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December 30, 2016

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Subject: Periodic Review Report - 2014 through 2016
Former Ward Products Site, Amsterdam, New York
Site # 429004

Dear Larry,

On behalf of New Water Realty Corporation, AECOM is submitting this Periodic Review Report (PRR) for the Former Ward Products Site (Site) located in Amsterdam, NY. This PRR was prepared in accordance with the approved Site Management Plan. Please note that the original signed certification forms will be sent to you under separate cover.

Please note that in this report we a recommending that the groundwater monitoring program be modified to reduce the sampling frequency to annually and to reduce the analysis of groundwater samples for chromium to three wells. We believe that the groundwater data collected over the last several years supports these changes. We are also recommending that the next PRR be due in 5 years (December 2021).

If you have any questions or require addition information, please feel free to contact Laura Warren or Jennifer Atkins at 978.905.2100. We look forward to receiving your response to our recommendations.

Yours sincerely,

Laura Warren
Project Manager
laura.warren@aecom.com

Jennifer Atkins
Compliance Specialist
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Cc: I. Ushe – NYSDOH (electronic)
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AECOM

Periodic Review Report - 2014 through 2016

Former Ward Products Site, Amsterdam, New York
Site # 429004

Project Number: 60481900-800

December 2016

Quality information

Prepared by	Checked by	Approved by
Jennifer Atkins Project Specialist	Laura Warren, Project Manager	Mike Gardner, PE

Revision History

Revision	Revision date	Details	Authorized	Name	Position

Prepared for:

New Water Realty Corporation

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Engineering Certification

for New York Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)

I, Michael Gardner, certify that I am currently a NYS registered professional engineer and that this Periodic Review Report for the Former Ward Products Site (Site No. 4-29-004) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

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

(a) The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by DER.

(b) Nothing has occurred that would impair the ability of such control to protect public health and the environment.

(c) Nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control.

(d) Access to the Site will continue to be provided to DER to evaluate the remedy, including access to evaluate the continued maintenance of this control.

Respectfully submitted,

AECOM Technical Services, Inc.

Michael Gardner — 12/29/2016

Michael Gardner
Registered Professional Engineer
New York License No. 089344

Date

Executive Summary

The Former Ward Products Site (Site) is located in Amsterdam, Montgomery County, NY (Figure 1). This Periodic Review Report (PRR) includes historical information, and all groundwater monitoring well data for the period of December 1, 2013 through November 30, 2016.

The Site was a former car antenna manufacturer. As part of the manufacturing process, small metal parts were cleaned with solvents (vapor degreasing) prior to electroplating operations using nickel/chromium, zinc/cyanide, and cadmium/cyanide processes. The Site encompasses approximately 8.6 acres and is located within an active industrial park. The Site was added by the New York State Department of Environmental Conservation (NYSDEC) Registry of Inactive Hazardous Waste Sites as a Class 2a site (Site # 4-29-004). A remedial investigation was performed on the Site between 1997 and 2005, and a feasibility study was performed in 2006.

A Record of Decision (ROD) was issued in March 2007. Under the ROD the remedial activities for the Site included In-Situ Chemical Oxidation (ISCO) with a supplemental Ground Water Extraction and Treatment System (GWETS), clean-up and maintenance of the downstream sediment basins, continued operation of the Sub-Slab Depressurization System (SSDS) when the building is occupied, unless future data warrants otherwise, and the implementation of a Site Management Plan (SMP).

Contaminated sediment was removed from the drainage ways downgradient from the Site between December 2008 and February 2009 in which approximately 3,475 tons of impacted sediments were removed. An SMP was developed for the Site and approved by the NYSDEC in March 2011. In August 2011 an Environmental Easement (EE) was recorded; the EE defines and regulates approximately 2.49 acres of the Site as Controlled Property. In March 2012, the NYSDEC issued a Certificate of Completion, documenting that the cleanup activities had been completed and that the Site activities had shifted to long term monitoring. A copy of the Certificate of Completion can be found as an appendix to the 2012 PRR (AECOM, 2012).

A total of 13 groundwater wells were sampled in May and August of 2014, 2015, and 2016. Volatile organic compounds (VOCs) were detected consistently in 6 of the 13 wells, and chromium levels that exceeded the Ambient Water Quality Standards (AWQS) were detected in four samples. A summary of all analytical data is provided in Appendix A.

The GWETS was installed on the Site in June 2009 and consisted of a single recovery well and a groundwater treatment system. ISCO injections utilizing potassium permanganate were conducted on June 15, 2009 and May 10, 2010. The GWETS was enhanced in August 2012 by installation of a second recovery well.

Quarterly effluent sampling of the discharge from the GWETS is conducted in accordance with the City of Amsterdam's Publically Owned Treatment Works (POTW) Permit renewed in April 2012 and April 2015. The GWETS is inspected on a regular basis and copies of system inspection records and repairs are stored in the on-site treatment shed.

Annual sediment basin inspections wer performed in August 2014, August 2015, and December 2016 in accordance with the SMP. The specific results of those inspection can be found in Section 2.2.2.3.

The building is currently unoccupied and therefore the SSDS is not being operated.

Recommendations for the Site made in this PRR include reducing groundwater monitoring to annually and reducing the number of wells sampled for chromium, and continuing the annual sediment basin inspections, operating the GWETS and overall Site inspections as required by the SMP. In the event that the building becomes occupied, operation of the SSDS will be conducted if necessary.

1. Site Overview

The periodic review process is used for determining if a remedy is being properly managed, as set forth in site documents, and if the remedy remains protective of human health and the environment. This Periodic Review Report (PRR) includes historical information, and all groundwater monitoring well data for the period of December 1, 2013 through November 30, 2016. Per the letter from the New York State Department of Environmental Conservation (NYSDEC) dated January 23, 2014, this PRR covers three years (2014 through 2016) and is due January 2, 2017.

This PRR has been prepared to evaluate the overall continued effectiveness of the existing remedies and their performance at the Site. AECOM Technical Services, Inc. (AECOM) monitors the Former Ward Products Site (Site) for the New Water Realty Corporation (NWR). The Site is located at 61 Edson Street in the Amsterdam Industrial Park, Amsterdam, NY in Montgomery County. The Site Location is shown on Figure 1. The Site is listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site Number 4-29-004 by the NYSDEC and was the subject of Orders on Consent Index #W4-0762-96-06 and #A4-0588-0507 between NWR and the NYSDEC. A Site Management Plan (SMP) was developed for the Site and approved by the NYSDEC in March 2011, and subsequently revised and re-approved by the NYSDEC in July 2011 (AECOM, 2011). On August 25, 2011 an Environmental Easement (EE) for the Site's Controlled Property was recorded under instrument No. 2011-43591 in the Montgomery County Clerk's Office. A Certificate of Completion was issued by the NYSDEC in March of 2012 classifying the Site as Class 4. Class 4 is defined as being properly closed but requires on-going management.

The engineering controls (ECs) included in the SMP and evaluated in this 2016 PRR are:

- Existing cover system to restrict exposure to impacted materials below the soil cover or building.
- Continued operation of the SSDS at the Site whenever the building is occupied, unless future data warrants otherwise.
- Continued operation of the GWETS.

The institutional controls (ICs) included in the SMP and evaluated in this PRR are:

- Environmental Easement (EE)

In addition to the ECs listed above, the SMP includes inspection of three off-site sediment retention basins in accordance with the ROD.

The Site is near the eastern boundary of the City of Amsterdam within the Town of Amsterdam, approximately 3,300 feet northeast of the Mohawk River. The Site encompasses approximately 8.6 acres and includes a 69,556 square foot single story building, a large paved parking lot, lawn areas, and approximately 3.5 acres of undeveloped land behind the building. The building is presently unoccupied. Reportedly, an offer to lease the site beginning in or about March 2017 has been recently received by NWR; however, the probability of a lease being signed cannot be predicted as the offer is not at the listed rent.

Fiber Glass Industries (FGI), a manufacturer of fiberglass insulation, occupied the property adjacent to the Site to the east; however, they ceased operations in 2014 and the building is currently unoccupied. Prozone Lockers, a firm that manufactured lockers for professional sports teams, was located across Edson Street to the south (in the building formerly occupied by UCMI), but they ceased operations in 2015 and the building is now occupied by a new tenant, Solar City. A business dealing in custom horse clothing and accessories is to the west, and undeveloped land lies to the north. Other commercial businesses are located in the industrial park in the general vicinity of the Site.

Soils at the Site consist of glacial till atop Chuctanunda Creek dolostone bedrock. The till layer is only about two feet thick near the north end of the Ward Products building but it increases to over fifty feet thick on the property to the south. Groundwater is scarce in the glacial till geological unit, and thus only a

few overburden wells have been placed on the Site. Bedrock groundwater is mostly contained in fractures and joints in the shallow bedrock. Groundwater flow is generally west-southwest of the Site.

1.1 Remedial History

The Site building was initially constructed in 1957, although expanded thereafter, and was first occupied by the Gabriel Corporation, which manufactured car antennas. Ward Products (now NWR) purchased Gabriel's operation and the Site in 1959. As part of the manufacturing process, small metal parts were cleaned with solvents (vapor degreasing) prior to electroplating operations using nickel/chromium, zinc/cyanide, and cadmium/cyanide lines.

Between 1957 and 1973, untreated electroplating bath solutions containing chromium, zinc, cadmium, and nickel, and the degreasing solvent trichloroethene (TCE), were discharged to the nearby drainage ditch east of the Ward Products building. From 1973 through 1985, operations pretreated the plating solutions from the nickel/chromium line and dried the resulting sludge on an outdoor concrete pad prior to removal for off-site disposal. The spent cadmium/cyanide plating solution was discharged to an outdoor tank for both natural and mechanical evaporation and off-site disposal of the remaining sludges. The zinc/cyanide line was discontinued in 1973.

Ward Products connected to Amsterdam's sewer system in 1983 and then discontinued the vapor degreasing system. All electroplating operations at the Site were discontinued in 1985. In 1988 and 1989, the plant expanded with a new grinding shop built over the former sludge drying pad and a new warehouse area built to the north. The expansion of the manufacturing building over this area eliminated some of the contaminant mass during removal of soil during the construction of the building footers and reduced the potential for migration of, and exposure to, the remaining residuals. The soils from the former sludge drying pad were excavated during the building expansion, stockpiled, and then removed from the Site during a subsequent Interim Remedial Measure (IRM).

In 1985, the NYSDEC first listed the Site as a Class 2a site in the Registry of Inactive Hazardous Waste Disposal Sites in New York (the Registry). Class 2a was a temporary classification assigned to a site that had inadequate and/or insufficient data for inclusion in any of the other classifications.

A hydrogeologic investigation of the Site took place in 1986 and again in 1988. The 1988 investigation included excavation of test pits east and southeast of the former electroplating and treatment operations. Surface water and sediment samples were collected from the drainage ditch. Shallow soil samples were also collected from beneath the sludge drying pad and analyzed for metals and volatile organic compounds (VOCs). In 1989, the NYSDEC listed the Site as a Class 2 site in the Registry. Class 2 is where hazardous waste presents a significant threat to the public health or the environment and action is required. Further hydrogeologic investigation of the Site in 1996 included the installation of four groundwater monitoring wells and additional sediment sample collection from the drainage ditch.

In 1997 Ward Products removed and properly disposed offsite 30 cubic yards (CY) of contaminated soil stockpiled during the plant expansion of 1988-1989. On classification, this soil was determined to exceed the Toxicity Characteristics Leaching Procedure (TCLP) standard for cadmium and contained high concentrations of other electroplating-related materials.

In 1999, 15 CY of soil were excavated adjacent to the Ward Products building in the vicinity of the fenced-in transformers and properly disposed of offsite. The soil contained low concentrations of polychlorinated biphenyls (PCBs) as well as electroplating materials.

The Ward Products facility connected to the municipal sewers in 1983. The main effluent pipe previously discharged plant effluent to the ditch on the eastern property line, and was subsequently utilized to direct stormwater runoff from the roof away from the building. However, examination of the inside of the pipe revealed sediment deposits which contained significantly elevated metals and VOC concentrations. This sediment was removed in an IRM in 2000 and was properly disposed offsite.

In 2004, 700 tons of contaminated soil around the Ward Products building and 350 tons sediment from the on-site and off-site drainage ditch were removed and properly disposed offsite.

In 2005, mitigation measures were taken at the Ward Products building to address current human exposures (via inhalation) to VOCs associated with soil vapor intrusion. A sub-slab depressurization system (SSDS) was installed to create a negative pressure gradient below the slab, thus minimizing infiltration into the building, to be operated when the building is occupied.

Specific details of each of the IRMs are attached to the PRR submitted in 2012 (AECOM, 2012).

The Record of Decision (ROD) was issued in March 2007 (NYSDEC, 2007) and included a summary of the remedial investigations, Site geology and hydrogeology, nature and extent of the contamination, IRMs, human exposure pathways, and environmental impacts. The components of the remedy were and are as follows:

- Removal of approximately 400 CY of contaminated sediments from the eastern branch of the tributary draining from the Site. Removal of 700 CY of contaminated sediment from the Mohawk River at the mouth of the eastern branch of the tributary.
- Construction of two sediment collection basins: one immediately north of the CSX railroad tracks on the east branch, and one immediately north of the rail spur on the west branch.
- Pilot testing of potassium permanganate injection into the bedrock aquifer followed by full scale implementation of potassium permanganate injection into the bedrock aquifer.
- Drilling of a recovery well at a central location on the Site. Extracted groundwater is pumped to a groundwater extractions and treatment system (GWETS), where VOCs will be reduced through the use of an air stripper.
- Maintaining the existing cover system to restrict exposure to impacted materials below the soil cover or building (removal of the contaminated soils from beneath the building will be required when they become accessible).
- Development and implementation of an SMP for long-term management of remaining contamination as required by the EE, which includes plans for institutional and engineering controls (IC/EC), monitoring, operation and maintenance, and reporting.
- On-site and off-site inspections, sampling and corrective actions, occurring and certified at a frequency and in a manner defined in the SMP.
- On-site environmental treatment and monitoring devices inspected, protected, repaired, and replaced as necessary to ensure continued functioning in the manner specified in the SMP.
- Periodic certification of the ICs and ECs.

After the ROD was issued, the following activities were performed:

- Approximately 3,475 tons of metals-impacted sediments were removed from the drainage ways downgradient from the Ward Product Site from December 2008 to February 2009. The sediment and soil remediation was performed in general accordance with the ROD (March 2007), Order on Consent (Index #A4-0588-0507, June 2007), and the Remedial Design/Remedial Action Work Plan (December 2007). All soils within the removal limits indicated in the Feasibility Study and ROD were removed during the remediation; however, some impacted material remained in the drainage areas above the NYSDEC Lower Effects Level (LEL) and Severe Effects Level (SEL) criteria for protection of benthic organisms. These areas have been capped with at least 18 inches of clean soil or 12 inches of armor stone to prevent or minimize exposures to and/or erosion of soils containing Site related contaminants. The sediment and soil remediation also included the construction of two sediment basins, one along the east branch drainage and one along the west branch drainage. All excavated sediment was properly disposed offsite.

- A GWETS was installed outside the southeast portion of the Ward Products building located on 61 Edson Street to reduce on-site source of contaminants in groundwater and to reduce future migration from the Site. The system was installed in June 2009 and began operation on June 15, 2009. (The GWETS has since been enhanced by installation of a second recovery well in August 2012). The GWETS remains in operation today.
- A limited ISCO program was implemented to reduce TCE concentrations within the area of MW-4R, MW-6, and MW-10, in accordance with the Feasibility Study, the ROD, and the Order on Consent of July 2007. The first two ISCO injections were performed the weeks of June 15, 2009 and May 10, 2010. During the first injection, each injection well (IW-01 through IW-04) was injected with 25 lbs of potassium permanganate. During the second ISCO injection, each well (IW-01, MW-4R, MW-6, and MW-10) was injected with approximately 20 lbs of potassium permanganate. Based upon the results of the two full scale injections, it was determined that the third round would not be effective and, with the NYSDEC approval, was eliminated from the program.
- A SMP was developed for the Site and approved by the NYSDEC in February 2011. A revision to the SMP was submitted to the NYSDEC on July 26, 2011 that would allow future use of the Site to be either commercial or industrial. The revision was approved by the NYSDEC on July 27, 2011.
- On August 25, 2011 an EE for the Site's Controlled Property was recorded under instrument No. 2011-43591 in the Montgomery County Clerk's Office.
- A Certificate of Completion was issued by the NYSDEC in March of 2012.
- The first PRR for the period December 1, 2011 through November 30, 2012 was submitted in January 2013 and approved by NYSDEC in February 2013.
- The second PRR for the period December 1, 2012 through November 30, 2013 was submitted in January 2014. NYSDEC approved it in January 2014 and set the due date for the next PRR for 3 years out on January 2, 2017.

In accordance with the SMP, the following activities have been performed since submittal of the 2013 PRR and are currently being performed:

- Operation of the GWETS.
- Quarterly sampling of the GWETS effluent in accordance with the City of Amsterdam's POTW Permit.
- Semi-annual groundwater sampling of 13 monitoring wells in May and August of each year.
- Annual inspection the sediment basins in accordance with the SMP.
- Operation and inspection of the SSDs when the building is regularly occupied.

1.1.1 Groundwater Monitoring

Semi-annual groundwater monitoring follows the requirements of the NYSDEC-approved SMP, which requires semi-annual measurement of groundwater levels in 22 monitoring wells plus the two groundwater recovery wells, and collection of groundwater quality samples for analysis of VOCs, total chromium and hexavalent chromium from 13 of the 22 monitoring wells. See Figure 2 for groundwater monitoring well locations. Sampling occurred at the Site in May and August 2014, May and August 2015, and May and August 2016.

In addition to collecting groundwater samples, water quality parameters are measured and recorded for the 13 sampled wells. Water quality parameters, which include temperature, specific conductivity, conductivity, pH, turbidity, dissolved oxygen (DO), oxygen-reduction potential (ORP), are measured with a water quality meter (e.g., YSI-556), and color and odor of the groundwater are observed and recorded. The depth-to-groundwater measurements are used to calculate groundwater elevations and develop contour maps.

All groundwater samples, including a blind field duplicate, from the 2014 through 2016 sampling events were sent to Adirondack Environmental Services, Inc., a New York certified laboratory, utilizing standard chain-of-custody and quality assurance/quality control (QA/QC) procedures. QA/QC procedures include the addition of a trip blank with every shipping container (i.e., cooler) with VOC samples and a matrix spike/matrix spike duplicate with all sample delivery groups. Data from all sampling events are used to evaluate the post remedial aquifer conditions. In addition, analytical data for the constituents of concern (COCs) in the groundwater at the Site are tabulated after each sampling event to assess the effectiveness of the selected remedy for the Site. All monitoring data is compared to the NYS Ambient Water Quality Standards (AWQS) and Guidance Values (GV). Groundwater analytical data is discussed in Section 2.0.

1.1.2 Groundwater Extraction and Treatment System Sampling

Sampling of the on-site GWETS includes quarterly sampling of the effluent from the GWETS for chromium, TCE, and pH. Sampling is conducted in accordance with the City of Amsterdam issued Publically Owned Treatment Works (POTW) Permit.

1.1.3 Sediment Basin Monitoring

Each of the three sediment basins downgradient from the Site, Sam Stratton Rd., Chapman Street, and Rt. 5 is inspected annually and subsequent to any emergency which might affect them (such as might occur after an extraordinary rain event), in accordance with the SMP. Inspection frequency is subject to change with the approval of the NYSDEC. The inspection consists of an assessment of the annual accumulation of sediment (since the last inspection) and total accumulation of sediment within the basins and the overall functionality of the basins. If the annual accumulation in a basin exceeds 4 inches or if there is a total accumulation in the basin exceeding 18 inches (all measured from the basin bottom at the end of the 2009 Sediment projects), then sediment samples are collected from the top 4 inches of sediment. The sediment samples are analyzed for cadmium, chromium, nickel and zinc. In case of the smaller basins (Route 5 Basin and Chapman Drive Basin), all sediments will be removed and in case of the bigger basins, sediments from the zone sampled will be removed and disposed offsite if:

- There is 18 inches of accumulated sediment and the sample results are above LEL; or
- Sample results are above the SEL.

1.1.4 Sub-Slab Depressurization System

Currently, the building located on the Site is not occupied; therefore, no operation or inspection of the SSDS is required. If this changes because of a new tenant then the system will be made operational and the lease will require the tenant to operate the system whenever the building is occupied.

2. Evaluate Remedy Performance, Effectiveness, and Protectiveness

2.1 IC/EC Report

The institutional controls (ICs) reported to and by the NYSDEC and included for evaluation in this 2016 PRR are:

- Environmental Easement (EE).

The engineering controls (ECs) reported to and by the NYSDEC and included for evaluation in this PRR are:

- Existing cover system to restrict exposure to impacted materials below the soil cover or building.
- Continued operation of the SSDS at the Site whenever the building is occupied, unless future data warrants otherwise.
- Continued operation of the GWETS.

In addition to the ECs listed above, the SMP includes inspection of three off-site sediment retention basins, as discussed in Section 2.2.2.3.

The only IC for the Site is the EE, which was signed between NWR and the NYSDEC on August 11, 2011 and filed with the Montgomery County Clerk's office on August 25, 2011. A copy of the EE can be found as an appendix to the 2012 PRR report (AECOM. 2012). During the reporting period, the current use of the Site was consistent with the ICs imposed on the property. During the reporting period of December 1, 2014 through November 30, 2016, the Site property was not sold, subdivided, merged, did not undergo a tax map amendment, and was not issued any new federal, state, and/or local permits and has been regularly unoccupied. Visits to the Site and building occur periodically for lease/sale marketing, inspections, repair and maintenance activities.

Annual inspections of the ECs occurred on September 26, 2014, September 25, 2015, and October 25, 2016. All ECs on the Site have been unchanged since the date the controls were implemented or approved by the NYSDEC. The inside cover system (building slab foundation) and the outside cover system (clean soil cover) remain intact. No new cracks were observed in the building slab and there was no evidence of settling or disturbance. For the clean soil cover, there was no evidence of erosion or disturbance. The building was not occupied during the period of December 1, 2013 through November 30, 2016, and therefore, the SSDS was not operated or inspected. The GWETS was operated continuously during the period of December 1, 2013 through November 30, 2016, except during maintenance events. The performance of the GWETS was monitored by the operator in accordance with the Operations and Maintenance Plan.

A SMP was developed for the Site and approved by the NYSDEC in February 2011, and revised and re-approved in July 2011. It has been followed since.

2.2 Monitoring Plan Compliance

2.2.1 Confirmation Compliance with Site Management Plan

The SMP, which was approved by the NYSDEC in February 2011 and subsequently revised and re-approved in July 2011, established a sampling and monitoring program that requires the monitoring of the GWETS effluent, groundwater sampling, and sediment basin inspections, at the frequencies provided in Table 1 below.

Table 1 Sampling and Monitoring Program

Activity	Required Frequency (X)			Compliance Dates
	Quarterly	Semi-Annually	As Required	
GWETS Effluent	X			2014-2016
Groundwater Sampling		X		2014-2016
Sediment Basin			X	2014-2016
Sub-Slab Depressurization System				As Required

2.2.2 Confirm that Performance Standards are Being Met

2.2.2.1 GWETS Influent and Effluent Monitoring

Quarterly monitoring of the GWETS occurred on the following dates:

2/28/2014	3/6/2015	2/18/2016
6/5/2014	5/22/2015	4/14/2016
9/19/2014	9/11/2015	8/11/2016
12/18/2014*	12/10/2015*	10/24/2016*

*effluent sample split with City

The system effluent discharging to the City of Amsterdam's POTW is being monitored in accordance with the POTW permit dated April 1, 2009, which was renewed in April 2012 and April 2015. The current permit expires on March 31, 2018. The limits are set by the permit to ensure that the integrity of the City's waste water treatment plant is not compromised. A list of protocols and sampling frequencies under the current permit are included below:

Table 2 GWETS Effluent Sampling Frequency

Parameter	Frequency	Sample Type	Limit
Flow, gpd	Continuous	Meter	Average not to exceed 20,000 gpd
pH	Quarterly	Grab	6.0 - 9.0
Trichloroethene	Quarterly	Grab	Monitor Only
Chromium	Quarterly	24 hr. composite	10 mg/L

Notes:
gpd – gallons per day
mg/L – milligrams per liter

Samples were collected on the dates listed above. In addition, the City of Amsterdam POTW collected split samples on December 18, 2014, December 10, 2015, and October 25, 2016. In addition to the effluent samples listed above, influent samples are collected from each of the recovery wells (RW-01 and RW-02) and the combined influent. The results of the quarterly sampling are presented in Table 3. All required monitoring parameters were within the limits of the POTW Permit.

The flow volumes measured during 2014 through 2016 and the calculated average daily flow rates are presented in Table 4. The average daily flow rates have decreased and were approximately an order of magnitude lower in 2016 than they were in 2014. AECOM is evaluating the cause of this decrease in flow from RW-02; however, as discussed in Section 2.2.2.2, the TCE plume is stable or decreasing indicating that the GWETS remains effective and protective.

Using the flow volumes (Table 4) and the influent concentrations of TCE (Table 3), the estimated mass of TCE removed since startup of the startup (June 2009) through November 2016 is approximately 168

pounds, as shown on Table 5. Initially, the mass of TCE removed per quarter fluctuated, and when RW-02 came online it was extracting 4-5 times the volume of RW-01 and removing 1.5-2.9 times the mass of TCE (AECOM, 2013). However, as shown in Tables 4 and 5, the volume of groundwater recovered by RW-02 has decreased over time (as discussed above), resulting in a decrease in mass of TCE removed.

2.2.2.2 Groundwater Monitoring

A long term groundwater monitoring program has been established to monitor the extent of the groundwater contamination and to determine the effectiveness of the groundwater remedy. In May and August, groundwater samples were collected from a subset 13 monitoring wells of the existing 22 monitoring wells per the SMP. The selected monitoring wells, well type, and sampling rationale are included below:

Table 6 Wells Sampled for Long Term Groundwater Monitoring

Monitoring Well	Well Type	Rationale
MW-1R	Bedrock	Along plume centerline; upgradient of source
MW-4	Overburden	In overburden above source area
MW-4R	Bedrock	Source area well
MW-10	Bedrock	Along plume centerline; downgradient of source
MW-11	Bedrock	Upgradient sentinel well
MW-13	Bedrock	Along plume centerline; downgradient of source
MW-14	Bedrock	Downgradient sentinel well
MW-15	Bedrock	Downgradient sentinel well
MW-16	Bedrock	Downgradient sentinel well
MW-17	Bedrock	Along plume centerline; downgradient of source
MW-18	Bedrock	Downgradient sentinel well
MW-19	Bedrock	Downgradient sentinel well
MW-20	Bedrock	Downgradient sentinel well

Field Activities

Groundwater monitoring was conducted twice per year during the period of 2014 through 2016 on the following dates:

- May 20-21 and August 11-13, 2014
- May 26-28 and August 25-26, 2015
- May 10-11 and August 18-19, 2016

During each event, water levels were measured at 22 monitoring wells and groundwater quality samples were collected from the 13 monitoring wells, as specified under the SMP.

Prior to sampling the wells, depth to groundwater was measured at the 22 Site monitoring wells and the recovery wells (RW-01 and RW-02) using a water level indicator. The depth to groundwater and the elevation of groundwater in each of the wells for the 2014 through 2016 sampling events are summarized in Appendix A, Table A-1. Copies of the field sheets for the 2014 through 2016 groundwater monitoring events are provided in Appendix B. Please note the following exceptions that occurred during this reporting period:

- August 2014 - MW-20 was observed to be damaged, the depth to water was measured but the water elevation was not calculated. The well was repaired and re-surveyed in November 2014.
- May 2015 - RW-01 was inadvertently not gauged for water level.
- August 2016 - MW-06 was inadvertently not gauged for water level.

The 13 monitoring wells were purged and sampled with a submersible pump using methods specified by the United States Environmental Protection Agency (USEPA) for low flow/low stress sampling (USEPA, 2010). For each well, the intake of the pump was lowered to the middle of the screened interval and water was then pumped at a low flow rate to match the well infiltration rate, with a maximum flow rate of 0.5 liters per minute. Purge water was pumped through an in-line water quality meter to establish that stabilization of the groundwater had occurred prior to sample collection. Water quality readings were documented approximately every five minutes. Stabilization parameters included pH, conductivity, temperature, dissolved oxygen (D.O.), oxidation reduction potential (ORP), and turbidity were recorded on the field notes in Appendix B.

Samples from the groundwater sampling events were analyzed by a New York State Department of Health Environmental Laboratory Approval Program (NYSDOH ELAP) certified laboratory, Adirondack Environmental Services, Inc., for VOCs by EPA Method 8260B, total chromium by Method E200.7, and hexavalent chromium by method SM3500-CR. The groundwater samples results from 2014 through 2016 for the primary constituents of concern are tabulated and shown in Appendix A, Table A-2.

During each sampling event, a duplicate sample (DUP) was collected from one monitoring well for quality assurance/quality control (QA/QC), as indicated in Appendix A, Table A-2. Trip blanks were also submitted during these sampling events for analysis of VOCs.

Groundwater Flow Direction

Groundwater elevation contours for the bedrock aquifer for each of the May and August sampling events for 2014 through 2016 are shown in Figures 3 through 8. Graphs of groundwater elevation and TCE over time are presented in Appendix C.

The 2014 through 2016 bedrock groundwater elevation contours indicate that groundwater flow in the bedrock south of the Ward Products property is to the south-southeast. In the western portion of the property, groundwater flow in the bedrock is to the west-southwest at a much shallower gradient than the rest of the property.

On the property, the effect of the recovery well RW-01 is evident by the cone of depression shown immediately to the south-southeast of the building. The radius of influence of that recovery well is limited to approximately 40 to 80 feet, and the drawdown at that recovery well is approximately 40 feet. Please note that in May 2015, the groundwater level at RW-01 was inadvertently not measured, therefore, the cone of depression cannot be depicted in detail on Figure 5. The radius of influence and the drawdown at any given time will depend on whether RW-01 was actively pumping at the time of well gauging. (Once the well is drawn down and the pump shuts off, based on a decrease in amp load on the motor, the controls will not let the pump restart for a set period of time to allow the well to recharge so that the pump can operate more efficiently).

On Figures 3 and 4 (May and August 2014, respectively), a larger radius of influence is seen for recovery well RW-02, which was installed in late August 2012. These figures show a cone of depression extending to the west of RW-02 approximately 300 feet.

As reported in the 2013 PRR (AECOM, 2013), the radius of influence of RW-02 on bedrock groundwater extended potentially as far west as well MW-18 and as far south as MW-16. Since that time, the extent of RW-02's influence has decreased. The groundwater elevation figures for May and August 2014 (Figures 3 and 4) show the influence of RW-02 extending to the southeast to include offsite well MW-13. A cone of depression for RW-02 is not seen on the groundwater elevations figures for 2015 (Figures 5 and 6) and 2016 (Figures 7 and 8), although the May 2016 contours show a bending around RW-02.

The trends in the groundwater elevation graphs in Appendix C for a number of wells also show a decrease in the drawdown since RW-02 began operating. For example, MW-18 showed approximately 6 feet of drawdown immediately after RW-02 came online, but that has decreased to approximately 3 feet. At well MW-09 which is within 70 feet of RW-02, the initial drawdown was roughly 20 feet, but over time it has decreased to approximately 5 feet. Similar trends can be seen on the graphs for wells MW-10, MW-12, MW-13, MW-14, MW-16, and MW-17. Less drawdown (roughly 5-10 feet) was initially seen upgradient from RW-02 at wells MW-4R, MW-6, MW-7, and MW-8, and the amount of drawdown at those wells has also decreased over time. Wells MW-15 and MW-20 do not appear to be influenced by pumping at RW-02.

However, as discussed below, despite the reduction in flow from RW-02 and the apparent decrease in its radius of influence, the TCE plume is stable or decreasing. The influence of RW-02 on groundwater flow will continue to be evaluated during future groundwater monitoring events.

Groundwater Analytical Results

A summary of the 2014 though 2016 concentrations of TCE and total and hexavalent chromium (the primary constituents of concern) are provided in Appendix A, Table A-2. The results of laboratory analyses (over time) for select constituents in the 13 wells sampled under the SMP are summarized in Appendix A, Table A-3. The Form 1 laboratory data sheets for the 2014 through 2016 sampling events were submitted to the NYSDEC under separate cover after each sampling event. TCE isoconcentration contours for the bedrock aquifer based on the May and August 2014 through 2016 measurements are shown in Figures 9 through 14, respectively. Appendix C presents graphs of TCE and groundwater elevation trends in the Site monitoring wells.

Volatile Organic Compounds

In the six sampling events in 2014 through 2016, VOCs were detected consistently in 6 of the 13 wells (MW-1R, MR-4, MW-4R, MW-10, MW-13, and MW-17). TCE continues to be the predominant VOC detected in the groundwater both on- and off-site. In addition, cis-1,2-DCE was detected in wells MW-4, MW-13, and MW-17. Tetrachloroethene (PCE) was detected in well MW-4R at elevated concentrations in the May 2014 and August 2015 sampling events.

On-Site Monitoring Wells

Five on-site monitoring wells are sampled: four bedrock wells (MW-1R, MW-4R, MW-10, and upgradient well MW-11) and one well (MW-4) that is mostly screened in overburden (5 feet into bedrock).

The highest TCE concentrations are typically detected in the on-site monitoring wells, particularly MW-4R; the 2014 through 2016 results for MW-4R ranged from 40,000 µg/L in May 2014 to 9,200 µg/L in August 2016.These concentrations are within the range of historically observed concentrations for this well (see Appendix A, Table A-3 and the graphs in Appendix C).

As shown on Figures 9 through 14, TCE concentrations decrease by two to three orders of magnitude to the north at well MW-1R and downgradient to the west-southwest at MW-10. The concentrations in MW-1R are consistent with historical results (see Appendix A, Table A-3 and Appendix C). Well MW-10 was used for injection of permanganate in the May 2010 ISCO event and is located approximately 35 feet northwest of RW-02, and has exhibited a decreasing trend in TCE concentration since then.

The upgradient well (MW-11) continues to be non-detect for TCE.

Overburden well MW-4, which is adjacent to MW-4R and screened 5 feet into bedrock, had TCE concentrations in 2014 through 2016 which were slightly lower than those historically observed in this well (see Appendix A, Table A-3 and Appendix C). Prior to 2014, TCE concentrations in this well were typically in the hundreds of µg/L, with occasional spikes an order of magnitude higher (e.g., September 2002 at 6,000 µg/L; September 2005 at 20,000 µg/L; August 2007 at 6,600 µg/L; August 2010 at 5,500 µg/L; and August 2012 at 1,900 µg/L). These spikes correlated to low groundwater elevations measured in this well, when the water table was at or below the top of bedrock (approximately 461 feet msl) (see the graph in Appendix C). However, in August 2015 although the groundwater elevation in this well was below the top of bedrock, a spike in TCE concentration was not observed.

Off-Site Monitoring Wells

Off-site monitoring wells include one cross-gradient well (MW-18) and seven downgradient wells (MW-13, MW-14, MW-15, MW-16, MW-17, MW-19, and MW-20).

As shown on Figures 9 through 14, the TCE plume extends onto the 1 Sam Stratton Road property to well MW-13 (in all 6 events) and to MW-17 (in two events; May 2014 and May 2015). For MW-13, TCE concentrations over the 2014 though 2016 period were slightly lower than those observed historically, and in August 2014 the TCE concentration in this well (26 µg/L) was at the lowest observed since sampling began (see Appendix A, Table A-3). As seen in the graph in Appendix C, a sharp decrease in TCE concentration in MW-13 followed the startup of recovery well RW-02, but the concentration has slightly rebounded as the water level in this well has rebounded. For MW-17, TCE concentrations over the 2014 though 2016 period decreased from 400 µg/L in May 2014 to non-detect in August 2015 through August 2016; however, cis-1,2-DCE concentrations remained consistent with historical results (see Appendix A, Table A-3). The graph in Appendix C does not show the same rebound in TCE concentration in MW-17 with the rebound in water level after the startup of RW-02 as was seen for MW-13.

Cross-gradient well MW-18, which is located on the 5 Edson Street property, historically exhibited occasional low TCE detections above the NYSDEC AWQS of 5 µg/L (see Appendix A, Table A-3 and Appendix C). However, TCE has not been detected in this well above the NYSDEC AWQS since May 2012. As discussed above, operation of the second recovery well (RW-02) appears to exert some influence on water levels at this well.

As shown in Figures 9 through 14, TCE was not detected in 2014 through 2016 in wells MW-14, MW-15, MW-16, MW-19, and MW-20, which represent the downgradient limits of TCE impacts. Historically, TCE had been sporadically detected in these wells above the NYSDEC AWQS (see Appendix A, Table A-3 and Appendix C). Operation of RW-02 showed some impacts on groundwater elevations at MW-14, MW-16, and MW-19 (Appendix C).

As a result of these decreased downgradient concentrations, the TCE plume appears to be contracting back towards the Ward Products property (Figures 9 through 14). The effects of the operation of RW-02 will continue to be evaluated during future groundwater monitoring events.

Chromium

Groundwater samples were analyzed for hexavalent and total chromium in 2014 through 2016, as shown on Appendix A, Table A-2.

In the period of 2014 through 2016, hexavalent chromium was only detected at well MW-1R. Concentrations ranged from 47 µg/L in May 2014 (below the NYSDEC AWQS of 50 µg/L) to 270 µg/L in August 2016. This is consistent with historical results (Appendix A, Table A-3).

In the period of 2014 through 2016, total chromium was detected in four wells (MW-1R, MW-4R, MW-13, and MW-20) at concentrations above the NYSDEC AWQS of 50 µg/L. At MW-1R, total chromium was detected at concentrations ranging from 59 µg/L (May 2016) to 241 µg/L (August 2015). These results are consistent with historical results, as shown on Appendix A, Table A-3. For MW-4R in 2014 through 2016, total chromium was detected once above the AWQS at 95 µg/L in May 2014, but total chromium has been detected historically in this well above the AWQS only two other times (Appendix A, Table A-3). At MW-13 and MW-20, total chromium was detected once in each well above the AWQS during 2014 through 2016 (73.2 µg/L in August 2015 at MW-13, and 116 µg/L in August 2014 at MW-20). For these two wells, these were the only detections of total chromium above the AWQS since sampling began. Potential trends in total chromium for these wells will continue to be evaluated during future groundwater monitoring events.

Chromium (hexavalent and total) was not detected at concentrations above the NYSDEC AWQS in 2013 in any of the other sampled wells.

2.2.2.3 Sediment Basin Monitoring

There are three sediment basins associated with the Site: Route 5 Area Basin, the Chapman Drive Basin, and the Sam Stratton Road Basin. These were inspected in August 2014, August 2015, and December 2016.

The inspections consist of an assessment of the annual (since the last inspection) and total accumulation of sediment within the basins and the overall functionality of the basins. Sediment samples are collected from a basin, if the annual accumulation in the basin:

- Exceeds 4 inches; or
- If there is a total accumulation in the basin exceeding 18 inches.

If sampling is required based on these criteria, then sediment samples are collected from the top 4 inches of sediment and analyzed for total cadmium, chromium, nickel and zinc.

The SMP requires that sediments from a basin be removed and disposed off-site if:

- There is 18 inches of accumulated sediment and the sample results are above the Lowest Effect Level (LEL) sediment guidance values in the NYSDEC “Technical Guidance for Screening Contaminated Sediments” (as cited in the ROD); or
- Sample results are above the Severe Effect Level (SEL) from that same guidance.

During the 2014 and 2015 inspections, the sediment accumulation in each of the three sediment basins did not exceed the criteria listed above; therefore, sediment samples were not collected for analysis of metals in those years.

During the 2016 inspection, the sediment accumulation in the Sam Stratton and Chapman Drive Basins did not exceed the criteria discussed above, and sediment samples were not collected for analysis from these two basins. However, in 2016 more than 4 inches of new sediment accumulation was observed in the Route 5 Area Basin, and sediment samples were collected from this basin for analysis of total cadmium, chromium, nickel and zinc. The results are summarized in Table 7 and show that the concentrations of cadmium, chromium and nickel were greater than their LELs, but less than their SELs. The result for zinc was less than both its LEL and SEL. However, on average across the Route 5 Basin, the total sediment accumulation was less than 18 inches; therefore, sediments are not required to be removed from this basin at this time based on the SMP criteria listed above.

NWR will continue to monitor the accumulation of sediment in the sedimentation basins. Photographs of each basin can be found in Appendix D.

2.2.2.4 Sub-Slab Depressurization System Monitoring

During the reporting period for this PRR, the building remains unoccupied, therefore, no inspection of the system was required.

2.2.2.5 Site Management Periodic Review Report and IC/EC Certification Submittal

The completed Site Management Periodic Review Report and IC/EC Certification Submittal can be found in Appendix E.

3. Evaluate Costs

Total costs for completing the required activities associated with Site monitoring in 2016 were approximately $87,000 which includes, the major cost components of routine operation, maintenance and monitoring of the GWETS, semi-annual groundwater monitoring/sampling, and the submittal of the PRR.

4. Conclusions and Recommendations

This periodic review process is used to determine if the selected remedy continues to be properly managed (as set forth by the ROD), and if the remedy continues to be protective of human health and the environment. This PRR is the third PRR for the Site since the NYSDEC issuance of the Certificate of Completion and covers the period of December 1, 2014 through November 30, 2016.

4.1 Conclusions

The following conclusions discuss the effectiveness of the Site remedy in comparison to the applicable Site remedial goals derived from the ROD.

1. **Implement a remedial design program to provide the necessary details for the construction, operation, maintenance, and monitoring of the remedial program.**

   A Remedial Design/Remedial Action Work Plan was submitted to the NYSDEC (RETEC, December 2007). It has been implemented since then.

2. **Remove approximately 400 cubic yards of contaminated sediments from a 600-foot section (south of the railroad tracks) of the eastern branch of the tributary draining the Site. Additionally, 700 cubic yards of contaminated sediment will be excavated from the Mohawk River at the mouth of the eastern branch of the tributary. Two sediment collection basins will be constructed: one immediately north of the CSX railroad tracks on the east branch, and one immediately north of the rail spur (North of Chapman Street) on the west branch. An existing sediment basin exists on the east branch just south of Sam Stratton Road. The three sediment basins will be inspected annually and periodically sampled to determine if the sediment collecting in them would need to be removed for off-site disposal.**

   A sediment removal action performed between December 2008 and January 2009 removed approximately 1,600 tons of contaminated sediments. A sediment basin (Route 5 Area Sediment Basin) was constructed immediately north of the railroad tracks on the east branch in January 2009. A sediment basin (Chapman Road Area Sediment Basin) was also constructed on the west branch between January 2009 and February 2009 (AECOM, 2009). The basins have been inspected and sampled as required. Additional sediment removal is not required.

3. **Conduct a treatability study and/or pilot study to determine the effectiveness of injection of an oxidant such as potassium permanganate into the bedrock via an existing monitoring well. Groundwater will be tested immediately before and after the injection. The information gathered during the pilot study will be used to determine the efficiency of the technology and the potential for a full-scale application. The results of the treatability study and/or pilot tests will determine the feasibility of this option.**

   A treatability study was performed during the week of June 15, 2009 to determine the effectiveness of potassium permanganate injections. Four wells were injected with 25 pounds of permanganate. The study indicated that full scale injections could be effective in reducing the TCE concentration in the groundwater. However, after completing two full rounds of permanganate injections and based upon analytical data, it was determined that the injections did not have the anticipated result of reducing TCE concentrations in the groundwater. Based on the analytical data NWR petitioned the NYSDEC not to pursue the third round of injections and on April 4, 2012 the NYSDEC concurred. In lieu of the third round of permanganate injections, NWR enhanced the GWETS by installing a second groundwater recovery well in August 2012.

4. **Install a recovery well at a central location on the Site. Extracted groundwater will be pumped to a heated treatment shed, where the concentrations of VOCs will be reduced**

through use of an air stripper before the water is discharged to a sanitary sewer or re-injected into the bedrock.

A single recovery well (RW-01) GWETS was installed outside the southeast portion of the building located on 61 Edson Street to reduce on-site source of contaminants in groundwater and to reduce future migration from the Site. The system was installed in June 2009 and started up on June 15, 2009. In August 2012 a second groundwater extraction well (RW-02) was installed to attempt to reduce migration of TCE off site and piped into the existing GWETS. The system remains in operation.

5. **Following a successful pilot test, the in situ chemical oxidation will be implemented full scale in conjunction with the extraction and treatment system. The oxidant injections will be repeated as necessary as long as it remains cost effective to do so, though there will probably be no more than three events.**

   Please refer to Item 3.

6. **Imposition of an institutional control in the form of an environmental easement that will (a) limit the use and development of the property to industrial use; (b) require compliance with the approved site management plan; (c) restrict the groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.**

   An EE was approved on August 11, 2011 and filed with Montgomery County on August 25, 2011. This PRR includes the required periodic certification.

7. **Develop a site management plan which will include the following institutional and engineering controls: (a) management of the final cover system to restrict excavation below the soil cover or buildings. Excavated soil would be tested, properly handles to protect the health and safety of the workers and the nearby community, and would be properly managed in a manner acceptable to the Department. Entities responsible for maintenance of sediment basins downstream from the Site will be notified that sediment collecting in those basins may be contaminated; (b) if contaminated soils beneath the building slab ever become accessible, it will be removed and properly managed; (c) continued operation of the sub-slab depressurization system at the Ward Products building whenever it is occupied, unless future data warrants otherwise; (d) soil vapor intrusion evaluations at any buildings located above the contaminated groundwater plume if there is a change in the current use of the building; (e) monitoring of groundwater, sediment and indoor air; (f) identification of any use restrictions on the Site; and (g) provisions for the continued proper operation and maintenance of the components of the remedy.**

   The SMP was approved by the NYSDEC in March 2011. Revisions to the SMP were submitted in July 2011 and approved by the NYSDEC in July 2011. Excavation of soils for installation of the 2012 enhancement of the GWETS has occurred, was properly managed and reported to the NYSDEC. No other excavation of soil cover or beneath the building has occurred. The building has been unoccupied so operation of the SSDS is not required. Monitoring has occurred as required. Use restrictions are set forth in the EE and have not been violated. Continuing components of the remedy are being properly operated and maintained as anticipated, except for isolated deviations separately reported to the NYSDEC.

8. **The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are**

either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the Site; and (c) state that nothing has occurred that will impair the ability to the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

This PRR satisfies this item.

9. **The operation of the component of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.**

   The GWETS (installed in June 2009 and expanded in August 2012) is still operating to reduce on-site sources of contaminants in groundwater and to control and reduce future migration of contaminated groundwater from the Site.

10. **Institute a long-term monitoring program for the Site. The monitoring well network at the Site will be sampled semi-annually to monitor the extent of the groundwater contamination. This program will allow the effectiveness of the oxidant injections and the groundwater extraction and treatment system to be monitored and will be a component of the long-term management for the Site. Sediment in the three basins will also be periodically monitored and the results will be sent to the entities responsible for maintenance of the basins.**

    A long-term monitoring program was implemented in the SMP submitted and approved in March 2011, and revised and re-approved in July 2011. A subset 13 monitoring wells have been selected out of the existing complete 22 monitoring well network for long-term monitoring. Monitoring/ inspection of the three sediment basins occurs annually with additional inspections after any emergency which might affect them (such as might occur after an extraordinary rain event).

4.2 Recommendations

The following recommendations are made for the Site:

- Continue operation of the enhanced GWETS as outlined in the SMP until further approval of the NYSDEC allows otherwise.
- Modify the groundwater monitoring program as follows:
  - Reduce the groundwater monitoring interval to annually in August. A qualitative review of graphs of TCE concentration by well by season (i.e., May versus August – see Appendix F) indicates that only two of the wells monitored under the SMP (MW-1R and MW-4) exhibit systematic differences in TCE concentrations between the spring (May) and summer (August) sampling events, with the higher concentrations typically occurring in the August event for both of these wells. The other currently monitored wells do not exhibit a qualitatively observable difference in TCE concentrations between seasons. Therefore, the reduction of the groundwater monitoring frequency to annually in August will continue to adequately monitor TCE plume behavior.
  - Reduce sampling for hexavalent chromium to the following three wells: MW-1R, MW-4, and MW-4R. As shown in Table A-3 of Appendix A, hexavalent chromium has not been detected in MW-10 since 1999, and has never been detected in wells MW-11 and MW-13 through MW-20.
  - Reduce sampling for total chromium to the following three wells: MW-1R, MW-4, and MW-4R. As shown in Table A-3 of Appendix A, total chromium has never been detected above the NYSDEC AWQS of 50 µg/L in wells MW-11 and MW-14 through MW-19. Well MW-10 had one detection above the AWQS of 94 µg/L in 1998. Well MW-13 had one detection above the AWQS (73 µg/L in August 2015), but that result appears to be anomalous since the maximum detection prior to that was 19.9 µg/L in August 2009. Similarly, well MW-20 had one detection above the

AWQS (116 µg/L in August 2014), but that result appears to be anomalous since the maximum detection prior to that was 16.6 µg/L in May 2013.

- Continue to monitor the sediment basins annually and after extraordinary rain events.
- Perform annual site inspections as outlined in the SMP.
- The SMP requires periodic PRRs, not annual PRRs. Given the results shown in this PRR, we recommend preparation and filing of the next PRR in December 2021 for the five year period of December 1, 2016 through November 30, 2021.

5. References

AECOM, 2009. Final Remediation Report, Former Ward Products Site, Amsterdam, NY. July 2009.

AECOM, 2011. Site Management Plan, Ward Products Site, Amsterdam, NY. February 2011, revised July 2011.

AECOM, 2012. Periodic Review Report, Former Ward Products Site, Amsterdam, New York, Site #429004. December 2012.

AECOM, 2013. Periodic Review Report – 2013, Former Ward Products Site, Amsterdam, New York, Site #429004. December 2013.

New York State Department of Environmental Conservation (NYSDEC), 2007. Record of Decision. March 2007.

United States Environmental Protection Agency (USEPA), 2010. Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells. EQASOP-GW-001, Rev. 3, January 19, 2010.

Tables

Tables 1, 2, and 6 are included within the text.

Table 3
Summary of Groundwater Treatment System Monitoring Data
2014 through 2016
61 Edson Street, Amsterdam, NY
NYS DEC Site # 4-029-004

Monitoring Period [a]	Source	Influent			Effluent		
	Parameter	pH	TCE	Chromium	pH	TCE	Chromium
	Units	SU	mg/L	mg/L	SU	mg/L	mg/L
	Limits	n/a	n/a	n/a	6.0 - 9.0	Monitor	10
4Q2013	RW-01	-	2.5	-	-	-	-
(12/10/2013)	RW-02	-	1.2	-	-	-	-
	combined	7.4	1.6	0.011	8.1	0.0012	0.008
2014							
1Q2014	RW-01	-	2.3	-	-	-	-
(2/28/2014)	RW-02	-	1.3	-	-	-	-
	combined	7.3	1.6	0.007	8.2	<0.001	0.009
2Q2014	RW-01	-	2.2	-	-	-	-
(6/5/2014)	RW-02	-	1.3	-	-	-	-
	combined	7.5	1.5	0.008	8.3	<0.001	0.010
3Q2014	RW-01	-	1.5	-	-	-	-
(9/19/2014)	RW-02	-	1.2	-	-	-	-
	combined	7.4	1.4	0.009	7.8	0.410	0.008
4Q2014	RW-01	-	1.8	-	-	-	-
(12/18/2014)	RW-02	-	1.7	-	-	-	-
	combined	8.3	1.8	0.010	7.5	<0.001	0.013
2015							
1Q2015	RW-01	-	1.9	-	-	-	-
(3/6/2015)	RW-02	-	1.4	-	-	-	-
	combined	7.4	1.6	0.007	8.2	<0.001	0.006
2Q2015	RW-01	-	2.3	-	-	-	-
(5/22/2015)	RW-02	-	1.8	-	-	-	-
	combined	7.1	2.3	0.010	8.0	<0.001	0.009
3Q2015	RW-01	-	1.9	-	-	-	-
(9/11/2015)	RW-02	-	1.3	-	-	-	-
	combined	7.3	1.8	0.008	7.9	0.560	0.007
4Q2015	RW-01	-	1.5	-	-	-	-
(12/10/2015)	RW-02	-	2.0	-	-	-	-
	combined	7.4	1.6	0.008	8.3	<0.001	0.010
2016							
1Q2016	RW-01	-	1.3	-	-	-	-
(2/18/2016)	RW-02	-	1.7	-	-	-	-
	combined	7.3	1.7	0.010	7.8	0.580	0.011
2Q2016	RW-01	-	1.5	-	-	-	-
(4/14/2016)	RW-02	-	1.8	-	-	-	-
	combined	7.5	1.5	0.006	8.2	<0.001	0.013
3Q2016	RW-01	-	1.1	-	-	-	-
(8/11/2016)	RW-02	-	1.6	-	-	-	-
	combined	7.4	1.0	0.007	8.0	<0.001	0.008
4Q2016	RW-01	-	NA	-	-	-	-
(10/25/16)	RW-02	-	NA	-	-	-	-
	combined	NA	NA	NA	8.2	0.190	0.032

Notes:
City of Amsterdam Industrial Wastewater Discharge Permit
Effective: 4/1/2012; Expired: 3/31/2015
Reissued Effective: 4/1/2015; Expires: 3/31/2018

n/a - not applicable
NA - not analyzed

[a] The Wastewater Discharge Permit reissued by the City of Amsterdam effective 4/1/2015 changed the reporting frequency to semiannual (SA), with the reporting periods as follows:
-1st SA period: December 1 through May 31
-2nd SA period: June 1 through November 30

Table 4
Summary of Groundwater Treatment System Flow Data
2014 through 2016
61 Edson Street, Amsterdam, NY
NYS DEC Site # 4-029-004

Date of Reading	RW-01 Totalizer Reading (gal)	RW-02 Totalizer Reading (gal)	RW-01 Volume Pumped Since Previous Reading (gal)	RW-01 Average Daily Flow (gpd)	RW-02 Volume Pumped Since Previous Reading (gal)	RW-02 Average Daily Flow (gpd)	Total Volume Pumped Since Previous Reading (gal)	Days Run	Avgerage Daily Flow (gpd)
Permit Limit									*20,000*
1/2/2014	5,951,526 [a]		-	-	-		-	-	-
3/28/2014	3,296,927	3,142,000	-	-	-		487,401	85	6,060
6/27/2014	3,434,626	3,555,800	137,699	1,513	413,800	4,547	551,499	91	6,060
9/26/2014	3,557,752	3,835,100	123,126	1,353	279,300	3,069	402,426	91	4,422
1/5/2015	3,698,107	3,983,650	140,355	1,390	148,550	1,471	288,905	101	2,860
3/26/2015	3,822,700	4,087,840	124,593	1,557	104,190	1,302	228,783	80	2,860
6/30/2015	3,981,520	4,234,100	158,820	1,654	146,260	1,524	305,080	96	3,178
11/25/2015	4,157,490	4,318,800	175,970	1,189	84,700	572	260,670	148	1,761
5/6/2016	4,305,510	4,439,600	148,020	908	120,800	741	268,820	163	1,649
5/13/2016	4,312,190	4,441,210	6,680	954	1,610	230	8,290	7	1,184
5/20/2016	4,318,700	4,443,000	6,510	930	1,790	256	8,300	7	1,186
5/27/2016	4,324,410	4,444,700	5,710	816	1,700	243	7,410	7	1,059
10/4/2016	4,406,800	4,477,140	82,390	634	32,440	250	114,830	130	883
10/25/2016	4,411,840	4,478,330	5,040	240	1,190	57	6,230	21	297
11/23/2016	4,423,100	4,480,140	11,260	388	1,810	62	13,070	29	451
11/28/2016	4,425,950	4,480,430	2,850	570	290	58	3,140	5	628

Notes:
[a] The 1/2/2014 totalizer reading was the combined readings for RW-01 and RW-02.
gal - gallons
gpd - gallons per day

Table 5
Estimate of Mass of TCE Removed by Treatment System
2014 through 2016
61 Edson Street, Amsterdam, NY
NYS DEC Site # 4-029-004

Monitoring Period	Flow Period	Total Volume Pumped in Period (gal)	Sample Date	Influent TCE (combined) (mg/L)	Mass of TCE Removed (lbs) [a]
4th Q 2013	9/27/13-1/2/14	588,470	12/10/2013	1.7	**8.3**
1st Q 2014	1/2-3/28/14	487,401	2/28/2014	1.6	6.5
2nd Q 2014	3/28-6/27/14	551,499	6/5/2014	1.5	6.9
3rd Q 2014	6/27-9/26/14	402,426	9/19/2014	1.4	4.7
4th Q 2014	9/26/14-1/5/15	288,905	12/18/2014	1.8	4.3
				Subtotal:	***22.4***
1st Q 2015	1/5-3/26/15	228,783	3/6/2015	1.6	3.1
2nd Q 2015	3/26-6/30/15	305,080	5/22/2015	2.3	5.9
2nd SA 2015 [b]	6/30-11/25/15	260,670	9/11/2015	1.8	3.9
				Subtotal:	***12.9***
1st SA 2016	11/25/15-5/27/16	292,820	12/10/2015	1.6	
			2/18/2016	1.7	
			4/14/2016	1.5	
			Average [c]	1.6	3.9
2nd SA 2016	5/27-11/28/16	137,270	8/11/2016	1.0	
			10/25/2016	NA	
			Average [c]	1.0	1.1
				Subtotal:	***5.0***
System Startup through September 2013 [d]					119
				Total since sytem startup:	***168***

Notes:

gal - gallons
lbs - pounds
mg/L - milligrams per liter
NA - not analyzed
Q - quarter
SA - semiannual
TCE - trichloroethene

[a] Estimated VOCs removed (lbs) = volume water pumped (gal) x (TCE influent concentration (mg/L)) x conversion factor (8.35x10-6 lb*L/gal*mg). The combined influent sample result was used.

[b] Due to a delay in receipt of the reissued Wastewater Discharge Permit, the 2nd Semiannual Monitoring Period for 2015 covered 6/30/2015 through 11/30/2015.

[c] The average of the quarterly TCE concentrations was used to calculate the approximate mass removed beginning with the 1st Semiannual Period 2016.

[d] Mass removed as reported in the 2013 PRR (AECOM, 2013).

Table 7
December 2016 Settling Basin Sediment Sampling Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

Constituent	Units	Screening Levels [1]			Sample Results
		NYSDEC LEL [2]	NYSDEC SEL [2]	Recreational Soil/ Sediment [3]	Rt 5 Basin 120816 12/8/2016
Cadmium	mg/kg	0.6	9	450	1.94
Chromium (total)	mg/kg	26	110	450	66.4
Nickel	mg/kg	16	50	20,000	40.6
Zinc	mg/kg	120	270	100,000	55.1

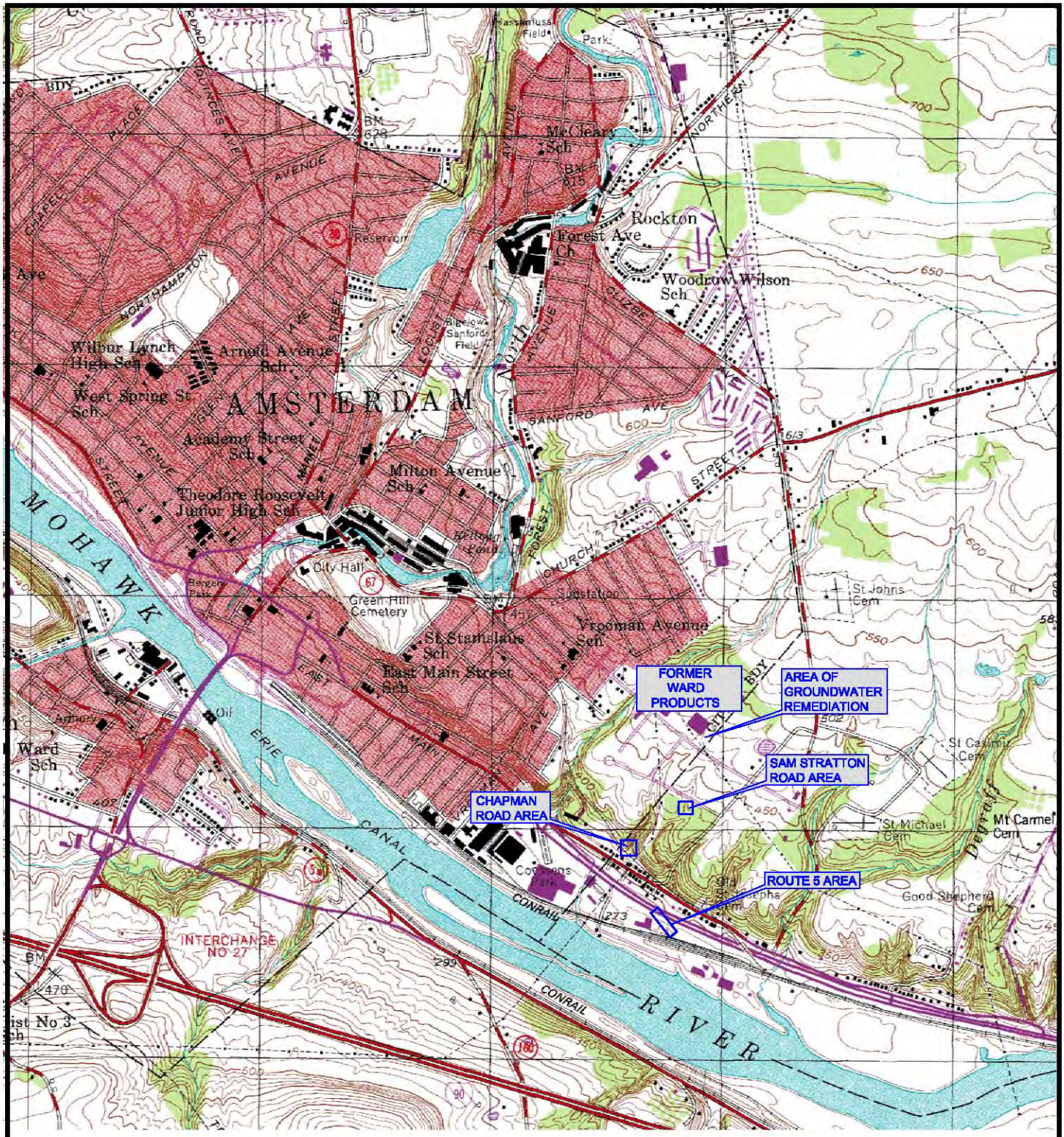
Notes:

(1) From Table 3-1 of the *Feasibility Study Report and Risk Assessment, Ward Products Corporation Site, Amsterdam, New York, Site Code 4-29-004* (RETEC, September 25, 2006).

(2) NYSDEC Sediment Criteria for Protection of Benthic Organisms. LEL = Lowest Effect Level. SEL = Severe Effect Level.

(3) Protection of Human Health, Recreational Soil/Sediment value based on EPA Region IX Preliminary Remediation Goals , dated October 2004 (risk factor = 10^{-6} or Hazard Quotient = 1.0), assuming recreational exposure is less than the industrial exposure scenario.

Figures



UNITED STATES GEOLOGIC SURVEY
AMSTERDAM QUADRANGLE
NEW YORK
7.5 MINUTE SERIES (TOPOGRAPHY)

0' 1000' 2000' 4000'

AECOM

FIGURE 1
SITE LOCATION MAP
FORMER WARD PRODUCTS

AMSTERDAM, NEW YORK

FILE NAME:	DRN	PROJECT NO.	DATE	FIGURE NO.
	KAM	60134119	11 - 2010	1

Plotted By: Meisterk
Layout-Sheet Name: 1
Plot File Date Created: Nov/11/2010 8:23 AM

Filename: L:\WORK\107297\CADD\AECOM-CADD\SITE_MANAGEMENT\WARDS-SITE-MAP_NAD83_EAST-ZONE_FT.DWG

SARATOGA HORSEWORKS
57 EDSON ST.

PARKING AREA

WARD PRODUCTS
61 EDSON ST.

BUSH MILLWORKS
54 EDSON ST.

EDSON STREET

SAM STRATTON ROAD

GRAVEL PARKING LOT

SOLAR CITY
(FORMERLY
PROZONE LOCKERS)
1 SAM STRATTON RD.

DRIVEWAY AND PARKING LOT

STORAGE BUILDING

OFFICES AND MANUFACTURING BUILDING

WATER WELL

FORMERLY
FIBER GLASS
INDUSTRIES, INC.
69 EDSON ST.

SAFARI ENTERPRISES INC.
64 EDSON ST.

MW-1
MW-1R
MW-2
MW-3
MW-4
MW-4R
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
MW-13
MW-14
MW-15
MW-16
MW-17
MW-18
MW-19
MW-20
RW-01
RW-02
IW-02
IW-03
IW-04

LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL

N

50 0 100

1"=100'

AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**GROUNDWATER MONITORING WELL NETWORK**
DATE: 12/09/16	DRWN: RCW		**FIGURE 2**

SARATOGA HORSEWORKS
57 EDSON ST.

PARKING AREA

WARD PRODUCTS
61 EDSON ST.

BUSH MILLWORKS
54 EDSON ST.

FORMERLY FIBER GLASS INDUSTRIES, INC.
69 EDSON ST.

SAFARI ENTERPRISES INC.
64 EDSON ST.

1 SAM STRATTON RD.

GRAVEL PARKING LOT

DRIVEWAY AND PARKING LOT

STORAGE BUILDING

OFFICES AND MANUFACTURING BUILDING

EDSON STREET

SAM STRATTON ROAD

MW-1 468.98
MW-1R 468.43
MW-2 468.92
MW-3 469.58
MW-4 465.35
MW-4R 452.23
MW-5 458.62
MW-6 451.97
MW-7 452.11
MW-8 453.46
MW-9 440.47
MW-10 440.48
MW-11 472.82
MW-12 447.86
MW-13 437.12
MW-14 444.04
MW-15 438.32
MW-16 429.04
MW-17 440.18
MW-18 442.96
MW-19 411.77
MW-20 421.10
RW-01 400.92
RW-02 429.42
IW-02
IW-03
IW-04

445 450 455 460 465 470 440 430 420 410 435 425 415

LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL
- 445 — 5' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 450 — 10' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 468.49 — GROUNDWATER ELEVATION (ft. MSL)
- GROUNDWATER FLOW DIRECTION

N

50 0 100

1"=100'

NOTES:
1. MW-1, MW-2, MW-3 AND MW-4 ARE OVERBURDEN WELLS AND ARE NOT USED TO CONTOUR.

AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK GROUNDWATER ELEVATIONS MAY 20-21, 2014**
DATE: 12/09/16	DRWN: RCW		**FIGURE 3**

SARATOGA HORSEWORKS
57 EDSON ST.

PARKING AREA

WARD PRODUCTS
61 EDSON ST.

BUSH MILLWORKS
54 EDSON ST.

FORMERLY FIBER GLASS INDUSTRIES, INC.
69 EDSON ST.

SAFARI ENTERPRISES INC.
64 EDSON ST.

1 SAM STRATTON RD.

EDSON STREET

SAM STRATTON ROAD

GRAVEL PARKING LOT

DRIVEWAY AND PARKING LOT

STORAGE BUILDING

OFFICES AND MANUFACTURING BUILDING

MW-1 466.04
MW-1R 465.41
MW-2 465.54
MW-3 465.53
MW-4 461.95
MW-4R 449.30
MW-5 458.10
MW-6 449.57
MW-7 449.34
MW-8 450.24
MW-9 440.61
MW-10 441.01
MW-11 469.84
MW-12 447.16
MW-13 438.90
MW-14 442.73
MW-15 436.08
MW-16 427.70
MW-17 440.29
MW-18 441.92
MW-19 410.74
MW-20 [a]
RW-01 404.06
RW-02 425.02
IW-01
IW-02
IW-03
IW-04

445 450 455 460 465 440 430 420 435 425 415

LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL
- 445 — 5' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 450 — 10' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 468.49 — GROUNDWATER ELEVATION (ft. MSL)
- NM — NOT MEASURED
- GROUNDWATER FLOW DIRECTION

N

50 0 100
1"=100'

NOTES:

1. MW-1, MW-2, MW-3 AND MW-4 ARE OVERBURDEN WELLS AND ARE NOT USED TO CONTOUR.
2. (a) MW-20 WAS OBSERVED TO BE DAMAGED AT THE TIME OF THE MONITORING EVENT.

AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK GROUNDWATER ELEVATIONS AUGUST 11, 2014**
DATE: 12/09/16	DRWN: RCW		**FIGURE 4**

SARATOGA HORSEWORKS
57 EDSON ST.

PARKING AREA

WARD PRODUCTS
61 EDSON ST.

BUSH MILLWORKS
54 EDSON ST.

FORMERLY
FIBER GLASS
INDUSTRIES, INC.
69 EDSON ST.

SAFARI ENTERPRISES INC.
64 EDSON ST.

1 SAM STRATTON RD.

EDSON STREET

SAM STRATTON ROAD

GRAVEL PARKING LOT

DRIVEWAY AND PARKING LOT

STORAGE BUILDING

OFFICES AND MANUFACTURING BUILDING

MW-1 466.65
MW-1R 466.32
MW-2 465.83
MW-3 466.73
MW-4 461.89
MW-4R 452.74
MW-5 457.79
MW-6 452.94
MW-7 451.55
MW-8 453.29
MW-9 446.44
MW-10 448.49
MW-11 469.70
MW-12 449.25
MW-13 447.03
MW-14 441.31
MW-15 436.36
MW-16 428.28
MW-17 441.96
MW-18 442.17
MW-19 410.66
MW-20 418.16
RW-01 NM
RW-02 446.59
IW-02
IW-03
IW-04

445 450 460 465 455 440 435 430 425 420 415

LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL
- 445 — 5' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 450 — 10' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 468.49 — GROUNDWATER ELEVATION (ft. MSL)
- NM — NOT MEASURED
- GROUNDWATER FLOW DIRECTION

N

50 0 100

1"=100'

NOTES:
1. MW-1, MW-2, MW-3 AND MW-4 ARE OVERBURDEN WELLS AND ARE NOT USED TO CONTOUR.

AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK GROUNDWATER ELEVATIONS MAY 26-28, 2015**
DATE: 12/09/16	DRWN: RCW		**FIGURE 5**

SARATOGA HORSEWORKS
57 EDSON ST.

PARKING AREA

WARD PRODUCTS
61 EDSON ST.

BUSH MILLWORKS
54 EDSON ST.

FORMERLY FIBER GLASS INDUSTRIES, INC.
69 EDSON ST.

SAFARI ENTERPRISES INC.
64 EDSON ST.

1 SAM STRATTON RD

EDSON STREET

SAM STRATTON ROAD

GRAVEL PARKING LOT

DRIVEWAY AND PARKING LOT

STORAGE BUILDING

OFFICES AND MANUFACTURING BUILDING

MW-1 Dry
MW-1R 462.67
MW-2 462.91
MW-3 462.37
MW-4 460.06
MW-4R 449.86
MW-5 Dry
MW-6 450.59
MW-7 450.76
MW-8 451.02
MW-9 447.48
MW-10 448.18
MW-11 467.29
MW-12 447.20
MW-13 446.25
MW-14 440.04
MW-15 432.81
MW-16 426.82
MW-17 441.50
MW-18 440.54
MW-19 409.09
MW-20 417.05
RW-01 407.05
RW-02 446.53
IW-01
IW-02
IW-03
IW-04

LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL
- 445 — 5' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 450 — 10' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 468.49 — GROUNDWATER ELEVATION (ft. MSL)
- GROUNDWATER FLOW DIRECTION

N

50 0 100

1"=100'

NOTES:
1. MW-1, MW-2, MW-3 AND MW-4 ARE OVERBURDEN WELLS AND ARE NOT USED TO CONTOUR.

AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK GROUNDWATER ELEVATIONS AUGUST 25-26, 2015**
DATE: 12/09/16	DRWN: RCW		**FIGURE 6**

SARATOGA HORSEWORKS
57 EDSON ST.

PARKING AREA

WARD PRODUCTS
61 EDSON ST.

BUSH MILLWORKS
54 EDSON ST.

FORMERLY
FIBER GLASS
INDUSTRIES, INC.
69 EDSON ST.

SAFARI ENTERPRISES INC.
64 EDSON ST.

1 SAM STRATTON RD.

EDSON STREET

SAM STRATTON ROAD

GRAVEL PARKING LOT

DRIVEWAY AND PARKING LOT

STORAGE BUILDING

OFFICES AND MANUFACTURING BUILDING

MW-1 468.52
MW-1R 468.37
MW-2 467.05
MW-3 468.87
MW-4 464.65
MW-4R 453.61
MW-5 458.39
MW-6 454.13
MW-7 454.01
MW-8 454.58
MW-9 450.34
MW-10 450.87
MW-11 471.20
MW-12 450.12
MW-13 449.74
MW-14 443.62
MW-15 436.91
MW-16 430.20
MW-17 444.32
MW-18 443.45
MW-19 412.17
MW-20 419.72
IW-02
IW-03
IW-04
RW-01 409.32
RW-02 449.40

LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL
- 445 — 5' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 450 — 10' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 468.49 — GROUNDWATER ELEVATION (ft. MSL)
- GROUNDWATER FLOW DIRECTION

N

50 0 100

1"=100'

NOTES:
1. MW-1, MW-2, MW-3 AND MW-4 ARE OVERBURDEN WELLS AND ARE NOT USED TO CONTOUR.

AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK GROUNDWATER ELEVATIONS MAY 10-11, 2016**
DATE: 12/09/16	DRWN: RCW		**FIGURE 7**

SARATOGA HORSEWORKS
57 EDSON ST.

PARKING AREA

WARD PRODUCTS
61 EDSON ST.

BUSH MILLWORKS
54 EDSON ST.

FORMERLY FIBER GLASS INDUSTRIES, INC.
69 EDSON ST.

SAFARI ENTERPRISES INC.
64 EDSON ST.

1 SAM STRATTON RD.

EDSON STREET

SAM STRATTON ROAD

GRAVEL PARKING LOT

DRIVEWAY AND PARKING LOT

STORAGE BUILDING

OFFICES AND MANUFACTURING BUILDING

MW-1 467.28
MW-1R 467.03
MW-2 451.35
MW-3 463.63
MW-4 462.2
MW-4R 450.97
MW-5 458.14
MW-6 NM
MW-7 451.26
MW-8 452.03
MW-9 447.53
MW-10 447.57
MW-11 468.64
MW-12 447.30
MW-13 446.17
MW-14 440.51
MW-15 433.70
MW-16 426.47
MW-17 441.14
MW-18 440.54
MW-19 428.94*
MW-20 417.46
RW-01 427.03
RW-02 446.42
IW-01
IW-02
IW-03
IW-04

LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL
- 445 — 5' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 450 — 10' GROUNDWATER CONTOUR (ft. MSL) (DASHED WHERE INFERRED)
- 468.49 — GROUNDWATER ELEVATION (ft. MSL)
- NM — NOT MEASURED
- GROUNDWATER FLOW DIRECTION

N

50 0 100

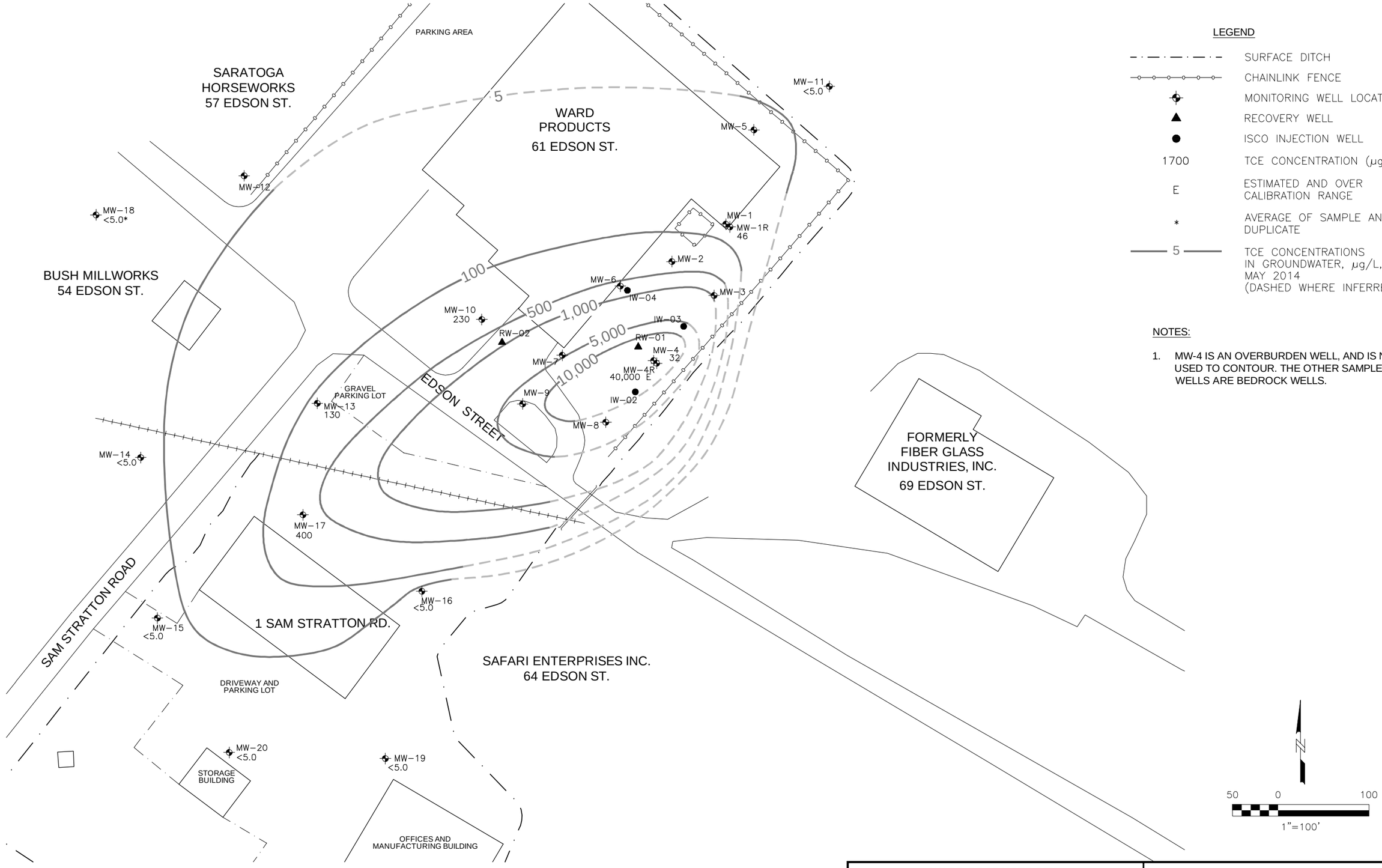
1"=100'

NOTES:

1. MW-1, MW-2, MW-3 AND MW-4 ARE OVERBURDEN WELLS AND ARE NOT USED TO CONTOUR.
2. THE GROUNDWATER ELEVATION AT MW-19 WAS ANOMALOUSLY HIGH AND WAS NOT USED TO CONTOUR, BASED ON PROFESSIONAL JUDGEMENT.

AECOM

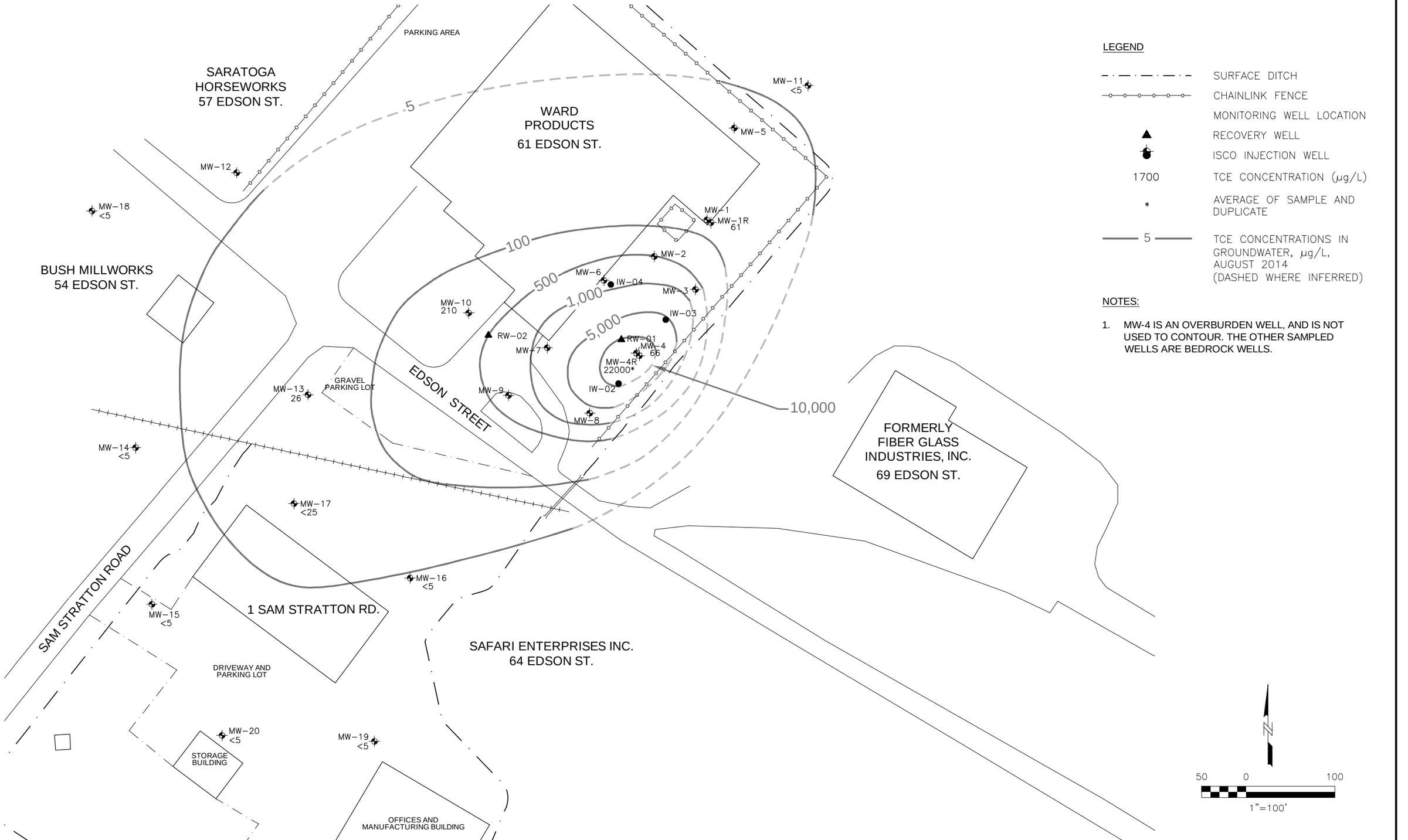
WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK GROUNDWATER ELEVATIONS AUGUST 18-19, 2016**
DATE: 12/09/16	DRWN: RCW		**FIGURE 8**



AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK TCE CONCENTRATIONS (ug/L) MAY 20-21 2014**
DATE: 12/09/16	DRWN: RCW		**FIGURE 9**

File: P:\Jobs\Rem_Eng\Project Files\New Water Realty\12518-Ward Products\CADD\AMSTERDAM_TCE_CONTOURS_2014.dwg Layout: TCE Cont 5-14 User: warrenr Plotted: Dec 09, 2016 - 1:28pm Xref's:



LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL
- 1700 — TCE CONCENTRATION (µg/L)
- * — AVERAGE OF SAMPLE AND DUPLICATE
- 5 — TCE CONCENTRATIONS IN GROUNDWATER, µg/L, AUGUST 2014 (DASHED WHERE INFERRED)

NOTES:

1. MW-4 IS AN OVERBURDEN WELL, AND IS NOT USED TO CONTOUR. THE OTHER SAMPLED WELLS ARE BEDROCK WELLS.

AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK TCE CONCENTRATIONS (ug/L) AUGUST 11-13 2014**
DATE: 12/09/16	DRWN: RCW		**FIGURE 10**

PARKING AREA

SARATOGA HORSEWORKS
57 EDSON ST.

WARD PRODUCTS
61 EDSON ST.

BUSH MILLWORKS
54 EDSON ST.

FORMERLY FIBER GLASS INDUSTRIES, INC.
69 EDSON ST.

SAFARI ENTERPRISES INC.
64 EDSON ST.

1 SAM STRATTON RD.

DRIVEWAY AND PARKING LOT

STORAGE BUILDING

OFFICES AND MANUFACTURING BUILDING

GRAVEL PARKING LOT

EDSON STREET

SAM STRATTON ROAD

MW-11 < 5.0
MW-5
MW-12
MW-18 < 5.0
MW-1
MW-1R 55*
MW-2
MW-6
IW-04
MW-3
MW-10 250
RW-02
IW-03
RW-01
MW-4 65
MW-7
MW-4R 24000
MW-9
IW-02
MW-13 480
MW-8
MW-14 < 5.0
MW-17 33
MW-16 < 5.0
MW-15 < 5.0
MW-20 < 5.0
MW-19 < 5.0

5
100
500
1,000
5,000
10,000

LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL
- 1700 TCE CONCENTRATION (µg/L)
- * AVERAGE OF SAMPLE AND DUPLICATE
- 5 TCE CONCENTRATIONS IN GROUNDWATER, µg/L, MAY 2015 (DASHED WHERE INFERRED)

NOTES:

1. MW-4 IS AN OVERBURDEN WELL, AND IS NOT USED TO CONTOUR. THE OTHER SAMPLED WELLS ARE BEDROCK WELLS.

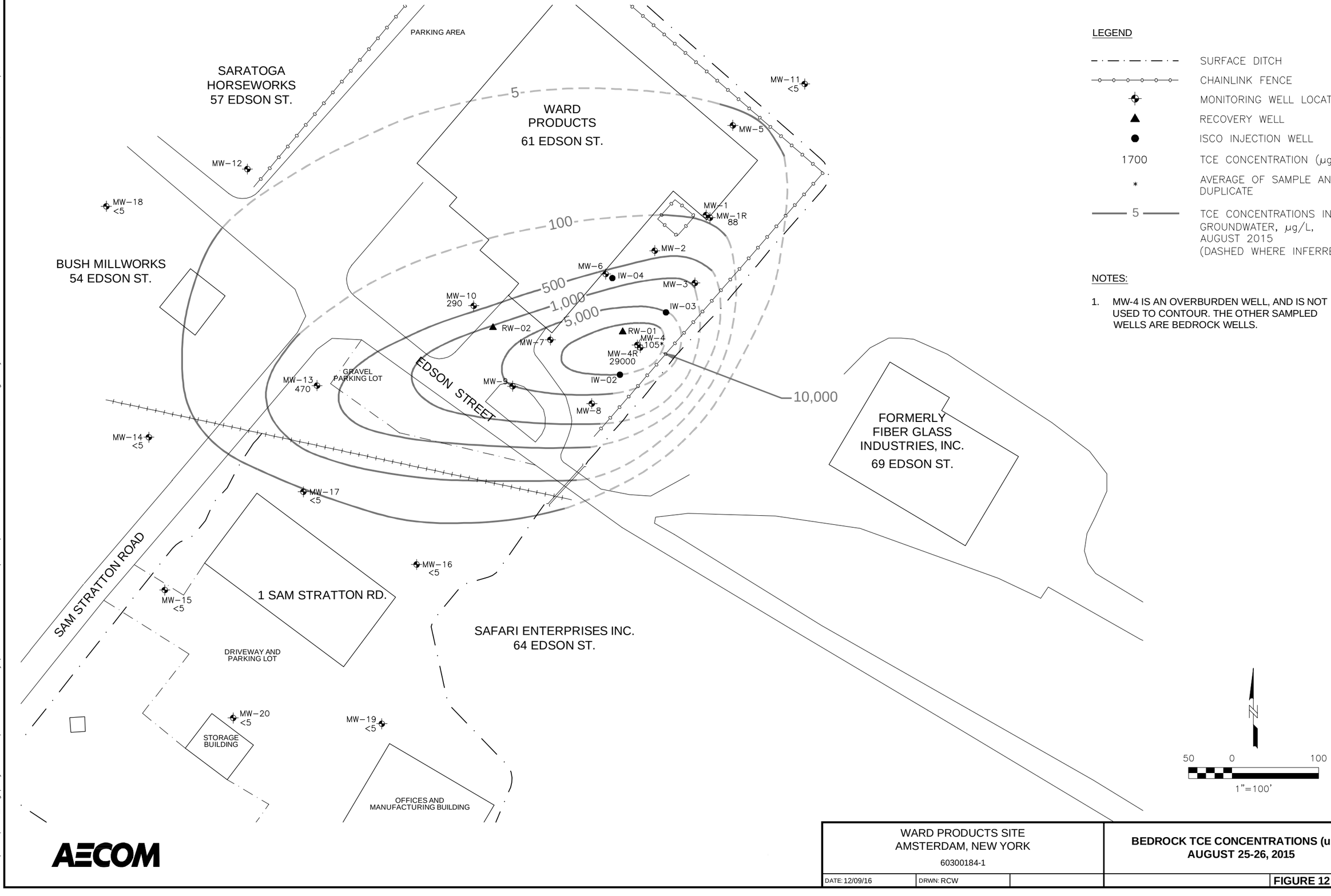
N

50 0 100

1"=100'

AECOM

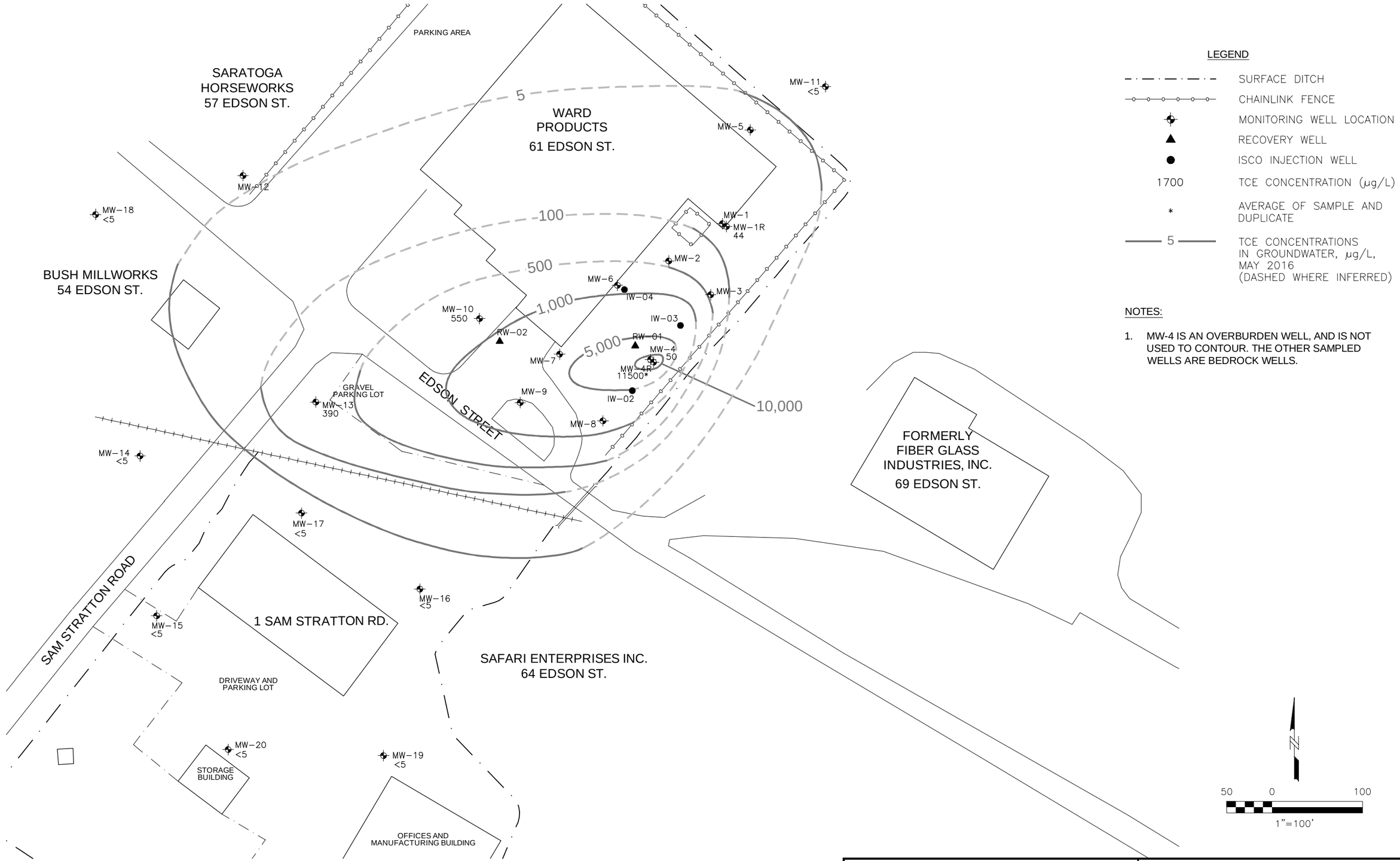
WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK TCE CONCENTRATIONS (ug/L) MAY 26-28, 2015**
DATE: 12/09/16	DRWN: RCW		**FIGURE 11**



AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK TCE CONCENTRATIONS (ug/L) AUGUST 25-26, 2015**
DATE: 12/09/16	DRWN: RCW		**FIGURE 12**

File: P:\Jobs\Rem_Eng\Project Files\New Water Realty\12518-Ward Products\CADD\AMSTERDAM_TCE_CONTOURS_2015.dwg Layout: TCE Cont 8-15 User: warrenr Plotted: Dec 09, 2016 - 1:27pm Xref's:



AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK TCE CONCENTRATIONS (ug/L) MAY 10-11, 2016**
DATE: 12/09/16	DRWN: RCW		**FIGURE 13**

File: P:\Jobs\Rem_Eng\Project Files\New Water Realty\12518-Ward Products\CADD\AMSTERDAM_TCE_CONTOURS_2016.dwg Layout: TCE Cont 5-16 User: warrenr Plotted: Dec 09, 2016 - 1:27pm Xref's:

PARKING AREA

SARATOGA HORSEWORKS
57 EDSON ST.

WARD PRODUCTS
61 EDSON ST.

BUSH MILLWORKS
54 EDSON ST.

FORMERLY FIBER GLASS INDUSTRIES, INC.
69 EDSON ST.

SAFARI ENTERPRISES INC.
64 EDSON ST.

1 SAM STRATTON RD.

DRIVEWAY AND PARKING LOT

STORAGE BUILDING

OFFICES AND MANUFACTURING BUILDING

GRAVEL PARKING LOT

EDSON STREET

SAM STRATTON ROAD

MW-1 79
MW-1R
MW-2
MW-3
MW-4 140
MW-4R 9050*
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10 510
MW-11 <5
MW-12
MW-13 190
MW-14 <5
MW-15 <5
MW-16 <5
MW-17 <5
MW-18 <5
MW-19 <5
MW-20 <5
IW-02
IW-03
IW-04
RW-01
RW-02

5
100
500
1,000
5,000

LEGEND

- SURFACE DITCH
- CHAINLINK FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL
- ISCO INJECTION WELL
- 1700 TCE CONCENTRATION (µg/L)
- * AVERAGE OF SAMPLE AND DUPLICATE
- 5 TCE CONCENTRATIONS IN GROUNDWATER, µg/L, AUGUST 2013 (DASHED WHERE INFERRED)

NOTES:

1. MW-4 IS AN OVERBURDEN WELL, AND IS NOT USED TO CONTOUR. THE OTHER SAMPLED WELLS ARE BEDROCK WELLS.

N

50 0 100

1"=100'

AECOM

WARD PRODUCTS SITE AMSTERDAM, NEW YORK 60300184-1			**BEDROCK TCE CONCENTRATIONS (ug/L) AUGUST 18-19, 2016**
DATE: 12/09/16	DRWN: RCW		**FIGURE 14**

Appendix A 2014 through 2016 Groundwater Data Tables

Table A-1
Summary of Groundwater Elevation Measurements - 2014 through 2016
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

Monitoring Well	Top of Casing Elevation (Ft)	2014				2015				2016			
		May 20-21, 2014		August 11-13, 2014		May 26-28, 2015		August 25-26, 2015		May 10-11, 2016		August 18-19, 2016	
		Depth to Water (Ft)	Water Elevation (Ft)	Depth to Water (Ft)	Water Elevation (Ft)	Depth to Water (Ft)	Water Elevation (Ft)	Depth to Water (Ft)	Water Elevation (Ft)	Depth to Water (Ft)	Water Elevation (Ft)	Depth to Water (Ft)	Water Elevation (Ft)
MW-1	471.55	2.57	468.98	5.51	466.04	4.90	466.65	Dry	Dry	3.03	468.52	4.27	467.28
MW-1R	471.46	3.03	468.43	6.05	465.41	5.14	466.32	8.79	462.67	3.09	468.37	4.43	467.03
MW-2	471.20	2.28	468.92	5.66	465.54	5.37	465.83	8.29	462.91	4.15	467.05	19.85 [d]	451.35 [d]
MW-3	473.03	3.45	469.58	7.70	465.33	6.30	466.73	10.66	462.37	4.16	468.87	9.40	463.63
MW-4	470.17	4.82	465.35	8.22	461.95	8.28	461.89	10.11	460.06	5.52	464.65	7.90	462.27
MW-4R	470.29	18.06	452.23	20.99	449.30	17.55	452.74	20.43	449.86	16.68	453.61	19.32	450.97
MW-5	475.62	17.00	458.62	17.52	458.10	17.83	457.79	Dry	Dry	17.23	458.39	17.48	458.14
MW-6	470.97	19.00	451.97	21.40	449.57	18.03	452.94	20.38	450.59	16.84	454.13	NM [e]	NM [e]
MW-7	469.14	16.93	452.21	19.80	449.34	17.59	451.55	18.38	450.76	15.13	454.01	17.88	451.26
MW-8	467.38	13.92	453.46	17.14	450.24	14.09	453.29	16.36	451.02	12.80	454.58	15.35	452.03
MW-9	465.43	24.96	440.47	24.82	440.61	18.99	446.44	17.95	447.48	15.09	450.34	17.90	447.53
MW-10	466.77	26.29	440.48	25.76	441.01	18.28	448.49	18.59	448.18	15.90	450.87	19.20	447.57
MW-11	485.37	12.55	472.82	15.53	469.84	15.67	469.70	18.08	467.29	14.17	471.20	16.73	468.64
MW-12	468.18	20.32	447.86	21.02	447.16	18.93	449.25	20.98	447.20	18.06	450.12	20.88	447.30
MW-13	462.12	25.00	437.12	23.22	438.90	15.09	447.03	15.87	446.25	12.38	449.74	15.95	446.17
MW-14	453.66	9.62	444.04	10.93	442.73	12.35	441.31	13.62	440.04	10.04	443.62	13.15	440.51
MW-15	445.20	6.88	438.32	9.12	436.08	9.84	435.36	12.39	432.81	8.29	436.91	11.50	433.70
MW-16	449.50	20.46	429.04	21.80	427.70	21.22	428.28	22.68	426.82	19.30	430.20	23.03	426.47
MW-17	450.84	10.66	440.18	10.55	440.29	8.88	441.96	9.34	441.50	6.52	444.32	9.70	441.14
MW-18	463.76	20.80	442.96	21.84	441.92	21.59	442.17	23.22	440.54	20.31	443.45	23.22	440.54
MW-19	441.64	29.87	411.77	30.90	410.74	30.98	410.66	32.55	409.09	29.47	412.17	12.70 [f]	428.94 [f]
MW-20 [b]	442.38	21.28	421.10	23.00 [a]	NM [a]	24.30	418.16	25.41	417.05	22.74	419.72	25.00	417.46
RW-01	472.08	71.16	400.92	68.02	404.06	NM [c]	NM [c]	65.03	407.05	62.76	409.32	45.05	427.03
RW-02*	465.57	36.15	429.42	40.55	425.02	18.98	446.59	19.04	446.53	16.17	449.40	19.15	446.42

Notes:
NM - Not measured
*RW-02 was formerly IW-01. RW-02 TOC elevation is estimated.
[a] August 2014, MW-20 was observed to be damaged; as a result, the depth to water was measured but the water elevation was not calculated.
[b] MW-20 was observed to be damaged in August 2014, and was repaired and re-surveyed in November 2014.
[c] May 2015, RW-01 was inadvertently not gauged for water level.
[f] August 2016, the water level reported for MW-02 is highly suspect, as it was approximately 15 ft lower than previously measured.
[e] August 2016, MW-06 was inadvertently not gauged for water level.
[f] August 2016, the water level reported for MW-19 is highly suspect, as it was approximately 15 ft higher than previously measured.

Table A-2
Summary of Primary Constituents of Interest - 2014 through 2016
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

Well Number	May 20-21, 2014	August 11-13, 2014	May 26-28, 2015	August 25-26, 2015	May 10-11, 2016	August 18-19, 2016
Trichloroethene (µg/L)		**NYSDEC GQS = 5 µg/L**				
MW-1R	**46**	**61**	**55***	**88**	**44**	**79**
MW-4	**32**	**66**	**65**	**105***	**50**	**140**
MW-4R	**40,000 E**	**22000***	**24000**	**29000**	**11500***	**9050***
MW-10	**230**	**210**	**250**	**290**	**550**	**510**
MW-11	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-13	**130**	**26**	**480**	**470**	**390**	**190**
MW-14	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-15	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-16	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-17	**400**	<25	**33**	<5.0	<5.0	<5.0
MW-18	<5.0*	<5.0	<5.0	<5.0	<5.0	<5.0
MW-19	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Hexavalent Chromium (µg/L)		**NYSDEC GQS = 50 µg/L**				
MW-1R	47	**80**	**80***	**240**	**65**	**270**
MW-4	<20	<20	<20	<20*	<20	<20
MW-4R	<20	<20 [1]	<20	<20	<20*	<20*
MW-10	<20	<20	<20	<20	<20	<20
MW-11	<20	<20	<20	<20	<20	<20
MW-13	<20	<20	<20	<20	<20	<20
MW-14	<20	<20	<20	<20	<20	<20
MW-15	<20	<20	<20	<20	<20	<20
MW-16	<20	<20	<20	<20	<20	<20
MW-17	<20	<20	<20	<20	<20	<20
MW-18	<20*	<20	<20	<20	<20	<20
MW-19	<20	<20	<20	<20	<20	<20
MW-20	<20	<20	<20	<20	<20	<20
Total Chromium (µg/L)		**NYSDEC GQS = 50 µg/L**				
MW-1R	**63.4**	**107**	**86.4***	**241**	**59**	**270**
MW-4	<2.7	17.1	3.1 B	<9.9*	18.6	14.8
MW-4R	**95**	42 [1]	12.3	<9.9	<9.9*	8.65*
MW-10	10 B	15.9	8.8 B	<9.9	<9.9	<6.9
MW-11	6.2 B	<2.8	<2.8	<9.9	<9.9	<6.9
MW-13	11.7	<2.8	<2.8	**73.2**	<9.9	<6.9
MW-14	<2.7	<2.8	<2.8	<9.9	<9.9	<6.9
MW-15	<2.7	<2.8	<2.8	<9.9	<9.9	<6.9
MW-16	24.6	<2.8	4.0 B	<9.9	<9.9	9.6 B
MW-17	5.6 B	<2.8	<2.8	<9.9	<9.9	<6.9
MW-18	<2.7 (*Dup - 5.6 B)	<2.8	<2.8	<9.9	<9.9	<6.9
MW-19	9.6 B	11.8	<2.8	<9.9	<9.9	<6.9
MW-20	10.1	**116**	11.9	<9.9	<9.9	<6.9

Notes:

B - Contamination in associated method blank

E - Estimated value outside of calibration range of instrument.

Dup - Field duplicate sample.

NYSDEC GQS - New York State Department of Environmental Conservation Groundwater Quality Standard

Semiannual groundwater monitoring conducted according to the "Site Management Plan, Ward Products Site, Site # 4-29-004, Amsterdam, New York" (AECOM, February 2011).

* Average of primary and duplicate sample results (reporting limit used for non-detect results)

[1] In the August 2014 event, a duplicate sample was only collected for VOC analysis.

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-1R												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
9/5/97	**6.77**	**7.16J**	**14**	<1	**4J**	NA	<2	**36**	<2	**3J**	**410**	<2
11/3/97	**12**	**11.5**	**33**	<1	**6**	NA	<2	**34**	<2	**4J**	**690**	<2
5/8/98	**0.89**	**1.48**	<5	<5	<5	<10	<5	NA	NA	<5	**180**	<10
8/26/98	**1.2**	**0.99**	**11**	<5	<5	<10	<5	NA	NA	<5	**280**	<10
11/17/98	**6.4**	**5.71**	**65**	<25	**30**	<50	<25	NA	NA	<25	**550**	<50
5/24/99	**0.55**	**0.451**	<5	<5	<5	<10	<5	NA	NA	<5	**100**	<10
8/24/99	**1.99**	**1.87**	**48**	<10	<10	<20	<10	NA	NA	<10	**420**	<20
11/15/99	**0.68**	**0.5**	**36**	<5	<5	<10	<5	NA	NA	<5	**280**	<10
5/23/00	**0.3**	**0.323**	<10	<10	<10	<20	<10	NA	NA	<10	**160**	<20
8/23/00	**0.41**	**0.349**	**10**	<5	<5	<10	<5	NA	NA	<5	**170**	<10
5/22/01	**0.26**	**0.26**	**10**	<10	<10	<20	<10	NA	NA	<10	**140**	<20
8/29/01	**0.43**	**0.365**	**11**	<10	<10	<20	<10	NA	NA	<10	**170**	<20
6/17/02	**0.16**	**0.216**	<5	<5	<5	<10	<5	NA	NA	<5	**62**	<10
9/16/02	**0.16**	**0.16**	<10	<10	<10	<20	<10	NA	NA	<10	**110**	<20
9/10/03	**0.25**	**0.22**	**17**	<10	<10	<20	<10	**14**	<10	<10	**180**	<20
5/19/04	**0.14**	**0.139**	<5	<5	<5	NA	<5	<5	<5	<5	**96**	<10
8/18/04	**0.2**	**0.214**	<10	<10	<10	NA	<10	<10	<10	<10	**180**	<10
5/11/05	**0.12**	**0.124**	**4J**	<10	<10	<10	<10	**2J**	<10	<10	**94**	<10
9/22/05	**0.03**	**0.319**	**10J**	<10	**2J**	<10	<10	**14**	<10	**2J**	**200E**	<10
5/23/06	**0.13**	**0.132**	**5J**	<10	**6J**	<10	<10	**4J**	<10	<10	**110**	<10
9/22/05	**0.26**	**0.241**	**9J**	<10	<10	<10	<10	**7J**	<10	<10	**150**	<10
5/30/07	**0.119**	**0.117**	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	**68**	<10.0
8/6/07	<.02	**0.019**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
6/25/08	**0.083**	**0.08**	<10	<10	<10	<10	<10	<10	<10	<10	**59**	<10
8/25/08	**0.09**	**0.135**	<5	<5	<5	<10	<5	<5	<5	<5	**95**	<10
5/19/09	**0.06**	**0.0557**	<5	<5	<5	<10	<5	<5	<5	<5	**68**	<10
8/12/09	**0.11**	**0.122**	**5.3**	<5	<5	<10	<5	<5	<5	<5	**100**	<10
5/5/10	**0.06**	**0.0682**	**2.3 J**	<5	<5	<10	<5	<5	<5	<5	**63**	<10
8/31/10	**0.29**	**0.311**	**5.3**	<5	<5	<10	<5	**6**	<5	<5	**140**	<10
5/26/11	**0.05**	**0.0698**	<5	<5	**4.4J**	<10	<5	<5	<5	<5	**120**	<10
8/30/11	**0.11**	**0.127**	<5	<5	<5	<10	<5	<5	<5	<5	**93**	<10
5/23/12	**0.06**	**0.0582**	<5	<5	<5	<10	<5	<5	<5	<5	**58**	<10
8/22/12	**0.37**	**0.855**	**4.3 J**	<5	<5	<10	<5	**5.1**	<5	<5	**130**	<10
5/13/13	**0.08**	**0.117**	**2.1 J**	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	**53**	< 10
8/28/13	**0.2**	**0.195**	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	**86**	< 10
5/20/14	**0.047**	**0.0634**	<5	<5	<5	<10	<5	<5	<5	<5	**46**	<10
8/13/14	**0.08**	**0.107**	<5	<5	<5	<10	<5	<5	<5	<5	**61**	<10
5/26/15	**0.08**	**0.097**	<5	<5	<5	<10	<5	<5	<5	<5	**54**	<10
8/25/15	**0.24**	**0.241**	<5	<5	<5	<10	<5	<5	<5	<5	**88**	<10
5/10/16	**0.065**	**0.059**	<5	<5	<5	<10	<5	<5	<5	<5	**44**	<10
8/18/16	**0.27**	**0.27**	<5	<5	<5	<10	<5	<5	<5	<5	**79**	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-4												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
8/22/96	**0.07**	**0.09**	<5	<5	<5	NA	<5	<5	<5	<5	**540**	<5
5/22/97	**0.086**	NA	<5	<5	<5	NA	<5	<5	<5	<5	**330**	<5
9/5/97	**0.0817**	**0.078J**	<1	<1	**1J**	NA	<1	<2	<2	<1	**330**	<2
11/3/97	**0.027J**	NA	<1	<1	**1J**	NA	<1	<2	<2	<1	**540**	<2
5/8/98	**0.1**	**0.11**	<5	<5	<5	<10	<5	NA	NA	<5	**300**	<10
8/26/98	**0.1**	**0.07**	<12	<12	<12	<25	<12	NA	NA	<12	**400**	<25
11/17/98	**0.06**	**0.068**	<100	<100	<100	<200	<100	NA	NA	<100	**3200**	<200
5/24/99	**0.08**	**0.08**	<25	<25	<25	<50	<25	NA	NA	<25	**800**	<50
8/24/99	**0.08**	**0.064**	<25	<25	<25	<50	<25	NA	NA	<25	**760**	<50
11/15/99	**0.1**	**0.066**	<25	<25	<25	<50	<25	NA	NA	<25	**920**	<50
5/23/00	**0.08**	**0.079**	<25	<25	<25	<50	<25	NA	NA	<25	**460**	<50
8/23/00	**0.07**	**0.068**	<25	<25	<25	<50	<25	NA	NA	<25	**470**	<50
5/22/01	**0.04**	**0.037**	<10	<10	<10	<20	<10	NA	NA	<10	**240**	<20
8/30/01	**0.04**	**0.043**	<125	<25	<25	<20	<25	NA	NA	<25	**300**	<50
6/18/02	**0.05**	**0.052**	<13	<13	<13	<25	<13	NA	NA	<13	**300**	<25
9/17/02	**0.04**	**0.039**	<250	<250	<250	<500	<250	NA	NA	<250	**6000**	<500
9/11/03	**0.05**	<0.005	<12	<12	<12	<25	<12	<12	<12	<12	**430**	<25
5/19/04	**0.06**	**0.045**	<10	<10	<10	NA	<10	<10	<10	<10	**330**	<20
8/18/04	**0.04**	**0.0569**	<20	<20	<20	NA	<20	<20	<20	<20	**390**	<20
5/11/05	**0.05**	**0.0441**	<20	<20	<20	<20	<20	<20	<20	<20	**340**	<20
9/22/05	**0.03**	**0.0288**	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	**20000E**	<1000
5/22/06	**0.03**	**0.029**	<20	<20	<20	<20	<20	<20	<20	<20	**300**	<20
8/23/06	**0.04**	**0.0289**	<50	<50	<50	<50	<50	<50	<50	<50	**690**	<50
5/30/07	<0.020	**0.016**	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	**190**	<10.0
8/6/07	<0.020	**0.022**	<250	<250	<250	<500	<250	<250	<250	<250	**6600**	<500
6/25/08	<0.02	**0.018**	<20	<20	<20	<20	<20	<20	<20	<20	**250**	<20
8/26/08	<0.02	**0.018**	<10	<10	<10	<20	<10	<10	<10	<10	**360**	<20
5/19/09	**0.03**	**0.029**	<10	<10	<10	<20	<10	<10	<10	<10	**260**	<20
8/11/09	**0.03**	**0.0296**	<10	<10	<10	<20	<10	<10	<10	<10	**290**	<20
5/6/10	**0.03**	**0.0403**	<5	<5	<5	<10	<5	<5	<5	<5	**140**	<10
8/31/10	**0.05**	**0.0401**	<250	<250	<250	<500	<250	<250	<250	<250	**5500**	<500
5/25/11	<0.02	**0.0143**	<25	<25	**20 J**	<50	<25	<25	<25	<25	**460**	<50
8/30/11	<0.02	<0.0047	<5	<5	<5	<10	<5	**2.2 J**	<5	<5	**160**	<10
5/22/12	<0.02	**0.0082 B**	<5	<5	<5	<10	<5	<5	<5	<5	**110**	<10
8/22/12	<0.02	**0.0748**	<5	<5	<5	<10	<5	**20**	<5	**31**	**1900 D**	<10
5/13/13	< 0.02	**0.0285**	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	**130**	< 10
8/26/13	< 0.02	**0.0027 B**	< 5.0	< 5.0	< 5.0	< 10	< 5.0	**47**	< 5.0	< 5.0	**190**	< 10
5/20/14	<0.02	<0.0027	<5	<5	<5	<10	<5	<5	<5	<5	**32**	<10
8/11/14	<0.02	**0.0171**	<5	<5	<5	<10	<5	**17**	<5	<5	**66**	<10
5/26/15	<0.02	**0.0031 B**	<5	<5	<5	<10	<5	**6.8**	<5	<5	**65**	<10
8/25/15*	<0.020	<0.0099	<5	<5	<5	<10	<5	**34**	<5	<5	**110**	<10
5/10/16	<0.020	**0.0186**	<5	<5	<5	<10	<5	<5	<5	<5	**50**	<10
8/18/16	<0.020	**0.0148**	<5	<5	<5	<10	<5	**44**	<5	<5	**140**	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-4R												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
9/4/97	**0.0155**	<0.030	<500	<500	<500	NA	<500	<500	<500	**1000**	**140000**	<500
11/3/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/22/98	**0.0052**	**0.0092J**	<20	<20	<20	NA	<20	**80J**	<40	**210**	**28000**	ND
5/8/98	**0.03**	**0.03**	<500	<500	<500	<1000	<500	NA	NA	<500	**22000**	<1000
8/26/98	**0.03**	**0.005**	<500	<500	<500	<1000	<500	NA	NA	<500	**17000**	<1000
11/16/98	**0.03**	**0.015**	<1200	<1200	<1200	<2500	<1200	NA	NA	<1200	**28000**	<2500
5/24/99	**0.04**	**0.006**	<1200	<1200	<1200	<2500	<1200	NA	NA	<1200	**52000**	<2500
8/24/99	**0.02**	**0.008**	<500	<500	<500	<1000	<500	NA	NA	<500	**14000**	<1000
11/15/99	<0.02	<0.005	<1250	<1250	<1250	<2500	<1250	NA	NA	<1250	**25000**	<2500
5/23/00	<0.02	**0.017**	<500	<500	<500	<1000	<500	NA	NA	<500	**20000**	<2500
8/23/00	<0.02	**0.006**	<500	<500	<500	<1000	<500	NA	NA	<500	**19000**	<2500
5/22/01	<0.02	**0.012**	<2500	<2500	<2500	<2500	<2500	NA	NA	<2500	**45000**	<5000
8/30/01	<0.02	**0.009**	<1250	<1250	<1250	<2500	<1250	NA	NA	<1250	**13000**	<2500
6/18/02	<0.02	**0.008**	<500	<500	<500	<1000	<500	NA	NA	<500	**14000**	<1000
9/17/02	<0.02	**0.005**	<250	<250	<250	<500	<250	NA	NA	<250	**7500**	<500
9/11/03	<0.02	**0.006**	<500	<500	<500	<1000	<250	<500	<500	<500	**19000**	<1000
5/19/04	<0.02	<0.005	<1000	<1000	<1000	NA	<1000	<1000	<1000	<1000	**49000**	<2000
8/18/04	<0.020	**0.0071B**	<2000	<2000	<2000	NA	<2000	<2000	<2000	<2000	**28000**	<2000
5/11/05	<0.020	**0.0076B**	<20000	<20000	<20000	<20000	<20000	<20000	<20000	<20000	**180000**	<20000
9/22/05	<0.020	**0.0047B**	<5000	<5000	<5000	<5000	<5000	<5000	<5000	<5000	**70000**	<5000
5/22/06	<0.020	**0.0071B**	<2000	<2000	<2000	<2000	<2000	<2000	<2000	<2000	**24000**	<2000
8/23/06	<0.020	**0.0138**	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	**21000E**	<1000
5/30/07	<0.020	**0.022**	<5000	<5000	<5000	<5000	<5000	<5000	<5000	<5000	**59000**	<5000
8/6/07	<.02	<.005	<250	<250	<250	<500	<250	<250	<250	<250	**7400**	<500
6/25/08	**0.03**	**0.036**	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<2500	**47000**	<2500
8/25/08	**0.03**	**0.026**	<1200	<1200	<1200	<2500	<1200	<1200	<1200	<1200	**28000**	<2500
5/19/09	**0.05**	**0.0276**	<1200	<1200	<1200	<2500	<1200	<1200	<1200	<1200	**45000**	<2500
8/11/09	**0.02**	**0.0347**	<500	<500	<500	<1000	<500	<500	<500	<500	**10000**	<1000
5/5/10	<0.020	**0.0254**	<500	<500	<500	<1000	<500	<500	<500	**330 J**	**18000**	<1000
8/31/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/28/10	NA	NA	<250	<250	<250	<500	<250	<250	<250	<250	**7000**	<500
5/25/11	<0.02	<0.005	<1000	<1000	**970 J**	<2000	<1000	<1000	<1000	<1000	**23000**	<2000
8/30/11	<0.02	<0.0047	<2500	<2500	<2500	<5000	<2500	<2500	<2500	**1200 J**	**47000**	<5000
5/22/12	**0.04**	**0.111**	<1200	<1200	<1200	<2500	<1200	<1200	<1200	**1000 J**	**37000**	<2500
8/22/12	<0.02	<0.0051	<1200	<1200	**350 J**	<2500	<1200	<1200	<1200	**1300**	**41000**	<2500
5/13/13	< 0.02	**0.122**	< 1200	< 1200	< 1200	< 2500	< 1200	< 1200	< 1200	**400 J**	**12000**	< 2500
8/26/13	< 0.02	**0.0196**	< 1000	< 1000	**1200**	< 2000	< 1000	< 1000	< 1000	**940 J**	**27000**	< 2000
5/20/14	<0.02	**0.095**	<1000	<1000	<1000	<2000	<1000	<1000	<1000	**1400**	**40000 E**	<2000
8/11/14	<0.02	**0.042**	<2000	<2000	<2000	<4000	<2000	<2000	<2000	<2000	**22000**	<4000
5/26/15	<0.02	**0.0123**	<1000	<1000	<1000	<2000	<1000	<1000	<1000	<1000	**24000**	<2000
8/25/15	<0.020	<0.0099	<1000	<1000	<1000	<2000	<1000	<1000	<1000	**1100**	**29000**	<2000
5/10/16	<0.020	<0.0099	<1000	<1000	<1000	<2000	<1000	<1000	<1000	<1000	**12000**	<2000
8/18/16	<0.020	**0.0104**	<500	<500	<500	<1000	<500	<500	<500	<500	**9200**	<1000

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-10												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
1/22/98	**0.0071**	**0.0146J**	<2	<2	**5J**	NA	**7J**	**39**	**6J**	**8J**	**2900**	<4
5/8/98	**0.09**	**0.094**	<50	<50	<50	<100	<50	NA	NA	<50	**1800**	<100
8/26/98	**0.05**	**0.021**	<125	<125	<125	<250	<125	NA	NA	<125	**5500**	<250
11/17/98	**0.05**	**0.023**	<250	<250	<250	<500	<250	NA	NA	<250	**5000**	<500
5/25/99	**0.02**	<0.005	<120	<120	<120	<250	<120	NA	NA	<120	**6000**	<250
8/24/99	<0.02	**0.016**	<250	<250	<250	<500	<250	NA	NA	<250	**7800**	<500
11/16/99	<0.02	**0.008**	<250	<250	<250	<500	<250	NA	NA	<250	**8000**	<500
5/23/00	<0.02	**0.021**	<250	<250	<250	<500	<250	NA	NA	<250	**12000**	<500
8/23/00	<0.02	**0.012**	<250	<250	<250	<500	<250	NA	NA	<250	**7000**	<500
5/22/01	<0.02	**0.012**	<250	<250	<250	<500	<250	NA	NA	<250	**6000**	<500
8/30/01	<0.02	**0.012**	<250	<250	<250	<500	<250	NA	NA	<250	**5700**	<500
6/18/02	<0.02	**0.008**	<500	<500	<500	<1000	<500	NA	NA	<500	**7200**	<1000
9/18/02	<0.02	**0.012**	<125	<125	<125	<250	<125	NA	NA	<125	**4500**	<250
9/11/03	<0.02	<0.005	<120	<120	<120	<250	<120	<120	<120	<120	**5000**	<250
5/19/04	<0.02	**0.045**	<120	<120	<120	NA	<120	<120	<120	<120	**3800**	<250
8/18/04	<0.020	**0.0229**	<250	<250	<250	NA	<250	<250	<250	<250	**3500**	<250
5/12/05	<0.020	**0.0269**	<500	<500	<500	<500	<500	<500	<500	<500	**3800**	<500
9/22/05	<0.020	**0.0232**	<500	<500	<500	<500	<500	<500	<500	<500	**4100**	<500
5/23/06	<0.020	**0.0213**	<250	<250	<250	<250	<250	<250	<250	<250	**4700**	<250
8/24/06	<0.020	**0.0332**	<500	<500	<500	NA	<500	<500	<500	<500	**5100**	<500
5/29/07	<0.020	**0.0064 J**	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	**6300**	<1000
8/6/07	<.02	**0.01**	<250	<250	<250	<500	<250	<250	<250	<250	**5400**	<500
6/25/08	<0.02	**0.008**	<250	<250	<250	<250	<250	<250	<250	<250	**3700**	<250
8/26/08	<0.02	<0.005	<250	<250	<250	<500	<250	<250	<250	<250	**3900**	<500
5/20/09	<0.02	**0.0095**	<250	<250	<250	<500	<250	<250	<250	<250	**5900**	<500
8/12/09	<0.02	<0.0052	<100	<100	<100	<200	<100	<100	<100	<100	**3400**	<200
5/6/10	<0.020	<0.0047	<50	<50	<50	<100	<50	<50	<50	<50	**1000**	<100
9/1/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/28/10	NA	NA	<50	<50	<50	<100	<50	<50	<50	<50	**2000 E**	<100
5/26/11	<0.02	<0.005	<50	<50	<50	<100	<50	<50	<50	<50	**1300**	<100
8/30/11	<0.02	<0.0047	<50	<50	<50	<100	<50	<50	<50	<50	**940**	<100
5/23/12	<0.02	<0.0051	<25	<25	<25	<50	<25	**14 J**	<25	<25	**700**	<50
8/22/12	<0.02	<0.0051	<50	<50	<50	<100	<50	**18 J**	<50	<50	**980**	<100
5/14/13	< 0.02	< 0.0027	< 10	< 10	< 10	< 20	< 10	**6.1 J**	< 10	< 10	**240**	< 20
8/28/13	< 0.02	**0.0035 B**	< 10	< 10	< 10	< 20	**2.7 J**	**8.5 J**	< 10	< 10	**260**	< 20
5/20/14	<0.02	**0.010 B**	<10	<10	<10	<20	<10	<10	<10	<10	**230**	<20
8/12/14	<0.02	**0.0159**	<10	<10	<10	<20	<10	<10	<10	<10	**210**	<20
5/26/15	<0.02	**0.0088 B**	<10	<10	<10	<20	<10	<10	<10	<10	**250**	<20
8/25/15	<0.020	<0.0099	<10	<10	<10	<20	<10	<10	<10	<10	**290**	<20
5/10/16	<0.020	<0.0099	<25	<25	<25	<50	<25	<25	<25	<25	**550**	<50
8/18/16	<0.020	<0.0069	<25	<25	<25	<50	<25	<25	<25	<25	**510**	<50

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-11												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
1/22/98	<0.0005	<0.0066	<1	<1	<1	NA	<1	<2	<2	<1	<1	<2
5/8/98	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
8/25/98	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
11/17/98	<0.02	**0.006**	<5	<5	<5	<10	<5	NA	NA	<5	**180**	<10
5/24/99	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
8/23/99	<0.02	**0.006**	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
11/15/99	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
5/23/00	<0.02	**0.008**	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
8/22/00	<0.02	**0.007**	<5	<5	**6**	<10	<5	NA	NA	<5	<5	<10
5/21/01	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
8/29/01	<0.02	**0.007**	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
6/17/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
9/16/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
9/10/03	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/19/04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
8/18/04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/12/05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
9/22/05	<0.02	**0.0050B**	<10	<10	<10	<10	<10	<10	<10	<10	**3J**	<10
5/23/06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
8/24/06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/30/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
8/6/07	<0.02	<.005	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
6/25/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
8/25/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/20/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
8/12/09	<0.02	<0.0052	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/7/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
9/1/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/26/11	<0.02	**0.0267**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/31/11	<0.02	<0.0047	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/24/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/24/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/13/13	< 0.02	< 0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
8/27/13	< 0.02	<0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
5/20/14	<0.02	**0.0062 B**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/11/14	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/27/15	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/25/15	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/10/16	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/18/16	<0.020	<0.0069	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-13												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
8/23/99	<0.02	<0.005	<10	<10	<10	<20	<10	NA	NA	<10	**290**	<20
11/16/99	<0.02	<0.005	<50	<50	<50	<100	<50	NA	NA	<50	**750**	<100
5/24/00	<0.02	<0.005	<5	<5	<5	<10	**14**	NA	NA	<5	**530**	<10
8/23/00	<0.02	<0.005	<25	<25	<25	<50	<25	NA	NA	<25	**650**	<50
5/21/01	<0.02	**0.005**	<50	<50	<50	<100	<50	NA	NA	<50	**840**	<100
8/30/01	<0.02	**0.006**	<50	<50	<50	<100	<50	NA	NA	<50	**940**	<100
6/18/02	<0.02	<0.005	<25	<25	<25	<50	<25	NA	NA	<25	**600**	<50
9/18/02	<0.02	<0.005	<50	<50	<50	<100	<50	NA	NA	<50	**700**	<100
9/11/03	<0.02	<0.005	<25	<25	<25	<50	<25	**59**	<25	<25	**800**	<50
5/19/04	<0.02	<0.005	<25	<25	<25	NA	<25	**46**	<25	<25	**740**	<50
8/18/04	<0.020	**0.0027B**	<50	<50	<50	NA	<50	**44J**	<50	<50	**740**	<50
5/12/05	<0.020	**0.0084B**	<100	<100	<100	<100	<100	<100	<100	<100	**950**	<100
9/22/05	<0.020	<0.0023	<50	<50	<50	<50	<50	**26J**	<50	<50	**540**	<50
5/23/06	<0.020	**0.0048B**	<50	<50	<50	<50	<50	**48J**	<50	<50	**600**	<50
8/24/06	<0.020	**0.0138**	<100	<100	<100	<100	<100	**62J**	<100	<100	**1000**	<100
5/30/07	<0.020	**0.010 J**	<100	<100	<100	<100	<100	**48 J**	<100	<100	**1000**	<100
8/7/07	<0.02	**0.006**	<50	<50	<50	<100	<50	**66**	<50	<50	**1600**	<100
6/25/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
8/25/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/20/09	<0.02	**0.0074**	<50	<50	<50	<100	<50	**81**	<50	<50	**1300**	<100
8/12/09	<0.02	**0.0199**	<50	<50	<50	<100	<50	**66**	<50	<50	**1000**	<100
5/6/10	<0.020	<0.0047	<25	<25	<25	<50	<25	**32**	<25	<25	**510**	<50
9/1/10	<0.020	<0.0047	<10	<10	<10	<20	<10	**17**	<10	<10	**270**	<20
10/28/10	NA	NA	<25	<25	<25	<50	<25	**31**	<25	<25	**410**	<50
5/26/11	<0.02	<0.005	<25	<25	<25	<50	<25	**38**	<25	<25	**1000 E**	<50
8/31/11	<0.02	<0.0047	<25	<25	<25	<50	<25	**18 J**	<25	<25	**440**	<50
5/23/12	<0.02	**0.0076 B**	<25	<25	<25	<50	**15 J**	**69**	**13 J**	<25	**560**	<50
8/23/12	<0.02	<0.0051	<25	<25	<25	<50	**20 J**	**120**	**16 J**	<25	**850**	<50
5/14/13	< 0.02	**0.0053 B**	< 10	< 10	< 10	< 20	**5.7 J**	**39**	**6 J**	< 10	**390**	< 20
8/28/13	< 0.02	<0.0027	< 25	< 25	< 25	< 50	< 25	**51**	< 25	< 25	**320**	< 50
5/21/14	<0.02	**0.0117**	<5	<5	<5	<10	<5	**59**	<5	<5	**130**	<10
8/12/14	<0.02	<0.0028	<5	<5	<5	<10	<5	**69**	<5	<5	**26**	<10
5/27/15	<0.02	<0.0028	<50	<50	<50	<100	<50	<50	<50	<50	**480**	<100
8/26/15	<0.020	**0.0732**	<50	<50	<50	<100	<50	<50	<50	<50	**470**	<100
5/10/16	<0.020	<0.0099	<25	<25	<25	<50	<25	**40**	<25	<25	**390**	<50
8/18/16	<0.020	<0.0069	<10	<10	<10	<20	<10	**56**	<10	<10	**190**	<20

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-14												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
8/22/00	<0.02	**0.011**	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
5/21/01	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
8/30/01	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
6/19/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
9/17/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
9/12/03	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/18/04	NA	NA	<5	<5	<5	NA	<5	<5	<5	<5	<5	<10
8/16/04	NA	NA	<10	<10	<10	NA	<10	<10	<10	<10	<10	<10
5/12/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
9/23/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
5/23/06	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
8/24/06	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
5/30/07	NA	NA	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	**17**	<10.0
8/7/07	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
6/25/08	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
8/25/08	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/20/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/11/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/7/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/30/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/26/11	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/31/11	<0.02	<0.0047	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/23/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	**10**	<10
8/23/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	**3.5 J**	<10
5/14/13	< 0.02	< 0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
8/28/13	< 0.02	<0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
5/21/14	<0.02	<0.0027	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/12/14	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/27/15	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/25/15	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/10/16	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/19/16	<0.020	<0.0069	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-15												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
8/22/00	<0.02	**0.009**	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
5/21/01	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
8/30/01	<0.02	**0.005**	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
6/19/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
9/17/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
9/12/03	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/18/04	NA	NA	<5	<5	<5	NA	<5	<5	<5	<5	<5	<10
8/16/04	NA	NA	<10	<10	<10	NA	<10	<10	<10	<10	<10	<10
5/12/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
9/23/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
5/23/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
8/25/06	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/30/07	NA	NA	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
8/7/07	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
6/25/08	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
8/25/08	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/20/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/11/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/7/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/30/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/26/11	NA	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	**11**	<10
8/31/11	<0.02	<0.0047	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/22/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	**57**	<10
8/23/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	**4.8 J**	<10
5/15/13	< 0.02	< 0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
8/29/13	< 0.02	<0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
5/21/14	<0.02	<0.0027	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/12/14	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/28/15	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/26/15	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/10/16	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/19/16	<0.020	<0.0069	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-16												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
6/19/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
9/17/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	**33**	<10
9/11/03	<0.02	<0.005	<10	<10	<10	<20	<10	**26**	<10	<10	**400**	<20
5/16/04	NA	NA	<5	<5	<5	NA	<5	<5	<5	<5	**33**	<10
8/18/04	NA	NA	<10	<10	<10	NA	<10	<10	<10	<10	**43**	<10
5/12/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	**7J**	<10
9/23/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	**10**	<10
5/23/06	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	**6J**	<10
8/24/06	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	**14**	<10
5/30/07	NA	NA	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	**8 J**	<10.0
8/7/07	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	**12**	<10
6/24/08	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
8/26/08	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/21/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	**3.3 J**	<10
8/12/09	<0.02	<0.0052	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/7/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/31/10	<0.020	<0.0047	<5	<5	<5	<10	<5	<5	<5	<5	**4.3 J**	<10
5/26/11	<0.02	<0.005	<5	<5	**4.4 J**	<10	<5	<5	<5	<5	<5	<10
8/31/11	<0.02	<0.0047	<5	<5	<5	<10	<5	**2.4 J**	<5	<5	<5	<10
5/24/12	<0.02	**0.0071 B**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/23/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	**1.8 J**	<10
5/14/13	< 0.02	**0.0125**	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	**7.7**	< 10
8/27/13	< 0.02	<0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
5/21/14	<0.02	**0.0246**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/12/14	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/27/15	<0.02	**0.004 B**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/26/15	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/11/16	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/19/16	<0.020	**0.0096 B**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-17												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
6/19/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	**67**	<10
9/17/02	<0.02	<0.005	<50	<50	<50	<100	<50	NA	NA	<50	**700**	<100
9/11/03	<0.02	<0.005	<5	<5	<5	<10	**9.9**	**35**	<5	<5	**1100**	<10
5/18/04	NA	NA	<5	<5	<5	NA	<5	**20**	<5	<5	**550**	<10
8/17/04	NA	NA	<50	<50	<50	NA	<50	**13J**	<50	<50	**590**	<50
5/12/05	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	**610**	<50
9/23/05	NA	NA	<50	<50	<50	<50	<50	**14J**	<50	<50	**610**	<50
5/23/06	NA	NA	<50	<50	<50	<50	<50	**26J**	<50	<50	**530**	<50
8/25/06	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	**920**	<50
5/29/07	NA	NA	<200	<200	<200	<200	<200	<200	<200	<200	**1400**	<200
8/7/07	<0.02	<.005	<100	<100	<100	<200	<100	<100	<100	<100	**2300**	<200
6/24/08	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	**530**	<50
8/26/08	<0.02	<0.005	<10	<10	<10	<20	<10	**11**	<10	<10	**320**	<20
5/21/09	NA	NA	<10	<10	<10	<20	<10	<10	<10	<10	**320**	<20
8/12/09	<0.02	<0.0052	<25	<25	<25	<50	<25	**48**	<25	<25	**600**	<50
5/7/10	NA	NA	<50	<50	<50	<100	**20 J**	**76**	<50	<50	**1900**	<100
8/31/10	<0.020	<0.0047	<50	<50	<50	<100	<50	**85**	<50	<50	**2100 E**	<100
5/26/11	<0.02	<0.005	<100	<100	<100	<200	<100	**49 J**	<100	<100	**2600**	<200
8/31/11	<0.02	<0.0047	<10	<10	<10	<20	<10	**8.5 J**	<10	<10	**280**	<20
5/24/12	<0.02	**0.0055 B**	<5	<5	<5	<10	<5	**6.2**	<5	<5	**99**	<10
8/23/12	<0.02	<0.0051	<50	<50	<50	<100	**25 J**	**65**	<50	<50	**1600**	<100
5/14/13	< 0.02	< 0.0027	< 10	< 10	< 10	< 20	**12**	**550 D**	**7.8 J**	< 10	**320**	< 20
8/27/13	< 0.02	**0.0040 B**	< 25	< 25	< 25	< 50	< 25	**36**	< 25	< 25	**170**	< 50
5/21/14	<0.02	**0.0056 B**	<25	<25	<25	<50	<25	**68**	<25	<25	**400**	<50
8/12/14	<0.02	<0.0028	<25	<25	<25	<50	<25	**280**	<25	<25	<25	<50
5/26/15	<0.02	<0.0028	<5	<5	<5	<10	<5	**20**	<5	<5	**33**	<10
8/25/15	<0.020	<0.0099	<5	<5	<5	<10	<5	**46**	<5	<5	<5	<10
5/11/16	<0.020	<0.0099	<5	<5	<5	<10	<5	**13**	<5	<5	<5	<10
8/19/16	<0.020	<0.0069	<5	<5	<5	<10	<5	**28**	<5	<5	<5	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-18												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
6/19/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
9/17/02	<0.02	<0.005	<5	<5	<5	<10	<5	NA	NA	<5	<5	<10
9/12/03	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	**6.7**	<10
5/18/04	NA	NA	<5	<5	<5	NA	<5	<5	<5	<5	**6.7**	<10
8/17/04	NA	NA	<10	<10	<10	NA	<10	<10	<10	<10	**4J**	<10
5/12/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	**7J**	<10
9/23/05	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	**13**	<10
5/23/06	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	**7J**	<10
8/25/06	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	**13**	<10
5/30/07	NA	NA	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	**9 J**	<10.0
8/7/07	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	**11**	<10
6/25/08	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
8/25/08	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	**11**	<10
5/20/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	**9.4**	<10
8/12/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	**8**	<10
5/7/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
9/1/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/26/11	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	**9.1**	<10
8/31/11	<0.02	<0.0047	<5	<5	<5	<10	<5	<5	<5	<5	**2.6 J**	<10
5/23/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	**12**	<10
8/24/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	**2.5 J**	<10
5/14/13	< 0.02	< 0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	**2.9 J**	< 10
8/28/13	< 0.02	**0.0052 B**	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
5/20/14	<0.02	<0.0027	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/11/14	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/27/15	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/26/15	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/11/16	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/18/16	<0.020	<0.0069	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-19												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
9/11/03	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
1/7/04	NA	NA	<5	<5	<5	NA	<5	<5	<5	<5	<5	<10
5/18/04	NA	NA	<5	<5	<5	NA	<5	<5	<5	<5	<5	<10
8/17/04	NA	NA	<10	<10	<10	NA	<10	<10	<10	<10	<10	<10
5/12/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
9/23/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
5/23/06	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
5/23/06	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
5/30/07	NA	NA	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
8/7/07	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
6/24/08	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
8/25/08	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/20/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	**14**	<10
8/11/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/7/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
9/1/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/26/11	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	**12**	<10
8/31/11	<0.02	<0.0047	<5	<5	**5 J**	<10	<5	<5	<5	<5	<5	<10
5/23/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/24/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/15/13	< 0.02	< 0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	**5.3**	< 10
8/27/13	< 0.02	<0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
5/21/14	<0.02	**0.0096 B**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/12/14	<0.02	**0.0118**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/27/15	<0.02	<0.0028	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/26/15	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/11/16	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/19/16	<0.020	<0.0069	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

MW-20												
	METALS (mg/L)		VOCs (µg/L)									
	Hexavalent Chromium	Total Chromium	Carbon Tetrachloride	Chloro-benzene	Chloroform	Dichloro-difluoromethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloro-ethene	Trichloro-ethene	Vinyl Chloride
NYSDEC STANDARD	**0.05**	**0.05**	**5**	**5**	**7**	**5**	**5**	**5**	**5**	**5**	**5**	**2**
9/11/03	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
1/7/04	NA	NA	<5	<5	<5	NA	<5	<5	<5	<5	<5	<10
5/18/04	NA	NA	<5	<5	<5	NA	<5	<5	<5	<5	<5	<10
8/16/04	NA	NA	<10	<10	<10	NA	<10	<10	<10	<10	<10	<10
5/12/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
9/23/05	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
5/23/06	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
8/25/06	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/30/07	NA	NA	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
8/7/07	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
6/24/08	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
8/26/08	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/20/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/11/09	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/7/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/31/10	NA	NA	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/26/11	<0.02	<0.005	<5	<5	<5	<10	<5	<5	<5	<5	**21**	<10
8/31/11	<0.02	<0.0047	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/22/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/24/12	<0.02	<0.0051	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/15/13	< 0.02	**0.0166**	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
8/27/13	< 0.02	<0.0027	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
5/21/14	<0.02	**0.0101**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/12/14	<0.02	**0.116**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/27/15	<0.02	**0.0119**	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/26/15	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
5/11/16	<0.020	<0.0099	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10
8/19/16	<0.020	<0.0069	<5	<5	<5	<10	<5	<5	<5	<5	<5	<10

Table A-3
Relevant Groundwater Analytical Results
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

Notes:
* From duplicate sample
NA - not analyzed
NS - not sampled
BOLD = parameter was detected
BOLD & shaded = value exceeds the NYSDEC Standard
B - Contamination in associated method blank
D - Initial result was outside the calibration range; sample re-analyzed at dilution.
E - estimated value ouside of the calibration range
J - estimated value below the detection limit

Appendix B Field Sheets for May 2014 through August 2016 Groundwater Sampling Events

2014 Field Notes

1/6/14 Ewing

1301 Started Purge of TW-5
1305 Purged TW-5 dry
1320 Sampled TW-5
1400 Collected Equipment Blank
1430 Filled out paperwork
~~Packed~~ Mobilized from Site AM will take Samples and Equipment ~~Removed Wells~~ TS
TS removed wells and filled with Bentonite
AM off Site
1500 TS off Site

TS 1/6/14

Date 5/20/14
Project Ward Products
Project# 60322038-600
Purpose MW Sample
Personell TS MD
Weather Sunny 50's
Equipment YSI Lamotte grundfos Generator
745 on site Unload truck
and ~~Jetboat~~ RS Gauge Wells

Well	DTW	~~DTB~~ (T)	
MW 1	2.57		
MW 1R	3.03		*
MW 2	2.28		
MW 3	3.45		
MW 4	4.82		*
MW 4R	18.06		*
MW 5	17.00		
MW 6	11.00		
MW 7	16.93		
MW 8	13.92		
MW 9	24.96		
MW 10	26.29		*
MW 11	12.55		*
MW 12	20.32		

Rite in the Rain

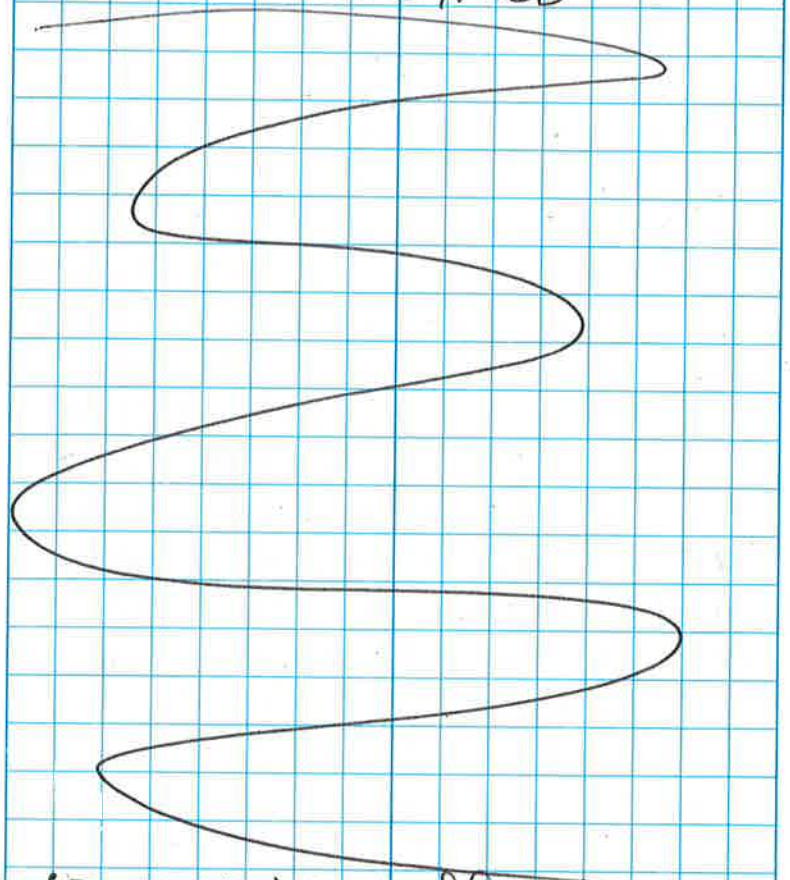
Date 5/20/14 Ward

Well	DTW	~~DTB~~	
MW 13	25.00		*
MW 14	9.62		X
MW 15	6.88		+
MW 16	20.46		X
MW 17	~~6.88~~	10.66	X
MW 18	20.80		X
MW 19	24.87		X +
MW 20	21.28		X
RW-01	71.16	Pump running	
RW-02	36.15	Mislabled on the Figure	

924 Started Purge of MW-11
1015 Sampled MW-11 052014
935 Started Purge of MW-1R
1020 Sampled MW-1R 052014
1205 Started Purge of MW-4R
1235 Sampled MW4R 052014
1210 ~~Sampled MW-18~~ (TS) Started Purge of MW-18
1235 Sampled MW-18 052014 + DUP-1 052014
1255 Started Purge of MW-4
1340 Sampled MW-4 052014

Date 5/20/14 Ward

1330 Started Purge of MW-10
1430 Collected MW-10 052014 + MS/MSD



1500 Mobize off site to drop off coolers
TS 5/20/14

Rite in the Rain

Date 5/21/14
Project Ward Products
Project # 60322038.600
Purpose MW Sample
Personell MD TS
Weather Sunny 60's
Equipment YSI LaMotte Grundfos Generator

745 On site
815 Started purge of MW-14
845 Collected MW-14 052114
820 Started purge of MW-13
920 Sampled MW-13 052114
950 Started purge of MW-17
1018 Sampled MW-17 052114
948 Started purge of MW-16
1120 Sampled MW-16 052114
1305 Started purge of MW-20
1350 Sampled MW-20 052114
1305 Started purge of MW-15
1405 Sampled MW-15 052114
1425 Started purge of MW-19
1512 Sampled MW-19 052114
1530 Mobilize from Site to bring Samples to Lab

TS 5/21/14

Rite in the Rain

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-1R Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-1R 052014 QA/QC Collected? NO

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):		feet
3. W = Static Depth to Water (TOC):	3.03 ~~2.48~~	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):	15.90	feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
~~2-inch~~	~~0.17~~
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	~~2-inch~~	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	935	940	945	950 *	1020		
Water Level (0.33)	feet	2.48	5.42	5.92	7.64	14.90		
Volume Purged	gal	0	< .25	< .5	.5	~~.5~~		
Flow Rate	mL / min	100	<100	<100	<100	—		
Turbidity (+/- 10%)	NTU	28.4	26.4	24.7	31.1	30.8		
Dissolved Oxygen (+/- 10%)	%	155.6	95.0	82.9	62.6	45.6		
Dissolved Oxygen (+/- 10%)	mg/L	17.31	10.27	8.89	6.78	4.44		
Eh / ORP (+/- 10)	MeV	-68.6	-65.2	-71.2	-72.2	-80.2		
Specific Conductivity	mS/cm^c	0.636	0.634	0.645	0.627	0.616		
Conductivity (+/- 3%)	mS/cm	0.457	0.478	0.486	0.467	0.518		
pH (+/- 0.1)	pH unit	6.76	6.52	6.58	6.64	7.05		
Temp (+/- 0.5)	C	10.28	11.83	12.06	11.63	16.67		
Color	Visual	Clear	"	"	"	"		
Odor	Olfactory	None	"	"	"	"		

Comments: * WL Not Stabilizing Well Purged ~~Dry~~ @ to top of Pump @ 954 and Let recharge according to EPA Methods

Sampled ~~MW-1R 052014~~ MW-1R 052014 @ 1020

1 of 1

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-4 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-4 052014 QA/QC Collected? no

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	4.82	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						*
Time	24 hr	12:55	13:00	13:05	13:10	13:15	13:20	13:25
Water Level (0.33)	feet	4.98	5.08	5.30	5.50	5.70	5.80	6.00
Volume Purged	gal	0	<.25	<.25	.25	>.25	>.25	7.25
Flow Rate	mL / min	100	80	80	80	80	80	80
Turbidity (+/- 10%)	NTU	39.6	39.1	32.9	30.5	30.7	30.0	28.4
Dissolved Oxygen (+/- 10%)	%	33.4	15.1	9.4	10.6	14.3	16.6	20.0
Dissolved Oxygen (+/- 10%)	mg/L	3.53	1.58	.96	1.07	1.44	1.65	2.02
Eh / ORP (+/- 10)	MeV	158.9	106.4	79.8	89.2	100.6	111.5	120.9
Specific Conductivity	mS/cm[c]	.357	.365	.373	.371	.360	.351	.333
Conductivity (+/- 3%)	mS/cm	.271	.282	.296	.302	.290	.288	.270
pH (+/- 0.1)	pH unit	7.27	7.26	7.27	7.27	7.25	7.19	7.17
Temp (+/- 0.5)	C	12.20	13.40	14.70	15.1	15.1	15.7	14.8
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments: * Turned up flow to aid WL stabilization
Purged to top of pump per EPA standards
allowed recharge
Sampled @ 13:40

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-4R Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-4R 052014 QA/QC Collected? NO

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	18.06	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	12:05	12:10	12:15	12:20	12:25	12:30	12:35
Water Level (0.33)	feet	18.70	18.90	19.00	19:00	19.05	19.05	19.05
Volume Purged	gal	0	2.25	.25	2.25	2.25	.50	.75
Flow Rate	mL / min	100	100	100	100	100	100	100
Turbidity (+/- 10%)	NTU	1871	limit	3085	3448	3024	1713	1018
Dissolved Oxygen (+/- 10%)	%	18.6	7.2	4.8	4.1	3.7	4.2	4.8
Dissolved Oxygen (+/- 10%)	mg/L	1.93	.73	.47	.41	.37	.41	.47
Eh / ORP (+/- 10)	MeV	144.9	103.9	92.3	83.5	68.9	55.6	47.4
Specific Conductivity	mS/cm^c	1.290	1.490	1.550	1.530	1.430	1.270	1.110
Conductivity (+/- 3%)	mS/cm	.990	1.190	1.250	1.220	1.160	1.030	0.890
pH (+/- 0.1)	pH unit	7.31	7.28	7.28	7.29	7.29	7.30	7.30
Temp (+/- 0.5)	C	12.6	14.4	14.7	14.6	15.0	15.1	15.0
Color	Visual	Permanganate	same	same	same	same	same	same
Odor	Olfactory	Odor	none	none	none	none	none	none

Comments:

Sampled @ 12:35

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-10 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-10 052014 QA/QC Collected? MS MSD

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth: _____ feet
2. D = Riser Diameter (I.D.): 0.17 feet
3. W = Static Depth to Water (TOC): 26.29 ~~26.72~~ feet
4. C = Column of Water in Casing: _____ feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$ _____ gal
6. D2 = Pump Setting Depth (ft): _____ feet
7. C2 = Column of water in Pump/Tubing (ft): _____ feet
8. Tubing Volume = C2(0.005737088) _____ gal

D (inches)	D (feet)
1-inch	0.08
2-inch	~~0.17~~
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	~~2-inch~~	3-inch	4-inch	6-inch
V (gal / ft)	0.041	~~0.163~~	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	1330	1335 *	1345	1350	1355	1400	1405
Water Level (0.33)	feet	26.72	26.70	26.84	26.66	26.64	26.64	26.40
Volume Purged	gal	0	.5	<.75	1.00	1.25	1.5	1.75
Flow Rate	mL / min	100	100	100	100	100	100	100
Turbidity (+/- 10%)	NTU	638	46.9	45.7	45.1	57.0	64.6	57.6
Dissolved Oxygen (+/- 10%)	%	43.3	15.0	19.5	10.2	5.7	4.9	4.8
Dissolved Oxygen (+/- 10%)	mg/L	4.33	1.53	1.92	1.00	0.56	0.49	0.49
Eh / ORP (+/- 10)	MeV	-122.4	-130.5	-111.2	-123.9	-134.3	-142.5	-141.1
Specific Conductivity	mS/cm[c]	0.786	0.799	0.770	0.782	0.784	0.790	0.781
Conductivity (+/- 3%)	mS/cm	0.619	0.632	0.633	0.646	0.645	0.633	0.623
pH (+/- 0.1)	pH unit	6.98	6.79	6.95	6.90	6.90	6.88	6.81
Temp (+/- 0.5)	C	13.39	14.11	15.70	15.86	15.47	14.56	14.37
Color	Visual	Brown	"	"	"	"	"	"
Odor	Olfactory	None	"	"	"	"	"	"

Comments: Generator run out of gas, restarted Purge

1 of 2

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-10 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-10 052014 QA/QC Collected? MS/MSD

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	26.29	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	1410	1415	1420	1425	1430		
Water Level (0.33)	feet	26.24	26.14	26.06	25.98	25.92		
Volume Purged	gal	2.00	2.25	2.5	2.75	2.75		
Flow Rate	mL / min	100	100	100	100	100		
Turbidity (+/- 10%)	NTU	60.9	57.2	50.5	50.1	50.6		
Dissolved Oxygen (+/- 10%)	%	4.9	5.0	4.7	4.8	4.9		
Dissolved Oxygen (+/- 10%)	mg/L	0.50	0.51	0.46	0.47	0.48		
Eh / ORP (+/- 10)	MeV	-140.2	-133.0	-119.9	-125.9	-129.2		
Specific Conductivity	mS/cm[c]	0.777	0.770	0.767	0.768	0.769		
Conductivity (+/- 3%)	mS/cm	0.619	0.622	0.630	0.641	0.641		
pH (+/- 0.1)	pH unit	6.78	6.80	6.89	6.96	6.96		
Temp (+/- 0.5)	C	14.35	14.45	16.09	16.34	16.20		
Color	Visual	Brown	"	"	"	"		
Odor	Olfactory	None	"	"	"	"		

Comments:

* Three consecutive readings within range indicates stabilization of that parameter.

2 of 2

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-11 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-11 052014 QA/QC Collected? no

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	12.85	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):	~~12.00~~	feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	9:24	9:29	9:34	9:39	9:44*	9:49	9:54
Water Level (0.33)	feet	14.00	14.46	14.79	15.02	15.51	19.10	19.20
Volume Purged	gal	80	<.25	<.25	.25	>.25	.50	.60
Flow Rate	mL / min	180	90	80	80	80	80	80
Turbidity (+/- 10%)	NTU	53.6	77.3	56.4	~~64.6~~ 43.1	39.8	24.8	25.8
Dissolved Oxygen (+/- 10%)	%	72.7	69.9	67.2	69.6	65.0	58.3	54.7
Dissolved Oxygen (+/- 10%)	mg/L	8.15	7.50	7.17	7.34	6.96	6.19	6.24
Eh / ORP (+/- 10)	MeV	152.1	140.4	152.2	161.7	169.9	158.4	150.2
Specific Conductivity	mS/cm[c]	.559	.560	.561	.564	.560	.557	.557
Conductivity (+/- 3%)	mS/cm	.403	.417	.428	.428	.423	.427	.432
pH (+/- 0.1)	pH unit	7.38	7.37	7.37	7.38	7.37	7.37	7.39
Temp (+/- 0.5)	C	10.40	11.60	12.50	12.90	12.20	12.80	13.30
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments: * Turn up pump to aid in wL stabilization

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-11 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-11 052014 QA/QC Collected? NO

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	12.55	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):	~~12.00~~	feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings					
Time	24 hr	9:59	10:04				
Water Level (0.33)	feet	19.70	21.30				
Volume Purged	gal	.75	1.0				
Flow Rate	mL / min	100	200				
Turbidity (+/- 10%)	NTU	22.4	16.8				
Dissolved Oxygen (+/- 10%)	%	60.2	54.2				
Dissolved Oxygen (+/- 10%)	mg/L	6.60	5.86				
Eh / ORP (+/- 10)	MeV	145.2	110.0				
Specific Conductivity	mS/cm[c]	.566	.558				
Conductivity (+/- 3%)	mS/cm	.414	.415				
pH (+/- 0.1)	pH unit	7.39	7.37				
Temp (+/- 0.5)	C	10.8	11.6				
Color	Visual	clear	clear				
Odor	Olfactory	none	none				

Comments: WL unstable: Purged to top of pump & let recharge

Sampled @ 10:15

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-13 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-13 052114 QA/QC Collected? No

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	25.00	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	820	825	830	835	840	845	850
Water Level (0.33)	feet	26.02	26.00	26.10	26.14	26.14	26.16	26.18
Volume Purged	gal	0.0	<0.25	0.25	<0.50	0.50	<1.00	1.00
Flow Rate	mL / min	100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	39.4	19.2	21.0	21.2	23.0	19.7	18.3
Dissolved Oxygen (+/- 10%)	%	40.2	32.2	13.4	7.7	6.2	5.0	4.1
Dissolved Oxygen (+/- 10%)	mg/L	4.45	3.57	1.50	0.85	0.70	0.56	0.46
Eh / ORP (+/- 10)	MeV	-93.6	-97.0	-113.2	-114.3	-114.6	-115.9	-117.9
Specific Conductivity	mS/cm[c]	0.322	0.430	0.620	0.662	0.672	0.680	0.684
Conductivity (+/- 3%)	mS/cm	0.234	0.313	0.442	0.472	0.480	0.487	0.490
pH (+/- 0.1)	pH unit	7.03	6.36	6.37	6.42	6.46	6.52	6.58
Temp (+/- 0.5)	C	10.67	10.48	9.96	10.00	10.08	10.13	10.16
Color	Visual	Cloudy	"	Clear	"	"	"	"
Odor	Olfactory	None	"	"	"	"	"	"

Comments:

1 of 2

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-13 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-13 052114 QA/QC Collected? _____

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	25.0	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings					
Time	24 hr	855	900	905	910	915	920
Water Level (0.33)	feet	26.26	26.50	26.52	26.52	26.52	26.52
Volume Purged	gal	1.25	<1.50	<1.75	1.75	<2.0	2.00
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	22.6	12.0	14.4	9.74	19.1	8.56
Dissolved Oxygen (+/- 10%)	%	4.0	3.9	3.3	3.3	3.4	3.3
Dissolved Oxygen (+/- 10%)	mg/L	0.45	0.44	0.37	0.37	0.37	0.37
Eh / ORP (+/- 10)	MeV	-118.1	-119.3	-119.7	-118.2	-119.5	-121.5
Specific Conductivity	mS/cm[c]	0.684	0.686	0.684	0.684	0.684	0.684
Conductivity (+/- 3%)	mS/cm	0.492	0.488	0.490	0.493	0.494	0.494
pH (+/- 0.1)	pH unit	6.61	6.63	6.67	6.69	6.71	6.72
Temp (+/- 0.5)	C	10.20	9.91	10.20	10.37	10.47	10.45
Color	Visual	Clear	"	"	"	"	"
Odor	Olfactory	None	"	"	"	"	"

Comments: Sampled @ Sampled well @ 920

2 of 2

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-14 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-14 052114 QA/QC Collected? NO

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	9.62	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	8:15	8:20	8:25	8:30	8:35	8:40	8:45
Water Level (0.33)	feet	10.61	10.82	11.05	11.22	11.38	11.50	11.54
Volume Purged	gal	0	<.25	<.25	.25	>.25	>.25	.50
Flow Rate	mL / min	100	100	80	80	80	80	80
Turbidity (+/- 10%)	NTU	855	616	85.9	61.5	33.7	26.7	21.8
Dissolved Oxygen (+/- 10%)	%	12.2	4.0	3.8	4.2	4.2	4.5	4.9
Dissolved Oxygen (+/- 10%)	mg/L	1.35	.42	.39	.44	.43	.47	.52
Eh / ORP (+/- 10)	MeV	-40.9	-81.9	-81.8	-80.2	-76.2	-69.6	-67.8
Specific Conductivity	mS/cm[c]	1.310	1.350	1.370	1.390	1.390	1.400	1.410
Conductivity (+/- 3%)	mS/cm	0.950	1.030	1.070	1.080	1.100	1.110	1.110
pH (+/- 0.1)	pH unit	7.28	7.20	7.22	7.19	7.18	7.18	7.17
Temp (+/- 0.5)	C	10.90	12.60	13.40	13.50	13.90	14.10	14.20
Color	Visual	Cloudy	Cloudy	Cloudy	Cloudy	Clear	Clear	Clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments: Sampled @ 8:45

1 of 1

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-15 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-15 052114 QA/QC Collected? NO

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	60.83	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	1305	1310	1315	1320	1325	1330	1335
Water Level (0.33)	feet	7.60	7.74	7.96	8.56	8.66	8.66	8.66
Volume Purged	gal	0	0.25	< 0.50	0.50	< .75	0.75	1.00
Flow Rate	mL / min	< 100	< 100	< 100	< 100	< 100	< 100	100
Turbidity (+/- 10%)	NTU	8.90	9.61	21	54.9	36.9	22.5	16.6
Dissolved Oxygen (+/- 10%)	%	95.7	63.9	26.4	9.5	7.9	6.5	5.3
Dissolved Oxygen (+/- 10%)	mg/L	10 11	7.02	2.64	0.99	0.81	0.66	0.52
Eh / ORP (+/- 10)	MeV	-150.6	-152.3	-168.0	-171.0	-153.9	-149.0	-163.4
Specific Conductivity	mS/cm[c]	0.194	0.435	1.188	1.226	1.213	1.199	1.196
Conductivity (+/- 3%)	mS/cm	0.147	0.348	0.960	0.957	0.963	0.964	0.971
pH (+/- 0.1)	pH unit	7.16	6.67	6.72	6.84	6.91	6.99	7.04
Temp (+/- 0.5)	C	12.69	14.04	14.52	13.51	14.18	14.78	15.13
Color	Visual	Clear	"	Cloudy	"	"	"	"
Odor	Olfactory	Slight	"	"	"	"	"	"

Comments:

1 of 2

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-15 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-15 052114 QA/QC Collected? No

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	6.88	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	~~0.163~~	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings					
Time	24 hr	1340	1345	1350	1355	1400	1405
Water Level (0.33)	feet	8.66	8.66	8.72	8.72	8.72	8.72
Volume Purged	gal	1.00	1.25	>1.25	1.50	>1.50	1.75
Flow Rate	mL / min	100	100	100	100	100	100
Turbidity (+/- 10%)	NTU	11.5	11.6	7.02	8.45	7.76	6.03
Dissolved Oxygen (+/- 10%)	%	4.3	3.9	3.7	3.5	3.0	3.3
Dissolved Oxygen (+/- 10%)	mg/L	0.43	0.40	0.38	0.36	0.31	0.34
Eh / ORP (+/- 10)	MeV	-176.1	-179.0	-177.4	-163.5	-146.0	-145.9
Specific Conductivity	mS/cm[c]	1.184	1.180	1.162	1.146	1.133	1.134
Conductivity (+/- 3%)	mS/cm	0.963	0.930	0.899	0.906	0.914	0.917
pH (+/- 0.1)	pH unit	7.05	7.09	7.02	6.98	7.04	7.06
Temp (+/- 0.5)	C	15.23	13.90	13.19	14.07	14.88	14.99
Color	Visual	Clear	"	"	"	"	"
Odor	Olfactory	None	"	"	"	"	"

Comments:

Sampled MW-15 052114 @ 1405

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-16 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-16 052114 QA/QC Collected? no

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	20.46	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
~~3-inch~~	~~0.25~~
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings					**	
Time	24 hr	9:48	9:53	9:58	10:03	10:08*	10:13	11:20
Water Level (0.33)	feet	21.10	21.70	22.30	22.80	23.35		—
Volume Purged	gal	0	<.25	<.25	.25	>.25		—
Flow Rate	mL / min	100	80	80	80	80		—
Turbidity (+/- 10%)	NTU	28.8	17.5	69	85.3	669		Irmit
Dissolved Oxygen (+/- 10%)	%	34.9	15.9	11.8	7.4	3.2		36.4
Dissolved Oxygen (+/- 10%)	mg/L	3.78	1.74	1.31	.81	0.36		3.89
Eh / ORP (+/- 10)	MeV	119.7	94.6	-63.2	-108.8	-122.5		-49.0
Specific Conductivity	mS/cm[c]	.390	.329	.461	.649	.608		.351
Conductivity (+/- 3%)	mS/cm	.287	.240	.334	.465	.440		.269
pH (+/- 0.1)	pH unit	7.60	7.36	7.24	7.23	7.27		7.54
Temp (+/- 0.5)	C	11.60	10.90	10.50	10.40	10.60		12.90
Color	Visual	clear	clear	clear	cloudy	cloudy		Cloudy
Odor	Olfactory	none	none	none	none	none		none

Comments: * WL not stabilizing. Ran at 400 ml per min to aid in stabilization

** Purged to top of pump via epa standards

sampled @ 11:20

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-17 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-17 052114 QA/QC Collected? NO

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	10.66	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):	41.50	feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	950	955	1000 *	1018			
Water Level (0.33)	feet	11.40	11.88	12.80	—			
Volume Purged	gal	0	<.25	0.50	—			
Flow Rate	mL / min	100	<100	<100	—			
Turbidity (+/- 10%)	NTU	11.9	9.75	12.6	2.92			
Dissolved Oxygen (+/- 10%)	%	59.8	12.8	7.2	14.0			
Dissolved Oxygen (+/- 10%)	mg/L	6.41	1.36	0.75	1.44			
Eh / ORP (+/- 10)	MeV	-113.2	-105.5	-111.2	-140.5			
Specific Conductivity	mS/cm[c]	0.228	0.219	0.203	1.181			
Conductivity (+/- 3%)	mS/cm	0.165	0.618	0.151	0.939			
pH (+/- 0.1)	pH unit	6.89	6.40	6.37	6.58			
Temp (+/- 0.5)	C	11.42	12.27	10.87	14.34			
Color	Visual	Clear	"	"	"			
Odor	Olfactory	None	"	"	"			

Comments: * WL Not Stabilizing Purged well to top of pump and wait for ~~recar~~ Sufficient recharge to sample according; to EPA method #
Sampled MW-17 052114 @ 1018

1 of 1

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-18 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-18 052014 QA/QC Collected? DUP-1 05 2014

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	2080 ~~21.46~~	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	~~2-inch~~	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings					
Time	24 hr	1210	1215	1220	1225	1230	1235
Water Level (0.33)	feet	21.46	21.44	21.56	21.61	21.64	21.62
Volume Purged	gal	0	<.25	<.5	.5	<.75	<100
Flow Rate	mL / min	100	100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	28.2	23.1	18.2	17.3	17.2	16.5
Dissolved Oxygen (+/- 10%)	%	51.1	39.0	34.9	34.7	35.9	34.3
Dissolved Oxygen (+/- 10%)	mg/L	5.54	4.28	3.82	3.82	3.95	3.74
Eh / ORP (+/- 10)	MeV	-87.7	-79.9	-79.4	-81.9	-83.8	-84.8
Specific Conductivity	mS/cm^c	0.360	0.357	0.351	0.350	0.349	0.349
Conductivity (+/- 3%)	mS/cm	0.2660	0.261	0.259	0.258	0.258	0.258
pH (+/- 0.1)	pH unit	6.85	6.67	6.66	6.69	6.72	6.70
Temp (+/- 0.5)	C	11.30	10.97	11.29	11.19	11.35	11.47
Color	Visual	Clear	"	"	"	"	"
Odor	Olfactory	None	"	"	"	"	"

Comments:

Sampled @ 1235

1 of 1

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-14 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-14 052114 QA/QC Collected? NO

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	29.87	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
~~2-inch~~	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	~~2-inch~~	3-inch	4-inch	6-inch
V (gal / ft)	0.041	~~0.163~~	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	1425	1430	1435	1440	1445		15:12
Water Level (0.33)	feet	31.47	31.87	32.42	32.89	33.35		—
Volume Purged	gal	0	<0.35	0.50	0.75	>0.75		—
Flow Rate	mL / min	100	100	100	100	<100		—
Turbidity (+/- 10%)	NTU	53.9	80.9	135	107.8	105.8		61.8
Dissolved Oxygen (+/- 10%)	%	52.0	14.9	6.0	5.0	4.8		44.2
Dissolved Oxygen (+/- 10%)	mg/L	5.50	1.47	0.62	0.51	0.47		4.09
Eh / ORP (+/- 10)	MeV	-118.9	-127.5	-136.2	-148.2	-150.8		-117.3
Specific Conductivity	mS/cm[c]	1.169	1.332	1.359	1.362	1.357		1.339
Conductivity (+/- 3%)	mS/cm	0.890	1.041	1.071	1.100	1.097		1.183
pH (+/- 0.1)	pH unit	7.04	6.76	6.69	6.86	6.86		7.07
Temp (+/- 0.5)	C	12.40	13.57	13.99	14.81	15.09		18.96
Color	Visual	Cloudy	"	"	"	"		"
Odor	Olfactory	None	"	"	"	"		"

Comments: *Wk Not Stabilizing purged to top of well @ 67.45 ft and will sample when ~~recharged~~. Sufficient water has recharged

Sampled @ 15:12

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-20 Date: 5/20-21/14

Samplers: Matt Dean and Tim Steinhofer

Sample Number: MW-20 052114 QA/QC Collected? no

Purging / Sampling Method: Grundfos or Peristaltic Pump with Dedicated Tubing/Low-Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	21.28	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 and LaMotte 2020

Parameter	Units	Readings						
Time	24 hr	13:05	13:10	13:15	13:20	13:25	13:30	13:50
Water Level (0.33)	feet	21.60	22.05	22.58	23.00	23.35	23.70	—
Volume Purged	gal	0	<.25	<.25	.25	>.25	>.25	—
Flow Rate	mL / min	100	80	80	80	80	80	—
Turbidity (+/- 10%)	NTU	78.8	70.0	1303	2179	1560	1693	608
Dissolved Oxygen (+/- 10%)	%	78.6	55.9	50.2	49.0	43.7	42.0	39.9
Dissolved Oxygen (+/- 10%)	mg/L	8.04	5.70	5.13	5.05	4.55	4.41	4.08
Eh / ORP (+/- 10)	MeV	51.5	48.2	23.3	23.9	5.7	-25.0	-47.5
Specific Conductivity	mS/cm[c]	.559	.559	.563	.561	.564	.559	.576
Conductivity (+/- 3%)	mS/cm	.438	.447	.440	.439	.437	.431	.462
pH (+/- 0.1)	pH unit	7.78	7.64	7.59	7.58	7.60	7.62	7.72
Temp (+/- 0.5)	C	13.70	14.40	13.60	13.50	13.20	13.00	14.60
Color	Visual	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy
Odor	Olfactory	sulfur	sulfur	sulfur	sulfur	sulfur	sulfur	sulfur

Comments: WL no stabilizing. Purged to top of pump let recharge.

Sampled @ 13:50

1 of 1

* Three consecutive readings within range indicates stabilization of that parameter.

Adirondack Environmental Services Inc.
314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

Experience is the solution

A full service analytical research laboratory offering solutions to environmental concerns

CHAIN OF CUSTODY RECORD

AES Work Order #

Client Name:	Address:	
AECOM	40 British American Blvd, Latham, NY	
Send Report To:	**Project Name (Location)**	**Samplers: (Names)**
Jennifer Atkins	Former Ward Products	Tim Steinhofer Matt Dain
Client Phone No:	**Client Email:**	**PO Number:**
518-951-2200	jennifer.atkins@aecom.com	**Samplers: (Signature)**

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type Matrix	Comp	Grab	Number of Cont's	Analysis Required	VOC
	MW-1R 052014	5/20/14	1020	(A) P	GW		X	4		X
	MW-4 052014		1340	A (P)			X	4		
	MW-4R 052014		1235	A (P)			X	4		
	MW-10 052014		1430	A (P)			X	10	Extra Volume for MS/MSD	
	MW-11 052014		1015	(A) P			X	4		
	MW-18 052014		1235	A (P)			X	4		
	DUP-01 052014		—	A P			X	4		
	Trip Blank-1 052014		—	A P			X	1		
				A P						
				A P						
				A P						
				A P						
				A P						
				A P						
				A P						

TCL Metals X Hex Chrom X

Shipment Arrived Via:

FedEx UPS Client AES Other:_____

CC Report To / Special Instructions/Remarks:

CAT B deliverables. AECOM Equis + PDF

Turnaround Time Request:

☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Matthew J. Dain		5/20/14 1555
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by:	Date/Time
		5/20/14 3:30 PM

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or (Chilled)	Y ☒ N ☐	Y N	Y N
Notes:_____		Notes:_____	Notes:_____

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

Adirondack Environmental Services Inc.

Experience is the solution

314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

CHAIN OF CUSTODY RECORD

AES Work Order #

· A full service analytical research laboratory offering solutions to environmental concerns

Client Name: AECOM	Address: 40 British American Blvd, Latham, NY 12110
Send Report To: Jennifer Atkins	Project Name (Location): Amsterdam, NY
Samplers: (Names)	Matt Dean + Tim Stenholer
Client Phone No: 518-951-2200	Client Email: jennifer.atkins@aecom.com
PO Number:	Samplers: (Signature)

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type: Matrix	Comp	Grab	Number of Cont's	Analysis Required: VOCs 8260	Total Chrome 6010	Hex Chrome SM 3500 (Cr)
	MW-13 052114	5/21/14	920	(A) / P	GW		X	4	X	X	X
	MW-14 052114		815	(A) / P				4			
	MW-15 052114		1405	A / (P)				4			
	MW-16 052114		1120	(A) / P				4			
	MW-17 052114		1015	(A) / P				4			
	MW-19 052114		1512	A / (P)				4			
	MW-20 052114		1350	A / (P)				4			
	Trip Blank-2 052114		—	A / P				1			
				A / P							
				A / P							
				A / P							
				A / P							
				A / P							
				A / P							

Shipment Arrived Via:
FedEx UPS Client AES Other:________

CC Report To / Special Instructions/Remarks:
CAT B deliverables / AECOM Equis + PDF

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature) [signature]	Received for Laboratory by: J. [signature]	Date/Time 5/21/14 4:34 Pm

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or (Chilled) Notes: 1.2	Y ☒ N ☐	(Y) N Notes:	(Y) N Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

PALMS Environmental, LLC

274 Main Street, Suite 101

Reading, MA 01867

877-785-7256

CALIBRATION CERTIFICATE

Instrument/Serial# YSI 1250 AH

Date: 5/15/14 Technician: EM

Conductivity Calibration

Result 1.413

Conductivity Standard 1.413 mS/cm

Lot#: 2402591 EXP 7/15

pH Calibration Results (mV)

pH 7.0 Buffer Solution
Lot#: 2306742 EXP: 6/15

RESULT -26.4

pH 4.0 Buffer Solution
Lot#: 2310F41 EXP: 10/15

RESULT 176.6

pH 10.0 Buffer Solution

Lot#: 2311520 EXP: 4/15

RESULT: -154.6

ORP Calibration Results

Temp ©: 22.21

Ag/AgC1(mV) 234.64

ZOBELL Solution

Lot#: C358607 EXP: 2/18

BAROMETRIC PRESSURE

mm Hg 766.0

Dissolved O2 100% ✓

Dissolved O2 ZERO ✓

Sodium Sulfite, Reagent
Lot#: C251081 EXP: 9/17

6820/6920 ONLY

Turbidity (NTU) Calibration Results:

Point 1 N/a Lot#: 1309805 Exp: 8/14

Point 2 N/a Lot#: C362395 Exp: 3/15

CHECKLIST INSPECTION:

INSTRUMENT: ✓

FLOW CELL/EXTENSIONS ✓

PROBE GUARD ✓

MANUAL ✓

SPARE BATTERIES ✓

DO REPAIR KIT: ✓

OTHER

PALMS Environmental, LLC

274 Main Street, Suite 101

Reading, MA 01867

877-785-7256

CALIBRATION CERTIFICATE

Instrument/Serial# YSI PRO #0879

Date: 5/14/14 Technician: EM

Conductivity Calibration

Result 1.413

Conductivity Standard 1.413 mS/cm

Lot#: 2402591 EXP 7/15

pH Calibration Results (mV)

pH 7.0 Buffer Solution
Lot#: 2306742 EXP: 6/15

RESULT -6.5

pH 4.0 Buffer Solution
Lot#: 2310F41 EXP: 10/15

RESULT 171.3

pH 10.0 Buffer Solution

Lot#: 2311520 EXP: 4/15

RESULT: -179.3

ORP Calibration Results

Temp ©: 21.4

Ag/AgC1(mV) 235.68

ZOBELL Solution

Lot#: C358607 EXP: 2/18

BAROMETRIC PRESSURE

mm Hg 766.2

Dissolved O2 100% ✓

Dissolved O2 ZERO ✓

Sodium Sulfite, Reagent
Lot#: C251081 EXP: 9/17

6820/6920 ONLY

Turbidity (NTU) Calibration Results:

Point 1 N/a Lot#: 1309805 Exp: 8/14

Point 2 Lot#: C362395 Exp: 3/15

CHECKLIST INSPECTION:

INSTRUMENT: ✓

FLOW CELL/EXTENSIONS

PROBE GUARD ✓

MANUAL ✓

SPARE BATTERIES ✓

DO REPAIR KIT: ✓

OTHER DVD + Cable

Well Gauging Form
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

AECOM

Sampling Dates: 8/11/14 - 8/13/14

Monitoring Well	Top of Casing Elevation (ft msl)	Depth to Water (ft bgs)	Condition of Well*
MW-1	471.55	5.51	No J-Plug, No Bolts OG
MW-1R	471.46	6.05	No J-Plug, No bolts, OG
MW-2	471.20	5.66	No Bolts, No J-Plug, OG
MW-3	473.03	7.70	No bolts, No J-Plug, OG
MW-4	470.17	8.22	No bolts, No J-Plug, OG
MW-4R	470.29	20.99	No bolts, OG
MW-5	475.62	17.52	~~No Lock~~, No J-Plug, Cement casing cracked
MW-6	470.97	21.40	No bolts, OG
MW-7	469.14	19.80	No bolts, No J-Plug, OG
MW-8	467.38	17.14	No J-Plug, OG
MW-9	465.43	24.82	No bolts, No J-Plug, Otherwise good
MW-10	466.77	25.76	Missing bolts, otherwise good
MW-11	485.37	15.53	No J-Plug, OG
MW-12	468.18	21.02	No Bolts, OG
MW-13	462.12	23.22	J-plug loose; Biologicals in tubing & well, OG
MW-14	453.66	10.93	No Lock, No J-Plug OG
MW-15	445.20	9.12	No bolts, No J-Plug, OG
MW-16	449.50	21.80	No bolts OG
MW-17	450.84	10.55	No bolts, ~~OG~~ Cement casing cracked
MW-18	463.76	21.84	Good
MW-19	441.64	30.90	Good
MW-20 ✱	442.38	23.00	No J-Plug, No protective casing, PVC broken off @ Ground Surface
RW-01	472.08	68.02	Good
RW-02	465.57	40.55	Good

*Describe the condition of each monitoring well and if there are any issues to address (condition of the pad, cover, casing, lock)

* OG = Otherwise Good

✱ = Very Poor condition

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-1R Date: August 13, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-1R081314 QA/QC Collected? ____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:	____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	6.05	feet
4. C = Column of Water in Casing:	____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	____	gal
6. D2 = Pump Setting Depth (ft):	____	feet
7. C2 = Column of water in Pump/Tubing (ft):	____	feet
8. Tubing Volume = C2(0.005737088)	____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings *						
Time	24 hr	8:50	8:55	9:00	9:05	9:10	9:15	9:20
Water Level (0.33)	feet	6.91	7.23	7.57	7.83	8.81	8.89	8.94
Volume Purged	gal	0	0.05	0.10	0.13	0.15	0.17	0.20
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	294	268	271	257	793	513	323
Dissolved Oxygen (+/- 10%)	%	23.8	19.5	17.3	18.2	19.2	24.1	18.8
Dissolved Oxygen (+/- 10%)	mg/L	2.39	1.93	1.64	1.75	1.89	2.30	1.79
Eh / ORP (+/- 10)	MeV	73.1	78.5	92.2	92.9	85.6	74.7	68.7
Specific Conductivity	mS/cm[c]	0.636	0.638	0.648	0.654	0.617	0.653	0.652
Conductivity (+/- 3%)	mS/cm	0.523	0.527	0.545	0.556	0.508	0.563	0.563
pH (+/- 0.1)	pH unit	7.36	7.32	7.32	7.34	7.35	7.50	7.30
Temp (+/- 0.5)	C	15.68	15.87	16.64	17.21	17.27	17.74	17.86
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO

Comments: * Generator Ran out of gas @ 9:08

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-1R Date: 08/13/14

Samplers: Ross McCready / Chris Tranch

Sample Number: MW-1R081314 QA/QC Collected? _____

Purging / Sampling Method: Grundfos & dedicated Tubing

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	6.05	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	9:25	9:30					
Water Level (0.33)	feet	9.05	9.20					
Volume Purged	gal	0.50	0.60					
Flow Rate	mL / min	<100	<100					
Turbidity (+/- 10%)	NTU	310	267					
Dissolved Oxygen (+/- 10%)	%	18.0	17.0					
Dissolved Oxygen (+/- 10%)	mg/L	1.70	1.65					
Eh / ORP (+/- 10)	MeV	67.3	67.3					
Specific Conductivity	mS/cm^c	0.650	0.647					
Conductivity (+/- 3%)	mS/cm	0.563	0.563					
pH (+/- 0.1)	pH unit	7.29	7.31					
Temp (+/- 0.5)	C	17.98	18.10					
Color	Visual	clear	clear					
Odor	Olfactory	No	No					

Comments: Sampled @ 9:30

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-4 Date: August 11, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-4 081114 QA/QC Collected? _____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	8.22	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	13:49	13:54	13:59	14:04	14:09	14:14	14:19
Water Level (0.33)	feet	8.81	9.11	9.37	9.70	9.92	10.18	10.37
Volume Purged	gal	N/A	0.2	0.25	←to 0.3	0.36.	0.5	0.6
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	286	169	175	130	115	91.5	56.7
Dissolved Oxygen (+/- 10%)	%	6.4	3.0	3.4	3.8	3.9	3.9	4.1
Dissolved Oxygen (+/- 10%)	mg/L	0.64	0.29	0.32	0.36	0.36	0.36	0.37
Eh / ORP (+/- 10)	MeV	-96	-97.2	-79.5	-71.7	-73	-67.9	-62.4
Specific Conductivity	mS/cm[c]	0.544	0.537	0.529	0.524	0.522	0.521	0.518
Conductivity (+/- 3%)	mS/cm	0.494	0.444	0.450	0.455	0.463	0.466	0.471
pH (+/- 0.1)	pH unit	7.29	7.21	7.23	7.26	7.26	7.28	7.27
Temp (+/- 0.5)	C	15.40	15.87	17.13	18.03	19.05	19.64	20.02
Color	Visual	Clear	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Odor	Olfactory	No	No	Metallic	Metallic	Metallic	Metallic	Metallic

Comments:

Sampled @ 14:23

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-4R Date: August 11, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-4R 081114 QA/QC Collected? DUP-1

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	20.99	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
~~2-inch~~	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings							
Time	24 hr	13:35	13:40	13:45	13:50	13:55	14:00	14:05	14:10
Water Level (0.33)	feet	20.99	22.47	22.42	22.46	22.46	22.46	22.48	22.48
Volume Purged	gal	0	.10	.20	.30	.35	.40	.42	0.44
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	Limit	Limit	840	777	174	124	77.0	50
Dissolved Oxygen (+/- 10%)	%	14.5	2.4	1.5	1.7	2.2	2.7	3.0	3.5
Dissolved Oxygen (+/- 10%)	mg/L	1.57	0.25	0.15	0.17	0.22	0.26	0.32	0.34
Eh / ORP (+/- 10)	MeV	86.1	-37.5	-20.4	-15.3	+28.6	25.4	25.2	28.3
Specific Conductivity	mS/cm[c]	1.452	1.669	1.690	1.675	1.509	1465	1.465	1.480
Conductivity (+/- 3%)	mS/cm	1.445	1.319	1.341	1.332	1.247	1.218	1.220	1.225
pH (+/- 0.1)	pH unit	7.22	6.44	6.49	6.57	6.87	6.92	6.97	6.97
Temp (+/- 0.5)	C	13.35	14.13	14.24	14.28	15.87	16.15	16.56	16.74
Color	Visual	Brown	L. Brown	L. Brown	L. Brown	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO	NO

Comments: Sampled @ 14:10

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-10 Date: August 12, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-10 081214 QA/QC Collected? ____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:	____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	25.76	feet
4. C = Column of Water in Casing:	____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	____	gal
6. D2 = Pump Setting Depth (ft):	____	feet
7. C2 = Column of water in Pump/Tubing (ft):	____	feet
8. Tubing Volume = C2(0.005737088)	____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	13:50	13:55	14:00	14:05	14:10	14:15	14:20
Water Level (0.33)	feet	26.12	26.00	26.08	26.25	26.35	26.40	26.43
Volume Purged	gal	0	0.13	0.15	0.20	0.25	0.30	0.32
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	203	178	133	136	91.0	84.8	74.4
Dissolved Oxygen (+/- 10%)	%	4.3	1.7	2.5	2.3	2.6	2.6	2.8
Dissolved Oxygen (+/- 10%)	mg/L	0.45	0.18	0.25	0.22	0.26	0.26	0.28
Eh / ORP (+/- 10)	MeV	97.8	103.6	90.5	99.5	94.6	92.7	90.2
Specific Conductivity	mS/cm[c]	0.705	0.704	0.703	0.705	0.701	0.700	0.698
Conductivity (+/- 3%)	mS/cm	0.554	0.564	0.576	0.581	0.569	0.570	0.576
pH (+/- 0.1)	pH unit	6.47	6.55	6.70	6.85	6.79	6.75	6.83
Temp (+/- 0.5)	C	13.75	14.59	15.46	15.86	15.12	15.33	15.83
Color	Visual	Muddy	clear	clear	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO

Comments:

Sampled @ 14:20

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-11 Date: August 11, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-11081114 QA/QC Collected? ____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	15.53	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	9:10	9:15	9:20	9:25	9:30	9:35	9:40
Water Level (0.33)	feet	17.12	18.30	19.30	19.93	20.3	20.45	20.98
Volume Purged	gal	0	.10	.25	0.625	0.7	0.85	0.95
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	16.9	18.7	21.1	22.4	25.7	32.6	26.2
Dissolved Oxygen (+/- 10%)	%	80.1	27.9	22.1	19.7	15.5	14.9	13.4
Dissolved Oxygen (+/- 10%)	mg/L	8.09	2.92	2.30	2.01	1.57	1.49	1.32
Eh / ORP (+/- 10)	MeV	292.1	264.4	200.6	180.7	147.0	139.3	205.2
Specific Conductivity	mS/cm[c]	0.578	0.575	.575	0.577	0.571	0.571	0.571
Conductivity (+/- 3%)	mS/cm	0.442	.445	.448	0.455	0.460	0.464	0.473
pH (+/- 0.1)	pH unit	7.11	6.35	6.50	6.65	6.79	6.86	6.98
Temp (+/- 0.5)	C	12.71	13.15	13.48	14.27	14.69	15.06	15.75
Color	Visual	clear	clear	clear	clear	Clear	Clear	Clear
Odor	Olfactory	NO	No	No	No	No	No	No

Comments:

Sampled @ 9:55

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-11 Date: 8/11/14

Samplers: Ross McCready & Chris French

Sample Number: MW-11081114 QA/QC Collected? _____

Purging / Sampling Method: Grundfos w/ dedicated tubing.

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	15.53	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	9:45	9:50	9:55				
Water Level (0.33)	feet	21.62	21.8	21.9				
Volume Purged	gal	1.05	1.125	1.25				
Flow Rate	mL / min	<100	<100	<100				
Turbidity (+/- 10%)	NTU	24.3	24.6	24.8				
Dissolved Oxygen (+/- 10%)	%	13.2	11.7	11.1				
Dissolved Oxygen (+/- 10%)	mg/L	1.31	1.16	1.07				
Eh / ORP (+/- 10)	MeV	176.7	145.9	123.6				
Specific Conductivity	mS/cm[c]	0.575	0.567	0.567				
Conductivity (+/- 3%)	mS/cm	0.473	0.470	0.473				
pH (+/- 0.1)	pH unit	7.01	6.95	7.00				
Temp (+/- 0.5)	C	15.9	15.86	16.23				
Color	Visual	Clear	Clear	Clear				
Odor	Olfactory	No	No	No				

Comments:

Sampled @ 9:55

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-13 Date: August 12, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-13 081214 QA/QC Collected? _____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	23.22	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	14:05	14:10	14:15	14:20	14:25	14:30	14:35
Water Level (0.33)	feet	25.22	25.59	25.83	25.98	26.16	26.29	26.25
Volume Purged	gal	N/A	0.2	0.25	0.375	0.42	0.48	0.6
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	150	121	114	264	203	210	205
Dissolved Oxygen (+/- 10%)	%	16.8	5.8	3.8	2.3	1.7	1.6	1.5
Dissolved Oxygen (+/- 10%)	mg/L	1.76	0.59	0.38	0.23	0.17	0.16	0.15
Eh / ORP (+/- 10)	MeV	47.4	49.1	13.2	-63.6	-103.8	-108.8	-108.3
Specific Conductivity	mS/cm[c]	0.267	0.312	0486	0.637	0.692	0.703	0.711
Conductivity (+/- 3%)	mS/cm	0.213	0.250	0.398	0.529	0.577	0.586	0.593
pH (+/- 0.1)	pH unit	7.12	7.01	7.10	7.19	7.23	7.25	7.27
Temp (+/- 0.5)	C	14.06	14.67	15.62	16.27	16.34	16.36	16.33
Color	Visual	Milky	Clear	Clear	Cloudy	Cloudy Metallic	Cloudy Metallic	Cloudy Metallic
Odor	Olfactory	No	No	No	No			

Comments:

Sampled @ 14:38

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-14 Date: August 12, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-14 QA/QC Collected? MS/MSD

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	10.93	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	09:45	09:50	09:55	10:00	10:05	10:10	10:15
Water Level (0.33)	feet	14.08	14.19	14.26	14.32	14.34	14.40	14.45
Volume Purged	gal	0	0.10	0.15	0.20	0.25	0.30	0.35
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	191	85.2	76.1	66.2	53.3	46.6	38.2
Dissolved Oxygen (+/- 10%)	%	5.9	2.5	3.0	2.9	3.3	3.2	2.8
Dissolved Oxygen (+/- 10%)	mg/L	0.64	0.25	0.30	0.28	0.32	0.31	0.28
Eh / ORP (+/- 10)	MeV	1.7	-8.1	-27.4	-30.5	-38.7	-45.9	-47.3
Specific Conductivity	mS/cm[c]	1.345	1.329	1.313	1.286	1.258	1.240	1.208
Conductivity (+/- 3%)	mS/cm	1.028	1.058	1.071	1.085	1.072	1.060	1.067
pH (+/- 0.1)	pH unit	6.44	6.40	6.64	6.85	6.90	6.93	6.90
Temp (+/- 0.5)	C	12.62	14.25	15.31	16.80	17.25	17.21	16.70
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No

Comments:

Sampled @ 10:15

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-15 Date: August 12, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-15081214 QA/QC Collected? _____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	9.12	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	9:53	9:58	10:03	10:08	10:13	10:18	10:23
Water Level (0.33)	feet	9.58	9.97	10.22	10.40	10.51	10.72	10.82
Volume Purged	gal	N/A	0.1	0.22	0.27	0.33	0.375	0.45
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	371	35.9	62.2	85.9	46.5	30.1	14.8
Dissolved Oxygen (+/- 10%)	%	23.9	6.2	3.0	2.8	2.1	1.7	1.3
Dissolved Oxygen (+/- 10%)	mg/L	2.48	0.67	0.29	0.28	0.20	0.16	0.12
Eh / ORP (+/- 10)	MeV	-46.2	-94.1	-107.8	-111.1	-113.8	-115.3	-111.5
Specific Conductivity	mS/cm^c	0.265	0.764	0.983	1.024	1.055	1.079	1.071
Conductivity (+/- 3%)	mS/cm	0.215	0.623	0.824	0.870	0.903	0.913	0.903
pH (+/- 0.1)	pH unit	7.39	7.13	7.15	7.16	7.16	7.18	7.15
Temp (+/- 0.5)	C	14.98	15.87	16.56	17.19	17.46	17.04	16.88
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	Sulfur	Metallic	Metallic	Metallic	Metallic	Metallic	Metallic

→ New Sheet

Comments: Recomend new tubing, due to missing J-Plug Biologicals are growing/on tubing

Sampled @ 10:35

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-15 Date: 8/12/14

Samplers: Chris French / Ross McCredy

Sample Number: MW-15081214 QA/QC Collected? _____

Purging / Sampling Method: Grundfos pump w/ dedicated tubing

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	9.12	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	10:28	10:33					
Water Level (0.33)	feet	10.87	10.91					
Volume Purged	gal	0.58	0.75					
Flow Rate	mL / min	<100	<100					
Turbidity (+/- 10%)	NTU	13.4	11.9					
Dissolved Oxygen (+/- 10%)	%	1.2	1.2					
Dissolved Oxygen (+/- 10%)	mg/L	0.12	0.11					
Eh / ORP (+/- 10)	MeV	-109.6	-107.0					
Specific Conductivity	mS/cm^c	1.078	1.067					
Conductivity (+/- 3%)	mS/cm	0.908	0.909					
pH (+/- 0.1)	pH unit	7.16	7.17					
Temp (+/- 0.5)	C	17.06	17.24					
Color	Visual	Clear	Clear					
Odor	Olfactory	Metallic	Metallic					

Comments:

Sampled @ 10:35

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-16 Date: August 12 , 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-16081214 QA/QC Collected? _____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	21.80	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 ~~& Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings						
Time	24 hr	11:21	11:26	11:31	11:36	11:41	11:46	11:51
Water Level (0.33)	feet	22.63	23.35	23.96	24.34	24.90	25.49	26.03
Volume Purged	gal	N/A	0.125	0.20	0.25	0.30	0.35	0.40
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	207	60.0	169	237	210	219	174
Dissolved Oxygen (+/- 10%)	%	16.9	10.6	3.2	2.9	2.3	2.1	1.7
Dissolved Oxygen (+/- 10%)	mg/L	1.85	1.12	0.34	0.30	0.23	0.22	0.17
Eh / ORP (+/- 10)	MeV	57.1	28.2	-23.5	-41.9	-51.5	-58	-58.3
Specific Conductivity	mS/cm^c	0.305	0.350	0.682	0.725	0.774	0.794	0.793
Conductivity (+/- 3%)	mS/cm	0.230	0.267	0.537	0.575	0.611	0.624	0.624
pH (+/- 0.1)	pH unit	7.63	7.34	7.29	7.30	7.29	7.28	7.27
Temp (+/- 0.5)	C	12.14	12.79	13.98	14.17	14.00	13.81	13.81
Color	Visual	Clear	Clear	Clear	Milky	Milky Sulfur	Milky Sulfur	Milky Sulfur
Odor	Olfactory	ND	No	No	No			

Comments:

Sampled @ 12:25

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-16 Date: 8/12/14

Samplers: Chris French & Ross McCredy

Sample Number: MW-160812I4 QA/QC Collected? _____

Purging / Sampling Method: Grundfos pump & dedicated tubing

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	21.86	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & 2100P Turbidimeter

Parameter	Units	Readings					
Time	24 hr	11:56	12:01	12:06	12:11	12:16	12:21
Water Level (0.33)	feet	26.56	27.08	27.60	28.26	28.79	29.48
Volume Purged	gal	0.5	0.55	0.625	0.75	0.875	1.0
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	226	126	125	134	96.7	64.3
Dissolved Oxygen (+/- 10%)	%	1.6	1.3	1.1	1.1	1.0	1.0
Dissolved Oxygen (+/- 10%)	mg/L	0.16	0.13	0.12	0.11	0.10	0.10
Eh / ORP (+/- 10)	MeV	-55.6	-46.7	-40.6	-34.9	-30.3	-22.3
Specific Conductivity	mS/cm[c]	0.789	0.787	0.780	0.741	0.688	0.645
Conductivity (+/- 3%)	mS/cm	0.622	0.621	0.617	0.580	0.541	0.503
pH (+/- 0.1)	pH unit	7.28	7.29	7.29	7.28	7.26	7.28
Temp (+/- 0.5)	C	13.91	14.01	14.03	13.59	13.81	13.38
Color	Visual	Milky	Milky	Milky	Milky	Clear	Clear
Odor	Olfactory	Sulfur	Sulfur	Sulfur	No	No	No

Comments: Parameters did not stabilize, Sampled after 1 hour

Sampled @ 12:25

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-17 Date: August 12, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-17 081214 QA/QC Collected? _____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	10.55	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 ~~& Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings					
Time	24 hr	11:05	11:10	11:15	11:20	11:25	11:30
Water Level (0.33)	feet	12.65	12.83	13.08	13.20	13.45	13.50
Volume Purged	gal	0	.10	.15	.20	.22	.25
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	20.8	18	10.4	15.0	4.78	4.61
Dissolved Oxygen (+/- 10%)	%	2.7	2.1	1.7	2.1	2.0	2.0
Dissolved Oxygen (+/- 10%)	mg/L	0.29	0.23	0.18	0.21	0.20	0.20
Eh / ORP (+/- 10)	MeV	-67.0	-68.5	-67.0	-79.4	-79.4	-72.0
Specific Conductivity	mS/cm[c]	1.049	1.052	1.056	1.060	1.063	1.069
Conductivity (+/- 3%)	mS/cm	.787	0.798	0.815	0.844	0.850	0.851
pH (+/- 0.1)	pH unit	8.42	6.31	6.41	6.73	6.78	6.80
Temp (+/- 0.5)	C	11.86	12.33	13.06	14.33	14.53	14.40
Color	Visual	Clear	Clear	Clear	Clear	Clear	Sulfur
Odor	Olfactory	Sulfur	Sulfur	NO	NO	NO	NO

Comments:

Sampled @ 11:30

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-18 Date: August 11, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-18080114 QA/QC Collected?

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	21.84	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings							
Time	24 hr	10:53	10:58	11:03	11:08	11:13	11:18	11:23	11:28
Water Level (0.33)	feet	22.32	22.43	22.52	22.6	22.65	22.65	22.68	22.80
Volume Purged	gal	0	0.25	0.4	0.5	0.55	0.7	0.75	0.82
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	63.4	46.6	33.4	33.1	65.2	53.5	40.3	37.3
Dissolved Oxygen (+/- 10%)	%	41	30.5	28.4	33.1	29.2	23.7	22.3	22.4
Dissolved Oxygen (+/- 10%)	mg/L	4.41	3.26	3.04	3.53	3.11	2.54	2.36	2.45
Eh / ORP (+/- 10)	MeV	172.8	189.5	173.0	167.5	158.3	148.9	142.3	140.2
Specific Conductivity	mS/cm[c]	0.295	0.290	0.288	0.283	0.340	0.349	0.351	0.351
Conductivity (+/- 3%)	mS/cm	0.224	0.221	0.219	0.216	0.259	0.265	0.267	0.270
pH (+/- 0.1)	pH unit	6.76	6.05	6.09	6.36	6.42	6.46	6.53	6.55
Temp (+/- 0.5)	C	12.46	12.43	12.37	12.62	12.58	12.46	12.58	12.09
Color	Visual	Yellow	yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Odor	Olfactory	No	No	No	NO	No	No	No	No

Comments:

Sampled @ 11:30

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-19 Date: August 12, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-19 08/12/14 QA/QC Collected? _____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	30.90	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Water Level: 33.66

Parameter	Units	Readings						
Time	24 hr	8:32	8:37	8:42	8:47	8:52	8:57	9:02
Water Level (0.33)	feet	32.28	32.36	32.18	~~32.66~~	33.94	34.21	34.36
Volume Purged	gal	N/A	0.125	0.30	0.375	0.42	0.5	0.625
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	185	245	682	601	450	412	382
Dissolved Oxygen (+/- 10%)	%	28.6	19.0	9.9	3.8	3.0	2.8	2.9
Dissolved Oxygen (+/- 10%)	mg/L	2.97	1.93	1.00	0.39	0.30	0.28	0.28
Eh / ORP (+/- 10)	MeV	29.5	33.3	29.3	21.4	19.3	20.0	~~0.28~~ 20.6
Specific Conductivity	mS/cm^c	1.118	1.160	1.195	1.209	1.209	1.210	1.210
Conductivity (+/- 3%)	mS/cm	0.879	0.927	0.967	0.976	0.980	0.989	0.996
pH (+/- 0.1)	pH unit	7.14	7.07	7.05	7.03	7.03	7.04	7.04
Temp (+/- 0.5)	C	13.86	14.50	15.12	19.88	15.07	15.45	15.72
Color	Visual	Clear	Clear	Clear	Milky	Milky	Milky	Milky
Odor	Olfactory	No	No	No	No	No	No	

Comments:

Sampled @ 9:04

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Ward Products 60322038

Monitoring Well Number: MW-20 Date: August 12, 2014

Samplers: Chris French & Ross McCredy

Sample Number: MW-20 08/12/14 QA/QC Collected? _____

Purging / Sampling Method: Grundfos or Peristaltic Pump with dedicated tubing/Low Flow

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	2	feet
3. W = Static Depth to Water (TOC):	_____	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 & ~~Lamotte 2020 Turbidity Meter~~ 2100P Turbidimeter

Parameter	Units	Readings							
Time	24 hr	08:20	8:25	8:30	8:35	8:40	8:45	8:50	8:56
Water Level (0.33)	feet	24.25	24.55	24.85	24.85	25.20	25.36	25.60	25.70
Volume Purged	gal	0	0.10	0.15	0.20	0.25	0.29	0.34	0.38
Flow Rate	mL / min	<100	<100	<100	<100	<100	<100	<100	<100
Turbidity (+/- 10%)	NTU	689	Limit	Limit	Limit	Limit	Limit	Limit	Limit
Dissolved Oxygen (+/- 10%)	%	41.7	21.6	13.2	9.6	7.7	6.1	5.7	4.9
Dissolved Oxygen (+/- 10%)	mg/L	4.48	2.22	1.32	0.94	0.77	0.60	0.55	0.48
Eh / ORP (+/- 10)	MeV	-32.8	-55.1	-81.8	-100.6	-123.7	-149.3	-160.0	-160.8
Specific Conductivity	mS/cm^c	0.807	0.819	0.830	0.840	0.851	0.849	0.855	0.851
Conductivity (+/- 3%)	mS/cm	0.622	0.652	0.674	0.697	0.701	0.703	0.703	0.700
pH (+/- 0.1)	pH unit	6.93	6.35	6.57	6.89	6.91	6.90	6.93	6.90
Temp (+/- 0.5)	C	13.05	14.33	15.18	16.09	15.83	15.99	15.70	15.50
Color	Visual	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy GR	cloudy	Cloudy
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO	NO

Comments: * No J-Plug or well casing covering well opening, Turbidity did not stabilize

Sampled @ 8:55

* Three consecutive readings within range indicates stabilization of that parameter.

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Albany, New York 12207
518-434-4546/434-0891 FAX

CHAIN OF CUSTODY RECORD

AES Work Order #

A full service analytical research laboratory offering solutions to environmental concerns

Client Name:	Address:	
AECOM		
Send Report To:	**Project Name (Location)**	**Samplers: (Names)**
Client Phone No:	**Client Email:**	**PO Number:**

Samplers: (Signature)

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type Matrix	Comp	Grab	Number of Cont's	Analysis Required
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					

Shipment Arrived Via:

FedEx UPS Client AES Other:_____

CC Report To / Special Instructions/Remarks:

Turnaround Time Request:

☐ 1 Day ☐ 3 Day ☐ Normal
☐ 2 Day ☐ 5 Day

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by:	Date/Time

Temperature	AES Bottles		Properly Preserved	Received Within Holding Times
Ambient or Chilled	Y	N	Y N	Y N
Notes:	☐	☐	Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

1 of 2

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CHAIN OF CUSTODY RECORD

AES Work Order #

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Client Name: AECOM	Address: 40 B[illegible] Albany [illegible] Blvd Latham NY	
Send Report To: Chris F[illegible]	Project Name (Location): Wood [illegible]	Samplers: (Names) R[illegible] / Ch[illegible] F[illegible]
Client Phone No:	Client Email: [illegible]	PO Number: [illegible]
		Samplers: (Signature) [signature]

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-20081214	8/12/14	[illegible]	A / P	GW		X	2	8260 TCL
	↓	↓	↓	A / P	↓		X	1	HEX - CHROME
	↓	↓	↓	A / P	↓		X	1	Ion Metal
	MW-19081214	8/12/14	[illegible]	A / P	GW		X	2	8260 TCL
	↓	↓	↓	A / P	↓		X	1	HEX CHROM
	↓	↓	↓	A / P	↓		X	1	Ion Metals
	MW-14081214	8/12/14	[illegible]	A / P	GW		X	4	[illegible]
	↓			A / P	↓		X	1	HEX - Chrome
	↓	↓	[illegible]	A / P	↓		X	1	Ion Metals
	MW-15081214	8/12/14		A / P	GW		X	2	8260 TCL
	↓	↓	↓	A / P	↓		X	1	HEX - Chrome
	↓	↓	↓	A / P	↓		X	1	Ion Metals
	(Continued)			A / P					
				A / P					

Shipment Arrived Via:	CC Report To / Special Instructions/Remarks:
FedEx UPS Client AES Other:_____	R[illegible] [illegible]

Turnaround Time Request:

- ☐ 1 Day ☐ 3 Day ☐ Normal
- ☐ 2 Day ☐ 5 Day

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature]		8/12/14
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by: [signature]	Date/Time 8/12/14 3:47 PM

TEMPERATURE	AES Bottles	PROPERLY PRESERVED	RECEIVED WITHIN HOLDING TIMES
Ambient or (Chilled)	Y ☒ N ☐	(Y) N	(Y) N
Notes: 2		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

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CHAIN OF CUSTODY RECORD

AES Work Order #

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Client Name:	Address:	
AECOM	[illegible] BLVD Latham NY	
Send Report To:	Project Name (Location)	Samplers: (Names)
[illegible]	West Bethlehem	[illegible]
Client Phone No:	Client Email:	PO Number:
	[illegible]	[illegible]

Samplers: (Signature)

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.	Sample Type: Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-17-1214	[illegible]	A/P	GW		X	2	[illegible]
	↓	↓	A/P	↓		X	1	Hex. chrome
	↓	↓	A/P	↓		X	1	[illegible]
	MW-11-1214	[illegible]	A/P	GW		X	2	[illegible]
	↓	↓	A/P	↓		X	1	Hex. chrome
	↓	↓	A/P	↓		X	1	[illegible]
	MW-10C-1214	[illegible]	A/P	GW		X	2	[illegible]
	↓	↓	A/P	↓		X	1	Hex. Chrome
	↓	↓	A/P	↓		X	1	[illegible]
	MW-13B-1214	[illegible]	A/P	GW		X	2	[illegible]
	↓	↓	A/P	↓		X	1	Hex. Chrome
	↓	↓	A/P	↓		X	1	[illegible]
	T. Blank	[illegible]	A/P					
			A/P					

Shipment Arrived Via:
FedEx UPS Client AES Other:_____

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☑ Normal
☐ 2 Day ☐ 5 Day

CC Report To / Special Instructions/Remarks:

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[illegible]	[illegible]	[illegible]
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by: [illegible]	Date/Time 8/12/14 3:47 PM

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or (Chilled)	Y ☒ N ☐	(Y) N	(Y) N
Notes: 2		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

Adirondack Environmental Services Inc.
Experience is the solution

314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

CHAIN OF CUSTODY RECORD

AES Work Order #

A full service analytical research laboratory offering solutions to environmental concerns

Client Name: AECOM	Address: 40 British American BLVD Latham, NY		
Send Report To: [illegible]	Project Name (Location): Ward Products		Samplers: (Names): [illegible]
Client Phone No:	Client Email: [illegible]	PO Number: [illegible]	Samplers: (Signature): [illegible]

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.	Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-1R081314	8/13/14	A / P	GW		X	2	[illegible]
	↓	↓	↓ A / P	↓		X	1	Hex-Chrome
	↓	↓	↓ A / P	↓		X	1	[illegible] Metals
	Trip Blank	8/13/14	- A / P	-		—		
			A / P					
			A / P					
			A / P					
			A / P					
			A / P					
			A / P					
			A / P					
			A / P					
			A / P					
			A / P					

Shipment Arrived Via:
FedEx UPS Client AES Other:________

CC Report To / Special Instructions/Remarks:

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☑ Normal
☐ 2 Day ☐ 5 Day

Relinquished by: (Signature) [illegible]	Received by: (Signature)	Date/Time 8/13/14 2:2[illegible]
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by: [illegible]	Date/Time 8/13/14 2:16pm

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or Chilled (circled) Notes: 2	Y ☒ N ☐	Y (circled) N Notes:	Y (circled) N Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

Adirondack Environmental Services, Inc.

MW-20, damage, August 2014

2015 Field Notes

Location Amsterdam, NY Date 5/26/2015

Project / Client Semi-Annual GW Sampling/MW Gauging
Ward Products

0755	AECOM (M. Kuzia-Carmel, G. Dunlavey) on site. Conditions: 85°, cloudy. Meet with Steve Gray to conduct site walk, locate monitoring wells. New tenant is occupying property across Edson St. Pumping wells are on. AECOM shuts wells down temporarily to allow for passing MW purge water through system.
0830	Steve Gray off site. AECOM sets up on MW-11. AECOM is using the following equipment: · Geopump peristaltic pump for shallow wells (≤30' DTW) · Monsoon submersible pump for deep wells (>30' DTW) · Horiba U-52 Multimeters · Hach 2100 Turbidimeters · PIDs - MiniRae 2000/3000 · Solinst - Water Level Meters
0855	MW-11 has ½ x ⅜" tubing. AECOM is unable to sample with peristaltic pump. AECOM leaves site to get ⅜ x ¼" tubing.
0945	AECOM back on site. Still unable to sample from MW-11.
1030	Move on to MW-1/MW-1R. Begin low flow purging at 1050.
1130	Sample MW-1R, DUP - 5/26/15 (1230 time).
1140	Sample MS - 5/26/15.

Location Amsterdam, NY Date 5/26/2015

Project / Client GW Sampling/MW Gauging
Ward Products

1145	Sample MSD - 5/26/15
1200	Move to MW-4/MW-4R. Begin low-flow purging on both wells
1250	Sample MW-4.
1305	Sample MW-4R.
1335	AECOM splits up. MKC will sample MW-10 with submersible pump. GD will sample MW-17 with peristaltic pump.
1505	Sample MW-10
1515	Sample MW-17. See below for gauging data

Well ID	DTW	DTB	Notes
MW-11	15.67	30.28	
MW-1	4.90	7.20	
MW-1R	5.14	17.93	
MW-5	17.83	18.85	
MW-2	5.37	11.62	
MW-3	6.30	14.79	
MW-6*	21.18*	37.42*	* NOT MW-6, IW-04
MW-4	8.28	14.39	
MW-4R	17.55	34.14	
MW-8	14.09	30.20	
MW-9	18.99	47.12	
RW-02	18.98	41.32	
MW-12	18.93	45.42	

Location Amsterdam, NY Date 5/26/2015

Project / Client GW Sampling / MW Gauging
Ward Products

Well ID	DTW	DTB	Notes
MW-10	18.28	50.48	
MW-17	8.88	66.79	

1545 AECOM demobilizes all sampling equipment. All purge water passed through treatment system. System turned back on.

1555 AECOM off site (to lab w/ samples).

MKC

MKC

Location Amsterdam, NY Date 5/27/2015

Project / Client GW Sampling / MW Gauging
Ward Products

0730 AECOM (M. Kuzia-Carmel, G. Dunlavey) on site. Conditions: overcast, 75°F. Will continue w/ MW Gauging + Sampling. MKC + GD split up to sample wells. MKC will sample MW-18, MW-13, MW-19. GD will sample MW-11, MW-14, MW-16.

0825 GD samples MW-11.

0905 MKC samples MW-13.

0955 GD samples MW-14.

1015 MKC unable to sample MW-18 with submersible pump due to destruction in well (@ ≈ 20' down). Move on to MW-19.

1125 GD samples MW-16

1215 MKC samples MW-19. Take a break for lunch.

1300 ~~MKC~~ MKC AECOM back on site. Unable to locate MW-15. Well is covered with crushed gravel. Contact ~~support~~ MKC PM for support. Advised to return w/ metal detector to locate. MKC + GD move on to MW-20.

1400 Moderate rain on site.

1425 Sample MW-20. Move to MW-18.

1500 AECOM is able to use peristaltic pump to purge MW-18.

1545 Sample MW-18. See following page for gauging data

Location Amsterdam, NY Date 5/27/2015

Project / Client GW Sampling / MW Gauging
Ward Products

Well ID	DTW	DTB	Notes
MW-6	18.03	37.45	
MW-7	17.59	34.32	
MW-11	17.11	30.62	
MW-13	15.09	68.78	
MW-14	12.35	54.83	
MW-18	21.59	66.18	obstruction in well
MW-16	21.22	66.86	
MW-19	30.98	69.91	
MW-20	24.30	53.52	

1600 All equipment demobilized + site restored. AECOM to lab w/ samples.

MKC

MKC

Location Amsterdam, NY Date 5/28/2015

Project / Client GW Sampling
Ward Products

1305 AECOM (M. Kuzia-Carmel) on site. Conditions: clear, 90°F. Will attempt to locate MW-15 using metal detector.

1315 MW-15 located. See sketch for relative locations.

Sketch

1400 Begin low-flow purge on MW-15.

1450 Sample MW-15.

1515 AECOM to lab w/ samples. All equipment de-mobilized. purge water passed through treatment system

Well ID	DTW	DTB	Notes
MW-15	9.84	54.37	took pictures of location

MKC

MKC

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-1R

Page 1 of ___

Field Personnel:

Date: 5/26/2015

Job No.:

Location:

Total Well Depth (from top of casing): 17.43 5.14 feet

Depth to Water Surface Before Purging (from top of casing): - 5.14 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): inches Gals per ft: $(d^2 \times 0.0408) = x$

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1049	.25	6.81	0.492	22.63	7.39	3.28	141	0.3
1054	.25	7.92	0.490	21.88	7.02	3.14	151	0.0
1059	.25	9.12	0.489	21.31	6.83	3.17	156	0.0
1104	.25	10.32	0.430	21.01	6.74	3.33	158	0.0
1109	.25	11.31	0.370	20.71	6.70	3.64	156	0.0
1114	.25	12.44	0.412	20.99	6.69	3.32	156	0.0
1119	.25	13.46	0.430	21.25	6.71	3.27	154	0.2
1124	.20	14.68	0.450	21.57	6.77	3.28	152	0.0
1129								

Total Volume of Water Purged: gallons/liters

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes: Sample time: 1130

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-4R

Field Personnel: M. Kuzia- Carmel, G. Dunlavey

Date: 5/26/2015

Job No.:

Location:

Total Well Depth (from top of casing): 34.14 feet

Depth to Water Surface Before Purging (from top of casing): - 17.55 feet

Height of Water Column: a = feet

Screen Length: b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) = x$

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet) ✓	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU) ✓	Dissolved Oxygen ✓ (mg/L)	Redox Potential (mV) ✓	Turbidity (NTU) ✓
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1230	0.5L/min	20.88	1.29	15.40	6.78	2.25	102	346
1235	0.5L/min	21.44	1.03	17.96	6.81	1.76	104	191
1240	0.5L/min	23.17	1.07	11.33	6.73	2.29	104	28.6
1245	0.4L/min	22.34	0.962	15.17	6.75	2.30	107	25.1
1250	0.4L/min	22.19	0.973	16.51	6.83	2.15	110	21.3
1255	0.4L/min	22.32	1.11	18.10	6.87	1.74	109	19.6
1300	0.35L/min	22.07	1.12	17.11	6.94	1.81	111	16.0
1305	0.4L/min	22.30	1.17	16.95	6.92	1.84	114	12.4

Total Volume of Water Purged: gallons/liters

Sampling Data: Sample at 1305 - Sampling Method: Bailer or Pump

- Depth of Pump intake or bailer: feet

- Color: Odor: none Sheen/Appearance: none

Notes: Initial color dark brown, turbid

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-10

Page 1 of 1

Field Personnel:

Date: 5/26/2015

Job No.:

Location: Ward Products

Total Well Depth (from top of casing): 50.48 feet

Depth to Water Surface Before Purging (from top of casing): - 18.28 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: (d^2 x 0.0408) = x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet) ✓	SC (mmhos/cm or µmhos) ✓	Temp. (°F or °C) X	pH (SU) ✓	Dissolved Oxygen (mg/L) ✓	Redox Potential (mV) ✓	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1415	—	18.89	0.546	29.88	7.65	2.76	157	281
1420	0.55L/min	19.17	0.635	21.67	7.00	2.16	168	240
1425	0.50L/min	19.18	0.600	23.58	6.98	1.78	164	164
1430	0.55L/min	19.20	0.594	23.72	6.86	1.74	167	156
1435	0.65L/min	19.53	0.605	22.43	6.81	1.50	168	125
1440	0.65L/min	19.24	0.598	22.88	6.80	1.51	172	104
1445	0.4L/min	18.97	0.595	23.14	6.88	1.57	169	74.3
1450	0.55L/min	19.15	0.598	23.02	6.84	1.56	171	49.9
1455	0.55L/min	19.17	0.600	22.84	6.81	1.58	172	50.2
1500	0.55L/min	19.19	0.601	22.76	6.81	1.56	171	48.7
MW ~~10~~								

Total Volume of Water Purged: gallons/liters

Sampling Data: Sample at 1505

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: feet
- Color: Brown Odor: Sheen/Appearance:

Notes:

GW Initially very turbid

MW ~~Couldn't get Flow down to 0.5L/min Used S.S. Monsoon submersible pump~~

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-11

Page 1 of ___

Field Personnel:

Date: 5/26/2015

Job No.:

Location:

Total Well Depth (from top of casing): 30.28 feet

Depth to Water Surface Before Purging (from top of casing): - 15.67 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): inches Gals per ft: $(d^2 \times 0.0408) = x$

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
10:03	.35	18.51	0.437	24.22	8.01	1.81	44	0.0
10:08	.30	19.44	0.421	23.09	7.41	1.70	56	0.0
10:13	.35	20.65	0.278	23.49	6.88	1.78	89	0.0

Total Volume of Water Purged: gallons/liters

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes:

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-1

Page 1 of

Field Personnel:

Date: 5/27

Job No.:

Location:

Total Well Depth (from top of casing): 30.62 feet

Depth to Water Surface Before Purging (from top of casing): - 17.11 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) = x$

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
0758	.25	19.08	0.263	25.45	7.74	2.41	76	0.0
0803	.25	20.73	0.271	24.72	7.86	1.65	81	0.0
0808	.25	21.35	0.264	24.03	7.87	1.42	98	0.0
0813	.25	22.33	6.268	23.43	7.86	1.39	105	0.0
0818	.25	23.49	0.269	22.83	7.85	1.29	105	0.0
0823	.25	24.36	6.275	22.71	7.83	1.21	101	0.0

Total Volume of Water Purged: gallons/liters

Sampling Data:

- Sampling Method: Bailer or (Pump) Tubing
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes: Sample time: 0825

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-13

Page 1 of 1

Field Personnel: M. Kuzia, Carmel

Date: ~~5/26/2015~~ 5/27/2015

Job No.:

Location:

Total Well Depth (from top of casing): 68.78 feet

Depth to Water Surface Before Purging (from top of casing): - 15.09 feet

Height of Water Column: a = feet

Screen Length: b feet

Lesser of a and b

Well Diameter (d): 2 inches

Gals per ft: $(d^2 \times 0.0408) =$ x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC ✓ (mmhos/cm or µmhos)	Temp. X (°F or °C)	pH ✓ (SU)	Dissolved Oxygen ✓ (mg/L)	Redox ✓ Potential (mV)	Turbidity (NTU) ✓
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
0815	-	18.19	0.247	24.43	7.52	3.03	236	5.1
0820	0.5L/min	21.07	0.664	14.17	7.03	2.08	-117	245
0825	0.55L/min	—	0.666	14.97	6.90	1.87	-124	311
0830	0.6L/min	30.74	0.686	12.59	6.81	1.89	-103	138
0835	0.65L/min	32.52	0.652	12.40	6.80	1.92	-88	24.6
0840	0.65L/min	33.16	0.570	14.62	~~6.66~~ 6.85	1.81	-76	11.6
0845	0.4L/min	33.17	0.646	13.22	6.87	1.84	-69	3.1
0850	0.4L/min	32.68	0.590	15.90	6.96	1.88	-68	3.4
0855	.45L/min	33.32	0.627	13.14	6.90	2.11	-61	2.9
0900	0.5L/min	33.21	0.568	15.74	6.89	1.94	-57	2.9
0905	0.5L/min	32.81	0.572	17.17	6.90	1.94	-54	3.2

Total Volume of Water Purged: gallons/liters

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: feet
- Color: black/brown (initial) Odor: mild sulfuric Sheen/Appearance:

Notes:

Equipment: Monsoon SS Pump (submersible), Horiba U-52 multimeter, Hach 2100 Turbidimeter
Sample at 0910

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-14

Page 1 of ___

Field Personnel:

Date: 5/27

Job No.:

Location:

Total Well Depth (from top of casing): 59.83 feet

Depth to Water Surface Before Purging (from top of casing): - 12.35 feet

Height of Water Column: a = feet

Screen Length: b feet

Lesser of a and b

Well Diameter (d): 2 inches

Gals per ft: $(d^2 \times 0.0408) = x$

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
0934	.2	13.93	0.394	23.45	7.20	3.73	142	0.0
0939	.25	14.95	0.383	23.39	7.26	3.12	150	0.0
0944	.25	16.03	0.375	23.34	7.26	3.04	157	0.0

Total Volume of Water Purged: gallons/liters

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes: Sample Time: 0955

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-15

Field Personnel: M. Kuzia-Gormel

Date: 5/28/2015

Job No.:

Location:

Total Well Depth (from top of casing): 54.37 feet

Depth to Water Surface Before Purging (from top of casing): - 9.84 feet

Height of Water Column: a = feet

Screen Length: b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet) ✓	SC ✓ (mmhos/cm or µmhos)	Temp. ✓ (°F or °C)	pH ✓ (SU)	Dissolved Oxygen (mg/L) ✓	Redox ✓ Potential (mV)	Turbidity (NTU) ✓
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1400	—	11.74	0.780	13.27	8.37	4.32	-47	15.6
1405	0.35L/min	13.09	0.623	17.34	7.69	2.85	-77	10.7
1410	0.5L/min	14.07	0.741	16.92	6.96	2.26	-85	11.4
1415	0.35L/min	14.94	0.646	19.15	6.73	1.87	-74	15.5
1420	0.42L/min	15.58	0.670	19.22	6.70	1.80	-75	15.7
1425	0.5L/min	16.28	0.709	19.24	6.67	1.75	-79	17.0
1430	0.45L/min	16.43	0.719	19.27	6.69	1.71	-81	18.6
1435	0.4L/min	16.84	0.765	19.30	6.69	1.74	-84	19.4
1440	0.35L/min	17.08	0.768	19.28	6.70	1.72	-86	20.2
1445	0.35L/min	17.12	0.772	19.29	6.67	1.69	-86	19.7

Total Volume of Water Purged: gallons/liters

Sampling Data: Sample at 1450

- Sampling Method: Bailer or Pump (Pump) Monsoon S.S
- Depth of Pump intake or bailer: ≈ 50 Ft feet
- Color: none Odor: none Sheen/Appearance:

Notes: Replaced tubing: 1/2 x 3/8" (approx. 57 Ft)

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volum

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-16

Page 1 of

Field Personnel:

Date: 5/27

Job No.:

Location:

Total Well Depth (from top of casing): 66.86 feet

Depth to Water Surface Before Purging (from top of casing): - 21.22 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: (d^2 x 0.0408) = x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1107	.2	24.02	0.208	28.13	7.71	2.34	80	0.0
1112	.2	25.52	0.202	27.50	7.40	1.61	106	0.0
1117	.2	26.78	0.203	26.91	7.33	1.51	114	0.0
1122	.2	27.63	0.201	26.84	7.29	1.53	117	0.0

Total Volume of Water Purged: gallons/liters

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes: Sample Time: 1125

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-19

Page 1 of 1

Field Personnel: M. Kuzia - Carmel; G Dunlavey

Date: 5/27/2015

Job No.:

Location:

Total Well Depth (from top of casing): 66.58 feet

Depth to Water Surface Before Purging (from top of casing): - 21.59 feet

Height of Water Column: a = feet

Screen Length: b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: (d^2 x 0.0408) = x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet) ✓	SC ✓ (mmhos/cm or µmhos)	Temp. ✗ (°F or °C)	pH ✓ (SU)	Dissolved Oxygen ✓ (mg/L)	Redox ✓ Potential (mV)	Turbidity (NTU) ✗
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1505	0.25L/min	22.40	0.185	27.17	7.31	6.18	147	0.0
1510	0.4L/min	22.61	0.188	26.93	6.80	3.68	140	0.0
1515	0.35L/min	23.11	0.191	26.03	6.72	2.87	130	0.0
1520	0.35L/min	23.39	0.189	25.53	6.66	2.69	123	0.0
1525	0.25L/min	23.61	0.190	24.94	6.27	2.68	117	0.0
1530	0.3L/min	23.64	0.190	24.71	6.04	2.67	118	0.0
1535	0.25L/min	23.68	0.192	24.51	6.06	2.65	123	0.0
1540		23.70	0.191	24.38	6.10	2.57	127	0.0

Total Volume of Water Purged: gallons/liters

Sampling Data: sample at 1545

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: ≈ 35 Ft feet
- Color: clear Odor: none Sheen/Appearance:

Notes: MW could not sample - obstruction in well - likely tubing - could not remove obstruction from well re-attempt sampling with Geopump (Peristaltic)

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-19

Page 1 of 1

Field Personnel: M. Kuzia · Carmel, G. Dunlavey

Date: 5/27/2015

Job No.:

Location:

Total Well Depth (from top of casing): 69.91 feet

Depth to Water Surface Before Purging (from top of casing): - 30.98 feet

Height of Water Column: a = feet

Screen Length: b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: (d^2 x 0.0408) = x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet) ✓	SC ✓ (mmhos/cm or µmhos)	Temp. (°F or °C)	pH ✓ (SU)	Dissolved Oxygen ✓ (mg/L)	Redox ✓ Potential (mV)	Turbidity ✓ (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1135	0.5L/min	40.88	1.08	18.63	6.79	1.52	19	274
1140	0.45L/min	42.37	0.992	19.35	6.66	1.47	3	187
1145	0.35L/min	45.57	0.960	17.28	6.65	1.57	6	82.0
1150	0.35L/min	46.28	0.853	19.01	6.78	1.46	9	56.4
1155	0.3L/min	47.80	0.797	18.70	6.84	1.62	8	40.3
1200	0.35L/min	49.40	0.770	19.90	6.80	1.54	4	39.0
1205	0.4L/min	49.78	0.745	20.58	6.78	1.51	3	23.6
1210	0.4L/min	49.84	0.754	19.23	6.81	1.54	3	21.4

Total Volume of Water Purged: gallons/liters

Sampling Data: Sample at 1215

- Sampling Method: Bailer or Pump (Monsoon S.S.)
- Depth of Pump intake or bailer: feet
- Color: lt. grey Odor: none Sheen/Appearance:

Notes:

purge water cloudy

Sample at 1215

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-20

Page 1 of

Field Personnel:

Date: 5/27

Job No.:

Location:

Total Well Depth (from top of casing): 53.52 feet

Depth to Water Surface Before Purging (from top of casing): - 24.30 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) = x$

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1340	.5	27.22	0.981	19.15	7.19	3.04	-70	330
1345	.5	29.46	0.831	21.79	7.22	2.68	13	243
1350	.3	30.76	6.730	22.32	7.24	2.53	41	195
1355	.35	31.61	0.881	21.49	7.31	2.59	42	155
1400	.5	33.52	0.807	22.2	7.32	2.34	0	131
1405	.4	34.01	0.758	22.38	7.22	2.49	36	102
1410	.3	34.42	0.772	21.69	7.30	2.25	-16	106
1415	.3	34.72	0.768	21.38	7.28	2.38	-37	84.7
1420	.3	34.81	0.758	21.26	7.26	2.21	-28	93.2

Total Volume of Water Purged: gallons/liters

Sampling Data:

- Sampling Method: Bailer or Pump Monsoon
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes: Sample Time: 1425

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

Adirondack Environmental Services Inc.
314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

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CHAIN OF CUSTODY RECORD

AES Work Order #

Client Name:	Address:	
AECOM	250 Apollo Drive, Chelmsford, MA 01824	
Send Report To: jennifer.atkins@aecom.com	Project Name (Location) Ward Products - Amsterdam, NY	Samplers: (Names) M. Kuzia-Carmel, G. Dunlavey
Client Phone No: (978) 905 2112	Client Email: jennifer.atkins@aecom.com	PO Number: 60337812-500
		Samplers: (Signature)

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.	Sample Type: Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-1R *Parent*	5/26/15	1130 A/P	GW		X	4	~~Total Chromium~~ (MKC)
	MS- 5/26/15		1140 A/P			X		see notes
	MSD- 5/26/15		1145 A/P			X		
	DUP- 5/26/15		1230 A/P			X		
	MW-4		1250 A/P			X		
	MW-10		1505 A/P			X		
	MW-17		1515 A/P			X		
	MW-4R	(HP)	~~1305~~ ~~1315~~ A/P			X		
			A/P					
(MKC)			A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					(MKC)

Shipment Arrived Via:
FedEx UPS Client AES Other:_____

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day
Note: Samples received after 3:30 pm are considered next business day

CC Report To / Special Instructions/Remarks:
Analyses needed: VOCs (8260)
Total Chromium (6010)
Hex Chromium (SM 3500 CR D)
Please analyze Trip Blank

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by: J. Mah	Date/Time 5/26/15 4:55 PM

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or (Chilled)	Y ☒ N ☐	(Y) N	(Y) N
Notes: 4		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

CHAIN OF CUSTODY RECORD

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AES Work Order #

Client Name: AECOM	Address: 250 Apollo Drive, Chelmsford, NY 01824		
Send Report To: Jen Atkins	Project Name (Location) Ward Products - Amsterdam, NY	Samplers: (Names) M. Kuzia - Carmel, G. Dunlavey	
Client Phone No: (978) 905-2112	Client Email: jennifer.atkins@aecom.com	PO Number: 60337812-500	Samplers: (Signature)

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-11	5/27/15	0825	(A) P	GW		X	4	VOCs (8260) total Chromium (6010) Hex. Chromium (SM 3500 Cr D)
	MW-13	5/27/15	0910	(A) P	GW		X	4	
	MW-14	5/27/15	0955	(A) P	GW		X	4	
	MW-16	5/27/15	1125	(A) P	GW		X	4	
	MW-19	5/27/15	1215	A (P)	GW		X	4	
	MW-20	5/27/15	1425	A (P)	GW		X	4	
	MW-18	5/27/15	1545	A (P)	GW		X	4	
	Trip Blank			A P					
MKC				A P					HIKE
				A P					
				A P					
				A P					
				A P					
				A P					

Shipment Arrived Via:
FedEx UPS Client AES Other:_____

CC Report To / Special Instructions/Remarks:

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by:	Date/Time 5/27/15 4:44 PM

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or (Chilled) 3	Y ☒ N ☐	(Y) N	(Y) N
Notes:		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

Adirondack Environmental Services Inc.
314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

CHAIN OF CUSTODY RECORD

AES Work Order #

Experience is the solution

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Client Name: AECOM	Address: 250 Apollo Drive, Chelmsford, MA 01824	
Send Report To: Jen Atkins	Project Name (Location) Ward Products - Amsterdam NY	Samplers: (Names) Michael Kuzia - Carmel
Client Phone No: (978) 905-2112	Client Email: jennifer.atkins@aecom.com	PO Number: 60337812-500
		Samplers: (Signature)

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type: Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-15	5/28/2015	1450	A (P)	GW		X	4	VOCs (8260), Total Chromium (6010), Hex. Chromium (SM 3500 Cr B)
	Trip Blank			A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					

Shipment Arrived Via:
FedEx UPS Client AES Other:_____

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day

CC Report To / Special Instructions/Remarks:

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by:	Date/Time 5/28/15 3:55 pm

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient / or (Chilled)	Y ☒ N ☐	(Y) N	(Y) N
Notes:		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21521
Description MIniRae 3000
Calibrated 5/20/2015 4:39:12PM

Manufacturer Rae Systems
Model Number MiniRAE 3000
Serial Number/ Lot Number 592-908657
Location New York
Department

State Certified
Status Pass
Temp °C 20.5
Humidity % 43

Calibration Specifications

Group # 1
Group Name Isobutylene
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

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

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS ISO 100 - 0310FM14	NYS ISO 100 PPM - 34L	American Gas Group	GP11012	0310FM14		3/10/2018

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21061
Description Horiba U-52
Calibrated 5/20/2015 10:57:59AM

Manufacturer Horiba
Model Number U-52
Serial Number/ Lot Number YDTV67YB
Location New York
Department

State Certified
Status Pass
Temp °C 22
Humidity % 50

Calibration Specifications

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.01 / 7.01	PH	7.01	PH	7.00	7.00	-0.14%	Pass
4.01 / 4.01	PH	4.01	PH	4.00	4.00	-0.25%	Pass

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.00 / 0.00	NTU	0.00	NTU	0.00	0.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.718 / 0.718	ms/cm	0.718	ms/cm	0.718	0.718	0.00%	Pass
5.000 / 5.000	ms/cm	5.000	ms/cm	5.000	5.000	0.00%	Pass
80.000 / 80.000	ms/cm	80.000	ms/cm	80.000	80.000	0.00%	Pass

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

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21061
Description Horiba U-52
Calibrated 5/20/2015 10:57:59AM

Group # 5
Group Name Disolved Oxygen Zero
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

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

Group # 6
Group Name Temperature DO Span
Stated Accy Plus / Minus

Range Acc % 0.0000
Reading Acc % 0.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
20.00 / 20.00	degrees C	8.84	mg/L	8.84	8.84	0.00%	Pass

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS COND 5K - 4AD416	NYS COND 5K - 4AD416	AquaPhoenix Scientific	SL20500-5G	4AD416		4/30/2015
NYS COND 718 - 4AD412	NYS COND 718 - 4AD412	GFS	SL20718-HA5G	4AD412		4/30/2015
NYS COND 80K - 4AD416	NYS COND 80K - 4AD416	AquaPhoenix Scientific	SL20032-5G	4AD416		4/30/2015
NYS DO ZERO	NYS DO ZERO	EMD	WQA90122	201023821		
NYS ORP 240 - 6448	NYS ORP 240 - 6448	Hanna	240 MV	6448		7/30/2018
NYS PH 4 - 4AB415	NYS PH 4 - 4AB415	VWR	SL1007-5G	4AB415		2/28/2016
NYS PH 7 - 4AC064	NYS PH 7 - 4AC064	VWR	SL1007-5G	4AC064		3/31/2016
NYS TURB 0 NTU - C475073	NYS TURB 0 NTU - C475073	GFS	SL30005-5G	C475073		10/31/2015
NYS TURB 800 NTU - A3073	NYS TURBIDITY STANDARD 800 NTU - A3073	Horiba	SL40047-1L	A3073		2/28/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joseph P. Burkhart

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21061
Description Horiba U-52
Calibrated 5/20/2015 10:57:59AM

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21389
Description Horiba U-52
Calibrated 5/20/2015 10:59:09AM

Manufacturer Horiba
Model Number U-52
Serial Number/ Lot Number 2HCHBA2V
Location New York
Department

State Certified
Status Pass
Temp °C 22
Humidity % 50

Calibration Specifications

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.00 / 0.00	NTU	0.00	NTU	0.00	0.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.718 / 0.718	ms/cm	0.718	ms/cm	0.718	0.718	0.00%	Pass
5.000 / 5.000	ms/cm	5.000	ms/cm	5.000	5.000	0.00%	Pass
80.000 / 80.000	ms/cm	80.000	ms/cm	80.000	80.000	0.00%	Pass

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

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21389
Description Horiba U-52
Calibrated 5/20/2015 10:59:09AM

Group # 5
Group Name Disolved Oxygen Zero
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

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

Group # 6
Group Name Temperature DO Span
Stated Accy Plus / Minus

Range Acc % 0.0000
Reading Acc % 0.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
20.00 / 20.00	degrees C	8.84	mg/L	8.84	8.84	0.00%	Pass

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date
NYS COND 5K - 4AD416	NYS COND 5K - 4AD416	AquaPhoenix Scientific	SL20500-5G	4AD416	4/30/2015
NYS COND 718 - 4AD412	NYS COND 718 - 4AD412	GFS	SL20718-HA5G	4AD412	4/30/2015
NYS COND 80K - 4AD416	NYS COND 80K - 4AD416	AquaPhoenix Scientific	SL20032-5G	4AD416	4/30/2015
NYS DO ZERO	NYS DO ZERO	EMD	WQA90122	201023821	
NYS ORP 240 - 6448	NYS ORP 240 - 6448	Hanna	240 MV	6448	7/30/2018
NYS PH 4 - 4AB415	NYS PH 4 - 4AB415	VWR	SL1007-5G	4AB415	2/28/2016
NYS PH 7 - 4AC064	NYS PH 7 - 4AC064	VWR	SL1007-5G	4AC064	3/31/2016
NYS TURB 0 NTU - C475073	NYS TURB 0 NTU - C475073	GFS	SL30005-5G	C475073	10/31/2015
NYS TURB 800 NTU - A3073	NYS TURBIDITY STANDARD 800 NTU - A3073	Horiba	SL40047-1L	A3073	2/28/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joseph P. Burkhart

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21389
Description Horiba U-52
Calibrated 5/20/2015 10:59:09AM

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 19319
Description HACH 2100Q Turbidimeter
Calibrated 5/20/2015 11:39:42AM

Manufacturer HACH
Model Number 2100Q
Serial Number/ Lot Number 11090C012488
Location New York
Department

State Certified
Status Pass
Temp °C 22
Humidity % 50

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
10.00 / 10.00	NTU	10.00	NTU	10.00	10.00	0.00%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	100.00	100.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS TURB 10 NTU - C364881	NYS 10 NTU TURBIDITY STANDARD	HACH	1451	C364881		6/30/2015
NYS TURB 100 NTU - A3115	NYS TURB 100 NTU TURBIDITY STANDARD FOR HACH	HACH	26602-42	A3115		4/30/2015
NYS TURB 20 NTU - A3175	NY TURB 20 NTU TURBIDITY STANDARD FOR HACH	HACH	WQA9062	A3175		6/30/2015
NYS TURB 800 NTU - A3073	NYS TURBIDITY STANDARD 800 NTU - A3073	Horiba	SL40047-1L	A3073		2/28/2016

Notes about this calibration

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 19319
Description HACH 2100Q Turbidimeter
Calibrated 5/20/2015 11:39:42AM

Calibration Result Calibration Successful
Who Calibrated Joseph P. Burkhart

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

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INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 25715
Description HACH 2100Q Turbidimeter
Calibrated 5/20/2015 11:38:57AM

Manufacturer HACH
Model Number 2100Q
Serial Number/ Lot Number 14030C031239
Location New York
Department

State Certified
Status Pass
Temp °C 22
Humidity % 50

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
10.00 / 10.00	NTU	10.00	NTU	10.00	10.00	0.00%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	100.00	100.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS TURB 10 NTU - C364881	NYS 10 NTU TURBIDITY STANDARD	HACH	1451	C364881		6/30/2015
NYS TURB 100 NTU - A3115	NYS TURB 100 NTU TURBIDITY STANDARD FOR HACH	HACH	26602-42	A3115		4/30/2015
NYS TURB 20 NTU - A3175	NY TURB 20 NTU TURBIDITY STANDARD FOR HACH	HACH	WQA9062	A3175		6/30/2015
NYS TURB 800 NTU - A3073	NYS TURBIDITY STANDARD 800 NTU - A3073	Horiba	SL40047-1L	A3073		2/28/2016

Notes about this calibration

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 25715
Description HACH 2100Q Turbidimeter
Calibrated 5/20/2015 11:38:57AM

Calibration Result Calibration Successful
Who Calibrated Joseph P. Burkhart

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Please call 866-960-7463 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 17303
Description HACH 2100Q Turbidimeter
Calibrated 5/19/2015 9:18:07AM

Manufacturer HACH
Model Number 2100Q
Serial Number/ Lot Number 11060C009984
Location New York
Department

State Certified
Status Pass
Temp °C 25
Humidity % 60

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
10.00 / 10.00	NTU	10.00	NTU	10.00	10.00	0.00%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	100.00	100.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS TURB 10 NTU - C364881	NYS 10 NTU TURBIDITY STANDARD	HACH	1451	C364881		6/30/2015
NYS TURB 100 NTU - A3115	NYS TURB 100 NTU TURBIDITY STANDARD FOR HACH	HACH	26602-42	A3115		4/30/2015
NYS TURB 20 NTU - A3175	NY TURB 20 NTU TURBIDITY STANDARD FOR HACH	HACH	WQA9062	A3175		6/30/2015
NYS TURB 800 NTU - A3073	NYS TURBIDITY STANDARD 800 NTU - A3073	Horiba	SL40047-1L	A3073		2/28/2016

Notes about this calibration

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 17303
Description HACH 2100Q Turbidimeter
Calibrated 5/19/2015 9:18:07AM

Calibration Result Calibration Successful
Who Calibrated Joseph P. Burkhart

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 20020
Description MIniRae 3000
Calibrated 5/20/2015 4:39:55PM

Manufacturer Rae Systems
Model Number MiniRAE 3000
Serial Number/ Lot Number 592-908308
Location New York
Department

State Certified
Status Pass
Temp °C 20.4
Humidity % 43

Calibration Specifications

Group # 1
Group Name Isobutylene
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

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

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date
NYS ISO 100 - 0310FM14	NYS ISO 100 PPM - 34L	American Gas Group	GP11012	0310FM14	3/10/2018

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

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

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

Well Gauging Form
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

AECOM

Sampling Dates: 8/25/2015 - 8/26/2015

Monitoring Well	Top of Casing Elevation (ft msl)	Depth to Water (ft bgs)	Condition of Well*
MW-1	471.55	N/A - DRY	Fair - No well cap (2" well)
MW-1R	471.46	8.79	
MW-2	471.20	8.29	
MW-3	473.03	10.66	
MW-4	470.17	10.11	
MW-4R	470.29	20.43	Good - cap in place (2" well)
MW-5	475.62	N/A - DRY	Fair - No well cap (2" well)
MW-6	470.97	20.38	
MW-7	469.14	18.38	
MW-8	467.38	16.36	
MW-9	465.43	17.95	
MW-10	466.77	18.59	Good - cap in place (2" well)
MW-11	485.37	18.08	" "
MW-12	468.18	20.98	Good - cap in place (2" well)
MW-13	462.12	~~13.62~~ 15.87	
MW-14	453.66	13.62	
MW-15	445.20	12.39	
MW-16	449.50	22.68	
MW-17	450.84	9.34	
MW-18	463.76	23.22	
MW-19	441.64	32.55	
MW-20	442.38	25.41	
RW-01	472.08	65.03	Fair - Well cap damaged (cracked) 6" well
RW-02	465.57	19.04	Fair - Well cap damaged - 6" well

*Describe the condition of each monitoring well and if there are any issues to address (condition of the pad, cover, casing, lock)

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-1R

Page 1 of ___

Field Personnel: GD + MK

Date: 8/25/15

Job No.:

Location: Ward

Total Well Depth (from top of casing): ~~17.92~~ 17.92 feet

Depth to Water Surface Before Purging (from top of casing): -8.79 feet

Height of Water Column: a = ____ feet

Screen Length: b ____ feet

Lesser of a and b ____

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x ____

One Wetted Screen Volume of Water Before Purging: = ____ gallons or ____ liters

Volume of Water Equal to three wetted screen volumes volumes: ____ gallons or ____ liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter # ____

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC ✓ (mmhos/cm or µmhos)	Temp. (°F or °C)	pH ✓ (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV) ✓	Turbidity (NTU) ✓
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1057	.3	9.54	0.691	20.23	7.28	7.14	186	6.0
1102	.3	10.55	0.697	20.25	6.98	3.84	238	0.0
1107	.25	11.61	0.700	20.36	6.94	3.07	265	0.0
1112	.25	12.56	0.699	20.68	6.95	2.89	271	0.0
1117	.25	13.49	0.691	21.16	6.95	2.56	276	0.0
1122	.25	14.61	0.686	21.61	6.96	2.42	278	0.0
1127	.2	15.38	0.672	21.78	6.96	2.63	276	0.0
1132	.2	15.77	0.678	21.87	6.96	2.58	275	0.0

Total Volume of Water Purged: ≈10.5 gallons/liters

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: ____ feet
- Color: Odor: Sheen/Appearance:

Notes: Sample time: 1135

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-4

Page 1 of

Field Personnel: GDT MK

Date: 8/25/15

Job No.:

Location: Wand

Total Well Depth (from top of casing): 14.41 feet

Depth to Water Surface Before Purging (from top of casing): - 10.11 feet

Height of Water Column: a = feet

Screen Length: b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1145	.2	10.64	0.486	24.72	7.15	4.70	-57	0.0
1150	.3	11.26	0.461	24.75	7.06	2.65	-19	0.0
1155	.3	11.96	0.457	24.71	7.04	2.38	58	0.0
1200	.2	12.36	0.459	24.86	7.03	2.52	65	0.0

Total Volume of Water Purged: ≈ 5 gallons (liters)

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes: Sample time: 1204, Dup also collected @ 1208

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-4R

Page 1 of 1

Field Personnel: M. Kuzia-Carroll, G. Dunlavey

Date: 8/25/2015

Job No.:

Location: Amsterdam, NY (Wood)

Total Well Depth (from top of casing): 34.10 feet

Depth to Water Surface Before Purging (from top of casing): - 20.43 feet

Height of Water Column: a = feet

Screen Length: b 10 feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x ,

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes:
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

gallons or liters

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet) ✓	SC ✓ (mmhos/cm or µmhos)	Temp ✗ (°F or °C)	pH (SU) ✓	Dissolved Oxygen ✓ (mg/L)	Redox ✓ Potential (mV)	✓ Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1330	0.4L/min	22.03	1.25	21.17	7.27	4.03	267	46.5
1335	0.35L/min	22.62	1.16	22.94	7.14	2.39	262	281
1340	0.4L/min	23.14	1.09	24.11	7.10	1.88	255	71.6
1345	0.45L/min	23.72	1.19	20.52	7.11	2.08	254	46.0
1350	0.4L/min	24.14	1.19	23.26	7.11	1.83	248	29.4
1355	0.4L/min	23.87	1.20	23.46	7.13	2.10	248	27.3
1400	0.45L/min	24.08	1.19	13.40	7.09	2.04	247	3.6
1405	0.45L/min	23.96	1.23	19.04	7.13	2.05	248	2.3

Horiba → shut OFF

Total Volume of Water Purged: 14 gallons/liters

Sampling Data:

Sample at 1410
(VOCs, ICP Metals, Hex Chrome)

- Sampling Method: Bailer or Pump ~~33'~~ sub.
- Depth of Pump intake or bailer: 33' feet
- Color: Odor: N/A Sheen/Appearance:

Notes:

initially highly turbid (dk brown)

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-10

Field Personnel: M. Kuzia-Carmel, G. Dunlavey

Date: 8/25/15

Job No.:

Location:

Total Well Depth (from top of casing): 50.20 feet

Depth to Water Surface Before Purging (from top of casing): - 18.59 feet

Height of Water Column: a = feet

Screen Length: b 15 feet

Lesser of a and b 15

Well Diameter (d): 2 inches Gals per ft: (d^2 x 0.0408) = x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes:
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters) gallons or liters

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Monsoon sub pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet) ✓	SC (mmhos/cm or µmhos) ✓	Temp. ✓ (°F or °C)	pH (SU) ✓	Dissolved Oxygen (mg/L) ✓	Redox ✓ Potential (mV)	Turbidity (NTU) ✓
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1440	0.5L/min	19.48	0.969	15.13	7.72	5.88	159	105
1445	0.5L/min	19.55	0.803	21.75	7.26	2.46	199	70.1
1450	0.5L/min	19.69	0.845	18.57	7.14	2.49	210	43.3
1455	0.5L/min	19.58	0.871	17.73	7.11	2.39	215	10.8
1500	0.4L/min	19.29	0.832	20.01	7.08	2.19	218	11.1
1505	0.55L/min	19.40	0.819	20.82	7.05	2.00	221	9.8
1510	0.45L/min	19.47	0.808	20.87	7.03	2.10	222	10.0
1515	0.45L/min	19.56	0.804	20.70	7.01	1.98	224	6.1

Horiba shut off

Total Volume of Water Purged: 16 gallons liters

Sampling Data: Sample at 1520

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: 44' feet

VOCs, ICP Metals, Hex. Chrom.

- Color: lt brown Odor: N/A

Sheen/Appearance: N/A

Notes:

initially turbid (lt brown

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-11

Field Personnel: GP + MK

Date: 8/25/15

Job No.:

Location: Wood Products

Total Well Depth (from top of casing): 30.26 feet

Depth to Water Surface Before Purging (from top of casing): - 18.98 feet

Height of Water Column: a = ____ feet

Screen Length: b ____ feet

Lesser of a and b ____

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x ____

One Wetted Screen Volume of Water Before Purging: = ____ gallons or ____ liters

Volume of Water Equal to three wetted screen volumes volumes: ____ gallons or ____ liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1002	.5	19.13	0.188	20.93	8.16	6.81	121	8.0
1007	.25	20.70	0.093	20.68	8.09	3.56	146	6.0
1012	.2	21.21	0.000	20.25	7.67	2.85	168	0.0
1017	.25	22.18	0.428	19.81	7.59	2.52	181	0.0
1022	.25	23.42	0.046	19.46	7.48	2.31	174	0.0
1027	.25	24.36	0.042	19.27	7.25	2.36	172	0.0
1032	.2	24.81	0.053	19.25	7.3	2.29	177	0.0

Total Volume of Water Purged: 9 gallons liters

Sampling Data:
- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: ____ feet
- Color: Odor: Sheen/Appearance:

Notes: Sample Time: 1035

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-13

Page 1 of 1

Field Personnel: M. Kuzia-Carnell

Date: 8/26/2015
Job No.: 60337812
Location: Amsterdam (Ward)

Total Well Depth (from top of casing): 68.78 feet

Depth to Water Surface Before Purging (from top of casing): - 15.87 feet

Height of Water Column: a = feet

Screen Length b 15 feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes:
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)
gallons or liters

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet) ✓	SC (mmhos/cm or µmhos) X	Temp. (°F or °C) X	pH (SU) ✓	Dissolved Oxygen (mg/L) ✓	Redox Potential (mV) ✓	Turbidity (NTU) ✓
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1545	0.45L/min	17.78	0.514	20.26	7.42	6.30	-14	627
1550	0.45L/min	20.13	0.959	12.98	7.01	3.22	-71	400
1555	0.45L/min	23.90	0.772	14.00	6.80	2.43	-68	26.3
1600	0.4L/min	23.92	0.649	17.17	7.01	2.05	-71	50.7
1605	0.4L/min	24.07	0.656	18.00	6.96	1.88	-44	64.8
1610	0.45L/min	24.29	0.642	18.68	7.03	1.81	-68	44.8
1615	0.45L/min	24.24	0.659	20.38	7.14	1.84	-49	18.0
1620	0.45L/min	24.35	0.634	17.84	7.16	1.97	-43	18.4
1625	0.45L/min	24.39	0.795	14.06	7.15	2.01	-40	6.4

Total Volume of Water Purged: ≈ 18 gallons/liters

Sampling Data: Sample at 1630
VOCs, total Cr. Hex. Cr.

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: 67.5' feet
- Color: dk brn Odor: Foul- not sewage though Sheen/Appearance:

Notes:
High initial turbidity

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-14

Page 1 of ___

Field Personnel: GD + MK

Date: 8/25/15

Job No.: _____

Location: _____

Total Well Depth (from top of casing): 60.91 feet

Depth to Water Surface Before Purging (from top of casing): - 13.62 feet

Height of Water Column: a = _____ feet

Screen Length: b _____ feet

Lesser of a and b _____

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x _____

One Wetted Screen Volume of Water Before Purging: = _____ gallons or _____ liters

Volume of Water Equal to three wetted screen volumes volumes: _____ gallons or _____ liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter # ✓

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1257	.25	14.71	0.790	29.51	7.85	5.77	110	0.0
1257	.25	15.86	0.761	28.29	7.83	3.54	124	0.0
1302	.25	17.01	0.761	26.69	7.81	3.24	133	0.0
1307	.2	17.96	0.766	25.86	7.79	3.32	136	0.0
1312	.2	18.39	0.772	25.64	7.79	3.26	139	0.0
1317	.2	18.71	0.781	25.74	7.78	3.19	141	0.0

Total Volume of Water Purged: 6.5 gallons/liters

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: _____ feet
- Color: Odor: Sheen/Appearance:

Notes: Sample time: 1320, MS taken 1325, MSD, 1330 / MS sample

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-15

Field Personnel: BT + MK

Date: 8/26/15

Job No.:

Location: Ward

Total Well Depth (from top of casing): 54.22 feet

Depth to Water Surface Before Purging (from top of casing): - 12.39 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) = x$

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
43 1158	.3	13.68	0.710	19.49	6.87	7.92	-65	0.0
08 1203	.25	14.60	0.769	19.25	6.91	2.5	-98	0.0
35 1208	.2	15.16	0.792	19.20	6.92	1.97	-109	0.0
1213	.2	15.61	0.814	19.32	6.93	1.72	-109	0.0
1218	.2	15.99	0.844	19.54	6.95	1.53	-113	0.0
1223	.2	16.21	0.859	19.61	6.96	1.45	-115	0.0

Total Volume of Water Purged: 6.25 gallons (liters)

Sampling Data:

- Sampling Method: Bailer or (Pump)
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes: Sample time: 1225

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-16

Page 1 of

Field Personnel: BD + MK

Date: 8/26/15

Job No.:

Location: Ward Products

Total Well Depth (from top of casing): 67.47 feet

Depth to Water Surface Before Purging (from top of casing): - 22.68 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1030	.2	23.53	0.257	20.57	7.20	9.22	124	0.0
1035	.2	24.48	0.256	19.43	7.12	5.35	161	0.0
1040	.2	25.31	0.253	18.77	7.10	4.87	178	0.0
1045	.2	26.02	0.263	16.54	7.03	4.80	186	0.0
1050	.2	26.61	0.266	16.32	7.01	4.73	196	0.0
1055	.2	27.04	0.274	15.95	7.01	4.84	200	0.0
1100	.2	27.39	0.270	16.07	7.01	4.81	199	0.0

Total Volume of Water Purged: 6 gallons/liters

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: feet
- Color: Odor:

Sheen/Appearance:

Notes: Sample time: ~~1052~~ 1103

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-17

Page 1 of

Field Personnel: GD + MR

Date: 8/25/15

Job No.:

Location: Ward Products

Total Well Depth (from top of casing): 66.27 feet

Depth to Water Surface Before Purging (from top of casing): - 9.34 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
~~1414~~ 1444	.25	10.46	0.168	28.71	7.51	4.08	-128	6.0
1419 1449	.35	11.91	0.158	28.61	6.70	1.69	-112	0.0
1424 1454	.25	13.08	0.159	27.43	6.63	1.43	-110	0.0
1429 1459	.25	14.28	0.159	27.07	6.61	1.26	-108	0.0
1434 1504	.2	15.14	0.163	26.84	6.59	1.18	~~-106~~ -107	0.0
1438	.2	16.01	0.163	27.02	6.58	1.10	-106	0.0
1444	.2	16.59	0.163	26.92	6.58	1.06	-106	0.0
1449	.2	17.08	0.164	26.88	6.58	1.05	-105	0.0

Total Volume of Water Purged: 8.75 gallons liters

Sampling Data:

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes: Sample time: 1452

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-18

Page 1 of ___

Field Personnel: GD + MK

Date: 8/26/15

Job No.:

Location: Wand

Total Well Depth (from top of casing): 66.26 feet

Depth to Water Surface Before Purging (from top of casing): - 23.22 feet

Height of Water Column: a = feet

Screen Length b feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes: gallons or liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1534	.15	23.83	0.199	24.60	7.36	5.43	14	0.0
1539	.25	23.91	0.178	23.86	7.39	4.05	102	0.0
1544	.25	24.10	0.176	23.27	7.32	3.82	113	0.0
1549	.25	24.25	0.184	22.86	7.33	3.63	129	0.0
1554	.25	24.39	0.178	22.42	7.35	3.60	131	0.0
1559	.25	24.48	0.189	22.34	7.38	3.70	129	0.0
1604	.25	24.56	0.192	22.26	7.36	3.66	129	0.0

Total Volume of Water Purged: 8 gallons (liters)

Sampling Data:

- Sampling Method: Bailer or (Pump)
- Depth of Pump intake or bailer: feet
- Color: Odor: Sheen/Appearance:

Notes: Sample time: 1606

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-19

Field Personnel: M. Kuzia-Carnell, G. Dunlavey

Date: 8/26/2015
Job No.: 60337812
Location: Amsterdam, NY (Ward)

Total Well Depth (from top of casing): 70.55 feet

Depth to Water Surface Before Purging (from top of casing): - 32.55 feet

Height of Water Column: a = feet

Screen Length: b 10 feet

Lesser of a and b

Well Diameter (d): 2 inches Gals per ft: $(d^2 \times 0.0408) =$ x

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes:
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)
gallons or liters

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC ✓ (mmhos/cm or µmhos)	Temp. (°F or °C)	pH ✓ (SU)	Dissolved Oxygen ✓ (mg/L)	Redox ✓ Potential (mV)	Turbidity ✓ (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1035	0.5 L/min	36.26	1.07	15.02	7.69	8.04	90	204
1040	0.45 L/min	37.51	1.24	16.36	7.15	3.24	11	247
1045	0.45 L/min	44.49	1.31	14.91	6.95	2.50	-14	~~76~~ 116
1050	0.45 L/min	47.58	1.24	16.52	6.91	2.26	-17	120
1055	0.35 L/min	49.63	1.15	17.89	6.90	2.04	-12	54.7
1100	0.35 L/min	50.92	1.09	18.66	6.92	2.26	-13	37.3
1105	0.4 L/min	52.84	1.05	19.24	6.95	2.21	-11	30.7
1110	0.4 L/min	~~50~~ 51.76	1.08	18.67	7.00	2.21	-9	30.4

Total Volume of Water Purged: ≈ 14 gallons/liters

Sampling Data: Sample at 1115
VOCs, ICP Metals, Hex. Cr.

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: 68.5 Ft feet
- Color: none Odor: none

Sheen/Appearance:

Notes:

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-20

Field Personnel: M. Kinzie, Conrad, C. Dunlavey

Date: 8/26/2015
Job No.: 60337812
Location: Amsterdam (Ward)

Total Well Depth (from top of casing): 57.05 feet

Depth to Water Surface Before Purging (from top of casing): - 25.41 feet

Height of Water Column: a = feet

Screen Length: b 10 feet

Well Diameter (d): 2 inches

Gals per ft: $(d^2 \times 0.0408) =$ x

Lesser of a and b 10

One Wetted Screen Volume of Water Before Purging: = gallons or liters

Volume of Water Equal to three wetted screen volumes volumes:
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters) gallons or liters

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #

Time	Volume Purged (Gallons / Liters)	Depth to Water ✓ (feet)	SC ✓ (mmhos/cm or µmhos)	Temp. X (°F or °C)	pH ✓ (SU)	Dissolved Oxygen ✓ (mg/L)	Redox ✓ Potential (mV)	Turbidity X (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%
1200	0.45L/min	29.04	0.428	18.57	7.50	11.10	101	464
1205	0.4L/min	29.36	0.987	22.61	7.33	8.15	27	328
1210	0.4L/min	30.58	0.968	22.79	7.37	7.49	20	298
1215	0.45L/min	30.84	0.934	23.02	7.38	7.28	11	277
1220	0.4L/min	32.89	0.689	23.14	7.36	6.68	25	92.7
1225	0.45L/min	37.18	1.10	15.91	7.26	9.84	43	836
1230	0.45L/min	41.32	1.13	14.26	7.12	9.16	28	755
1235	0.4L/min	41.38	0.905	18.14	7.11	7.19	27	630
1240	0.4L/min	41.49	1.03	17.62	7.09	7.54	23	460
1245	0.45L/min	41.56	0.958	18.90	7.18	6.68	20	289

Total Volume of Water Purged: ≈ 20 gallons/liters

Sampling Data: Sample at 1250
VOCs, ICP metals, Hex Cr.

- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: 56' feet
- Color: Odor: Sheen/Appearance:

Notes: Initial color: gray brown

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

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CHAIN OF CUSTODY RECORD

AES Work Order #

A full service analytical research laboratory offering solutions to environmental concerns

Client Name: AECOM	**Address:** 250 Apollo Drive Chelmsford MA 01824		
Send Report To: Jen Atkins	**Project Name (Location):**	**Samplers: (Names)** M. [illegible] / G. [illegible]	
Client Phone No: (978) 905-2117	**Client Email:** [illegible]	**PO Number:** 60337812 500	**Samplers: (Signature)** [signature]

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time (A=a.m. P=p.m.)	Sample Type: Matrix	Sample Type: Comp	Sample Type: Grab	Number of Cont's	Analysis Required
	MW-11	8/25/2015	1035 A	GW		X	4	VOCs, total Cr, hex Cr
	MW-1R		1135 A			X		
	MW-4		1204 P			X		
	MW-14		1320 P			X		
	MW-17		1452 P			X		
	MW-4R		1410 P			X		
	MW-10		1520 P			X		
	DUP		A P			X		
	MS - 8252015		1325 P			X		
	MSD 8252015		1330 P			X		
			A P					
			A P					
			A P					
			A P					

Shipment Arrived Via:
FedEx UPS Client (circled) AES Other: ____

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☑ Normal
☐ 2 Day ☐ 5 Day
Note: Samples received after 3:30 pm are considered next business day

CC Report To / Special Instructions/Remarks:
Parent sample for MS, MSD - MW-14

Relinquished by: (Signature) [signature]	**Received by: (Signature)**	**Date/Time**
Relinquished by: (Signature)	**Received by: (Signature)**	**Date/Time**
Relinquished by: (Signature)	**Received for Laboratory by:** [signature]	**Date/Time** 8/25/15 4:25 PM

TEMPERATURE	AES Bottles	PROPERLY PRESERVED	RECEIVED WITHIN HOLDING TIMES
Ambient or Chilled (circled)	Y ☒ N ☐	Y (circled) N	Y (circled) N
Notes: 2		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

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CHAIN OF CUSTODY RECORD

AES Work Order #

A full service analytical research laboratory offering solutions to environmental concerns

Client Name:	Address:	
AECOM	250 Apollo Drive, Chelmsford, MA 01824	
Send Report To:	**Project Name (Location)**	**Samplers: (Names)**
Jen Atkins	Ward Products (Amsterdam)	M. Kuzia-Conrad/G. Pinkney
Client Phone No:	**Client Email:**	**PO Number:**
(978) 905-2102	jennifer.atkins@aecom.com	60337812-500
		Samplers: (Signature)

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.	Sample Type: Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-15	8/26/2015	1225 A/P	GW		X	4	VOCs, total Cr, Hex Cr
	MW-16		1103 A/P			X		
	MW-20		1250 A/P			X		
	MW-19		1115 A/P			X		
	MW-17		A/P					
	MW-18		A/P					
	MW-10		A/P					
	DUP		A/P					
	MS		A/P					
	MSD		A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					

Shipment Arrived Via:
FedEx UPS Client AES Other:_____

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☑ Normal
☐ 2 Day ☐ 5 Day
Note: Samples received after 3:30 pm are considered next business day

CC Report To / Special Instructions/Remarks:
MW-19

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	**Received by: (Signature)**	**Date/Time**
Relinquished by: (Signature)	**Received for Laboratory by:**	**Date/Time**
		8/26/15 2:19pm

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or Chilled	Y ☐ N ☒	Y N	Y N
Notes: 15°C		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

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Albany, New York 12207
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CHAIN OF CUSTODY RECORD

AES Work Order #

Client Name: AECOM	Address: 250 Apollo Drive, Chelmsford, MA 01824	
Send Report To: Jen Atkins	Project Name (Location) Ward Products (Amsterdam)	Samplers: (Names) M. Kuzia-Carmel/G. Pudlarey
Client Phone No: (978) 905-2112	Client Email: jennifer.atkins@aecom.com	PO Number: 60337812.500
		Samplers: (Signature)

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.	Sample Type: Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-18	8/26/2015	1604 A/P	GW		X	4	VOCs, total Cr. Hex. Cr.
	MW-13	8/26/2015	1630 A/P	GW		X	4	VOCs, total Cr. Hex. Cr.
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					
			A/P					

Shipment Arrived Via:

FedEx UPS Client AES Other:_____

Turnaround Time Request:

☐ 1 Day ☐ 3 Day ☐ Normal
☐ 2 Day ☐ 5 Day

Note: Samples received after 3:30 pm are considered next business day

CC Report To / Special Instructions/Remarks:

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by:	Date/Time 8/27/15 8:05

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or (Chilled)	Y ☐ N ☐	(Y) N	(Y) N
Notes:		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

Adirondack Environmental Services Inc.
Experience is the solution

314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

CHAIN OF CUSTODY RECORD

AES Work Order #

A full service analytical research laboratory offering solutions to environmental concerns

Client Name:	Address:	
AECOM	250 Apollo Drive Chelmsford, MA 01824	
Send Report To:	**Project Name (Location)**	**Samplers: (Names)**
Jen Atkins	Ward Products (Amsterdam)	M. Kuzia - Carmel / G. Dunlavy
Client Phone No:	**Client Email:**	**PO Number:**
(978) 905-2112	jennifer.atkins@aecom.com	60337812-500
		Samplers: (Signature)

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type: Matrix	Comp	Grab	Number of Cont's	Analysis Required
	SSRCB-COMP	8/27/15	1130	(A) P	S	X		1	Metals (ICP)
				A P					Cd, Cr, Ni, Zn.
				A P					CS 8/27/15
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					
				A P					

Shipment Arrived Via:
FedEx UPS (Client) AES Other:_____

CC Report To / Special Instructions/Remarks:

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day
Note: Samples received after 3:30 pm are considered next business day

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	**Received by: (Signature)**	**Date/Time**
Relinquished by: (Signature)	**Received for Laboratory by:**	**Date/Time**
	C. Ingram	8/27/15 3:53pm

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or (Chilled)	Y ☐ N ☐	(Y) N	(Y) N
Notes: 2°		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

Location Amsterdam, NY Date 8/25/2015

Project / Client GW Sampling
Ward Products

0915 AECOM (M. Kuzia - Carmel/MKC, G. Dunlavey/GD) on site. Conditions: clear, 85°F. Access treatment system shed. System running. Shut down system + prepare for GW sampling. GD to MW-11, MKC to MW-4R. GD is using Geopump 2 (peristaltic). MKC is using SS Monsoon Pro (submersible)

0945 MKC unable to get Monsoon to work. Contact Pine For troubleshooting. Pine will send replacement.

1030 MKC begins gauging wells on site. GD sampled MW-11 at 1035, MW-1R at 1135.

★ Dup collected From MW-4. MS, MSD From MW-14

Well ID	DTW	DTB	Notes
MW-1	N/A	7.27	well dry, 2" dia.
MW-2	8.29	11.58	2" well
MW-3	10.66	14.80	2" well
MW-5	N/A	18.17	well dry, 2"
MW-6	20.38	37.38	2" capped
MW-7	18.38	33.88	2"
MW-8	16.36	30.07	2"
MW-9	17.95	46.35	2"
RW-02	19.04	30.72	6"?

GD samples MW-4 at 1204, MW-14 at 1320
MW-17 at 1452

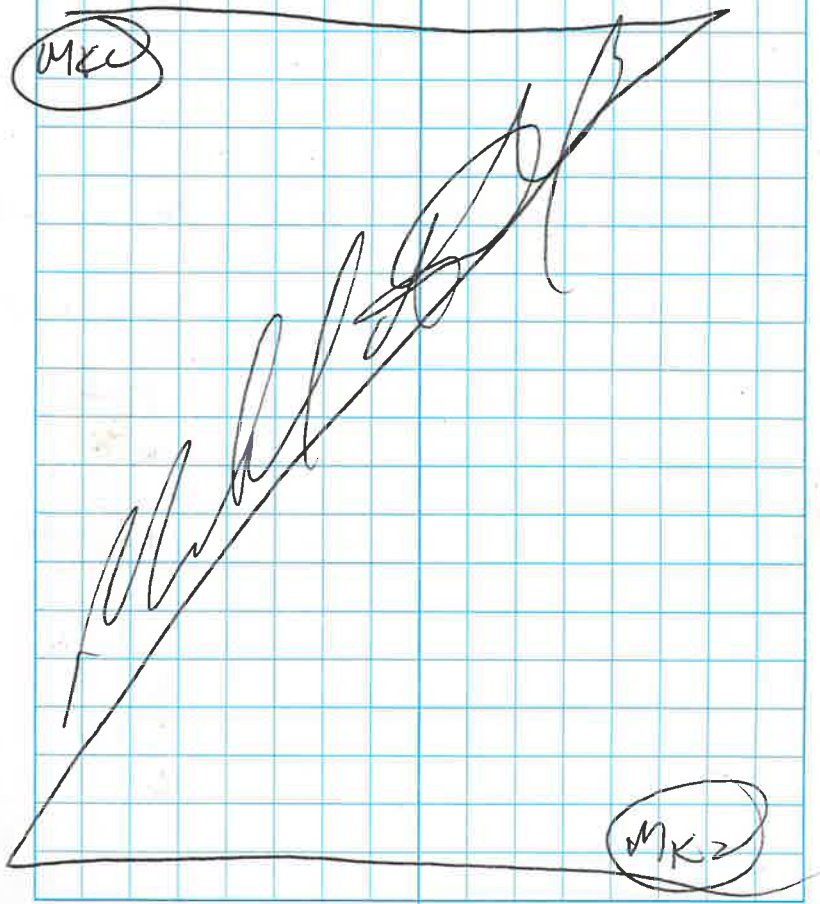
Location Amsterdam, NY Date 8/25/2015

Project / Client GW Sampling
Ward Products

1305 Pine arrives w/ replacement pump. Begin sampling on MW-4R.
MKC samples MW-4R at 1410, MW-10 at 1520.

1530 AECOM off site. Pump + Treat system turned back on.

MKC



MKZ

Location Amsterdam, NY Date 8/26/2015

Project / Client GW Sampling
Ward Products

0930 AECOM (MKC, GD) on site. Conditions: clear. 80°F. Attempt to locate MW-13.

1000 Abandon search for MW-13. GD to MW-16 (Peri. pump). MKC to MW-19 (sub. pump). Contact Pine. Pine will deliver a metal detector to site.
Sample MW-16 at 1103, MW-19 at 1115

1230 Pine on site w/ metal detector. AECOM locates MW-13. Insufficient bottleware to sample. Sample MW-~~18~~ 13 at 1250, MW-15 at 1225

1400 AECOM off site to drop off samples.

1600 AECOM returns to site to complete sampling. MKC to MW-13, GD to MW-18. Sample MW-18 at 1606, MW-13 at 1630. Begin packing up. GW sampling complete

1650 AECOM off site for day

MKC

MKC

Location Amsterdam, NY Date 8/27/2015

Project / Client Catch Basin Inspection / MW Gauging
Ward Products

0800 MKC drops off GW samples (MW-13, MW-18) at AES.

0930 AECOM (MKC, GD) on site. Conditions: clear. 75°F. Will finish MW Gauging + conduct catch basin inspections today.

Well ID	DTW	DTB	Notes
MW-12	20.98	45.54	2", capped
RW-01	65.03	79.96	6", cap cracked

1000 MW Gauging complete. Head to Sam Stratton Rd Area.

1130 Unable to locate rebar reference. Sample SSRCB-COMP from concrete culvert outlets. Move to Chapman Rd Area.

1300 Locate Chapman Rd Area. Observe cistern/spillway and stone cover, but unable to locate rebar reference. D~~GD~~MKC No soil sample collected.

1400 Move to Route 5 Area. Locate rebar along train tracks. Depth of sediment is approx. 3.09'. No sample collected.

1415 AECOM off site.

MKC

MKC

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 16547
Description HACH 2100P Turbidimeter
Calibrated 8/18/2015 2:36:20PM

Manufacturer HACH
Model Number 2100P
Serial Number/ Lot Number 09120C038991
Location New York
Department

State Certified
Status Pass
Temp °C 25
Humidity % 49

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.10 / 0.10	NTU	0.10	NTU	0.10	0.10	0.00%	Pass
20.0 / 20.0	NTU	20.0	NTU	20.0	20.0	0.00%	Pass
100 / 100	NTU	100	NTU	100	100	0.00%	Pass
800 / 800	NTU	800	NTU	800	800	0.00%	Pass

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS TURB <0.1 NTU - A5124	NYS TURB <0.1 NTU - A5124	HACH	WQA90598			8/31/2016
NYS TURB 100 NTU - A5169	NYS TURB 100 NTU - A5169	HACH	WQA90598	A5169		9/30/2016
NYS TURB 20 NTU - A5170	NYS TURB 20 NTU - A5170	HACH	WQA90598			9/30/2016
NYS TURB 800 - A5169	NYS TURB 800 NTU - A5169	HACH	WQA90598			9/30/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 16547
Description HACH 2100P Turbidimeter
Calibrated 8/18/2015 2:36:20PM

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 27206
Description HACH 2100P Turbidity meter
Calibrated 8/18/2015 2:36:57PM

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

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INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 27206
Description HACH 2100P Turbidity meter
Calibrated 8/18/2015 2:36:57PM

Manufacturer HACH
Model Number 2100P
Serial Number/ Lot Number 930900003749
Location New York
Department

State Certified
Status Pass
Temp °C 25
Humidity % 49

Calibration Specifications

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.10 / 0.10	NTU	0.10	NTU	0.10	0.10	0.00%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	100.00	100.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS TURB <0.1 NTU - A5124	NYS TURB <0.1 NTU - A5124	HACH	WQA90598			8/31/2016
NYS TURB 100 NTU - A5169	NYS TURB 100 NTU - A5169	HACH	WQA90598	A5169		9/30/2016
NYS TURB 20 NTU - A5170	NYS TURB 20 NTU - A5170	HACH	WQA90598			9/30/2016
NYS TURB 800 - A5169	NYS TURB 800 NTU - A5169	HACH	WQA90598			9/30/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 24325
Description Horiba U-52
Calibrated 8/18/2015 2:21:03PM

Manufacturer Horiba
Model Number U-5000
Serial Number/ Lot Number R4D5L6R6
Location New York
Department

State Certified
Status Pass
Temp °C 25
Humidity % 49

Calibration Specifications

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.00 / 0.00	NTU	0.00	NTU	0.00	0.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.718 / 0.718	ms/cm	0.718	ms/cm	0.718	0.718	0.00%	Pass
5.000 / 5.000	ms/cm	5.000	ms/cm	5.000	5.000	0.00%	Pass
80.000 / 80.000	ms/cm	80.000	ms/cm	80.000	80.000	0.00%	Pass

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

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 24325
Description Horiba U-52
Calibrated 8/18/2015 2:21:03PM

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

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

Group # 6 — **Range Acc %** 0.0000
Group Name Temperature DO Span — **Reading Acc %** 0.0000
Stated Accy Plus / Minus — **Plus/Minus** 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
20.00 / 20.00	degrees C	8.84	mg/L	8.84	8.84	0.00%	Pass

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS COND 5K - 5AB057	NYS COND 5K - 5AB057	AquaPhoenix Scientific	SL20500-5G	5AB057		2/28/2016
NYS COND 718 - 5GE716	NYS COND 718 - 5GE716	GFS	SL20718-HA5G	5GE716		5/31/2016
NYS COND 80K - 4AJ839	NYS COND 80K - 4AJ839	AquaPhoenix Scientific	SL20032-5G	4AJ839		10/31/2016
NYS DO ZERO	NYS DO ZERO	EMD	WQA90122	201023821		
NYS ORP 240 - 8039	NYS ORP 240 - 6448	Hanna	240 MV	8039		9/30/2019
NYS PH 7 - 4AI882	NYS PH 7 - 4AI882	VWR	SL1007-5G	4AI882		9/30/2016
NYS PH4 - 4AL777	NYS PH 4 - 4AL777	VWR	SL1007-5G	4AL777		12/31/2016
NYS TURB 0 NTU - C580803	NYS TURB 0 NTU - C580803	GFS	SL30005-5G	C580803		6/30/2016
NYS TURB 800 NTU - A3073	NYS TURBIDITY STANDARD 800 NTU - A3073	Horiba	SL40047-1L	A3073		2/28/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 25213
Description Horiba U-52
Calibrated 8/18/2015 2:21:23PM

Manufacturer Horiba
Model Number U-5000
Serial Number/ Lot Number TVRNE5VS
Location New York
Department

State Certified
Status Pass
Temp °C 25
Humidity % 49

Calibration Specifications

Group # 1
Group Name INSTRUMENT TEST
Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

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Please call 866-960-7463 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21389
Description Horiba U-52
Calibrated 8/17/2015 4:12:18PM

Manufacturer Horiba
Model Number U-52
Serial Number/ Lot Number 2HCHBA2V
Location New York
Department

State Certified
Status Pass
Temp °C 25
Humidity % 56

Calibration Specifications

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.00 / 0.00	NTU	0.00	NTU	0.00	0.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.718 / 0.718	ms/cm	0.718	ms/cm	0.718	0.718	0.00%	Pass
5.000 / 5.000	ms/cm	5.000	ms/cm	5.000	5.000	0.00%	Pass
80.000 / 80.000	ms/cm	80.000	ms/cm	80.000	80.000	0.00%	Pass

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

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21389
Description Horiba U-52
Calibrated 8/17/2015 4:12:18PM

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

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

Group # 6 | **Range Acc %** 0.0000
Group Name Temperature DO Span | **Reading Acc %** 0.0000
Stated Accy Plus / Minus | **Plus/Minus** 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
20.00 / 20.00	degrees C	8.84	mg/L	8.84	8.84	0.00%	Pass

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS COND 5K - 5AB057	NYS COND 5K - 5AB057	AquaPhoenix Scientific	SL20500-5G	5AB057		2/28/2016
NYS COND 718 - 5GE716	NYS COND 718 - 5GE716	GFS	SL20718-HA5G	5GE716		5/31/2016
NYS COND 80K - 4AJ839	NYS COND 80K - 4AJ839	AquaPhoenix Scientific	SL20032-5G	4AJ839		10/31/2016
NYS DO ZERO	NYS DO ZERO	EMD	WQA90122	201023821		
NYS ORP 240 - 8039	NYS ORP 240 - 6448	Hanna	240 MV	8039		9/30/2019
NYS PH 7 - 4AI882	NYS PH 7 - 4AI882	VWR	SL1007-5G	4AI882		9/30/2016
NYS PH4 - 4AL777	NYS PH 4 - 4AL777	VWR	SL1007-5G	4AL777		12/31/2016
NYS TURB 0 NTU - C580803	NYS TURB 0 NTU - C580803	GFS	SL30005-5G	C580803		6/30/2016
NYS TURB 800 NTU - A3073	NYS TURBIDITY STANDARD 800 NTU - A3073	Horiba	SL40047-1L	A3073		2/28/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 21389
Description Horiba U-52
Calibrated 8/17/2015 4:12:18PM

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INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 19276
Description Horiba U-52 Display
Calibrated 8/18/2015 2:23:58PM

Manufacturer Horiba
Model Number U-5000
Serial Number/ Lot Number AV8KCBHW
Location New York
Department

State Certified
Status Pass
Temp °C 24
Humidity % 49

Calibration Specifications

Group # 1
Group Name INSTRUMENT TEST
Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

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2016 Field Notes

Well Gauging Form
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

AECOM

Sampling Dates: 5/10/2016 - 5/11/2016

Monitoring Well	Top of Casing Elevation (ft msl)	Depth to Water (ft bgs)	Condition of Well*
MW-1	471.55	3.03	No bolts
MW-1R	471.46	3.09	No bolts
MW-2	471.20	4.15	No bolts
MW-3	473.03	4.16	No bolts, no J plug, tubing in well
MW-4	470.17	5.52	No bolts
MW-4R	470.29	16.68	No bolts
MW-5	475.62	17.23	No J Plug, tubing in well
MW-6	470.97	16.84	
MW-7	469.14	15.13	No bolts, no J plug
MW-8	467.38	12.80	No J plug, 1 bolt
MW-9	465.43	15.09	
MW-10	466.77	15.90	
MW-11	485.37	14.17	
MW-12	468.18	18.06	No bolts
MW-13	462.12	12.38	No bolts
MW-14	453.66	10.04	
MW-15	445.20	8.29	
MW-16	449.50	19.30	
MW-17	450.84	6.52	
MW-18	463.76	20.31	
MW-19	441.64	29.47	
MW-20	442.38	22.74	No bolts
RW-01	472.08	62.76	
RW-02	465.57	16.17	

*Describe the condition of each monitoring well and if there are any issues to address (condition of the pad, cover, casing, lock)

IW-04 17.17

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products - Amsterdam /

Monitoring Well Number: MW - 1R Date: 5/10/2016

Samplers: GD

Sample Number: MW-1R 051016 QA/QC Collected? —

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	17.94	feet
2. D = Riser Diameter (I.D.):	2	feet
3. W = Depth to Water:	3.06	feet
4. C = Column of Water in Well:	14.88	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.43	gal
6. 3(V) = Target Purge Volume	7.29	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 MPS - 15F100872

Parameter	Units	Readings ✓				✓	✓
Time	24 hr	1012	1017	1022	1027	1032	1037
Water Level (0.33)	feet	4.31	4.88	5.51	5.90	6.18	6.49
Volume Purged	gal						
Flow Rate	mL/min	250	250	250	200	150	150
Turbidity (+/- 10%)	NTU	15.7	11.6	10.4	10.3	10.0	9.8
Dissolved Oxygen (+/- 10%)	%	53.9	44.6	41.1	40.4	40.6	40.3
Dissolved Oxygen (+/- 10%)	mg/L	6.10	5.00	4.60	4.52	4.55	4.51
Eh / ORP (+/- 10)	MeV	97.2	114.5	122.4	128.7	128.0	128.8
Specific Conductivity (+/- 3%)	mS/cm[c]	0.472	0.470	0.472	0.470	0.469	0.461
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	5.87	5.68	5.71	5.69	5.70	5.73
Temp (+/- 0.5)	C°	10.38	10.29	10.33	10.26	10.29	10.36
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	None	None	None	None	None	None

Comments:

Sample @ 1040

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-4 Date: 5/10/16

Samplers: GD

Sample Number: MW-4 051016 QA/QC Collected? —

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	14.34	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	5.45	feet
4. C = Column of Water in Well:	8.89	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.45	gal
6. 3(V) = Target Purge Volume	4.35	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 MPS - 15F100872

Parameter	Units	Readings ✓				✓	✓
Time	24 hr	1113	1118	1123	1128	1133	1138
Water Level (0.33)	feet	6.04	6.41	6.79	7.08	7.36	7.70
Volume Purged	gal	~~350~~					
Flow Rate	mL/min	250	250	250	200	200	200
Turbidity (+/- 10%)	NTU	20.0	14.7	13.1	12.8	12.7	12.5
Dissolved Oxygen (+/- 10%)	%	56.3	40.8	37.5	38.6	37.8	38.6
Dissolved Oxygen (+/- 10%)	mg/L	6.55	4.64	4.28	4.38	4.26	4.34
Eh / ORP (+/- 10)	MeV	117.5	121.6	121.6	120.0	119.2	117.1
Specific Conductivity (+/- 3%)	mS/cm^c	0.370	0.371	0.369	0.368	0.373	0.372
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	5.33	5.44	5.86	5.54	5.52	5.53
Temp (+/- 0.5)	C°	9.45	9.72	9.63	9.77	9.85	9.87
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	None	None	None	None	None	None

Comments:

Sample @ 1140.

MS + MSD collected.

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products - Amsterdam / 60481900

Monitoring Well Number: MW-4R Date: 5/10/2016

Samplers: Mike Kuzia-Carmel, Greg Dunlavey

Sample Number: MW-4R 051016 QA/QC Collected? DUP-01

Purging / Sampling Method: ~~Three Well Volumes~~ / Low-Flow Sampling w/ submersible pump

1. L = Well Depth:	34.73	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	16.68	feet
4. C = Column of Water in Well:	18.05	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.94	gal
~~6~~ 3(V) = Target Purge Volume	8.82	gal

D (inches)	D (feet)
1-inch	0.08
(2-inch)	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	(2-inch)	3-inch	4-inch	6-inch
V (gal / ft)	0.041	(0.163)	0.37	0.65	1.5

Water Quality Readings Collected Using YSI - 556 / Hach 2100P

Parameter	Units	Readings						
Time	24 hr	0952	0957	1002	1007	1012		
Water Level (0.33)	feet	18.54	23.63	24.98	25.05	25.08		
Volume Purged	gal	—	1.2	2.5	3.6	4.8		
Flow Rate	mL/min	450	500	450	450	500		
Turbidity (+/- 10%)	NTU	>1,000	>1,000	24.6	7.4	5.2		
Dissolved Oxygen (+/- 10%)	%	17.0	15.0	15.4	15.9	16.0		
Dissolved Oxygen (+/- 10%)	mg/L	1.85	1.61	1.63	1.68	1.73		
Eh / ORP (+/- 10)	MeV	-3.3	-15.1	10.1	4.6	6.7		
Specific Conductivity (+/- 3%)	mS/cm[c]	1.496	0.940	1.382	1.407	1.393		
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—		
pH (+/- 0.1)	pH unit	7.24	7.29	7.21	7.24	7.18		
Temp (+/- 0.5)	C°	11.54	12.20	12.15	12.26	12.32		
Color	Visual	dk gray	brown	cloudy	cloudy	clear		
Odor	Olfactory	none	none	none	none	none		

Comments: Sample at 1015 (VOCs, Hex. Chrom., ICP Metals)

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products - Amsterdam / 60481900

Monitoring Well Number: MW-10 Date: 5/10/2016

Samplers: Mike Kuzia - Carmel, Greg Dunlavey

Sample Number: MW-10 051016 QA/QC Collected? No

Purging / Sampling Method: ~~Three Well Volumes~~ / Low-Flow Sampling w/ Submersible Pump

1. L = Well Depth:	50.49	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	15.90	feet
4. C = Column of Water in Well:	34.59	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	5.64	gal
~~X~~ 3(V) = Target Purge Volume	16.92	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 / Hach 2100P

Parameter	Units	Readings						
Time	24 hr	1113	1123	1133	1143	1153		
Water Level (0.33)	feet	16.42	16.86	17.08	17.14	17.14		
Volume Purged	gal	—	2.5	4.8	7.1	9.4		
Flow Rate	mL/min	500	500	500	500	500		
Turbidity (+/- 10%)	NTU	48.2	24.1	7.2	4.1	2.4		
Dissolved Oxygen (+/- 10%)	%	9.6	3.3	2.5	3.4	2.4		
Dissolved Oxygen (+/- 10%)	mg/L	1.04	0.35	0.27	0.34	0.25		
Eh / ORP (+/- 10)	MeV	36.1	38.7	33.6	28.7	26.2		
Specific Conductivity (+/- 3%)	mS/cm[c]	0.763	0.862	0.803	0.804	0.806		
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—		
pH (+/- 0.1)	pH unit	7.47	7.09	7.07	7.06	7.05		
Temp (+/- 0.5)	C°	12.55	12.55	12.50	12.50	12.53		
Color	Visual	cloudy	cloudy	clear	clear	clear		
Odor	Olfactory	none	none	none	none	none		

Comments: Sample at 1155 (VOCs, Hex. Chrom., ICP Metals)

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-11 Date: 5/10/16

Samplers: GO

Sample Number: MW-11 051016 QA/QC Collected? -

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	30.28	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	14.17	feet
4. C = Column of Water in Well:	16.11	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	2.63	gal
6. 3(V) = Target Purge Volume	7.89	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 MPS - 15F100372

Parameter	Units	Readings					✓	✓	✓
Time	24 hr	0856	0901	0906	0911	0916	0921	0926	0931
Water Level (0.33)	feet	15.44	16.20	16.90	17.89	18.28	18.60	18.91	19.19
Volume Purged	gal								
Flow Rate	mL/min	250	250	250	250	250	250	200	200
Turbidity (+/- 10%)	NTU	4.78	2.54	3.06	2.89	2.67	2.81	3.03	2.77
Dissolved Oxygen (+/- 10%)	%	58.5	45.9	38.2	32.0	28.5	26.9	24.8	24.4
Dissolved Oxygen (+/- 10%)	mg/L	7.32	5.35	4.45	3.70	3.30	3.10	2.88	2.83
Eh / ORP (+/- 10)	MeV	89.2	97.9	107.6	112.7	114.1	116.8	116.3	116.1
Specific Conductivity (+/- 3%)	mS/cm^c	0.405	0.401	0.397	0.389	0.390	0.394	0.396	0.396
Conductivity (+/- 3%)	mS/cm	-	-	-	-	-	-	-	-
pH (+/- 0.1)	pH unit	6.97	6.60	6.35	5.78	5.66	5.57	5.59	5.60
Temp (+/- 0.5)	C°	8.69	8.67	8.69	8.77	8.73	8.76	8.82	8.86
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	None	None	None	None	None	None	None	None

Comments:

Sample @ 0933.

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products - Amsterdam / C0481900

Monitoring Well Number: MW-13 Date: 5/10/2016

Samplers: Mike Kuzia - Carmel, Greg Dunlavey

Sample Number: MW-13 051016 QA/QC Collected? No

Purging / Sampling Method: ~~Three Well Volumes~~ / Low-Flow Sampling w/ Submersible Pump

1. L = Well Depth:	68.94	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	12.38	feet
4. C = Column of Water in Well:	56.56	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	9.23	gal
~~X~~ 3(V) = Target Purge Volume	27.69	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 / Hach 2100P

Parameter	Units	Readings					
Time	24 hr	1235	1245	1255	1305	1315	1325
Water Level (0.33)	feet	16.36	25.53	34.60	44.11	44.24	44.28
Volume Purged	gal	—	≈2.4	≈5	≈7.3	≈9.5	≈11.7
Flow Rate	mL/min	500	500	500	500	500	500
Turbidity (+/- 10%)	NTU	240	55.9	32.1	18.4	16.8	12.0
Dissolved Oxygen (+/- 10%)	%	3.2	2.2	1.2	2.8	1.0	0.8
Dissolved Oxygen (+/- 10%)	mg/L	0.35	0.23	0.13	0.30	0.11	0.08
Eh / ORP (+/- 10)	MeV	-75.7	-70.3	-59.7	-58.7	-58.3	-57.6
Specific Conductivity (+/- 3%)	mS/cm[c]	0.679	0.655	0.585	0.551	0.619	0.593
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	7.28	7.04	6.98	7.08	7.04	7.06
Temp (+/- 0.5)	C°	11.26	11.47	11.61	11.52	11.77	11.79
Color	Visual	cloudy	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none

Comments: Sample at 1330 (VOCs, Hex. Chrom., TCP Metals).

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-14 Date: 5/10/16

Samplers: GD

Sample Number: MW-14 05101 6 QA/QC Collected? —

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	60,41	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	10,04	feet
4. C = Column of Water in Well:	50,37	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	8,22	gal
6. 3(V) = Target Purge Volume	24,66	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 MPS - 15F100872

Parameter	Units	Readings					
Time	24 hr	1228	1233	1238	1243	1248	1253
Water Level (0.33)	feet	11,07	11,70	12,16	12,48	12,82	13,09
Volume Purged	gal						
Flow Rate	mL/min	250	250	200	200	175	175
Turbidity (+/- 10%)	NTU	3,98	3,41	3,01	2,88	3,09	2,78
Dissolved Oxygen (+/- 10%)	%	63.3	49.5	47.8	47.8	49.1	47.9
Dissolved Oxygen (+/- 10%)	mg/L	7,07	5,37	5,18	5,15	5,31	5,23
Eh / ORP (+/- 10)	MeV	44.0	125,2	142.0	149.3	152.3	157.3
Specific Conductivity (+/- 3%)	mS/cm^c	0,677	0,681	0,644	0,645	0,650	0,649
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	6.02	5,25	5,01	4,92	4,85	4,76
Temp (+/- 0.5)	C°	10,84	11,74	11,65	11,88	11,72	11,74
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	None	None	None	None	None	None
					V	V	V

Comments:

Sample @ 1255.

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products - Amsterdam / 60481900

Monitoring Well Number: MW-15 Date: 5/10/2016

Samplers: Mike Kuzia-Carmel, Greg Dunlavey

Sample Number: MW-15 051016 QA/QC Collected? No

Purging / Sampling Method: ~~Three Well Volumes~~ / Low-Flow Sampling w/ Submersible Pump

1. L = Well Depth:	54.12	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	8.29	feet
4. C = Column of Water in Well:	45.83	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	7.48	gal
~~3~~(V) = Target Purge Volume	22.44	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 / Hach 2100P

Parameter	Units	Readings					
Time	24 hr	1410	1420	1430	1440	1450	1500
Water Level (0.33)	feet	10.44	20.42	24.80	35.72	37.09	37.06
Volume Purged	gal	—	2	≈4.25	≈6.3	≈8.5	≈10.7
Flow Rate	mL/min	500	500	500	500	500	500
Turbidity (+/- 10%)	NTU	568	479	72	29	26	21
Dissolved Oxygen (+/- 10%)	%	2.9	36.6	25.1	24.2	19.6	20.4
Dissolved Oxygen (+/- 10%)	mg/L	0.31	3.92	2.68	2.61	2.02	2.13
Eh / ORP (+/- 10)	MeV	-95.1	-54.0	-49.7	-57.8	-62.1	-60.8
Specific Conductivity (+/- 3%)	mS/cm[c]	1.099	0.827	0.915	0.918	0.932	0.940
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	7.16	7.01	6.96	6.98	6.96	6.97
Temp (+/- 0.5)	C°	11.84	12.07	12.19	12.22	12.35	12.30
Color	Visual	cloudy	cloudy	cloudy	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none

Comments: Sample at 1510 (VOCs, Hex. Chrome., ICP Metals)

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-16 Date: 5/11/16

Samplers: GO

Sample Number: MW-16 051116 QA/QC Collected? —

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	66.98	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	19.30	feet
4. C = Column of Water in Well:	47.68	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	7.78	gal
6. 3(V) = Target Purge Volume	23.34	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 MPS - 15F100872

Parameter	Units	Readings					
Time	24 hr	1026	1031	1036	1041	1046	1051
Water Level (0.33)	feet	20.46	21.02	21.44	21.75	21.98	22.28
Volume Purged	gal						
Flow Rate	mL/min	250	200	150	150	150	150
Turbidity (+/- 10%)	NTU	12.6	14.6	11.1	10.3	11.2	10.7
Dissolved Oxygen (+/- 10%)	%	59.1	38.1	35.6	34.6	35.0	34.2
Dissolved Oxygen (+/- 10%)	mg/L	6.66	4.10	3.95	3.84	3.88	3.78
Eh / ORP (+/- 10)	MeV	90.2	110.0	111.5	111.1	107.5	106.0
Specific Conductivity (+/- 3%)	mS/cm^c	0.152	0.151	0.147	0.145	0.145	0.145
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	5.39	5.42	5.48	5.40	5.40	5.38
Temp (+/- 0.5)	C°	10.50	11.05	10.63	10.62	10.68	10.86
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	None	None	None	None	None	None

Comments:

Sample @ 1053

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-17 Date: 5/11/16

Samplers: GD

Sample Number: MW-17 051116 QA/QC Collected? —

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	66.26	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	6.52	feet
4. C = Column of Water in Well:	59.74	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	9.75	gal
6. 3(V) = Target Purge Volume	29.25	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 MPS - 15F100872

Parameter	Units	Readings						✓
Time	24 hr	0902	0907	0912	0917	0922	0927	0932
Water Level (0.33)	feet	7.63	8.66	9.36	10.01	10.54	10.92	11.27
Volume Purged	gal							
Flow Rate	mL/min	250	250	200	200	150	150	150
Turbidity (+/- 10%)	NTU	4.95	6.86	8.12	7.24	6.23	5.83	5.31
Dissolved Oxygen (+/- 10%)	%	37.4	12.7	8.2	7.2	6.3	6.0	6.0
Dissolved Oxygen (+/- 10%)	mg/L	4.44	1.47	1.05	0.82	0.71	0.66	0.68
Eh / ORP (+/- 10)	MeV	30.9	48.0	55.9	67.4	76.1	82.3	83.7
Specific Conductivity (+/- 3%)	mS/cm[c]	0.143	0.135	0.129	0.124	0.120	0.119	0.115
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	6.39	6.27	6.15	5.94	5.71	5.50	5.43
Temp (+/- 0.5)	C°	9.58	9.39	9.49	9.82	10.22	10.32	10.04
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	None	None	None	None	None	None	None

Comments:

Sample @ 0944.

Continued...

Monitoring Well Purging / Sampling Form

Project Name and Number: Wand

Monitoring Well Number: MW-17 Date: 5/11/16

Samplers: GD

Sample Number: MW-17 051116 QA/QC Collected? —

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	_____	feet
3. W = Depth to Water:	_____	feet
4. C = Column of Water in Well:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. 3(V) = Target Purge Volume	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	✓	✓		Readings			
Time	24 hr	0937	0842					
Water Level (0.33)	feet	11.59	11.88					
Volume Purged	gal							
Flow Rate	mL/min	150	150					
Turbidity (+/- 10%)	NTU	4.99	5.37					
Dissolved Oxygen (+/- 10%)	%	5.2	5.6					
Dissolved Oxygen (+/- 10%)	mg/L	0.59	0.62					
Eh / ORP (+/- 10)	MeV	88.9	96.5					
Specific Conductivity (+/- 3%)	mS/cm[c]	0.114	0.109					
Conductivity (+/- 3%)	mS/cm	—	—					
pH (+/- 0.1)	pH unit	5.33	5.25					
Temp (+/- 0.5)	C°	10.31	10.45					
Color	Visual	Clear	Clear					
Odor	Olfactory	None	None					

Comments:

Sample @ 0944.

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-18 Date: 5/11/16

Samplers: GD

Sample Number: MW-18 051116 QA/QC Collected? —

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	65.55	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	20.31	feet
4. C = Column of Water in Well:	45.24	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	7.38	gal
6. 3(V) = Target Purge Volume	22.15	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 MPS - 15F100872

Parameter	Units	Readings				✓	✓	✓
Time	24 hr	1136	1141	1146	1151	1156	1201	1206
Water Level (0.33)	feet	20.92	20.91	21.01	21.11	21.19	21.24	21.30
Volume Purged	gal							
Flow Rate	mL/min	250	200	250	200	200	200	200
Turbidity (+/- 10%)	NTU	4.89	4.21	3.88	2.84	2.11	1.41	1.87
Dissolved Oxygen (+/- 10%)	%	28.4	21.3	15.5	11.6	9.2	9.0	8.3
Dissolved Oxygen (+/- 10%)	mg/L	3.13	2.34	1.70	1.24	1.12	1.08	0.99
Eh / ORP (+/- 10)	MeV	108.5	115.4	116.1	112.0	116.0	119.6	123.1
Specific Conductivity (+/- 3%)	mS/cm^c	0.217	0.217	0.220	0.225	0.226	0.229	0.228
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	4.69	4.87	5.00	5.24	5.16	5.13	5.07
Temp (+/- 0.5)	C°	11.21	11.40	11.54	12.02	11.68	11.53	11.60
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	None	None	None	None	None	None	None

Comments:

Sample @ 1208

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products - Amsterdam / 60481900

Monitoring Well Number: MW-19 Date: 5/11/2016

Samplers: Mike Kuzia-Carmel, Greg Dunlavey

Sample Number: MW-19 051116 QA/QC Collected? No

Purging / Sampling Method: ~~Three Well Volumes~~ / Low-Flow Sampling w/ submersible pump

1. L = Well Depth:	70.54	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	29.47	feet
4. C = Column of Water in Well:	41.07	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	6.69	gal
~~X~~ 3(V) = Target Purge Volume	20.07	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 / Hach 2100P

Parameter	Units	Readings						
Time	24 hr	0915	0925	0935	0940	0945	0950	0955
Water Level (0.33)	feet	32.01	36.51	39.64	41.25	42.98	43.11	43.09
Volume Purged	gal	—	≈1.5	≈2.8	≈4.3	≈5.8	≈7.0	≈8.5
Flow Rate	mL/min	500	500	450	500	500	450	500
Turbidity (+/- 10%)	NTU	44	61	134	146	160	146	152
Dissolved Oxygen (+/- 10%)	%	101.8	4.9	2.6	2.4	2.9	2.2	2.6
Dissolved Oxygen (+/- 10%)	mg/L	11.09	0.54	0.29	0.26	0.32	0.24	0.28
Eh / ORP (+/- 10)	MeV	-83.5	-64.2	-64.2	-63.1	-63.7	-64.7	-64.2
Specific Conductivity (+/- 3%)	mS/cm[c]	6.014	1.181	1.168	1.159	1.148	1.096	1.092
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	7.95	7.15	7.05	7.00	6.98	6.95	6.97
Temp (+/- 0.5)	C°	11.52	11.36	11.63	11.70	11.62	11.74	11.82
Color	Visual	lt brown	clear	cloudy	cloudy	cloudy	cloudy	cloudy
Odor	Olfactory	none	none	none	none	none	none	none

Comments: Sample at 1010 (VOCs, Hex. Chrom., ICP Metals)

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products - Amsterdam / 60481900

Monitoring Well Number: MW-20 Date: 5/11/2016

Samplers: Mike Kuzia-Carmel, Greg Dunlavey

Sample Number: MW-20 051116 QA/QC Collected? No

Purging / Sampling Method: ~~Three Well Volumes~~ / Low-Flow Sampling w/ submersible pump

1. L = Well Depth:	57.05	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	22.74	feet
4. C = Column of Water in Well:	34.31	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	5.59	gal
~~X~~ 3(V) = Target Purge Volume	16.77	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 / Hach 2100P

Parameter	Units	Readings						
Time	24 hr	1058	1103	1108	1113	1118	1123	1128
Water Level (0.33)	feet	26.44	34.87	35.68	36.42	36.93	37.11	37.09
Volume Purged	gal	—	≈1.5	≈2.8	≈4.3	≈5.6	≈7.1	≈8.6
Flow Rate	mL/min	500	500	450	500	450	500	500
Turbidity (+/- 10%)	NTU	>1,000	742	533	301	314	327	329
Dissolved Oxygen (+/- 10%)	%	7.2	9.7	9.1	6.4	5.8	.4	5.1
Dissolved Oxygen (+/- 10%)	mg/L	0.74	1.03	0.97	0.68	0.62	0.58	0.55
Eh / ORP (+/- 10)	MeV	-142.5	-74.7	-61.7	-55.1	-54.0	-52.5	-51.0
Specific Conductivity (+/- 3%)	mS/cm^c	1.308	1.263	1.233	1.186	1.170	1.166	1.160
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	7.54	7.22	7.17	7.15	7.13	7.11	7.10
Temp (+/- 0.5)	C°	12.19	12.15	12.33	12.54	12.50	12.55	12.62
Color	Visual	black	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy
Odor	Olfactory	none	none	none	none	none	none	none

Comments: Sample at 1135 (VOCs, Hex. Chrom., ICP Metals).

URS

Page ____ of ____

Job _____ Project No. _____ Sheet ____ of ____

Description Ward Products - Equip. Cal Computed by _____ Date 5/11/2016

Checked by _____ Date _____

Reference

YSI - 556 (#33364)

pH (4.0) - 3.96
pH (7.0) - 6.94
pH (10.0) - 9.97
cond. (1,000 µs/cm) - 1,016
ORP (240 mV) - 242

YSI - 556 (#37743)

pH (4.0) - 4.02
pH (7.0) - 7.00
pH (10.0) - 10.01
cond. (1,000 µs/cm) - 1,004
ORP (240 mV) - 248

Location Amsterdam, NY Date 7/16/2015

Project / Client GW Sampling / MW Gauging
Wood Products

0830 AECOM (M. Kuzia-Carmel, G. Dunlavey) on site. Conditions: clear, 70°F. Access treatment system shed. System is running. Shut down system + begin tasks. GD heads to MW-11 (using peristaltic pump) while MKC gauges wells and sets up on MW-4R (using submersible pump).
- Sample MW-11 at 0933 (GD)
- Sample MW-4R at 1015 (MKC) * + Duplicate *
- Sample MW-1R at 1040 (GD)
- Sample MW-4 at 1140 (GD) * + MS/MSD *
- Sample MW-10 at 1155 (MKC)
- Sample MW-14 at 1255 (GD)
- Sample MW-13 at 1330 (MKC)
- Sample MW-15 at 1510 (MKC + GD)

1520 Package up all samples. Return to treatment system shed to restart system. All purge water into treatment system.

1545 AECOM off site to Adirondack Labs in Albany, NY.

* All GW samples for VOCs, Hex. Chrom., and ICP Metals *

Location Amsterdam, NY Date 7/16/2015

Project / Client GW Sampling / MW Gauging
Wood Products

0830 AECOM (M. Kuzia-Carmel, G. Dunlavey) on site. Conditions: clear, 70°F. Access treatment system shed + shut down. GD heads to MW-17 (using peristaltic pump) + MKC heads to MW-19 (using submersible pump).
- Sample MW-17 at 0944 (GD)
- Sample MW-19 at 1010 (MKC)
- Sample MW-16 at 1053 (GD)
- Sample MW-20 at 1135 (MKC)
- Sample MW-18 at 1208 (GD)

1215 All sampling / gauging complete. Package up all samples. Return to treatment system shed to restart system. All purge water into treatment system. AECOM observes that RW-2 is displaying a "low voltage" alert upon restart. It appears that RW-2 isn't running.

1230 AECOM off site to Adirondack Labs in Albany, NY.

* All GW samples for VOCs, Hex. Chrom., and ICP Metals *

Adirondack Environmental Services Inc.
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314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

CHAIN OF CUSTODY RECORD

AES Work Order #

A full service analytical research laboratory offering solutions to environmental concerns

Client Name:	Address:	
AECOM	250 Apollo Drive Chelmsford MA 01824	
Send Report To:	**Project Name (Location)**	**Samplers: (Names)**
Jen Atkins	Ward Products (Amsterdam)	M Kuzia, C. Mael, G. Dunlavey
Client Phone No:	**Client Email:**	**PO Number:** 70990ACM ~~6048~~
(978) 905-2112	jennifer.atkins@aecom.com	**Samplers: (Signature)**

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-11 051016	5/10/2016	0935	A P	GW		X	4	VOCs, Hex. Chrome, TAL Metals
	MW-1R 051016		1040	A P	GW		X	4	
	MW-4 051016		1140	A P	GW		X	4	
	MS 051016 (parent: MW-4 051016)		1140	A P	GW		X	4	
	MSD 051016 (parent: MW-4 051016)		1140	A P	GW		X	4	
	MW-14 051016		1255	A P	GW		X	4	
	MW-4R 051016		1015	A P	GW		X	4	
	DUP-01		—	A P	GW		X	4	
	MW-10 051016		1155	A P	GW		X	4	
	MW-13 051016		1330	A P	GW		X	4	
	MW-15 051016		1510	A P	GW		X	4	
				A P					
				A P					
				A P					

Shipment Arrived Via:
FedEx UPS Client AES Other:_____

CC Report To / Special Instructions/Remarks:

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day
Note: Samples received after 3:30 pm are considered next business day

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	**Received by: (Signature)**	**Date/Time**
Relinquished by: (Signature)	**Received for Laboratory by:**	**Date/Time**
		5/11/16 9:24

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or Chilled	Y ☐ N ☐	Y N	Y N
Notes:		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

Adirondack Environmental Services Inc.
314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

Experience is the solution

A full service analytical research laboratory offering solutions to environmental concerns

CHAIN OF CUSTODY RECORD

AES Work Order #

Client Name:	Address:	
AECOM	250 Apollo Drive, Chelmsford, MA 01824	
Send Report To:	**Project Name (Location)**	**Samplers: (Names)**
Jen Atkins	Wood Products (Amsterdam)	M. Kuzia-Carmel, G. Dunlavey
Client Phone No:	**Client Email:**	**PO Number:** / **Samplers: (Signature)**
(978) 905-2112	jennifer.atkins@aecom.com	70990ACM

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type: Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-19 051116	5/11/2016	1010	A/P	GW		X	4	VOCs, Hex. Chrom., ICP Metals
	MW-20 051116		1135	A/P	GW		X	4	
	MW-17 051116		0944	A/P	GW		X	4	
	MW-16 051116		1053	A/P	GW		X	4	
	MW-18 051116		1208	A/P	GW		X	4	
				A/P					
				A/P					
				A/P					
				A/P					
				A/P					
				A/P					
				A/P					
				A/P					
				A/P					
				A/P					

MKL

Shipment Arrived Via:

FedEx UPS Client AES Other:_____

CC Report To / Special Instructions/Remarks:

Turnaround Time Request:

☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day

Note: Samples received after 3:30 pm are considered next business day

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	**Received by: (Signature)**	**Date/Time**
Relinquished by: (Signature)	**Received for Laboratory by:**	**Date/Time**
		5/12/16 10:30

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or (Chilled)	Y ☐ N ☐	(Y) N	(Y) N
Notes:		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 7293
Description HACH 2100P Turbidimeter
Calibrated 5/3/2016 9:15:03AM

Manufacturer HACH
Model Number 2100P
Serial Number/ Lot Number 06070C017868
Location New York
Department

State Certified
Status Pass
Temp °C 20
Humidity % 40

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.10 / 0.10	NTU	0.10	NTU	0.10	0.10	0.00%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	100.00	100.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS TURB <0.1 NTU - A5124	<0.1 NTU TURBIDITY STANDARD	HACH	WQA90598			8/31/2016
NYS TURB 100 NTU - A5169	100 NTU TURBIDITY STANDARD	HACH	WQA90598	A5169		9/30/2016
NYS TURB 20 NTU - A5170	20 NTU TURBIDITY STANDARD	HACH	WQA90598			9/30/2016
NYS TURB 800 - A5169	800 NTU TURBIDITY STANDARD	HACH	WQA90598			9/30/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joseph P. Burkhart

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 7293
Description HACH 2100P Turbidimeter
Calibrated 5/3/2016 9:15:03AM

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 27206
Description HACH 2100P Turbidity meter
Calibrated 5/3/2016 9:14:25AM

Manufacturer HACH
Model Number 2100P
Serial Number/ Lot Number 930900003749
Location New York
Department

State Certified
Status Pass
Temp °C 20
Humidity % 40

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.10 / 0.10	NTU	0.10	NTU	0.10	0.10	0.00%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	100.00	100.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS TURB <0.1 NTU - A5124	<0.1 NTU TURBIDITY STANDARD	HACH	WQA90598			8/31/2016
NYS TURB 100 NTU - A5169	100 NTU TURBIDITY STANDARD	HACH	WQA90598	A5169		9/30/2016
NYS TURB 20 NTU - A5170	20 NTU TURBIDITY STANDARD	HACH	WQA90598			9/30/2016
NYS TURB 800 - A5169	800 NTU TURBIDITY STANDARD	HACH	WQA90598			9/30/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joseph P. Burkhart

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 27206
Description HACH 2100P Turbidity meter
Calibrated 5/3/2016 9:14:25AM

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 33364
Description YSI 556
Calibrated 5/3/2016 9:12:10AM

Manufacturer YSI
Model Number 556
Serial Number/ Lot Number 15l100158
Location New York
Department

State Certified
Status Pass
Temp °C 20
Humidity % 40

Calibration Specifications

Group # 1
Group Name pH
Stated Accy Plus / Minus
Range Acc % 0.0000
Reading Acc % 0.0000
Plus/Minus 0.20

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

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 1.0000
Plus/Minus 0.000

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

Group # 3
Group Name ORP
Stated Accy Plus / Minus
Range Acc % 0.0000
Reading Acc % 0.0000
Plus/Minus 20.00

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

Group # 4
Group Name Dissolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 2.0000
Plus/Minus 0.00

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 33364
Description YSI 556
Calibrated 5/3/2016 9:12:10AM

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS COND 1.413 - 5GF613	NYS COND 1.413	AquaPhoenix Scientific		5GF613		6/30/2016
NYS DO ZERO	NYS DO ZERO	EMD	WQA90122	201023821		
NYS ORP 240 - 8039	NYS ORP 240 - 6448	Hanna	240 MV	8039		9/30/2019
NYS PH 10 - 4AC399	NYS PH 10 - 4AC399	VWR	SL1007-5G	4AC399		3/31/2016
NYS PH 4 - 4AB415	ROC PH 4 Standard 4AE330	AquaPhoenix Scientific	SL1004-5G	4AE330		5/31/2016
NYS PH 7 - 4AI882	NYS PH 7 - 4AI882	VWR	SL1007-5G	4AI882		9/30/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joseph P. Burkhart

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 32743
Description YSI 556
Calibrated 5/3/2016 9:13:53AM

Manufacturer YSI
Model Number 556
Serial Number/ Lot Number 15F100872
Location New York
Department

State Certified
Status Pass
Temp °C 20
Humidity % 40

Calibration Specifications

Group # 1
Group Name pH
Stated Accy Plus / Minus
Range Acc % 0.0000
Reading Acc % 0.0000
Plus/Minus 0.20

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

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 1.0000
Plus/Minus 0.000

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

Group # 3
Group Name ORP
Stated Accy Plus / Minus
Range Acc % 0.0000
Reading Acc % 0.0000
Plus/Minus 20.00

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

Group # 4
Group Name Dissolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 2.0000
Plus/Minus 0.00

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 32743
Description YSI 556
Calibrated 5/3/2016 9:13:53AM

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS COND 1.413 - 5GF613	NYS COND 1.413	AquaPhoenix Scientific		5GF613		6/30/2016
NYS DO ZERO	NYS DO ZERO	EMD	WQA90122	201023821		
NYS ORP 240 - 8039	NYS ORP 240 - 6448	Hanna	240 MV	8039		9/30/2019
NYS PH 10 - 4AC399	NYS PH 10 - 4AC399	VWR	SL1007-5G	4AC399		3/31/2016
NYS PH 4 - 4AB415	ROC PH 4 Standard 4AE330	AquaPhoenix Scientific	SL1004-5G	4AE330		5/31/2016
NYS PH 7 - 4AI882	NYS PH 7 - 4AI882	VWR	SL1007-5G	4AI882		9/30/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joseph P. Burkhart

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Please call 866-960-7463 for Technical Assistance

Well Gauging Form
61 Edson Street, Amsterdam, NY
NYSDEC Site #4-029-004

AECOM

Sampling Dates: 8/18/16

Monitoring Well	Top of Casing Elevation (ft msl)	Depth to Water (ft bgs)	Condition of Well*
MW-1	471.55	4.27	Good, no cap
MW-1R	471.46	4.43	Good, no cap
MW-2	471.20	19.85	No Bolts
MW-3	473.03	9.40	No Bolts, cap
MW-4	470.17	7.90	Good, No Bolts, well open, no cap
MW-4R	470.29	19.32	Good, No Bolts
MW-5	475.62	17.48	Good, No Cap
MW-6	470.97	~~4.27~~	Good, No cap
MW-7	469.14	17.88	No Bolts, Cap
MW-8	467.38	15.35	No Cap, bolts
MW-9	465.43	17.90	No cap, bolts
MW-10	466.77	19.20	No Bolts
MW-11 X	485.37	16.73	
MW-12	468.18	20.08	No Bolts
MW-13	462.12	15.95	No Bolts
MW-14	453.66	13.15	No cap
MW-15	445.20	11.50	Good
MW-16	449.50	23.03	Good
MW-17	450.84	9.70	Good, hard to find
MW-18	463.76	23.22	
MW-19	441.64	12.70	Good
MW-20	442.38	25.00	No Bolts
RW-01	472.08	45.05	Good
RW-02	465.57	19.15	Good

*Describe the condition of each monitoring well and if there are any issues to address (condition of the pad, cover, casing, lock)

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products. Amsterdam

Monitoring Well Number: MW-1R Date: 8/18/2016

Samplers: Mike Kuzia- Carmel, Ross McCredy

Sample Number: MW-1R 081816 QA/QC Collected? MS, MSD

Purging / Sampling Method: Three Well Volumes / Low-Flow

1. L = Well Depth:	17.94	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	4.43	feet
4. C = Column of Water in Well:	13.51	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.20	gal
6. 3(V) = Target Purge Volume	6.60	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 / Hach 2100P

Parameter	Units	Readings						
Time	24 hr	1025	1035	1040	1045	1050	1055	1100
Water Level (0.33)	feet	7.06	9.04	9.76	10.58	11.42	12.42	13.99
Volume Purged	gal	—						
Flow Rate	mL/min	300	200	200	200	200	200	500
Turbidity (+/- 10%)	NTU	9.12	5.43	4.06	6.81	6.47	4.55	11.5
Dissolved Oxygen (+/- 10%)	%	69.3	54.5	52.1	43.6	~~40.3~~ 38.3	36.1	38.3
Dissolved Oxygen (+/- 10%)	mg/L	6.97	5.28	5.04	4.20	3.70	3.47	3.76
Eh / ORP (+/- 10)	MeV	41.7	40.9	41.2	41.5	40.9	40.5	42.8
Specific Conductivity (+/- 3%)	mS/cm[c]	0.579	0.580	0.549	0.474	0.450	0.504	0.540
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	7.37	7.15	7.15	7.20	7.19	7.18	7.16
Temp (+/- 0.5)	C°	16.19	16.76	17.03	17.08	17.21	17.00	16.21
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments: Purge dry at 1106 (≈ 3.75 gallons removed)

Sample at 1135.

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-4 Date: 8/18/16

Samplers: RM / MKC

Sample Number: MW-4 081816 QA/QC Collected? _____

Purging / Sampling Method: Three Well Volumes / Low-Flow

1. L = Well Depth:	14.41	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	7.90	feet
4. C = Column of Water in Well:	6.51	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.06	gal
6. 3(V) = Target Purge Volume	3.18	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 / Hach 2100P

Parameter	Units	Readings					
Time	24 hr	1204	1210	1215	1220	1225	1230
Water Level (0.33)	feet	8.68	10.02	10.73	11.68	12.56	13.25
Volume Purged	gal	-			1.2		
Flow Rate	mL/min	250	200	200	250	250	250
Turbidity (+/- 10%)	NTU	5.54	3.45	3.08	5.87	3.83	3.76
Dissolved Oxygen (+/- 10%)	%	48.1	43.8	42.6	39.6	29.1	31.9
Dissolved Oxygen (+/- 10%)	mg/L	4.81	4.39	4.21	3.98	2.92	3.14
Eh / ORP (+/- 10)	MeV	-0.0	7.3	24.1	25.3	24.3	24.7
Specific Conductivity (+/- 3%)	mS/cm^c	0.479	0.468	0.470	0.471	0.470	0.469
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	7.69	7.35	7.11	7.14	7.14	7.11
Temp (+/- 0.5)	C°	16.20	15.29	15.89	15.47	15.14	15.29
Color	Visual	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none

Comments: Sample at 1300

(Purge dry at 1233) ≈ 2.25 gallons removed

Monitoring Well Purging / Sampling Form

Project Name and Number: Weed Products

Monitoring Well Number: MW-4R Date: 08/18/16

Samplers: RM / MEc

Sample Number: MW-4R 081816 QA/QC Collected? DUP-1 081816

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	34.10	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	19.32	feet
4. C = Column of Water in Well:	14.78	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.4	gal
6. 3(V) = Target Purge Volume	7.22	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings							
Time	24 hr	1211	1216	1221	1226	1231	1236	1241	1246
Water Level (0.33)	feet	19.88	20.10	20.25	20.30	20.60	20.62	20.62	20.62
Volume Purged	gal	0	0.5	0.90	1.5	2.0	2.5	3.0	3.5
Flow Rate	mL/min	<100	~1 G/min	0.1 G/min	"	"	"	<100mL/min	<100
Turbidity (+/- 10%)	NTU	40.5	94.2	43.0	23.0	16.5	11.3	10.5	9.8
Dissolved Oxygen (+/- 10%)	%	5.0	3.5	4.4	7.6	10.8	12.8	14.2	13.4
Dissolved Oxygen (+/- 10%)	mg/L	0.52	.35	0.45	0.77	1.10	1.28	1.40	1.58
Eh / ORP (+/- 10)	MeV	55.9	46.0	63.2	57.4	59.0	67.0	70.2	69.8
Specific Conductivity (+/- 3%)	mS/cm[c]	1.103	1.096	1.057	1.062	1.088	1.167	1.199	1.216
Conductivity (+/- 3%)	mS/cm	0.861	0.873	0.842	0.842	0.867	0.932	0.948	0.958
pH (+/- 0.1)	pH unit	7.42	6.76	6.75	6.87	6.97	6.99	7.06	7.03
Temp (+/- 0.5)	C°	13.75	14.34	14.40	14.16	14.38	14.50	14.07	14.00
Color	Visual	cloudy	clear	green	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No	No

Comments:

Sampled @ 1246

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-10 Date: 8/18/16

Samplers: RM / MEc

Sample Number: MW-10 08816 QA/QC Collected? No

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	50.22	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	19.20	feet
4. C = Column of Water in Well:	31.02	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	5.05	gal
6. 3(V) = Target Purge Volume	15.17	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556

Parameter	Units	Readings						
Time	24 hr	1315	1320	1325	1330	1335	1340	1345
Water Level (0.33)	feet	19.32	19.38	19.38	19.38	19.38	19.38	19.38
Volume Purged	gal	0	0.75	1.75	2.5	3.25	4.00	4.5
Flow Rate	mL/min	-	-	-	-	-	-	-
Turbidity (+/- 10%)	NTU	31.4	28.5	29.2	14.7	8.67	8.21	7.80
Dissolved Oxygen (+/- 10%)	%	18.9	4.9	3.6	4.1	3.4	3.0	2.6
Dissolved Oxygen (+/- 10%)	mg/L	2.00	0.50	0.37	0.43	0.38	0.30	0.28
Eh / ORP (+/- 10)	MeV	23.0	-19.3	-1.4	+1.1	2.3	4.4	7.9
Specific Conductivity (+/- 3%)	mS/cm[c]	0.696	0.711	0.709	0.708	0.712	0.714	0.718
Conductivity (+/- 3%)	mS/cm	0.555	0.564	0.560	0.562	0.568	0.570	0.571
pH (+/- 0.1)	pH unit	7.35	7.16	7.02	7.03	7.04	7.07	7.07
Temp (+/- 0.5)	C°	14.56	14.19	14.03	14.20	14.40	14.44	14.38
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No

Comments:

Sampled @ 1345

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products- Amsterdam

Monitoring Well Number: MW-11 Date: 8/18/2016

Samplers: Mike Kuzia- Carmel / Ross McCrady

Sample Number: MW-11 081616 QA/QC Collected? No

Purging / Sampling Method: Three Well Volumes / Low-Flow

1. L = Well Depth:	29.48	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	16.73	feet
4. C = Column of Water in Well:	12.75	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.07	gal
6. 3(V) = Target Purge Volume	6.21	gal

D (inches)	D (feet)
1-inch	0.08
(2-inch)	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 / Hach 2100P

Parameter	Units	Readings						
Time	24 hr	0925	0935	0945	0955	1005		
Water Level (0.33)	feet	18.78	23.11	23.19	23.22	23.21		
Volume Purged	gal	—						
Flow Rate	mL/min	~~250~~ 500	250	250	250	250		
Turbidity (+/- 10%)	NTU	5.61	5.74	4.25	4.34	4.08		
Dissolved Oxygen (+/- 10%)	%	44.9	16.6	14.0	15.2	15.4		
Dissolved Oxygen (+/- 10%)	mg/L	4.87	1.80	1.50	1.65	1.63		
Eh / ORP (+/- 10)	MeV	61.9	36.3	28.6	29.9	32.8		
Specific Conductivity (+/- 3%)	mS/cm[c]	0.537	0.525	0.524	0.522	0.525		
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—		
pH (+/- 0.1)	pH unit	7.00	7.14	7.18	7.21	7.16		
Temp (+/- 0.5)	C°	13.31	11.57	11.54	11.53	11.59		
Color	Visual	clear	clear	clear	clear	clear		
Odor	Olfactory	none	none	none	none	none		

Comments: Sample at 1010

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-13 Date: 08/18/16

Samplers: RM / MKC

Sample Number: MW-13 08816 QA/QC Collected? _____

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	68.78	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	15.98	feet
4. C = Column of Water in Well:	52.8	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	8.6	gal
6. 3(V) = Target Purge Volume	26	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings						
Time	24 hr	1405	1410	1415	1420	1425	1430	1435
Water Level (0.33)	feet	17.10	18.70	19.00	19.55	19.60	19.62	19.63
Volume Purged	gal	0	0.5	0.75	1.00	1.50	1.90	2.3
Flow Rate	mL/min	-	-	-	-	-	-	-
Turbidity (+/- 10%)	NTU	13.9	11.4	11.2	14.5	13.2	12.7	11.9
Dissolved Oxygen (+/- 10%)	%	8.0	2.0	3.8	4.5	0.9	0.9	0.9
Dissolved Oxygen (+/- 10%)	mg/L	0.89	0.31	0.37	0.46	0.09	0.09	0.09
Eh / ORP (+/- 10)	MeV	-39.1	-61.4	-57.1	-83.2	-88.3	-87.4	-86.1
Specific Conductivity (+/- 3%)	mS/cm^c	0.502	0.596	0.617	0.628	0.632	0.625	0.618
Conductivity (+/- 3%)	mS/cm	0.792	0.447	0.520	0.520	0.510	0.500	0.486
pH (+/- 0.1)	pH unit	7.19	7.21	7.17	7.20	7.19	7.16	7.12
Temp (+/- 0.5)	C°	13.82	14.54	16.78	16.06	15.80	15.32	14.92
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO

Comments:

Sampled @ 1435

SS GeoSub pump would not pump @ a slow rate, kept fluctuating hard to get the water Level to stabilize

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-14 Date: 8/19/16

Samplers: TM / MEc

Sample Number: MW-14 081916 QA/QC Collected? _____

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	60.54	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	13.15	feet
4. C = Column of Water in Well:	47.39	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	7.7	gal
6. 3(V) = Target Purge Volume	23	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings							
Time	24 hr	1058	1103	1108	1113	1118	1123	1128	1133
Water Level (0.33)	feet	14.67	16.70	17.78	18.23	18.62	18.85	18.97	19.09
Volume Purged	gal	—			~1				
Flow Rate	mL/min	200	200	150	150	150	100	100	100
Turbidity (+/- 10%)	NTU	7.40	3.71	3.96	2.54	2.43	8.35	2.96	1.31
Dissolved Oxygen (+/- 10%)	%	44.2	36.4	36.3	36.5	35.9	38.3	36.2	35.5
Dissolved Oxygen (+/- 10%)	mg/L	4.58	3.80	3.80	3.74	3.66	3.87	3.67	3.60
Eh / ORP (+/- 10)	MeV	210.9	174.5	217.3	171.9	122.6	85.3	67.5	68.7
Specific Conductivity (+/- 3%)	mS/cm[c]	0.947	0.947	0.949	0.948	0.954	0.956	0.960	0.958
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	7.27	7.34	7.38	7.41	7.44	7.43	7.41	7.37
Temp (+/- 0.5)	C°	13.69	13.15	13.23	14.22	14.29	14.66	14.47	14.69
Color	Visual	clear	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none	none

Comments: Sample @ 1135

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-15 Date: 08/19/16

Samplers: RM / MEC

Sample Number: MW-15 081916 QA/QC Collected? _____

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	54.49	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	11.50	feet
4. C = Column of Water in Well:	42.99	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	7.00	gal
6. 3(V) = Target Purge Volume	21.00	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 MPS Hach 2100P

Parameter	Units	Readings								
Time	24 hr	1015	1020	1025	1030	1035	1040	1045	1050	1055
Water Level (0.33)	feet	12.70	15.20	16.20	19.08	19.90	20.50	20.90	20.93	20.98
Volume Purged	gal	0	.5	1.2	2.0	2.8	3.8	4.2	5.0	6.0
Flow Rate	mL/min	-	-	-	-	-	-	-	-	-
Turbidity (+/- 10%)	NTU	28.6	21.7	24.5	39.2	27.0	18.2	16.3	15.0	14.2
Dissolved Oxygen (+/- 10%)	%	6.1	0.9	2.0	2.0	0.3	0.6	0.8	0.8	0.7
Dissolved Oxygen (+/- 10%)	mg/L	0.05	0.09	0.19	0.22	0.03	0.06	0.08	0.08	0.07
Eh / ORP (+/- 10)	MeV	-38.3	-58.6	-64.1	-53.8	-67.3	-70.3	-68.8	-74.9	-73
Specific Conductivity (+/- 3%)	mS/cm[c]	1.179	1.184	1.189	0.673	1.171	1.170	1.166	1.179	1.174
Conductivity (+/- 3%)	mS/cm	0.941	0.936	0.960	0.540	0.936	0.926	0.932	0.957	0.950
pH (+/- 0.1)	pH unit	7.13	7.04	6.94	6.67	6.90	6.96	6.94	6.99	7.03
Temp (+/- 0.5)	C°	14.65	13.92	14.84	13.72	14.28	14.07	14.40	14.80	15.00
Color	Visual	clear	clear	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO	NO	NO

Comments: Sampled @ 1055

Pump rate fluctuating, hard to get WL to stabilize

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-16 Date: 08/19/16

Samplers: RM / MKC

Sample Number: MW-16 081916 QA/QC Collected? _____

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	67.00	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	23.03	feet
4. C = Column of Water in Well:	43.97	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	7.17	gal
6. 3(V) = Target Purge Volume	21.5	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556/Hach 2100P

Parameter	Units	Readings						
Time	24 hr	0935	0940	0945	0950	0955	1000	1005
Water Level (0.33)	feet	24.57	26.30	26.80	27.03	27.11	27.17	27.15
Volume Purged	gal	—			≈1.2			
Flow Rate	mL/min	250	250	250	250	250	250	250
Turbidity (+/- 10%)	NTU	4.97	2.56	2.07	1.43	2.18	1.97	2.05
Dissolved Oxygen (+/- 10%)	%	39.1	32.9	28.9	29.2	30.8	31.2	30.3
Dissolved Oxygen (+/- 10%)	mg/L	4.34	3.59	3.10	3.21	3.37	3.49	3.28
Eh / ORP (+/- 10)	MeV	223.4	229.1	209.4	203.6	195.2	193.9	196.6
Specific Conductivity (+/- 3%)	mS/cm[c]	0.219	0.215	0.212	0.210	0.210	0.211	0.212
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	6.80	6.56	6.37	6.37	6.40	6.42	6.40
Temp (+/- 0.5)	C°	11.99	11.03	11.07	11.12	11.18	11.20	11.23
Color	Visual	cloudy	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments: ~~Sample at 1007~~ MKC

Attempt to sample at 1007 w/ peristaltic pump. Insufficient lift.

Sample @ 1115 w/ submersible pump

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-17 ~~080416~~ Date: 8/4/16

Samplers: RM / MKC

Sample Number: MW-17 080416 QA/QC Collected? No

Purging / Sampling Method: Three Well Volumes / Low-Flow Sampling

1. L = Well Depth:	66.31	feet	
2. D = Riser Diameter (I.D.):	0.17	feet	
3. W = Depth to Water:	9.70	feet	
4. C = Column of Water in Well:	56.61	feet	
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	9.22	gal	
6. 3(V) = Target Purge Volume	28	gal	

D (inches)	D (feet)
1-inch	0.08
(2-inch)	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	(2-inch)	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556/Hach 2100P (022427)

Parameter	Units	Readings						
Time	24 hr	0830	0835	0840	0845	0850	0900	0910
Water Level (0.33)	feet	10.32	13.47	14.73	16.08	16.22	16.34	16.41
Volume Purged	gal	—		1.1			2.5	
Flow Rate	mL/min	350	300	250	250	200	200	200
Turbidity (+/- 10%)	NTU	7.06	6.71	3.61	2.89	5.65	4.73	5.08
Dissolved Oxygen (+/- 10%)	%	67.2	10.2	9.9	10.4	10.7	9.9	9.7
Dissolved Oxygen (+/- 10%)	mg/L	6.31	~~40.2~~ 1.10	1.06	1.11	1.13	0.95	1.03
Eh / ORP (+/- 10)	MeV	-20.0	-35.3	-45.3	-47.9	-47.7	-46.2	-50.1
Specific Conductivity (+/- 3%)	mS/cm[c]	0.278	0.205	0.200	0.200	0.200	0.200	0.200
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—	—	—
pH (+/- 0.1)	pH unit	6.16	5.79	5.90	6.01	6.04	6.15	6.09
Temp (+/- 0.5)	C°	12.38	12.07	12.19	12.28	12.37	12.49	12.42
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	sulfur	sulfur	sulfur	sulfur	sulfur	sulfur	sulfur

Comments: Sample at 0920.

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-18 Date: 8/18/16

Samplers: RM / MK

Sample Number: MW-18 081816 QA/QC Collected? No

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	65.65	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	23.22	feet
4. C = Column of Water in Well:	42.43	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	6.9	gal
6. 3(V) = Target Purge Volume	20.7	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI-556 / Hach 2100P

Parameter	Units	Readings						
Time	24 hr	1350	1355	1400	1405	1410		
Water Level (0.33)	feet	23.89	24.11	24.13	~~24.12~~	24.15		
Volume Purged	gal	—						
Flow Rate	mL/min	150	150	150	150	150		
Turbidity (+/- 10%)	NTU	7.77	6.94	3.72	1.44	0.91		
Dissolved Oxygen (+/- 10%)	%	10.8	7.6	7.4	8.1	8.4		
Dissolved Oxygen (+/- 10%)	mg/L	1.14	0.82	0.79	0.86	0.89		
Eh / ORP (+/- 10)	MeV	4.8	18.9	14.1	17.0	12.0		
Specific Conductivity (+/- 3%)	mS/cm[c]	0.289	0.286	0.285	0.285	0.285		
Conductivity (+/- 3%)	mS/cm	—	—	—	—	—		
pH (+/- 0.1)	pH unit	7.75	7.11	7.09	7.15	7.11		
Temp (+/- 0.5)	C°	13.22	12.32	12.30	12.29	12.28		
Color	Visual	clear	clear	clear	clear	clear		
Odor	Olfactory	none	none	none	none	none		

Comments: Sample at 1415

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-19 Date: 8/19/16

Samplers: RM/MKc

Sample Number: MW-19 081916 QA/QC Collected? No

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	70.56	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	12.70	feet
4. C = Column of Water in Well:	57.86	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	9.4	gal
6. 3(V) = Target Purge Volume	28	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings							
Time	24 hr	830	835	840	845	850	855	900	905
Water Level (0.33)	feet	34.65	40.20	42.30	45.00	45.80	47.70	47.80	47.82
Volume Purged	gal	0	1	1.5	2.0	2.3	2.3	3.0	3.2
Flow Rate	mL/min	-	-		-	-	-	-	-
Turbidity (+/- 10%)	NTU	30.3	51.0	68.8	53.7	50.9	53.2	51.8	50.1
Dissolved Oxygen (+/- 10%)	%	5.7	1.2	1.3	1.0	1.3	1.3	1.5	1.3
Dissolved Oxygen (+/- 10%)	mg/L	0.60	0.13	0.14	0.10	0.14	0.13	0.15	0.14
Eh / ORP (+/- 10)	MeV	205.3	105.5	55.9	-27.7	-61.7	-70.2	-80.0	-90.1
Specific Conductivity (+/- 3%)	mS/cm[c]	1.052	1.254	1.224	1.071	0.977	0.968	0.893	0.887
Conductivity (+/- 3%)	mS/cm	0.800	0.951	0.936	0.825	0.766	0.736	0.708	0.700
pH (+/- 0.1)	pH unit	6.65	6.05	6.28	6.45	6.62	6.72	6.80	6.89
Temp (+/- 0.5)	C°	12.69	12.34	12.68	12.86	13.60	13.52	13.80	13.90
Color	Visual	clear	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	Sulfur	Sulfur	No	No	No

Comments:

Sampled @ 905

Pump Not pumping @ Constant rate

Monitoring Well Purging / Sampling Form

Project Name and Number: Ward Products

Monitoring Well Number: MW-20 Date: 8/19/16

Samplers: RM / mkc

Sample Number: MW-20 081916 QA/QC Collected? NO

Purging / Sampling Method: Three Well Volumes

1. L = Well Depth:	57.06	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	25.00	feet
4. C = Column of Water in Well:	32.06	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	5.22	gal
6. 3(V) = Target Purge Volume	15.66	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 556 MPS / Hach 2100P

Parameter	Units	Readings							
Time	24 hr	925	930	935	940	945	950	955	1000
Water Level (0.33)	feet	26.70	28.10	29.80	31.80	32.15	32.45	32.50	32.50
Volume Purged	gal	0	.25	.50	1.00	1.25	2.00	2.40	2.75
Flow Rate	mL/min	-	-	-	-	-	-	-	-
Turbidity (+/- 10%)	NTU	69.6	191	132	95.5	94.3	85.1	83.2	82.1
Dissolved Oxygen (+/- 10%)	%	31.9	35.8	18.9	18.2	17.0	15.3	13.7	13.8
Dissolved Oxygen (+/- 10%)	mg/L	3.34	3.82	1.98	1.86	1.74	1.55	1.40	1.32
Eh / ORP (+/- 10)	MeV	-40.2	-28.6	-39.5	-35.0	-31.9	-31.2	-30.6	-29.9
Specific Conductivity (+/- 3%)	mS/cm[c]	1.443	1.444	1.429	1.417	1.404	1.374	1.348	1.329
Conductivity (+/- 3%)	mS/cm	1.126	1.150	1.108	1.123	1.113	1.097	1.099	1.088
pH (+/- 0.1)	pH unit	7.06	6.95	6.93	6.89	6.95	6.96	6.98	6.99
Temp (+/- 0.5)	C°	13.52	14.42	13.23	14.13	14.17	14.42	14.52	14.70
Color	Visual	clear	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO	NO

Comments: Sampled @ 1000

Adirondack Environmental Services Inc.
314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

CHAIN OF CUSTODY RECORD

AES Work Order #

Experience is the solution

A full service analytical research laboratory offering solutions to environmental concerns

Client Name:	Address:		
AECOM	250 Apollo Drive Chelmsford MA 01824		
Send Report To:	**Project Name (Location)**	**Samplers: (Names)**	
jennifer.atkins@aecom.com	Ward - Amsterdam, NY	M.K Kuzia-Carmel, Ross M'Cready	
Client Phone No:	**Client Email:**	**PO Number:**	**Samplers: (Signature)**

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-11 081816	8/15/16	1016	A P	GW		X	4	VOCs, ~~SVOCs~~, Metals, ICP Hex Chrom.
	MW-1R 081816		1135	A P	GW		X	4	
	MS - 081816 (MW-1R)		1135	A P	GW		X	4	
	MSD - 081816 (MW-1R)		1135	A P	GW		X	4	
	MW-4 081816		1320	A P	GW		X	4	
	MW-4R 081816		1246	A P	GW		X	4	
	DUP-1 081816			A P	GW		X	4	
	MW-18 081816		1415	A P	GW		X	4	
	MW-10 081816		1345	A P	GW		X	4	
	MW-13 081816		1435	A P	GW		X	4	
				A P					
				A P					
				A P					
				A P					

Shipment Arrived Via:

FedEx UPS Client AES Other:_____

Turnaround Time Request:

☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day

Note: Samples received after 3:30 pm are considered next business day

CC Report To / Special Instructions/Remarks:

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received for Laboratory by:	Date/Time 8/15/16 17:40

Temperature	AES Bottles		Properly Preserved	Received Within Holding Times
Ambient or Chilled	Y	N	Y N	Y N
Notes:	☐	☐	Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

Adirondack Environmental Services Inc.
Experience is the solution

314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

CHAIN OF CUSTODY RECORD

AES Work Order #

A full service analytical research laboratory offering solutions to environmental concerns

Client Name:	Address:	
AECOM	40 British American BLVD Latham, NY	
Send Report To:	**Project Name (Location)**	**Samplers: (Names)**
Jennifer Atkins	Weird Products Amsterdam	Ross McCord / Mike Kozlowski
Client Phone No:	**Client Email:**	**PO Number:**
(518) 951-2200	jennifer.atkins@aecom.com	**Samplers: (Signature)**

AES Sample Number	Client Sample Identification & Location	Date Sampled	Time A=a.m. P=p.m.		Sample Type: Matrix	Comp	Grab	Number of Cont's	Analysis Required
	MW-19 081916	8/19/16	905	A/P	GW		✓	4	VOCs, TCL Metals Mn, Chrom
	MW-17 081916		920	A/P	GW		✓	4	
	MW-20 081916		1000	A/P	GW		✓	4	
	MW-15 081916		1055	A/P	GW		✓	4	
	MW-16 081916		1115	A/P	GW		✓	4	
	MW-14 081916		1135	A/P	GW		✓	4	
	TRIP BLANK	-	-	A/P	-		-	2	VOCs (HCl)
				A/P					
				A/P					
				A/P					
				A/P					
				A/P					
				A/P					
				A/P					

Shipment Arrived Via:
FedEx UPS Client AES Other:_____

CC Report To / Special Instructions/Remarks:

Turnaround Time Request:
☐ 1 Day ☐ 3 Day ☒ Normal
☐ 2 Day ☐ 5 Day
Note: Samples received after 3:30 pm are considered next business day

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	**Received by: (Signature)**	**Date/Time**
Relinquished by: (Signature)	**Received for Laboratory by:**	**Date/Time**
		8/19/16 2:43 PM

Temperature	AES Bottles	Properly Preserved	Received Within Holding Times
Ambient or Chilled	Y ☒ N ☐	Y N	Y N
Notes:		Notes:	Notes:

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 27207
Description HACH 2100P Turbidity meter
Calibrated 8/5/2016 8:47:23AM

Manufacturer HACH
Model Number 2100P
Serial Number/ Lot Number 010500028939
Location New York
Department

State Certified
Status Pass
Temp °C 24
Humidity % 41

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.10 / 0.10	NTU	0.10	NTU	0.10	0.10	0.00%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	100.00	100.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS TURB <0.1 NTU - A5124	<0.1 NTU TURBIDITY STANDARD	HACH	WQA90598			8/31/2016
NYS TURB 100 NTU - A5169	100 NTU TURBIDITY STANDARD	HACH	WQA90598	A5169		9/30/2016
NYS TURB 20 NTU - A5170	20 NTU TURBIDITY STANDARD	HACH	WQA90598			9/30/2016
NYS TURB 800 NTU - A5169	800 NTU TURBIDITY STANDARD	HACH		A5169		9/30/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.
405 Cambridge Ave
Syracuse, NY 13208
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 27206
Description HACH 2100P Turbidity meter
Calibrated 8/16/2016 11:05:33AM

Manufacturer HACH
Model Number 2100P
Serial Number/ Lot Number 930900003749
Location New York
Department

State Certified
Status Pass
Temp °C 24
Humidity % 51

Calibration Specifications

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.10 / 0.10	NTU	0.10	NTU	0.10	0.10	0.00%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	100.00	100.00	0.00%	Pass
800.00 / 800.00	NTU	800.00	NTU	800.00	800.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NYS TURB <0.1 NTU - A5124	<0.1 NTU TURBIDITY STANDARD	HACH	WQA90598			8/31/2016
NYS TURB 100 NTU - A5169	100 NTU TURBIDITY STANDARD	HACH	WQA90598	A5169		9/30/2016
NYS TURB 20 NTU - A5170	20 NTU TURBIDITY STANDARD	HACH	WQA90598			9/30/2016
NYS TURB 800 NTU - A5169	800 NTU TURBIDITY STANDARD	HACH		A5169		9/30/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID 12315
Description YSI 556
Calibrated 8/15/2016 11:01:22AM

Manufacturer YSI
Model Number 556
Serial Number/ Lot Number 01B1251 AF
Location New Jersey
Department

State Certified
Status Pass
Temp °C 28.6
Humidity % 53

Calibration Specifications

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	6.90	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.12	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.09	10.00	0.00%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.402	1.414	0.07%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.0

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.0 / 240.0	mv	240.0	mv	233.6	240.0	0.00%	Pass

Group # 4
Group Name Dissolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.0

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.0 / 100.0	%	100.0	%	97.8	99.8	-0.20%	Pass

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID 12315
Description YSI 556
Calibrated 8/15/2016 11:01:22AM

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NJ COND 1413 6GC013	1413 conductivity standard	AquaPhoenix Scientific	1413	6GC013	4/5/2016	3/31/2017
NJ ORP 240MV 9099	ORP solution 240mv	Hanna	240Mv	9099	3/2/2016	7/31/2020
NJ PH 10 6GB188	BUFFER, PH10 BLUE	AquaPhoenix Scientific	PH10	6GB188	4/5/2016	2/28/2018
NJ PH 4 6GA048	BUFFER, PH4 RED	AquaPhoenix Scientific	PH4	6GA048	4/5/2016	1/31/2018
NJ PH 7 6GA544	BUFFER, PH7 YELLOW	AquaPhoenix Scientific	PH7	6GA544	4/5/2016	1/31/2018

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated William Barnett

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

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

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID 22427
Description YSI 556
Calibrated 8/16/2016 10:57:59AM

Manufacturer YSI
Model Number 556
Serial Number/ Lot Number 13j100679
Location New Jersey
Department

State Certified
Status Pass
Temp °C 28.6
Humidity % 41

Calibration Specifications

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

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.16	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	3.93	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.02	10.00	0.00%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.442	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	236.00	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	97.85	100.00	0.00%	Pass

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID 22427
Description YSI 556
Calibrated 8/16/2016 10:57:59AM

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

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NJ COND 1413 6GC013	1413 conductivity standard	AquaPhoenix Scientific	1413	6GC013	4/5/2016	3/31/2017
NJ ORP 240MV 9099	ORP solution 240mv	Hanna	240Mv	9099	3/2/2016	7/31/2020
NJ PH 10 6GB188	BUFFER, PH10 BLUE	AquaPhoenix Scientific	PH10	6GB188	4/5/2016	2/28/2018
NJ PH 4 6GA048	BUFFER, PH4 RED	AquaPhoenix Scientific	PH4	6GA048	4/5/2016	1/31/2018
NJ PH 7 6GA544	BUFFER, PH7 YELLOW	AquaPhoenix Scientific	PH7	6GA544	4/5/2016	1/31/2018

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Sigyan Congo

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

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

URS

Job Ward Products- Amsterdam | Project No. | Page ____ of ____

Description Equipment Calibration Log | Computed by | Sheet ____ of ____

| Checked by | Date 8/19/16

Reference

YSI-556 #1 (12315)

conductivity (1.413) - 1.256
pH (10) - 10.19
pH (7) - 6.86
ORP (240) - 252.4

YSI-556 #2 (022427)

conductivity (1.413) - 1.232
pH (10) - 10.02
pH (7) - 7.15
pH (4) - 3.94
ORP (240) - 247.7

Location Amsterdam, NY Date 8/18/2016

Project / Client GW Sampling/MW Gauging
Ward Products

0745	AECOM (M. Kuzia-Carmel, R McCredy) on site. Shut down treatment system and prepare to begin GW sampling. Discover that flow controller for submersible pump wasn't delivered. Contact Pine to advise. Pine will send another sub. pump via courier.
0815	Begin GW Sampling/MW Gauging.
1045	MW Gauging complete.
1120	Pine courier on site. Exchange submersible pump for replacement + resume GW sampling.
1445	AECOM has completed sampling for the day. (MW-1R, MW-4, MW-4R, MW-10, MW-11, MW-13, MW-18) (MS, MSD collected from MW-1R), (DUP collected from MW-4R). Begin packing up equipment + restart treatment system.
1500	AECOM off site to lab w/ samples.

MKC

Location Amsterdam, NY Date 8/19/2016

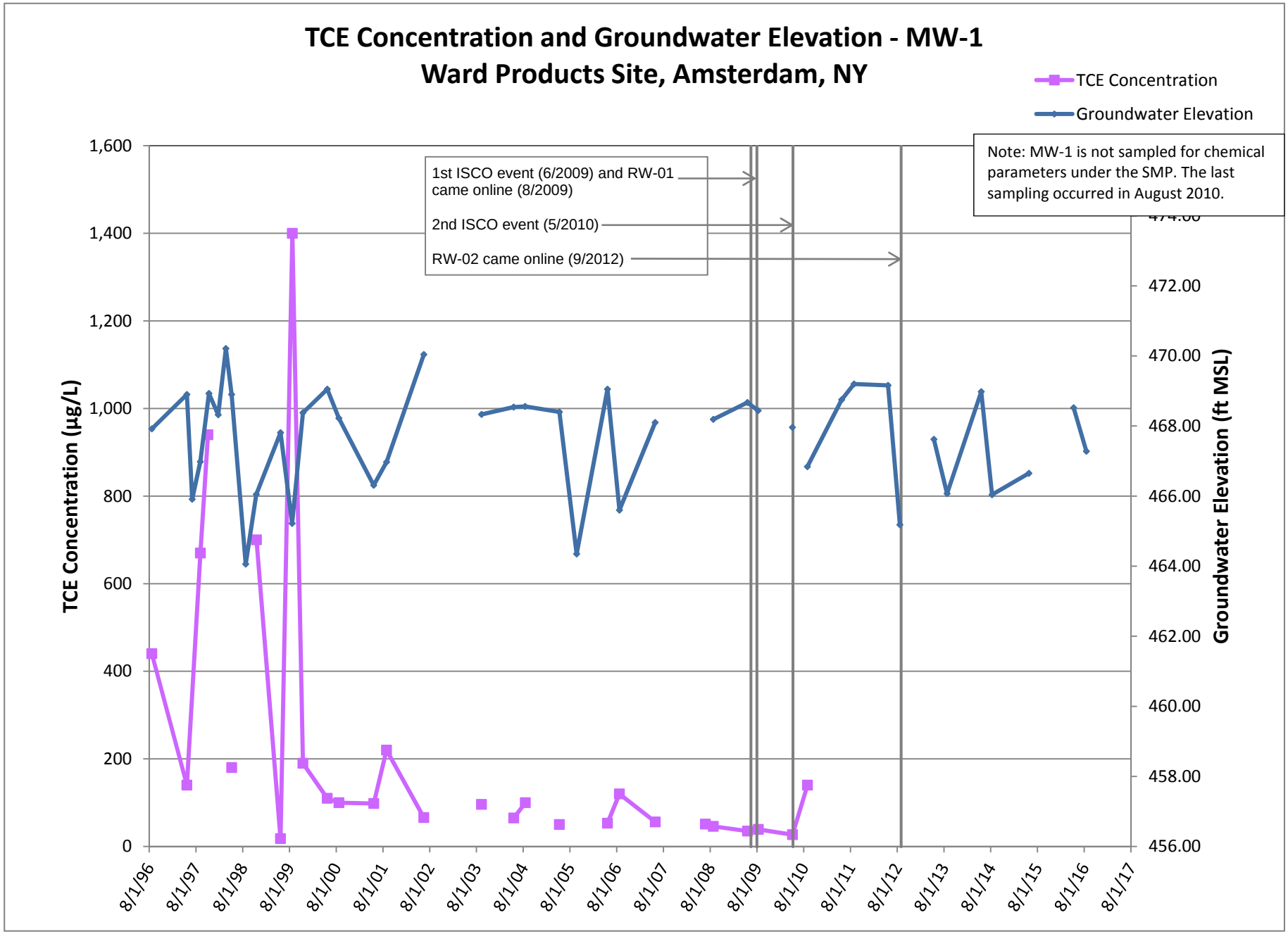
Project / Client GW Sampling/MW Gauging
Ward Products

0745	AECOM (M. Kuzia-Carmel, R McCredy) on site. Re-calibrate YSI multimeters, shut down system, and prepare to resume GW sampling.
0830	Sampling resumes.
1145	Sampling complete (MW-14, MW-15, MW-16, MW-17, MW-19, MW-20). Begin packing up equipment, restart system.
1200	AECOM off site to lab w/ samples.

MKC

MKC

Appendix C Graphs – Groundwater Elevations and TCE Concentrations Over Time


TCE Concentration and Groundwater Elevation - MW-1
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
Note: MW-1 is not sampled for chemical parameters under the SMP. The last sampling occurred in August 2010.
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
1,600
1,400
1,200
1,000
800
600
400
200
0
472.00
470.00
468.00
466.00
464.00
462.00
460.00
458.00
456.00
8/1/96
8/1/97
8/1/98
8/1/99
8/1/00
8/1/01
8/1/02
8/1/03
8/1/04
8/1/05
8/1/06
8/1/07
8/1/08
8/1/09
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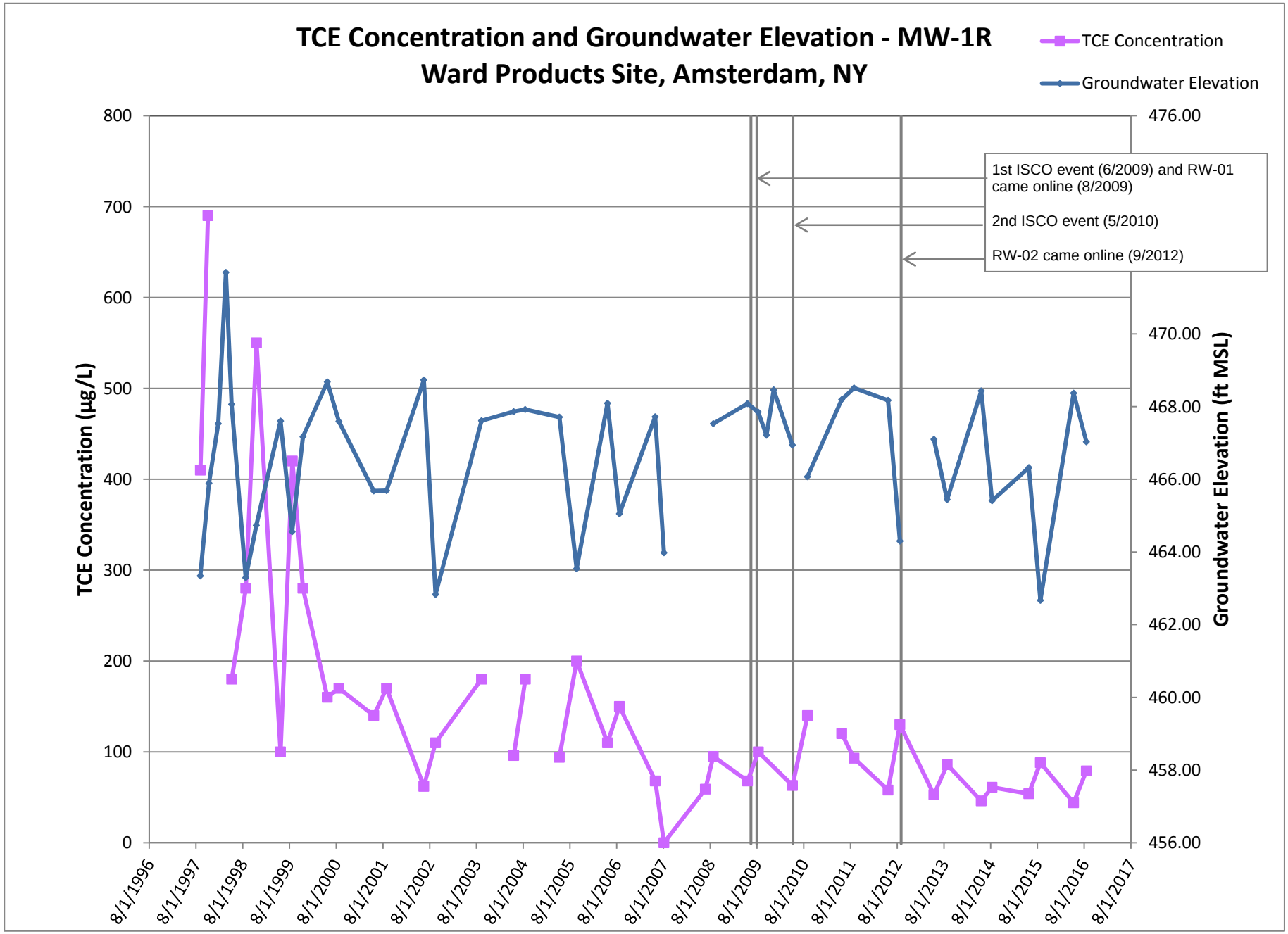
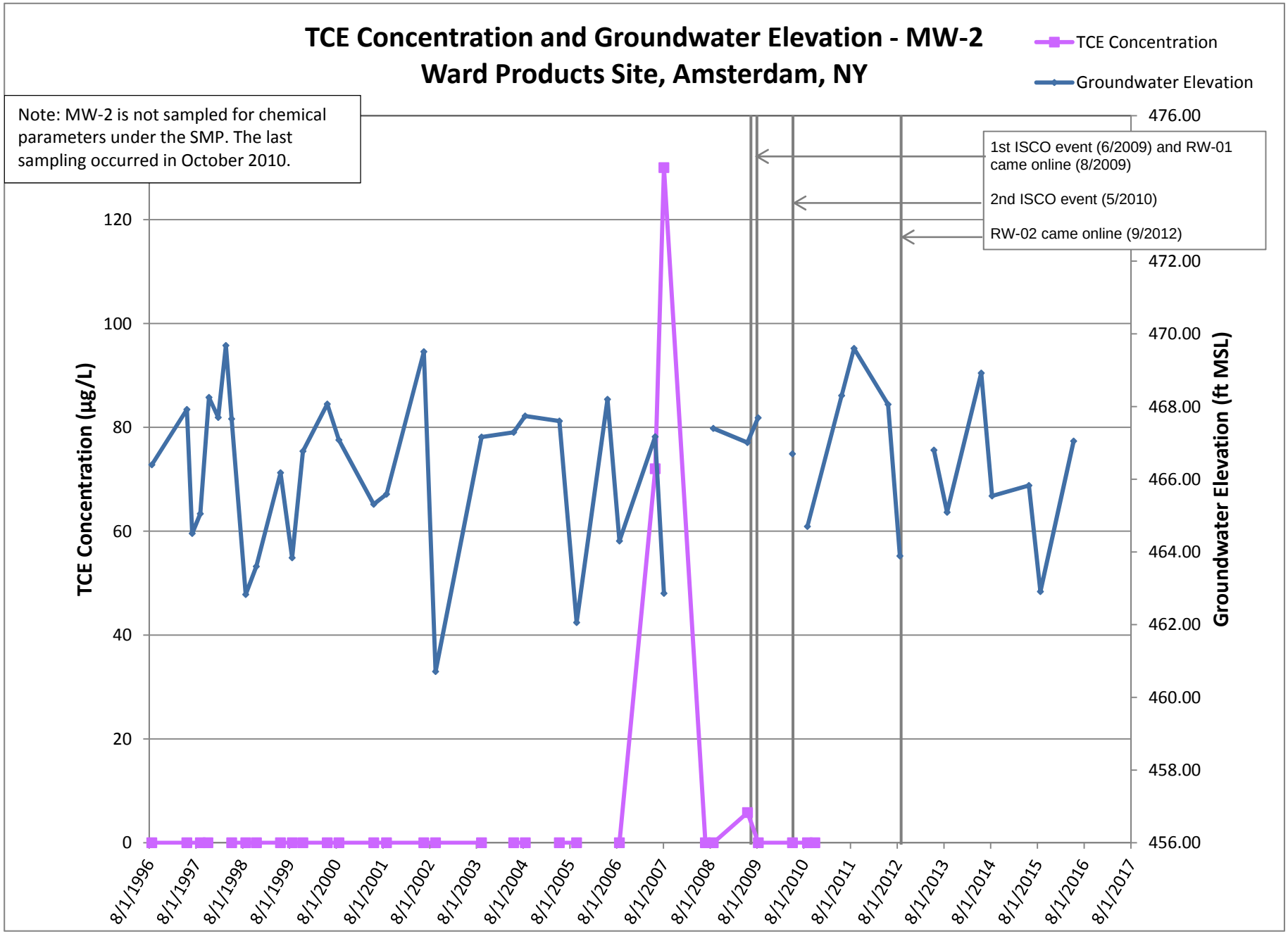
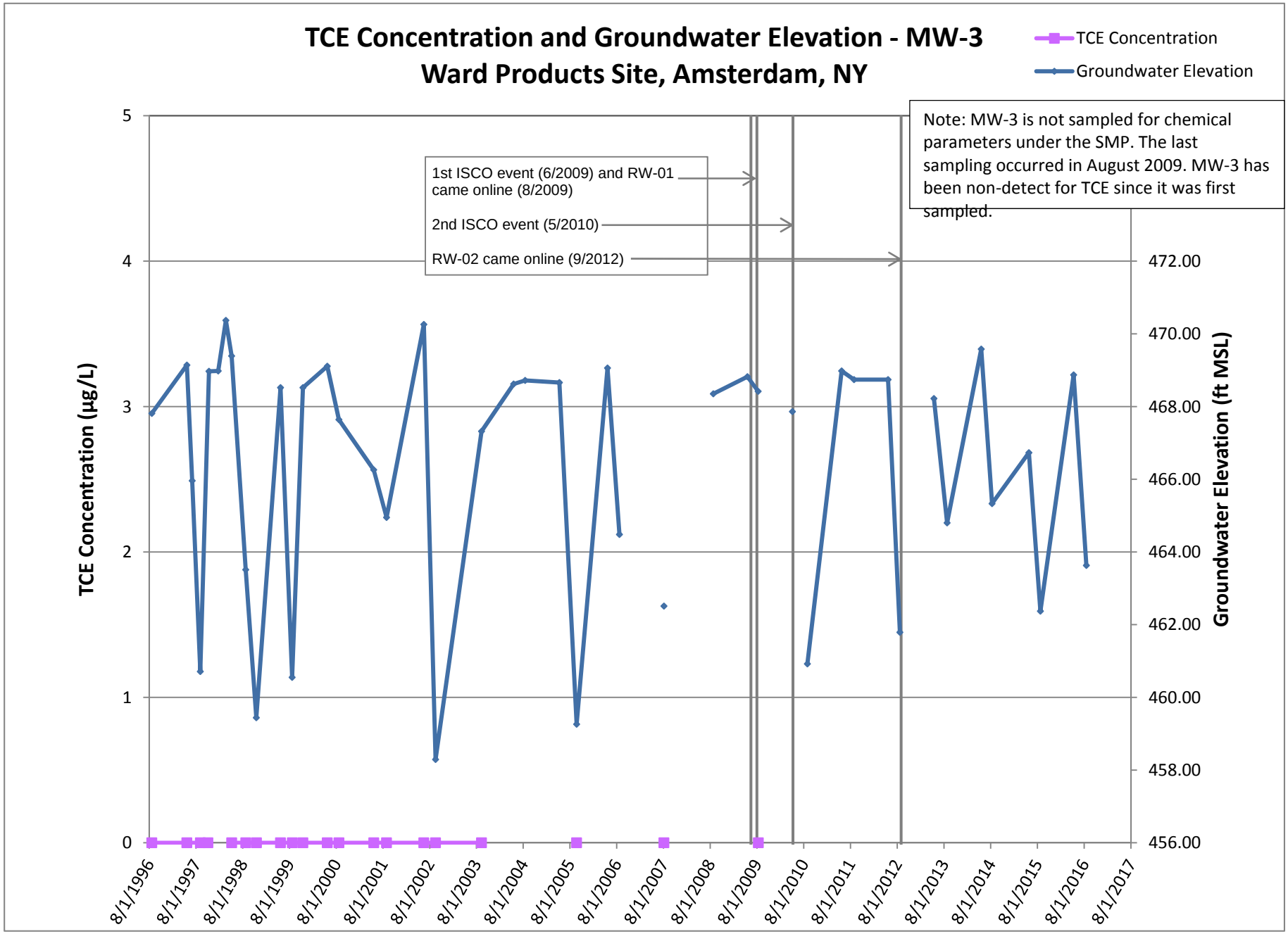
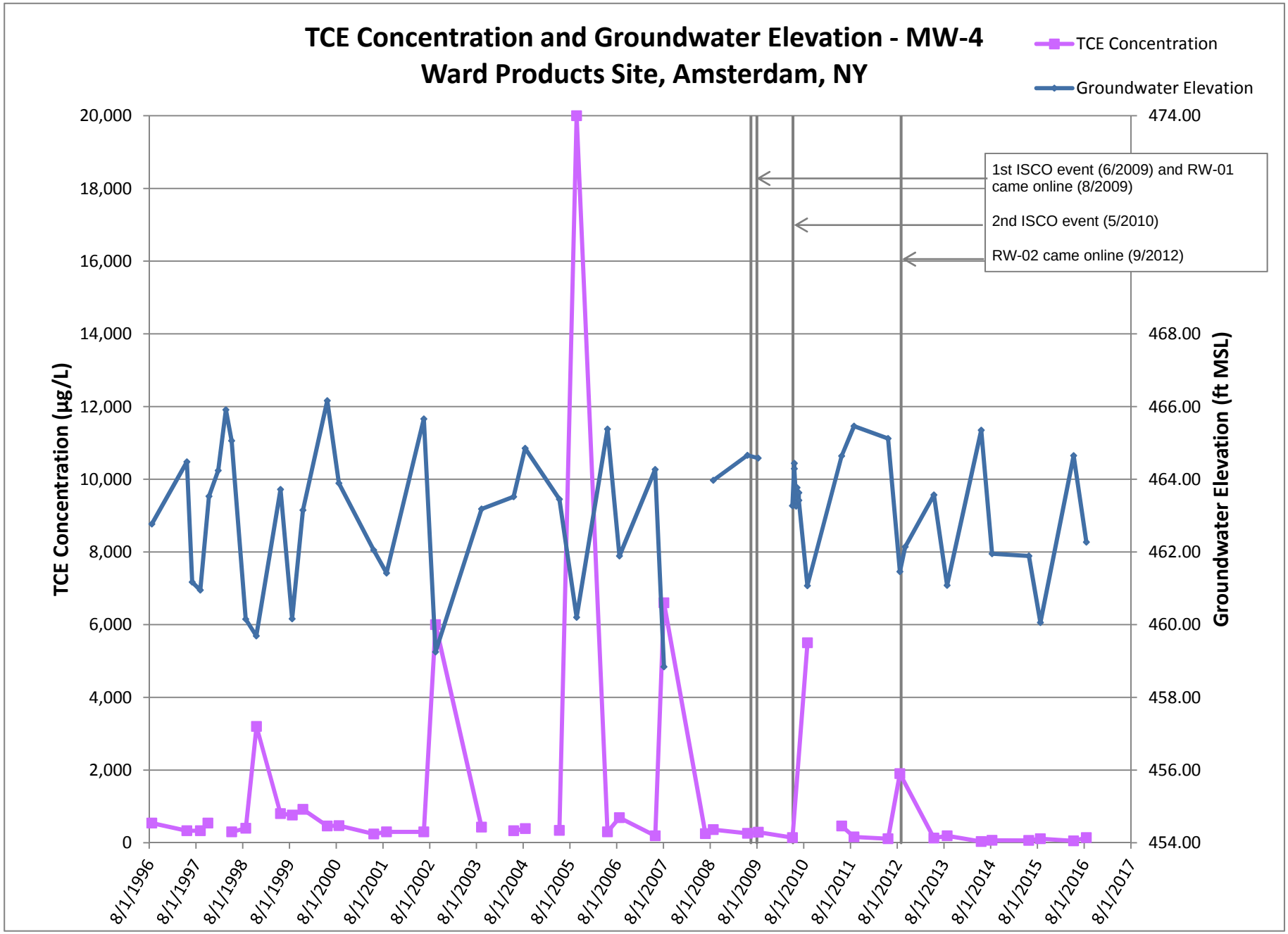
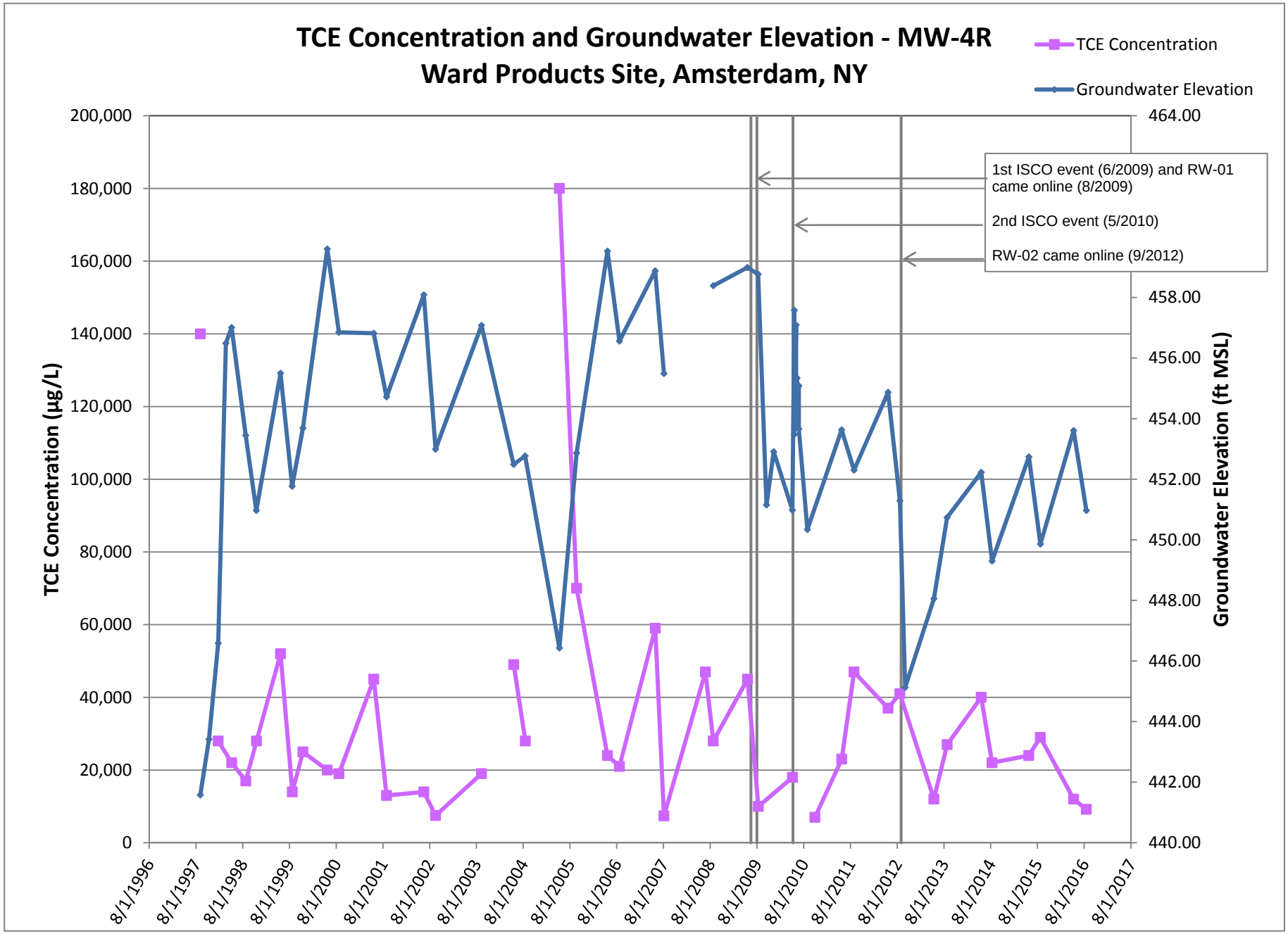
8/1/15
8/1/16
8/1/17

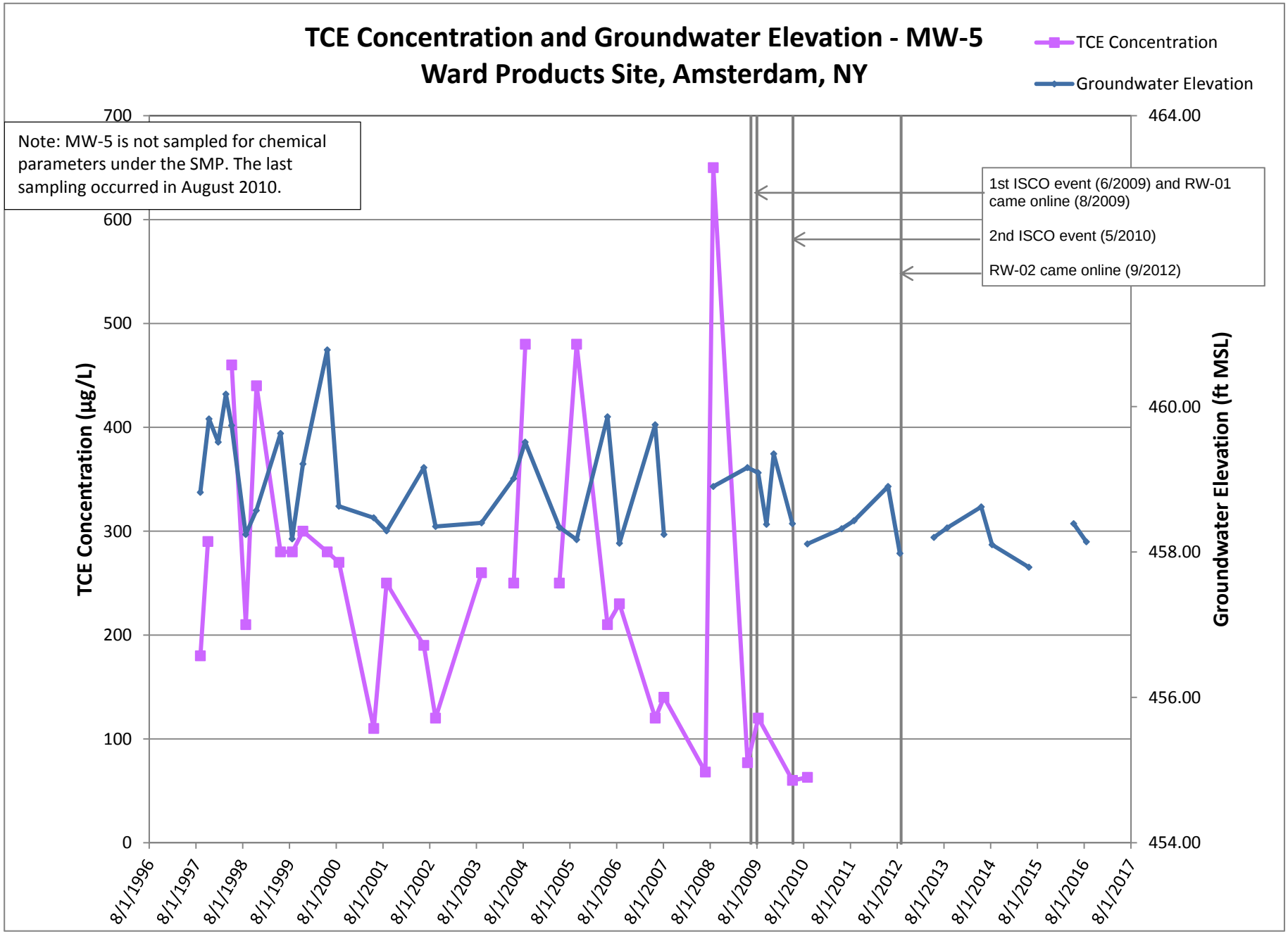

TCE Concentration and Groundwater Elevation - MW-1R
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
800
700
600
500
400
300
200
100
0
476.00
470.00
468.00
466.00
464.00
462.00
460.00
458.00
456.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-2
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
Note: MW-2 is not sampled for chemical parameters under the SMP. The last sampling occurred in October 2010.
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
0
20
40
60
80
100
120
456.00
458.00
460.00
462.00
464.00
466.00
468.00
470.00
472.00
476.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-3
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
Note: MW-3 is not sampled for chemical parameters under the SMP. The last sampling occurred in August 2009. MW-3 has been non-detect for TCE since it was first sampled.
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
0
1
2
3
4
5
456.00
458.00
460.00
462.00
464.00
466.00
468.00
470.00
472.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-4
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
474.00
468.00
466.00
464.00
462.00
460.00
458.00
456.00
454.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-4R
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
464.00
458.00
456.00
454.00
452.00
450.00
448.00
446.00
444.00
442.00
440.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-5
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
Note: MW-5 is not sampled for chemical parameters under the SMP. The last sampling occurred in August 2010.
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
700
600
500
400
300
200
100
0
464.00
460.00
458.00
456.00
454.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
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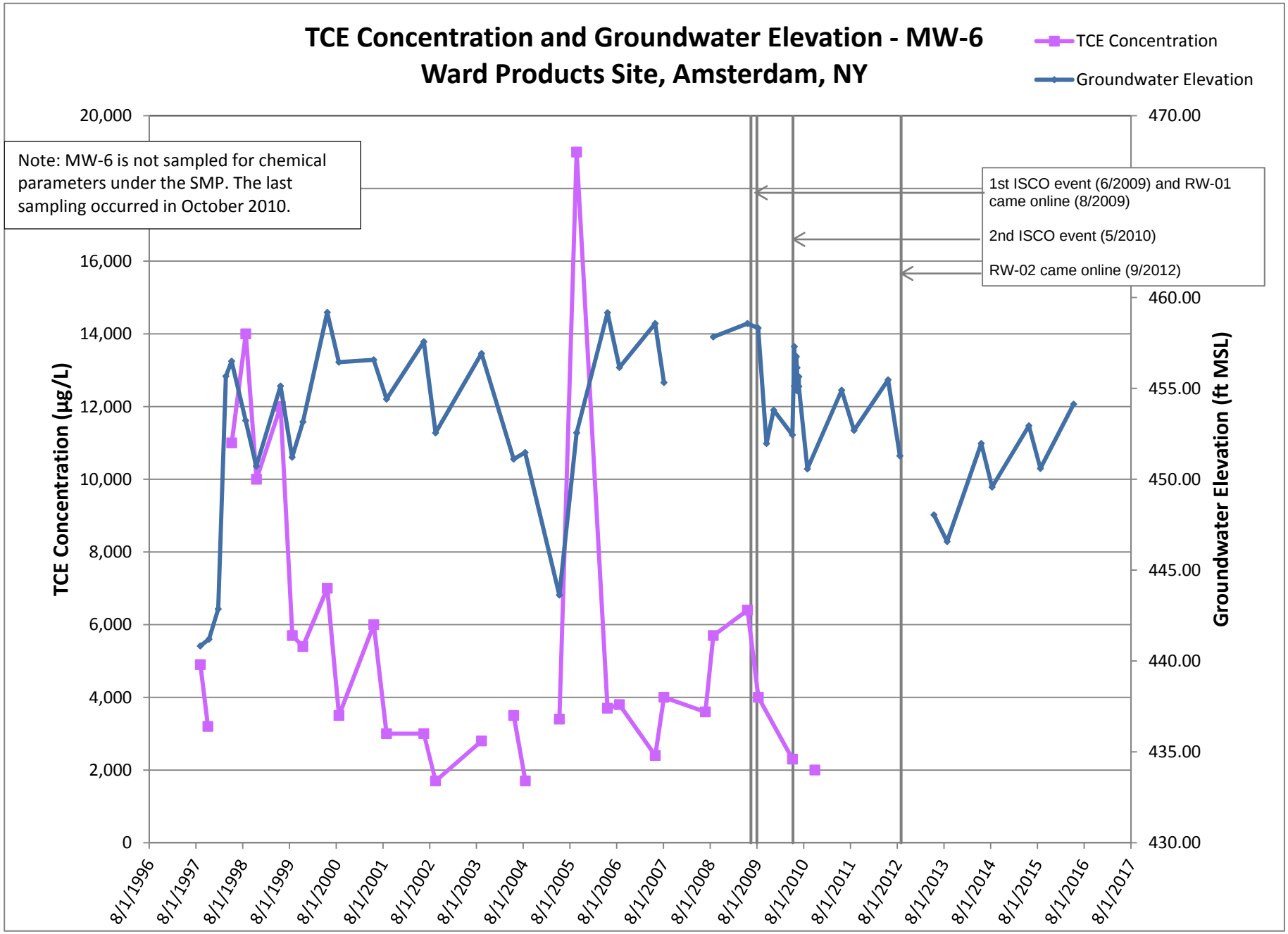
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-6
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
Note: MW-6 is not sampled for chemical parameters under the SMP. The last sampling occurred in October 2010.
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
20,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
470.00
460.00
455.00
450.00
445.00
440.00
435.00
430.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
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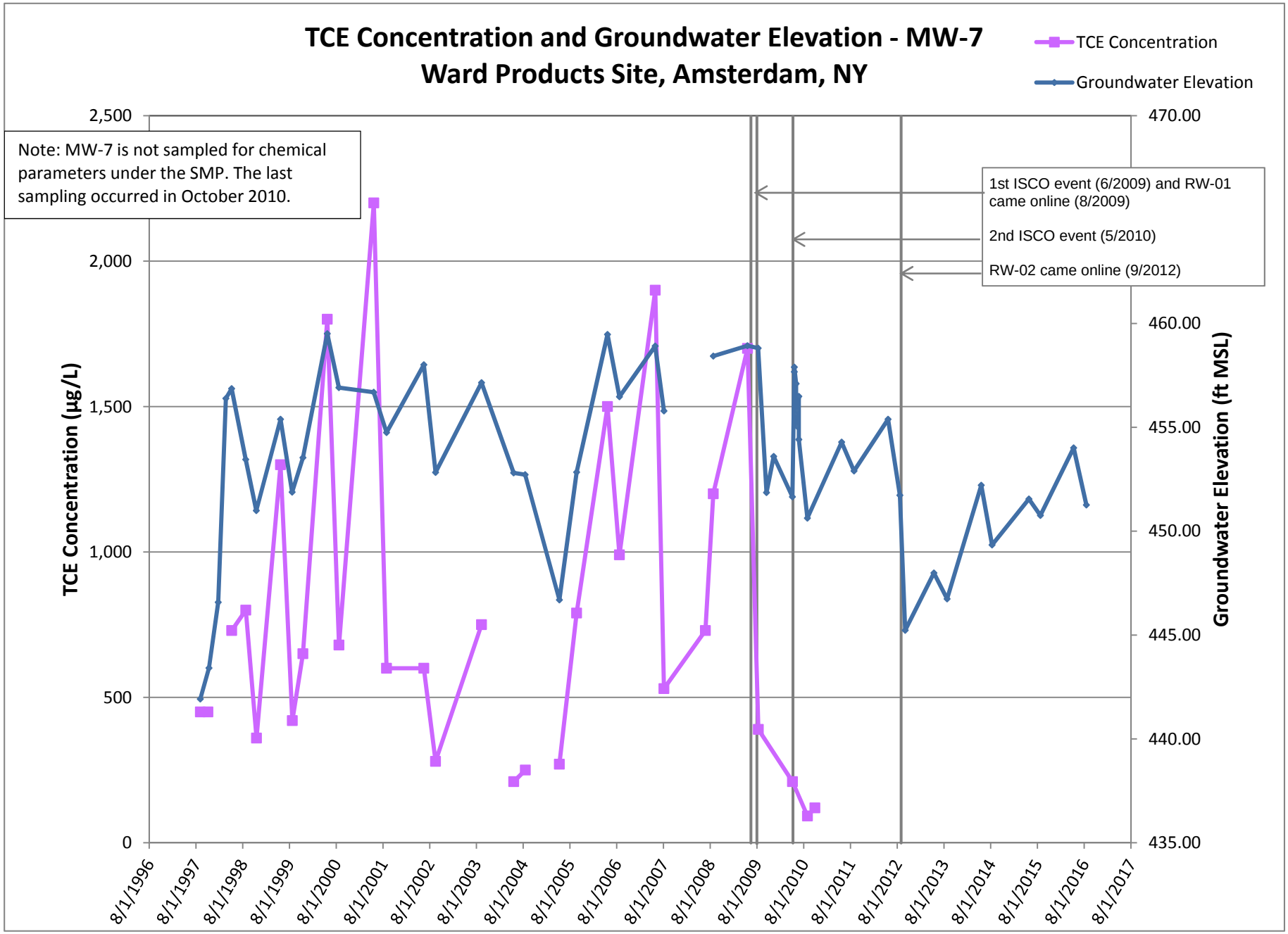
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-7
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
Note: MW-7 is not sampled for chemical parameters under the SMP. The last sampling occurred in October 2010.
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
2,500
2,000
1,500
1,000
500
0
470.00
460.00
455.00
450.00
445.00
440.00
435.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
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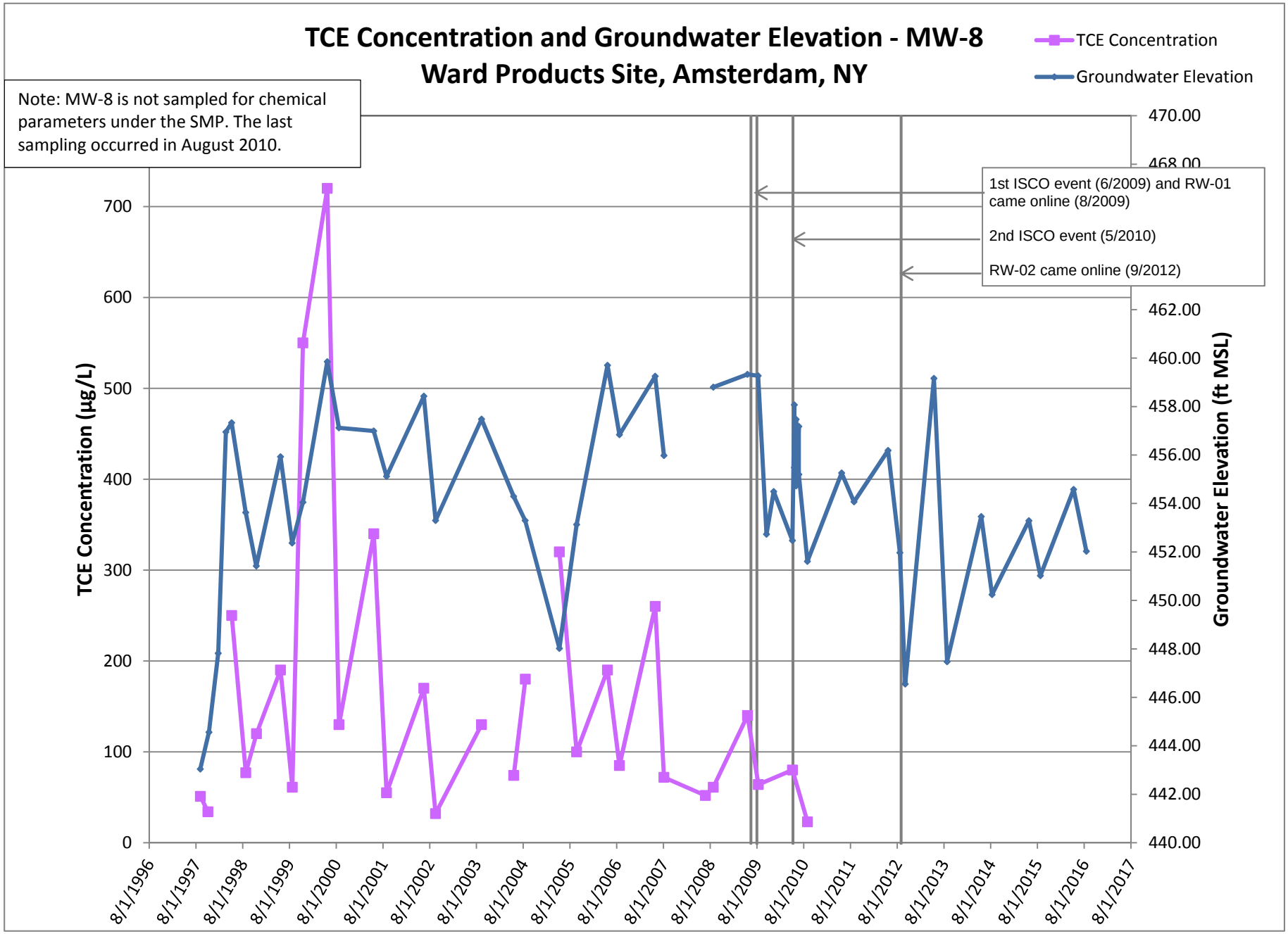
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-8
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
Note: MW-8 is not sampled for chemical parameters under the SMP. The last sampling occurred in August 2010.
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
0
100
200
300
400
500
600
700
440.00
442.00
444.00
446.00
448.00
450.00
452.00
454.00
456.00
458.00
460.00
462.00
468.00
470.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
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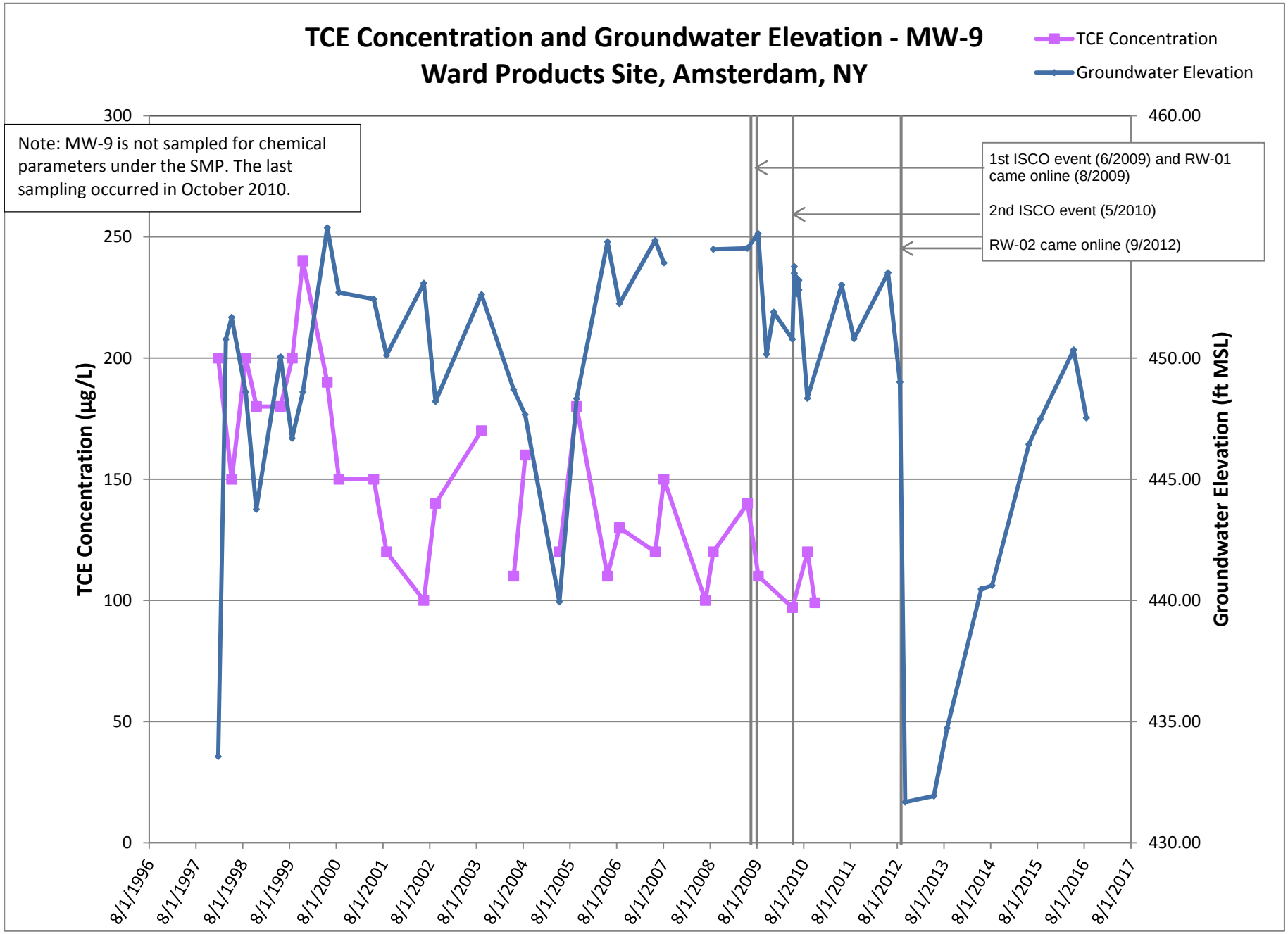
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-9
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
Note: MW-9 is not sampled for chemical parameters under the SMP. The last sampling occurred in October 2010.
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
300
250
200
150
100
50
0
460.00
450.00
445.00
440.00
435.00
430.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
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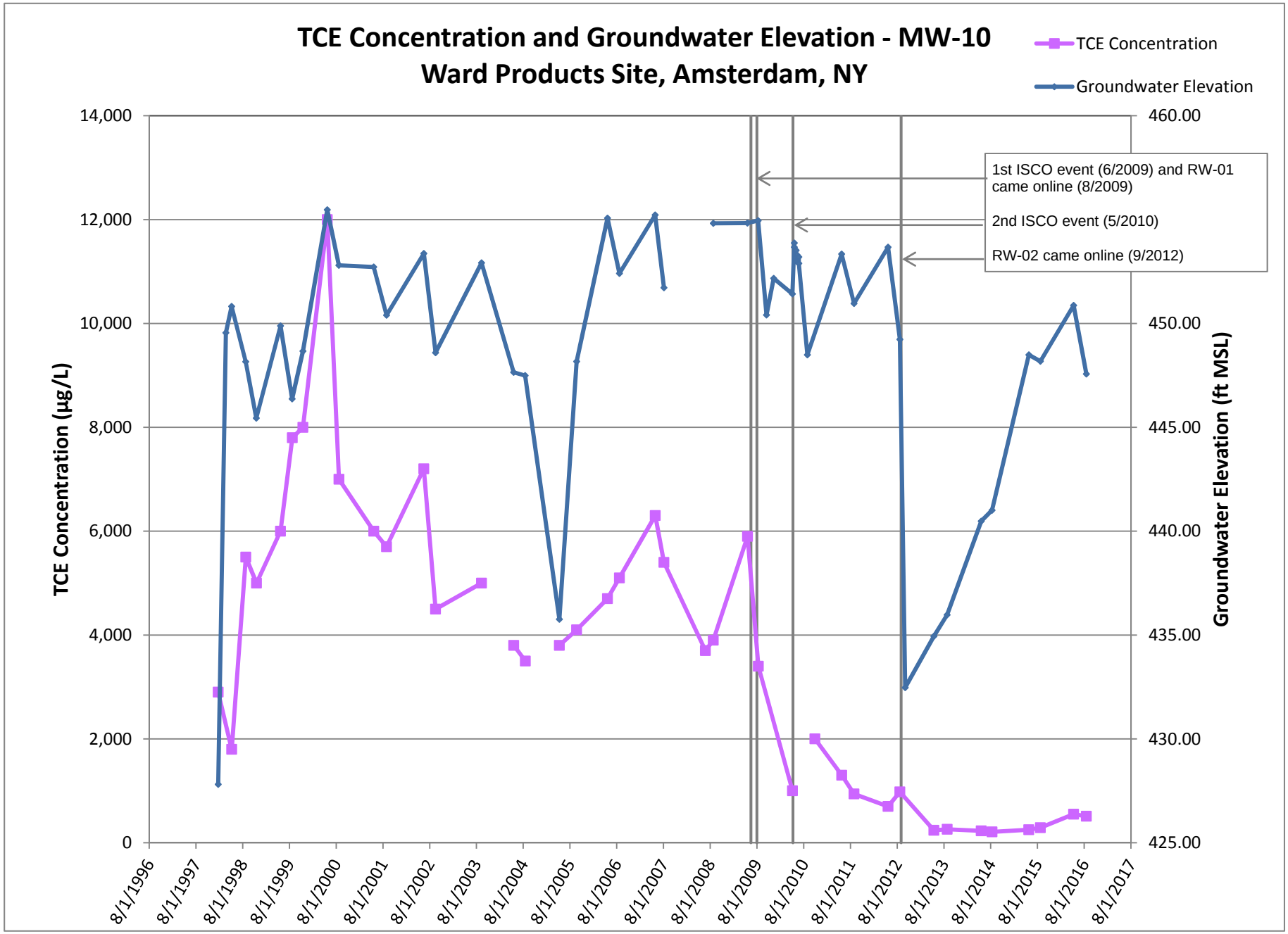
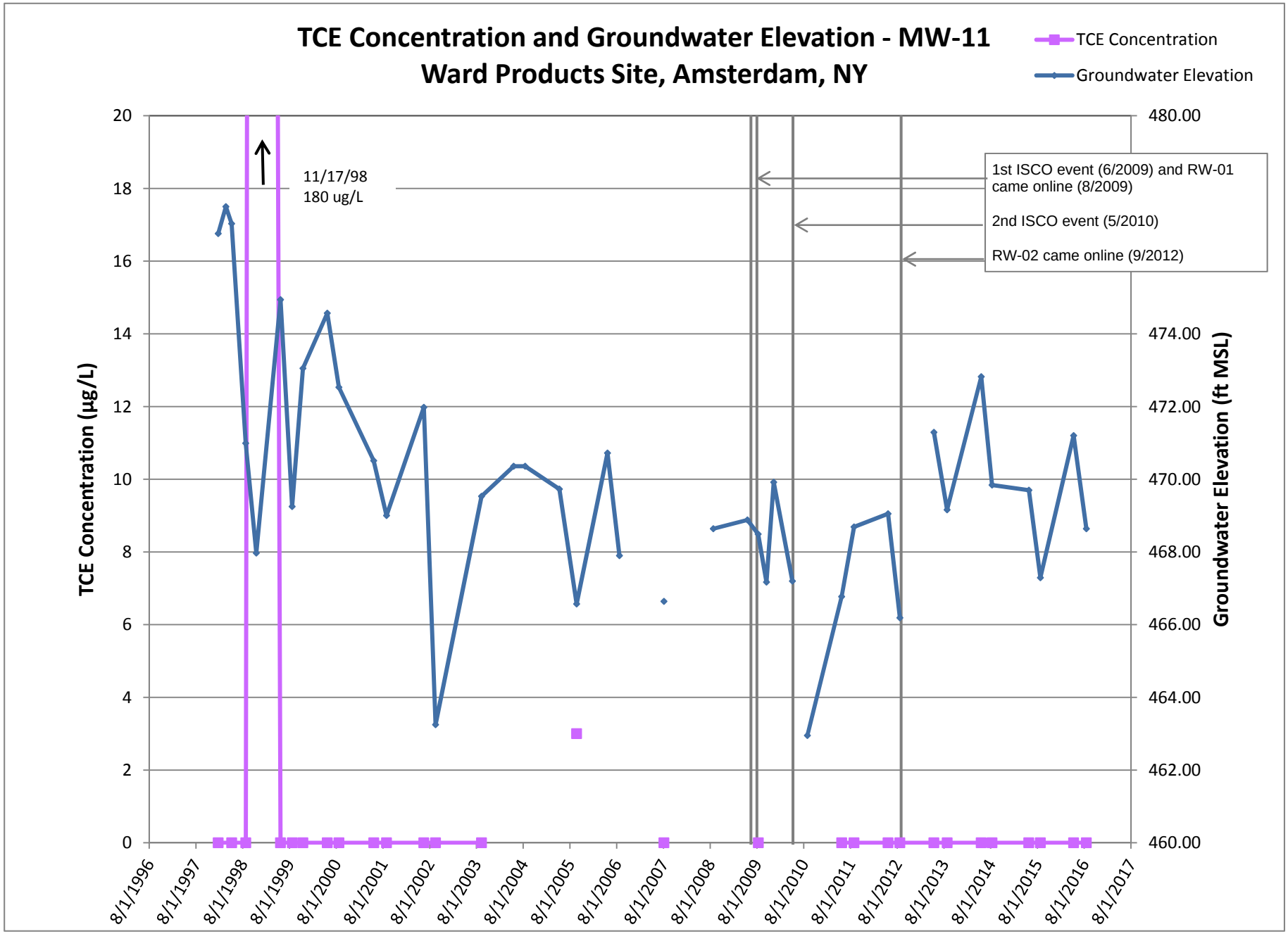
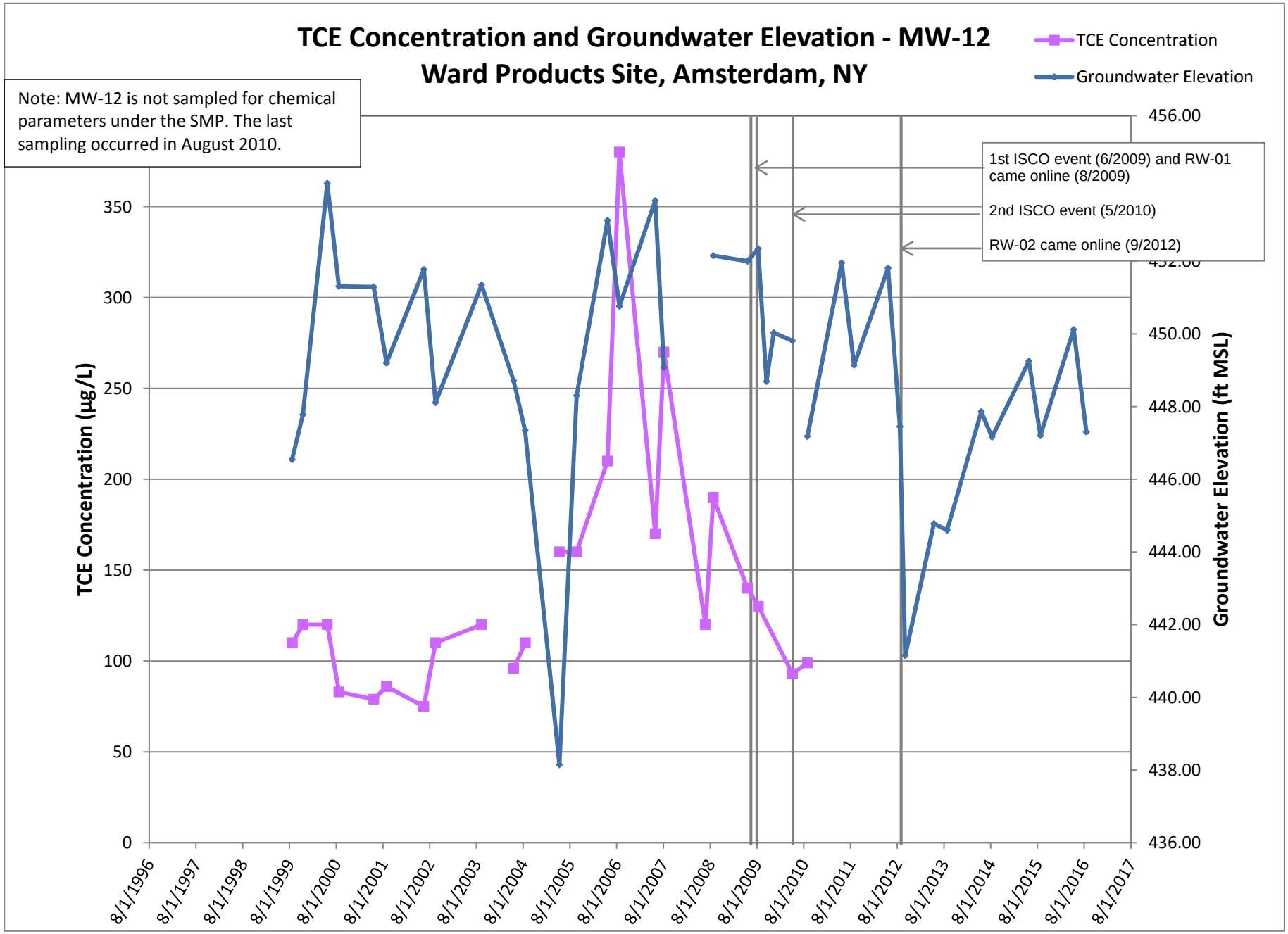
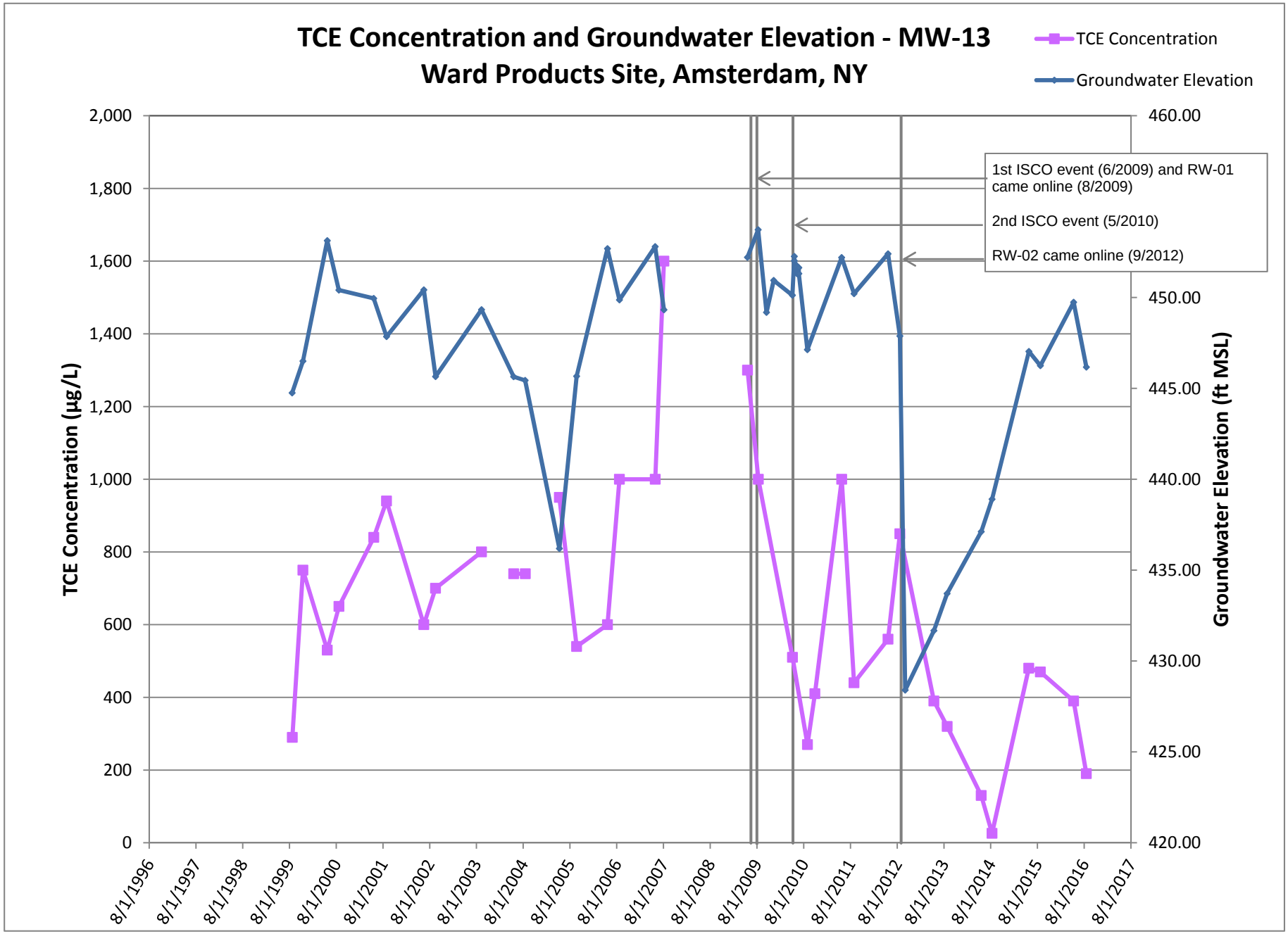
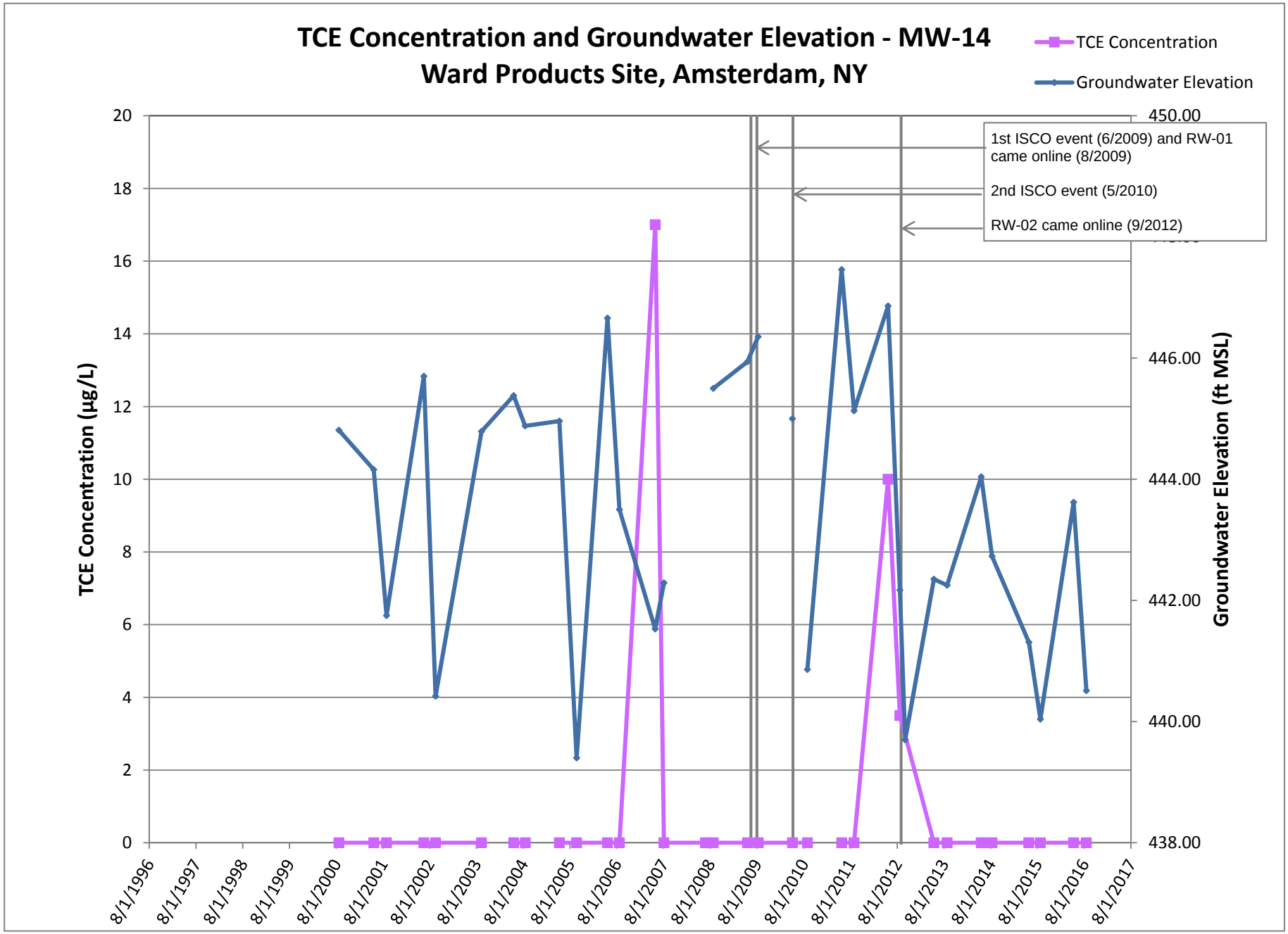
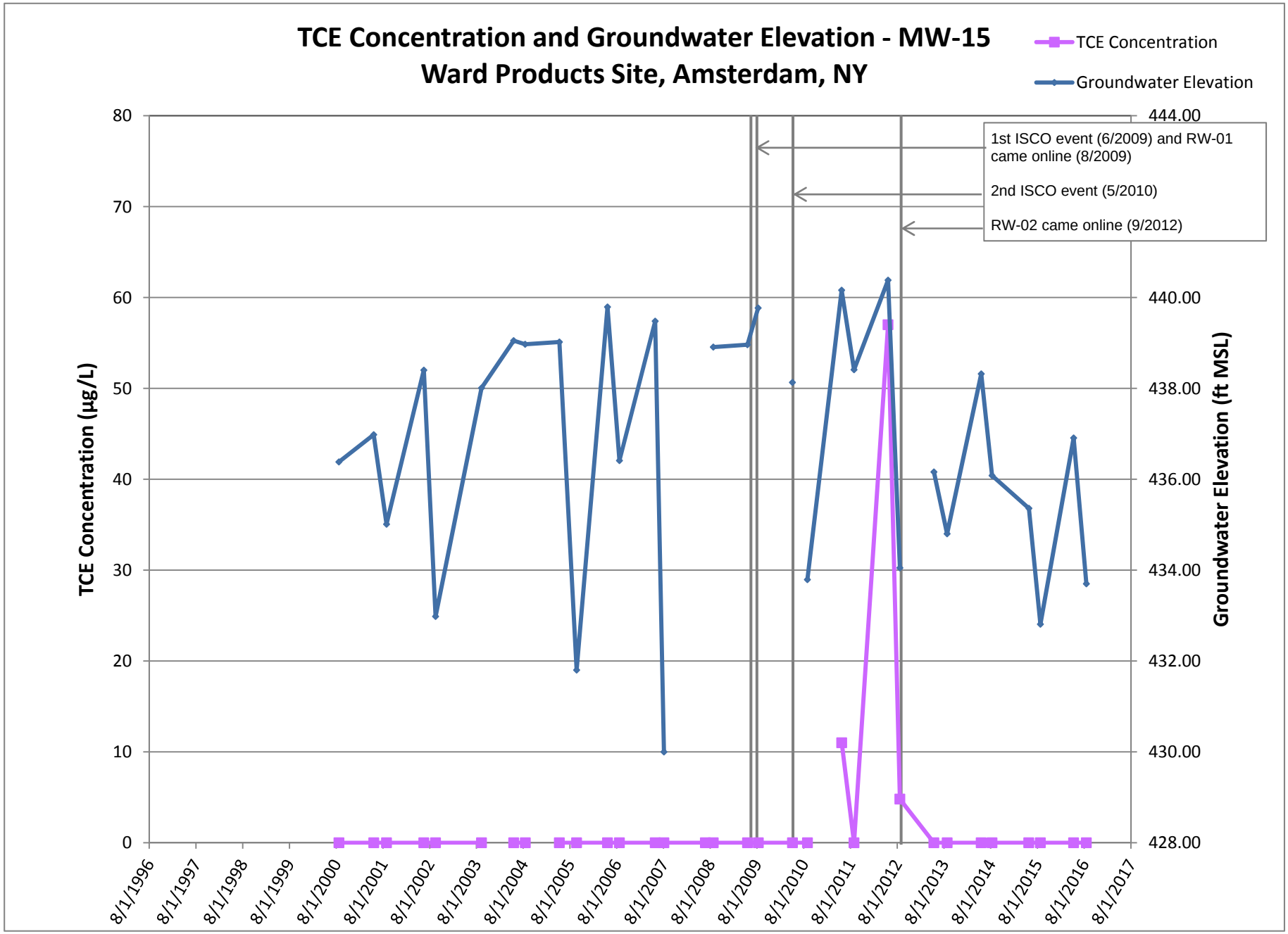

TCE Concentration and Groundwater Elevation - MW-10
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
460.00
450.00
445.00
440.00
435.00
430.00
425.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017

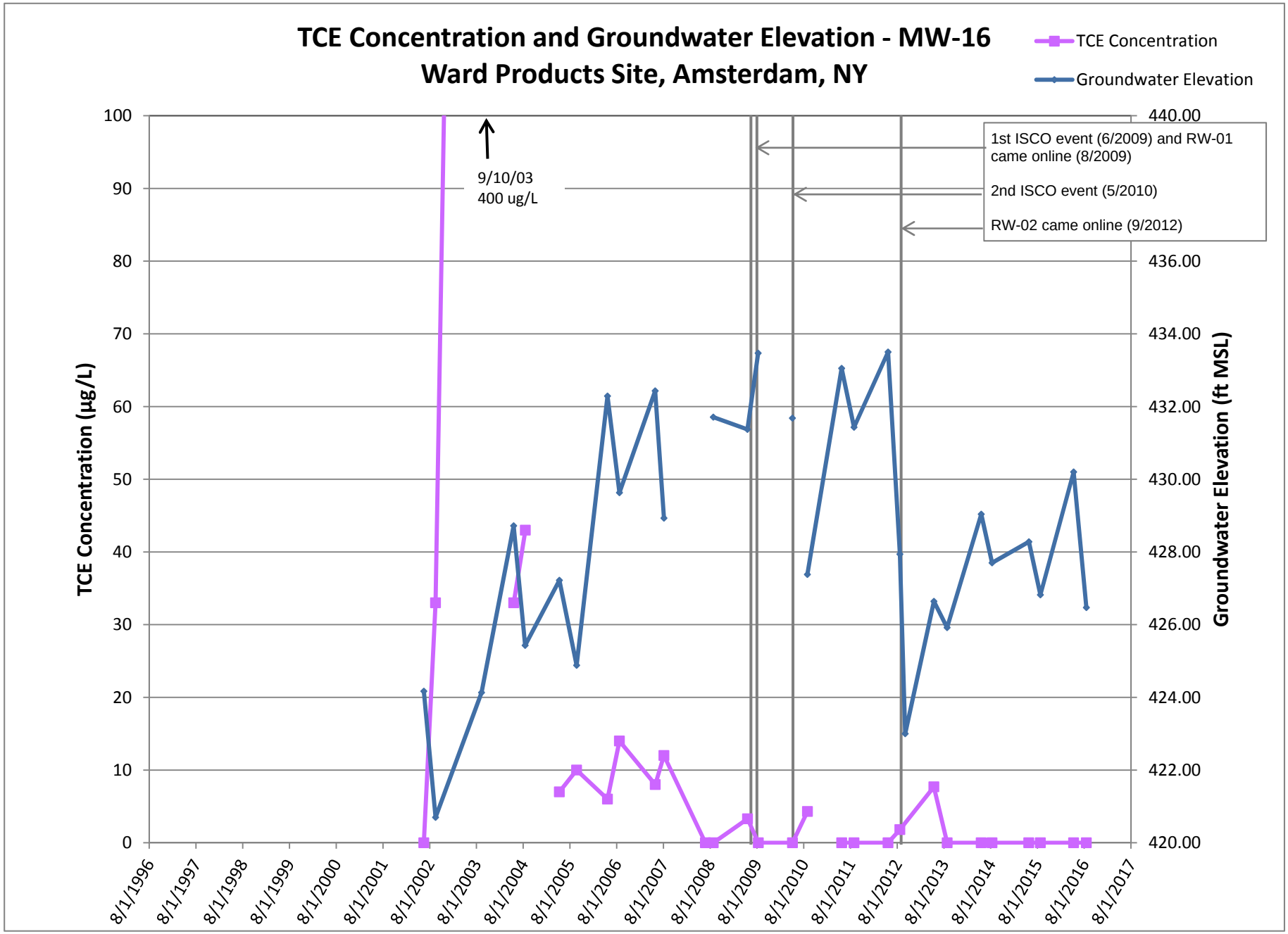

TCE Concentration and Groundwater Elevation - MW-11
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
11/17/98
180 ug/L
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
0
2
4
6
8
10
12
14
16
18
20
460.00
462.00
464.00
466.00
468.00
470.00
472.00
474.00
480.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017

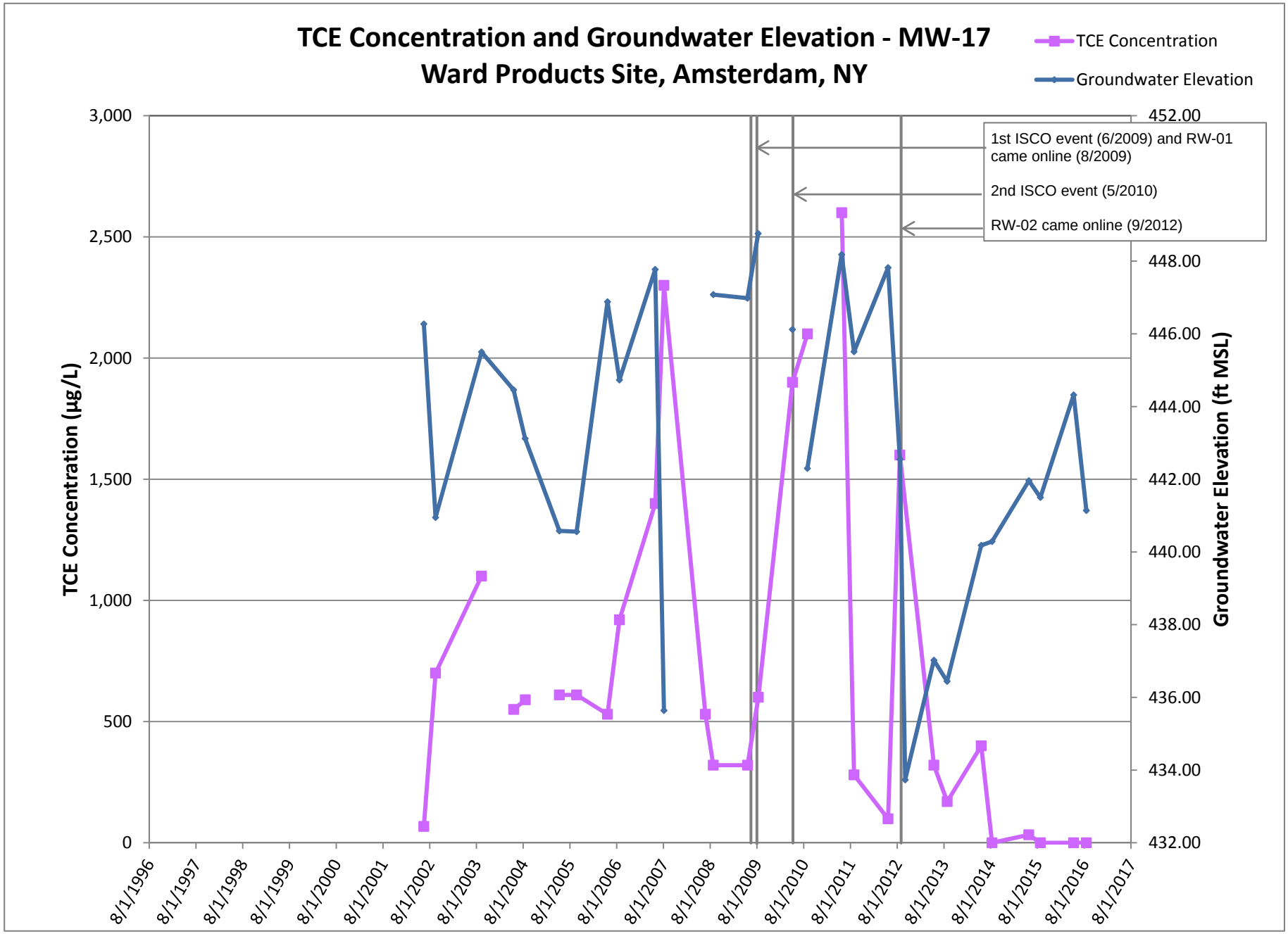

TCE Concentration and Groundwater Elevation - MW-12
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
Note: MW-12 is not sampled for chemical parameters under the SMP. The last sampling occurred in August 2010.
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
0
50
100
150
200
250
300
350
436.00
438.00
440.00
442.00
444.00
446.00
448.00
450.00
456.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017

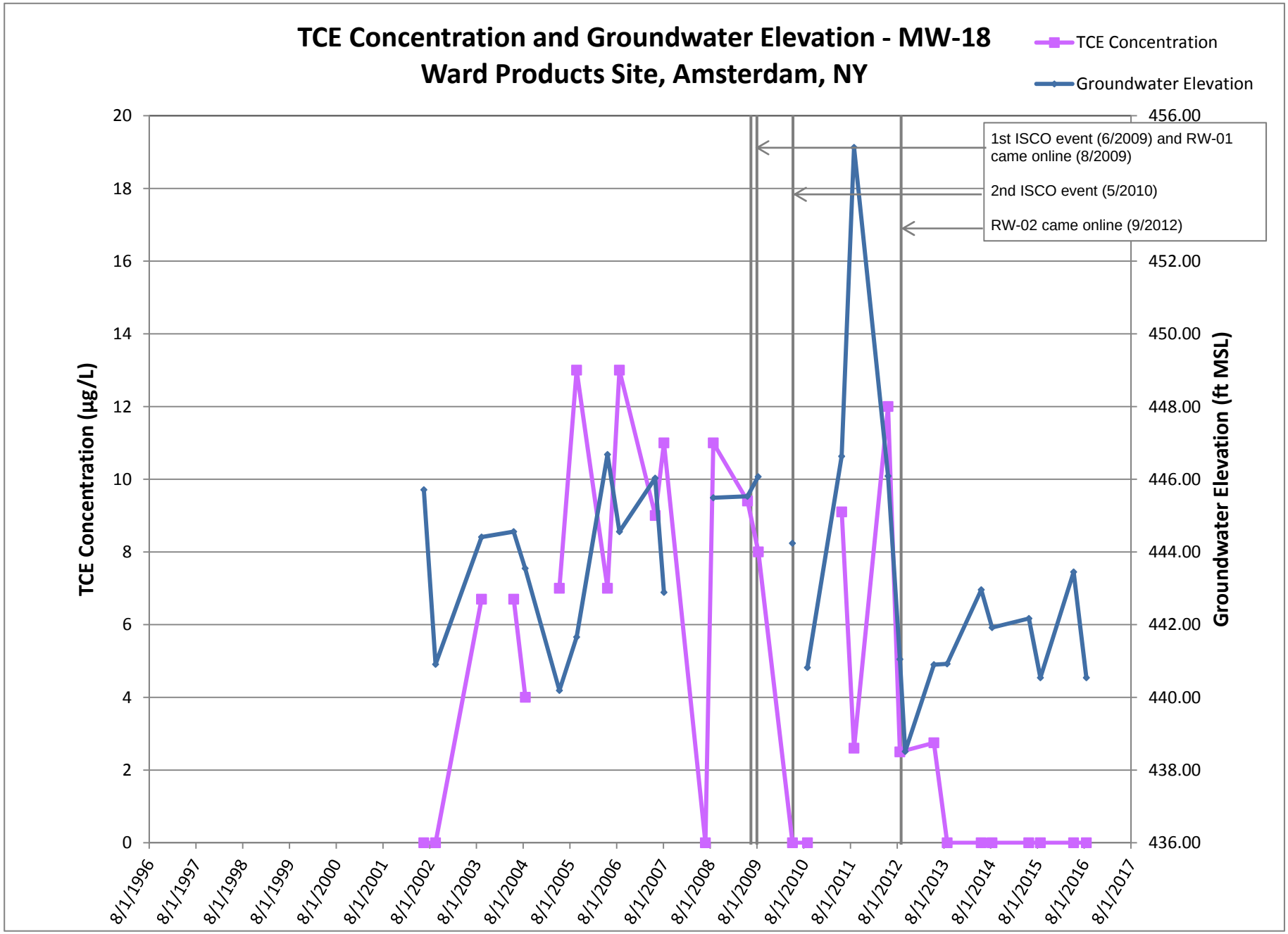

TCE Concentration and Groundwater Elevation - MW-13
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
460.00
450.00
445.00
440.00
435.00
430.00
425.00
420.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017

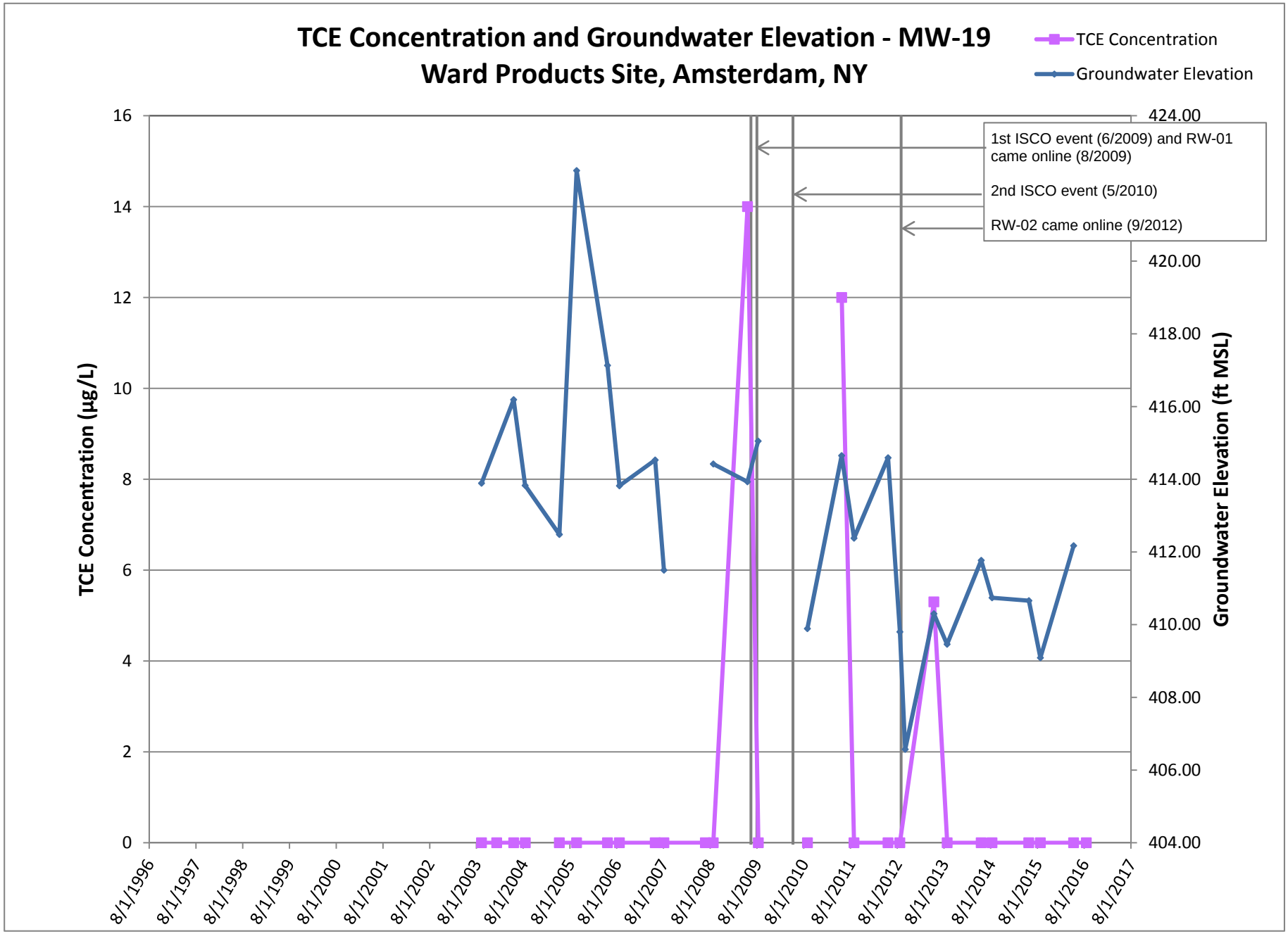

TCE Concentration and Groundwater Elevation - MW-14
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
0
2
4
6
8
10
12
14
16
18
20
438.00
440.00
442.00
444.00
446.00
450.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-15
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
80
70
60
50
40
30
20
10
0
444.00
440.00
438.00
436.00
434.00
432.00
430.00
428.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-16
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
9/10/03
400 ug/L
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
100
90
80
70
60
50
40
30
20
10
0
440.00
436.00
434.00
432.00
430.00
428.00
426.00
424.00
422.00
420.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-17
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
3,000
2,500
2,000
1,500
1,000
500
0
452.00
448.00
446.00
444.00
442.00
440.00
438.00
436.00
434.00
432.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-18
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
0
2
4
6
8
10
12
14
16
18
20
436.00
438.00
440.00
442.00
444.00
446.00
448.00
450.00
452.00
456.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-19
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
0
2
4
6
8
10
12
14
16
404.00
406.00
408.00
410.00
412.00
414.00
416.00
418.00
420.00
424.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
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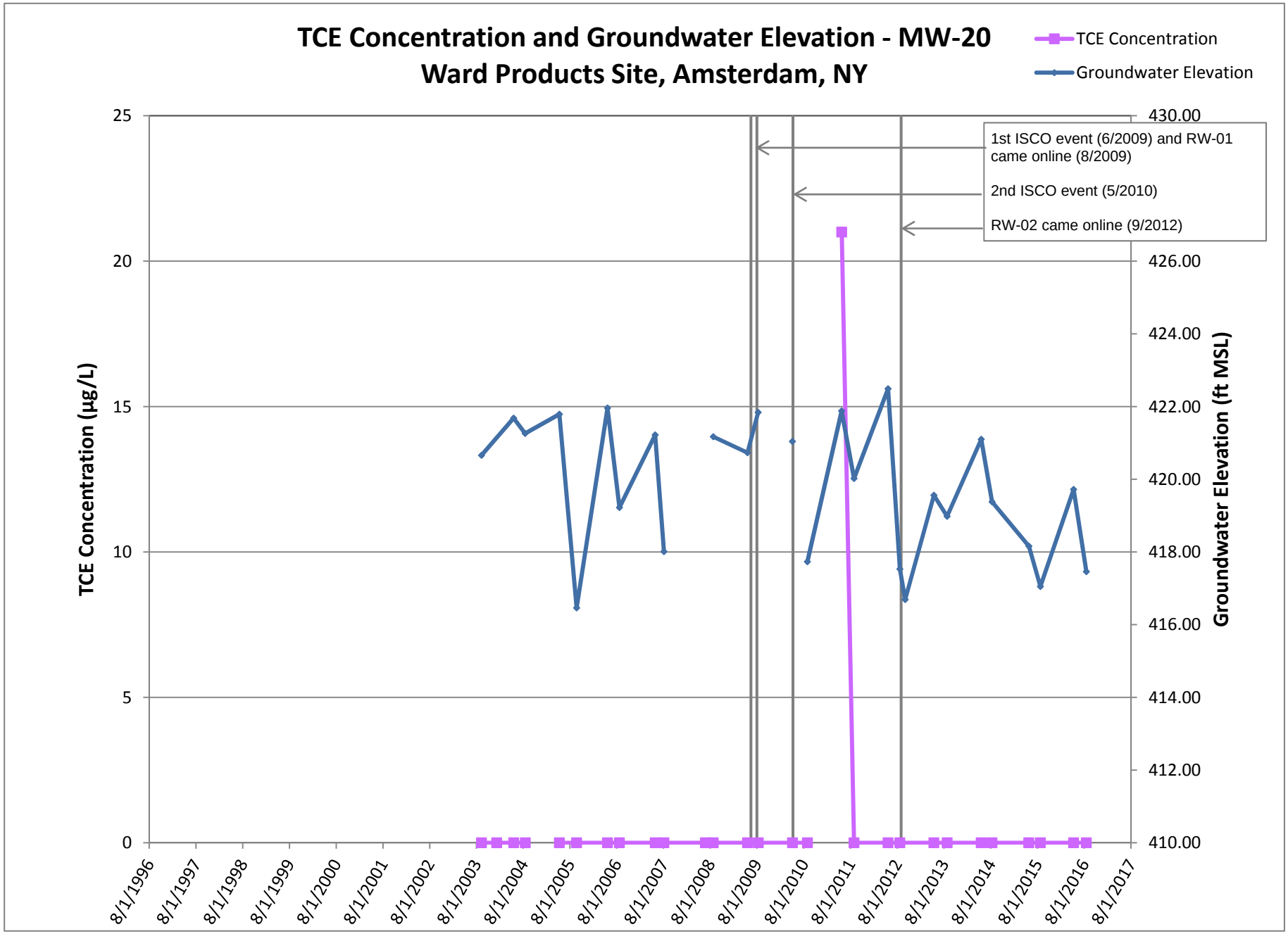
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017


TCE Concentration and Groundwater Elevation - MW-20
Ward Products Site, Amsterdam, NY
TCE Concentration
Groundwater Elevation
1st ISCO event (6/2009) and RW-01 came online (8/2009)
2nd ISCO event (5/2010)
RW-02 came online (9/2012)
TCE Concentration (µg/L)
Groundwater Elevation (ft MSL)
25
20
15
10
5
0
430.00
426.00
424.00
422.00
420.00
418.00
416.00
414.00
412.00
410.00
8/1/1996
8/1/1997
8/1/1998
8/1/1999
8/1/2000
8/1/2001
8/1/2002
8/1/2003
8/1/2004
8/1/2005
8/1/2006
8/1/2007
8/1/2008
8/1/2009
8/1/2010
8/1/2011
8/1/2012
8/1/2013
8/1/2014
8/1/2015
8/1/2016
8/1/2017

Appendix D Sediment Basin Photographs – August 2014, August 2015, December 2015

2014 Photos

Chapman Road Sediment Basin – August 2014

Chapman Road Sediment Basin – August 2014

Route 5 Sediment Basin – August 2014

Sam Stratton Sediment Basin – August 2014

2015 Photos

Route 5 Sediment Basin – August 2015

Route 5 Sediment Basin – August 2015

Route 5 Sediment Basin – August 2015

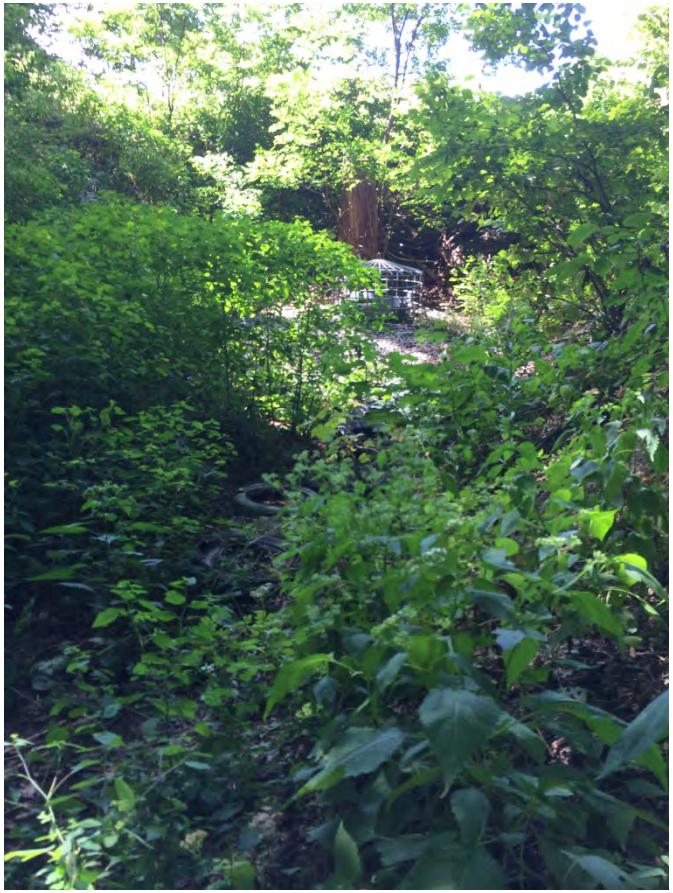
Route 5 Sediment Basin – August 2015

Sam Stratton Sediment Basin – August 2015

Sam Stratton Sediment Basin – August 2015

Sam Stratton Sediment Basin – August 2015

Chapman Road Sediment Basin – August 2015



Chapman Road Sediment Basin – August 2015

Chapman Road Sediment Basin – August 2015

2016 Photos

Route 5 Sediment Basin – December 2016

Sam Stratton Sediment Basin – December 2016

Appendix E Site Management Periodic Review Report and IC/EC Certification Submittal

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. 429004

Site Name Ward Products

Site Address: Edson Street Zip Code: 12010
City/Town: Amsterdam
County: Montgomery
Site Acreage: 2.5

Reporting Period: December 01, 2013 to December 01, 2016

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____
Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. 429004 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
56.10-2-34	New Water Realty Corp. c/o B. Littleton	Soil Management Plan Building Use Restriction Ground Water Use Restriction Landuse Restriction Monitoring Plan Site Management Plan O&M Plan IC/EC Plan

From ROD:

6.Imposition of an institutional control in the form of an environmental easement that will (a) limit the use and development of the property to industrial use; (b) require compliance with the approved site management plan; (c) restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) require the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

7.Development of a site management plan which will include the following institutional and engineering controls:(a) management of the final cover system to restrict excavation below the soil cover or buildings. Excavated soil would be tested, properly handled to protect the health and safety of workers and the nearby community, and would be properly managed in a manner acceptable to the Department. Entities responsible for maintenance of sediment basins downstream from the site will be notified that sediment collecting in those basins may be contaminated; (b) if contaminated soil beneath the building slab ever becomes accessible, it will be removed and properly managed; (c) continued operation of the sub-slab depressurization system at the Ward Products building whenever it is occupied, unless future data warrants otherwise; (d) soil vapor intrusion evaluations at any buildings located above the contaminated groundwater plume if there is a change in the current use of that building; (e) monitoring of groundwater, sediment, and indoor air; (f) identification of any use restrictions on the site; and (g) provisions for the continued proper operation and maintenance of the components of the remedy.

8.The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
56.10-2-34	Vapor Mitigation Cover System Groundwater Treatment System Groundwater Containment

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____

Signature of Owner, Remedial Party or Designated Representative Date

IC CERTIFICATIONS
SITE NO. 429004

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Barbara C. Littleton (print name) at c/o 2900 Orchard Place, Orchard Lake, MI 48324 (print business address),

am certifying as President of New Water Realty Corporation, Owner and Remedial Party (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

New Water Realty Corporation

By Barbara C. Littleton
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

12/16/2016
Date

Barbara C. Littleton, President

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Michael Gardner at 250 Apollo Drive Chelmsford, MA 01842,
print name print business address

am certifying as a Professional Engineer for the Owner
(Owner or Remedial Party)

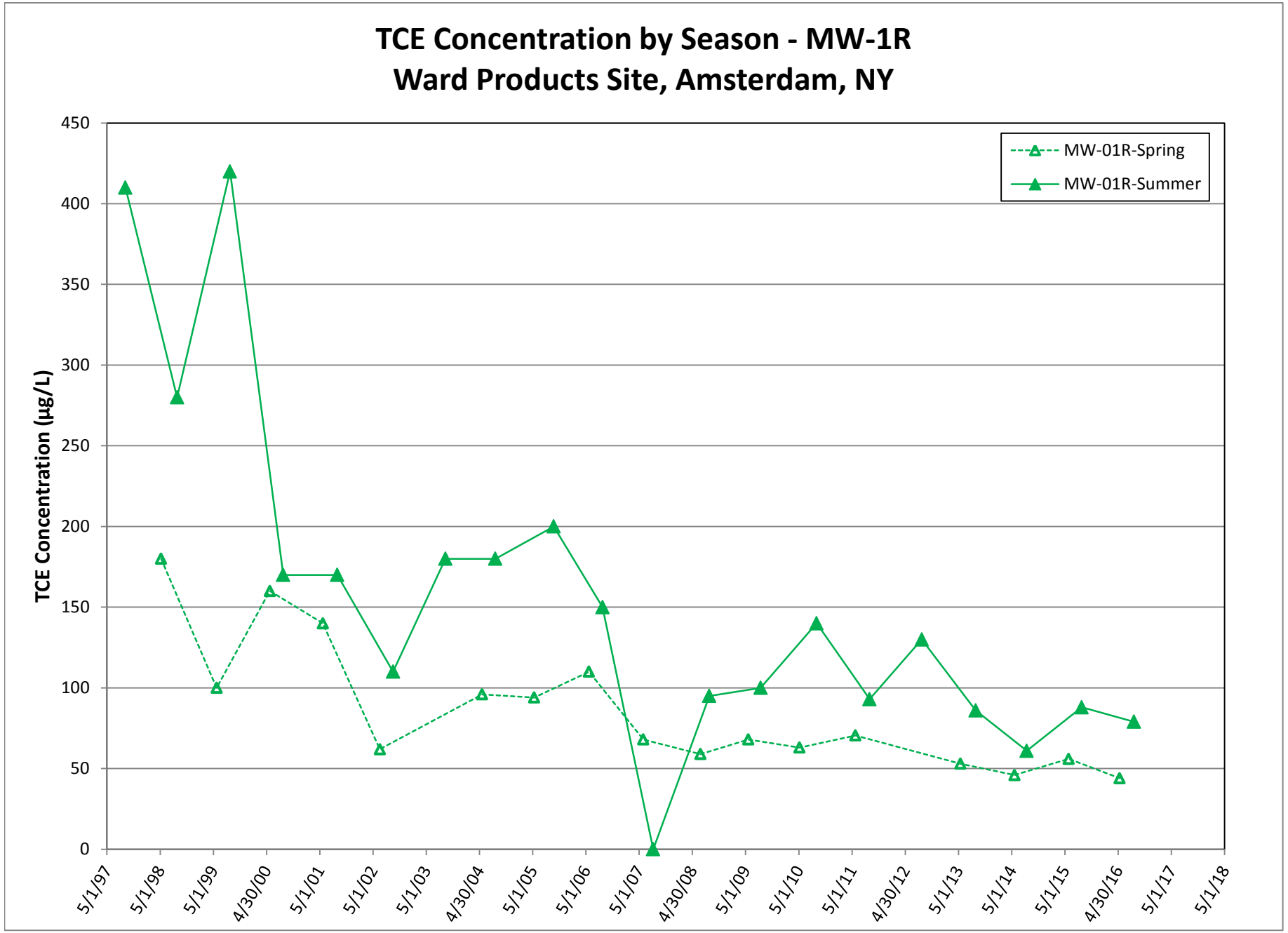
STATE OF NEW YORK
MICHAEL J GARDNER
089344
LICENSED PROFESSIONAL ENGINEER

Michael Gardner 12/21/16

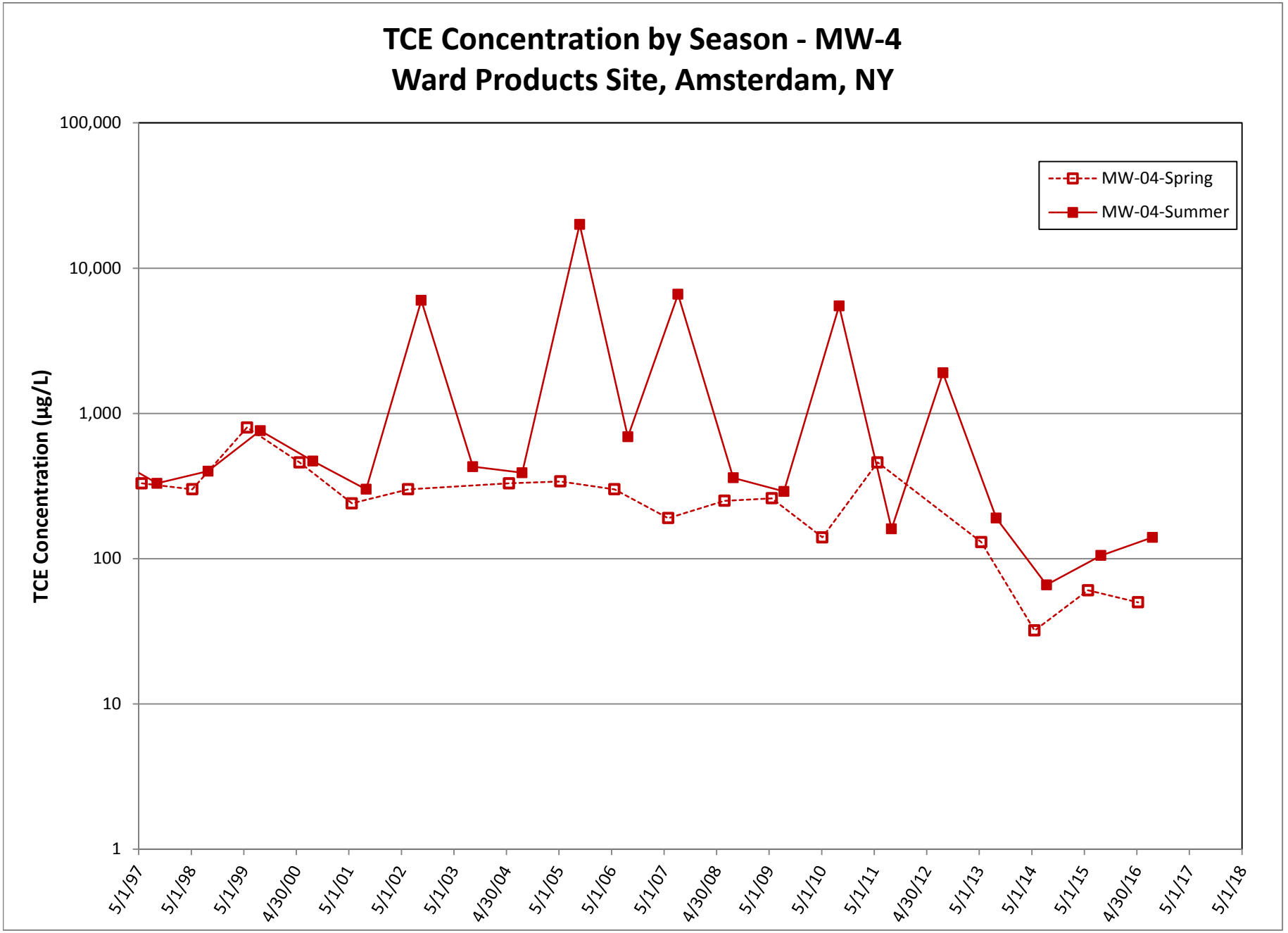
Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification | Stamp (Required for PE) | Date

Appendix F Graphs – TCE Concentration by Season

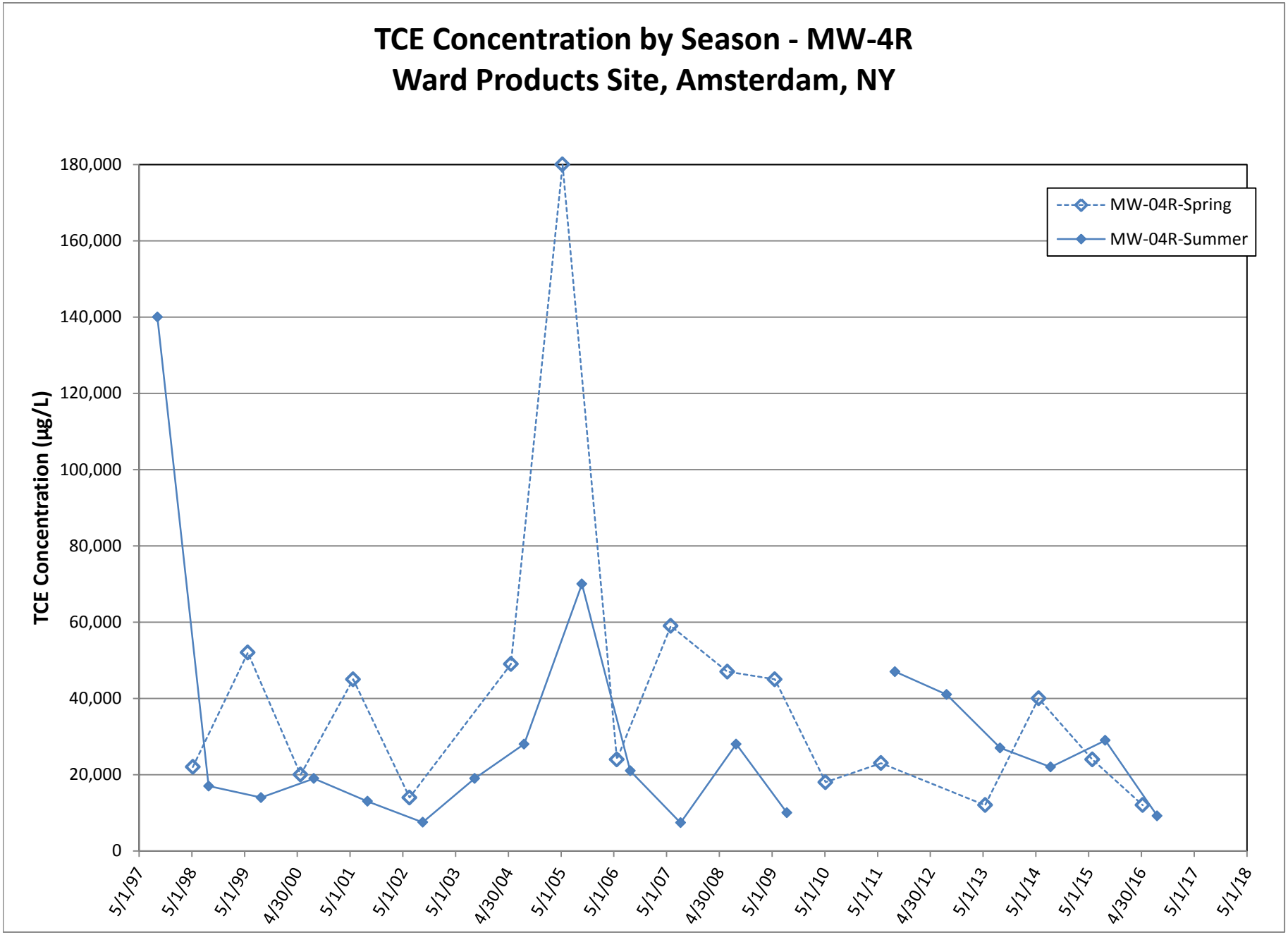
This Appendix does not include graphs for wells MW-11, MW-14, MW-15, MW-19, and MW-20 because most of the TCE results for these wells were non-detect.

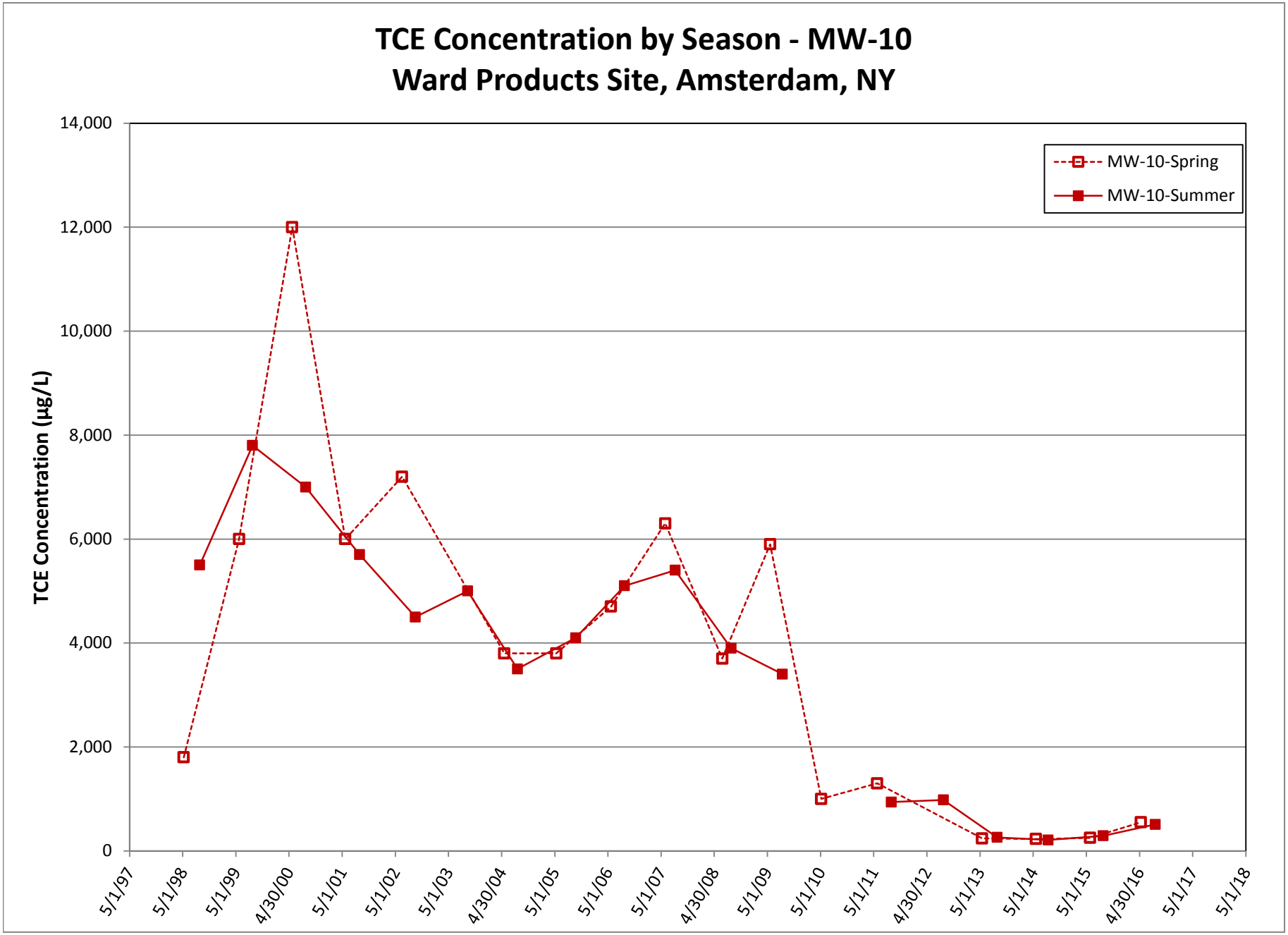

TCE Concentration by Season - MW-1R
Ward Products Site, Amsterdam, NY
TCE Concentration (µg/L)
450
400
350
300
250
200
150
100
50
0
MW-01R-Spring
MW-01R-Summer
5/1/97
5/1/98
5/1/99
4/30/00
5/1/01
5/1/02
5/1/03
4/30/04
5/1/05
5/1/06
5/1/07
4/30/08
5/1/09
5/1/10
5/1/11
4/30/12
5/1/13
5/1/14
5/1/15
4/30/16
5/1/17
5/1/18

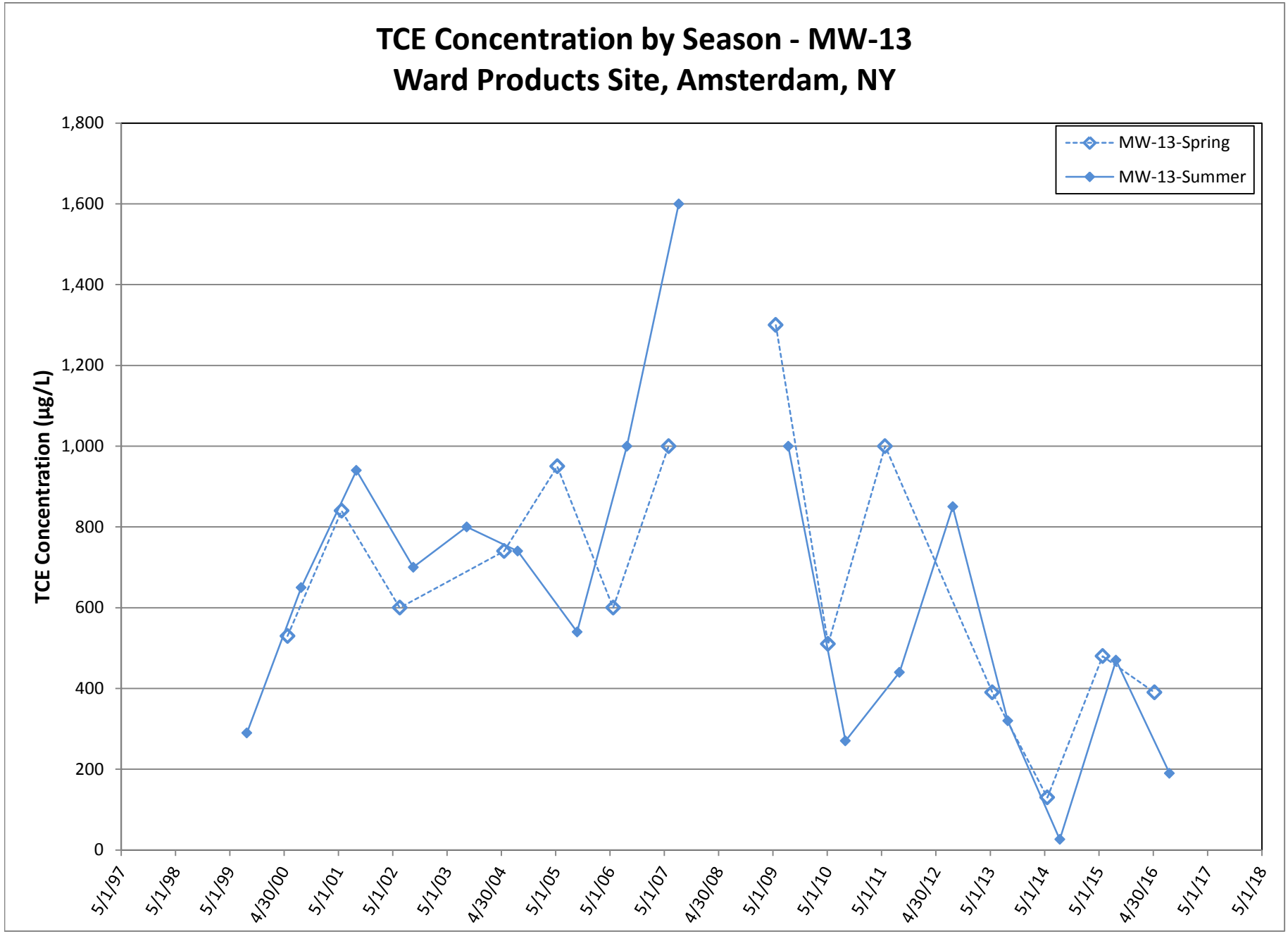
TCE Concentration by Season - MW-4
Ward Products Site, Amsterdam, NY

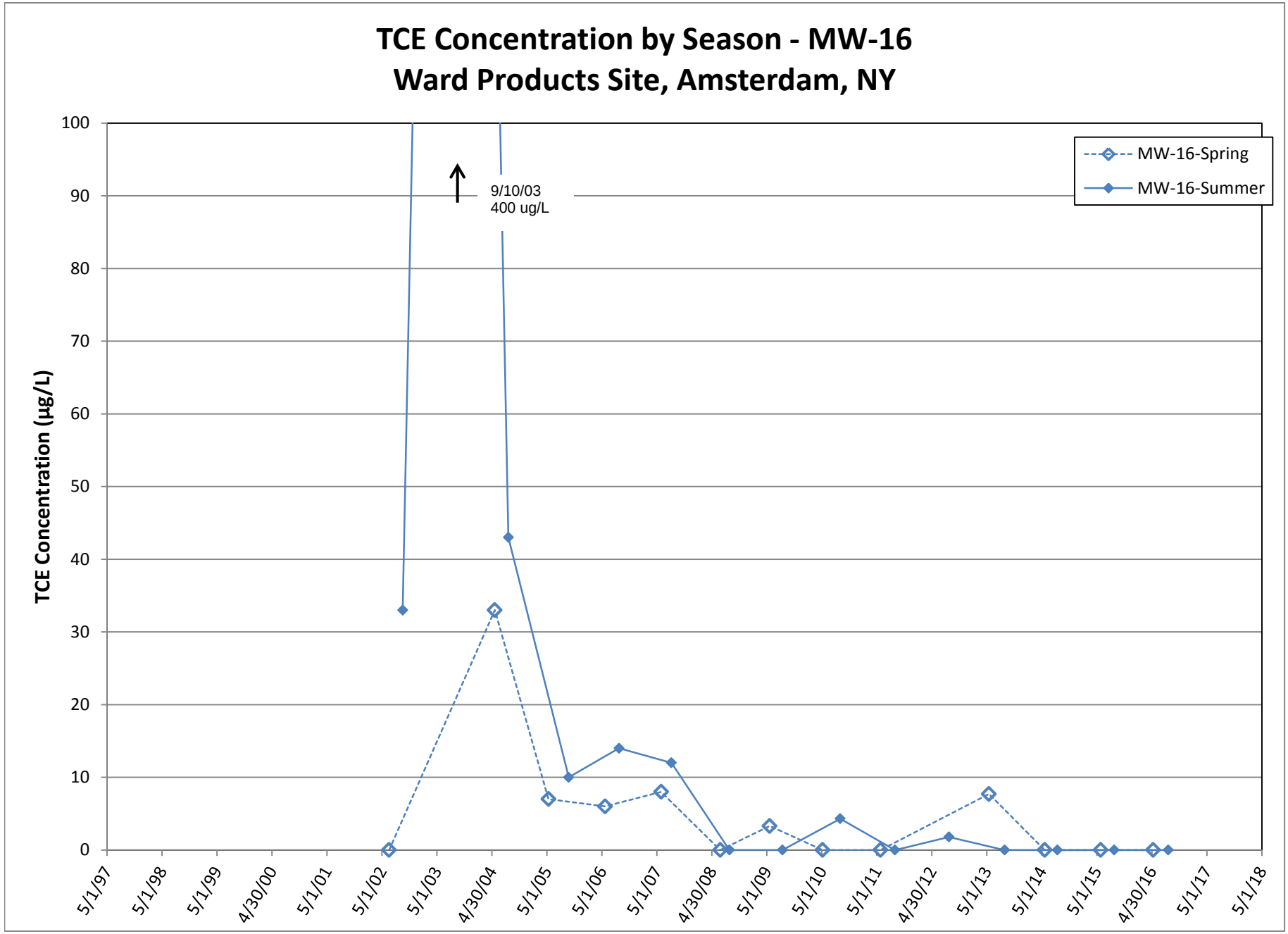


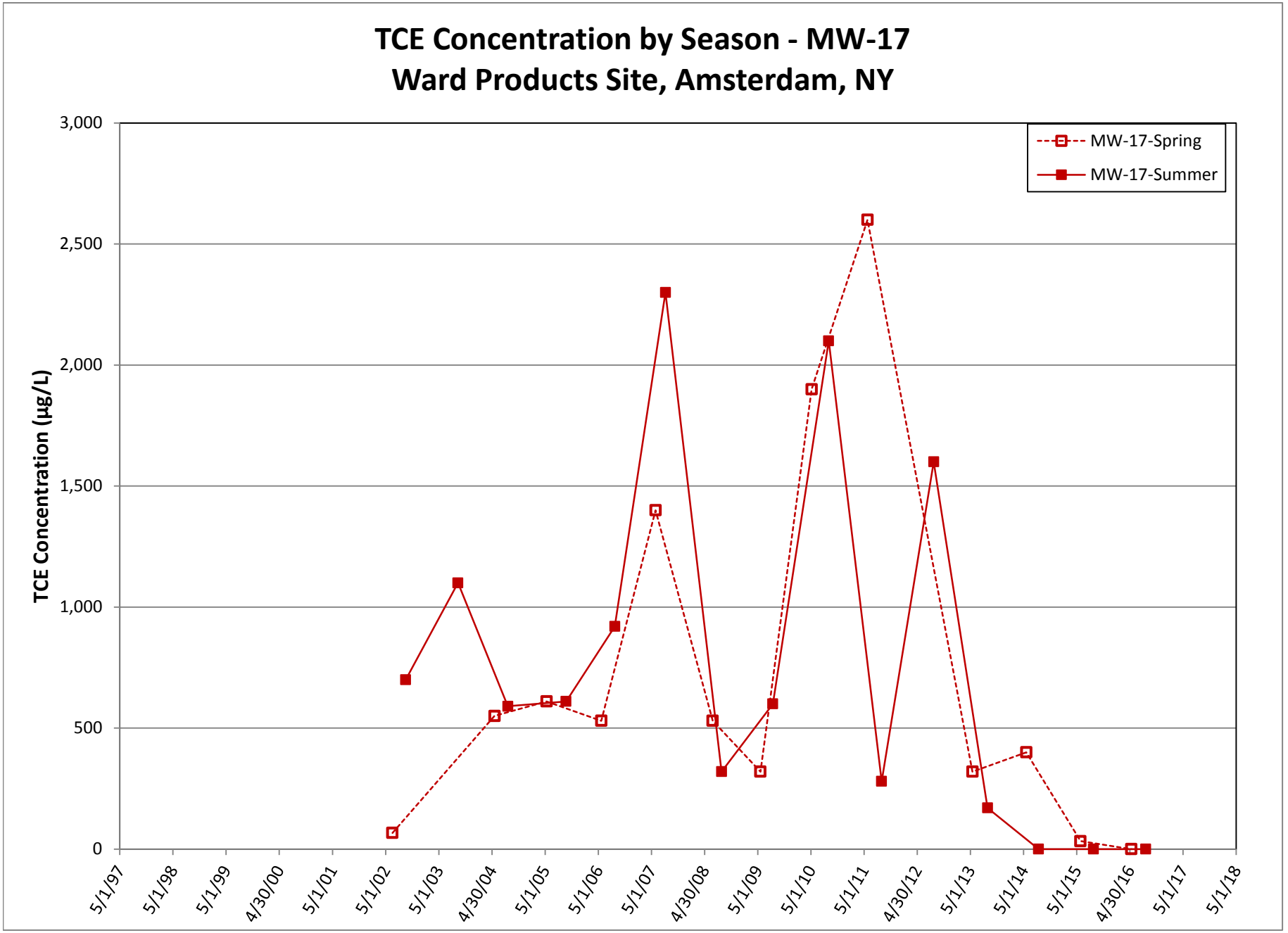
TCE Concentration by Season - MW-4R
Ward Products Site, Amsterdam, NY

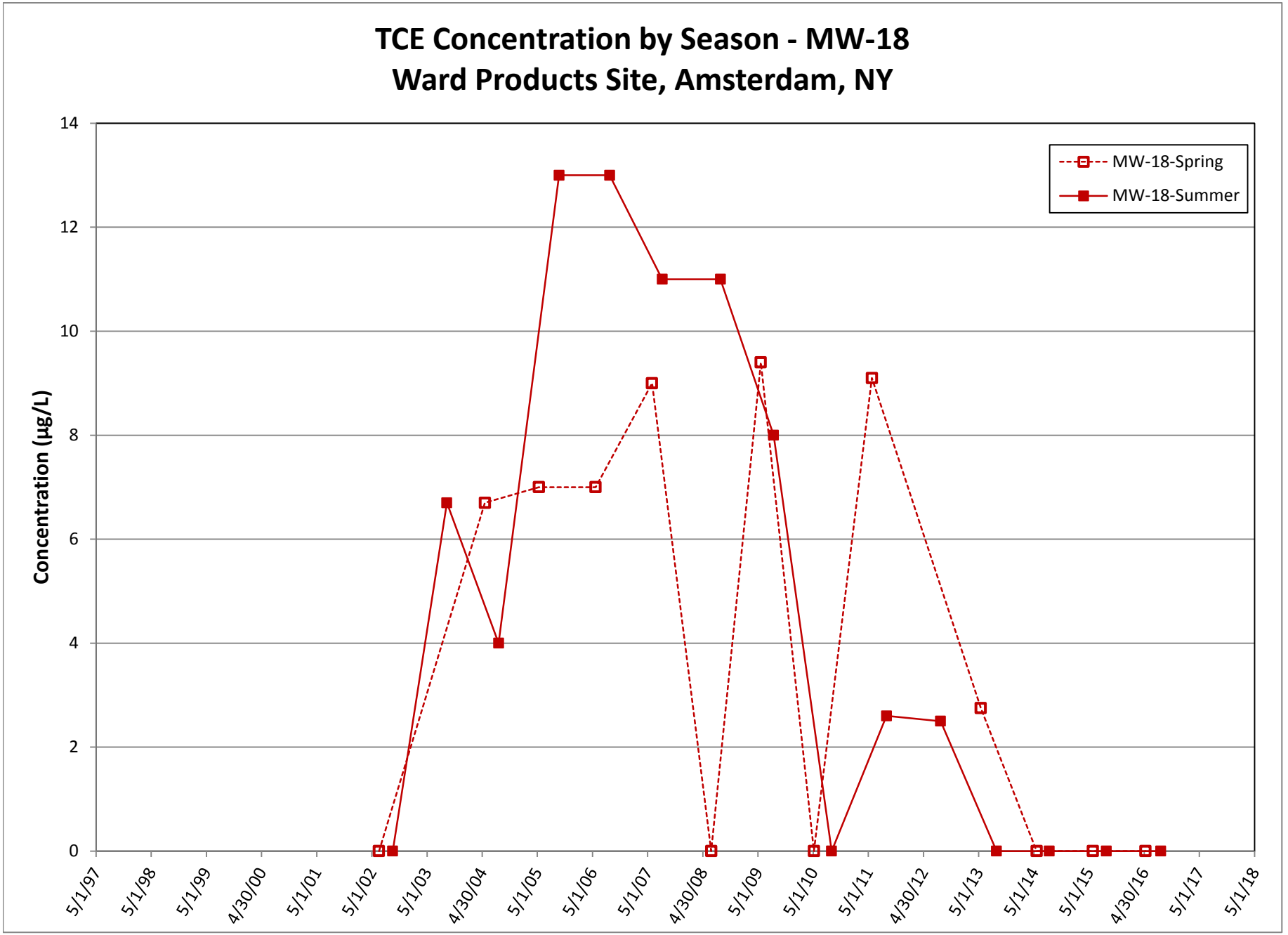



TCE Concentration by Season - MW-10
Ward Products Site, Amsterdam, NY
TCE Concentration (µg/L)
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
MW-10-Spring
MW-10-Summer
5/1/97
5/1/98
5/1/99
4/30/00
5/1/01
5/1/02
5/1/03
4/30/04
5/1/05
5/1/06
5/1/07
4/30/08
5/1/09
5/1/10
5/1/11
4/30/12
5/1/13
5/1/14
5/1/15
4/30/16
5/1/17
5/1/18


TCE Concentration by Season - MW-13
Ward Products Site, Amsterdam, NY
TCE Concentration (µg/L)
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
MW-13-Spring
MW-13-Summer
5/1/97
5/1/98
5/1/99
4/30/00
5/1/01
5/1/02
5/1/03
4/30/04
5/1/05
5/1/06
5/1/07
4/30/08
5/1/09
5/1/10
5/1/11
4/30/12
5/1/13
5/1/14
5/1/15
4/30/16
5/1/17
5/1/18


TCE Concentration by Season - MW-16
Ward Products Site, Amsterdam, NY
TCE Concentration (µg/L)
100
90
80
70
60
50
40
30
20
10
0
9/10/03
400 ug/L
MW-16-Spring
MW-16-Summer
5/1/97
5/1/98
5/1/99
4/30/00
5/1/01
5/1/02
5/1/03
4/30/04
5/1/05
5/1/06
5/1/07
4/30/08
5/1/09
5/1/10
5/1/11
4/30/12
5/1/13
5/1/14
5/1/15
4/30/16
5/1/17
5/1/18


TCE Concentration by Season - MW-17
Ward Products Site, Amsterdam, NY
TCE Concentration (µg/L)
3,000
2,500
2,000
1,500
1,000
500
0
MW-17-Spring
MW-17-Summer
5/1/97
5/1/98
5/1/99
4/30/00
5/1/01
5/1/02
5/1/03
4/30/04
5/1/05
5/1/06
5/1/07
4/30/08
5/1/09
5/1/10
5/1/11
4/30/12
5/1/13
5/1/14
5/1/15
4/30/16
5/1/17
5/1/18


TCE Concentration by Season - MW-18
Ward Products Site, Amsterdam, NY
Concentration (µg/L)
0
2
4
6
8
10
12
14
5/1/97
5/1/98
5/1/99
4/30/00
5/1/01
5/1/02
5/1/03
4/30/04
5/1/05
5/1/06
5/1/07
4/30/08
5/1/09
5/1/10
5/1/11
4/30/12
5/1/13
5/1/14
5/1/15
4/30/16
5/1/17
5/1/18
MW-18-Spring
MW-18-Summer