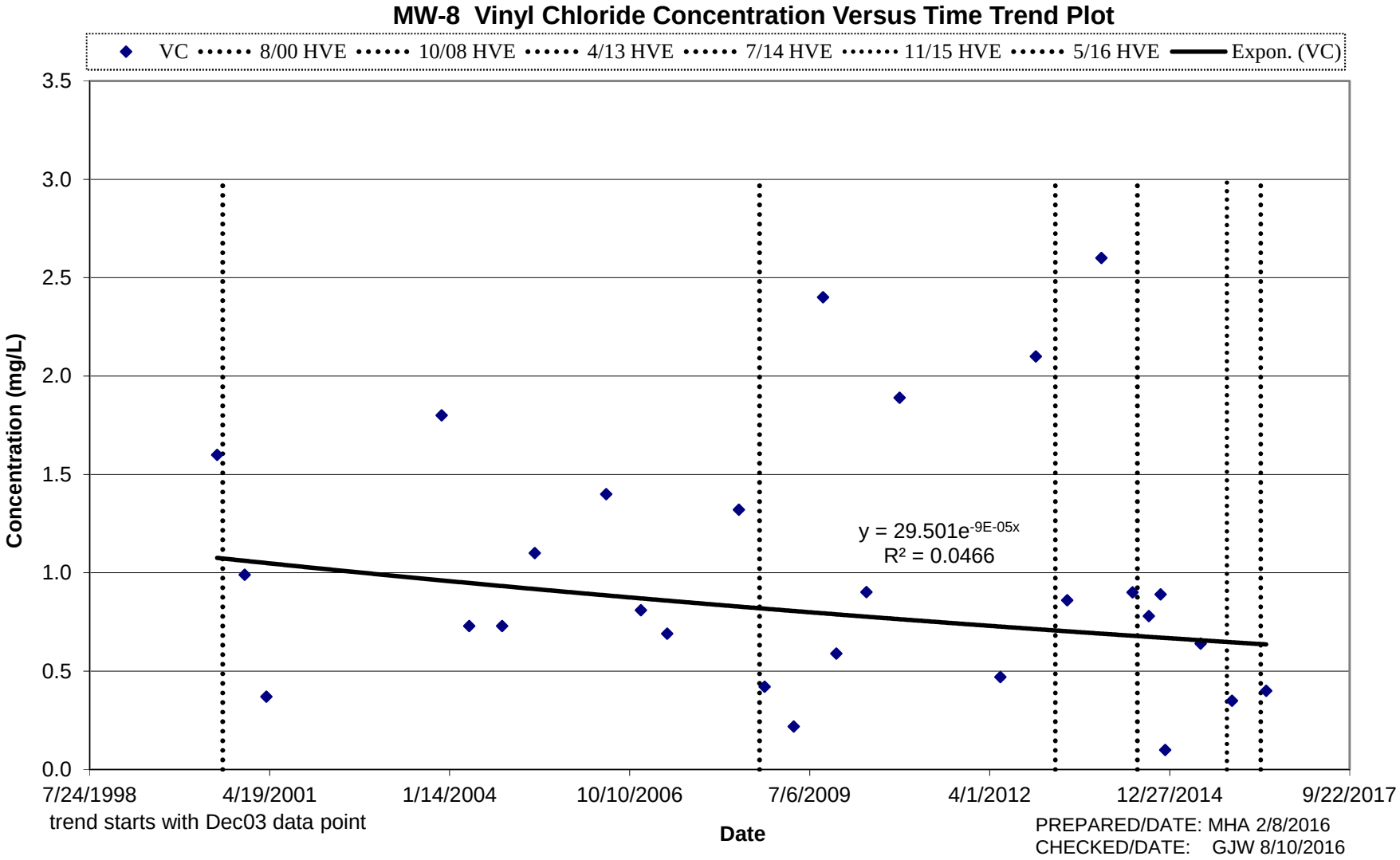
PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 8/10/2016

MW-8 Trichloroethene Concentration Versus Time Trend Plot



PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 8/10/2016

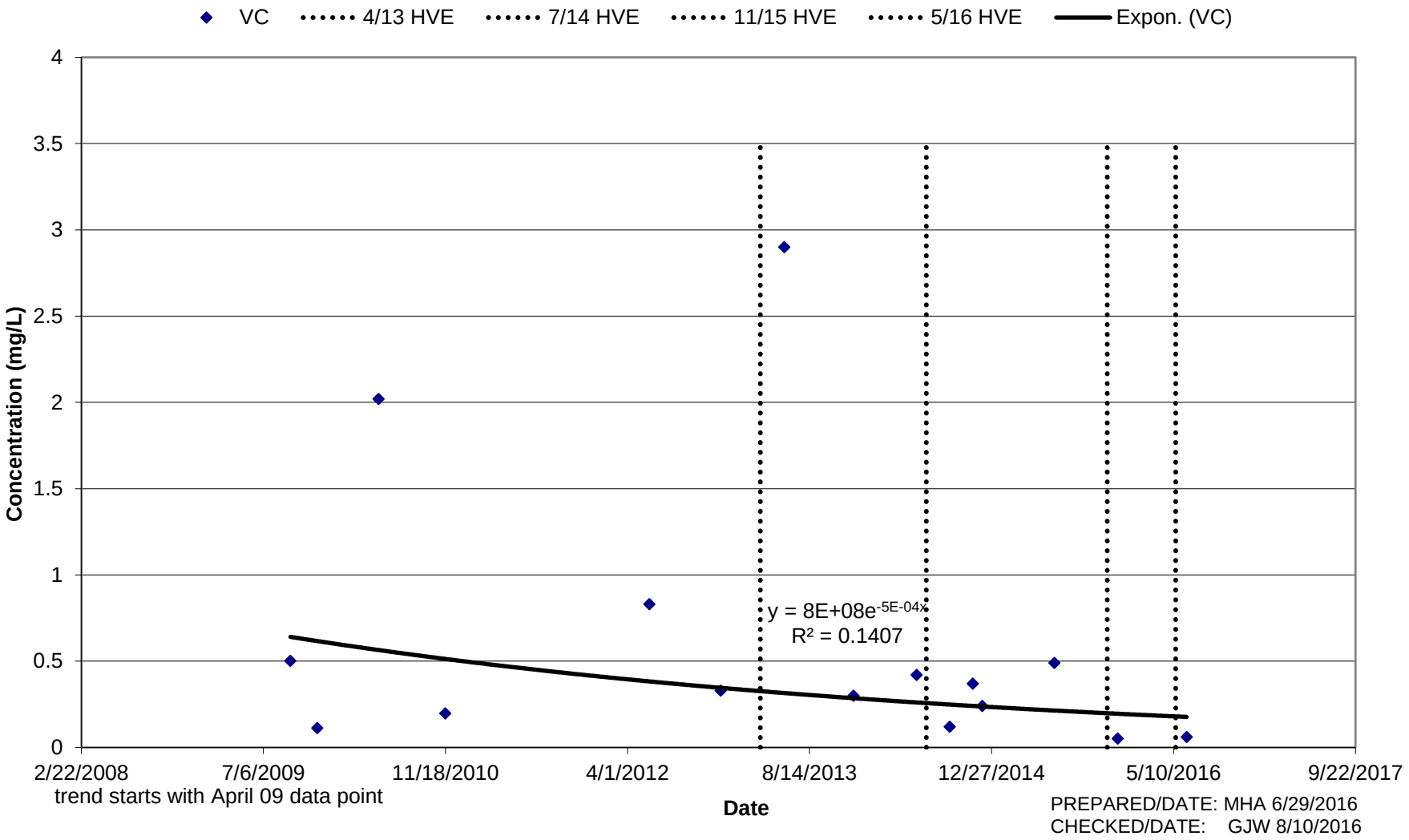

MW-8 cis-1,2-Dichloroethene Concentration Versus Time Trend Plot
cis-1,2-DCE
8/00 HVE
10/08 HVE
4/13 HVE
7/14 HVE
11/15 HVE
5/16 HVE
Expon. (cis-1,2-DCE)
Concentration (mg/L)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
y = 79.026e-9E-05x
R² = 0.055
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
trend starts with Dec03 data point
Date
PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 8/10/2016


MW-8 Vinyl Chloride Concentration Versus Time Trend Plot
VC
8/00 HVE
10/08 HVE
4/13 HVE
7/14 HVE
11/15 HVE
5/16 HVE
Expon. (VC)
Concentration (mg/L)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
y = 29.501e-9E-05x
R² = 0.0466
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
Date
trend starts with Dec03 data point
PREPARED/DATE: MHA 2/8/2016
CHECKED/DATE: GJW 8/10/2016

Former Automatic Sprinkler Site
Swainsboro, GA

August 2016

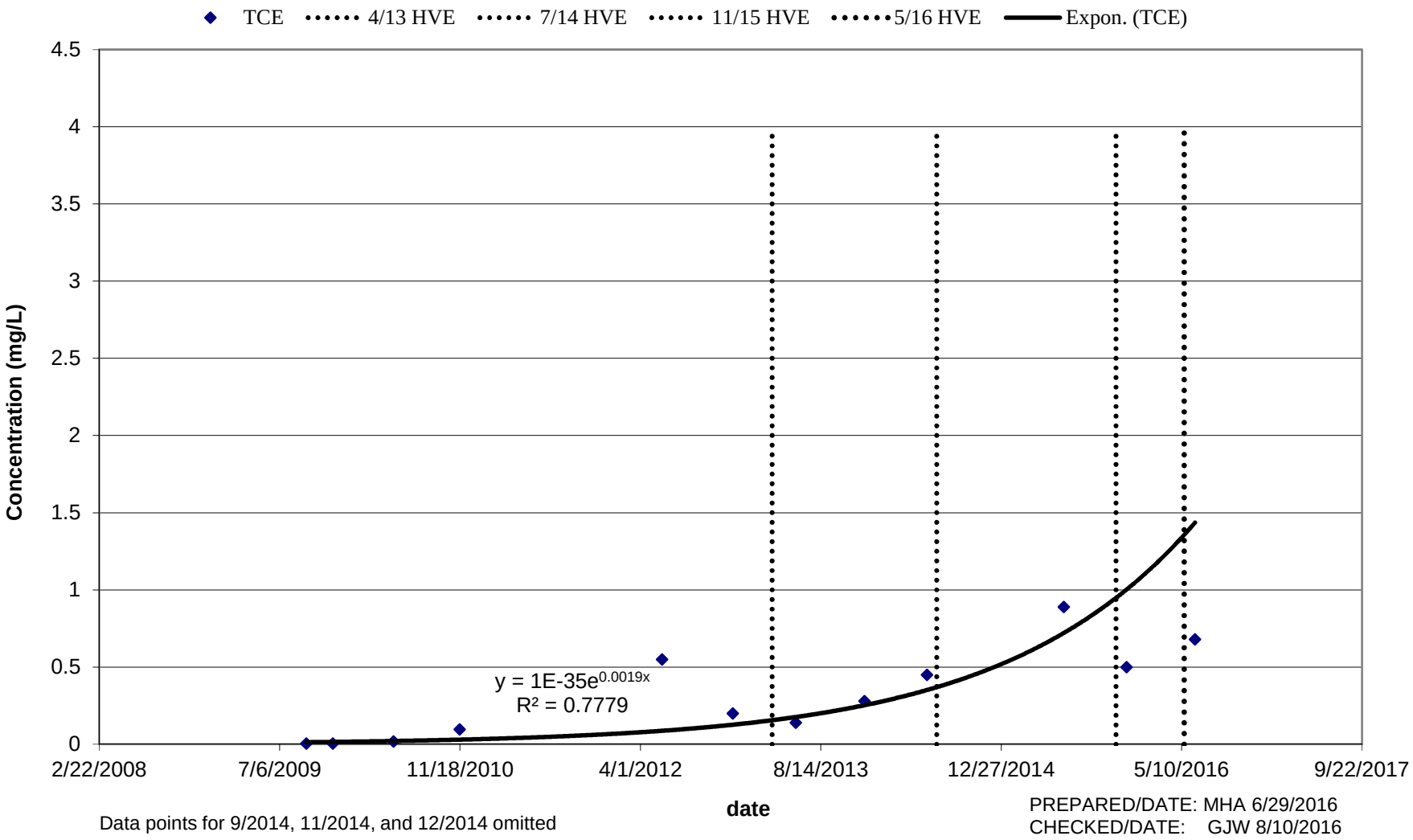
MW-19 Vinyl Chloride Concentration Versus Time Trend Plot



trend starts with April 09 data point

PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 8/10/2016

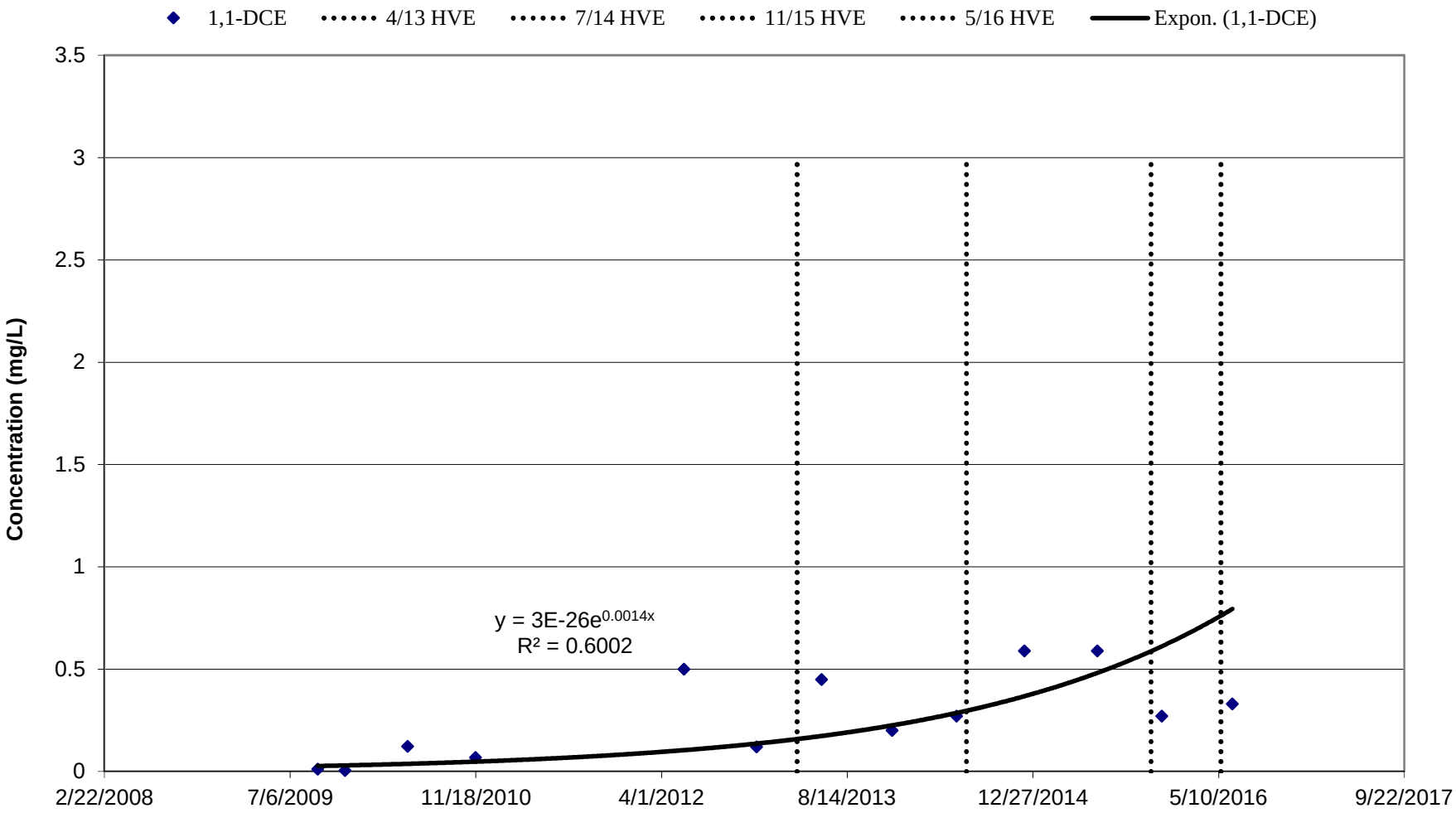
MW-19 Trichloroethene Concentration Versus Time Trend Plot B



Data points for 9/2014, 11/2014, and 12/2014 omitted

PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 8/10/2016

MW-19 1,1-Dichloroethene Concentration Versus Time Trend Plot B

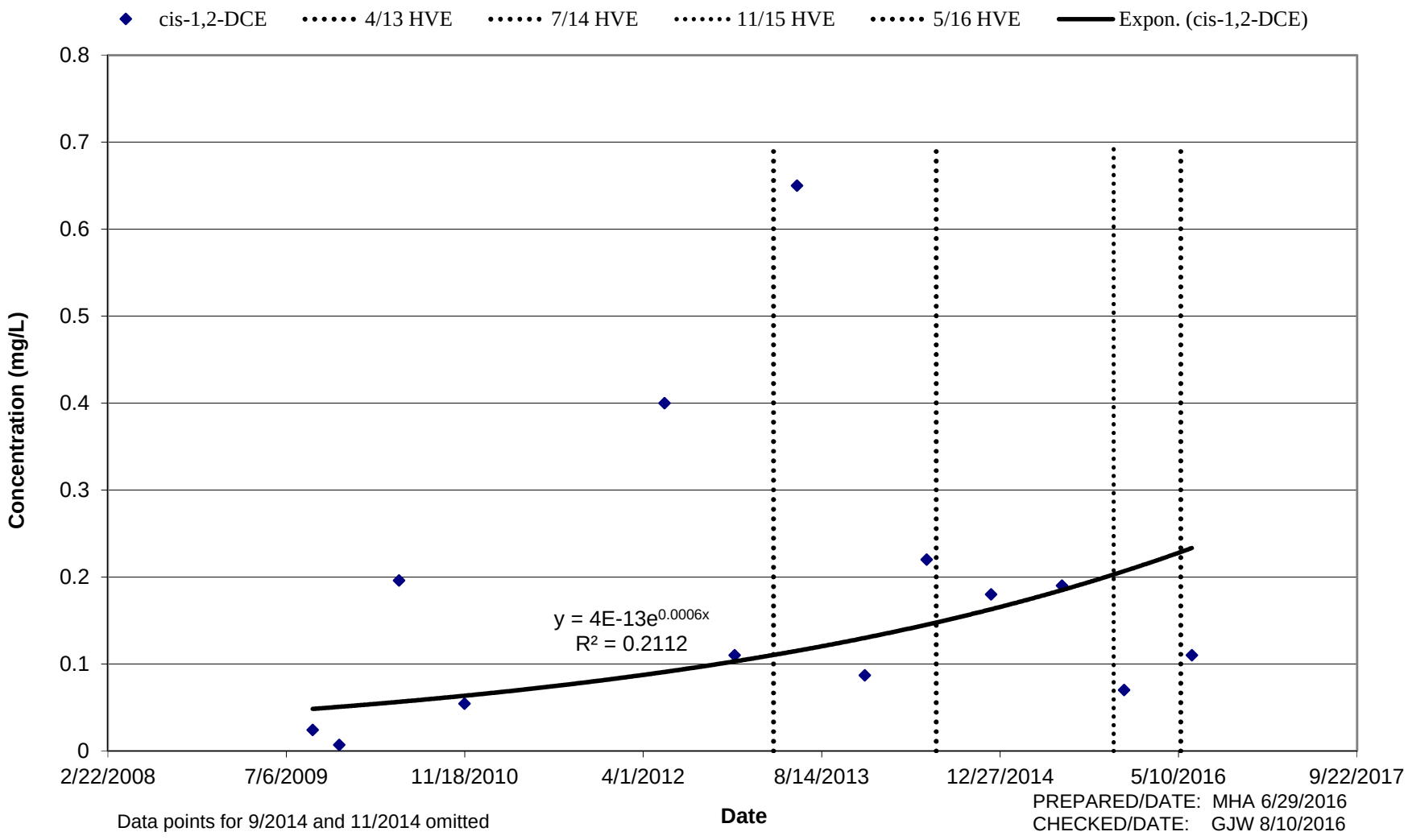


trend starts with September 09 data point

Data points for 9/2014 and 11/2014 omitted

PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 8/10/2016

MW-19 cis-1,2-Dichloroethene Concentration Versus Time Trend Plot B



Data points for 9/2014 and 11/2014 omitted

PREPARED/DATE: MHA 6/29/2016
CHECKED/DATE: GJW 8/10/2016

APPENDIX C

LABORATORY REPORTS

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

March 23, 2016

Tanya Kinnard
AMEC E&I, Inc. -Kennesaw
1075 Big Shanty Rd NW
Kennesaw GA 30144

TEL: (770) 421-3444
FAX: (770) 421-3486

RE: STI Swainsboro GA

Dear Tanya Kinnard: Order No: 1603I02

Analytical Environmental Services, Inc. received 3 samples on 3/17/2016 7:30:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAC/Florida State Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, and Drinking Water Microbiology, effective 07/01/15-06/30/16.
-NELAC/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/15-06/30/16.
-NELAC/Texas Certificate No. T104704509-16-6 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 03/01/16-02/28/17.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

Ioana Pacurar

Ioana Pacurar
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
AES
3080 Presidential Drive, Atlanta GA 30340-3704
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1603F02

Date: 3/17/16 Page 1 of 1

COMPANY: AMEC FW

ADDRESS: ~~2677~~ 1075 Big Shanty RD Kennesaw GA

PHONE: 770 421 3502

FAX:

SAMPLED BY: P. Gazzo

SIGNATURE: [signature]

Visit our website **www.aesatlanta.com** to check on the status of your results, place bottle orders, etc.

ANALYSIS REQUESTED: GC ANALYSIS DEGASSED SAMPLES; TCL VOC'S

#	SAMPLE ID	DATE	TIME	Grab	Composite	Matrix (See codes)	GC ANALYSIS DEGASSED SAMPLES	TCL VOC'S	REMARKS	No # of Containers
	PRESERVATION (See codes)						A	A		
1	MW8	3/17/16	1325	✓		GW	✓	✓	A Site-Specific VOC's	4
2	MW19	3/17/16	1520	✓		GW	✓	✓		4
3	TRIP BLANK									2
4	TEMP.									1
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: [signature]	3/17/16 1930	1: Ioana Pacurar	3/17/16 1930
2:		2:	
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
(CLIENT) FedEx UPS MAIL COURIER
GREYHOUND OTHER

PROJECT INFORMATION
PROJECT NAME: STI Swainsboro GA
PROJECT #:
SITE ADDRESS: 162 Meadowlake Pkwy Swainsboro GA
SEND REPORT TO: Tanya Kinnaird, Greg Wrenn
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#: C012403760

RECEIPT
Total # of Containers: 11

Turnaround Time Request
- [x] Standard 5 Business Days
- [ ] 2 Business Day Rush
- [ ] Next Business Day Rush
- [ ] Same Day Rush (auth req.)
- [ ] Other

STATE PROGRAM (if any):
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 23-Mar-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW8
Project Name:	STI Swainsboro GA	**Collection Date:**	3/17/2016 1:25:00 PM
Lab ID:	1603I02-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	770	250		ug/L	221424	50	03/22/2016 17:28	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 21:00	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 21:00	NP
1,1-Dichloroethane	66	5.0		ug/L	221424	1	03/22/2016 21:00	NP
1,1-Dichloroethene	1300	250		ug/L	221424	50	03/22/2016 17:28	NP
1,2-Dichloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 21:00	NP
Chloroethane	BRL	10		ug/L	221424	1	03/22/2016 21:00	NP
cis-1,2-Dichloroethene	1300	250		ug/L	221424	50	03/22/2016 17:28	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	221424	1	03/22/2016 21:00	NP
Trichloroethene	1900	250		ug/L	221424	50	03/22/2016 17:28	NP
Vinyl chloride	580	100		ug/L	221424	50	03/22/2016 17:28	NP
Surr: 4-Bromofluorobenzene	92.7	70.7-125		%REC	221424	50	03/22/2016 17:28	NP
Surr: 4-Bromofluorobenzene	94.2	70.7-125		%REC	221424	1	03/22/2016 21:00	NP
Surr: Dibromofluoromethane	111	82.2-120		%REC	221424	50	03/22/2016 17:28	NP
Surr: Dibromofluoromethane	122	82.2-120	S	%REC	221424	1	03/22/2016 21:00	NP
Surr: Toluene-d8	100	81.8-120		%REC	221424	50	03/22/2016 17:28	NP
Surr: Toluene-d8	99.6	81.8-120		%REC	221424	1	03/22/2016 21:00	NP
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	221457	1	03/22/2016 11:18	MD
Ethylene	8.9	7.0		ug/L	221457	1	03/22/2016 11:18	MD
Methane	6500	200		ug/L	221457	50	03/22/2016 11:31	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 23-Mar-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW19
Project Name:	STI Swainsboro GA	**Collection Date:**	3/17/2016 3:20:00 PM
Lab ID:	1603I02-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 20:36	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 20:36	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 20:36	NP
1,1-Dichloroethane	26	5.0		ug/L	221424	1	03/22/2016 20:36	NP
1,1-Dichloroethene	230	50		ug/L	221424	10	03/22/2016 17:51	NP
1,2-Dichloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 20:36	NP
Chloroethane	83	10		ug/L	221424	1	03/22/2016 20:36	NP
cis-1,2-Dichloroethene	92	5.0		ug/L	221424	1	03/22/2016 20:36	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	221424	1	03/22/2016 20:36	NP
Trichloroethene	370	50		ug/L	221424	10	03/22/2016 17:51	NP
Vinyl chloride	330	20		ug/L	221424	10	03/22/2016 17:51	NP
Surr: 4-Bromofluorobenzene	90.6	70.7-125		%REC	221424	10	03/22/2016 17:51	NP
Surr: 4-Bromofluorobenzene	92.1	70.7-125		%REC	221424	1	03/22/2016 20:36	NP
Surr: Dibromofluoromethane	109	82.2-120		%REC	221424	1	03/22/2016 20:36	NP
Surr: Dibromofluoromethane	110	82.2-120		%REC	221424	10	03/22/2016 17:51	NP
Surr: Toluene-d8	98.5	81.8-120		%REC	221424	10	03/22/2016 17:51	NP
Surr: Toluene-d8	100	81.8-120		%REC	221424	1	03/22/2016 20:36	NP
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	34	9.0		ug/L	221457	1	03/22/2016 11:22	MD
Ethylene	300	7.0		ug/L	221457	1	03/22/2016 11:22	MD
Methane	5600	200		ug/L	221457	50	03/22/2016 11:36	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 23-Mar-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	TRIP BLANK
Project Name:	STI Swainsboro GA	**Collection Date:**	3/17/2016
Lab ID:	1603I02-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 17:04	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 17:04	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 17:04	NP
1,1-Dichloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 17:04	NP
1,1-Dichloroethene	BRL	5.0		ug/L	221424	1	03/22/2016 17:04	NP
1,2-Dichloroethane	BRL	5.0		ug/L	221424	1	03/22/2016 17:04	NP
Chloroethane	BRL	10		ug/L	221424	1	03/22/2016 17:04	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	221424	1	03/22/2016 17:04	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	221424	1	03/22/2016 17:04	NP
Trichloroethene	BRL	5.0		ug/L	221424	1	03/22/2016 17:04	NP
Vinyl chloride	BRL	2.0		ug/L	221424	1	03/22/2016 17:04	NP
Surr: 4-Bromofluorobenzene	90.2	70.7-125		%REC	221424	1	03/22/2016 17:04	NP
Surr: Dibromofluoromethane	109	82.2-120		%REC	221424	1	03/22/2016 17:04	NP
Surr: Toluene-d8	98.6	81.8-120		%REC	221424	1	03/22/2016 17:04	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client AIVEC Work Order Number 1603E03

Checklist completed by [signature] 3/17/16
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 1.3° Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro GA
Workorder: 1603I02

ANALYTICAL QC SUMMARY REPORT

BatchID: 221424

Sample ID: **MB-221424** Client ID: Units: **ug/L** Prep Date: **03/21/2016** Run No: **312950**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **221424** Analysis Date: **03/21/2016** Seq No: **6730546**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
Chloroethane	BRL	10									
cis-1,2-Dichloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	45.78	0	50.00		91.6	70.7	125				
Surr: Dibromofluoromethane	44.79	0	50.00		89.6	82.2	120				
Surr: Toluene-d8	48.40	0	50.00		96.8	81.8	120				

Sample ID: **LCS-221424** Client ID: Units: **ug/L** Prep Date: **03/21/2016** Run No: **312950**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **221424** Analysis Date: **03/21/2016** Seq No: **6730542**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	61.39	5.0	50.00		123	65.3	137				
Trichloroethene	55.56	5.0	50.00		111	73.1	128				
Surr: 4-Bromofluorobenzene	45.85	0	50.00		91.7	70.7	125				
Surr: Dibromofluoromethane	46.15	0	50.00		92.3	82.2	120				
Surr: Toluene-d8	48.83	0	50.00		97.7	81.8	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro GA
Workorder: 1603I02

ANALYTICAL QC SUMMARY REPORT

BatchID: 221424

Sample ID: **1603G47-001AMS** Client ID: Units: **ug/L** Prep Date: **03/21/2016** Run No: **312950**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **221424** Analysis Date: **03/21/2016** Seq No: **6730554**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	1132	100	1000	142.4	99.0	60	150				
Trichloroethene	1530	100	1000	551.8	97.8	70	136				
Surr: 4-Bromofluorobenzene	936.2	0	1000		93.6	70.7	125				
Surr: Dibromofluoromethane	860.2	0	1000		86.0	82.2	120				
Surr: Toluene-d8	961.0	0	1000		96.1	81.8	120				

Sample ID: **1603G47-001AMSD** Client ID: Units: **ug/L** Prep Date: **03/21/2016** Run No: **312950**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **221424** Analysis Date: **03/21/2016** Seq No: **6730558**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	1175	100	1000	142.4	103	60	150	1132	3.71	17.7	
Trichloroethene	1571	100	1000	551.8	102	70	136	1530	2.70	20	
Surr: 4-Bromofluorobenzene	945.6	0	1000		94.6	70.7	125	936.2	0	0	
Surr: Dibromofluoromethane	865.2	0	1000		86.5	82.2	120	860.2	0	0	
Surr: Toluene-d8	961.8	0	1000		96.2	81.8	120	961.0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro GA
Workorder: 1603I02

ANALYTICAL QC SUMMARY REPORT

BatchID: 221457

Sample ID: **MB-221457** Client ID: Units: **ug/L** Prep Date: **03/22/2016** Run No: **312921**
SampleType: **MBLK** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **221457** Analysis Date: **03/22/2016** Seq No: **6729948**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	BRL	9.0									
Ethylene	BRL	7.0									
Methane	BRL	4.0									

Sample ID: **LCS-221457** Client ID: Units: **ug/L** Prep Date: **03/22/2016** Run No: **312921**
SampleType: **LCS** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **221457** Analysis Date: **03/22/2016** Seq No: **6729949**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	137.2	9.0	200.0		68.6	40.9	115				
Ethylene	92.75	7.0	200.0		46.4	26.8	115				
Methane	153.8	4.0	200.0		76.9	45.9	115				

Sample ID: **LCSD-221457** Client ID: Units: **ug/L** Prep Date: **03/22/2016** Run No: **312921**
SampleType: **LCSD** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **221457** Analysis Date: **03/22/2016** Seq No: **6729950**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	127.2	9.0	200.0		63.6	40.9	115	137.2	7.61	20	
Ethylene	90.32	7.0	200.0		45.2	26.8	115	92.75	2.66	20	
Methane	142.3	4.0	200.0		71.1	45.9	115	153.8	7.77	20	

Sample ID: **1603I02-001BMS** Client ID: **MW8** Units: **ug/L** Prep Date: **03/22/2016** Run No: **312921**
SampleType: **MS** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **221457** Analysis Date: **03/22/2016** Seq No: **6729956**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	98.27	9.0	200.0	2.963	47.7	40.5	115				
Ethylene	77.79	7.0	200.0	8.941	34.4	23	115				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro GA
Workorder: 1603I02

ANALYTICAL QC SUMMARY REPORT

BatchID: 221457

Sample ID: **1603I02-001BMS**	Client ID: **MW8**				Units: **ug/L**		Prep Date: **03/22/2016**		Run No: **312921**	
SampleType: **MS**	TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175**				BatchID: **221457**		Analysis Date: **03/22/2016**		Seq No: **6729958**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Methane	15190	200	200.0	6540	4330	40	115				S

Sample ID: **1603I02-001BMSD**	Client ID: **MW8**				Units: **ug/L**		Prep Date: **03/22/2016**		Run No: **312921**	
SampleType: **MSD**	TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175**				BatchID: **221457**		Analysis Date: **03/22/2016**		Seq No: **6729957**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	98.28	9.0	200.0	2.963	47.7	40.5	115	98.27	0.007	20	
Ethylene	78.81	7.0	200.0	8.941	34.9	23	115	77.79	1.31	20	

Sample ID: **1603I02-001BMSD**	Client ID: **MW8**				Units: **ug/L**		Prep Date: **03/22/2016**		Run No: **312921**	
SampleType: **MSD**	TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175**				BatchID: **221457**		Analysis Date: **03/22/2016**		Seq No: **6729959**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Methane	14570	200	200.0	6540	4020	40	115	15190	4.15	20	S

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-125307-1
Client Project/Site: STI-Swainsboro, GA

For:
AMEC Foster Wheeler E & I, Inc
1075 Big Shanty Road, NW
Suite 100
Kennesaw, Georgia 30144

Attn: Greg Wrenn

Authorized for release by:
5/17/2016 9:15:20 AM

Lisa Harvey, Project Manager II
(912)354-7858 e.3221
lisa.harvey@testamericainc.com

Qualifiers

GC/MS VOA

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

Glossary

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

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: STI-Swainsboro, GA

TestAmerica Job ID: 680-125307-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-125307-1	HVR Water	Water	05/16/16 13:10	05/16/16 14:40
680-125307-2	Trip Blank Atl-162	Water	05/16/16 00:00	05/16/16 14:40

Job ID: 680-125307-1

Laboratory: TestAmerica Savannah

Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project: STI-Swainsboro, GA
Report Number: 680-125307-1

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

RECEIPT

The samples were received on 05/16/2016; the samples arrived in good condition. The temperature of the coolers at receipt was 11.4 C.

The COC notes 3 vials for the trip blank but the lab only received 2 vials.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples HVR Water (680-125307-1) and Trip Blank Atl-162 (680-125307-2) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/16/2016.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-433428.

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

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: STI-Swainsboro, GA

TestAmerica Job ID: 680-125307-1

Client Sample ID: HVR Water
Date Collected: 05/16/16 13:10
Date Received: 05/16/16 14:40

Lab Sample ID: 680-125307-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	5.0	U	5.0	2.5	ug/L			05/16/16 22:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			05/16/16 22:15	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			05/16/16 22:15	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			05/16/16 22:15	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			05/16/16 22:15	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			05/16/16 22:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			05/16/16 22:15	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			05/16/16 22:15	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			05/16/16 22:15	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			05/16/16 22:15	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			05/16/16 22:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*70 - 130*		*05/16/16 22:15*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*05/16/16 22:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*		*05/16/16 22:15*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/16/16 22:15*	*1*

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: STI-Swainsboro, GA

TestAmerica Job ID: 680-125307-1

Client Sample ID: Trip Blank Atl-162
Date Collected: 05/16/16 00:00
Date Received: 05/16/16 14:40

Lab Sample ID: 680-125307-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	5.0	U	5.0	2.5	ug/L			05/16/16 21:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			05/16/16 21:51	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			05/16/16 21:51	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			05/16/16 21:51	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			05/16/16 21:51	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			05/16/16 21:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			05/16/16 21:51	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			05/16/16 21:51	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			05/16/16 21:51	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			05/16/16 21:51	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			05/16/16 21:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*70 - 130*		*05/16/16 21:51*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*05/16/16 21:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*		*05/16/16 21:51*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*05/16/16 21:51*	*1*

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

Lab Sample ID: MB 680-433428/10
Matrix: Water
Analysis Batch: 433428

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	5.0	U	5.0	2.5	ug/L			05/16/16 16:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			05/16/16 16:47	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			05/16/16 16:47	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			05/16/16 16:47	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			05/16/16 16:47	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			05/16/16 16:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			05/16/16 16:47	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			05/16/16 16:47	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			05/16/16 16:47	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			05/16/16 16:47	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			05/16/16 16:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*70 - 130*		*05/16/16 16:47*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*05/16/16 16:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*05/16/16 16:47*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*05/16/16 16:47*	*1*

Lab Sample ID: LCS 680-433428/4
Matrix: Water
Analysis Batch: 433428

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroethane	50.0	45.8		ug/L		92	50 - 151
cis-1,2-Dichloroethene	50.0	49.8		ug/L		100	80 - 122
1,1-Dichloroethane	50.0	50.1		ug/L		100	80 - 120
1,2-Dichloroethane	50.0	48.0		ug/L		96	75 - 130
1,1-Dichloroethene	50.0	45.5		ug/L		91	74 - 125
1,1,2,2-Tetrachloroethane	50.0	52.9		ug/L		106	72 - 128
trans-1,2-Dichloroethene	50.0	52.2		ug/L		104	78 - 123
1,1,1-Trichloroethane	50.0	50.1		ug/L		100	74 - 128
1,1,2-Trichloroethane	50.0	51.5		ug/L		103	79 - 125
Trichloroethene	50.0	56.0		ug/L		112	80 - 123
Vinyl chloride	50.0	49.6		ug/L		99	68 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*105*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 680-433428/5
Matrix: Water
Analysis Batch: 433428

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
Chloroethane	50.0	44.3		ug/L		89	50 - 151	3	30

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

Lab Sample ID: LCSD 680-433428/5
Matrix: Water
Analysis Batch: 433428

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
cis-1,2-Dichloroethene			50.0	49.4		ug/L		99	80 - 122	1	20
1,1-Dichloroethane			50.0	49.3		ug/L		99	80 - 120	2	20
1,2-Dichloroethane			50.0	47.3		ug/L		95	75 - 130	1	20
1,1-Dichloroethene			50.0	45.0		ug/L		90	74 - 125	1	20
1,1,2,2-Tetrachloroethane			50.0	51.7		ug/L		103	72 - 128	2	20
trans-1,2-Dichloroethene			50.0	51.9		ug/L		104	78 - 123	1	20
1,1,1-Trichloroethane			50.0	49.6		ug/L		99	74 - 128	1	20
1,1,2-Trichloroethane			50.0	51.9		ug/L		104	79 - 125	1	20
Trichloroethene			50.0	55.7		ug/L		111	80 - 123	1	20
Vinyl chloride			50.0	49.2		ug/L		98	68 - 132	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*106*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: STI-Swainsboro, GA

TestAmerica Job ID: 680-125307-1

GC/MS VOA

Analysis Batch: 433428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-125307-1	HVR Water	Total/NA	Water	8260B	
680-125307-2	Trip Blank Atl-162	Total/NA	Water	8260B	
LCS 680-433428/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-433428/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-433428/10	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: STI-Swainsboro, GA

TestAmerica Job ID: 680-125307-1

Client Sample ID: HVR Water

Lab Sample ID: 680-125307-1

Date Collected: 05/16/16 13:10

Matrix: Water

Date Received: 05/16/16 14:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	433428	05/16/16 22:15	DJK	TAL SAV
	Instrument ID: CMSC									

Client Sample ID: Trip Blank Atl-162

Lab Sample ID: 680-125307-2

Date Collected: 05/16/16 00:00

Matrix: Water

Date Received: 05/16/16 14:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	433428	05/16/16 21:51	DJK	TAL SAV
	Instrument ID: CMSC									

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: STI-Swainsboro, GA

TestAmerica Job ID: 680-125307-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 680-125307-1

Login Number: 125307

List Source: TestAmerica Savannah

List Number: 1

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	Received same day of collection; chilling process has begun.
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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Serial Number 108850

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

681-Atlanta

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
STI Swainsboro	6125080149	GA
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Lisa Harvey	CO1203518	
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Greg Wrenn	770-421-3400	770-421-3496
CLIENT NAME	CLIENT E-MAIL	
Amec Foster-Wheeler	tanya.Kinnard@amecfw.com greg.wrenn@amecfw.com	
CLIENT ADDRESS		
1075 Big Shanty Rd. Ste 100, Kennesaw, GA 30144		
COMPANY CONTRACTING THIS WORK (if applicable)		

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS: 8260B VOCs Site Specific; H+I

PAGE 1 OF 1

STANDARD REPORT DELIVERY ( )

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) (•)

DATE DUE ASAP

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	NUMBER OF CONTAINERS SUBMITTED	REMARKS
5-16-16	1:10	HVR Water	G	W				3	Please e-mail results
		Trip Blank ATL-162						3	ASAP

Page 13 of 14

680-125307 Chain of Custody

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Jeffrey Nunn	5-16-16	1440						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
	05/16/16	1440	YES ( ) NO ( )	680-125307		11.1 (CF) 11.4°C

5/17/2016

TAL8240-680 (1008)

Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: STI-Swainsboro, GA

TestAmerica Job ID: 680-125307-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-16 *

* Certification renewal pending - certification considered valid.

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

June 27, 2016

Greg Wrenn
AMEC E&I, Inc. -Kennesaw
1075 Big Shanty Rd NW
Kennesaw GA 30144

TEL: (770) 421-3444
FAX: (770) 421-3486

RE: STI Swainsboro

Dear Greg Wrenn: Order No: 1606H98

Analytical Environmental Services, Inc. received 21 samples on June 17, 2016 10:50 am for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAC/Florida State Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, and Drinking Water Microbiology, effective 07/01/15-06/30/16.
-NELAC/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/15-06/30/16.
-NELAC/Texas Certificate No. T104704509-16-6 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 03/01/16-02/28/17.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

Ioana Pacurar

Ioana Pacurar
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

1606498
Work Order: 74569

Date: 6-16-16 Page 1 of 2

COMPANY: AmecE&I

ADDRESS: 1075 Big Shanty Rd. Ste 100 Kenn... Sgw, GA 30144

PHONE: 770-421-3400

FAX: 770-421-3486

SAMPLED BY: Jeff Moore

SIGNATURE: Jeffrey T. Moore

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	8260B	SOP-RSK175	PRESERVATION (See codes) HT	PRESERVATION (See codes) HT	REMARKS	No # of Containers
1	MW-6-0616	6-15-16	8:08	✓		GW			2	2		4
2	MW-9R-0616		8:50	✓					2	2		4
3	MW-15-0616		8:58	✓					2	2		4
4	MW-20-0616		10:00	✓					2	2		4
5	MW-20D-0616		10:15	✓					2	2		4
6	MW-11-0616		11:23	✓					2	2		4
7	MW-18-0616		11:35	✓					2	2		4
8	MW-7-0616		1:18	✓					2	2		4
9	MW-8-0616		1325	✓					2	2		4
10	MW-3-0616	6-16-16	9:04	✓					2	2		4
11	MW-19-0616		9:10	✓					2	2		4
12	MW-4-0616		10:00	✓					2	2		4
13	MW-21-0616		10:05	✓					2	2		4
14	MW-5-0616		11:04	✓					2	2		4

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY / DATE/TIME
1: Jeffrey T. Moore 6-17-16 10:50
2:
3:

RECEIVED BY / DATE/TIME
1: Jessica Shelling 6/17/16 10:50 am
2:
3:

PROJECT INFORMATION
PROJECT NAME: STI Swainsboro
PROJECT #: 6125080149
SITE ADDRESS: Swainsboro, GA
SEND REPORT TO: Greg Wrenn
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT
Total # of Containers

Turnaround Time Request
- (X) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth req.)
- ( ) Other

STATE PROGRAM (if any):
E-mail? (Y)/N; Fax? Y/N
DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:
GC samples = methane-ethene-ethane
VOCs = TCE, 1,1-DCE, cis 1,2-DCE
1,1,2,2-TCA, VC, 1,1,1-TCA, Trans 1,2-DCE
1,1,2-TCA, 1,2-DCA, CE, 1,1-DCA

SHIPMENT METHOD
OUT / / VIA:
IN 6/17/16 VIA:
(CLIENT) FedEx UPS MAIL COURIER
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TURNAROUND TIMES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

160604198
Work Order: 74569

Date: 6-16-16 Page 2 of 2

COMPANY:	ADDRESS:
Amec Fo&I	1075 Big Shanty Rd. Ste 100 Kennesaw, GA 30144
PHONE: 770-421-3400	FAX: 770-421-3486
SAMPLED BY: Jeff Moore	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	PRESERVATION (See codes) H+I	H+I	82603	SOP-RSK175	REMARKS	No # of Containers
1	SW-2-0616	6-16-16	7:30	✓		SW	2					2
2	SW-4-0616		7:40	✓			2					2
3	SW-5-0616		7:50	✓			2					2
4	SW-6-0616		8:00	✓			2					2
5	Dup-01-0616	6-15-16	12:00	✓		GW	2					2
6	Dup-02-0616	6-16-16	12:00	✓		SW	2					2
7	Trip Blank						2					2
8	Temp Blank											1
9												
10												
11												
12												
13												
14												

ANALYSIS REQUESTED

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	6-17-16 10:50	1: Jessica Shilly	6/17/16 10:50 am
2:		2:	
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN 6/17/16 VIA:
(CLIENT) FedEx UPS MAIL COURIER
GREYHOUND OTHER

PROJECT INFORMATION
PROJECT NAME: STI Swainsboro
PROJECT #: 6125080149
SITE ADDRESS: Swainsboro, GA
SEND REPORT TO: Greg Wrenn
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT
Total # of Containers

Turnaround Time Request
(●) Standard 5 Business Days
( ) 2 Business Day Rush
( ) Next Business Day Rush
( ) Same Day Rush (auth req.)
( ) Other

STATE PROGRAM (if any):
E-mail? (Y)N; Fax? Y / N
DATA PACKAGE: I II III IV

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TURNAROUND TIMES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-6-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 8:08:00 AM
Lab ID:	1606H98-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:07	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:07	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:07	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:07	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:07	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:07	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 15:07	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:07	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:07	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:07	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/20/2016 15:07	CH
Surr: 4-Bromofluorobenzene	83.7	70.7-125		%REC	225764	1	06/20/2016 15:07	CH
Surr: Dibromofluoromethane	97.7	82.2-120		%REC	225764	1	06/20/2016 15:07	CH
Surr: Toluene-d8	103	81.8-120		%REC	225764	1	06/20/2016 15:07	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 09:52	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 09:52	MD
Methane	4100	160		ug/L	225331	40	06/22/2016 11:08	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-9R-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 8:50:00 AM
Lab ID:	1606H98-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:33	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:33	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:33	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:33	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:33	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:33	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 15:33	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:33	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:33	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:33	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/20/2016 15:33	CH
Surr: 4-Bromofluorobenzene	81	70.7-125		%REC	225764	1	06/20/2016 15:33	CH
Surr: Dibromofluoromethane	98.1	82.2-120		%REC	225764	1	06/20/2016 15:33	CH
Surr: Toluene-d8	101	81.8-120		%REC	225764	1	06/20/2016 15:33	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 09:57	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 09:57	MD
Methane	170	4.0		ug/L	225331	1	06/22/2016 09:57	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-15-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 8:58:00 AM
Lab ID:	1606H98-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:58	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:58	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:58	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:58	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:58	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 15:58	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 15:58	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:58	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:58	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 15:58	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/20/2016 15:58	CH
Surr: 4-Bromofluorobenzene	81.1	70.7-125		%REC	225764	1	06/20/2016 15:58	CH
Surr: Dibromofluoromethane	95.1	82.2-120		%REC	225764	1	06/20/2016 15:58	CH
Surr: Toluene-d8	97.8	81.8-120		%REC	225764	1	06/20/2016 15:58	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 10:27	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 10:27	MD
Methane	2200	80		ug/L	225331	20	06/22/2016 11:15	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-20-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 10:00:00 AM
Lab ID:	1606H98-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:24	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:24	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:24	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:24	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 16:24	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:24	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 16:24	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 16:24	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 16:24	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 16:24	CH
Vinyl chloride	4.2	2.0		ug/L	225764	1	06/20/2016 16:24	CH
Surr: 4-Bromofluorobenzene	80.6	70.7-125		%REC	225764	1	06/20/2016 16:24	CH
Surr: Dibromofluoromethane	100	82.2-120		%REC	225764	1	06/20/2016 16:24	CH
Surr: Toluene-d8	103	81.8-120		%REC	225764	1	06/20/2016 16:24	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 10:33	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 10:33	MD
Methane	6600	200		ug/L	225331	50	06/22/2016 11:21	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-20D-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 10:15:00 AM
Lab ID:	1606H98-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:50	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:50	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:50	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:50	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 16:50	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 16:50	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 16:50	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 16:50	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 16:50	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 16:50	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/20/2016 16:50	CH
Surr: 4-Bromofluorobenzene	81.7	70.7-125		%REC	225764	1	06/20/2016 16:50	CH
Surr: Dibromofluoromethane	99.6	82.2-120		%REC	225764	1	06/20/2016 16:50	CH
Surr: Toluene-d8	103	81.8-120		%REC	225764	1	06/20/2016 16:50	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 10:37	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 10:37	MD
Methane	7.7	4.0		ug/L	225331	1	06/22/2016 10:37	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-11-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 11:23:00 AM
Lab ID:	1606H98-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:16	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:16	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:16	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:16	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 17:16	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:16	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 17:16	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 17:16	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 17:16	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 17:16	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/20/2016 17:16	CH
Surr: 4-Bromofluorobenzene	82.5	70.7-125		%REC	225764	1	06/20/2016 17:16	CH
Surr: Dibromofluoromethane	94.8	82.2-120		%REC	225764	1	06/20/2016 17:16	CH
Surr: Toluene-d8	99	81.8-120		%REC	225764	1	06/20/2016 17:16	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 10:42	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 10:42	MD
Methane	110	4.0		ug/L	225331	1	06/22/2016 10:42	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-18-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 11:35:00 AM
Lab ID:	1606H98-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:42	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:42	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:42	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:42	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 17:42	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 17:42	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 17:42	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 17:42	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 17:42	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 17:42	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/20/2016 17:42	CH
Surr: 4-Bromofluorobenzene	80.7	70.7-125		%REC	225764	1	06/20/2016 17:42	CH
Surr: Dibromofluoromethane	95.2	82.2-120		%REC	225764	1	06/20/2016 17:42	CH
Surr: Toluene-d8	103	81.8-120		%REC	225764	1	06/20/2016 17:42	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 10:48	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 10:48	MD
Methane	6200	160		ug/L	225331	40	06/22/2016 11:26	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-7-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 1:18:00 PM
Lab ID:	1606H98-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:08	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:08	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:08	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:08	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:08	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:08	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 18:08	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:08	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:08	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:08	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/20/2016 18:08	CH
Surr: 4-Bromofluorobenzene	82.2	70.7-125		%REC	225764	1	06/20/2016 18:08	CH
Surr: Dibromofluoromethane	95.9	82.2-120		%REC	225764	1	06/20/2016 18:08	CH
Surr: Toluene-d8	103	81.8-120		%REC	225764	1	06/20/2016 18:08	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 11:32	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 11:32	MD
Methane	650	16		ug/L	225331	4	06/22/2016 12:24	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-8-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 1:25:00 PM
Lab ID:	1606H98-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	170	5.0		ug/L	225764	1	06/21/2016 06:53	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:53	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:53	CH
1,1-Dichloroethane	50	5.0		ug/L	225764	1	06/21/2016 06:53	CH
1,1-Dichloroethene	720	250		ug/L	225764	50	06/20/2016 11:38	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:53	CH
Chloroethane	BRL	10		ug/L	225764	1	06/21/2016 06:53	CH
cis-1,2-Dichloroethene	760	250		ug/L	225764	50	06/20/2016 11:38	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 06:53	CH
Trichloroethene	460	250		ug/L	225764	50	06/20/2016 11:38	CH
Vinyl chloride	400	100		ug/L	225764	50	06/20/2016 11:38	CH
Surr: 4-Bromofluorobenzene	83.7	70.7-125		%REC	225764	50	06/20/2016 11:38	CH
Surr: 4-Bromofluorobenzene	84.6	70.7-125		%REC	225764	1	06/21/2016 06:53	CH
Surr: Dibromofluoromethane	98.7	82.2-120		%REC	225764	50	06/20/2016 11:38	CH
Surr: Dibromofluoromethane	102	82.2-120		%REC	225764	1	06/21/2016 06:53	CH
Surr: Toluene-d8	104	81.8-120		%REC	225764	50	06/20/2016 11:38	CH
Surr: Toluene-d8	97.9	81.8-120		%REC	225764	1	06/21/2016 06:53	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 11:36	MD
Ethylene	8.6	7.0		ug/L	225331	1	06/22/2016 11:36	MD
Methane	2500	80		ug/L	225331	20	06/22/2016 12:30	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-3-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 9:04:00 AM
Lab ID:	1606H98-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:27	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:27	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:27	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:27	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 06:27	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:27	CH
Chloroethane	BRL	10		ug/L	225764	1	06/21/2016 06:27	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 06:27	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 06:27	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 06:27	CH
Vinyl chloride	5.7	2.0		ug/L	225764	1	06/21/2016 06:27	CH
Surr: 4-Bromofluorobenzene	83.4	70.7-125		%REC	225764	1	06/21/2016 06:27	CH
Surr: Dibromofluoromethane	97.8	82.2-120		%REC	225764	1	06/21/2016 06:27	CH
Surr: Toluene-d8	100	81.8-120		%REC	225764	1	06/21/2016 06:27	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 11:41	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 11:41	MD
Methane	6700	160		ug/L	225331	40	06/22/2016 12:35	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-19-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 9:10:00 AM
Lab ID:	1606H98-011	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 13:24	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 13:24	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 13:24	CH
1,1-Dichloroethane	7.0	5.0		ug/L	225764	1	06/20/2016 13:24	CH
1,1-Dichloroethene	330	50		ug/L	225764	10	06/20/2016 13:50	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 13:24	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 13:24	CH
cis-1,2-Dichloroethene	110	5.0		ug/L	225764	1	06/20/2016 13:24	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 13:24	CH
Trichloroethene	680	50		ug/L	225764	10	06/20/2016 13:50	CH
Vinyl chloride	61	2.0		ug/L	225764	1	06/20/2016 13:24	CH
Surr: 4-Bromofluorobenzene	81.7	70.7-125		%REC	225764	1	06/20/2016 13:24	CH
Surr: 4-Bromofluorobenzene	82.9	70.7-125		%REC	225764	10	06/20/2016 13:50	CH
Surr: Dibromofluoromethane	92.8	82.2-120		%REC	225764	10	06/20/2016 13:50	CH
Surr: Dibromofluoromethane	94.8	82.2-120		%REC	225764	1	06/20/2016 13:24	CH
Surr: Toluene-d8	102	81.8-120		%REC	225764	1	06/20/2016 13:24	CH
Surr: Toluene-d8	102	81.8-120		%REC	225764	10	06/20/2016 13:50	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 11:45	MD
Ethylene	40	7.0		ug/L	225331	1	06/22/2016 11:45	MD
Methane	1800	40		ug/L	225331	10	06/22/2016 12:39	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-4-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 10:00:00 AM
Lab ID:	1606H98-012	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:33	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:33	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:33	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:33	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:33	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:33	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 18:33	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:33	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:33	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:33	CH
Vinyl chloride	7.7	2.0		ug/L	225764	1	06/20/2016 18:33	CH
Surr: 4-Bromofluorobenzene	79.5	70.7-125		%REC	225764	1	06/20/2016 18:33	CH
Surr: Dibromofluoromethane	94.6	82.2-120		%REC	225764	1	06/20/2016 18:33	CH
Surr: Toluene-d8	103	81.8-120		%REC	225764	1	06/20/2016 18:33	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 11:52	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 11:52	MD
Methane	4500	160		ug/L	225331	40	06/22/2016 12:44	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-21-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 10:05:00 AM
Lab ID:	1606H98-013	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:59	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:59	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:59	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:59	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:59	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 18:59	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 18:59	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:59	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:59	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 18:59	CH
Vinyl chloride	6.2	2.0		ug/L	225764	1	06/20/2016 18:59	CH
Surr: 4-Bromofluorobenzene	81.4	70.7-125		%REC	225764	1	06/20/2016 18:59	CH
Surr: Dibromofluoromethane	93	82.2-120		%REC	225764	1	06/20/2016 18:59	CH
Surr: Toluene-d8	102	81.8-120		%REC	225764	1	06/20/2016 18:59	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 12:08	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 12:08	MD
Methane	7300	200		ug/L	225331	50	06/22/2016 12:49	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-5-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 11:04:00 AM
Lab ID:	1606H98-014	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 19:25	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 19:25	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 19:25	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 19:25	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 19:25	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/20/2016 19:25	CH
Chloroethane	BRL	10		ug/L	225764	1	06/20/2016 19:25	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 19:25	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 19:25	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/20/2016 19:25	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/20/2016 19:25	CH
Surr: 4-Bromofluorobenzene	79.3	70.7-125		%REC	225764	1	06/20/2016 19:25	CH
Surr: Dibromofluoromethane	94.8	82.2-120		%REC	225764	1	06/20/2016 19:25	CH
Surr: Toluene-d8	101	81.8-120		%REC	225764	1	06/20/2016 19:25	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 12:53	MD
Ethylene	BRL	7.0		ug/L	225331	1	06/22/2016 12:53	MD
Methane	320	8.0		ug/L	225331	2	06/22/2016 13:17	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	SW-2-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 7:30:00 AM
Lab ID:	1606H98-015	**Matrix:**	Surface Water

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:20	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:20	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:20	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:20	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 01:20	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:20	CH
Chloroethane	BRL	10		ug/L	225764	1	06/21/2016 01:20	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 01:20	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 01:20	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 01:20	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/21/2016 01:20	CH
Surr: 4-Bromofluorobenzene	82	70.7-125		%REC	225764	1	06/21/2016 01:20	CH
Surr: Dibromofluoromethane	104	82.2-120		%REC	225764	1	06/21/2016 01:20	CH
Surr: Toluene-d8	106	81.8-120		%REC	225764	1	06/21/2016 01:20	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	SW-4-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 7:40:00 AM
Lab ID:	1606H98-016	**Matrix:**	Surface Water

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:45	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:45	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:45	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:45	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 01:45	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 01:45	CH
Chloroethane	BRL	10		ug/L	225764	1	06/21/2016 01:45	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 01:45	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 01:45	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 01:45	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/21/2016 01:45	CH
Surr: 4-Bromofluorobenzene	80.8	70.7-125		%REC	225764	1	06/21/2016 01:45	CH
Surr: Dibromofluoromethane	94.3	82.2-120		%REC	225764	1	06/21/2016 01:45	CH
Surr: Toluene-d8	103	81.8-120		%REC	225764	1	06/21/2016 01:45	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	SW-5-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 7:50:00 AM
Lab ID:	1606H98-017	**Matrix:**	Surface Water

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:11	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:11	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:11	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:11	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 02:11	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:11	CH
Chloroethane	BRL	10		ug/L	225764	1	06/21/2016 02:11	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 02:11	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 02:11	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 02:11	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/21/2016 02:11	CH
Surr: 4-Bromofluorobenzene	79.4	70.7-125		%REC	225764	1	06/21/2016 02:11	CH
Surr: Dibromofluoromethane	97.7	82.2-120		%REC	225764	1	06/21/2016 02:11	CH
Surr: Toluene-d8	102	81.8-120		%REC	225764	1	06/21/2016 02:11	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	SW-6-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 8:00:00 AM
Lab ID:	1606H98-018	**Matrix:**	Surface Water

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:37	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:37	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:37	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:37	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 02:37	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 02:37	CH
Chloroethane	BRL	10		ug/L	225764	1	06/21/2016 02:37	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 02:37	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 02:37	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 02:37	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/21/2016 02:37	CH
Surr: 4-Bromofluorobenzene	79.7	70.7-125		%REC	225764	1	06/21/2016 02:37	CH
Surr: Dibromofluoromethane	87.7	82.2-120		%REC	225764	1	06/21/2016 02:37	CH
Surr: Toluene-d8	98.8	81.8-120		%REC	225764	1	06/21/2016 02:37	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	DUP-01-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/15/2016 12:00:00 PM
Lab ID:	1606H98-019	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	170	5.0		ug/L	225764	1	06/21/2016 07:19	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 07:19	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 07:19	CH
1,1-Dichloroethane	51	5.0		ug/L	225764	1	06/21/2016 07:19	CH
1,1-Dichloroethene	700	250		ug/L	225764	50	06/20/2016 12:03	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 07:19	CH
Chloroethane	BRL	10		ug/L	225764	1	06/21/2016 07:19	CH
cis-1,2-Dichloroethene	740	250		ug/L	225764	50	06/20/2016 12:03	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 07:19	CH
Trichloroethene	490	250		ug/L	225764	50	06/20/2016 12:03	CH
Vinyl chloride	400	100		ug/L	225764	50	06/20/2016 12:03	CH
Surr: 4-Bromofluorobenzene	84.4	70.7-125		%REC	225764	50	06/20/2016 12:03	CH
Surr: 4-Bromofluorobenzene	83.9	70.7-125		%REC	225764	1	06/21/2016 07:19	CH
Surr: Dibromofluoromethane	101	82.2-120		%REC	225764	50	06/20/2016 12:03	CH
Surr: Dibromofluoromethane	102	82.2-120		%REC	225764	1	06/21/2016 07:19	CH
Surr: Toluene-d8	108	81.8-120		%REC	225764	50	06/20/2016 12:03	CH
Surr: Toluene-d8	100	81.8-120		%REC	225764	1	06/21/2016 07:19	CH
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9.0		ug/L	225331	1	06/22/2016 12:57	MD
Ethylene	8.6	7.0		ug/L	225331	1	06/22/2016 12:57	MD
Methane	2500	80		ug/L	225331	20	06/22/2016 13:22	MD

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	DUP-02-0616
Project Name:	STI Swainsboro	**Collection Date:**	6/16/2016 12:00:00 PM
Lab ID:	1606H98-020	**Matrix:**	Surface Water

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:02	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:02	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:02	CH
1,1-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:02	CH
1,1-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 06:02	CH
1,2-Dichloroethane	BRL	5.0		ug/L	225764	1	06/21/2016 06:02	CH
Chloroethane	BRL	10		ug/L	225764	1	06/21/2016 06:02	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 06:02	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 06:02	CH
Trichloroethene	BRL	5.0		ug/L	225764	1	06/21/2016 06:02	CH
Vinyl chloride	BRL	2.0		ug/L	225764	1	06/21/2016 06:02	CH
Surr: 4-Bromofluorobenzene	84.7	70.7-125		%REC	225764	1	06/21/2016 06:02	CH
Surr: Dibromofluoromethane	93.7	82.2-120		%REC	225764	1	06/21/2016 06:02	CH
Surr: Toluene-d8	98.6	81.8-120		%REC	225764	1	06/21/2016 06:02	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 27-Jun-16

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	TRIP BLANK
Project Name:	STI Swainsboro	**Collection Date:**	6/17/2016
Lab ID:	1606H98-021	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	225694	1	06/20/2016 18:48	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	225694	1	06/20/2016 18:48	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	225694	1	06/20/2016 18:48	NP
1,1-Dichloroethane	BRL	5.0		ug/L	225694	1	06/20/2016 18:48	NP
1,1-Dichloroethene	BRL	5.0		ug/L	225694	1	06/20/2016 18:48	NP
1,2-Dichloroethane	BRL	5.0		ug/L	225694	1	06/20/2016 18:48	NP
Chloroethane	BRL	10		ug/L	225694	1	06/20/2016 18:48	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	225694	1	06/20/2016 18:48	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	225694	1	06/20/2016 18:48	NP
Trichloroethene	BRL	5.0		ug/L	225694	1	06/20/2016 18:48	NP
Vinyl chloride	BRL	2.0		ug/L	225694	1	06/20/2016 18:48	NP
Surr: 4-Bromofluorobenzene	91	70.7-125		%REC	225694	1	06/20/2016 18:48	NP
Surr: Dibromofluoromethane	109	82.2-120		%REC	225694	1	06/20/2016 18:48	NP
Surr: Toluene-d8	99.1	81.8-120		%REC	225694	1	06/20/2016 18:48	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client AMEC Work Order Number 1606498

Checklist completed by _____ 6/17/2016
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present __

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 0.1°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ AD 6/17 Yes X No ✓

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\I\Sample Receipt\My Documents\COCs and pH Adjustment Sheet\Sample_Cooler_Recipt_Checklist_Rev1.rtf

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro
Workorder: 1606H98

ANALYTICAL QC SUMMARY REPORT

BatchID: 225331

Sample ID: **MB-225331**	Client ID:				Units: **ug/L**		Prep Date: **06/22/2016**		Run No: **319453**	
SampleType: **MBLK**	TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175**				BatchID: **225331**		Analysis Date: **06/22/2016**		Seq No: **6892985**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	BRL	9.0									
Ethylene	BRL	7.0									
Methane	BRL	4.0									

Sample ID: **LCS-225331**	Client ID:				Units: **ug/L**		Prep Date: **06/22/2016**		Run No: **319453**	
SampleType: **LCS**	TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175**				BatchID: **225331**		Analysis Date: **06/22/2016**		Seq No: **6892987**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	119.6	9.0	200.0		59.8	40.9	115				
Ethylene	79.67	7.0	200.0		39.8	26.8	115				
Methane	129.0	4.0	200.0		64.5	45.9	115				

Sample ID: **LCSD-225331**	Client ID:				Units: **ug/L**		Prep Date: **06/22/2016**		Run No: **319453**	
SampleType: **LCSD**	TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175**				BatchID: **225331**		Analysis Date: **06/22/2016**		Seq No: **6892989**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	115.7	9.0	200.0		57.8	40.9	115	119.6	3.29	20	
Ethylene	78.42	7.0	200.0		39.2	26.8	115	79.67	1.58	20	
Methane	125.3	4.0	200.0		62.6	45.9	115	129.0	2.98	20	

Sample ID: **1606H98-005BMS**	Client ID: **MW-20D-0616**				Units: **ug/L**		Prep Date: **06/22/2016**		Run No: **319453**	
SampleType: **MS**	TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175**				BatchID: **225331**		Analysis Date: **06/22/2016**		Seq No: **6893056**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	114.6	9.0	200.0		57.3	40.5	115				
Ethylene	75.92	7.0	200.0		38.0	23	115				
Methane	128.7	4.0	200.0	7.687	60.5	40	115				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro
Workorder: 1606H98

ANALYTICAL QC SUMMARY REPORT

BatchID: 225331

Sample ID: **1606H98-005BMSD** Client ID: **MW-20D-0616** Units: **ug/L** Prep Date: **06/22/2016** Run No: **319453**
SampleType: **MSD** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **225331** Analysis Date: **06/22/2016** Seq No: **6893057**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	114.7	9.0	200.0		57.3	40.5	115	114.6	0.042	20	
Ethylene	77.46	7.0	200.0		38.7	23	115	75.92	2.00	20	
Methane	125.0	4.0	200.0	7.687	58.7	40	115	128.7	2.88	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro
Workorder: 1606H98

ANALYTICAL QC SUMMARY REPORT

BatchID: 225694

Sample ID: **MB-225694** Client ID: Units: **ug/L** Prep Date: **06/17/2016** Run No: **319111**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **225694** Analysis Date: **06/17/2016** Seq No: **6887838**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
Chloroethane	BRL	10									
cis-1,2-Dichloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	45.37	0	50.00		90.7	70.7	125				
Surr: Dibromofluoromethane	55.38	0	50.00		111	82.2	120				
Surr: Toluene-d8	50.99	0	50.00		102	81.8	120				

Sample ID: **LCS-225694** Client ID: Units: **ug/L** Prep Date: **06/17/2016** Run No: **319111**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **225694** Analysis Date: **06/17/2016** Seq No: **6887837**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	62.70	5.0	50.00		125	65.3	137				
Trichloroethene	52.70	5.0	50.00		105	73.1	128				
Surr: 4-Bromofluorobenzene	46.10	0	50.00		92.2	70.7	125				
Surr: Dibromofluoromethane	53.03	0	50.00		106	82.2	120				
Surr: Toluene-d8	49.33	0	50.00		98.7	81.8	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro
Workorder: 1606H98

ANALYTICAL QC SUMMARY REPORT

BatchID: 225694

Sample ID: **1606I15-001AMS** Client ID: Units: **ug/L** Prep Date: **06/17/2016** Run No: **319111**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **225694** Analysis Date: **06/17/2016** Seq No: **6887834**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	53390	5000	50000		107	60	150				
Trichloroethene	48320	5000	50000		96.6	70	136				
Surr: 4-Bromofluorobenzene	45910	0	50000		91.8	70.7	125				
Surr: Dibromofluoromethane	54190	0	50000		108	82.2	120				
Surr: Toluene-d8	49670	0	50000		99.3	81.8	120				

Sample ID: **1606I15-001AMSD** Client ID: Units: **ug/L** Prep Date: **06/17/2016** Run No: **319111**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **225694** Analysis Date: **06/17/2016** Seq No: **6887836**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	55600	5000	50000		111	60	150	53390	4.06	17.7	
Trichloroethene	48310	5000	50000		96.6	70	136	48320	0.021	20	
Surr: 4-Bromofluorobenzene	46480	0	50000		93.0	70.7	125	45910	0	0	
Surr: Dibromofluoromethane	53680	0	50000		107	82.2	120	54190	0	0	
Surr: Toluene-d8	49790	0	50000		99.6	81.8	120	49670	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro
Workorder: 1606H98

ANALYTICAL QC SUMMARY REPORT

BatchID: 225764

Sample ID: **MB-225764** Client ID: Units: **ug/L** Prep Date: **06/20/2016** Run No: **319264**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **225764** Analysis Date: **06/20/2016** Seq No: **6888594**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
Chloroethane	BRL	10									
cis-1,2-Dichloroethene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
Trichloroethene	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	42.07	0	50.00		84.1	70.7	125				
Surr: Dibromofluoromethane	50.90	0	50.00		102	82.2	120				
Surr: Toluene-d8	53.11	0	50.00		106	81.8	120				

Sample ID: **LCS-225764** Client ID: Units: **ug/L** Prep Date: **06/20/2016** Run No: **319355**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **225764** Analysis Date: **06/20/2016** Seq No: **6890533**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	51.41	5.0	50.00		103	65.3	137				
Trichloroethene	49.19	5.0	50.00		98.4	73.1	128				
Surr: 4-Bromofluorobenzene	41.12	0	50.00		82.2	70.7	125				
Surr: Dibromofluoromethane	48.76	0	50.00		97.5	82.2	120				
Surr: Toluene-d8	48.96	0	50.00		97.9	81.8	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: STI Swainsboro
Workorder: 1606H98

ANALYTICAL QC SUMMARY REPORT

BatchID: 225764

Sample ID: **1606H98-009AMS** Client ID: **MW-8-0616** Units: **ug/L** Prep Date: **06/20/2016** Run No: **319264**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **225764** Analysis Date: **06/20/2016** Seq No: **6888639**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	3172	250	2500	717.0	98.2	60	150				
Trichloroethene	2812	250	2500	464.5	93.9	70	136				
Surr: 4-Bromofluorobenzene	2070	0	2500		82.8	70.7	125				
Surr: Dibromofluoromethane	2206	0	2500		88.2	82.2	120				
Surr: Toluene-d8	2416	0	2500		96.6	81.8	120				

Sample ID: **1606H98-009AMSD** Client ID: **MW-8-0616** Units: **ug/L** Prep Date: **06/20/2016** Run No: **319264**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **225764** Analysis Date: **06/20/2016** Seq No: **6888645**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	3185	250	2500	717.0	98.7	60	150	3172	0.409	17.7	
Trichloroethene	2803	250	2500	464.5	93.5	70	136	2812	0.303	20	
Surr: 4-Bromofluorobenzene	2104	0	2500		84.2	70.7	125	2070	0	0	
Surr: Dibromofluoromethane	2486	0	2500		99.4	82.2	120	2206	0	0	
Surr: Toluene-d8	2514	0	2500		101	81.8	120	2416	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

APPENDIX D

HVE CONTRACTOR REPORT

227 Sandy Springs Place
Suite D-122
Atlanta, Georgia 30328-5918
Phone 404 256 0667
Fax 404 256 0668

May 25, 2016

Tanya Kinnard
AMEC
1075 Big Shanty Road, NW, Suite 100
Kennesaw, GA 30144

Subject: 24-Hour Multi-Phase Extraction Event
STI Properties, Inc.
162 East Meadowlake Parkway
Swainsboro, GA
Project No. GA51637
AMEC PO No.: C012403501

Dear Ms. Kinnard:

Brown Remediation, Inc. is pleased to provide you with this report of our Multi-Phase Extraction (MPE) service conducted at the subject facility on May 16, 2016.

Site monitoring wells MW-8, MW-19, MW-18, and MW-21 were gauged before the MPE event with an oil-water interface probe to determine the static depth to groundwater and the presence of light non-aqueous phase liquid (LNAPL). Detectable levels of LNAPL were not observed in monitoring wells measured during the initial gauging event.

MW-8 and MW-19 were used as extraction wells during the MPE event. A drop tube was connected to the vacuum port of the MPE unit before lowering it below the static groundwater level in each extraction well. Vacuum was applied to the drop tube, thereby creating a vacuum influence, which was not detected in adjacent monitoring wells MW-18 and MW-21.

Following the MPE event, all wells were again gauged to determine the new static depth to groundwater and the presence of LNAPL. The differences in water levels before and after the event were recorded. No LNAPL was detected in any of the wells measured.

Following is a summary of the site data recorded during the event.

MPE Event Gauging Data Summary

Well Number	Before Event			Influence Vacuum	After Event			Change in Elevation (ft)
	DTP (ft)	DTW (ft)	Prod.(ft)	Time: 15:00	DTP (ft)	DTW (ft)	Prod.(ft)	
MW-8		4.30		-7.5" Hg		7.05		-2.75
MW-19		5.04		-4.0" Hg		12.85		-7.81
MW-18		4.34		0.00		4.53		-0.19
MW-21		6.35		0.00		6.37		-0.02

Calculated values for carbon, methane, and hydrocarbon recorded during the MPE event are presented below. In addition, the amount of recovered groundwater, propane consumption, and total MPE event time are noted.

Event Totals	
Total Carbon (lbs)	0.10
Total Methane (lbs)	0.00
Total Hydrocarbon (lbs)	212.21
Equiv. Hydrocarbons (gallons)	17.43
Total Liquid (gallons)	975
Total Propane (gallons)	150.0
Total Event Time (hours)	24.0

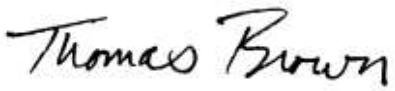
Cumulative Totals	
Total Carbon (lbs)	0.28
Total Methane (lbs)	0.00
Total Hydrocarbon (lbs)	768.33
Equiv. Hydrocarbons (gallons)	63.10
Total Liquid (gallons)	3525
Total Propane (gallons)	305.0
Events	3

All extracted groundwater was transported to the local waste water treatment plant located adjacent to the facility.

We appreciate the opportunity to provide you with these services. Please do not hesitate to call if you have any questions.

Sincerely,

Brown Remediation, Inc.



Thomas Brown
Director of Operations

Attachments: Site Map
MPE Event Data Summary
Field Data Sheet
Flow and Hydrocarbon Removal Rates
MPE Technology Description and Calculations
Disposal Manifest

J:\STI\JAN 2016\FIG 5-VOC CONCEN IN GW-DEC 2015.dwg - Layout1 02/10/2016 3:19pm Tonya.Gladstone

MW-18	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-20D	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-20	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.0055**

MW-15	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-9R	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-6	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-8 /DUP-1	Dec-15	
CE	<0.010	<0.010
1,1,2,2-TCA	<0.005	<0.005
1,1,1-TCA	3.00	2.90
1,1,2-TCA	<0.005	<0.005
TCE	**4.6**	**5.1**
1,1-DCE	**2.9**	**2.8**
1,1-DCA	0.065	0.051
1,2-DCA	<0.005	<0.005
cis-1,2-DCE	**1.10**	**1.10**
trans-1,2-DCE	<0.005	<0.005
VC	**0.350**	**0.330**

MW-11	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-19	Dec-15
CE	0.014
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	**0.50**
1,1-DCE	**0.27**
1,1-DCA	0.0069
1,2-DCA	<0.005
cis-1,2-DCE	0.070
trans-1,2-DCE	<0.005
VC	**0.052**

MW-7	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-5	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-12	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	<0.002

MW-4	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	**0.018**

MW-21	Dec-15
CE	<0.010
1,1,2,2-TCA	<0.005
1,1,1-TCA	<0.005
1,1,2-TCA	<0.005
TCE	<0.005
1,1-DCE	<0.005
1,1-DCA	<0.005
1,2-DCA	<0.005
cis-1,2-DCE	<0.005
trans-1,2-DCE	<0.005
VC	0.0027

LAKE P

MW-1D

MW-15

MEADOW LAKE PARKWAY

MW-9

MW-9R

A' PZ-1

MW-6

MW-2D B'

MANUFACTURING BUILDING

(162 EAST MEADOW LAKE PARKWAY)

FENCE

MW-16D

MW-20

MW-20D

MW-18

MW-11

(184 EA

MW-19

MW-8

MW-7

MW-5

MW-3

C'

MW-21

MW-4

MW-14

MW-10

FENCE

MW-1

D

MW-12

MW-2

A

LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- PAVED SURFACE
- FLOODPLAIN
- VOC PLUME ABOVE RISK REDUCTION STANDARDS FOR VC (0.0033 mg/L) IN SHALLOW AQUIFER
- RECENTLY CONSTRUCTED PARKING AREA (PAVED) AND BUILDINGS
- PROPERTY LINE

PPM	PARTS PER MILLION
VOC	VOLATILE ORGANIC COMPOUNDS
1,1,1-TCA	1,1,1-TRICHLOROETHANE (ppm)
TCE	TRICHLOROETHENE (ppm)
CIS-1,2-DCE	CIS-1,2-DICHLOROETHENE (ppm)
1,1-DCE	1,1-DICHLOROETHENE (ppm)
VC	VINYL CHLORIDE (ppm)
CE	CHLOROETHANE (ppm)
1,1,1,2-TCA	1,1,1,2-TETRACHLOROETHANE
1,1,2-TCA	1,1,2-TETRACHLOROETHANE
1,1,-DCA	1,1 - DICHLOROETHANE

SCALE IN FEET

0 100 200

SOURCE: BASE MAP EMCON, 12/98 AND 6/99. NEW SURVEYED POINTS, MW-3, 4, 5, 18, 19, 20 AND 20D, SEPTEMBER 22, 2009.

FORMER AUTOMATIC SPRINKLER SITE
162 EAST MEADOWLAKE PKWY
SWAINSBORO, GEORGIA

amec foster wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

FIGURE 5
VOC CONCENTRATIONS IN GROUNDWATER DECEMBER 2015

JOB NO. 6125-08-0149

PREPARED BY/DATE MHA 1/12/2016
CHECKED BY/DATE TRK 1/12/2016

MPE Event Data Summary

STI Properties, Inc.
162 East Meadowlake Park, Swainsboro, GA
Operator Name: Chuck Parsons
Date: May 16, 2016
Project # GA51637

Time	Time Interval	Applied Well Head Vacuum					Addl. Ambient Air	Total Velocity	Total Effluent Flow	Well Field Flow	Pump Effluent Temp.	Total Influent FID	Filtered (CH_4) FID	Hydrocarbon Compounds		Before off-gas treatment				Stack Gas Temp.	Effluent Conc. Data	Total Flow Rate	After off-gas treatment		
		MW-8	MW-19													Total Methane Removed	Total Carbon Removed	Total Hydrocarbon Removed					Carbon Emission Rate	Equiv. Hydrocarbon Rate	Destruction Efficiency Rating %
	(minutes)	(in/Hg)	(in/Hg)	(in/Hg)	(in/Hg)	(in/Hg)	(SCFM)	ft/sec.	(SCFM)	(SCFM)	(F^0)	(PPMv)	(PPMv)	(PPMv)	(mg/m3)	(lbs./ reading)	(lbs./ reading)	(lbs./ reading)	(gal./ reading)	(F^0)	(PPMv)	(SCFM)	(lbs./ reading)	(lbs./ reading)	
12:00	0 min.	9.0	9.0				106.2	13.6	163.2	47.0	111.0	37	0	37	39,777	0.000	0.00	0.00	0.000	1503.0		163.21			
12:30	30 min.	9.0	9.0				90.3	12.5	150.7	50.3	210.0	21	0	21	22,649	0.000	0.00	6.39	0.524	1492.0		150.67			
13:00	30 min.	9.0	9.0				74.4	12.3	147.9	63.6	235.0	14	0	14	14,670	0.000	0.00	4.06	0.334	1498.0		147.94			
13:30	30 min.	9.0	9.0				74.2	12.4	149.0	64.9	225.0	13	0	13	13,713	0.000	0.00	3.82	0.314	1501.0	3.90	149.01	0.0005	1.1570	69.74%
14:00	30 min.	9.0	9.0				74.0	12.5	150.1	66.2	215.0	13	0	13	13,926	0.000	0.00	3.91	0.321	1499.0		150.11			
14:30	30 min.	9.0	9.0				73.6	12.5	149.9	66.3	217.0	14	0	14	15,096	0.000	0.00	4.23	0.348	1498.0		149.89			
15:00	30 min.	9.0	9.0				73.4	12.7	153.0	69.6	190.0	17	0	17	17,755	0.000	0.00	5.08	0.417	1495.0		152.97			
15:30	30 min.	9.0	9.0				51.7	12.8	154.3	92.6	179.0	18	0	18	19,245	0.000	0.00	5.56	0.456	1495.0		154.29			
16:00	30 min.	9.0	9.0				51.7	12.7	153.3	91.7	187.0	19	0	19	20,521	0.000	0.00	5.89	0.484	1431.0		153.33			
16:30	30 min.	9.0	9.0				51.6	12.7	152.4	90.8	195.0	18	0	18	19,564	0.000	0.00	5.58	0.458	1297.0		152.39			
17:00	30 min.	9.0	9.0				51.7	12.6	151.7	90.0	201.0	18	0	18	18,819	0.000	0.00	5.34	0.439	1002.0		151.70			
17:30	30 min.	9.0	9.0				51.7	12.6	151.5	89.8	203.0	17	0	17	17,968	0.000	0.00	5.09	0.418	983.0		151.47			
18:00	30 min.	9.0	9.0				51.8	12.6	151.5	89.7	203.0	18	0	18	18,926	0.000	0.00	5.36	0.441	898.0		151.47			
18:30	30 min.	9.0	9.0				51.8	12.6	151.7	89.9	201.0	18	0	18	19,245	0.000	0.00	5.46	0.449	797.0		151.70			
AVG	960 min.	9.0	9.0				51.9	12.8	153.6	91.7	185.0	14	0	14	14,989	0.000	0.06	137.85	11.321	799.0		153.57			
10:30	0 min.	9.0	9.0				51.9	12.9	155.5	93.6	169.0	11	0	11	11,266	0.000	0.00	0.00	0.000	801.0		155.51			
11:00	30 min.	9.0	9.0				51.9	12.7	152.9	91.0	191.0	10	0	10	10,415	0.000	0.00	2.98	0.245	798.0		152.86			
11:30	30 min.	9.0	9.0				52.0	12.5	149.9	87.9	217.0	10	0	10	10,309	0.000	0.00	2.89	0.237	799.0		149.89			
12:00	30 min.	9.0	9.0				52.2	12.4	149.3	87.2	222.0	9	0	9	9,670	0.000	0.00	2.70	0.222	798.0		149.34			
Average Reading:		**9.0**	**9.0**				**62.5**	**12.6**	**152.2**	**79.7**	**197.7**	**16.3**	**0.0**	**Total Removed:**		**0.000**	**0.10**	**212.21**	**17.428**	**Total Lbs Discharged:**			0.00054	1.15700	69.74%

Comments
Jeff Moore was on site for AMEC Foster Wheeler.
Recovered approximately 25 gallons of well purge water from a drum located on site.

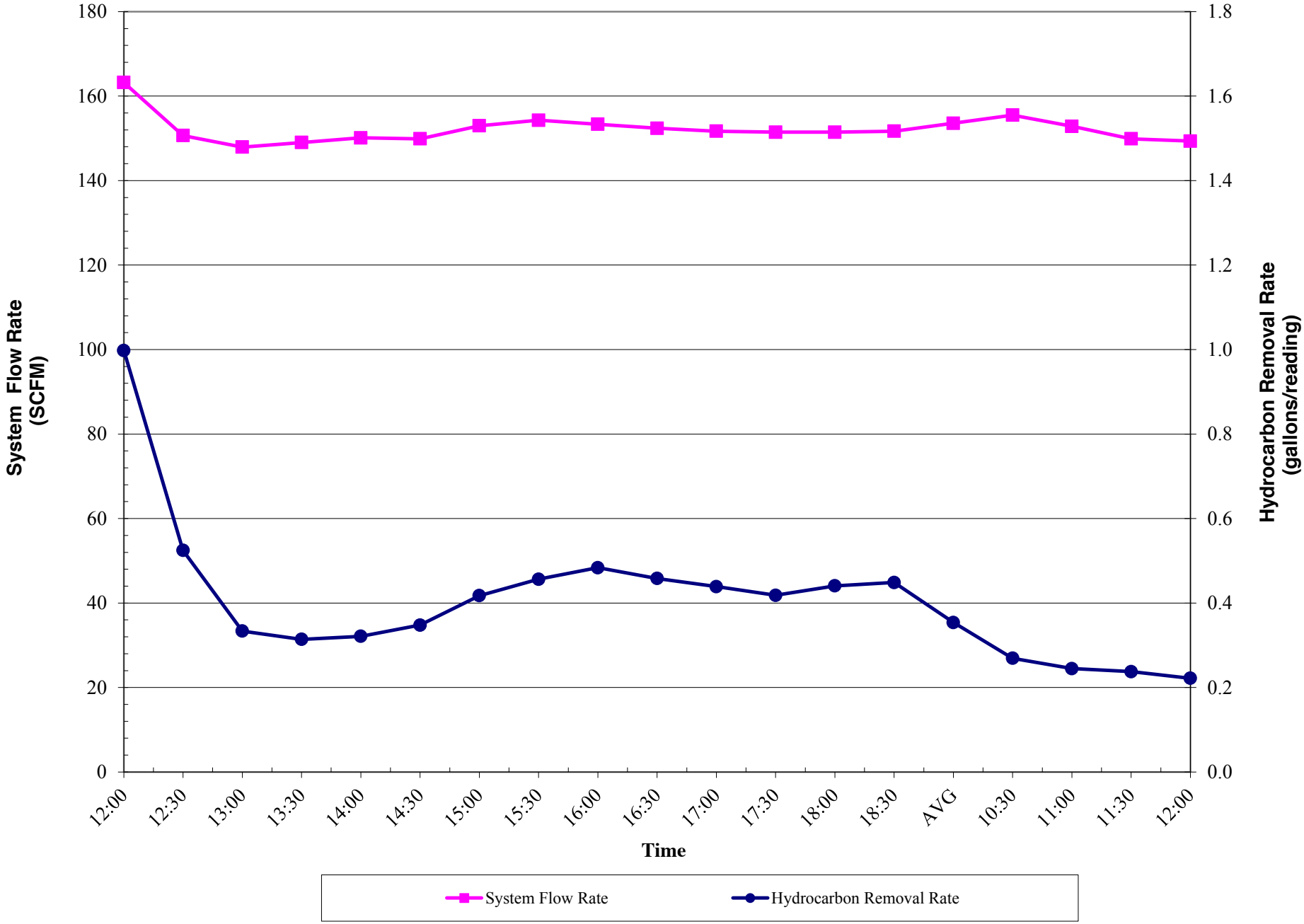
Field Data Sheet

STI Properties, Inc.
162 East Meadowlake Park, Swainsboro, GA
Operator Name: Chuck Parsons
Date: May 16, 2016
Project # GA51637

Response Ratio : 0.94
(Gas=600, Diesel=203, JetA=198)
Specific Gravity : 1.46
(Gas=0.74, Diesel=0.83, JetA=0.80)

LINE #	Time	Time Interval	Dilution Stream		Pump Discharge Stream				Extraction Well #		MW-8	Extraction Well #		MW-19	Extraction Well #			Extraction Well #			Extraction Well #			LINE#
			Bleed Air Diff Press. ("WC)	Bleed Air Temp	Effluent Pressure (psi)	Manifold Vacuum ("Hg")	Effluent Separator Temp	Effluent Diff Press ("WC)	Wellhead Vacuum ("Hg)	Ambient Air (SCFM)	Stinger Depth (ft.)	Wellhead Vacuum ("Hg)	Ambient Air (SCFM)	Stinger Depth (ft.)	Wellhead Vacuum ("Hg)	Ambient Air (SCFM)	Stinger Depth (ft.)	Wellhead Vacuum ("Hg)	Ambient Air (SCFM)	Stinger Depth (ft.)	Wellhead Vacuum ("Hg)	Ambient Air (SCFM)	Stinger Depth (ft.)	
1	12:00	0.01	0.64	81	0.1	14.5	111	0.77	9	5	7	9	5	7										1
2	12:30	30	0.46	82	0.1	14.5	210	0.77	9	5	7	9	5	7										2
3	13:00	30	0.31	85	0.1	14.5	235	0.77	9	5	7	9	5	7										3
4	13:30	30	0.31	88	0.1	14.5	225	0.77	9	5	7	9	5	7										4
5	14:00	30	0.31	91	0.1	14.5	215	0.77	9	5	8	9	5	7										5
6	14:30	30	0.31	96	0.1	14.5	217	0.77	9	5	8	9	5	8										6
7	15:00	30	0.31	99	0.1	14.5	190	0.77	9	5	8	9	5	8										7
8	15:30	30	0.15	101	0.1	14.5	179	0.77	9	5	8	9	5	8										8
9	16:00	30	0.15	101	0.1	14.5	187	0.77	9	5	8	9	5	8										9
10	16:30	30	0.15	102	0.1	14.5	195	0.77	9	5	8	9	5	8										10
11	17:00	30	0.15	100	0.1	14.5	201	0.77	9	5	8	9	5	8										11
12	17:30	30	0.15	100	0.1	14.5	203	0.77	9	5	8	9	5	8										12
13	18:00	30	0.15	99	0.1	14.5	203	0.77	9	5	8	9	5	8										13
14	18:30	30	0.15	99	0.1	14.5	201	0.77	9	5	8	9	5	8										14
15	AVG	960	0.15	97	0.1	14.25	185	0.77	9	5	8	9	5	8										15
16	10:30	0.01	0.15	96	0.1	14	169	0.77	9	5	8	9	5	8										16
17	11:00	30	0.15	96	0.1	14	191	0.77	9	5	8	9	5	8										17
18	11:30	30	0.15	93	0.1	14	217	0.77	9	5	8	9	5	8										18
19	12:00	30	0.15	90	0.1	14	222	0.77	9	5	8	9	5	8										19
Average Reading:			0.23	94.53	0.10	14.38	197.68	0.77	9.00	5.00	7.79	9.00	5.00	7.74										

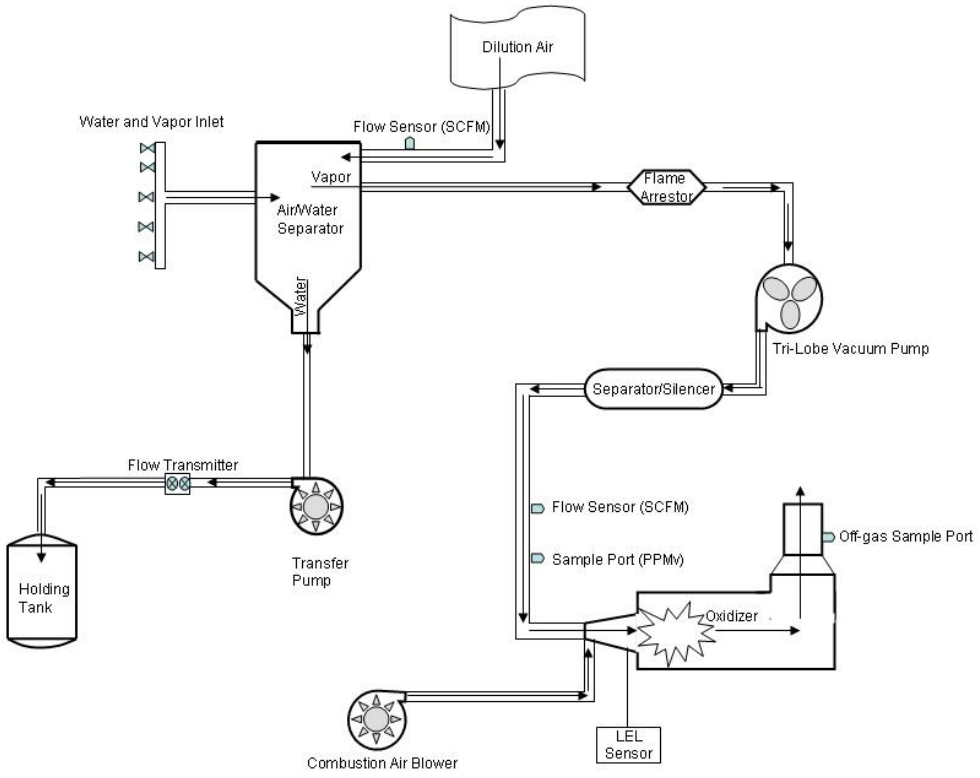
System Flow and Hydrocarbon Removal Rates



Multi-Phase Extraction Technology

Multi-phase extraction (MPE) systems remove vapors and liquids simultaneously from the subsurface. Ambient air (5 to 20 cubic feet per minute) is drawn down the casing of monitoring wells, across the groundwater interface, and back up a drop tube, providing the necessary lift to extract subsurface groundwater. An airflow gauge attached to a well head is used to measure the amount of ambient air, which is subtracted from the total flow. Additionally, vacuum gauges are used to measure the extraction vacuum, as well as the vacuum applied to the subsurface stratigraphy.

The extracted vapors and liquids are transferred to a mobile treatment system, where the liquids are separated and discharged into a storage tank for proper disposal. Soil vapors are transferred to a forced air thermal oxidation (ThOx) unit and incinerated at approximately 1,500 degrees Fahrenheit. The treated air is then discharged into the atmosphere. Following is a process flow diagram for the Brown Remediation, Inc. MPE system.



Summary of Calculations

During the MPE event, a total flow rate measurement of the process stream is taken on the discharge side of the vacuum extraction pump and before off-gas treatment. This measurement is performed using an averaging pitot tube (Dwyer DS-300) attached to a digital differential pressure sensor. This measurement is used to calculate the removal rates and the off-gas emission rates and is reported in actual cubic feet per minute. A separate flow rate is calculated for the extraction well field, as well as for any additional ambient air introduced into the influent stream. To determine the volume of hydrocarbon removed during the event, samples of the extracted vapors are collected from a sample port located before the vapor stream enters the ThOx unit. A second sample port located on the exhaust stack of the ThOx unit provides access for determining the destruction efficiency of the combustion process.

Concentration measurements are taken using a TVA-1000A flame ionization detector (FID) calibrated to methane. This FID instrument has a dynamic range of 0 to 50,000 parts per million (PPM) as methane, and 0 to 100,000 PPM as hydrocarbon. The concentration measurements of the process stream are made after the addition of ambient air at the phase separator and prior to the addition of combustion air at the oxidizer; however, the concentration of the process stream at the sample port exceed the dynamic range of the FID instrument. To accurately record the high concentrations commonly observed during an MPE event, a calibrated 10:1 dilution assembly is used to accurately dilute the sample. This dilution assembly, along with the FID instrument, is calibrated before the start of each event.

To account for naturally occurring methane present during a typical MPE event, two concentration measurements are taken. One unfiltered sample measures the total volatile organic compounds (VOCs) in the subsurface. The other sample is collected using an in-line activated carbon filter, which adsorbs the hydrocarbon compounds, leaving only methane. This methane-only result is then subtracted from the total VOC measurement for use in the mass hydrocarbon removal calculation. However, as with any FID instrument, the non-methane organic compound results are recorded as parts per million by volume (PPMv) as if the concentrations were equivalent to methane gas. A conversion from methane to hydrocarbon, and from volume to weight, is necessary to calculate the accurate hydrocarbon removal. By using the TVA-1000's factory-certified response ratio for various hydrocarbons, the measurements are converted to equivalent hydrocarbon in milligrams per liter (mg/L). For example, a TVA-1000 FID has an average response ratio of 600 PPMv per mg/L for unleaded gasoline and 200 PPMv per mg/L for diesel. Following is a summary of calculations.

Flow

$$Q = 128.8 \times K \times D \times SQRT((P \times dP) / (T + 460) \times Ss)$$

Where:

Q =	Flow expressed in Standard Cubic Feet per Minute (SCFM)
K =	Flow coefficient (provided by Dwyer Instruments, Inc.)
D =	Inside diameter of process line in inches
SQRT =	Square Root
P =	Static line pressure
dP =	Differential pressure expressed in inches of water column (WC)
T =	Temperature in degrees Fahrenheit (plus 460 equals degrees Rankine)

Ss = Specific gravity at 60 degrees Fahrenheit

Conversion of Field Data (PPMv to mg/m^3)

C = (PPMv / R) x (1000 L / 1 m^3)

Where:

R = TVA response ratio supplied in The Foxboro Monitor, Volume 3, Issue 1A (600 PPMv / (mg/L) for gasoline and 200 PPMv / (mg/L) for diesel)

Hydrocarbon Loading Rate

M = Q x C x c

Where:

M = Contaminant loading rate (lbs/hr)

Q = Air flow rate (SCFM)

C = Contaminant concentration (mg/m^3)

c = (1m^3 / 35.31 ft) x (1 lb / 454 x 10^3) x (60 min / 1 hr) = 3.743 x 10^{-6}

Conversion of Pounds of Hydrocarbon to Equivalent Gallons

Equivalent Gallons = Ss x c

Where:

Ss = Specific gravity (0.74 = gasoline, 0.84 = diesel fuel)

c = 8.34 lbs/gallon

CITY OF SWAINSBORO
SEPTAGE RECEIVING FORM

Brock Remediation
Company Name

IPU75F / 3000
Truck License # and Capacity

900
# of Gallons Pumped

Sample #

Driver Signature

12:10 5/10/16
Date and Time Delivered to Plant

STI Properties
Customer Name

162 East Meadowlake Place
Customer Address

Comments: set up by AMEC

227 Sandy Springs Place
Suite D-122
Atlanta, Georgia 30328-5918
Phone 404 256 0667
Fax 404 256 0668

Non-Hazardous Waste Manifest

Manifest No.: 6309 Project No.: GA51637 Quantity in U.S. Gallons: 975

Section 1: Generator

Company Name: STI Properties
Address: 162 East Meadowlake Parkway
City: Swainsboro State: GA ZIP:
Phone No.: Fax No.:

Location:
Address:
City: State: ZIP:
Phone No.: Fax No.:

Description of Waste: X HVR WATER

This is to certify that the above-named material is properly described and is in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that the above-named material is not a hazardous waste as defined by 40 CFR, Parts 261 and 279, or any applicable federal, state, or local laws.

X [signature] Authorized Agent X [signature] Signature X 5-17-16 Date

Section 2: Transporter

Primary

Company Name: Brown Remediation, Inc
Address: 227 Sandy Springs Place
Suite D-122
City: Atlanta State: GA ZIP: 30328
Phone No.: (404) 256-0667 Fax No.: (404) 256-0668
Driver Name: Chuck Parsons
Truck No.: Vehicle Tag: IPO78F

[signature] Driver Signature Date

Secondary

Company Name:
Address:
City: State: ZIP:
Phone No.: Fax No.:
Driver Name:
Truck No.: Vehicle Tag:

Driver Signature Date

Section 3: Destination

Company Name: City of Swainsboro
Address:
City: State: ZIP:
Phone No.: Fax No.:

I hereby certify that the above material has been accepted, and to the best of my knowledge, the foregoing is true and accurate.

Chris Morton Authorized Agent [signature] Signature 5-17-16 Date

White – Destination Yellow – Brown Remediation

APPENDIX E

MICROBIAL INSIGHTS REPORT

10515 Research Drive
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
Web: www.microbe.com

SITE LOGIC Report

Comprehensive Report

Contact: Tanya Kinnard
Address: AMEC Foster Wheeler
1075 Big Shanty Road NW, Suite 100
Kennesaw, GA 30144

Phone: (806) 477-6636

Email: Tanya.Kinnard@amecfw.com

MI Identifier: 076NC

Report Date: May 10, 2016

Project: STI Swansboro, #6125080149.1602

Comments:

Executive Summary

Groundwater samples collected from wells MW 8 and MW19 at the STI Swansboro site were submitted for CENSUS® quantitation of dechlorinating bacteria and key reductive dehalogenase genes known to be involved in the anaerobic biodegradation of trichloroethene (TCE) and associated daughter compounds (*e.g.*, *cis*-1,2-dichloroethene, vinyl chloride, and ethene). A site map showing sampling locations for taxonomic and specific functional gene assessment is provided on the following page. The CENSUS® results, along with contaminant concentrations, and dissolved gas levels for the groundwater samples are provided in Table 1 and Figures 2 and 3. Below are the general observations based on analyses conducted to date.

Well MW 8

- The *Dehalococcoides* concentration was measured at 10^4 cells/mL, which was equal to the 10^4 cells/mL density threshold proposed by Lu et al. (2006) as a screening criterion for generally useful rates of biological reductive dechlorination. Additionally, a moderate concentration of the *bvcA* reductase gene (10^3 cells/mL) was detected in this groundwater sample. The TCE reductase gene *tceA* and the vinyl chloride reductase gene *vcrA* fell below the detection limit. Collectively, these results indicate that the potential for the complete reductive dechlorination of TCE to ethene exists at well MW 8.
- Contaminant analysis demonstrated that the primary chlorinated compound at well MW 8 was trichloroethene (1,900 µg/L), followed by *cis*-1,2-dichloroethene (cis-DCE) and 1,1-dichloroethene (1,1-DCE) at 1,300 µg/L for both compounds. Lower concentrations of vinyl chloride and ethene were also detected (580 µg/L and 8.9 µg/L, respectively), suggesting that complete reductive dechlorination is occurring at this location. 1,1,1-Trichloroethane and 1,1-dichloroethane were also present at this location.
- The high methane concentration (6,500 µg/L) at MW 8 suggested the existence of reducing conditions conducive to reductive dechlorination.
- Taken as a whole, the microbiological, chemical, and dissolved gases results suggest that reductive dechlorination is likely occurring under existing site conditions.

Well MW 19

- A moderate *Dehalococcoides* concentration (10^3 cells/mL) was detected in MW 19. Although lower than the threshold value of 10^4 cells/mL proposed by Lu et al. (2006) for effective reductive dechlorination, these results indicate the presence of a bacterial population capable of completely dechlorinating TCE to ethene. A low concentration of the *bvcA* functional gene was also detected.
- The concentrations of TCE, cis-DCE, and 1,1-DCE were 1 to 2 orders of magnitude lower compared to those in MW 8. Vinyl chloride and ethene daughter products were also detected (330 µg/L and 300 µg/L, respectively). Additionally, 1,1-dichloroethane was detected at 26 µg/L, and the chloroethane concentration was 83 µg/L.
- A high concentration of methane (5,600 µg/L) was present in the MW 19 water sample, suggesting reducing conditions conducive to reductive dechlorination.
- Overall, the CENSUS® results indicating a moderate *Dehalococcoides* population combined with available contaminant and dissolved gases data suggest that complete reductive dechlorination is likely occurring at this location.

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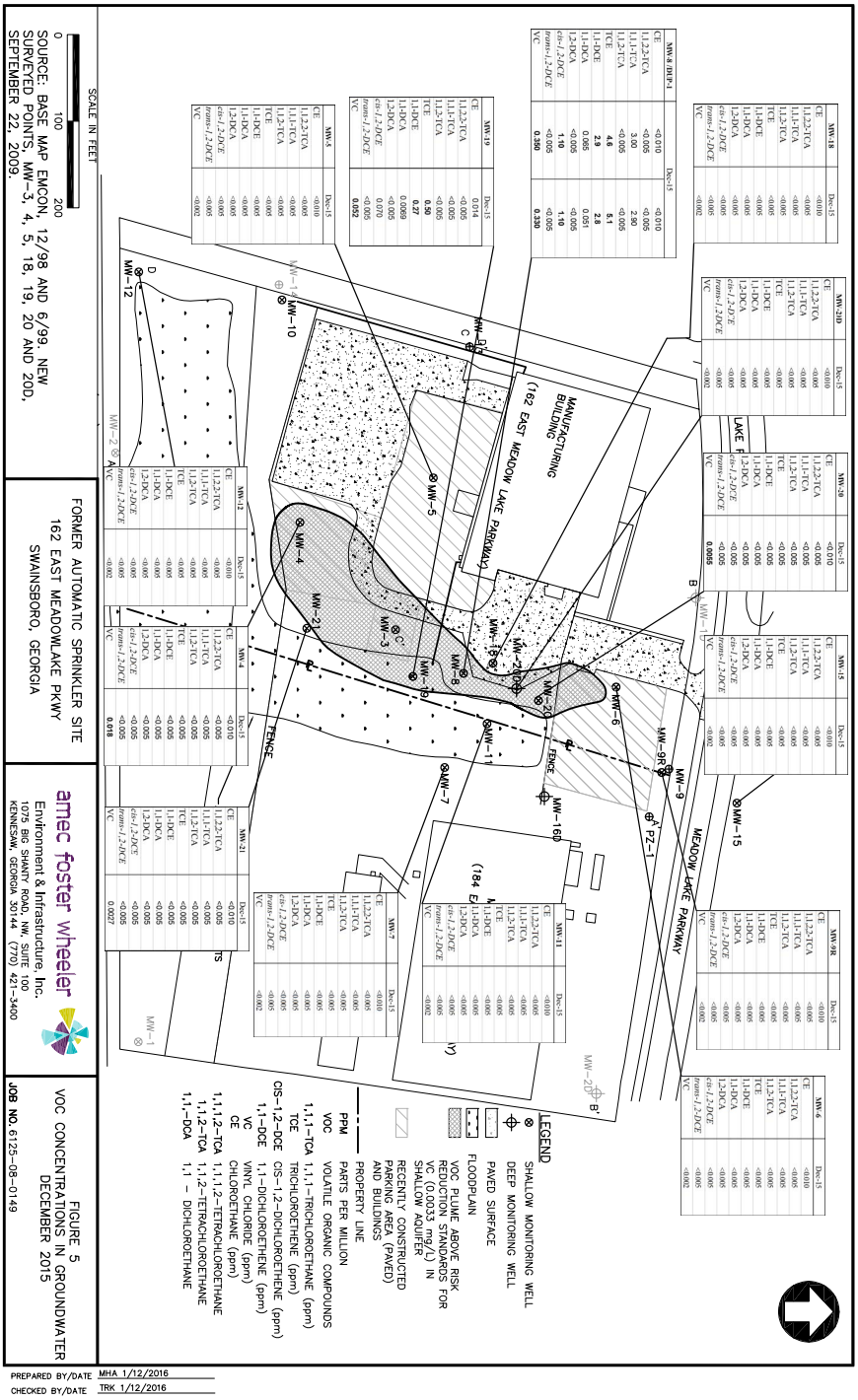

Figure 1. Monitoring well locations with December 2015 VOC concentrations in groundwater.

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Results

Table 1. Summary of CENSUS®, contaminant, and dissolved gases results[1]

Well ID	MW 8	MW 19
Sample Date	**3/17/2016**	**3/17/2016**
Microbial Populations (cells/mL)		
Dehalococcoides sp. (DHC)	**2.00E+04**	**3.21E+03**
tceA Reductase (TCE)	<5.00E-01	<5.00E-01
bvcA Reductase (BVC)	**5.46E+03**	**8.19E+02**
vcrA Reductase (VCR)	<5.00E-01	<5.00E-01
Contaminant Concentrations (µg/L)		
Trichloroethene	**1,900**	**370**
1,1-Dichloroethene	**1,300**	**230**
cis-1,2-Dichloroethene	**1,300**	**92**
trans-1,2-Dichlorothene	<5.0	<5.0
Vinyl Chloride	**580**	**330**
1,1,1-Trichloroethane	**770**	<5.0
1,1-Dichloroethane	**66**	**26**
Chloroethane	<10	**83**
Dissolved Gases (µg/L)		
Ethene	**8.9**	**300**
Ethane	<9.0	**34**
Methane	**6,500**	**5,600**

[1]Contaminant concentrations, geochemical parameters, and field measurements provided by AMEC Foster Wheeler.

Legend: J = estimated concentration between the quantitation and minimum detection limits.

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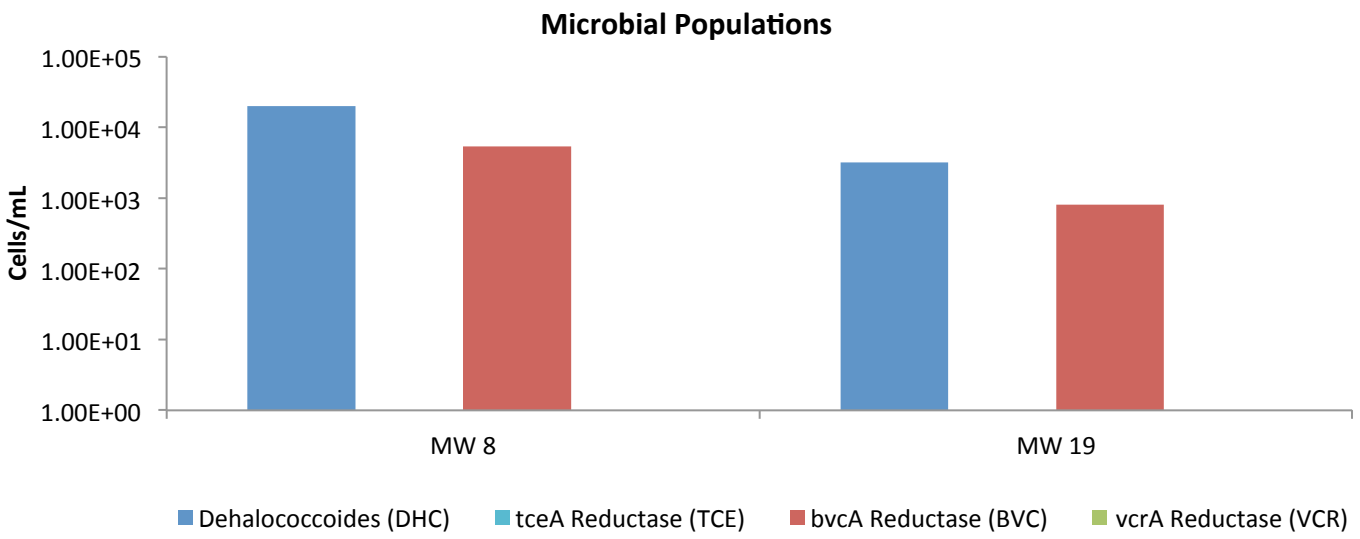

Figure 2. CENSUS® results for selected microbial populations (cells/mL) in MW 8 and MW19.

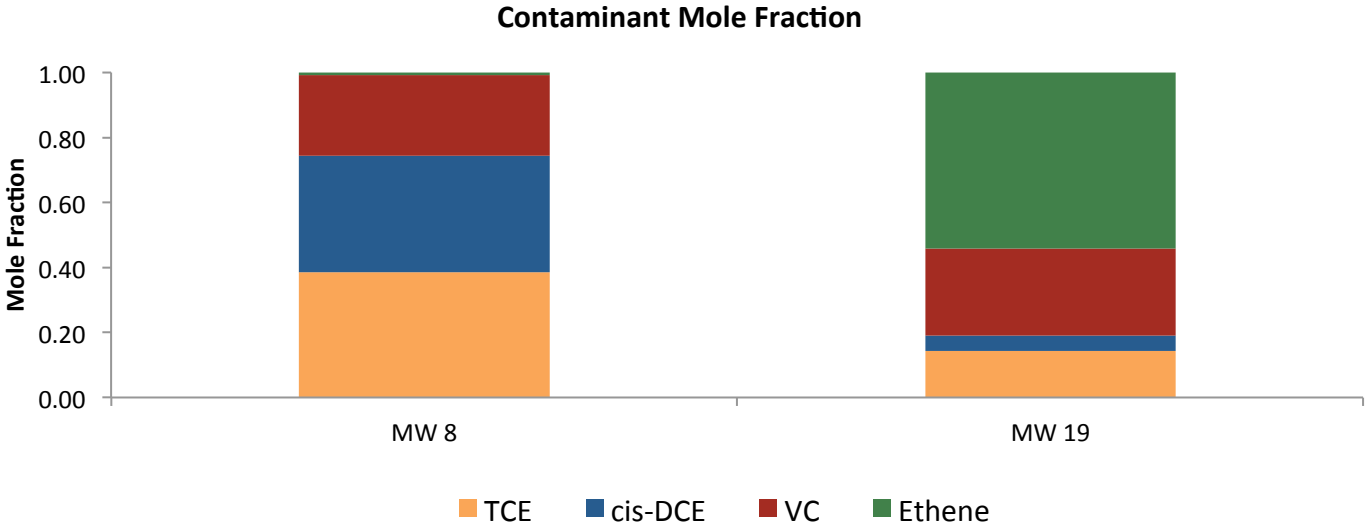

Figure 3. Chlorinated ethene concentrations (mole fraction) in MW 8 and MW 19.

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Interpretation

The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Contaminant of Concern (COC) Concentrations: Under anaerobic conditions, some bacteria, most notably *Dehalococcoides* species, can use chlorinated ethenes as electron acceptors in a process called reductive dechlorination. The net result is the sequential dechlorination of PCE and TCE through daughter products DCE and vinyl chloride to ethene. In general, the production of reduced daughter products particularly ethene (See Dissolved Gases) suggests active reductive dechlorination.

Microbial Populations: CENSUS® analysis allows site managers to quantify targeted members of the microbial community deemed critical for site remediation. Total Eubacteria provides an index of the total bacterial biomass and is generally greater than 10^6 cells/bead in the absence of factors inhibiting microbial growth. While a number of bacterial cultures capable of utilizing PCE and TCE as growth supporting electron acceptors have been isolated[1-5], *Dehalococcoides* spp. may be the most important because they are the only bacterial group that has been isolated to date which is capable of complete reductive dechlorination of PCE to ethene[6]. In fact, the presence of *Dehalococcoides* spp. has been associated with the full dechlorination to ethene at sites across North America and Europe[7]. Thus, CENSUS® quantification of *Dehalococcoides* can be used to evaluate the likelihood of complete reductive dechlorination of PCE and TCE. The accumulation of the daughter products *cis*-DCE and vinyl chloride termed "DCE stall" is relatively common at PCE/TCE sites especially under MNA conditions. Accumulation of vinyl chloride, generally considered more carcinogenic than the parent compounds, is particularly problematic. CENSUS® quantification of vinyl chloride reductase genes (*bvc*A and *vcr*A) was developed to more definitively confirm the potential for biodegradation of vinyl chloride. Again, comparison of vinyl chloride reductase copies can be used to assess the efficacy of enhanced bioremediation approaches (biostimulation and bioaugmentation) to enhance populations of organisms specifically capable of reductive dechlorination of vinyl chloride.

Dissolved Gases: While ethene can volatilize, be further metabolized, or be further reduced to ethane in some environments, greater concentrations of ethene generally indicate complete reductive dechlorination of PCE and TCE. In addition to quantifying the end products of reductive dechlorination, analysis of dissolved gases includes determination of dissolved methane. Combined with results of geochemical analysis, elevated methane concentrations are indicative of highly reducing conditions conducive to reductive dechlorination. However, methanogens also compete with dechlorinating bacteria including *Dehalococcoides* for available hydrogen.

Glossary

CENSUS: CENSUS is based on a technique called quantitative polymerase chain reaction (qPCR) whereby many copies of a specific gene are generated. As each gene copy is made, a fluorescent marker is released, measured, and used to quantify the number of target genes present in a sample.

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