Groundwater Sampling and Analysis Report

October and December 2017 Sampling Events and Summary of 2017 Supplemental Injection Event

Former EMCA Site
Site No. 360025
Mamaroneck, New York

Prepared for:

Rohm and Haas Company, a wholly-owned subsidiary of The Dow Chemical Company

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January 2018

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FORMER EMCA SITE

SITE NO. 360025

MAMARONECK, NEW YORK

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OCTOBER AND DECEMBER 2017 SAMPLING EVENTS
AND SUMMARY OF 2017 SUPPLEMENTAL INJECTION EVENT

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1.0 INTRODUCTION

The Former EMCA site occupies 0.3 acres of land in a mixed residential/industrial area in the Village of Mamaroneck, New York (see Figures 1 and 2). The site was formerly owned and operated by a subsidiary of Rohm and Haas Company (Rohm and Haas) who manufactured high conductivity precious metal paste at the site. Manufacturing was discontinued in 1988 and the current site owner is Cablevision of Westchester.

Environmental site investigations performed by URS Corporation (URS), an AECOM company, revealed that groundwater beneath the site was contaminated with 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113, CAS No. 76-13-1). The site was listed on the New York Registry of Inactive Hazardous Waste Disposal Sites and a Consent Order was signed between the New York State Department of Environmental Conservation (NYSDEC) and Rohm and Haas in March 1999. Rohm and Haas implemented remediation to address impacted groundwater at the site. The remedial technology consisted of anaerobic biodegradation and reductive dechlorination of Freon 113 through injection of food-grade emulsified soybean oil, sodium lactate, and specialized bacteria into the subsurface. Remedial actions were conducted during the following events:

- Pilot program in June 2003
- Interim remedial measure in November 2004
- Supplemental injection in August 2007
- Supplemental injection in September 2009
- Supplemental injection in October 2012
- Supplemental injection in June 2013
- Supplemental injection in October 2014

The original release was thought to be in the vicinity of monitoring well MW-03 and the pilot program injections were focused on that area. As additional data were obtained, injection areas included the area of groundwater monitoring wells MW-02, MW-06, and MW-07/MW-07R and piezometer GZ-06. The 2012, 2013, and 2014 supplemental injections also included the KB-1 Plus® bacteria culture, developed by SiREM Laboratory in Guelph, Ontario, Canada, as a biological amendment to the emulsified soybean oil and sodium lactate injections. The KB-1 Plus® bacteria culture contains a

proprietary mixture of dehalobacter and dehalococcoides strains formulated by the laboratory to stimulate biological dechlorination of Freon.

Additional remedial injections were performed in October and November 2017 consisting of PlumeStop® Liquid Activated Carbon™ (PlumeStop). PlumeStop is a remediation amendment manufactured by Regenesis Corporation (Regenesis) and is composed of very fine activated carbon that adsorbs contaminants and promotes bioremediation processes. The injections were conducted between October 23 and November 3, 2017.

This report presents details of the PlumeStop injections and the results of groundwater monitoring conducted at the site in October 2017 pursuant to the approved Site Management Plan ([SMP], URS, 2010). Also discussed in this report are additional sampling events completed in October and December 2017 that were intended to:

- Evaluate the effectiveness of using passive diffusion bags (PDBs) to collect representative groundwater samples; and
- Evaluate the effectiveness of the PlumeStop injections on reducing dissolved-phase Freon concentrations in groundwater.

The groundwater monitoring program generates data used to monitor the effectiveness of remedial actions performed at the site. The frequency of groundwater sampling was increased from semi-annual to quarterly following a discussion with Rohm and Haas, AECOM, and the NYSDEC in January 2017. The October and December 2017 groundwater sampling events were the twenty-seventh and twenty-eighth site-wide sampling events since the interim remedial measure (IRM) began in November 2004; the December 2017 groundwater sampling event was the first site-wide sampling event following the October/November 2017 remedial injections. The next groundwater sampling event is planned for January 2018.

2.0 2017 REMEDIAL INJECTION PROGRAM

The 2017 Supplemental Remedial Injection Work Plan, Revision 1 (Work Plan) (AECOM, 2017c) was approved by the NYSDEC on September 27, 2017. The Work Plan specified 22 PlumeStop injection locations.

On September 29, 2017, an Inventory of Injection Wells (OMB No. 2040-0042) along with a description of the proposed injection program was submitted to the United States Environmental Protection Agency (USEPA) to comply with their Underground Injection Control program. Prior to injection activities, a utility location company used ground penetrating radar (GPR) to locate and mark out utilities in the vicinity of the 22 proposed injection points. Some of the injection locations were relocated slightly to avoid surface and/or subsurface obstructions. AECOM revised the Site Plan to reflect the new utility information. The actual locations of the PlumeStop injection borings are shown on Figure 3.

AECOM retained Regenesis Remediation Services (RRS) to implement the PlumeStop injection program. In addition, AECOM retained Cascade Technical Services (Cascade) to provide drilling and injection services. The PlumeStop injections were completed between October 23 and November 3, 2017. AECOM coordinated and supervised all fieldwork. Appendix A contains a report prepared by RRS documenting the PlumeStop injection program as well as PlumeStop product information.

Commercially-prepared PlumeStop is a liquid containing 200,000 milligrams per liter (mg/L) carbon. RRS prepared the PlumeStop solution in their injection trailer by adding water provided from a nearby hydrant with PlumeStop to create a 1,500 mg/L carbon solution. Injections were completed by pumping the PlumeStop solution into one to four injection borings simultaneously using a manifold system. The treatment interval extended from 4 feet bgs to a depth of 28 feet bgs. The injection work was conducted in 3-foot intervals, starting at the bottom of each boring and working up, for a total of eight intervals at each injection location.

The Work Plan specified a total of 1,395 gallons of PlumeStop solution be pumped into each of the 22 injection borings. However, daylighting, where the PlumeStop solution appeared at the ground surface due to the inability of the formation to accept the injected liquid, occurred at 13 locations (IB-1, IB-2, IB-3, IB-4, IB-6, IB-7, IB-8, IB-14, IB-16, IB-18, IB-19, IB-21, and IB-22). As a result, injections at these borings were abandoned and new borings, identified with an “A” and “B” suffix (IB-1A, IB-2A, IB-3A, IB-

4A, IB-6A, IB-7A, IB-8A, IB-8B, IB-16A, IB-18A, IB-19A, and IB-22A), were advanced in the immediate vicinity of the original boring as shown on Figure 3.

In some instances, the daylighting continued and the remaining intended injection volumes were distributed between adjacent boring locations (IB-2, IB-5, IB-9, IB-10, IB-13, IB-18, and IB-20). The volumes injected per boring are presented in Appendix A. A total of 9,600 pounds of PlumeStop were injected as specified in the Work Plan.

3.0 GROUNDWATER SAMPLING AND ANALYSIS

On October 9, 2017, AECOM collected groundwater samples from monitoring wells MW-02, MW-03, MW-04, MW-06 and MW-07R (see Figure 2 for well locations). The samples were collected using low-flow sampling procedures.

The sample chain-of-custody (COC) was initiated immediately after the groundwater samples were collected and maintained through shipment to the laboratory. Laboratory analyses were performed for the following parameters:

Parameter	Analytical Method
Freon 113, Freon 123a, Freon 1113	SW8260B
Methane	RSK-175
Sulfate	ASTM D516-90, 02

In addition, the following analyses were performed on samples collected in order to generate additional natural attenuation groundwater data:

Parameter	Analytical Method
Total Iron	200.7
Ferrous Iron	Field Parameter
Nitrate	SM 4500-NO_3 F
Nitrite	SM 4500-NO_2 F
Hardness	SM 2340 C
Alkalinity (Total, HCO_3^-, CO_3^-, OH^-)	SM 2320 B
Total Organic Carbon	SM 5310 B

At the conclusion of the October 9, 2017 sampling event, PDBs, filled with laboratory deionized (DI) water, were installed in wells MW-02 and MW-03 in accordance with the approved Work Plan. It is known that sampling groundwater with PlumeStop present can result in a significant amount of carbon in the groundwater samples and that carbon can interfere with the VOC analyses. In the Work Plan, AECOM proposed using PDBs to ensure that PlumeStop is not present in the samples. Therefore, the purpose of installing PDBs during the October 9, 2017 event was threefold: to obtain analytical data before the injection of PlumeStop; to obtain PlumeStop-free groundwater samples after the injection; and, by comparing the low flow sample results to the pre-injection PDB results, to evaluate the effectiveness of using PDBs to collect representative groundwater samples.

In accordance with the Work Plan, after the PDBs were recovered on October 23, 2017, new PDBs were installed in wells MW-02, MW-03, MW-04, MW-06, and MW-07R. AECOM returned to the site on December 7, 2017 to recover the PDBs; new PDBs were installed in all five wells during the December 2017 event.

It is noted that the PDBs were used for samples for analyses of Freon compounds and methane only. Low flow sampling was performed to obtain groundwater samples for the remaining analytical parameters.

During each sampling event, the depth to groundwater and water quality parameter measurements of ferrous iron, dissolved oxygen, oxidation-reduction potential, pH, specific conductance, temperature, and turbidity were recorded during the purging process. The field purge logs are presented in Appendix B.

Groundwater levels were recorded from site wells on October 9 and December 7, 2017. The data are presented in Tables 1A and 1B. Groundwater elevation contours for the October 9 and December 7, 2017 sampling events are shown on Figures 4A and 4B, respectively. Typically, general groundwater flow is to the north. The resulting groundwater contours for the October and December 2017 data as shown in Figures 4A and 4B show a low point in the vicinity of wells MW-03 and MW-06, which is somewhat typical for the site. However, the typical downgradient flow toward wells MW-04 and MW-05 was not observed in October or December 2017. Regional groundwater flow is expected to be to the north toward the Sheldrake River. Monitoring of the Sheldrake River water surface level was discontinued in 2015 due to traffic safety concerns for the field personnel taking the measurements.

4.0 RESULTS

The analytical results for the October and December 2017 sampling events are provided in Table 2. Historical groundwater analytical results are presented in Appendix C. Laboratory data sheets and a data usability summary report (DUSR) for the October and December 2017 samples are provided in Appendix D.

The analytical results presented in Table 2 are compared to groundwater standards and guidance values presented in the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series Memo 1.1.1 (TOGS 1.1.1). It is noted that there are no TOGS 1.1.1 groundwater standards or guidance values specifically for Freon 113, Freon 123a or Freon 1113. However, consistent with TOGS 1.1.1, the Freon results are compared to the "principal organic contaminant" standard for groundwater of 5 micrograms per liter (µg/L).

There are no criteria for most of the natural attenuation parameters. Evaluation of the results for those parameters generally consists of comparing the new results to historical data to evaluate whether conditions in the formation remain favorable to biodegradation/natural attenuation.

4.1 Fourth Quarter Groundwater Sampling Event

The fourth quarter groundwater sampling event was completed on October 9, 2017. The sampling results are presented in Table 2 and Figure 5. The samples collected from wells MW-02, MW-03, and MW-06 contained Freon 113, 123a, and 1113 at concentrations above the 5 µg/L NYSDEC standard.

Of note, the Freon 113 concentration of 660 µg/L in well MW-02 is the lowest found in this well since a notable increase occurred in April 2016. The concentrations of Freon 123a and 1113 have continued to fluctuate but remain elevated, an indication that biodegradation is continuing to occur at the site.

In general, concentrations of natural attenuation parameters were consistent with historical data. However, the October 9, 2017 results for hardness in samples from MW-02, MW-03, and MW-04 were anomalously low in comparison with the historical data.

4.2 October 23, 2017 Groundwater Sampling Event

On October 23, 2017, AECOM collected groundwater samples from the PDBs in wells MW-02 and MW-03 prior to initiating PlumeStop injections. The samples were analyzed for the list of parameters identified above with the exception of nitrate and nitrite. The Freon data from the October 9 and 23, 2017 sampling events are compared in the table below.

COMPARISON OF FREON CONCENTRATIONS LOW FLOW (OCTOBER 9, 2017) AND PDBS (OCTOBER 23, 2017)				
Freon Compounds (µg/L)	MW-02		MW-03	
	10/9/17	10/23/17	10/9/17	10/23/17
Freon 113	660	0.78	17	7.6
Freon 123a	37	7.2	5.2	7
Freon 1113	690	61	230	210

As shown on the above table, the sample collected from well MW-03 using the PDBs on October 23, 2017 correlated fairly well with the data collected using low flow sampling. The sample collected from well MW-02 using the PDBs on October 23, 2017 did not correlate well with the low flow sampling results. However, the October 23, 2017 results were similar to concentrations historically detected in the well. Based on the data collected, the following observations were made regarding the use of PDBs to collect representative groundwater samples:

- Freon compounds were detected in samples collected using PDBs.
- The data from MW-03 shows good correlation for Freon compounds with recent, historical results, which suggests that PDBs are effective for sampling Freon in groundwater.

The October 23, 2017 analytical results for the natural attenuation parameters were consistent with historical data, including the hardness values, which were not anomalously low as they were for the October 9, 2017 samples.

4.3 December 7, 2017 Supplemental Groundwater Sampling Event

The samples collected during the supplemental monitoring event on December 7, 2017, after the PlumeStop injections, showed that Freon 113 was not detected in any of the wells, there were no exceedances of the 5 µg/L guidance for Freon 123a in any of the wells, and Freon 1113 was detected in MW-06 and MW-07R above the 5 µg/L guidance value, with concentrations of 63 µg/L and 13 µg/L, respectively.

In general, the results of the groundwater sampling event completed in December 2017 showed that concentrations of Freon have decreased significantly at all of the wells compared to the October 2017 sampling events. Natural attenuation parameter results were consistent with historical data. It is noted that field analysis for ferrous iron was not performed on samples from MW-02, MW-03, and MW-06 due to high turbidity resulting from the PlumeStop injections (the ferrous iron measurement is a colorimetric analysis) .

5.0 DATA ASSESSMENT

Appendix C presents the historical groundwater analytical data dating back to the pilot program in 2003. Using this data, Freon 113, Freon 123a, and Freon 1113 concentrations are shown in plan view in Figure 5 for the 10-year period between 2008 and 2017. The historical data were also used to create trend plots for the following parameters:

- Freon 113 - Figures 6 and 7
- Freon 123a - Figure 8
- Freon 1113 - Figure 9
- Sulfate - Figure 10
- Methane - Figure 11
- Dissolved Oxygen - Figure 12
- Dissolved Oxygen vs. Temperature in MW-02 – Figure 13
- Oxidation-Reduction Potential - Figure 14

The text below presents a discussion of the October and December 2017 data compared to the July 2017 data, followed by an assessment of the historical results over time. Table 3A presents a summary comparison of July and October 2017 parameter concentration trends, and Table 3B presents a summary comparison of October and December 2017 parameter concentration trends.

Freon 113

In comparison with the July 2017 results, the analytical results for the October and December 2017 sampling events (Table 2 and Figures 6 and 7) indicate that Freon 113:

- Decreased in MW-02 from 2,100 µg/L on July 18, 2017 to 660 µg/L on October 9, 2017, to 0.78 µg/L on October 23, 2017, and non-detect on December 7, 2017;
- Decreased in MW-03 from 80 µg/L on July 18, 2017 to 17 µg/L on October 9, 2017, to 7.6 µg/L on October 23, 2017, and non-detect on December 7, 2017;
- Remained non-detect in MW-04 in July, October, and December 2017;
- Increased in MW-06 from 4.4 µg/L on July 17, 2017 to 18 µg/L on October 9, 2017, then decreased to non-detect on December 7, 2017; and
- Remained non-detect in MW-07R in July, October, and December 2017.

In well MW-02, the Freon 113 concentration has decreased over the course of the treatment program. As shown in Appendix C, the highest concentration of 2,400 µg/L occurred in July 2001 prior to the treatment program. Freon 113 concentrations in well MW-02 varied greatly since the start of the treatment program in 2003 until the concentrations began decreasing in April 2012. During the period between the June 2003 pilot injection and April 2012, Freon 113 concentrations in MW-02 varied between 12 µg/L and 1,300 µg/L. During the six sampling events between November 2012 and October 2015, the Freon 113 concentrations in MW-02 were below 100 µg/L. However, Freon 113 concentrations rebounded starting in April 2016. Because Freon is no longer used at the site, the recent increase does not indicate a new release, but is likely due to groundwater impacts from a residual source. The samples from October and December 2017 showed a significant decrease in Freon 113 concentrations.

Wells MW-03 and MW-07R had the highest Freon 113 concentrations prior to the treatment program and showed the greatest reduction as a result of the treatment. The Freon 113 concentration of 0.81 µg/L (October 2014) in MW-03 was below TOGS 1.1.1 criteria and was non-detect in November and December 2014. An increase of Freon 113 at MW-03 in March and April 2015, in April and October 2016, and April and July 2017 coincides with increases in the concentration of the Freon 123a and Freon 1113 daughter products, indicating ongoing reduction of Freon 113. The relatively low-level Freon 113 concentration in MW-07R (15 µg/L) in October 2014 decreased to non-detect in the nine subsequent sampling events.

Freon 113 has not been detected in well MW-04 since April 2015.

Freon 113 was not detected in MW-06 in the July and October 2014 sampling events, increased slightly to 1.6 µg/L in April 2015, and decreased to non-detect in October 2015 and April and October 2016. The concentration of Freon 113 increased slightly to 5.5 µg/L in April 2017 then decreased to 4.4 µg/L in July 2017. The Freon 113 concentration increased in October 2017 to 18 µg/L, then decreased to below the detection limit in December 2017.

Freon 123a

Freon 123a and Freon 1113 are the expected reductive dechlorination daughter products of Freon 113. Freon 123a holds one less chlorine than Freon 113, while Freon 1113 holds two less chlorines than Freon 113. With the reductive dechlorination of Freon 113, the concentrations of these

daughter compounds are expected to increase and then eventually decline over time as reductive dechlorination continues and the residual source diminishes. The following text presents a discussion of the October and December 2017 Freon 123a results in comparison with the July 2017 results.

Compared to the July 2017 data, the analytical results for the October and December 2017 sampling event (Figure 8) indicate that Freon 123a:

- Decreased in MW-02 from 68 µg/L on July 18, 2017 to 37 µg/L on October 9, 2017, to 7.2 µg/L on October 23, 2017, and 0.33 µg/L on December 7, 2017;
- Decreased in MW-03 from 17 µg/L on July 18, 2017 to 5.2 µg/L on October 9, 2017, to 7 µg/L on October 23, 2017, and to non-detect on December 7, 2017;
- Remained non-detect in MW-04 in April, July, October, and December 2017;
- Increased in MW-06 from 3.6 µg/L on July 18, 2017 to 13 µg/L on October 9, 2017, then decreased to non-detect on December 7, 2017; and
- Increased in MW-07R from 0.37 µg/L on July 18, 2017 to 0.48 µg/L on October 23, 2017, then decreased to non-detect on December 7, 2017.

In well MW-02, the Freon 123a concentration has been variable over the course of the treatment program, ranging from non-detect to 220 µg/L (April 2016). The recent results show a decrease since April 2017.

The highest Freon 123a concentration (140 µg/L) in well MW-03 was detected in April, 2017 and have steadily decreased since that time to non-detect in December 2017.

Freon 123a has never been detected in well MW-04.

Freon 123a was detected above the groundwater criteria in well MW-06 in seven sampling events, with the two most recent exceedances occurring in April and October 2017. Freon 123a was not detected in the well in December 2017.

Freon 123a concentrations in well MW-07R have remained well below TOGS 1.1.1 criteria since September 2012.

Freon 1113

Compared to the July 2017 data, the analytical results for the October and December 2017 sampling event (Figure 9) indicate that Freon 1113:

- Increased in MW-02 from a concentration of 470 µg/L on July 18, 2017 to 690 µg/L on October 9, 2017, then decreased to 61 µg/L on October 23, 2017 and to 2 µg/L on December 7, 2017;
- Increased in MW-03 from a concentration of 160 µg/L on July 18, 2017 to 230 µg/L on October 9, 2017, then decreased to 210 µg/L on October 23, 2017 and to non-detect on December 7, 2017;
- Increased slightly in MW-04 from 0.9 on July 18, 2017 to 4.5 µg/L on October 9, 2017, then decreased to non-detect on December 7, 2017;
- Increased in MW-06 from 31 µg/L on July 18, 2017 to 63 µg/L on October 9, 2017, then decreased to non-detect on December 7, 2017; and
- Increased in MW-07R from a concentration of 17 µg/L on July 18, 2017 to 47 µg/L on October 9, 2017, then decreased to 13 µg/L on December 7, 2017.

Prior to and at the beginning of the treatment program, Freon 1113 was either not detected or was present at very low concentrations. As the treatment program progressed, Freon 1113 concentrations increased, indicating the successful reduction of Freon 113. The October 2016 and April 2017 concentrations of Freon 1113 in wells MW-02 and MW-03 were the highest levels detected in those wells.

Sulfate

In comparison with the July 2017 data, the October 2017 sulfate concentrations increased in MW-02 and MW-04 and decreased in MW-03, MW-06, and MW-07R; the December 2017 sulfate concentrations increased in MW-06 and MW-07R and decreased in MW-02, MW-03, and MW-04 (Figure 10).

Studies have shown that the presence of sulfate in anaerobic environments above 200 mg/L slows the rates of dehalogenation reactions because sulfate competes with the halogenated compounds

as electron acceptors (USGS, 2009). The recent sulfate concentrations in groundwater at the site are well below 200 mg/L.

Methane

Degradation of Freon is likely due to sulfate-reducing or methane-forming microbes (Horneman, 2007). Historical site data shows increased methane concentrations during the treatment programs, suggesting that reduction of Freon concentrations may be due to contaminant degradation through methanogenesis, a process that was successfully stimulated as a result of the treatment injection program. In the treatment areas, methane concentrations following injection events generally rose to levels well above 5,000 µg/L, compared to a maximum concentration of 740 µg/L prior to the start of the treatment program.

The methane concentrations in wells MW-03, MW-04, and MW-07R were considerably lower (e.g., less than 3,000 µg/L) between April 2016 and April 2017, suggesting reduced methanogenesis. Methane concentrations increased to above 3,000 µg/L in wells MW-02 and MW-06 in April 2017 then decreased again in July 2017. Methane concentrations increased to above 3,000 µg/L in wells MW-02, MW-03, MW-06, and MW-07R in October 2017; methane concentrations decreased to below 3,000 µg/L in MW-02, MW-06, and MW-07R but remained above 3,000 µg/L in MW-03 in December 2017 (Figure 11).

Dissolved Oxygen

In comparison with the July 2017 data, the October 9, 2017 dissolved oxygen concentrations (Figure 12) decreased in wells MW-02, MW-03, MW-04, and MW-07R and increased in well MW-06. During the supplemental sampling event on October 23, 2017, the dissolved oxygen concentrations had increased in wells MW-02 and MW-03. The dissolved oxygen levels decreased significantly in all of the wells during the December 2017 sampling event. Historically, dissolved oxygen concentrations have fluctuated significantly, from highs as much as 9 mg/L down to below detection limits. Overall, levels are generally low, reflecting anaerobic conditions.

Temperature

Comparison of the October and December 2017 data with historical measurements shows an apparent correlation of groundwater temperature with seasonal weather conditions; groundwater is

cooler in the winter/spring and warmer in the summer/fall. As an example, Figure 13 presents a graphical presentation of temperature data for well MW-02 dating back to February 2008. The October 2017 temperature measurements were less than 1 degree Celsius higher than measurements recorded in July 2017, and the December 2017 temperature measurements were approximately 4 degrees Celsius lower than the October 2017 temperature measurements. The temperature data suggests that groundwater at the site area is influenced by changes in seasonal weather conditions/precipitation infiltration. The graph also shows dissolved oxygen concentrations in MW-02.

Oxidation-Reduction Potential

In comparison with the July 2017 data, the October and December 2017 oxidation-reduction potential values (Figure 14) increased in wells MW-02, MW-03, MW-04, and MW-07R and decreased in well MW-06. The April 2017 values were all positive, ranging from 11 millivolts (mV) to 26 mV, except in well MW-02 with a value of -6.0 mV. The samples from the July and October 2017 events showed that the values decreased to more typical levels, ranging from -96 mV to -134 mV. Oxidation-reduction potential values have typically been negative throughout most of the treatment program.

Dehalococcoides and Dehalobacter

Since 2012, select wells have been periodically sampled for dehalococcoides and dehalobacter to better understand microbial populations necessary for Freon degradation (see Table 2). No samples were analyzed for dehalococcoides or dehalobacter during the October or December 2017 events.

6.0 CONCLUSIONS

A total of 9,600 pounds of PlumeStop was injected at the site, focusing on the MW-02, MW-03, and MW-06 areas in accordance with the Work Plan. PlumeStop volumes that could not be pumped into the intended borings due to daylighting were injected into new, adjacent replacement borings and/or into nearby injection borings.

PDBs were used during sampling on October 23 and December 7, 2017 to obtain analytical data before the injection of PlumeStop, to obtain PlumeStop-free groundwater samples after the injection, and, by comparing the low flow sample results to the pre-injection PDB results, to evaluate of the effectiveness of using PDBs to collect representative groundwater samples.

In comparison with the October 9, 2017 groundwater samples obtained using the traditional low flow sampling procedure, the October 23, 2017 results were mixed. The October 23, 2017 results from well MW-03 were consistent with the October 9, 2017 results, suggesting that PDBs are effective for sampling Freon compounds. However, the October 23, 2017 Freon results for well MW-02 were significantly lower than the October 9, 2017 results, but were similar to results obtained from this well in the past. Consequently, the decreased Freon concentrations observed in the October 23, 2017 sample from MW-02 could be indicative of temporal variations that have been observed in the well.

The December 9, 2017 groundwater results show that Freon compound concentrations were low or absent on all wells sampled. The fact that Freon compounds were detected using the PDBs in MW-03 prior to the PlumeStop injection suggests that, as designed, the use of PlumeStop was effective in removing Freon from the dissolved phase.

While only Freon 1113 was detected in well MW-07R at a concentration above the groundwater criteria, no exceedences were observed in downgradient well MW-04. The absence of impacts in this downgradient well demonstrates that there are no unacceptable impacts to surface water or other potential receptors.

7.0 CONTINGENCY TRIGGER EVALUATION AND NEXT STEPS

In response to increasing levels of Freon 113, particularly in well MW-02, AECOM implemented PlumeStop injections in October 2017. In accordance with the SMP, the groundwater sampling program will continue on the five long-term monitoring wells (i.e., MW-02, MW-03, MW-04, MW-06 and MW-07R). The next sampling event will be in January 2018. Groundwater samples will be collected using PDBs. Each groundwater sample will be analyzed for Freon 113, Freon 123a, and Freon 1113, as well as the other natural attenuation and water quality parameters as specified in the PlumeStop injection Work Plan. PDBs will continue to be utilized for groundwater sample collection until PlumeStop is no longer present in the site wells (i.e., the groundwater is no longer black in color).

REFERENCES

AECOM, 2017. Groundwater Sampling and Analysis Report, April 2017 Sampling Event, Former EMCA Site, Mamaroneck, New York. May.

AECOM, 2017. Groundwater Sampling and Analysis Report, July 2017 Sampling Event, Former EMCA Site, Mamaroneck, New York. August.

AECOM, 2017. 2017 Supplemental Remedial Injection Work Plan, Revision 1. September.

Horneman, A, et al, 2007. Degradation rates of CFC-11, CFC-12 and CFC-113 in Anoxic Shallow Aquifers of Araihazar, Bangladesh, Journal of Contaminant Hydrology 97 (2008).

TOGS 1.1.1, 1998. New York State Department of Environmental Conservation Technical and Operational Guidance Series Memo 1.1.1. June.

URS, 2010. Site Management Plan, NYSDEC Site Number 360025, Former EMCA Site, Mamaroneck, New York. October.

URS, 2012. 2012 Supplemental Injection Work Plan, Former EMCA Site, Site No. 360025, Mamaroneck, New York. February.

URS, 2012a. Groundwater Sampling and Analysis Report, April 2012 Sampling Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York. June.

URS, 2012b. Groundwater Sampling and Analysis Report, September 2012 Sampling Event & Summary of 2012 Supplemental Injection Event and 2012 Post-Injection Groundwater Sampling Events, Former EMCA Site, Site No. 360025, Mamaroneck, New York. December.

URS, 2014. Groundwater Sampling and Analysis Report, October 2013 Sampling Event, Former EMCA Site, Mamaroneck, New York. January.

URS, 2014a. Groundwater Sampling and Analysis Report, April 2014 Sampling Event, Former EMCA Site, Mamaroneck, New York. June.

URS, 2014b. Letter Report for July 2014 Sampling Event, Former EMCA Site, Mamaroneck, New York. July.

URS, 2014c. Supplemental Remedial Injection Work Plan, Revision 1, Former EMCA Site, Mamaroneck, New York. August.

URS, 2015. Groundwater Sampling and Analysis Report, October, November, and December 2014 Sampling Events & Summary of 2014 Supplemental Injection Event, Former EMCA Site, Mamaroneck, New York. February.

URS, 2015. Groundwater Sampling and Analysis Report, March and April 2015 Sampling Events, Former EMCA Site, Mamaroneck, New York. May.

URS, 2015. Groundwater Sampling and Analysis Report, October 2015 Sampling Event, Former EMCA Site, Mamaroneck, New York. November.

URS, 2016. Groundwater Sampling and Analysis Report, April 2016 Sampling Event, Former EMCA Site, Mamaroneck, New York. May.

URS, 2016. Groundwater Sampling and Analysis Report, October 2016 Sampling Event, Former EMCA Site, Mamaroneck, New York. December.

U.S. Geological Survey (USGS), 2009. Chlorofluorocarbons Background, L. N. Plummer and E. Busenberg, water.usgs.gov/lab/chlorofluorocarbons/background. November.

TABLES

TABLE 1A
GROUNDWATER ELEVATION MEASUREMENTS (OCTOBER 9, 2017)
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location	Measuring Point Elevation[1] (ft.)	Depth to Water (ft.)	Water Surface Elevation (ft.)
GZ-03[2]	26.16	6.77	19.39
GZ-06	28.02	NM	NM
MW-01	25.74	5.94	19.80
MW-02	25.63	6.12	19.51
MW-03	25.59	5.97	19.62
MW-04	25.31	5.81	19.50
MW-05	24.63	4.94	19.69
MW-06	25.77	6.47	19.30
MW-07R	25.63	6.41	19.22
Benchmark B (Sheldrake River - South [Rockaway Avenue] Bridge)	NM	NM	NM
Benchmark C[3] (Sheldrake River - between North and South Bridges)	--	--	NM
Benchmark D[4] (Sheldrake River - North [Fenimore Road] Bridge)	27.41	10.34	17.07

Notes:

1) All of the monitoring well and benchmark locations were resurveyed on 6/25/2010.
2) Monitoring well GZ-03 was modified from a stick-up well to a flush-mount well on 6/24/2010 and resurveyed.
3) Benchmark C could not be calculated because of a safety issue at Benchmark B.
4) Benchmark D water surface elevation was taken from culvert approximately 10 feet from concrete support of North bridge.

TABLE 1B
GROUNDWATER ELEVATION MEASUREMENTS (DECEMBER 7, 2017)
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location	Measuring Point Elevation[1] (ft.)	Depth to Water (ft.)	Water Surface Elevation (ft.)
GZ-03[2]	26.16	6.29	19.87
GZ-06	28.02	7.89	20.13
MW-01	25.74	5.01	20.73
MW-02	25.63	5.87	19.76
MW-03	25.59	6.71	18.88
MW-04	25.31	4.69	20.62
MW-05	24.63	5.09	19.54
MW-06	25.77	6.28	19.49
MW-07R	25.63	6.29	19.34
Benchmark B (Sheldrake River - South [Rockaway Avenue] Bridge)	NM	NM	NM
Benchmark C[3] (Sheldrake River - between North and South Bridges)	--	--	NM
Benchmark D[4] (Sheldrake River - North [Fenimore Road] Bridge)	27.41	10.61	16.80

Notes:

1) All of the monitoring well and benchmark locations were resurveyed on 6/25/2010.
2) Monitoring well GZ-03 was modified from a stick-up well to a flush-mount well on 6/24/2010 and resurveyed.
3) Benchmark C could not be calculated because of a safety issue at Benchmark B.
4) Benchmark D water surface elevation was taken from culvert approximately 10 feet from concrete support of North bridge.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20170418MW-02	20170718MW-02	20171009 MW-02	20171023 MW-02	20171207MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/18/17	07/18/17	10/09/17	10/23/17	12/07/17
Parameter	**Units**	**Criteria***					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1,300	470	690	61	2.0
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	2,200	2,100	660	0.78 J	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	170	68	37	7.2	0.33 J
Dissolved Gases							
Methane	UG/L	-	5,800	1,200	5,900	560	1,100
Total Metals							
Iron	UG/L	300	61,800	48,300	54,400	46,000	32,900
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	281	325	248	223	240
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	281	325	248	223	240
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	400 J	NA	NA	NA	NA
Dehalobacter	GC/mL	-	3.0 U	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	410	420	37.6	358	341
Nitrogen, Nitrate	MG/L	10	0.10 UJ	1.0 U	0.10 U	NA	0.013 J
Nitrogen, Nitrite	MG/L	1	0.049 J-	0.42 J	0.040 J	NA	0.022 J
Sulfate	MG/L	250	36.2	30.3	50.2	49.4	36.8
Total Organic Carbon	MG/L	-	7.1	10.8	7.1	6.4	4.2
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	1.07	0.75	2.39	0 U
Ferrous Iron	MG/L	-	11	7.0	6.5	6.5	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. (J-) - Estimated result biased low.

U - Non-Detect NA - Not Analyzed

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20170418MW-02	20170718MW-02	20171009 MW-02	20171023 MW-02	20171207MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/18/17	07/18/17	10/09/17	10/23/17	12/07/17
Parameter	**Units**	**Criteria***					
Field Parameter							
Oxidation-Reduction Potential	mV	-	-6	-134	-113	-173	-114
pH	S.U.	-	6.40	6.59	6.51	6.90	6.44
Specific Conductance	MS/CM	-	2.23	2.63	2.46	2.44	2.12
Temperature	DEG C	-	11.27	19.18	19.89	20.01	16.17
Turbidity	NTU	-	0 U	5.2	1.7	0 U	280

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

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TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20170418MW-03	20170718MW-03	20171009 MW-03	20171023 MW-03	20171207MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/18/17	07/18/17	10/09/17	10/23/17	12/07/17
Parameter	**Units**	**Criteria***					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	230	160	230	210	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	140	80	17	7.6	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	52	17	5.2	7.0	1.0 U
Dissolved Gases							
Methane	UG/L	-	1,500	1,200	5,300	4,300	3,800
Total Metals							
Iron	UG/L	300	24,200	24,700	22,300	20,600	12,400
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	264	276	250	263	248
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	264	276	250	263	248
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	6	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	390	376	37.6	358	261
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	NA	0.10 U
Nitrogen, Nitrite	MG/L	1	0.031 J	0.034 J	0.026 J	NA	0.014 J
Sulfate	MG/L	250	56.6	48.3	42.6	39.9	22.2
Total Organic Carbon	MG/L	-	6.0	6.4	5.9	6.2	2.2
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	1.35	0.77	2.84	0 U
Ferrous Iron	MG/L	-	10	6.0	4.5	5.5	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20170418MW-03	20170718MW-03	20171009 MW-03	20171023 MW-03	20171207MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/18/17	07/18/17	10/09/17	10/23/17	12/07/17
Parameter	**Units**	**Criteria***					
Field Parameter							
Oxidation-Reduction Potential	mV	-	18	-119	-106	-194	-133
pH	S.U.	-	6.51	6.55	6.48	6.74	6.55
Specific Conductance	MS/CM	-	1.63	1.96	1.93	1.95	1.53
Temperature	DEG C	-	12.91	19.12	19.62	19.11	11.53
Turbidity	NTU	-	0 U	0 U	1.8	0 U	245

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-06
Sample ID			20170418MW-04	20170718MW-04	20171009 MW-04	20171207MW-04	20170418MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/18/17	07/18/17	10/09/17	12/07/17	04/18/17
Parameter	**Units**	**Criteria***					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1.0 U	0.90 J	4.5	1.0 U	60
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	1.0 U	1.0 U	5.5
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U	1.0 U	1.0 U	13
Dissolved Gases							
Methane	UG/L	-	770	210	1,700	490	3,100
Total Metals							
Iron	UG/L	300	21,700	17,600	17,800	7,130	20,200
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	400	323	335	216	290
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	400	323	335	216	290
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	3.0 U	NA	NA	NA	3.0 U
Hardness (as CaCO3)	MG/L	-	540	420	5.0 U	166	360
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrogen, Nitrite	MG/L	1	0.028 J	0.042 J	0.10 U	0.013 J	0.024 J
Sulfate	MG/L	250	5.0 U	7.3	9.7	3.8 J	26.5
Total Organic Carbon	MG/L	-	13.2	12.6	12.5	8.9	5.1
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	1.01	0.71	0 U	0 U
Ferrous Iron	MG/L	-	8.0	7.0	7.0	4.5	6.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-06
Sample ID			20170418MW-04	20170718MW-04	20171009 MW-04	20171207MW-04	20170418MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/18/17	07/18/17	10/09/17	12/07/17	04/18/17
Parameter	**Units**	**Criteria***					
Field Parameter							
Oxidation-Reduction Potential	mV	-	20	-117	-96	-71	11
pH	S.U.	-	6.56	6.60	6.56	6.51	6.63
Specific Conductance	MS/CM	-	2.15	2.49	2.39	1.20	1.76
Temperature	DEG C	-	13.83	21.81	21.80	16.17	12.04
Turbidity	NTU	-	0 U	9.5	1.9	17.0	0 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

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TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-07R	MW-07R
Sample ID			20170718MW-06	20171009 MW-06	20171207MW-06	20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/18/17	10/09/17	12/07/17	04/18/17	07/18/17
Parameter	**Units**	**Criteria***					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	31	63	1.0 U	3.6	17
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	4.4	18	1.0 U	1.0 U	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	3.6	13	1.0 U	0.32 J	0.37 J
Dissolved Gases							
Methane	UG/L	-	560	4,600	2,900	990	830
Total Metals							
Iron	UG/L	300	16,000	16,900	8,390	29,800	33,000
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	252	256	258	321	376
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	252	256	258	321	376
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	3	NA
Hardness (as CaCO3)	MG/L	-	304	307	301	560	516
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U
Nitrogen, Nitrite	MG/L	1	0.051 J	0.018 J	0.013 J	0.035 J	0.61 J
Sulfate	MG/L	250	38.4	31.8	37.2	5.4	10.2
Total Organic Carbon	MG/L	-	4.3	4.9	1.5	7.6	10.3
Field Parameter							
Dissolved Oxygen	MG/L	-	0.84	1.06	0 U	0 U	1.53
Ferrous Iron	MG/L	-	7.0	5.0	NA	10	9.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

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TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-07R	MW-07R
Sample ID			20170718MW-06	20171009 MW-06	20171207MW-06	20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/18/17	10/09/17	12/07/17	04/18/17	07/18/17
Parameter	**Units**	**Criteria***					
Field Parameter							
Oxidation-Reduction Potential	mV	-	-116	-126	-126	26	-125
pH	S.U.	-	6.66	6.50	6.50	6.43	6.48
Specific Conductance	MS/CM	-	1.63	1.76	1.64	3.53	3.11
Temperature	DEG C	-	19.48	19.09	15.20	12.47	18.22
Turbidity	NTU	-	0 U	0 U	1,000 >	0 U	0 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

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Printed: 1/5/2018 9:57:18 AM
[LOGDATE] >= #4/01/2017# AND [MATRIX] = 'WG

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R
Sample ID			20171009 MW-07R	20171207MW-07R
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			10/09/17	12/07/17
Parameter	**Units**	**Criteria***		
Volatiles				
Chlorotrifluoroethene (Freon-1113)	UG/L	5	47	13
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.48 J	1.0 U
Dissolved Gases				
Methane	UG/L	-	8,100	1,800
Total Metals				
Iron	UG/L	300	39,000	38,300
Miscellaneous Parameters				
Alkalinity, Total (as CaCO3)	MG/L	-	355	338
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	355	338
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA
Dehalobacter	GC/mL	-	NA	NA
Hardness (as CaCO3)	MG/L	-	515	525
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U
Nitrogen, Nitrite	MG/L	1	0.10 U	0.013 J
Sulfate	MG/L	250	5.0 U	2.5 J
Total Organic Carbon	MG/L	-	11.4	11.6
Field Parameter				
Dissolved Oxygen	MG/L	-	0.70	0 U
Ferrous Iron	MG/L	-	8	7.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. (J-) - Estimated result biased low.

U - Non-Detect NA - Not Analyzed

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp:
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Printed: 1/5/2018 9:57:18 AM
[LOGDATE] >= #4/01/2017# AND [MATRIX] = 'WG

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
APRIL 2017 - DECEMBER 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R
Sample ID			20171009 MW-07R	20171207MW-07R
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			10/09/17	12/07/17
Parameter	**Units**	**Criteria***		
Field Parameter				
Oxidation-Reduction Potential	mV	-	-99	-97
pH	S.U.	-	6.45	6.41
Specific Conductance	MS/CM	-	2.81	2.64
Temperature	DEG C	-	19.90	15.77
Turbidity	NTU	-	0.1	4.5

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. (J-) - Estimated result biased low.

U - Non-Detect NA - Not Analyzed

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Table 3A

Comparison of October 9, 2017 to July 18, 2017 Data

Location	Freon 113	Freon 123a	Freon 1113	Methane	Sulfate	ORP	DO
MW-02	↓	↓	↑	↑	↑	↑	↑
MW-03	↓	↓	↑	↑	↓	↓	↑
MW-04	↔	↔	↑	↑	↑	↑	↓
MW-06	↑	↑	↑	↑	↓	↓	↑
MW-07/07R	↔	↑	↑	↑	↓	↑	↓

Table 3B

Comparison of December 7, 2017 to October 9, 2017 Data

Location	Freon 113	Freon 123a	Freon 1113	Methane	Sulfate	ORP	DO
MW-02	↓	↓	↓	↑	↓	↑	↓
MW-03	↓	↓	↓	↓	↓	↑	↓
MW-04	↔	↔	↓	↓	↓	↑	↓
MW-06	↓	↓	↓	↓	↑	↔	↓
MW-07/07R	↔	↓	↓	↓	↑	↑	↓

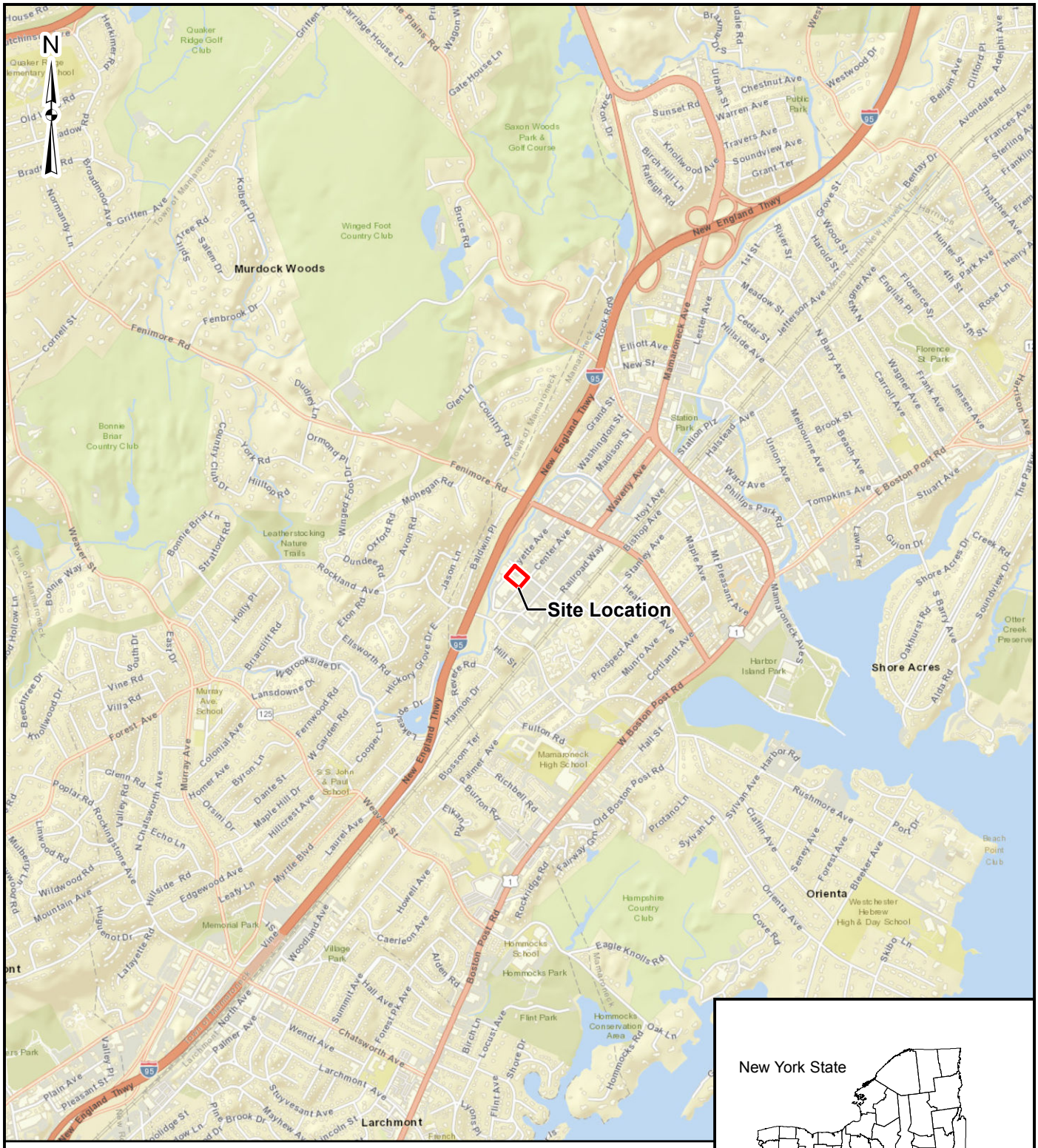
Legend

↓ Decrease from previous event

↑ Increase from previous event

↔ No significant change from previous event

FIGURES



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AECOM

FORMER EMCA SITE
SITE LOCATION MAP
SITE NO. 360025
MAMARONECK, NEW YORK

FIGURE 1

N

MW-05

FAYETTE AVENUE

MW-04

GATE

MW-07R

GATE

OGDEN AVENUE

UTILITY POLE

ASPHALT PARKING LOT

MW-03

GATE

MW-06

MW-02

DUMPSTER

HVAC UNIT

EMERGENCY GENERATOR

COMMUNICATION TOWER

ASPHALT PARKING LOT

FORMER EMCA SITE BOUNDARY (APPROXIMATE)

CABLEVISION BUILDING

GZ-06

CENTER AVENUE

GZ-03

Legend

- Monitoring Well
- Overhead Utility
- Underground Utility
- Underground Utility Corridor

20 0 20 Feet

FORMER EMCA SITE
SITE PLAN
SITE NO. 360025
MAMARONECK, NEW YORK

AECOM

FIGURE 2

J:\Projects\11172730.00000\DB\GIS\2001\ArcMap\SITE PLAN_rev.mxd 1/2/2018

N

MW-07R

IB-5

IB-2

IB-2A

GATE

IB-8B

UTILITY POLE

IB-8A

IB-8

IB-1

IB-4

IB-4A

IB-1A

ASPHALT PARKING LOT

MW-03

IB-7A

IB-11

IB-3

IB-7

IB-3A

IB-14

IB-10

IB-6

IB-16

GATE

IB-19A

IB-13

IB-16A

IB-9

IB-12

IB-19

HVAC UNIT

MW-02

MW-06

EMERGENCY GENERATOR

IB-18A

IB-22A

IB-15

DUMPSTER

IB-18

IB-22

IB-17

IB-21

COMMUNICATION TOWER

IB-20

FORMER EMCA SITE BOUNDARY (APPROXIMATE)

ASPHALT PARKING

Legend

- Monitoring Well
- Plume Stop® Injection Boring
- Overhead Utility
- Underground Utility
- Underground Utility Corridor

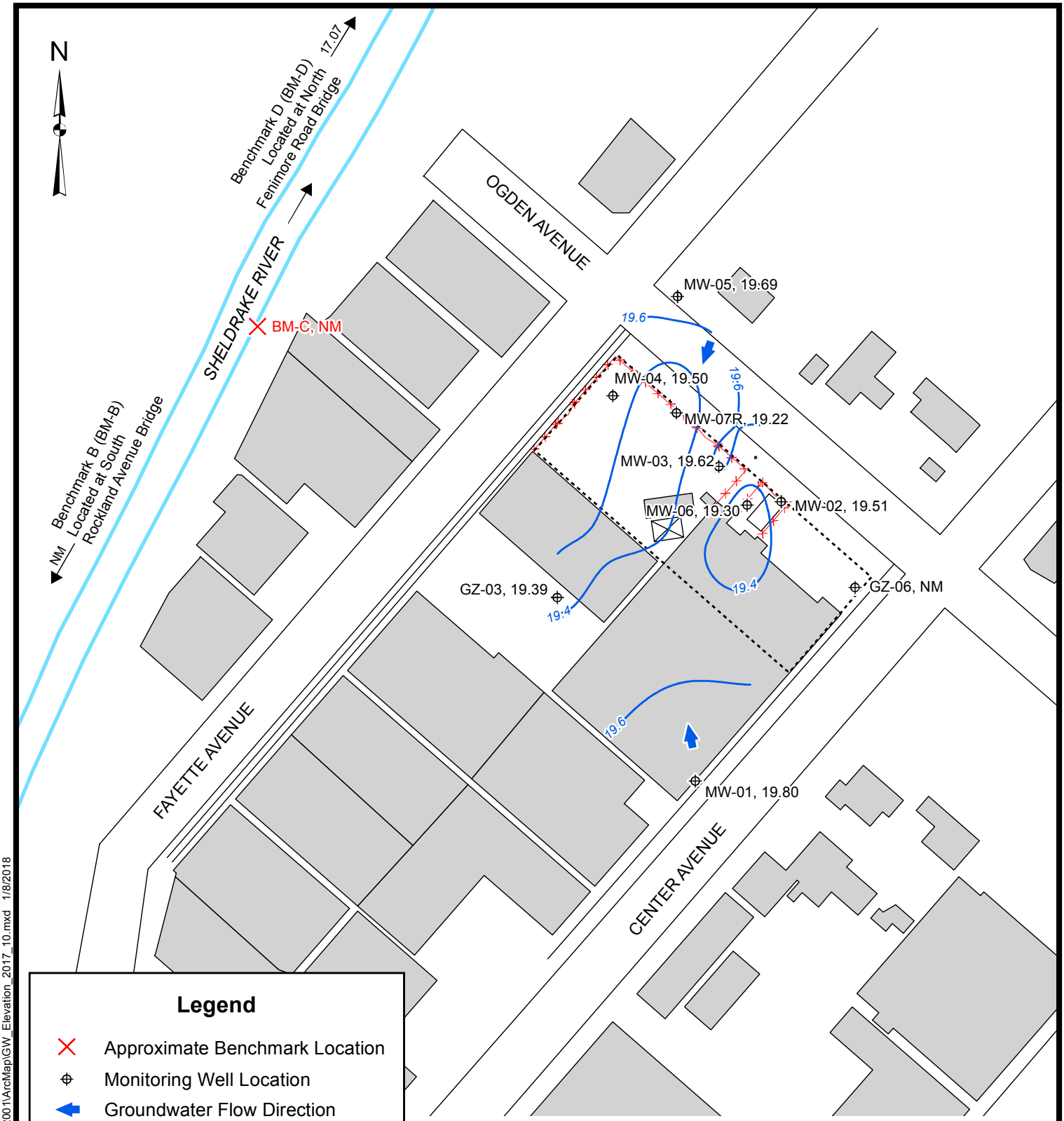
10 0 10 Feet

FORMER EMCA SITE
2017 REMEDIAL INJECTION LOCATIONS
SITE NO. 360025
MAMARONECK, NEW YORK

AECOM

FIGURE 3

J:\Projects\11172730.00000\DB\GIS\2001\ArcMap\Proposed Injection (2017)_REV2.mxd 1/2/2018



NOTES:
(1) Well MW-07 was replaced by well MW-07R on September 3, 2009.
(2) Benchmark C was originally established as a temporary benchmark off a tree branch overhanging the Sheldrake River between the north and south bridges. The approximate water surface elevation for this benchmark was calculated by taking the average water surface elevation of Benchmark B and Benchmark D until 2015 when measurements at Benchmark B were no longer taken due to safety concerns.
(3) NM - Not Measured

80 0 80 Feet

AECOM

FORMER EMCA SITE
GROUNDWATER ELEVATION MAP - OCTOBER 9, 2017
SITE NO. 360025
MAMARONECK, NEW YORK

FIGURE 4A

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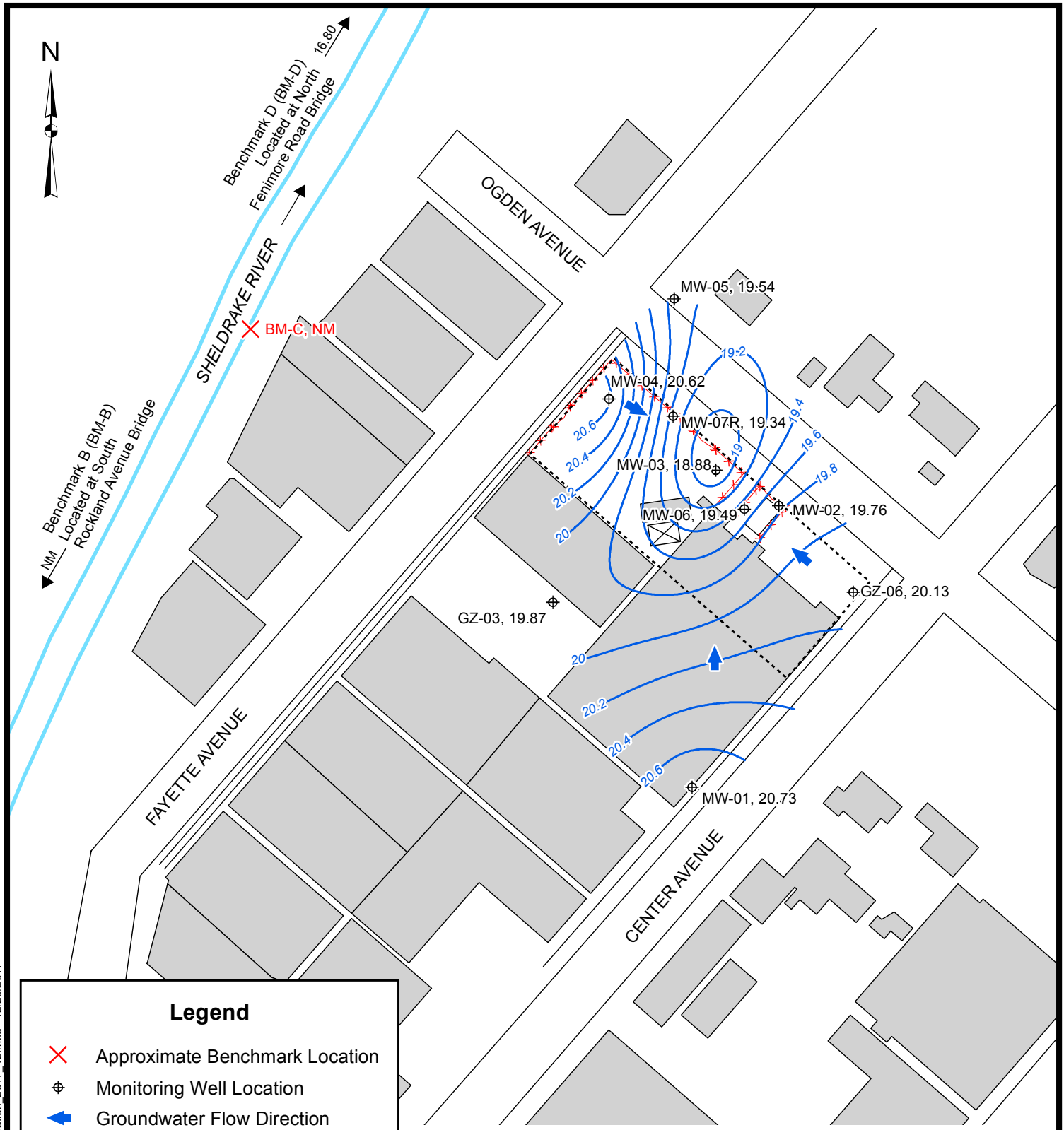

Legend

- Approximate Benchmark Location
- Monitoring Well Location
- Groundwater Flow Direction
- –19.8– Groundwater Elevation Contour
- Former EMCA Site Boundary (Approximate)

MW-02, 19.76
Location ID
Groundwater Elevation (based upon AECOM survey datum)

NOTES:
(1) Well MW-07 was replaced by well MW-07R on September 3, 2009.
(2) Benchmark C was originally established as a temporary benchmark off a tree branch overhanging the Sheldrake River between the north and south bridges. The approximate water surface elevation for this benchmark was calculated by taking the average water surface elevation of Benchmark B and Benchmark D until 2015 when measurements at Benchmark B were no longer taken due to safety concerns.
(3) NM - Not Measured

80 0 80 Feet

AECOM

FORMER EMCA SITE
GROUNDWATER ELEVATION MAP - DECEMBER 7, 2017
SITE NO. 360025
MAMARONECK, NEW YORK

FIGURE 4B

J:\Projects\11172730.00000\DB\GIS\2001\ArcMap\GW_Elevation_2017_12.mxd 12/29/2017

N

SHELDRAKE RIVER

FAYETTE AVENUE

OGDEN AVENUE

CENTER AVENUE

MW-05

MW-04	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12	4/13	10/13	4/14	7/14	10/14	4/15	10/15	4/16	10/16	4/17	7/17	10/9/17	12/17
Freon-113	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.38J	ND	ND	ND	ND	ND	ND	ND
Freon-123A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon-1113	1.0J	ND	1.0J	15	7.7J	12	2.8	5J	1.2	7.2J	2.5	4.4J	12	ND	ND	1.2	2.1	4.4	0.5J	4.3	ND	0.9J	4.5	ND

MW-03	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12	4/13	10/13	4/14	7/14	10/14	11/14	12/14	3/15	4/15	10/15	4/16	10/16	4/17	7/17	10/9/17	10/23/17	12/17
Freon-113	0.5J	ND	5.0J	0.9J	ND	ND	ND	32	5.4	20J	1.1	27	ND	100	120	0.81J	ND	ND	18	25	0.52J	42	11	140	80	17	7.6	ND
Freon-123A	4.0J	1.0J	40	2.1	ND	0.5J	ND	99J	9.4	36	3.2	30	ND	62	100	1.3	ND	1.7	17	25	1.7	30	3.3	52	17	5.2	7	ND
Freon-1113	13J	10	38	20	17J	26	4.6	110J	82	150J	130	160J	58	96	170	96	86	150	110	120	140	180	290	230	160	230	210	ND

MW-07/07R	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12	4/13	10/13	4/14	7/14	10/14	3/15	4/15	10/15	4/16	10/16	4/17	7/17	10/9/17	12/17
Freon-113	ND	3.0J	46	580	18J	1.1J	53J	18	1.6	67J	5.9J	5.5	12	ND	ND	15	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon-123A	0.9J	16	20	76	8.1	1.8	9.5	6.3J	0.9J	11	2.4J	2.6	1.1	ND	1.2	2.2	0.78J	0.39J	ND	ND	ND	0.32J	0.37J	0.48J	ND
Freon-1113	92	170	150	370	150J	390	350	370J	26	630J	430	310J	390	2.1	69	130	130	10	46	22	65	3.6	17	47	13

MW-02	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12	11/12	1/13	2/13	4/13	7/13	8/13	9/13	10/13	4/14	7/14	10/14	11/14	12/14	3/15	4/15	10/15	4/16	10/16	4/17	7/17	10/9/17	10/23/17	12/17
Freon-113	830J	700	1300	1200	76J	670	580	920	490	1200J	650	65	28	18	12	ND	ND	ND	ND	3.1	83	0.19J	0.14J	ND	45	24	21	960	940	2200	2100	660	0.78J	ND
Freon-123A	72	38J	34J	51	6.1	37	26	33J	26	57	26	29	52	30J	11	ND	ND	ND	ND	10	62	3.3	1.5	1.7	67	22	7.7	220	37	170	68	37	7.2	0.33J
Freon-1113	120J	160	81J	300	92J	240	180	110J	180	140J	98	380	400	330J	400J	120	66	42	61	210	480	270J	66	56	300	310	260	940	1000	1300	470	690	61	2

GZ-06	2/08	8/08	2/09
Freon-113	ND	ND	ND
Freon-123A	ND	ND	ND
Freon-1113	ND	ND	ND

MW-06	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12	4/13	10/13	4/14	7/14	10/14	4/15	10/15	4/16	10/16	4/17	7/17	10/9/17	12/17
Freon-113	ND	ND	2.0J	ND	ND	ND	ND	33	ND	82J	3.3	0.19J	ND	26	ND	ND	1.6	ND	ND	ND	5.5	4.4	18	ND
Freon-123A	ND	ND	35	ND	3.6	0.57J	ND	38J	4.4	28	3.6	4.9	ND	33	2.7	ND	8.1	ND	1.1	0.28J	13	3.6	13	ND
Freon-1113	8.0J	4.0J	34	6.4	35J	68J	61	96J	30	230J	140	61J	27	75	84	51	110	51	51	68	60	31	63	ND

Legend

- Existing Monitoring Well Location
- Generalized Groundwater Flow Direction
- Concentration Exceeds NYSDEC TOGS (1.1.1) Class GA Standards
- 2/08 - Post-2007 Supplemental Injection Sampling Dates
- 10/09 - Post-2009 Supplemental Injection Sampling Dates
- 11/12 - Post-2012 Supplemental Injection Sampling Dates
- 7/13 - Post-2013 Supplemental Injection Sampling Dates
- 10/14 - Post-2014 Supplemental Injection Sampling Dates
- 12/17 - Post-2017 Supplemental Injection Sampling Dates

NOTES:
All analytical results are reported in µg/L.
Well, MW-07, was replaced by well, MW-07R, on September 3, 2009.
ND = Not Detected
J = Estimated Value
Freon-113 = 1,1,2-Trichloro-1,2,2-trifluoroethane
Freon-123A = 1,2-Dichloro-1,1,2-trifluoroethane
Freon-1113 = Chlorotrifluoroethene

100 0 100 Feet

FORMER EMCA SITE
SUMMARY OF FREON DETECTIONS IN GROUNDWATER (2008 - 2017)
SITE NO. 360025
MAMARONECK, NEW YORK

AECOM

FIGURE 5

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FIGURE 6
FORMER EMCA SITE
Freon 113 Concentrations - MW-03, MW-04, and MW-07/07R

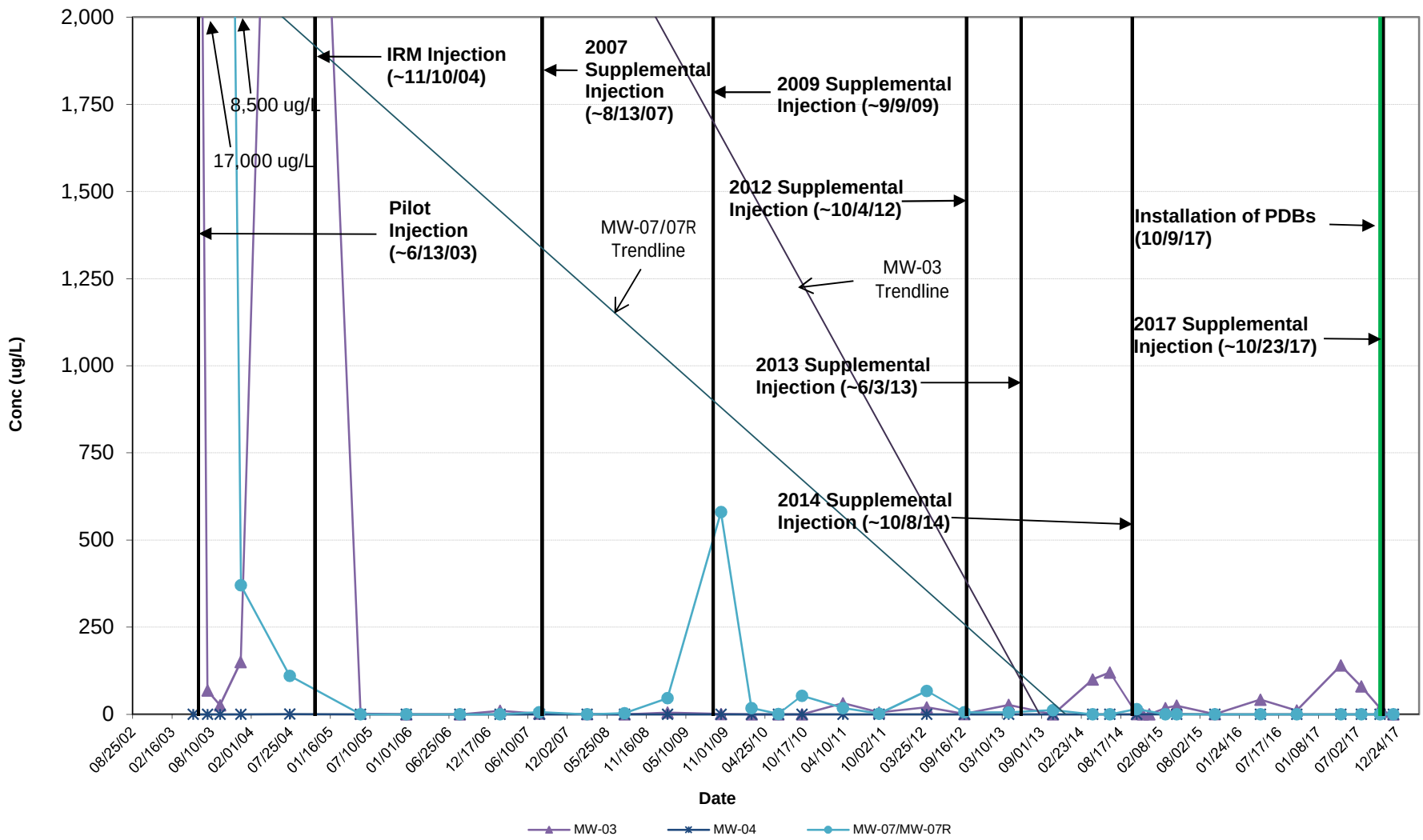


FIGURE 7
FORMER EMCA SITE

Freon 113 Concentrations - GZ-06, MW-02, and MW-06

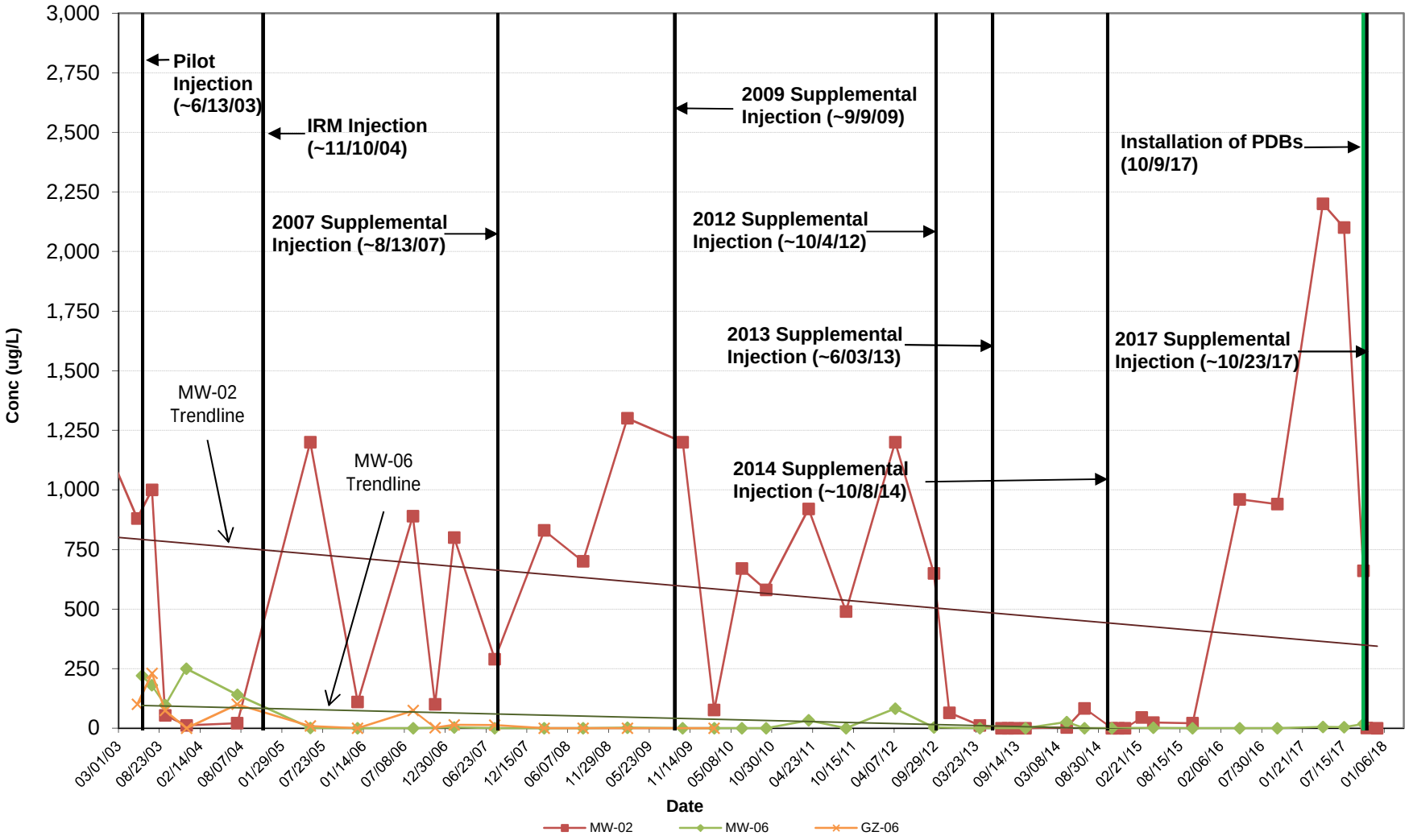


FIGURE 8
FORMER EMCA SITE

Freon 123a Concentrations

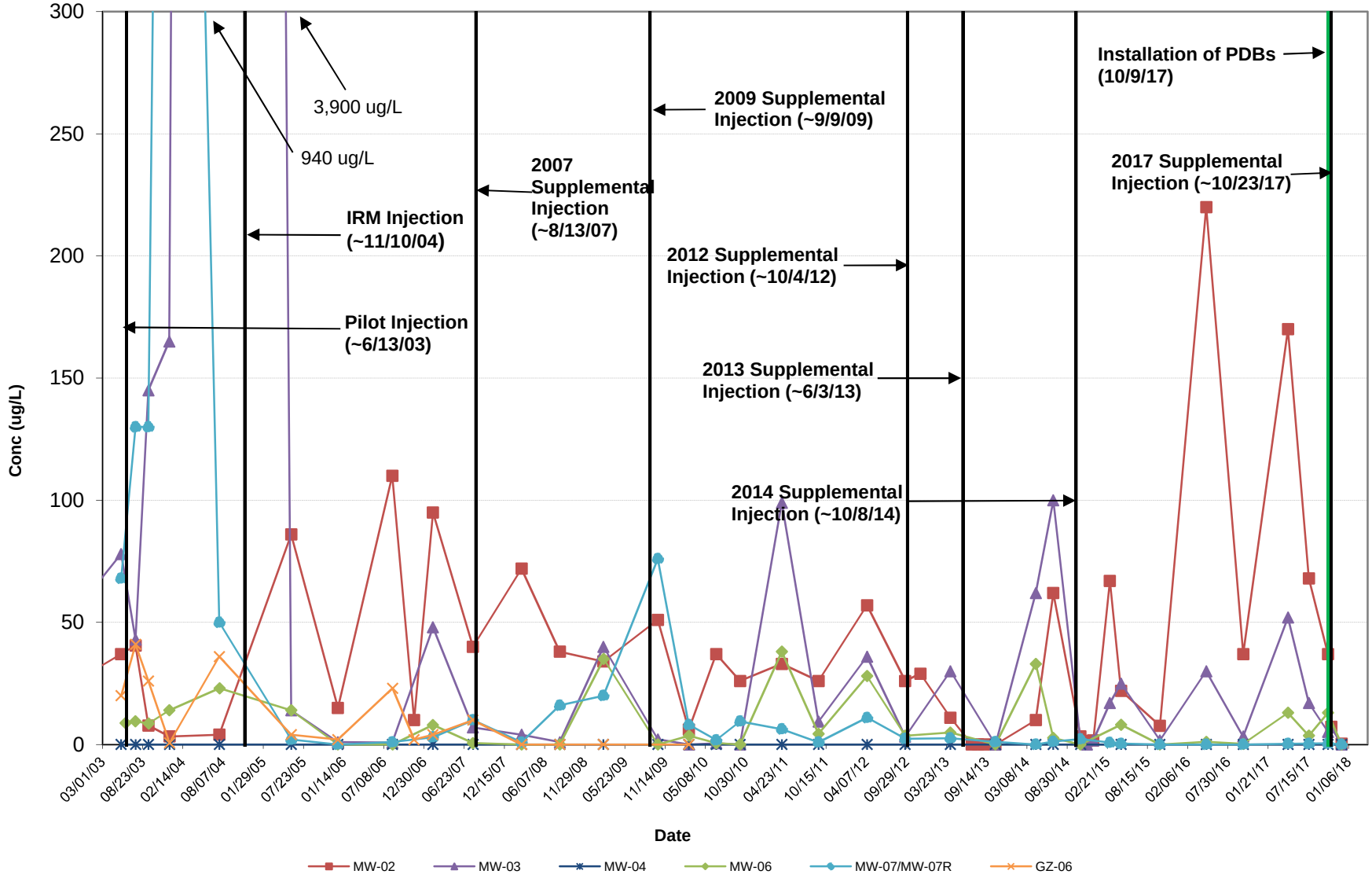
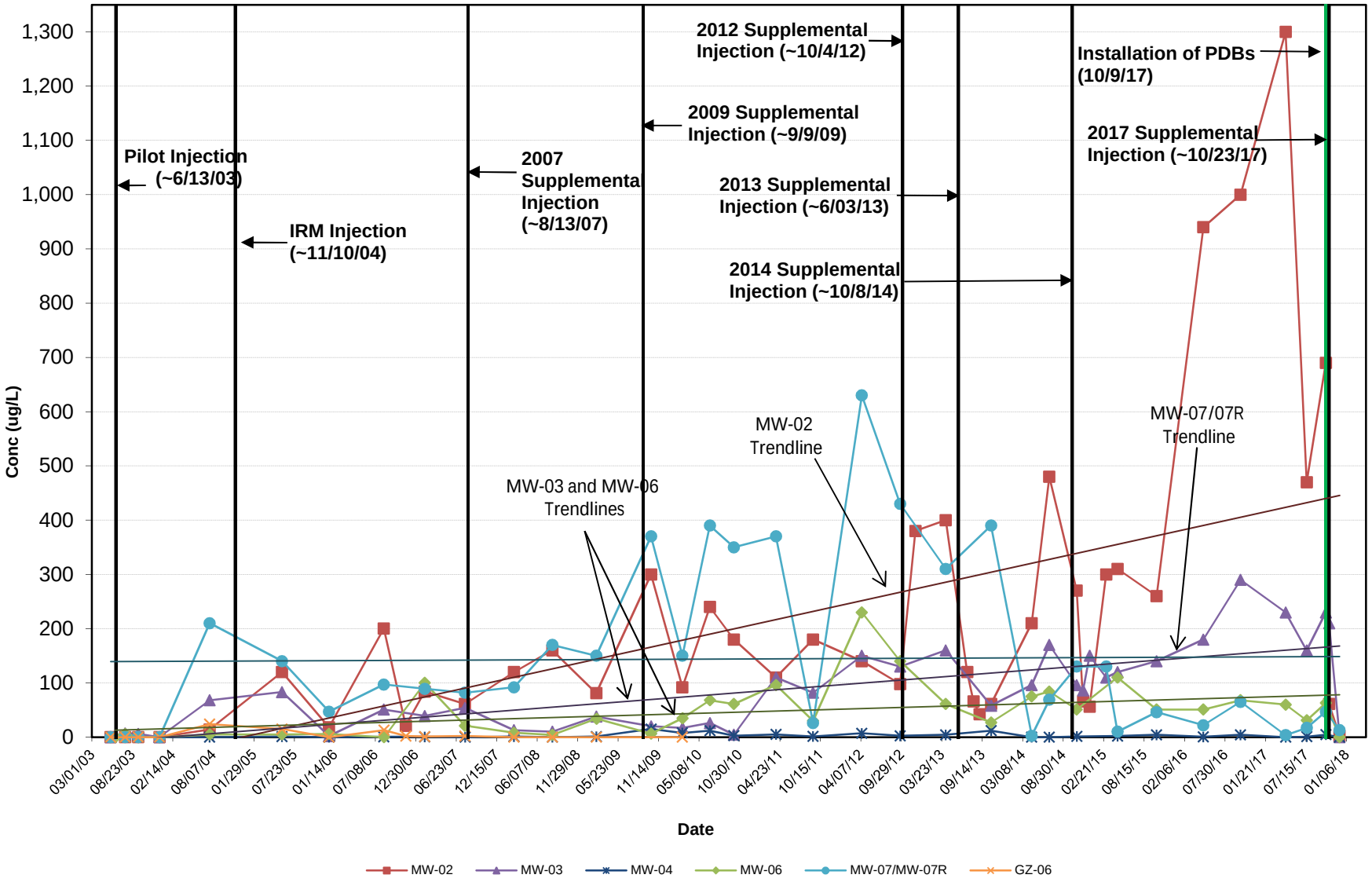


FIGURE 9
FORMER EMCA SITE

Freon 1113 Concentrations



\\URSBUFFALO\Buffalo\Projects\11172730.00000\WORD\DRAFT\GW SAR Reports\Oct 2017 GW SAR\GW Data Plots_Time Scaled Long_Oct2017.xls - Fig 9

FIGURE 10
FORMER EMCA SITE

Sulfate Concentrations

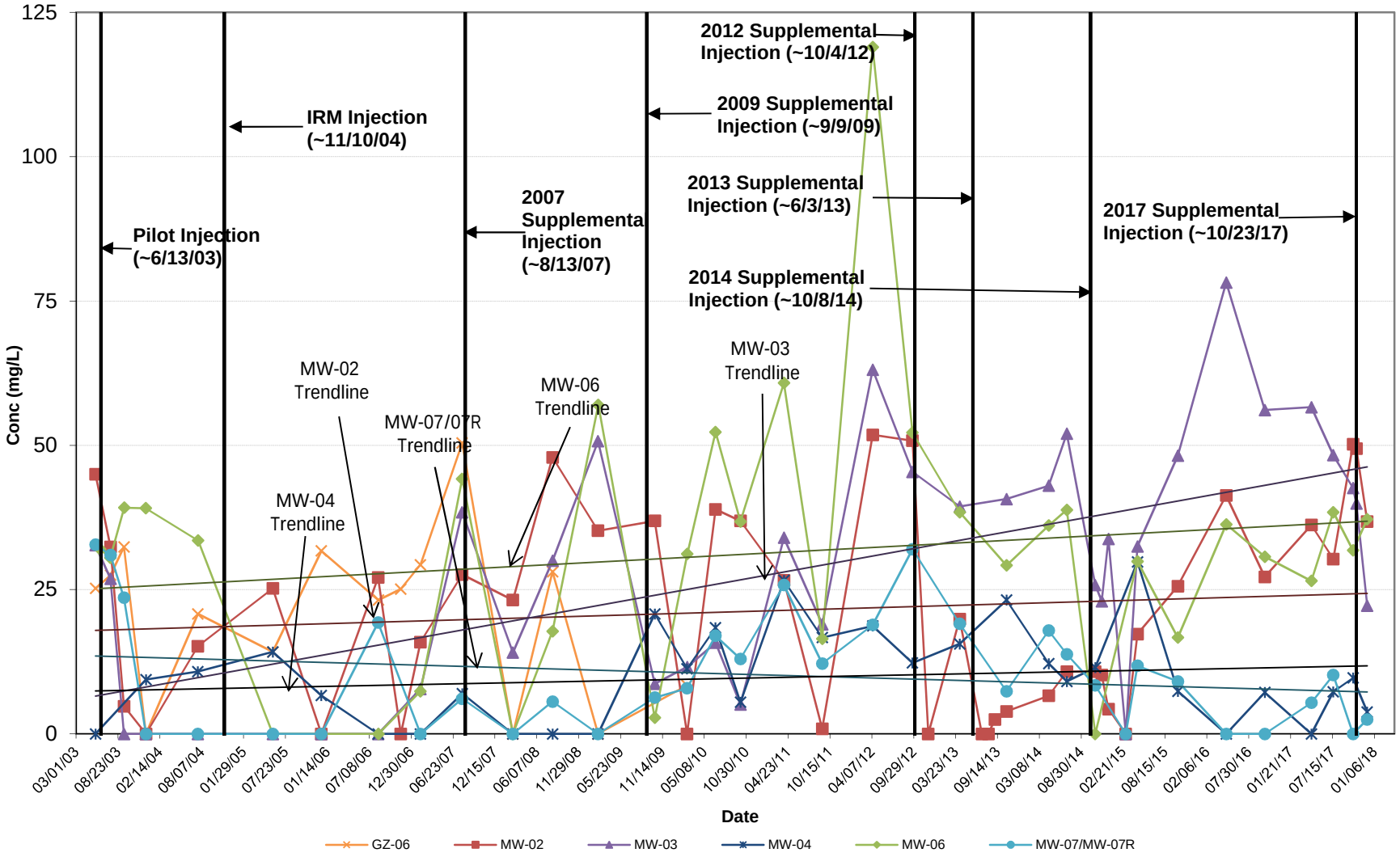


FIGURE 11
FORMER EMCA SITE
Methane Concentrations

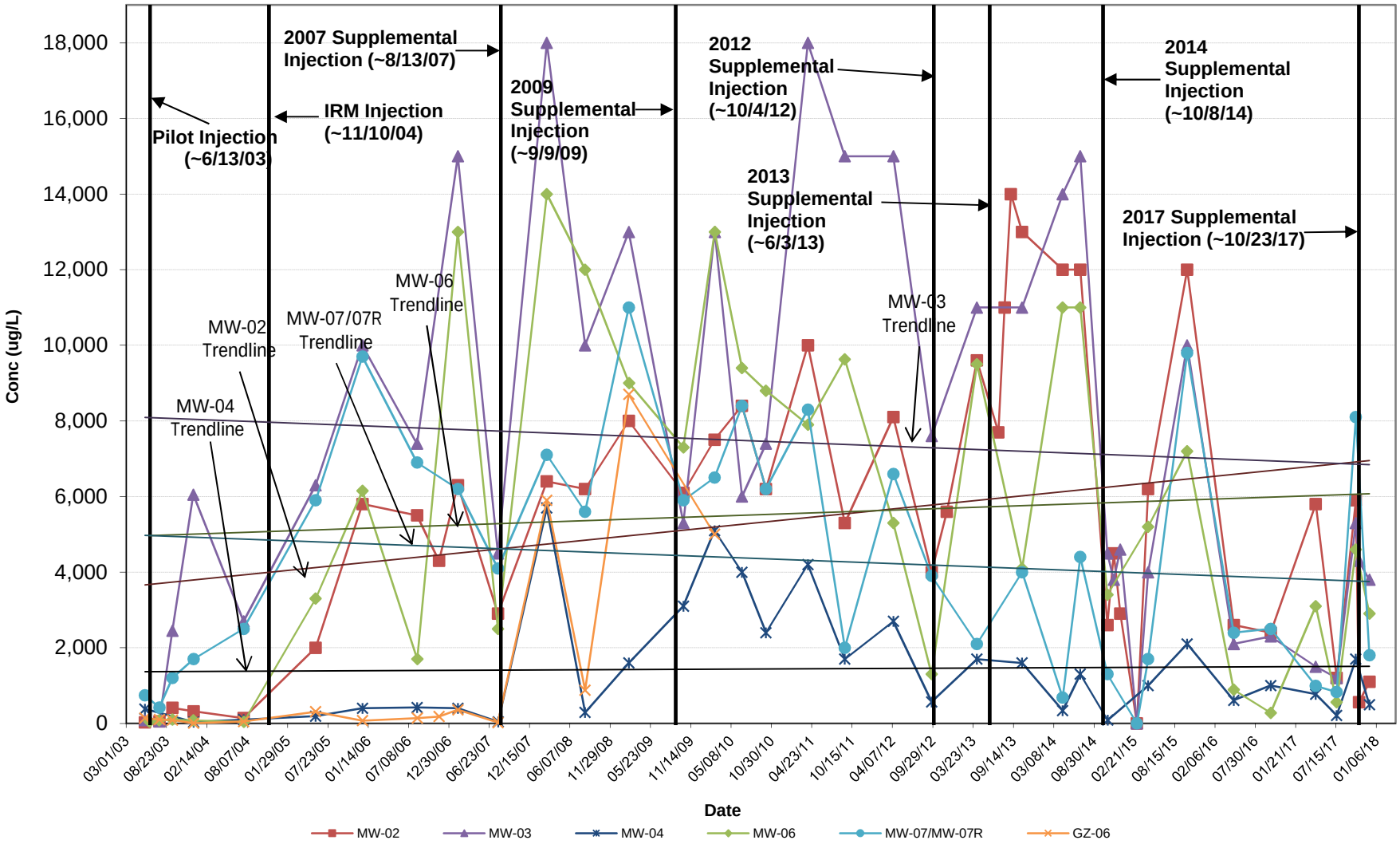


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FIGURE 12
FORMER EMCA SITE

Dissolved Oxygen Concentrations

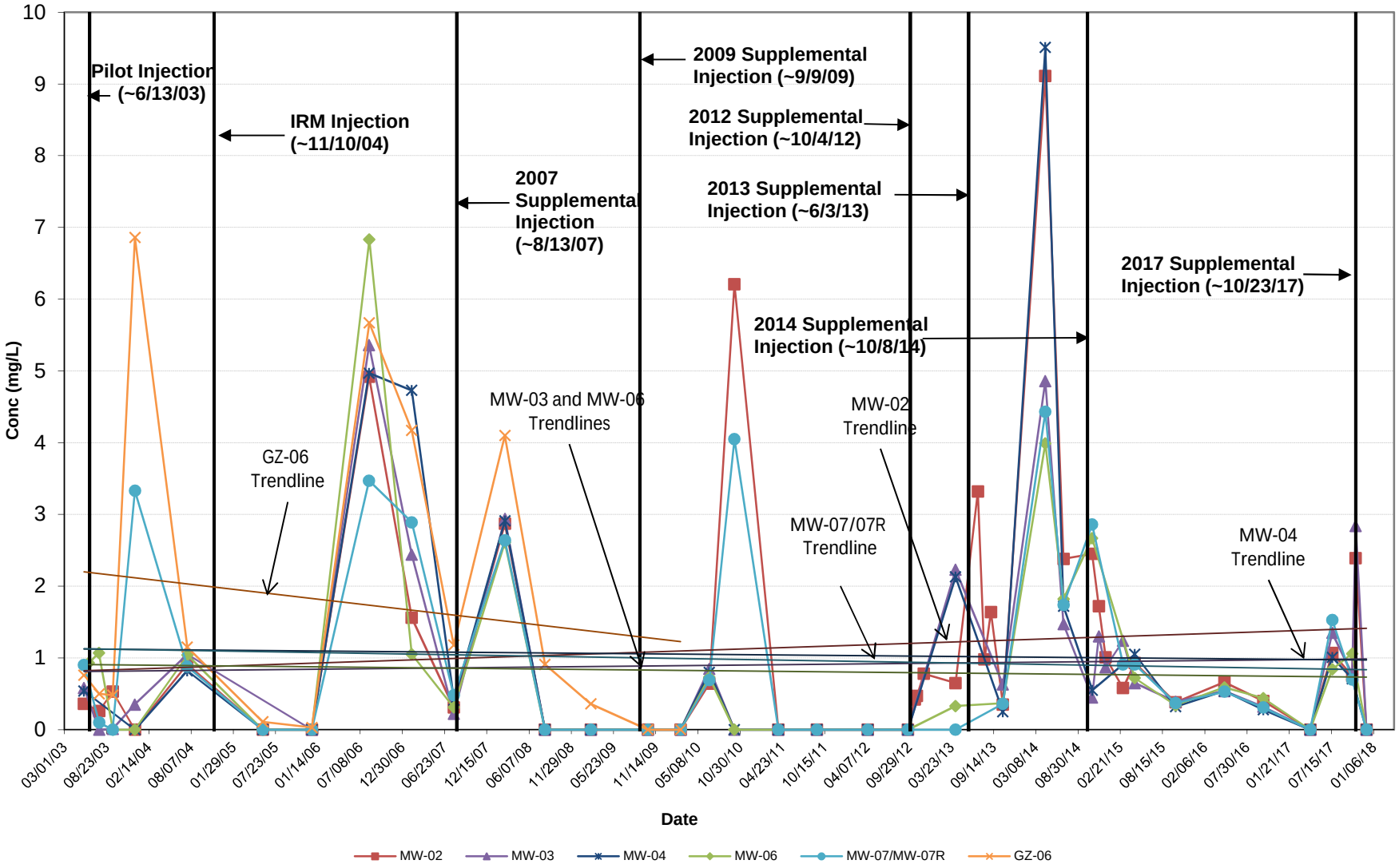
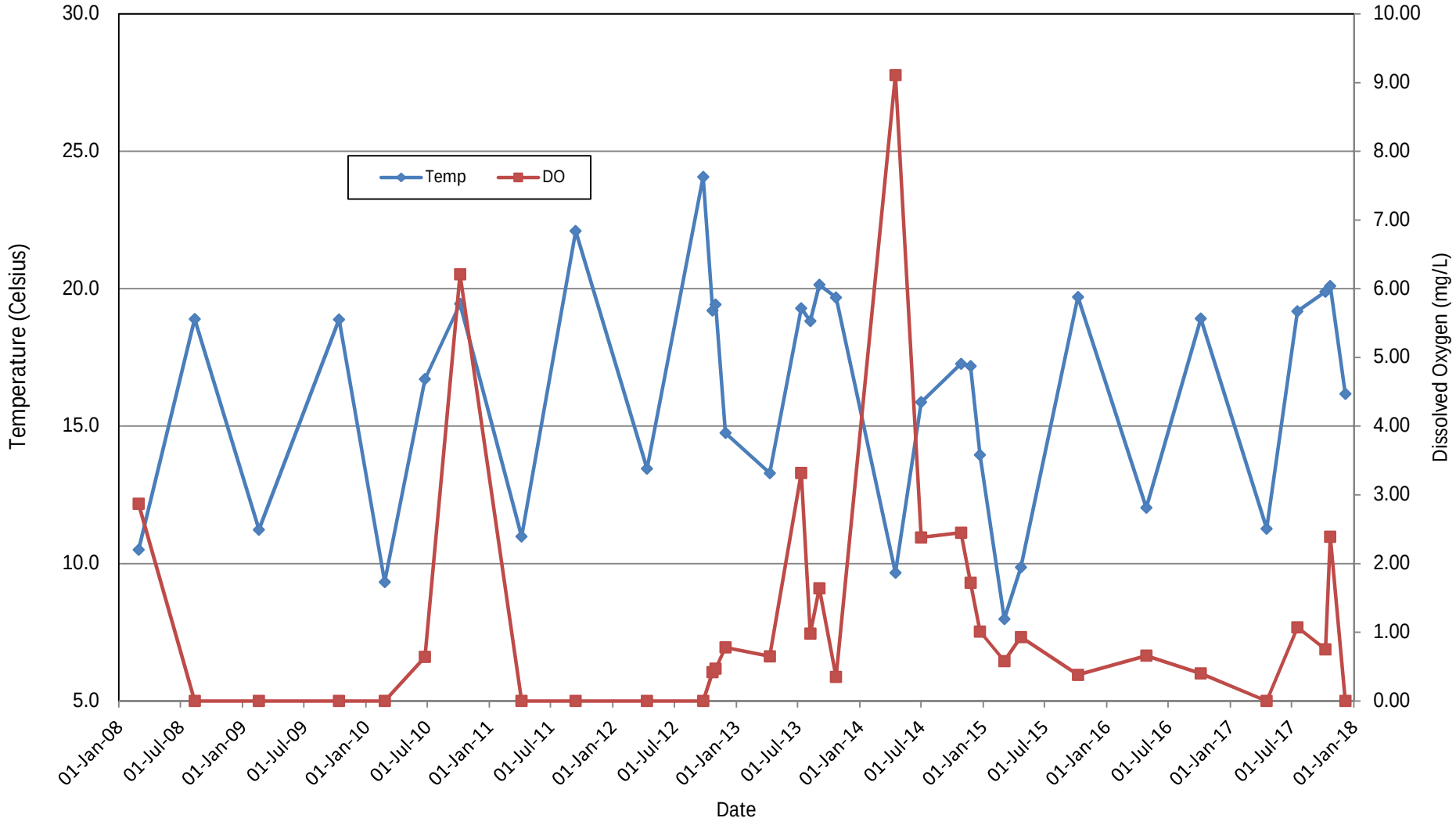
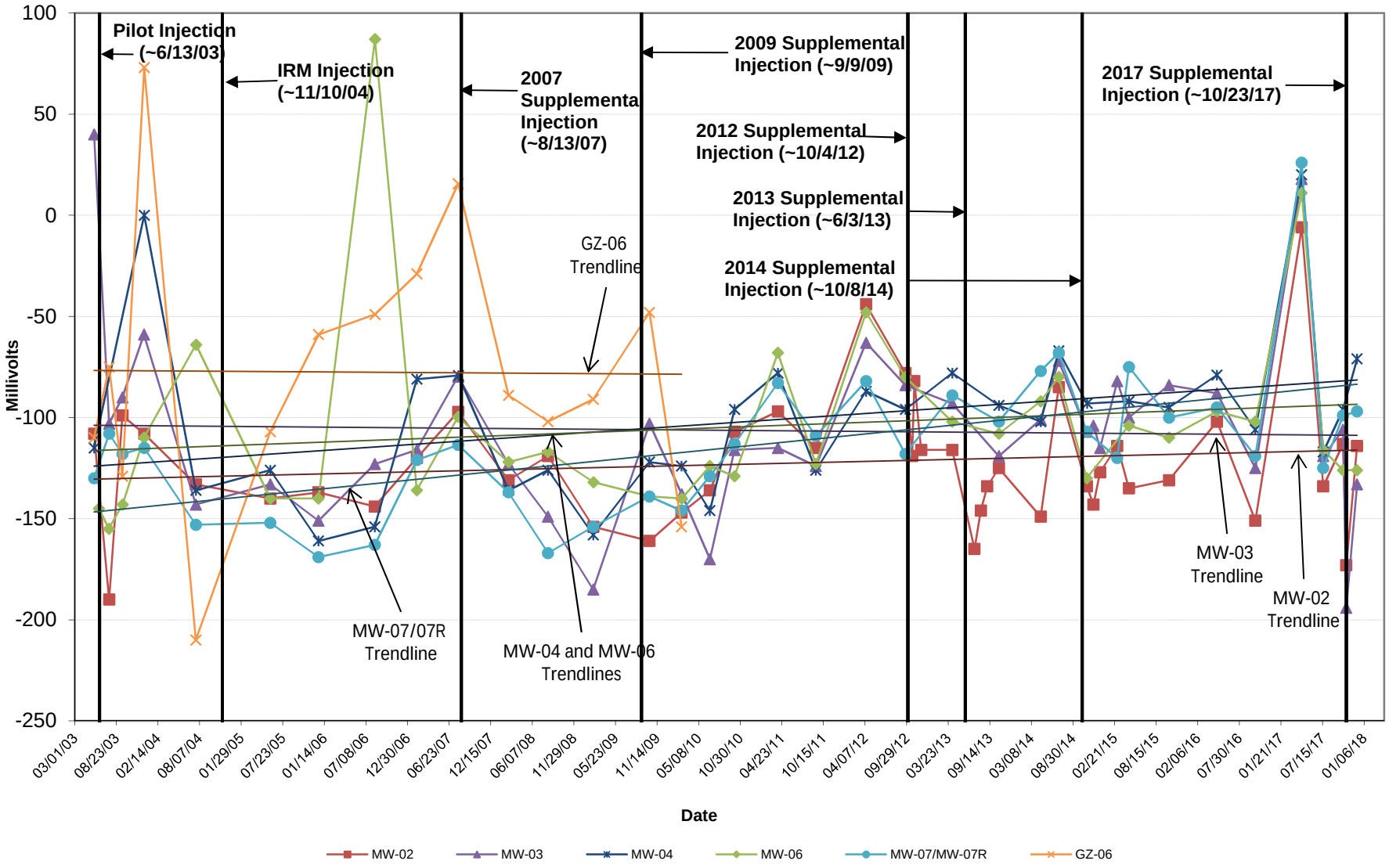


FIGURE 13
FORMER EMCA SITE
MW-02
Dissolved Oxygen vs Temperature



\\URSBUFFALO\Buffalo\Projects\11172730.00000\WORD\DRAFT\GW SAR Reports\Oct 2017 GW SAR\GW Data Plots_Time Scaled Long_Oct2017.xls

FIGURE 14
FORMER EMCA SITE
Oxidation-Reduction Potential



APPENDIX A

PLUMESTOP APPLICATION SUMMARY REPORT PREPARED BY REGENESIS REMEDIATION SERVICES AND PLUMESTOP INFORMATION

REGENESIS
REMEDIATION SERVICES
Technology-Based Solutions for the Environment

Global Headquarters
1011 Calle Sombra
San Clemente, CA 92673
Ph: (949) 366-8000
Fax: (949) 366-8090

12/06/2017 **REGENESIS Proposal No. MaD58612**

AECOM
257 W. Genesee St.
Suite 400
Buffalo, NY 14202

SUBJECT: Application Summary Report for Remedial Services at the Former EMCA facility site

Kevin,

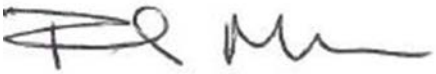
REGENESIS Remediation Services (RRS) has recently completed an *in-situ* injection application of PlumeStop™ Liquid Activated Carbon® (PlumeStop) at the Former EMCA facility site located at 609 Center Avenue, Mamaroneck, NY 10543. The goal of the remedial application was to remediate Freon 113, and associated daughter products Freon 123A and Freon 1113 contaminating the groundwater and soil at this location.

RRS mobilized product, support pickup truck, injection trailer, and personnel to the site to begin work over 10 (ten) days on 10/23/2017 – 11/03/2017. RRS staffed this project with an experienced Project Personnel who ensured a safe, successful injection application.

Please review the attached application summary page and injection log for more detail on the application.

RRS appreciates the opportunity to work at this site with AECOM. RRS will be available to interpret the field data as it is collected, or answer any questions. If you need additional information regarding the application process or attached field notes, please contact Paul Mansur 630.335.9563 or William Clogan 724.766.1811

Sincerely,



Paul Mansur
East Region Project Manager
REGENESIS Remediation Services

William Clogan
Staff Geoscientist
REGENESIS Remediation Services

REGENESIS
REMEDIATION SERVICES
Technology-Based Solutions for the Environment

Global Headquarters
1011 Calle Sombra
San Clemente, CA 92673
Ph: (949) 366-8000
Fax: (949) 366-8090

Application Summary Page

PLUME STOP
Liquid Activated Carbon

OVERVIEW

Client: AECOM
Client PM: Kevin Shanahan
RRS Project Manager: Paul Mansur

Site Address: 609 Centre, Ave., Mamaroneck, NY 10543
Project Name: Former EMCA site
Project Dates: 10/23/2017 to 11/03/2017

TREATMENT TECHNOLOGY

RRS employed PlumeStop to remediate the site area that encompasses MW-02, MW-03, and MW-06. PlumeStop is composed of very fine particles of activated carbon (1-2µm) suspended in water through the use of unique organic polymer dispersion chemistry. Once in the subsurface, the material behaves as a colloidal biomatrix binding to the aquifer matrix, rapidly removing contaminants from groundwater, and expediting permanent contaminant biodegradation.

This unique remediation technology accomplishes treatment with the use of highly dispersible, fast-acting, sorption-based technology which captures and concentrates dissolved-phase contaminants within its matrix-like structure. Once contaminants are sorbed onto the regenerative matrix, biodegradation processes achieve complete remediation at an accelerated rate.

RRS employed remediation design specifications as outlined in designs dated 08/24/2017.

APPLICATION

RRS applied the REGENESIS product PlumeStop utilizing the RRS injection trailer and borings installed by the drilling subcontractor. Mixing water was provided by a nearby hydrant located at the corner of Centre avenue and Ogden avenue. Using this water RRS mixed the PlumeStop into a 1,500 mg/l solution inside the dual batch mixing system containing 300-gallon tanks. Product was pumped from these tanks using a positive displacement electrically powered pump. The PlumeStop entered the subsurface through stainless-steel retractable screens (3-foot) or expendable tips. Throughout injections, pressures were observed generally between 0 and 20 pounds per square inch (PSI), with the exception of IB-2, IB-18, IB-22 experiencing high pressures due to clogged injection tooling. Injection flow rates were held generally between 2.00 and 2.70 gallons per minute (GPM), with the exception decreased flow rates in areas where surfacing occurred.

Injections were completed by pumping on one to four injection points at a time using the RRS injection trailer manifold system. Although pressure was observed at 100 PSI, the RRS trailer is equipped with a

REGENESIS REMEDIATION SERVICES
Technology-Based Solutions for the Environment

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pressure bypass valve that will re-route fluids back into the trailer tanks when downhole pressures reach 100 PSI in order to keep pressures at safe levels for field personnel. Product surfacing was observed during this application. Points IB-1, IB-3, IB-4. IB-6, IB-7, IB-8, IB-14, IB-16, IB-19, IB-21, and IB-22 had to be abandoned prior to their target volume, due to the inability to control surfacing while injecting at these locations. Prior to abandonment all intervals were attempted at these locations. Once all intervals were attempted and surfacing was deemed uncontrollable, remaining volumes were redistributed between IB-2, IB-5, IB-9, IB-10, IB-13, IB-18, and IB-20.

After injections were completed all soil borings were back filled with bentonite chips and patched with cold patch asphalt. Monitoring wells on-site were not flush at the commencement injections upon AECOM's request.

TREATMENT AREA MW-02, MW-03, and MW-06

A total of 30,606 gallons of PlumeStop was mixed and applied as a 1,500 mg/l solution, with a total of 9,600 pounds applied in the area.

Application Method: Direct push drilling with retractable injection screens — 3-feet screens and expendable tips
Injection Depth: 28 to 4 feet below ground surface
Number of Injection Points: 22

Deviations from Proposal:

1. IB-1, IB-2, IB-3, IB-4, IB-7, IB-8, IB-16, IB-18, IB-19, and IB-22 were offset from original boring location in order to attempt injecting at all intervals without surfacing.
2. IB-15 was relocated due to underground utilities and refusal in the adjacent area.
3. Volume was redistributed from points with surfacing issues into more accepting locations.

Please see attached Table 1 for details on injection flow rates and pressures observed.

PLUME STOP
Liquid Activated Carbon

AECOM - DOW

Plumestop Injection Summary Log

MW-02, MW-03, & MW-06 Area

Table 1

REGENESIS
REMEDIATION SERVICES
Technology-Based Solutions for the Environment

Injection Point	Date	Time	Injection Depth (feet)	Injection Pressure (psi)	Flow Rate (gpm)	Volume of PlumeStop Injected			Total gallons Per Location	Pounds of PlumeStop Injected Per Location	Comments	Injection Tooling
						Beginning Flow Meter (gal)	Ending Flow Meter (gal)	Gallons Injected Per Interval				
1	10/23/2017	13:52	28-25	18	2.04	0	182	182	1132	355		3-Foot Screen
	10/23/2017	15:22	25-22	17	2.21	182	367	185				
	10/23/2017	16:00	22-19	15	2.32	367	459	92				
	10/24/2017	8:29	22-19	15	2.25	459	548	89				
	10/24/2017	9:34	19-16	18	2.44	548	735	187				
	10/24/2017	10:56	16-13	0	2.30	735	919	184				
	10/24/2017	11:57	13-10	15	2.30	919	1018	99			Surfacing from asphalt in several spots in the area. Point stopped	
	11/2/2017	9:58	13-10	11	1.23	0	47	47			Surfacing from asphalt in the area	
	11/2/2017	10:09	10-7	12	1.30	47	53	6			Surfacing from asphalt in the area	
	11/2/2017	15:34	7-4	0	2.13	0	61	61			Point offset 2'. Surfacing from asphalt in the area. Point abandonded	
2	10/24/2017	14:41	28-25	20	2.12	0	182	182	1468	460		3-Foot Screen
	10/24/2017	16:03	25-22	16	2.16	182	364	182				
	10/24/2017	16:11	22-19	18	3.13	364	404	40				
	10/25/2017	7:57	22-19	100	0.00	404	404	0			Max pressure no flow due to clogged tooling. Point stopped and redrilled	
	10/25/2017	10:37	22-19	18	2.31	404	557	153			Point offset 2' towards IP-1	
	10/25/2017	12:00	19-16	10	2.09	557	742	185				
	10/25/2017	13:25	16-13	12	2.38	742	935	193				
	10/25/2017	15:30	13-10	10	1.89	935	1114	179				
	10/25/2017	16:31	10-7	10	2.47	1114	1234	120				
	10/26/2017	8:44	10-7	11	2.22	1234	1327	93				
	10/26/2017	10:05	7-4	8	2.30	1327	1468	141				
3	10/26/2017	11:30	28-25	20	2.32	0	182	182	1193	374		3-Foot Screen
	10/26/2017	13:02	25-22	18	2.12	182	364	182				
	10/26/2017	14:18	22-19	18	2.27	364	540	176			Surfacing from IP-2 boring and asphalt surrounding it	
	10/26/2017	15:49	19-16	10	1.84	540	728	188			Minor surfacing from asphalt near IP-2	
	10/26/2017	16:35	16-13	8	2.14	728	845	117			Minor surfacing from asphalt near IP-2 and IP-3	
	10/27/2017	8:07	16-13	10	2.49	845	881	36			Surfacing from asphalt in surounding areas. Point Stopped	
	11/1/2017	13:33	13-10	0	1.89	0	154	154			Point offset 1' SE. Surfacing out of asphalt in the area	
	11/1/2017	15:11	10-7	0	1.54	154	283	129			Surfacing from the asphalt in the area	
	11/1/2017	15:30	7-4	0	1.67	283	312	29			Unable to control surfacing from around the surounding area. Point abandonded	
4	10/23/2017	14:02	28-25	18	2.00	0	182	182	1325	416		3-Foot Screen
	10/23/2017	15:19	25-22	20	2.34	182	367	185				
	10/23/2017	16:00	22-19	20	2.49	367	476	109				
	10/24/2017	8:18	22-19	18	2.35	476	564	88				
	10/24/2017	9:27	19-16	18	2.21	564	736	172				
	10/24/2017	10:52	16-13	8	2.46	736	925	189				
	10/24/2017	12:48	13-10	9	2.17	925	1096	171			Surfacing from asphalt in several spots in the area. Point stopped	
	11/2/2017	10:50	10-7	7	1.34	0	120	120			Surfacing from asphalt in the surrounding area	
	11/2/2017	16:25	7-4	8	2.70	0	109	109			Point offset 1'. Surfacing from asphalt in the surrounding area. Point abandonded	
5	10/24/2017	10:52	28-25	18	2.51	0	182	182	1457	457		3-Foot Screen
	10/24/2017	12:18	25-22	10	2.08	182	372	190				
	10/24/2017	13:33	22-19	5	2.09	372	546	174				
	10/24/2017	14:56	19-16	0	2.09	546	728	182				
	10/24/2017	16:07	16-13	8	2.84	728	914	186				
	10/24/2017	16:10	13-10	11	3.43	914	932	18				
	10/25/2017	8:52	13-10	10	2.56	932	1109	177				
	10/25/2017	10:16	10-7	10	2.07	1109	1281	172				
	10/25/2017	10:27	7-4	8	2.13	1281	1307	26			Surfacing from ground surounding point. Point Stopped	
	11/1/2017	15:23	7-4	32	1.65	0	150	150			Surfacing from ground surounding point. Point abandoned	

PLUME STOP
Liquid Activated Carbon

AECOM - DOW

Plumestop Injection Summary Log

MW-02, MW-03, & MW-06 Area

Table 1

REGENESIS
REMEDIATION SERVICES
Technology-Based Solutions for the Environment

Injection Point	Date	Time	Injection Depth (feet)	Injection Pressure (psi)	Flow Rate (gpm)	Volume of PlumeStop Injected			Total gallons Per Location	Pounds of PlumeStop Injected Per Location	Comments	Injection Tooling
						Beginning Flow Meter (gal)	Ending Flow Meter (gal)	Gallons Injected Per Interval				
6	10/24/2017	13:26	28-25	15	2.26	0	182	182	993	311		3-Foot Screen
	10/24/2017	14:45	25-22	11	2.42	182	367	185				
	10/24/2017	15:44	22-19	12	2.28	367	548	181				
	10/24/2017	16:11	19-16	11	1.36	548	622	74				
	10/25/2017	8:29	19-16	5	2.93	622	735	113				
	10/25/2017	10:04	16-13	11	2.21	735	921	186				
	10/25/2017	10:21	13-10	8	2.30	921	965	44			Surfacing from asphalt in several spots in the area. Point Stopped	
	11/2/2017	8:52	13-10	12	1.30	0	12	12			Surfacing from asphalt in several spots in the area. Point Stopped	
	11/2/2017	12:45	10-7	10	1.50	0	9	9			Surfacing from asphalt in several spots in the area	
	11/2/2017	12:54	7-4	10	1.50	9	16	7			Surfacing from asphalt in several spots in the area. Point abandonded	
7	10/27/2017	10:15	28-25	26	2.32	0	184	184	1330	417		3-Foot Screen
	10/27/2017	11:33	25-22	18	2.31	184	350	166				
	10/27/2017	12:59	22-19	18	2.09	350	535	185				
	10/27/2017	13:50	19-16	12	2.41	535	616	81				
	10/30/2017	10:20	19-16	0	2.45	616	700	84				
	10/30/2017	11:53	16-13	12	2.02	700	875	175				
	10/30/2017	13:02	13-10	8	2.60	875	1050	175				
	10/30/2017	13:25	10-7	6	2.66	1050	1110	60			Surfacing from the asphalt in the area. Point Stopped	
	11/1/2017	16:04	10-7	7	1.50	0	8	8			Surfacing from the asphalt in the area. Point Stopped	
	11/2/2017	8:22	10-7	0	1.60	8	16	8			Surfacing from the asphalt in the area. Point Stopped	
	11/2/2017	14:58	7-4	0	1.30	0	204	204			Point offset 2'	
8	10/23/2017	14:05	28-25	18	2.19	0	186	186	1232	386		3-Foot Screen
	10/23/2017	15:25	25-22	11	2.30	186	368	182				
	10/23/2017	16:00	22-19	6	2.23	368	442	74				
	10/24/2017	8:33	22-19	18	2.15	442	543	101				
	10/24/2017	9:14	19-16	18	2.21	543	602	59			Unable to control surfacing from around the rod and surounding area. Point Stopped	
	11/1/2017	9:28	19-16	5	1.96	0	98	98				
	11/1/2017	11:00	16-13	0	2.05	98	278	180				
	11/1/2017	12:25	13-10	0	2.09	278	407	129			Injection tooling clogged	
	11/1/2017	13:17	10-7	0	1.98	407	455	48			Point offset 1' E. Surfacing from surounding area. Point Stopped	
	11/2/2017	15:56	7-4	10	2.14	0	175	175			Point offset another 1' E	
9	10/26/2017	13:59	28-25	15	2.51	0	184	184	1908	598		3-Foot Screen
	10/26/2017	15:22	25-22	12	2.11	184	372	188				
	10/26/2017	16:35	22-19	12	2.34	372	555	183				
	10/27/2017	9:15	19-16	8	2.41	555	704	149				
	10/27/2017	10:29	16-13	9	2.41	704	878	174			Surfacing from around the rod. Sealed with bentonite	
	10/27/2017	11:45	13-10	8	2.41	878	1050	172				
	10/27/2017	12:53	10-7	0	2.56	1050	1225	175				
	10/27/2017	13:51	7-4	0	2.44	1225	1388	163				
	11/2/2017	16:35	10-7	0	3.30	0	74	74			Volume redistribured into this point	
	11/3/2017	8:12	10-7	0	1.93	74	106	32				
	11/3/2017	11:29	7-4	0	1.59	106	520	414				
10	10/25/2017	10:24	25-22	20	2.39	0	182	182	1665	522	Point drilled to 25'. Not noticed until final lift on 10/26	3-Foot Screen
	10/25/2017	11:53	22-19	15	2.20	182	366	184				
	10/25/2017	13:33	19-16	12	2.26	366	545	179				
	10/25/2017	14:50	16-13	12	2.33	545	724	179				
	10/25/2017	16:08	13-10	12	2.40	724	890	166				
	10/25/2017	16:28	10-7	11	1.86	890	939	49				
	10/26/2017	9:17	10-7	0	2.53	939	1106	167				

PLUME STOP
Liquid Activated Carbon

AECOM - DOW

Plumestop Injection Summary Log

MW-02, MW-03, & MW-06 Area

Table 1

REGENESIS
REMEDIATION SERVICES
Technology-Based Solutions for the Environment

Injection Point	Date	Time	Injection Depth (feet)	Injection Pressure (psi)	Flow Rate (gpm)	Volume of PlumeStop Injected			Total gallons Per Location	Pounds of PlumeStop Injected Per Location	Comments	Injection Tooling
						Beginning Flow Meter (gal)	Ending Flow Meter (gal)	Gallons Injected Per Interval				
	10/26/2017	10:46	7-4	0	2.30	1106	1331	225			Surfacing from asphalt at the edge of the street.	
	10/26/2017	11:59	28-25	15	2.51	1331	1467	136			Point redrilled down same hole	
	11/3/2017	9:20	13-10	5	2.69	0	144	144			Volume redistributed into this point	Expendable tip
	11/3/2017	9:40	10-7	0	2.60	144	198	54			Surfacing from cracks in surrounding asphalt	
11	10/30/2017	11:24	28-25	16	2.76	0	175	175	1395	438		3-Foot Screen
	10/30/2017	12:39	25-22	10	2.34	175	348	173				
	10/30/2017	14:03	22-19	11	2.17	348	549	201				
	10/30/2017	15:39	19-16	8	2.26	549	700	151				
	10/30/2017	16:29	16-13	0	2.49	700	806	106				
	10/31/2017	8:15	16-13	0	2.35	806	875	69				
	10/31/2017	9:34	13-10	0	2.31	875	1050	175				
	10/31/2017	11:32	10-7	11	2.35	1050	1234	184			Surfacing from around the rod. Sealed with bentonite	
	10/31/2017	12:47	7-4	10	2.21	1234	1395	161			Surfacing from around the rod. Sealed with bentonite. Surfacing from nearby cracks in the surrounding asphalt	
12	10/26/2017	13:29	28-25	12	2.50	0	181	181	1395	438		3-Foot Screen
	10/26/2017	14:59	25-22	5	2.26	181	368	187				
	10/26/2017	16:16	22-19	11	2.16	368	554	186				
	10/26/2017	16:35	19-16	8	2.37	554	612	58				
	10/27/2017	8:49	19-16	10	2.58	612	716	104				
	10/27/2017	10:08	16-13	4	2.26	716	879	163				
	10/27/2017	11:18	13-10	5	2.29	879	1050	171				
	10/27/2017	12:37	10-7	0	2.33	1050	1225	175				
	10/27/2017	13:41	7-4	0	2.53	1225	1395	170				
13	10/30/2017	11:24	28-25	16	2.01	0	178	178	1630	511		3-Foot Screen
	10/30/2017	12:49	25-22	11	2.18	178	350	172				
	10/30/2017	14:04	22-19	12	2.08	350	525	175				
	10/30/2017	15:28	19-16	8	2.42	525	700	175				
	10/30/2017	16:29	16-13	0	2.35	700	852	152				
	10/31/2017	7:50	13-10	5	2.64	852	865	13				
	10/31/2017	8:57	13-10	0	2.60	865	1050	185				
	10/31/2017	10:28	10-7	0	2.57	1050	1234	184				
	10/31/2017	11:55	7-4	6	2.35	1234	1395	161				
	11/3/2017	11:28	10-7	0	1.96	198	433	235			Volume redistributed into this point	Expendable tip
14	10/23/2017	14:12	28-25	20	2.19	0	181	181	1365	428		3-Foot Screen
	10/23/2017	15:33	25-22	16	2.33	181	362	181				
	10/23/2017	16:00	22-19	12	2.21	362	442	80				
	10/24/2017	8:24	22-19	10	2.36	442	548	106				
	10/24/2017	9:29	19-16	10	2.51	548	734	186				
	10/24/2017	10:57	16-13	0	2.30	734	913	179				
	10/24/2017	12:20	13-10	5	2.00	913	1092	179				
	10/24/2017	13:55	10-7	8	2.29	1092	1282	190			Surfacing from around the rod. Sealed with bentonite	
	10/24/2017	14:46	7-4	8	2.60	1282	1360	78			Surfacing from asphalt in the area	
	10/25/2017	7:57	7-4	8	2.43	1360	1365	5			Point restarted and surfacing occurred immediately	
15	10/31/2017	14:46	28-25	12	2.55	0	175	175	1395	438	Point relocated 10' NW due to utilities and refusal in orginal location at 8'	3-Foot Screen
	10/31/2017	16:39	25-22	12	2.28	175	350	175				
	11/1/2017	9:13	22-19	11	2.53	350	525	175				
	11/1/2017	10:24	19-16	10	2.55	525	700	175				
	11/1/2017	11:57	16-13	11	2.41	700	875	175				
	11/1/2017	13:24	13-10	12	2.14	875	1050	175				
	11/1/2017	15:05	10-7	8	2.07	1050	1225	175				

PLUME STOP
Liquid Activated Carbon

AECOM - DOW

Plumestop Injection Summary Log

MW-02, MW-03, & MW-06 Area

Table 1

REGENESIS
REMEDIATION SERVICES
Technology-Based Solutions for the Environment

Injection Point	Date	Time	Injection Depth (feet)	Injection Pressure (psi)	Flow Rate (gpm)	Volume of PlumeStop Injected			Total gallons Per Location	Pounds of PlumeStop Injected Per Location	Comments	Injection Tooling
						Beginning Flow Meter (gal)	Ending Flow Meter (gal)	Gallons Injected Per Interval				
	11/1/2017	16:26	7-4	0	2.66	1225	1395	170				
16	10/31/2017	16:18	28-25	19	2.34	0	171	171	1239	389		3-Foot Screen
	10/31/2017	16:40	25-22	10	3.18	171	240	69				
	11/1/2017	8:38	25-22	12	2.78	240	350	110				
	11/1/2017	9:55	22-19	11	2.28	350	523	173				
	11/1/2017	11:15	19-16	12	2.22	523	700	177				
	11/1/2017	12:28	16-13	14	2.50	700	885	185				
	11/1/2017	14:08	13-10	11	2.13	885	1050	165				
	11/1/2017	15:06	10-7	10	2.47	1050	1198	148			Surfacing from the asphalt in the area	
	11/2/2017	8:13	10-7	11	1.98	1198	1211	13			Surfacing from the asphalt in the area	
	11/2/2017	12:18	7-4	0	1.04	0	28	28			Point offset 2'. Surfacing from the asphalt in the area. Point Abandonded	
17	10/30/2017	15:55	28-25	0	2.42	0	175	175	1395	438		3-Foot Screen
	10/30/2017	16:29	25-22	0	2.46	175	250	75				
	10/31/2017	8:26	25-22	11	2.36	250	353	103				
	10/31/2017	9:39	22-19	8	2.78	353	544	191				
	10/31/2017	11:20	19-16	0	2.64	544	700	156				
	10/31/2017	12:37	16-13	0	2.58	700	873	173				
	10/31/2017	14:23	13-10	0	2.55	873	1050	177				
	10/31/2017	15:45	10-7	0	2.55	1050	1223	173				
	10/31/2017	16:39	7-4	0	2.60	1223	1353	130				
	11/1/2017	8:07	7-4	0	2.66	1353	1395	42				
18	10/25/2017	13:04	28-25	16	2.21	0	192	192	1876	588		3-Foot Screen
	10/25/2017	14:31	25-22	11	2.23	192	368	176				
	10/25/2017	16:05	22-19	11	2.27	368	549	181			Surfacing from around the rod. Sealed with bentonite	
	10/25/2017	16:27	19-16	11	2.27	549	599	50				
	10/26/2017	10:39	16-13	11	2.27	599	917	318			Max pressure no flow due to clogged tooling. Point stopped and redrilled in same location	
	10/26/2017	11:33	13-10	5	2.14	917	1036	119			Unable to stop the surfacing from around the rod and cracks in asphalt. Point Stopped	
	11/1/2017	11:45	10-7	10	2.30	0	21	21			Surfacing from cracks in surrounding asphalt	
	11/2/2017	13:26	16-13	12	1.24	0	303	303			Point offset 2' NE. Volume redistributed into this location	
	11/2/2017	16:35	13-10	12	2.30	303	630	327				
	11/3/2017	9:17	10-7	18	2.34	630	789	159				
	11/3/2017	9:29	7-4	9	2.32	789	819	30			Surfacing from cracks in surrounding asphalt	
19	10/31/2017	13:42	28-25	0	2.54	0	177	177	1055	331		3-Foot Screen
	10/31/2017	14:49	25-22	0	2.79	177	350	173				
	10/31/2017	16:05	22-19	0	2.55	350	525	175				
	11/1/2017	9:18	19-16	10	2.64	525	700	175				
	11/1/2017	10:45	16-13	10	2.38	700	875	175				
	11/1/2017	11:19	13-10	10	2.48	875	949	74			Surfacing from cracks in surrounding asphalt	
	11/2/2017	9:11	13-10	10	1.33	0	56	56			Surfacing from cracks in surrounding asphalt	
	11/2/2017	11:56	10-7	8	1.10	0	11	11			Surfacing from cracks in surrounding asphalt	
	11/2/2017	12:03	7-4	0	1.00	11	12	1			Surfacing from cracks in surrounding asphalt	
	11/3/2017	10:24	16-13	10	1.81	0	56	38			Point offset 3'. Surfacing from cracks in surrounding asphalt. Point abandonded	
20	10/25/2017	12:09	28-25	4	1.80	0	183	183	1467	460		3-Foot Screen
	10/25/2017	13:47	25-22	0	2.01	183	366	183				
	10/25/2017	15:04	22-19	8	2.24	366	534	168				
	10/25/2017	16:28	19-16	0	2.40	534	718	184				
	10/26/2017	8:11	19-16	15	2.42	718	748	30				
	10/26/2017	9:36	16-13	10	2.50	748	932	184				
	10/26/2017	10:51	13-10	9	2.00	932	1106	174				

PLUME STOP Liquid Activated Carbon

AECOM - DOW

Plumestop Injection Summary Log

MW-02, MW-03, & MW-06 Area

Table 1

REGENESIS REMEDIATION SERVICES Technology-Based Solutions for the Environment

Injection Point	Date	Time	Injection Depth (feet)	Injection Pressure (psi)	Flow Rate (gpm)	Volume of PlumeStop Injected			Total gallons Per Location	Pounds of PlumeStop Injected Per Location	Comments	Injection Tooling
						Beginning Flow Meter (gal)	Ending Flow Meter (gal)	Gallons Injected Per Interval				
	10/26/2017	12:48	10-7	10	2.23	1106	1299	193			Surfacing from around the rod. Sealed with bentonite	
	10/26/2017	14:35	7-4	6	2.13	1299	1467	168				
21	10/26/2017	16:11	28-25	28	1.91	0	181	181	1388	435		3-Foot Screen
	10/26/2017	16:34	25-22	16	2.22	181	245	64				
	10/27/2017	8:54	25-22	15	2.07	245	358	113				
	10/27/2017	10:12	22-19	12	2.21	358	509	151				
	10/27/2017	11:52	19-16	5	2.17	509	700	191				
	10/27/2017	13:18	16-13	10	2.26	700	865	165				
	10/27/2017	13:46	13-10	12	2.19	865	892	27				
	10/30/2017	10:49	13-10	12	2.96	892	1051	159				
	10/30/2017	12:03	10-7	8	2.17	1051	1225	174				
	10/30/2017	13:44	7-4	8	2.40	1225	1388	163			Surfacing from around the rod. Sealed with bentonite. Surfacing from cracks in the asphalt	
22	10/30/2017	15:06	28-25	16	2.84	0	175	175	1303	409		3-Foot Screen
	10/30/2017	16:30	25-22	6	2.29	175	356	181				
	10/31/2017	10:11	22-19	45	1.29	356	525	169			Injection tooling partially clogged.	
	10/31/2017	11:33	19-16	10	2.51	525	709	184			Tooling cleaned and drilled back down same hole	
	10/31/2017	12:54	16-13	0	2.10	709	874	165				
	10/31/2017	14:00	13-10	10	2.48	874	1050	176				
	10/31/2017	14:47	10-7	10	2.12	1050	1145	95			Surfacing from cracks in surrounding asphalt	
	11/2/2017	9:24	10-7	9	1.23	0	40	40			Surfacing from cracks in surrounding asphalt	
	11/2/2017	14:02	7-4	8	1.30	0	118	118			offset 1' SW	

Total Project Volume PlumeStop (gal)	Total Project Pounds PlumeStop
30606	9600

PlumeStop® Liquid Activated Carbon™ Technical Description

PlumeStop Liquid Activated Carbon is an innovative groundwater remediation technology designed to rapidly remove and permanently degrade groundwater contaminants. PlumeStop is composed of very fine particles of activated carbon (1-2µm) suspended in water through the use of unique organic polymer dispersion chemistry. Once in the subsurface, the material behaves as a colloidal biomatrix, binding to the aquifer matrix, rapidly removing contaminants from groundwater, and expediting permanent contaminant biodegradation.

This unique remediation technology accomplishes treatment with the use of highly dispersible, fast-acting, sorption-based technology, capturing and concentrating dissolved-phase contaminants within its matrix-like structure. Once contaminants are sorbed onto the regenerative matrix, biodegradation processes achieve complete remediation at an accelerated rate.

Distribution of PlumeStop in water

To see a list of treatable contaminants with the use of PlumeStop, view the Range of Treatable Contaminants Guide.

Chemical Composition

- Water - CAS# 7732-18-5
- Colloidal Activated Carbon ≤2.5 - CAS# µm 7440-44-0
- Proprietary Additives

Properties

- Physical state: Liquid
- Form: Aqueous suspension
- Color: Black
- Odor: Odorless
- pH: 8 - 10

Storage and Handling Guidelines

Storage
Store in original tightly closed container
Store away from incompatible materials
Protect from freezing

Handling
Avoid contact with skin and eyes
Avoid prolonged exposure
Observe good industrial hygiene practices
Wash thoroughly after handling
Wear appropriate personal protective equipment

PlumeStop® Liquid Activated Carbon™ Technical Description

Applications

PlumeStop is easily applied into the subsurface through gravity-feed or low-pressure injection.

Health and Safety

Wash hands after handling. Dispose of waste and residues in accordance with local authority requirements. Please review the Material Safety Data Sheet for additional storage, usage, and handling requirements here: PlumeStop SDS.

REGENESIS

www.regenesis.com
1011 Calle Sombra, San Clemente CA 92673
949.366.8000

APPENDIX B

LOW FLOW GROUNDWATER PURGING/SAMPLING LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-02

Date: ~~7/18/2017~~ 10/9/17 Sampling Personnel: Megan Dascoli Company: AECOM/URS

Purging/ Sampling Device: Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser Initial Depth to Water: 6.12 Depth to Well Bottom: 12.05 Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171009 MW-02 Sample Time: 1150 QA/QC: TB20171009

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
1100	20.19	6.65	-121	3.63	10.5	1.39	300	5.75	
1105	20.30	6.64	-126	3.12	5.3	1.05			
1110	20.05	6.61	-123	2.82	2.8	0.99			
1115	19.97	6.58	-122	2.63	2.1	0.94			
1120	19.96	6.56	-121	2.57	2.1	0.94	300	5.75	
1125	~~19.96~~	hose came out							
1130	19.95	6.58	-102	~~2.52~~	1.8	1.38	350		
1135	19.94	6.54	-109	2.49	1.8	0.83	350	5.83	
1140	19.93	6.52	-113	2.48	1.6	0.76			
1145	19.89	6.51	-113	2.46	1.7	0.75			6.5
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-03

Date: ~~7/18/2017~~ 10/9/17 Sampling Personnel: Megan Dascoli Company: AECOM/URS

Purging/ Sampling Device: Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location: 13.5

Measuring Point: Below Top of Riser Initial Depth to Water: 5.97 Depth to Well Bottom: 13.98 Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171009 MW-03 Sample Time: 1010 QA/QC: TB20171009

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
925	19.40	6.81	-54	1.72	29.6	1.95	300	5.42	
930	19.65	6.47	-81	1.84	3.6	1.12			
935	19.63	6.46	-87	1.87	3.1	1.01			
940	19.62	6.45	-94	1.90	2.7	0.90	325	5.23	
945	19.59	6.46	-98	1.91	2.1	0.86			
950	19.59	6.47	-102	1.92	1.7	0.82			
955	19.61	6.48	-104	1.92	1.7	0.80	325	5.25	
1000	19.62	6.48	-106	1.93	1.8	0.77			
1005									4.5mg/L
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-04

Date: ~~7/18/2017~~ 10/9/17 Sampling Personnel: Megan Dascoli Company: AECOM/URS

Purging/ Sampling Device: Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location: 10.5

Measuring Point: Below Top of Riser Initial Depth to Water: 5.81 Depth to Well Bottom: 11.56 Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171009 MW-04 Sample Time: 1335 QA/QC: TB20171009

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
1250	22.27	6.76	-79	2.25	51.8	1.44	350	5.69	
1255	21.79	6.60	-86	2.40	25.7	0.89			
1300	21.71	6.58	-88	2.38	16.4	0.89	350		
1305	21.87	6.56	-91	2.40	5.1	0.81	290	6.21	
1310	21.90	6.56	-92	2.40	3.6	0.74			
1315	21.87	6.56	-93	2.40	2.0	0.71			
1320	21.83	6.56	-94	2.40	2.0	0.71	290	6.33	
1325	21.82	6.56	-95	2.39	2.1	0.71			
1330	21.80	6.56	-96	2.39	1.9	0.71			7.0
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-06

Date: ~~9/18/2017~~ 10/9/17 Sampling Personnel: Megan Dascoli Company: AECOM/URS

Purging/ Sampling Device: Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location: 18.0

Measuring Point: Below Top of Riser Initial Depth to Water: 6.47 Depth to Well Bottom: 18.42 Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171009 MW-06 Sample Time: 850 QA/QC: TB20171009

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
813	18.99	6.11	-91	1.63	11.4	2.30	200	6.71	
818	19.29	6.39	-114	1.59	3.2	1.24		6.71	
823	19.19	6.46	-119	1.63	2.0	1.17	250	6.75	
828	19.14	6.49	-123	1.68	0.9	1.12			
833	19.08	6.50	-125	1.71	0.4	1.11	260	6.77	
838	19.07	6.50	-125	1.74	0.2	1.11		6.78	
843	19.06	6.50	-125	1.75	0.0	1.08		6.79	
848	19.09	6.50	-126	1.76	0.0	1.06			5.0
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-07R

Date: ~~7/18/2017~~ 10/9/17 Sampling Personnel: Megan Dascoli Company: AECOM/URS

Purging/ Sampling Device: Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser Initial Depth to Water: 6.41 Depth to Well Bottom: 19.75 Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171009MW-07R Sample Time: 1445 QA/QC: TB20171009

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
1405	18.94	7.00	-57	3.00	7.1	2.54	300	6.47	
1410	20.16	6.51	-89	2.78	1.3	0.96			
1415	20.10	6.48	-93	2.78	0.6	0.87			
1420	19.95	6.47	-95	2.78	0.3	0.78	310	6.49	
1425	19.91	6.46	-97	2.79	0.2	0.75	310	6.49	
1430	19.90	6.46	-98	2.81	0.1	0.70	315	6.49	
1435	19.90	6.45	-99	2.81	0.1	0.70			
1440									8 mg/l
1445									
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft, 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cy} = \pi r^2 h$)

Remarks:

EMCA
Mamaroneck, NY
Date: ~~7/18/17~~ 10/9/17

Well ID	DTP	DTW 4/17	DTB 4/17	DTW	DTB	Comments
GZ-03	x	5.32	8.92	6.77	8.97	2-3/4" Concrete pad is crumbling
GZ-06	x	6.85	15.21	NC	NC	locked, bolt hitter drift twt
MW-01	x	3.94	7.88	5.94	7.75	2-½"
MW-02	x	4.96	12.04	6.12	12.05	1 9/16" 1 5/8"
MW-03	x	5.42	13.95	5.97	13.98	1 9/16" 1 5/8" @920
MW-04	x	5.11	11.59	5.81	11.50	1 9/16"
MW-05	x	4.58	15.21	4.94	15.24	2-½"
MW-06	x	5.55	18.45	6.47	18.42	2-3/4" Road box is not concreted in
MW-07R	x	5.52	12.28	6.41	19.75	2-3 mm in 4Q16, DTB= 17'
BM D	x	10.43	11.15	10.34	N/C	current moving too fast for DTB

N/C not collected

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-02

Date: 10/23/2017 Sampling Personnel: Megan Dascoli Company: AECOM/URS

Purging/ Sampling Device: Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser Initial Depth to Water: Not Collected Depth to Well Bottom: Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171023 MW-02 Sample Time: 12:25 QA/QC: N/A

Sample Parameters: Sampled by Passive Diffusion Bag at 9:05am: Freon 113, 123a, 1113; Methane;
Sampled by low flow peri-pump at 12:25: Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
11:45	20.77	6.92	-151	2.67	12.2	6.39	160		
11:50	20.51	6.91	-154	2.56	4.9	4.05	210		
11:55	20.38	6.91	-156	2.49	2.0	3.10			
12:00	20.2	6.90	-162	2.49	1.9	2.96	250		
12:05	20.10	6.91	-168	2.45	0.3	2.63			
12:10	20.03	6.91	-170	2.45	0.0	2.60	260		
12:15	19.94	6.90	-172	2.45	0.0	2.46			
12:20	20.01	6.90	-173	2.44	0.0	2.39			
12:25	Sample								**6.5**
Tolerance:	**---**	**0.1**	**+ or - 10**	**3%**	**10%**	**10%**	**---**		

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-03

Date: 10/23/2017 Sampling Personnel: Megan Dascoli & John Crespo Company: AECOM/URS

Purging/ Sampling Device: Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser Initial Depth to Water: Not Collected Depth to Well Bottom: Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171023 MW-03 Sample Time: 8:50 QA/QC: N/A

Sample Parameters: Sampled by Passive Diffusion Bag at 8:10 am: Freon 113, 123a, 1113; Methane;
Sampled by low flow peri-pump at 8:50 am: Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
8:15	18.72	6.54	-177	1.89	4.8	5.91	175		
8:20	18.98	6.30	-163	1.97	1.6	3.55	200		
8:25	18.97	6.38	-170	1.96	1.2	2.88	200		
8:30	19.01	6.55	-179	1.96	0.5	2.89			
8:35	19.06	6.68	-188	1.96	0.0	2.87	200		
8:40	19.09	6.72	-189	1.96	0.3	2.71	200		
8:45	19.11	6.74	-194	1.95	0.0	2.84			
8:50	Sampled								**5.5**
Tolerance:	**---**	**0.1**	**+ or - 10**	**3%**	**10%**	**10%**	**---**		

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-02

Date: ~~7/18/2017~~ 12/7/17 Sampling Personnel: Megan Dascoli + John Crego Company: AECOM/URS

Purging/ Sampling Device: + PDB for VOA vials Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser Initial Depth to Water: 5.87 Depth to Well Bottom: Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171207MW-02 Sample Time: 1130 - Freon + Methane (3) (2) 12:28 - other parameters QA/QC:

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC
Samples DUP

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	~~Ferrous Iron~~ X (mg/l)
1155	13.81	6.80	-72	3.33	>1000	9.26	240	—	—
1200	15.21	6.47	-98	2.48	977	0.00	—	—	—
1205	15.53	6.46	-106	2.31	407	0.0	250	—	—
1210	15.90	6.45	-111	2.20	238	0.0	—	5.86	—
1215	15.86	6.44	-112	2.19	250	0.0	275	5.68	—
1220	16.06	6.44	-114	2.12	272	0.0	250	—	—
1225	16.17	6.44	-114	2.12	280	0.0	—	—	—
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

* Field Test for Ferrous Iron not performed b/c purge water was black + color change from iron not visible.

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-03

Date: ~~12/18/2017~~ 12/7/17 Sampling Personnel: Megan Dascoli + J Crespo Company: AECOM/URS

Purging/ Sampling Device: PDB - VOC + Methane; Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser Initial Depth to Water: 6.71 Depth to Well Bottom: Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters): 3 Freon / 2 Methane

Sample ID: 20171207MW-03 Sample Time: 730 - ~~VOC~~ Methane; 817 - other parameters QA/QC:

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
740	11.20	6.53	-72	1.67	>1000	4.5	235	-	-
7:45	15.89	6.46	-105	1.58	>1000	0.0		-	-
7:50	16.28	6.48	-117	1.52	951	0.0		-	-
7:55	16.46	6.49	-125	1.54	671	0.0	280	-	-
8:00	16.53	6.49	-129	1.54	426	0.0	250	-	-
8:05	16.48	6.49	-131	1.54	287	0.0		-	-
8:10	16.58	6.57	-132	1.53	255	0.0	250	-	-
8:15	16.53	6.55	-133	1.53	245	0.0	-	-	-
		Attempted Ferrous iron, but water was black, so Field test based on color didn't work							
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks: Black water throughout

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-04

Date: ~~7/18/2017~~ 12/7/17 Sampling Personnel: Megan Dascoli + John Crespo Company: AECOM/URS

Purging/ Sampling Device: Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser Initial Depth to Water: 4.69 Depth to Well Bottom: Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171207MW-04 Sample Time: 1320 Freon+Methane 14:03 - others QA/QC:

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC
Ferrous Iron = 4.5

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
13:30	14.94	6.61	-38	1.21	643	4.39	225	-	-
13:35	15.95	6.52	-54	1.16	104	0.0		5.96	-
13:40	16.03	6.51	-60	1.17	34.1	0.0		-	-
13:45	16.14	6.52	-65	1.18	27.4	0.0	275	-	-
1350	16.12	6.51	-67	1.19	19.2	0.0	-	-	-
13:55	16.14	6.52	-70	1.20	18.1	0.0	-	-	-
1400	16.17	6.51	-71	1.20	17.0	0.0	275	-	4.5
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks: Manhole is loose in pavement
Riser is too high / manhole sank - need to cut it down

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-06

Date: 12/7/17 ~~7/13/2017~~ Sampling Personnel: Megan Dascoli + John Crespo Company: AECOM/URS

Purging/ Sampling Device: Passive Diffusion bag / Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser Initial Depth to Water: 6.28 Depth to Well Bottom: Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20170120 7MW-06 Sample Time: 1025 Freon + Methane (3) (20) / 1110 - other parameters QA/QC:

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
1035	13.95	6.71	-33	1.39	>1000	5.06	300	-	-
1040	15.04	6.61	-115	1.65	>1000	0.00	240	-	-
1045	15.09	6.59	-119	1.66	>1000	0.00	240	-	-
1050	15.23	6.57	-122	1.65	>1000	0.00	-	-	-
1055	15.25	6.56	-123	1.65	>1000	0.00	230	6.44	
1100	15.19	6.55	-125	1.65	>1000	0.00	-	-	-
1105	15.20	6.54	-126	1.64	>1000	0.00	-	6.42	-
1110									
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks: * Ferrous Iron field test not able to be performed b/c purge water is black

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-07R

Date: ~~7/18/2017~~ 12/7/17 Sampling Personnel: Megan Dascoli + JC Company: AECOM/URS

Purging/ Sampling Device: + PDB for Freon + Methane Low Flow/ Peristaltic Pump- Geopump Tubing Type: HDPE & Silicone Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser Initial Depth to Water: 6.29 Depth to Well Bottom: Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20171207 MW-07R Sample Time: 905 - Freon + Methane 1000 - other parameters QA/QC:

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate, alkalinity, hardness, nitrogen-nitrate, TOC, total iron- TestAmerica, Edis
Ferrous Iron is field test only, don't put on CoC

PURGE PARAMETERS

TIME	TEMP (°C)	pH	ORP (mV)	COND. (mS/cm)	TURB. (NTU)	DISS. O_2 (mg/l)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)	Ferrous Iron (mg/l)
920	12.15	6.21	-52	2.49	55.1	6.82	150		—
925	13.93	6.30	-74	2.56	60.7	0.0	150		
930	14.69	6.31	-82	2.62	21.8	0.0	180		
935	15.09	6.32	-87	2.61	14.6	0.0	180	6.35	
940	15.41	6.33	-92	2.61	13.4	0.0			
945	15.53	6.33	-94	2.62	9.8	0.0			
950	15.66	6.33	-96	2.64	7.7	0.0	200		
955	15.77	6.41	-97	2.64	4.5	0.0			
1005									7.10
Tolerance:	---	0.1	+ or - 10	3%	10%	10%	---		

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks: Water is clear

EMCA
Mamaroneck, NY
Date: 7/18/17

12/7/17

Well ID	DTP	DTW 4/17	DTB 4/17	DTW	DTB	Comments
GZ-03	x	5.32	8.92	6.29	8.98	Concrete pad is crumbling
GZ-06	x	6.85	15.21	7.89	15.18	
MW-01	x	3.94	7.88	5.01	7.75	
MW-02	x	4.96	12.04	5.87	NC	PDB deployed
MW-03	x	5.42	13.95	6.71	NC	PDB deployed
MW-04	x	5.11	11.59	4.69	NC	PDB deployed
MW-05	x	4.58	15.21	5.09	15.21	
MW-06	x	5.55	18.45	6.28	NC	PDB deployed ~~Road box is not concreted in~~
MW-07R	x	5.52	12.28	6.29	NC	PDB deployed ~~in 4Q16, DTB= 17'~~
BM D	x	10.43	11.15	10.61	10.8	

APPENDIX C

HISTORICAL ANALYTICAL DATA SUMMARY

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-03	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20070801GZ-03V11N	GZ06_52103	GZ06	GZ06-091703	GZ-06-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/01/07	05/21/03	07/23/03	09/17/03	12/18/03
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	5.0 U	10 U	5.0 U	5.0 U
Benzene	UG/L	1	NA	5.0 U	10 U	5.0 U	5.0 U
Bromodichloromethane	UG/L	50	NA	1.0 U	2 U	1.0 U	1.0 U
Bromoform	UG/L	50	NA	4.0 U	8 U	4.0 U	4.0 U
Bromomethane	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	R	R	R	R
Carbon Disulfide	UG/L	60	NA	5.0 U	10 U	5.0 U	5.0 U
Carbon Tetrachloride	UG/L	5	NA	2.0 U	4 U	2.0 U	2.0 U
Chlorobenzene	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
Chloroethane	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
Chloroform	UG/L	7	NA	5.0 U	10 U	5.0 U	5.0 U
Chloromethane	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	0 U	0 U	5.4 NJ	0 U
Dibromochloromethane	UG/L	50	NA	5.0 U	10 U	5.0 U	5.0 U
1,1-Dichloroethane	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
1,2-Dichloroethane	UG/L	0.6	NA	2.0 U	4 U	2.0 U	2.0 U
1,1-Dichloroethene	UG/L	5	NA	0.8 J	1.5 J	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
1,2-Dichloropropane	UG/L	1	NA	1.0 U	2 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	UG/L	0.4	NA	5.0 U	10 U	5.0 U	5.0 U
trans-1,3-Dichloropropene	UG/L	0.4	NA	5.0 U	10 U	5.0 U	5.0 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-03	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20070801GZ-03V11N	GZ06_52103	GZ06	GZ06-091703	GZ-06-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/01/07	05/21/03	07/23/03	09/17/03	12/18/03
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	4.0 U	8 U	4.0 U	4.0 U
2-Hexanone	UG/L	50	NA	5.0 U	10 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	UG/L	-	NA	5.0 U	10 U	5.0 U	5.0 U
Methylene Chloride	UG/L	5	NA	3.0 U	6 U	3.0 U	3.0 U
Styrene	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	UG/L	5	NA	1.0 U	2 U	1.0 U	1.0 U
Tetrachloroethene	UG/L	5	NA	0.6 J	2 U	0.5 J	1.0 U
1,1,1-Trichloroethane	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
1,1,2-Trichloroethane	UG/L	1	NA	3.0 U	6 U	3.0 U	3.0 U
Trichloroethene	UG/L	5	NA	1.0 U	2 U	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	100	230	74	5.0 U
Toluene	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
Vinyl Chloride	UG/L	2	NA	5.0 U	10 U	5.0 U	5.0 U
Xylene (total)	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	20	41	26	0.7 J
Dissolved Gases							
Ethane	UG/L	-	NA	10 U	5 U	10 U	5.0 U
Ethene	UG/L	-	NA	10 U	5 U	10 U	5.0 U
Methane	UG/L	-	5.0 U	140	98	89	5.9
Total Metals							
Iron	UG/L	300	NA	2,390	866	517 J	173

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-03	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20070801GZ-03V11N	GZ06_52103	GZ06	GZ06-091703	GZ-06-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/01/07	05/21/03	07/23/03	09/17/03	12/18/03
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	2,290	778	583 J	85.3 B
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	559	474	477 J	218
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	0.1 U	0.1 U	0.1 U	0.1 U
Nitrogen, Kjeldahl, Total	MG/L	-	NA	0.5 U	0.7	1.3	0.57
Nitrogen, Nitrate	MG/L	10	NA	0.1 U	NA	0.58	0.1 U
Nitrogen, Nitrite	MG/L	1	NA	0.1 U	NA	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	0.12 J	NA	NA
Sulfate	MG/L	250	15.8	25.2	27.5	32.4	5.0 U
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	2.8	9.6	0.25	0.03
Ferric Iron (lab)	MG/L	-	NA	0.1 U	0.1 U	0.52	0.143
Fluoride	MG/L	1.5	NA	0.1 U	0.1 U	0.1 U	0.32

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:17 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-03	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20070801GZ-03V11N	GZ06_52103	GZ06	GZ06-091703	GZ-06-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/01/07	05/21/03	07/23/03	09/17/03	12/18/03
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	5 U	5 U	NA	5 U
Oil & Grease	MG/L	-	NA	NA	NA	R	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.52	0.76	0.5	0.48	6.86
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	98.5	-110	-75	-129	73
pH	S.U.	-	6.05	NA	NA	NA	NA
Specific Conductance	MS/CM	-	0.599	2.27	1.99	1.98	1.11
Temperature	DEG C	-	21.6	NA	NA	NA	NA
Turbidity	NTU	-	28	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:17 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			GZ06	GZ-06	MW-GZ-06V08N	GZ-0608N	20061117GZ-0608
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/15/06	11/17/06
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	24	15	10 U	13	2.0 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			GZ06	GZ-06	MW-GZ-06V08N	GZ-0608N	20061117GZ-0608
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/15/06	11/17/06
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	100 J	9.0 J	10 U	74	2.0 J
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	36	4.0 J	2.0 J	23	2.0 J
Dissolved Gases							
Ethane	UG/L	-	NA	50 U	NA	NA	NA
Ethene	UG/L	-	NA	50 U	NA	NA	NA
Methane	UG/L	-	48	310	74	140	180
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:17 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			GZ06	GZ-06	MW-GZ-06V08N	GZ-0608N	20061117GZ-0608
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/15/06	11/17/06
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	1,610	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	20.8	14.2	31.7	23.2	25.1
Sulfide	MG/L	0.05	1.0 U	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	1.00 U	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			GZ06	GZ-06	MW-GZ-06V08N	GZ-0608N	20061117GZ-0608
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/15/06	11/17/06
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	1.15	0.11	0.03	5.67	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-210	-107	-59	-49	NA
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	5.25	1.43	1.16	1.28	NA
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20061117GZ0608FD	20070207GZ-06V08N	20070731GZ-06V08	20080228GZ06V08	20080812GZ06V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/17/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.0 J	1.0 J	2.0 J	10 U	10 U
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20061117GZ0608FD	20070207GZ-06V08N	20070731GZ-06V08	20080228GZ06V08	20080812GZ06V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/17/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	2.0 J	14	13	10 UJ	10 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	2.0 J	4.0 J	10	10 U	10 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	210	360	23	5,900	880
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20061117GZ0608FD	20070207GZ-06V08N	20070731GZ-06V08	20080228GZ06V08	20080812GZ06V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/17/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	25.4	29.3	50.4	5 U	28.1
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20061117GZ0608FD	20070207GZ-06V08N	20070731GZ-06V08	20080228GZ06V08	20080812GZ06V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/17/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	4.17	1.18	4.1	0.91
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-29	15.6	-89.0	-102
pH	S.U.	-	NA	NA	6.22	6.15	6.31
Specific Conductance	MS/CM	-	NA	3.06	1.671	0.89	1.59
Temperature	DEG C	-	NA	NA	NA	8.91	17.5
Turbidity	NTU	-	NA	NA	NA	1,000	18

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	MW-01	MW-02	MW-02
Sample ID			20090218GZ-06V10N	20100225GZ-06V14N	20070801MW-01V08N	MW02-5-20-03	MW02-5-20-03DUP
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	02/25/10	08/01/07	05/20/03	05/20/03
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	NA	140 J	130 J
Benzene	UG/L	1	NA	NA	NA	50 U	25 U
Bromodichloromethane	UG/L	50	NA	NA	NA	10 U	5.0 U
Bromoform	UG/L	50	NA	NA	NA	40 U	20 U
Bromomethane	UG/L	5	NA	NA	NA	50 U	25 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	R	R
Carbon Disulfide	UG/L	60	NA	NA	NA	50 U	25 U
Carbon Tetrachloride	UG/L	5	NA	NA	NA	20 U	10 U
Chlorobenzene	UG/L	5	NA	NA	NA	50 U	25 U
Chloroethane	UG/L	5	NA	NA	NA	50 U	25 U
Chloroform	UG/L	7	NA	NA	NA	50 U	25 U
Chloromethane	UG/L	5	NA	NA	NA	50 U	25 U
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	1 UJ	20 U	0 U	0 U
Dibromochloromethane	UG/L	50	NA	NA	NA	50 U	25 U
1,1-Dichloroethane	UG/L	5	NA	NA	20 U	50 U	25 U
1,2-Dichloroethane	UG/L	0.6	NA	NA	20 U	20 U	10 U
1,1-Dichloroethene	UG/L	5	NA	NA	20 U	4.4 J	5.1 J
cis-1,2-Dichloroethene	UG/L	5	NA	NA	250	50 U	25 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	4.0 J	50 U	25 U
1,2-Dichloropropane	UG/L	1	NA	NA	NA	10 U	5.0 U
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	50 U	25 U
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	50 U	25 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	MW-01	MW-02	MW-02
Sample ID			20090218GZ-06V10N	20100225GZ-06V14N	20070801MW-01V08N	MW02-5-20-03	MW02-5-20-03DUP
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	02/25/10	08/01/07	05/20/03	05/20/03
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	40 U	20 U
2-Hexanone	UG/L	50	NA	NA	NA	50 U	25 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	50 U	25 U
Methylene Chloride	UG/L	5	NA	NA	NA	30 U	15 U
Styrene	UG/L	5	NA	NA	NA	50 U	25 U
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	10 U	5.0 U
Tetrachloroethene	UG/L	5	NA	NA	8.0 J	10 U	5.0 U
1,1,1-Trichloroethane	UG/L	5	NA	NA	20 U	50 U	25 U
1,1,2-Trichloroethane	UG/L	1	NA	NA	20 U	30 U	15 U
Trichloroethene	UG/L	5	NA	NA	5.0 J	10 U	5.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	1 UJ	20 U	710	880
Toluene	UG/L	5	NA	NA	NA	50 U	25 U
Vinyl Chloride	UG/L	2	NA	NA	5.0 J	50 U	25 U
Xylene (total)	UG/L	5	NA	NA	NA	50 U	25 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	1 U	20 U	34 J	40
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	5.0 U	5.0 U
Ethene	UG/L	-	NA	NA	NA	5.0 U	5.0 U
Methane	UG/L	-	8,700	5,000	98	26	32
Total Metals							
Iron	UG/L	300	NA	NA	NA	27,800	28,300

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	MW-01	MW-02	MW-02
Sample ID			20090218GZ-06V10N	20100225GZ-06V14N	20070801MW-01V08N	MW02-5-20-03	MW02-5-20-03DUP
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	02/25/10	08/01/07	05/20/03	05/20/03
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	27,900	28,200
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	338	338
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	3.3	3.4
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	6.6	6.2
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	0.15	0.16
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 UJ	8.4	39.2	44.0	46.0
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	25.3	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	2.5	3
Fluoride	MG/L	1.5	NA	NA	NA	0.28	0.3

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported at tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	MW-01	MW-02	MW-02
Sample ID			20090218GZ-06V10N	20100225GZ-06V14N	20070801MW-01V08N	MW02-5-20-03	MW02-5-20-03DUP
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	02/25/10	08/01/07	05/20/03	05/20/03
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	5 U	5 U
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.36	0.0	0.99	0.36	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-91	-154	95.4	-108	NA
pH	S.U.	-	6.12	6.73	6.25	NA	NA
Specific Conductance	MS/CM	-	2.13	5.49	1.755	1.68	NA
Temperature	DEG C	-	9.24	7.23	NA	NA	NA
Turbidity	NTU	-	16	300	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:19 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP-7_22_03	MW02-7_22_03	MW02-091803	MW-02-121803	MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/03	07/22/03	09/18/03	12/18/03	07/22/04
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	R	R	5.0 U	5.0 U	NA
Benzene	UG/L	1	50 U	50 U	5.0 U	5.0 U	NA
Bromodichloromethane	UG/L	50	10 U	10 U	1.0 U	1.0 U	NA
Bromoform	UG/L	50	40 U	40 U	4.0 U	4.0 U	NA
Bromomethane	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R	R	NA
Carbon Disulfide	UG/L	60	50 U	50 U	5.0 U	5.0 U	NA
Carbon Tetrachloride	UG/L	5	20 U	20 U	2.0 U	2.0 U	NA
Chlorobenzene	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
Chloroethane	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
Chloroform	UG/L	7	50 U	50 U	5.0 U	5.0 U	NA
Chloromethane	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	0 U	0 U	14
Dibromochloromethane	UG/L	50	50 U	50 U	5.0 U	5.0 U	NA
1,1-Dichloroethane	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
1,2-Dichloroethane	UG/L	0.6	20 U	20 U	2.0 U	2.0 U	NA
1,1-Dichloroethene	UG/L	5	8.2 J	7.5 J	2.0 U	2.0 U	NA
cis-1,2-Dichloroethene	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
trans-1,2-Dichloroethene	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
1,2-Dichloropropane	UG/L	1	10 U	10 U	1.0 U	1.0 U	NA
cis-1,3-Dichloropropene	UG/L	0.4	50 U	50 U	5.0 U	5.0 U	NA
trans-1,3-Dichloropropene	UG/L	0.4	50 U	50 U	5.0 U	5.0 U	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP-7_22_03	MW02-7_22_03	MW02-091803	MW-02-121803	MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/03	07/22/03	09/18/03	12/18/03	07/22/04
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Ethylbenzene	UG/L	5	40 U	3.4 J	4.0 U	4.0 U	NA
2-Hexanone	UG/L	50	50 U	50 U	5.0 U	5.0 U	NA
4-Methyl-2-Pentanone	UG/L	-	50 U	50 U	5.0 U	5.0 U	NA
Methylene Chloride	UG/L	5	30 U	30 U	3.0 U	3.0 U	NA
Styrene	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
1,1,2,2-Tetrachloroethane	UG/L	5	10 U	10 U	1.0 U	1.0 U	NA
Tetrachloroethene	UG/L	5	10 U	10 U	1.0 U	1.0 U	NA
1,1,1-Trichloroethane	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
1,1,2-Trichloroethane	UG/L	1	30 U	30 U	3.0 U	3.0 U	NA
Trichloroethene	UG/L	5	10 U	10 U	1.0 U	1.0 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1,000	1,000	54	12	21 J
Toluene	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
Vinyl Chloride	UG/L	2	50 U	50 U	5.0 U	5.0 U	NA
Xylene (total)	UG/L	5	7.1 J	11 J	5.0 U	5.0 U	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	40 J	41 J	7.8	3.3 J	4 J
Dissolved Gases							
Ethane	UG/L	-	5 U	5 U	50 U	25 U	NA
Ethene	UG/L	-	5 U	5 U	50 U	25 U	NA
Methane	UG/L	-	54	52	410	320	140
Total Metals							
Iron	UG/L	300	30,100	30,900	63,800 J	69,000	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP-7_22_03	MW02-7_22_03	MW02-091803	MW-02-121803	MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/03	07/22/03	09/18/03	12/18/03	07/22/04
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Dissolved Metals							
Iron	UG/L	300	30,500	30,500	60,900 J	69,300	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	307	283	839	769	238
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	4.1	3.8	11.5	11.9	NA
Nitrogen, Kjeldahl, Total	MG/L	-	6.6	6.1	17.1	16.9	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1	0.1 U	0.1 U	NA
Nitrogen, Nitrite	MG/L	1	0.1 U	0.1 U	0.1 U	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	32.3	32.5	4.80	5.0 U	15.2
Sulfide	MG/L	0.05	NA	NA	NA	NA	1.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	25.7	28.0	49.3	6.3	NA
Ferric Iron (lab)	MG/L	-	4.4	2.9	48.3	62.7	NA
Fluoride	MG/L	1.5	0.37	0.39	0.3	0.31	0.294

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP-7_22_03	MW02-7_22_03	MW02-091803	MW-02-121803	MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/03	07/22/03	09/18/03	12/18/03	07/22/04
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Miscellaneous Parameters							
TPH	MG/L	-	5 U	5 U	NA	5 U	NA
Oil & Grease	MG/L	-	NA	NA	5 U	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.26	0.53	0 U	0.91
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-190	-99	-108	-133
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	NA	1.65	3.17	3.28	2.34
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:19 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			MW-02	MW-02V06N	MW-02V15N	20061117MW02VISN	20070207MW-02V06N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	11/17/06	02/07/07
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	120	18	200	21	84
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			MW-02	MW-02V06N	MW-02V15N	20061117MW02VISN	20070207MW-02V06N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	11/17/06	02/07/07
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1,200	110	890	100	800
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	86 J	15	110	10	95
Dissolved Gases							
Ethane	UG/L	-	100 U	NA	NA	NA	NA
Ethene	UG/L	-	100 U	NA	NA	NA	NA
Methane	UG/L	-	2,000	5,800	5,500	4,300	6,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			MW-02	MW-02V06N	MW-02V15N	20061117MW02VISN	20070207MW-02V06N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	11/17/06	02/07/07
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	25.2	5.0 U	27.1	5.0 U	15.9
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			MW-02	MW-02V06N	MW-02V15N	20061117MW02VISN	20070207MW-02V06N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	11/17/06	02/07/07
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	0 U	4.92	NA	1.56
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-140	-137	-144	NA	-120
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.19	2.51	1.55	NA	1.77
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20070731MW-02V15N	20080228MW02V15N	20080812MW02V10N	20090218MW-02V10N	20091013MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	61	120 J	160	81 J	300
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20070731MW-02V15N	20080228MW02V15N	20080812MW02V10N	20090218MW-02V10N	20091013MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	290	830 J	700	1,300	1,200 D
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	40	72	38 J	34 J	51
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	2,900	6,400	6,200	8,000	6,100
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20070731MW-02V15N	20080228MW02V15N	20080812MW02V10N	20090218MW-02V10N	20091013MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	27.6	23.2	47.9	35.2 J	36.9
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20070731MW-02V15N	20080228MW02V15N	20080812MW02V10N	20090218MW-02V10N	20091013MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.31	2.87	0 U	0 U	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-97.2	-131	-119	-154	-161
pH	S.U.	-	6.39	6.38	6.40	6.26	6.16
Specific Conductance	MS/CM	-	2.357	2.18	2.14	2.55	2.09
Temperature	DEG C	-	NA	10.5	18.9	11.23	18.88
Turbidity	NTU	-	NA	28	3	5	9.4

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20100225MW-02V08N	20100624MW-02V08N	20101006MW-02V08N	20110406MW-02V08N	20110913MW02V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	92 J	240	180	110 J	180
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20100225MW-02V08N	20100624MW-02V08N	20101006MW-02V08N	20110406MW-02V08N	20110913MW02V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	76 J	670	580	920	490
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	6.1	37	26	33 J	26
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	7,500	8,400	6,200	10,000	5,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	60,400

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20100225MW-02V08N	20100624MW-02V08N	20101006MW-02V08N	20110406MW-02V08N	20110913MW02V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	361
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	1.79
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	726
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	0.1 U
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 U	38.9	36.9 J	26.6	5 U
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	19.1
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20100225MW-02V08N	20100624MW-02V08N	20101006MW-02V08N	20110406MW-02V08N	20110913MW02V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.64	6.21	0.0	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	50.6
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	9.8
Oxidation-Reduction Potential	mV	-	-147	-136	-107	-97	-115
pH	S.U.	-	6.57	8.91	6.76	6.36	6.80
Specific Conductance	MS/CM	-	4.48	1.70	1.91	3.34	3.24
Temperature	DEG C	-	9.33	16.71	19.45	10.98	22.1
Turbidity	NTU	-	0.0	3.0	11.9	3.9	0.1

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20120411MW-02V08N	20120924MW-02V10N	20121022MW-02V10N	MW-02	20121129MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	10/22/12	10/31/12	11/29/12
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	140 J	98	NA	NA	380
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20120411MW-02V08N	20120924MW-02V10N	20121022MW-02V10N	MW-02	20121129MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	10/22/12	10/31/12	11/29/12
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1,200 J	650	NA	NA	65
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	57	26	NA	NA	29
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	8,100	4,000	NA	NA	5,600
Total Metals							
Iron	UG/L	300	NA	32,900	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20120411MW-02V08N	20120924MW-02V10N	20121022MW-02V10N	MW-02	20121129MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	10/22/12	10/31/12	11/29/12
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	245	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	245	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	5.0 U	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	5.0 U	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	100	NA	NA	2,000
Dehalobacter	GC/mL	-	NA	5	NA	NA	40,000
Hardness (as CaCO3)	MG/L	-	NA	388	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	0.10 U	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	51.8	50.8	NA	NA	2.2 U
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	8.4	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20120411MW-02V08N	20120924MW-02V10N	20121022MW-02V10N	MW-02	20121129MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	10/22/12	10/31/12	11/29/12
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.0	0.42	0.47	0.78
Ferrous Iron	MG/L	-	NA	9.0	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-44	-78	-119	-82	-116
pH	S.U.	-	6.56	6.62	6.38	6.35	6.40
Specific Conductance	MS/CM	-	1.86	1.69	2.53	2.52	2.39
Temperature	DEG C	-	13.45	24.07	19.21	19.42	14.75
Turbidity	NTU	-	0.0	0.0	0.0	9.3	0.0

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130115MW-02V10N	20130219MW-02V10N	20130409MW-02V09FD	20130409MW-02V09N	20130711MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/15/13	02/19/13	04/09/13	04/09/13	07/11/13
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	400	330 J	400 J	280 J	120
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130115MW-02V10N	20130219MW-02V10N	20130409MW-02V09ED	20130409MW-02V09N	20130711MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/15/13	02/19/13	04/09/13	04/09/13	07/11/13
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	28	18	12	11	1.0 UJ
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	52	30 J	11	11	1.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	8,000	8,000	9,600	9,000	7,700
Total Metals							
Iron	UG/L	300	NA	NA	56,600	58,100	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130115MW-02V10N	20130219MW-02V10N	20130409MW-02V09FD	20130409MW-02V09N	20130711MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/15/13	02/19/13	04/09/13	04/09/13	07/11/13
Parameter	Units	Criteria*			Field Duplicate (1-1)		
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	510	249	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	510	249	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	5.0 U	5.0 U	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	5.0 U	5.0 U	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	2,000	200	NA	60	1,000
Dehalobacter	GC/mL	-	30,000	2,000	NA	1,000	6,000 J
Hardness (as CaCO3)	MG/L	-	NA	NA	673	653	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	0.10 UJ	0.10 UJ	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	14.4	13 J	9.2	19.9	5.0 U
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	31.1	31.1	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130115MW-02V10N	20130219MW-02V10N	20130409MW-02V09FD	20130409MW-02V09N	20130711MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/15/13	02/19/13	04/09/13	04/09/13	07/11/13
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	1 U	NA	29.3 J	NA
Formic Acid	MG/L	-	NA	1 U	NA	1.0 U	NA
Lactic Acid	MG/L	-	NA	1 U	NA	1.0 U	NA
n-Butyric Acid	MG/L	-	NA	0.19 J	NA	1.0 U	NA
Propionic Acid	MG/L	-	NA	1 U	NA	1.0 U	NA
Pyruvic Acid	MG/L	-	NA	1 U	NA	4.4	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	1.36	4.57	NA	0.65	3.32
Ferrous Iron	MG/L	-	NA	NA	NA	44.3	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-121	-140	NA	-116	-165
pH	S.U.	-	6.58	6.82	NA	6.27	6.61
Specific Conductance	MS/CM	-	2.43	2.61	NA	8.18	2.60
Temperature	DEG C	-	13.05	10.18	NA	13.29	19.29
Turbidity	NTU	-	0.0	0.0	NA	0.0	0.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130807MW-02V09N	20130903MW-02V09N	20131022MW-02V09FD	20131022MW-02V09N	20140416MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/07/13	09/03/13	10/22/13	10/22/13	04/16/14
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	66 J	42	64	61	210
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130807MW-02V09N	20130903MW-02V09N	20131022MW-02V09FD	20131022MW-02V09N	20140416MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/07/13	09/03/13	10/22/13	10/22/13	04/16/14
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	1.0 U	1.0 U	3.1
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U	1.0 U	1.0 U	10
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	11,000	14,000	9,600	13,000	12,000
Total Metals							
Iron	UG/L	300	NA	NA	77,200	78,400	69,900

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130807MW-02V09N	20130903MW-02V09N	20131022MW-02V09FD	20131022MW-02V09N	20140416MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/07/13	09/03/13	10/22/13	10/22/13	04/16/14
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	230	233	456
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	456
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	5.0 U
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	800 J	50 J	NA	30	NA
Dehalobacter	GC/mL	-	10,000	3,000	NA	500	70
Hardness (as CaCO3)	MG/L	-	NA	NA	69.3	131	455
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	0.10 UJ	0.28 J	0.10 U
Nitrogen, Nitrite	MG/L	1	NA	NA	0.078 J	0.036 J	0.049 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	2.5 J	3.9 J	3.9 J	6.6
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	9.5	9.5	12.8
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130807MW-02V09N	20130903MW-02V09N	20131022MW-02V09FD	20131022MW-02V09N	20140416MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/07/13	09/03/13	10/22/13	10/22/13	04/16/14
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.98	1.64	NA	0.35	9.11
Ferrous Iron	MG/L	-	NA	NA	NA	46.5	3.5
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-146	-134	NA	-125	-149
pH	S.U.	-	6.42	6.10	NA	6.41	7.04
Specific Conductance	MS/CM	-	2.22	2.06	NA	1.76	2.49
Temperature	DEG C	-	18.82	20.14	NA	19.68	9.66
Turbidity	NTU	-	0.0	1.0	NA	1.2	0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP04162014	20140701MW-02V09N	Dup20140701	20141027MW-02V09N	20141124MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	07/01/14	07/01/14	10/27/14	11/24/14
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	190	480	380	270 J	66
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP04162014	20140701MW-02V09N	Dup20140701	20141027MW-02V09N	20141124MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	07/01/14	07/01/14	10/27/14	11/24/14
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	2.9	83	78	0.19 J	0.14 J
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	11	62	50	3.3	1.5
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	13,000	12,000	8,000	2,600	4,500
Total Metals							
Iron	UG/L	300	70,500	73,100	74,300	94,800	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP04162014	20140701MW-02V09N	Dup20140701	20141027MW-02V09N	20141124MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	07/01/14	07/01/14	10/27/14	11/24/14
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	456	254	292	367	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	456	254	292	367	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	NA
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	5	2 J
Dehalobacter	GC/mL	-	NA	100	NA	9,000	2,000
Hardness (as CaCO3)	MG/L	-	455	436	356	455	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.11	1.0 U	NA
Nitrogen, Nitrite	MG/L	1	0.043 J	0.038 J	0.049 J	0.10 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	6.5	10.8	10.5	10.8	10.2
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	12.7	9.2	10	81.0	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP04162014	20140701MW-02V09N	Dup20140701	20141027MW-02V09N	20141124MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	07/01/14	07/01/14	10/27/14	11/24/14
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	2.38	NA	2.45	1.72
Ferrous Iron	MG/L	-	NA	3.0	NA	7.8	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-85	NA	-134	-143
pH	S.U.	-	NA	6.49	NA	6.50	6.85
Specific Conductance	MS/CM	-	NA	2.13	NA	2.48	2.59
Temperature	DEG C	-	NA	15.87	NA	17.27	17.18
Turbidity	NTU	-	NA	2.7	NA	0.7	0.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20141222MW-02V09N	20150304MW-02	20150422MW-02	20151008MW-02	20160427MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/22/14	03/04/15	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	56	300	310	260	940
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20141222MW-02V09N	20150304MW-02	20150422MW-02	20151008MW-02	20160427MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/22/14	03/04/15	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	45	24	21	960 J
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.7	67	22	7.7	220
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	2,900	NA	6,200	12,000	2,600
Total Metals							
Iron	UG/L	300	NA	NA	60,500	61,800	63,100

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20141222MW-02V09N	20150304MW-02	20150422MW-02	20151008MW-02	20160427MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/22/14	03/04/15	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	432	292	261
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	432	292	261
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	NA	NA	5.0 U	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	1 J	NA	20 J	1 J	40
Dehalobacter	GC/mL	-	NA	90	200	300	80 J
Hardness (as CaCO3)	MG/L	-	NA	NA	525	424	400
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	0.10 U	2.0 U	0.10 U
Nitrogen, Nitrite	MG/L	1	NA	NA	0.10 U	0.034 J	0.085 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	0.050 U	NA	NA
Sulfate	MG/L	250	4.3 J	NA	17.3	25.6	41.3
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	13.8	6.2	6.0
Ferrous Iron (lab)	MG/L	-	NA	NA	12.5 J	2.5 J	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20141222MW-02V09N	20150304MW-02	20150422MW-02	20151008MW-02	20160427MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/22/14	03/04/15	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	1.01	0.58	0.93	0.38	0.66
Ferrous Iron	MG/L	-	NA	NA	5.5	7.0	4.5
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-127	-114	-135	-131	-102
pH	S.U.	-	6.78	6.80	6.60	5.36	6.14
Specific Conductance	MS/CM	-	2.60	2.53	2.86	2.52	2.71
Temperature	DEG C	-	13.95	7.98	9.86	19.70	12.03
Turbidity	NTU	-	0.0	0.0	8.0	0.0	7.2

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-03	MW-03
Sample ID			20161005MW-02	20170418MW-02	20170718MW-02	MW03_52103	MW03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/21/03	07/23/03
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	250 U	78
Benzene	UG/L	1	NA	NA	NA	250 U	2.3
Bromodichloromethane	UG/L	50	NA	NA	NA	50 U	1.0 U
Bromoform	UG/L	50	NA	NA	NA	200 U	4.0 U
Bromomethane	UG/L	5	NA	NA	NA	250 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	R	130 J
Carbon Disulfide	UG/L	60	NA	NA	NA	250 U	5.0 U
Carbon Tetrachloride	UG/L	5	NA	NA	NA	100 U	2.0 U
Chlorobenzene	UG/L	5	NA	NA	NA	250 U	5.0 U
Chloroethane	UG/L	5	NA	NA	NA	250 U	5.0 U
Chloroform	UG/L	7	NA	NA	NA	250 U	5.0 U
Chloromethane	UG/L	5	NA	NA	NA	250 U	5.0 U
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1,000	1,300	470	0 U	7.0 NJ
Dibromochloromethane	UG/L	50	NA	NA	NA	250 U	5.0 U
1,1-Dichloroethane	UG/L	5	NA	NA	NA	250 U	5.0 U
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	100 U	2.0 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	33 J	2.0 U
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	250 U	5.0 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	250 U	5.0 U
1,2-Dichloropropane	UG/L	1	NA	NA	NA	50 U	1.0 U
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	250 U	5.0 U
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	250 U	5.0 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

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Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-03	MW-03
Sample ID			20161005MW-02	20170418MW-02	20170718MW-02	MW03_52103	MW03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/21/03	07/23/03
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	200 U	0.3 J
2-Hexanone	UG/L	50	NA	NA	NA	250 U	5.0 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	250 U	5.0 U
Methylene Chloride	UG/L	5	NA	NA	NA	150 U	3.0 U
Styrene	UG/L	5	NA	NA	NA	250 U	5.0 U
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	50 U	1.0 U
Tetrachloroethene	UG/L	5	NA	NA	NA	50 U	1.0 U
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	250 U	5.0 U
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	150 U	3.0 U
Trichloroethene	UG/L	5	NA	NA	NA	50 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	940	2,200	2,100	5,800	68
Toluene	UG/L	5	NA	NA	NA	250 U	5.0 U
Vinyl Chloride	UG/L	2	NA	NA	NA	250 U	5.0 U
Xylene (total)	UG/L	5	NA	NA	NA	250 U	1.1 J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	37	170	68	78 J	43
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	5.0 U	5 U
Ethene	UG/L	-	NA	NA	NA	5.0 U	5 U
Methane	UG/L	-	2,400	5,800	1,200	86	56
Total Metals							
Iron	UG/L	300	53,800	61,800	48,300	1,170	150,000

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-03	MW-03
Sample ID			20161005MW-02	20170418MW-02	20170718MW-02	MW03_52103	MW03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/21/03	07/23/03
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	267	152,000
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	250	281	325	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	250	281	325	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	NA	NA
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	NA	NA
Chloride	MG/L	250	NA	NA	NA	113	143
Dehalococcoides ethenogenes	CEQ/mL	-	90	400 J	NA	NA	NA
Dehalobacter	GC/mL	-	30	3.0 U	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	470	410	420	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	0.36	2.7
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	1.3	10.8
Nitrogen, Nitrate	MG/L	10	0.28	0.10 UJ	1.0 U	2	NA
Nitrogen, Nitrite	MG/L	1	0.037 J	0.049 J-	0.42 J	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	0.1 UJ
Sulfate	MG/L	250	27.2	36.2	30.3	32.7	26.9
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	6.2	7.1	10.8	NA	NA
Ferrous Iron (lab)	MG/L	-	0.25 J	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	0.5	3.7
Ferric Iron (lab)	MG/L	-	NA	NA	NA	0.67	146
Fluoride	MG/L	1.5	NA	NA	NA	0.28	0.44

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-03	MW-03
Sample ID			20161005MW-02	20170418MW-02	20170718MW-02	MW03_52103	MW03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/21/03	07/23/03
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	5 U	5 U
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.40	0 U	1.07	0.58	0 U
Ferrous Iron	MG/L	-	11	11	7.0	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-151	-6	-134	40	-103
pH	S.U.	-	6.49	6.40	6.59	NA	NA
Specific Conductance	MS/CM	-	2.69	2.23	2.63	0.638	4.35
Temperature	DEG C	-	18.91	11.27	19.18	NA	NA
Turbidity	NTU	-	0.1	0 U	5.2	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported at tentatively identified compound at an estimated concentration.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP-91703	MW03-091703	DUP1_121703	MW-03_121703	MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	09/17/03	12/17/03	12/17/03	07/23/04
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	110	110	130 J	120 J	NA
Benzene	UG/L	1	2.2	1.8	10 U	10 U	NA
Bromodichloromethane	UG/L	50	1.0 U	1.0 U	2.0 U	2 U	NA
Bromoform	UG/L	50	4.0 U	4.0 U	8.0 U	8 U	NA
Bromomethane	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	69 J	65 J	39 J	38 J	NA
Carbon Disulfide	UG/L	60	5.0 U	5.0 U	10 U	10 U	NA
Carbon Tetrachloride	UG/L	5	2.0 U	2.0 U	4.0 U	4 U	NA
Chlorobenzene	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
Chloroethane	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
Chloroform	UG/L	7	5.0 U	5.0 U	10 U	10 U	NA
Chloromethane	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	6.2 NJ	0 U	0 U	0 U	68 J
Dibromochloromethane	UG/L	50	5.0 U	5.0 U	10 U	10 U	NA
1,1-Dichloroethane	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
1,2-Dichloroethane	UG/L	0.6	2.0 U	2.0 U	4.0 U	4 U	NA
1,1-Dichloroethene	UG/L	5	2.0 U	2.0 U	4.0 U	4 U	NA
cis-1,2-Dichloroethene	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
trans-1,2-Dichloroethene	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
1,2-Dichloropropane	UG/L	1	1.0 U	1.0 U	2.0 U	2 U	NA
cis-1,3-Dichloropropene	UG/L	0.4	5.0 U	5.0 U	10 U	10 U	NA
trans-1,3-Dichloropropene	UG/L	0.4	5.0 U	5.0 U	10 U	10 U	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP-91703	MW03-091703	DUP1_121703	MW-03_121703	MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	09/17/03	12/17/03	12/17/03	07/23/04
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		
Volatiles							
Ethylbenzene	UG/L	5	4.0 U	4.0 U	8.0 U	8 U	NA
2-Hexanone	UG/L	50	19	16	10 U	10 U	NA
4-Methyl-2-Pentanone	UG/L	-	11	11	10 U	10 U	NA
Methylene Chloride	UG/L	5	3.0 U	3.0 U	6.0 U	6 U	NA
Styrene	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
1,1,2,2-Tetrachloroethane	UG/L	5	1.0 U	1.0 U	2.0 U	2 U	NA
Tetrachloroethene	UG/L	5	1.0 U	1.0 U	4.9	4.6	NA
1,1,1-Trichloroethane	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
1,1,2-Trichloroethane	UG/L	1	3.0 U	3.0 U	6.0 U	6 U	NA
Trichloroethene	UG/L	5	1.0 U	1.0 U	2.0 U	2 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	26	16	150	150	4,900 J
Toluene	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
Vinyl Chloride	UG/L	2	5.0 U	5.0 U	10 U	10 U	NA
Xylene (total)	UG/L	5	5.0 U	5.0 U	10 U	10 U	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	180	110	170	160	3,900
Dissolved Gases							
Ethane	UG/L	-	250 U	250 U	500 U	250 U	NA
Ethene	UG/L	-	250 U	250 U	500 U	250 U	NA
Methane	UG/L	-	2,400	2,500	7,200	4,900	2,700
Total Metals							
Iron	UG/L	300	174,000 J	178,000 J	156,000	164,000	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP-91703	MW03-091703	DUP1_121703	MW-03_121703	MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	09/17/03	12/17/03	12/17/03	07/23/04
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		
Dissolved Metals							
Iron	UG/L	300	187,000 J	186,000 J	167,000	176,000	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	99.2 J	91.5 J	224	192	71.7
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	0.86	0.95	1.4	1.2	NA
Nitrogen, Kjeldahl, Total	MG/L	-	4.5	4.4	4.0	4.0	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1 U	0.1 U	0.1 U	NA
Nitrogen, Nitrite	MG/L	1	0.1 U	0.1 U	0.1 U	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Sulfide	MG/L	0.05	NA	NA	NA	NA	1.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	25.5	27.9	23.5	30.0	NA
Ferric Iron (lab)	MG/L	-	67.0	93.0	132	134	NA
Fluoride	MG/L	1.5	0.27	0.2	0.22	0.25	0.397

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP-91703	MW03-091703	DUP1_121703	MW-03_121703	MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	09/17/03	12/17/03	12/17/03	07/23/04
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	5.38 U	5.21 U	NA
Oil & Grease	MG/L	-	R	R	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.01	NA	0.35	1.05
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-90	NA	-59	-143
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	NA	1.64	NA	1.99	2.40
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW-03	MW-03VION	MW-03V15N	20070207MW-03V10N	20070731MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	02/07/07	07/31/07
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	83	2.0 J	51	39	54
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW-03	MW-03VION	MW-03V15N	20070207MW-03V10N	20070731MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	02/07/07	07/31/07
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	2.0 J	10 U	10 U	10	2.0 J
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	14	1.0 J	0.8 J	48	7.0 J
Dissolved Gases							
Ethane	UG/L	-	500 U	NA	NA	NA	NA
Ethene	UG/L	-	500 U	NA	NA	NA	NA
Methane	UG/L	-	6,300	10,000	7,400	15,000	4,500
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:24 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW-03	MW-03VION	MW-03V15N	20070207MW-03V10N	20070731MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	02/07/07	07/31/07
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	5.0 U	5.0 U	7.80	38.4
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW-03	MW-03VION	MW-03V15N	20070207MW-03V10N	20070731MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	02/07/07	07/31/07
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	1.24	0 U	5.36	2.44	0.22
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-133	-151	-123	-116	-79.7
pH	S.U.	-	NA	NA	NA	NA	6.15
Specific Conductance	MS/CM	-	3.19	1.20	0.946	0.91	1.309
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080228MW03V10N	20080812MW03V10FD	20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	08/12/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	13 J	10	10	38	20
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080228MW03V10N	20080812MW03V10FD	20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	08/12/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			Field Duplicate (1-1)
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	0.5 J	10 U	10 U	5.0 J	0.92 J
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	4.0 J	1.0 J	1.0 J	40	2.1
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	18,000	10,000	8,400	13,000	5,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080228MW03V10N	20080812MW03V10FD	20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	08/12/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			Field Duplicate (1-1)
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	14.1	30.0	28.1	50.7 J	4.6 J
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080228MW03V10N	20080812MW03V10FD	20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	08/12/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			Field Duplicate (1-1)
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	2.94	NA	0 U	0 U	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-123	NA	-149	-185	NA
pH	S.U.	-	6.15	NA	6.36	6.06	NA
Specific Conductance	MS/CM	-	1.36	NA	1.69	2.08	NA
Temperature	DEG C	-	11.6	NA	17.8	12.87	NA
Turbidity	NTU	-	41	NA	2	5	NA

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20091013MW-03V10N	20100226MW-03V09N	20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	02/26/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	19	17 J	26	4.6	110 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20091013MW-03V10N	20100226MW-03V09N	20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	02/26/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	0.82 J	1 UJ	1 U	1 U	32
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.9	1 U	0.5 J	1 U	99 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	4,800	13,000	6,000	7,400	18,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20091013MW-03V10N	20100226MW-03V09N	20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	02/26/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	8.7	11.6	15.8	5.1 J	34.0
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20091013MW-03V10N	20100226MW-03V09N	20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	02/26/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.0	0.85	0.0	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-103	-138	-170	-116	-115
pH	S.U.	-	5.87	6.32	9.28	6.73	6.38
Specific Conductance	MS/CM	-	1.85	3.39	1.50	1.68	1.55
Temperature	DEG C	-	18.68	8.95	16.51	20.19	11.90
Turbidity	NTU	-	8.7	94	5.1	6.3	3.6

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20110913MW03V09FD	20110913MW03V09N	20120411MW-03V09N	20120924MW-03V09N	20130409MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	09/13/11	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	69	82	150 J	130	160 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20110913MW03V09FD	20110913MW03V09N	20120411MW-03V09N	20120924MW-03V09N	20130409MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	09/13/11	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	4.2	5.4	20 J	1.1	27
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	8.3	9.4	36	3.2	30
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	12,000	15,000	15,000	7,600	11,000
Total Metals							
Iron	UG/L	300	35,300	35,700	NA	21,800	27,900

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20110913MW03V09FD	20110913MW03V09N	20120411MW-03V09N	20120924MW-03V09N	20130409MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	09/13/11	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	596	596	NA	292	367
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	292	367
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	1,820	3,780	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	700	40
Hardness (as CaCO3)	MG/L	-	520	510	NA	248	396
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1 U	NA	0.10 U	0.21 J
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	19	18.2	63.1	45.4	39.4
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	27.1	26.7	NA	7.2	8.7
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20110913MW03V09FD	20110913MW03V09N	20120411MW-03V09N	20120924MW-03V09N	20130409MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	09/13/11	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.0	0.0	0.0	2.23
Ferrous Iron	MG/L	-	29.8	29.8	NA	3.5	26.0
Ferric Iron (calculated)	MG/L	-	5.5	5.9	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-124	-63	-84	-93
pH	S.U.	-	NA	6.85	6.64	6.64	6.39
Specific Conductance	MS/CM	-	NA	1.99	1.02	0.697	3.37
Temperature	DEG C	-	NA	20.7	13.35	23.57	15.42
Turbidity	NTU	-	NA	21.8	0.0	0.0	17.9

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20131022MW-03V12N	20140416MW-03V12N	20140701MW-03V12N	20141027MW-03V12N	20141124MW-03V12N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	11/24/14
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	58	96	170	96	86
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20131022MW-03V12N	20140416MW-03V12N	20140701MW-03V12N	20141027MW-03V12N	20141124MW-03V12N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	11/24/14
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	100	120	0.81 J	1.0 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	62	100	1.3	1.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	11,000	14,000	15,000	4,500	3,800
Total Metals							
Iron	UG/L	300	29,400	19,700	26,800	26,600	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20131022MW-03V12N	20140416MW-03V12N	20140701MW-03V12N	20141027MW-03V12N	20141124MW-03V12N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	11/24/14
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	237	220	253	329	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	220	253	329	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	5.0 U	5.0 U	5.0 U	NA
Alkalinity, Hydroxide	MG/L	-	NA	5.0 U	5.0 U	5.0 U	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	500	NA	500
Dehalobacter	GC/mL	-	100	10	20	50	10
Hardness (as CaCO3)	MG/L	-	65.3	249	337	386	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.23 J	0.40	0.10 U	1.0 U	NA
Nitrogen, Nitrite	MG/L	1	0.025 J	0.038 J	0.017 J	0.10 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	40.7	43.0	52.0	25.8	23.0
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	5.6	6.3	7.0	27.1	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20131022MW-03V12N	20140416MW-03V12N	20140701MW-03V12N	20141027MW-03V12N	20141124MW-03V12N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	11/24/14
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.63	4.86	1.47	0.45	1.30
Ferrous Iron	MG/L	-	16.9	5.5	4.5	8.3	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-119	-101	-72	-107	-104
pH	S.U.	-	6.21	6.85	6.69	6.54	6.68
Specific Conductance	MS/CM	-	1.35	1.12	1.26	1.72	1.28
Temperature	DEG C	-	19.3	10.69	19.59	17.99	17.52
Turbidity	NTU	-	0.4	0	5.4	0.2	0.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20141222MW-03V12N	20150304MW-03	20150422MW-03	20151008MW-03	20160427MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/22/14	03/04/15	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	150	110	120	140	180
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20141222MW-03V12N	20150304MW-03	20150422MW-03	20151008MW-03	20160427MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/22/14	03/04/15	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	18	25	0.52 J	42
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.7	17	25	1.7	30
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	4,600	NA	4,000	10,000	2,100
Total Metals							
Iron	UG/L	300	NA	NA	19,600	29,500	23,700

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20141222MW-03V12N	20150304MW-03	20150422MW-03	20151008MW-03	20160427MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/22/14	03/04/15	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	196	279	313
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	196	279	313
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	NA	NA	5.0 U	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	20	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	3	7	2 J	4 J
Hardness (as CaCO3)	MG/L	-	NA	NA	242	368	400
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	0.10 U	2.0 U	0.10 U
Nitrogen, Nitrite	MG/L	1	NA	NA	0.10 U	0.021 J	0.076 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	0.050 U	NA	NA
Sulfate	MG/L	250	33.8	NA	32.5	48.2	78.2
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	5.1	7.1	7.6
Ferrous Iron (lab)	MG/L	-	NA	NA	0.10 UJ	1.7 J	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20141222MW-03V12N	20150304MW-03	20150422MW-03	20151008MW-03	20160427MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/22/14	03/04/15	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.87	1.24	0.65	0.39	0.54
Ferrous Iron	MG/L	-	NA	NA	6.0	6.5	6.5
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-115	-82	-100	-84	-88
pH	S.U.	-	6.58	6.84	6.69	5.27	6.31
Specific Conductance	MS/CM	-	1.38	1.82	1.06	1.69	2.08
Temperature	DEG C	-	14.88	8.58	11.87	19.94	13.90
Turbidity	NTU	-	0.0	0.0	1.7	0.0	4.5

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20161005MW-03	20170418MW-03	20170718MW-03	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/20/03	12/17/03
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	5.0 U	5.0 U
Benzene	UG/L	1	NA	NA	NA	5.0 U	5.0 U
Bromodichloromethane	UG/L	50	NA	NA	NA	1.0 U	1.0 U
Bromoform	UG/L	50	NA	NA	NA	4.0 U	4.0 U
Bromomethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	R	R
Carbon Disulfide	UG/L	60	NA	NA	NA	5.0 U	5.0 U
Carbon Tetrachloride	UG/L	5	NA	NA	NA	2.0 U	2.0 U
Chlorobenzene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Chloroethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Chloroform	UG/L	7	NA	NA	NA	5.0 U	5.0 U
Chloromethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Chlorotrifluoroethene (Freon-1113)	UG/L	5	290	230	160	0 U	0 U
Dibromochloromethane	UG/L	50	NA	NA	NA	5.0 U	5.0 U
1,1-Dichloroethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	2.0 U	2.0 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,2-Dichloropropane	UG/L	1	NA	NA	NA	1.0 U	1.0 U
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	5.0 U	5.0 U
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	5.0 U	5.0 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20161005MW-03	20170418MW-03	20170718MW-03	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/20/03	12/17/03
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	4.0 U	4.0 U
2-Hexanone	UG/L	50	NA	NA	NA	5.0 U	5.0 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	5.0 U	5.0 U
Methylene Chloride	UG/L	5	NA	NA	NA	3.0 U	3.0 U
Styrene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	1.0 U	1.0 U
Tetrachloroethene	UG/L	5	NA	NA	NA	1.0 U	1.0 U
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	3.0 U	3.0 U
Trichloroethene	UG/L	5	NA	NA	NA	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	11	140	80	5.0 U	5.0 U
Toluene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Vinyl Chloride	UG/L	2	NA	NA	NA	5.0 U	5.0 U
Xylene (total)	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	3.3	52	17	5.0 U	5.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	25 U	5.0 U
Ethene	UG/L	-	NA	NA	NA	25 U	5.0 U
Methane	UG/L	-	2,300	1,500	1,200	380	35
Total Metals							
Iron	UG/L	300	22,200	24,200	24,700	18,400	3,640

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20161005MW-03	20170418MW-03	20170718MW-03	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/20/03	12/17/03
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	18,500	3,760
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	297	264	276	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	297	264	276	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	NA	NA
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	NA	NA
Chloride	MG/L	250	NA	NA	NA	238	294
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	10	6	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	420	390	376	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	1.6	1.2
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	6.2	1.9
Nitrogen, Nitrate	MG/L	10	0.13	0.10 U	0.10 U	0.1 U	0.1 U
Nitrogen, Nitrite	MG/L	1	0.036 J	0.031 J	0.034 J	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	56.1	56.6	48.3	5.0 U	9.40
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	5.8	6.0	6.4	NA	NA
Ferrous Iron (lab)	MG/L	-	0.35 J	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	17.6	2.2
Ferric Iron (lab)	MG/L	-	NA	NA	NA	0.76	1.3
Fluoride	MG/L	1.5	NA	NA	NA	0.27	0.19

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20161005MW-03	20170418MW-03	20170718MW-03	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/20/03	12/17/03
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	5 U	5.38 U
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.32	0 U	1.35	0.54	0 U
Ferrous Iron	MG/L	-	5.5	10	6.0	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-125	18	-119	-115	0 U
pH	S.U.	-	6.52	6.51	6.55	NA	NA
Specific Conductance	MS/CM	-	2.03	1.63	1.96	1.61	0.99
Temperature	DEG C	-	20.15	12.91	19.12	NA	NA
Turbidity	NTU	-	0 U	0 U	0 U	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			Dup1	MW-04	MW-04	MW-04VION	MW-04V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	07/22/04	05/31/05	12/20/05	08/14/06
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	10 U	1.0 J	10 U	0.7 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			Dup1	MW-04	MW-04	MW-04VION	MW-04V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	07/22/04	05/31/05	12/20/05	08/14/06
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 UJ	0.7 J	10 U	10 U	10 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	10 U	10 U	10 U	10 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	10 U	NA	NA
Ethene	UG/L	-	NA	NA	10 U	NA	NA
Methane	UG/L	-	69	99	190	400	420
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			Dup1	MW-04	MW-04	MW-04VION	MW-04V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	07/22/04	05/31/05	12/20/05	08/14/06
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	158	161	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	10.8	10.8	14.2	6.66	5.0 U
Sulfide	MG/L	0.05	1.0 U	1.0 U	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	0.304	0.302	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			Dup1	MW-04	MW-04	MW-04VION	MW-04V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	07/22/04	05/31/05	12/20/05	08/14/06
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.82	0 U	0 U	4.97
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-136	-126	-161	-154
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	NA	1.05	1.85	1.47	1.14
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N	20090218MW-04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	08/01/07	02/28/08	08/12/08	02/18/09
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0.6 J	10 U	1.0 J	10 U	1.0 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N	20090218MW-04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	08/01/07	02/28/08	08/12/08	02/18/09
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	10 U	10 UJ	10 U	10 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	10 U	10 U	10 U	10 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	400	43	5,700	290	1,600
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:28 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N	20090218MW-04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	08/01/07	02/28/08	08/12/08	02/18/09
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	7.0	5 U	5 U	5 UJ
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N	20090218MW-04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	08/01/07	02/28/08	08/12/08	02/18/09
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	4.73	0.41	2.91	0 U	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-81	-79.2	-136	-126	NA
pH	S.U.	-	NA	6.59	6.45	6.65	NA
Specific Conductance	MS/CM	-	0.804	1.241	1.16	0.531	NA
Temperature	DEG C	-	NA	NA	9.19	21.3	NA
Turbidity	NTU	-	NA	NA	9	2	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD	20100225MW-04V08N	20100624MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	02/25/10	06/24/10
Parameter	Units	Criteria*			Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1.0 J	15	6.6 J	7.7 J	12
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD	20100225MW-04V08N	20100624MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	02/25/10	06/24/10
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	1 U	1 UJ	1 UJ	1 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	1 U	1 U	1 U	1 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	1,600	3,100	5,200	5,100	4,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD	20100225MW-04V08N	20100624MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	02/25/10	06/24/10
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 UJ	20.8	13	11.3	18.4
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD	20100225MW-04V08N	20100624MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	02/25/10	06/24/10
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	0.0	NA	0.0	0.80
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-158	-122	NA	-124	-146
pH	S.U.	-	6.33	6.43	NA	6.50	8.99
Specific Conductance	MS/CM	-	1.75	1.83	NA	2.14	1.84
Temperature	DEG C	-	9.36	19.37	NA	8.34	18.45
Turbidity	NTU	-	4	4.6	NA	1.5	1.9

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:29 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N	20110913MW04V08N	20120411MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	04/06/11	09/13/11	04/11/12
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.8	5 J	4.3 J	1.2	7.2 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N	20110913MW04V08N	20120411MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	04/06/11	09/13/11	04/11/12
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1 U	1 U	1 U	1 U	1 UJ
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1 U	1 UJ	1 UJ	1 U	1 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	2,400	4,200	4,300	1,700	2,700
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N	20110913MW04V08N	20120411MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	04/06/11	09/13/11	04/11/12
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.5 J	26.6	22.3	16.7	18.7
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N	20110913MW04V08N	20120411MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	04/06/11	09/13/11	04/11/12
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	NA	0.0	0.0	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	14.3	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-96	NA	-78	-126	-87
pH	S.U.	-	6.86	NA	6.40	6.83	6.80
Specific Conductance	MS/CM	-	1.48	NA	2.19	2.29	1.38
Temperature	DEG C	-	21.38	NA	12.86	22.5	14.07
Turbidity	NTU	-	3.7	NA	0.0	0.2	8.9

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported at tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20120924MW-04V08ED	20120924MW-04V08N	20130409MW-04V09N	20131022MW-04V09N	20140428MW-04V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	09/24/12	04/09/13	10/22/13	04/28/14
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.1	2.5	4.4 J	12	1.0 U
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20120924MW-04V08ED	20120924MW-04V08N	20130409MW-04V09N	20131022MW-04V09N	20140428MW-04V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	09/24/12	04/09/13	10/22/13	04/28/14
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	570	550	1,700	1,600	340
Total Metals							
Iron	UG/L	300	7,430	7,280	16,100	17,700	18,900

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20120924MW-04V08ED	20120924MW-04V08N	20130409MW-04V09N	20131022MW-04V09N	20140428MW-04V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	09/24/12	04/09/13	10/22/13	04/28/14
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	211	210	5.0 U	243	239
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	211	210	5.0 U	NA	239
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	NA	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	NA	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	4 U	3 U	3 U	3 U
Hardness (as CaCO3)	MG/L	-	188	185	426	73.3	525
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 U
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	0.014 J	0.10 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	12.3	12.0	15.6	23.2	12.2
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	10.2	10	7.2	7.0	8.4
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20120924MW-04V08FD	20120924MW-04V08N	20130409MW-04V09N	20131022MW-04V09N	20140428MW-04V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	09/24/12	04/09/13	10/22/13	04/28/14
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.0	2.13	0.25	9.51
Ferrous Iron	MG/L	-	NA	27.7	14.9	13.9	7.0
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-96	-78	-94	-102
pH	S.U.	-	NA	6.91	6.43	6.44	6.76
Specific Conductance	MS/CM	-	NA	0.519	3.98	1.27	2.65
Temperature	DEG C	-	NA	25.40	16.39	19.44	12.11
Turbidity	NTU	-	NA	8.0	1.7	5.7	0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20140701MW-04V09N	20141028MW-04V09N	20150422MW-04	20151008MW-04	20160427MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/01/14	10/28/14	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1.0 U	1.2	2.1	4.4	0.52 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20140701MW-04V09N	20141028MW-04V09N	20150422MW-04	20151008MW-04	20160427MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/01/14	10/28/14	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	0.38 J	1.0 U	1.0 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	1,300	87	1,000	2,100	610
Total Metals							
Iron	UG/L	300	17,900	8,820	28,000	15,800	16,700

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:30 PM
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FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20140701MW-04V09N	20141028MW-04V09N	20150422MW-04	20151008MW-04	20160427MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/01/14	10/28/14	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	295	208	338	303	255
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	295	208	338	303	255
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	3 U	3	3.0 U	3.0 U	3.0 U
Hardness (as CaCO3)	MG/L	-	614	267	882	523	450
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	2.0 U	0.10 U
Nitrogen, Nitrite	MG/L	1	0.013 J	0.10 U	0.10 U	0.016 J	0.052 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	0.050 U	NA	NA
Sulfate	MG/L	250	9.1	11.5	29.8	7.4	5.0 U
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	11.4	8.4	12.3	11.8	9.2
Ferrous Iron (lab)	MG/L	-	NA	NA	0.10 J	0.33 J	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20140701MW-04V09N	20141028MW-04V09N	20150422MW-04	20151008MW-04	20160427MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/01/14	10/28/14	04/22/15	10/08/15	04/27/16
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	1.72	0.55	1.05	0.32	0.54
Ferrous Iron	MG/L	-	6.5	5.2	5.5	6.0	5.5
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-67	-93	-92	-95	-79
pH	S.U.	-	6.62	6.57	6.73	5.42	6.33
Specific Conductance	MS/CM	-	2.47	1.62	4.47	3.05	2.90
Temperature	DEG C	-	21.90	17.78	11.71	21.26	14.79
Turbidity	NTU	-	52.9	2.1	1.1	0.0	0.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-05	MW-05
Sample ID			20161005MW-04	20170418MW-04	20170718MW-04	MW05_52103	MW-05-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/21/03	12/18/03
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	5.0 U	5.0 U
Benzene	UG/L	1	NA	NA	NA	5.0 U	5.0 U
Bromodichloromethane	UG/L	50	NA	NA	NA	1.0 U	1.0 U
Bromoform	UG/L	50	NA	NA	NA	4.0 U	4.0 U
Bromomethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	R	R
Carbon Disulfide	UG/L	60	NA	NA	NA	5.0 U	5.0 U
Carbon Tetrachloride	UG/L	5	NA	NA	NA	2.0 U	2.0 U
Chlorobenzene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Chloroethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Chloroform	UG/L	7	NA	NA	NA	5.0 U	5.0 U
Chloromethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Chlorotrifluoroethene (Freon-1113)	UG/L	5	4.3	1.0 U	0.90 J	0 U	0 U
Dibromochloromethane	UG/L	50	NA	NA	NA	5.0 U	5.0 U
1,1-Dichloroethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	2.0 U	2.0 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,2-Dichloropropane	UG/L	1	NA	NA	NA	1.0 U	1.0 U
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	5.0 U	5.0 U
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	5.0 U	5.0 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-05	MW-05
Sample ID			20161005MW-04	20170418MW-04	20170718MW-04	MW05_52103	MW-05-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/21/03	12/18/03
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	4.0 U	4.0 U
2-Hexanone	UG/L	50	NA	NA	NA	5.0 U	5.0 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	5.0 U	5.0 U
Methylene Chloride	UG/L	5	NA	NA	NA	3.0 U	3.0 U
Styrene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	1.0 U	1.0 U
Tetrachloroethene	UG/L	5	NA	NA	NA	0.4 J	1.0 U
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	3.0 U	3.0 U
Trichloroethene	UG/L	5	NA	NA	NA	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U
Toluene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Vinyl Chloride	UG/L	2	NA	NA	NA	5.0 U	5.0 U
Xylene (total)	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	5.0 U	5.0 U
Ethene	UG/L	-	NA	NA	NA	5.0 U	5.0 U
Methane	UG/L	-	1,000	770	210	27	6.7
Total Metals							
Iron	UG/L	300	10,900	21,700	17,600	2,110	15,500

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-05	MW-05
Sample ID			20161005MW-04	20170418MW-04	20170718MW-04	MW05_52103	MW-05-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/21/03	12/18/03
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	1,670	39.7 U
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	277	400	323	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	277	400	323	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	NA	NA
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	NA	NA
Chloride	MG/L	250	NA	NA	NA	49.8	27.5
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	3.0 U	3.0 U	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	320	540	420	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	0.25	0.1 U
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	3.6	0.61
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	0.22	0.18
Nitrogen, Nitrite	MG/L	1	0.046 J	0.028 J	0.042 J	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	7.2	5.0 U	7.3	50.1	61.4
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	9.8	13.2	12.6	NA	NA
Ferrous Iron (lab)	MG/L	-	0.10 UJ	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	1.7	0.07
Ferric Iron (lab)	MG/L	-	NA	NA	NA	0.43	15.4
Fluoride	MG/L	1.5	NA	NA	NA	0 U	0.12

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-05	MW-05
Sample ID			20161005MW-04	20170418MW-04	20170718MW-04	MW05_52103	MW-05-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	05/21/03	12/18/03
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	5 U	5 U
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.28	0 U	1.01	0.37	0 U
Ferrous Iron	MG/L	-	6.0	8.0	7.0	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-106	20	-117	26	121
pH	S.U.	-	6.61	6.56	6.60	NA	NA
Specific Conductance	MS/CM	-	2.02	2.15	2.49	0.426	0.629
Temperature	DEG C	-	21.54	13.83	21.81	NA	NA
Turbidity	NTU	-	1.5	0 U	9.5	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-05	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-05	MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/04	06/10/03	07/22/03	09/18/03	12/17/03
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	10 U	5.0 U	5.0 U	10 U
Benzene	UG/L	1	NA	10 U	5.0 U	5.0 U	10 U
Bromodichloromethane	UG/L	50	NA	2 U	1.0 U	1.0 U	2 U
Bromoform	UG/L	50	NA	8 U	4.0 U	4.0 U	8 U
Bromomethane	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	R	R	R	R
Carbon Disulfide	UG/L	60	NA	10 U	5.0 U	5.0 U	10 U
Carbon Tetrachloride	UG/L	5	NA	4 U	2.0 U	2.0 U	4 U
Chlorobenzene	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
Chloroethane	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
Chloroform	UG/L	7	NA	10 U	5.0 U	5.0 U	10 U
Chloromethane	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	0 U	5.7 NJ	0 U	0 U
Dibromochloromethane	UG/L	50	NA	10 U	5.0 U	5.0 U	10 U
1,1-Dichloroethane	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
1,2-Dichloroethane	UG/L	0.6	NA	4 U	2.0 U	2.0 U	4 U
1,1-Dichloroethene	UG/L	5	NA	4 U	1.2 J	2.0 U	4 U
cis-1,2-Dichloroethene	UG/L	5	NA	10 U	1.7 J	1.4 J	1.3 J
trans-1,2-Dichloroethene	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
1,2-Dichloropropane	UG/L	1	NA	2 U	1.0 U	1.0 U	2 U
cis-1,3-Dichloropropene	UG/L	0.4	NA	10 U	5.0 U	5.0 U	10 U
trans-1,3-Dichloropropene	UG/L	0.4	NA	10 U	5.0 U	5.0 U	10 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-05	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-05	MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/04	06/10/03	07/22/03	09/18/03	12/17/03
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	8 U	4.0 U	4.0 U	8 U
2-Hexanone	UG/L	50	NA	10 U	5.0 U	5.0 U	10 U
4-Methyl-2-Pentanone	UG/L	-	NA	10 U	5.0 U	5.0 U	10 U
Methylene Chloride	UG/L	5	NA	6 U	3.0 U	3.0 U	6 U
Styrene	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	5	NA	2 U	1.0 U	1.0 U	2 U
Tetrachloroethene	UG/L	5	NA	2 U	1.0 U	1.0 U	2 U
1,1,1-Trichloroethane	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
1,1,2-Trichloroethane	UG/L	1	NA	6 U	3.0 U	3.0 U	6 U
Trichloroethene	UG/L	5	NA	2 U	1.0 U	1.0 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	0.5 J	220	180	97	250
Toluene	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
Vinyl Chloride	UG/L	2	NA	10 U	1.2 J	5.0 U	10 U
Xylene (total)	UG/L	5	NA	10 U	5.0 U	5.0 U	10 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	8.8 J	9.5	8.6	14
Dissolved Gases							
Ethane	UG/L	-	NA	5.0 U	5 U	5.0 U	5.0 U
Ethene	UG/L	-	NA	5.0 U	5 U	5.0 U	5.0 U
Methane	UG/L	-	47	49	81	99	78
Total Metals							
Iron	UG/L	300	NA	14,400	10,500	8,370 J	7,690

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-05	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-05	MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/04	06/10/03	07/22/03	09/18/03	12/17/03
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	14,300	10,300	8,470 J	7,670
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	63.9	184	82.3	74.6	84.0
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	0.19	0.33	0.31	0.36
Nitrogen, Kjeldahl, Total	MG/L	-	NA	0.72	1.1	0.88	0.79
Nitrogen, Nitrate	MG/L	10	NA	0.33	0.1 U	0.1 U	0.1 UJ
Nitrogen, Nitrite	MG/L	1	NA	0.1 U	0.1 U	0.1 U	0.1 UJ
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	42.3	32.0	30.5	39.2	39.1
Sulfide	MG/L	0.05	1.0 U	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	14.3	8.6	6.0	8.7
Ferric Iron (lab)	MG/L	-	NA	0.12	1.9	8.4	1.0 U
Fluoride	MG/L	1.5	0.103	0.46	0.56	0.37	0.42

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-05	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-05	MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/04	06/10/03	07/22/03	09/18/03	12/17/03
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	5 U	5 U	NA	5.26 U
Oil & Grease	MG/L	-	NA	NA	NA	5 U	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.97	0.93	1.07	0 U	0 U
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	46	-145	-155	-143	-110
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	0.463	0.741	0.866	0.581	0.602
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06	Field-Dup	MW-06	MW-06V15FD	MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/04	05/31/05	05/31/05	12/20/05	12/20/05
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)		Field Duplicate (1-1)	
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	5 J	6.0 J	5.0 J	6.0 J	6.0 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06	Field-Dup	MW-06	MW-06V15FD	MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/04	05/31/05	05/31/05	12/20/05	12/20/05
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)		Field Duplicate (1-1)	
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	140 J	1.0 J	1.0 J	10 U	10 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	23	16	14	10 UJ	10 UJ
Dissolved Gases							
Ethane	UG/L	-	NA	250 U	250 U	NA	NA
Ethene	UG/L	-	NA	250 U	250 U	NA	NA
Methane	UG/L	-	40	3,600	3,300	6,700	5,600
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06	Field-Dup	MW-06	MW-06V15FD	MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/04	05/31/05	05/31/05	12/20/05	12/20/05
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)		Field Duplicate (1-1)	
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	60.5	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	33.5	5.0 U	5.0 U	5.0 U	5.0 U
Sulfide	MG/L	0.05	1.0 U	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	0.467	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06	Field-Dup	MW-06	MW-06V15FD	MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/04	05/31/05	05/31/05	12/20/05	12/20/05
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)		Field Duplicate (1-1)	
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	1.04	NA	0 U	NA	0 U
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-64	NA	-140	NA	-140
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	0.513	NA	1.13	NA	1.29
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06V15FD	MW-06V15N	20070207MW-06V15FD	20070207MW-06V15N	20070731MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	08/15/06	02/07/07	02/07/07	07/31/07
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	10 U	100	100	18
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

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Advanced Selection: amk-temp
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Printed: 1/3/2018 1:24:32 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06V15FD	MW-06V15N	20070207MW-06V15FD	20070207MW-06V15N	20070731MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	08/15/06	02/07/07	02/07/07	07/31/07
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	10 U	3.0 J	3.0 J	10 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	10 U	8.0 J	8.0 J	0.5 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	1,600	1,700	12,000	13,000	3,800
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06V15FD	MW-06V15N	20070207MW-06V15FD	20070207MW-06V15N	20070731MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	08/15/06	02/07/07	02/07/07	07/31/07
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	5.0 U	7.40	7.00	41.8
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06V15FD	MW-06V15N	20070207MW-06V15FD	20070207MW-06V15N	20070731MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	08/15/06	02/07/07	02/07/07	07/31/07
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	6.83	NA	1.05	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	87	NA	-136	NA
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	NA	0.033	NA	0.79	NA
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20070731MW-06V15N	20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	02/28/08	08/12/08	02/19/09
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	21	8.0 J	8.0 J	4.0 J	34
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20070731MW-06V15N	20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	02/28/08	08/12/08	02/19/09
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	10 UJ	10 U	10 U	2.0 J
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.6 J	10 U	10 U	10 U	35
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	2,500	12,000	14,000	12,000	9,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20070731MW-06V15N	20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	02/28/08	08/12/08	02/19/09
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	44.2	5 U	5 U	17.8	57.0 J
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20070731MW-06V15N	20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	02/28/08	08/12/08	02/19/09
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.31	NA	2.61	0 U	0 U
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-99.7	NA	-122	-117	-132
pH	S.U.	-	6.38	NA	6.24	6.37	6.30
Specific Conductance	MS/CM	-	1.050	NA	1.21	1.47	0.84
Temperature	DEG C	-	NA	NA	12.2	17.0	13.23
Turbidity	NTU	-	NA	NA	9	5	8

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20091013MW-06V13N	20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13FD	20101006MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	02/26/10	06/24/10	10/06/10	10/06/10
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	6.4	35 J	68 J	61	57
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20091013MW-06V13N	20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13FD	20101006MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	02/26/10	06/24/10	10/06/10	10/06/10
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1 U	1 UJ	1 U	1 U	1 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1 U	3.6	0.57 J	1 U	1 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	7,300	13,000	9,400	8,300	8,800
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20091013MW-06V13N	20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13FD	20101006MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	02/26/10	06/24/10	10/06/10	10/06/10
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	2.8 J	31.2	52.3	36.8 J	34.5 J
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20091013MW-06V13N	20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13FD	20101006MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	02/26/10	06/24/10	10/06/10	10/06/10
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.0	0.73	NA	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-139	-140	-124	NA	-129
pH	S.U.	-	6.57	6.46	8.81	NA	6.97
Specific Conductance	MS/CM	-	1.79	2.48	0.958	NA	0.879
Temperature	DEG C	-	17.80	11.80	17.79	NA	18.25
Turbidity	NTU	-	2.2	39	0.45	NA	0.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20110406MW-06V13N	20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	20130409MW-06V12N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/06/11	09/13/11	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	96 J	30	230 J	140	61 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20110406MW-06V13N	20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	20130409MW-06V12N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/06/11	09/13/11	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	33	1 U	82 J	3.3	0.19 J
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	38 J	4.4	28	3.6	4.9
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	7,900	1,800	5,300	1,300	9,500
Total Metals							
Iron	UG/L	300	NA	9,630	NA	12,100	24,700

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20110406MW-06V13N	20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	20130409MW-06V12N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/06/11	09/13/11	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	388	NA	304	244
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	304	244
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	353,000 J	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	1 J	3 U
Hardness (as CaCO3)	MG/L	-	NA	235	NA	308	337
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	0.1 U	NA	0.10 U	0.25 J
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	60.8	16.5	119	52.2	38.4
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	10.9	NA	6.9	5.9
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20110406MW-06V13N	20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	20130409MW-06V12N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/06/11	09/13/11	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.0	0.0	0.0	0.33
Ferrous Iron	MG/L	-	NA	7.4	NA	9.9	23.7
Ferric Iron (calculated)	MG/L	-	NA	2.23	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-68	-123	-48	-80	-102
pH	S.U.	-	7.08	7.08	6.81	6.82	6.47
Specific Conductance	MS/CM	-	1.61	0.801	1.06	0.636	2.91
Temperature	DEG C	-	12.46	22.4	14.04	22.01	16.34
Turbidity	NTU	-	0.0	5.3	0.0	0.0	0.2

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20131022MW-06V15N	20140416MW-06V15N	20140701MW-06V15N	20141027MW-06V15N	DUP20141027
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	10/27/14
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	27	75	84	51	44
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20131022MW-06V15N	20140416MW-06V15N	20140701MW-06V15N	20141027MW-06V15N	DUP20141027
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	10/27/14
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	26	1.0 U	1.0 U	1.0 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	33	2.7	1.0 U	1.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	4,100	11,000	11,000	3,400	2,700
Total Metals							
Iron	UG/L	300	20,500	20,900	17,100	31,000	33,200

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20131022MW-06V15N	20140416MW-06V15N	20140701MW-06V15N	20141027MW-06V15N	DUP20141027
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	10/27/14
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	245	240	259	740	726
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	240	259	740	726
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	NA	5.0 U	5.0 U	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	2 J	3 U	3 U	80	NA
Hardness (as CaCO3)	MG/L	-	99.0	370	317	297	564
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.10 UJ	0.10 UJ	0.10 U	1.0 U	0.58 J
Nitrogen, Nitrite	MG/L	1	0.017 J	0.051 J	0.0092 J	0.10 U	0.10 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	29.2	36.1	38.8	5.0 U	5.0 U
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	5.6	5.8	6.0	314	298
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20131022MW-06V15N	20140416MW-06V15N	20140701MW-06V15N	20141027MW-06V15N	DUP20141027
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	10/27/14
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.37	3.99	1.82	2.67	NA
Ferrous Iron	MG/L	-	3.6	6.0	5.0	6.7	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-108	-92	-80	-130	NA
pH	S.U.	-	6.45	7.02	6.78	6.66	NA
Specific Conductance	MS/CM	-	1.4	1.73	1.33	2.34	NA
Temperature	DEG C	-	18.41	12.71	19.20	17.32	NA
Turbidity	NTU	-	1.4	0	7.3	5.6	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20150422MW-06	20151008MW-06	20160427MW-06	20161005MW-06	20170418MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/22/15	10/08/15	04/27/16	10/05/16	04/18/17
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	110	51	51	68	60
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20150422MW-06	20151008MW-06	20160427MW-06	20161005MW-06	20170418MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/22/15	10/08/15	04/27/16	10/05/16	04/18/17
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.6	1.0 U	1.0 U	1.0 U	5.5
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	8.1	1.0 U	1.1	0.28 J	13
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	5,200	7,200	890	280	3,100
Total Metals							
Iron	UG/L	300	26,400	20,200	20,600	14,900	20,200

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20150422MW-06	20151008MW-06	20160427MW-06	20161005MW-06	20170418MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/22/15	10/08/15	04/27/16	10/05/16	04/18/17
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	311	312	277	256	290
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	311	312	277	256	290
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	3.0 U	1 J	3 J	4	3.0 U
Hardness (as CaCO3)	MG/L	-	515	337	380	320	360
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.10 U	2.0 U	0.10 U	0.10 U	0.10 U
Nitrogen, Nitrite	MG/L	1	0.10 U	0.020 J	0.098 J	0.031 J	0.024 J
Nitrogen, Nitrate-Nitrite	MG/L	10	0.050 U	NA	NA	NA	NA
Sulfate	MG/L	250	29.9	16.7	36.3	30.7	26.5
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	5.1	5.5	4.9	4.3	5.1
Ferrous Iron (lab)	MG/L	-	0.90 J	0.44 J	NA	0.10 UJ	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20150422MW-06	20151008MW-06	20160427MW-06	20161005MW-06	20170418MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/22/15	10/08/15	04/27/16	10/05/16	04/18/17
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.72	0.34	0.59	0.44	0 U
Ferrous Iron	MG/L	-	4.5	7.0	7.0	4.5	6.0
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-104	-110	-97	-102	11
pH	S.U.	-	6.83	5.50	6.35	6.66	6.63
Specific Conductance	MS/CM	-	2.67	1.60	1.97	1.59	1.76
Temperature	DEG C	-	12.18	18.70	13.61	17.83	12.04
Turbidity	NTU	-	4.1	0.0	0.0	0 U	0 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-07	MW-07	MW-07	MW-07
Sample ID			20170718MW-06	MW07-6-10-03	MW07	MW07-91703	MW-07_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/18/17	06/10/03	07/23/03	09/17/03	12/17/03
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	250 U	500 U	250 U	50 U
Benzene	UG/L	1	NA	250 U	500 U	250 U	14
Bromodichloromethane	UG/L	50	NA	50 U	100 U	50 U	10 U
Bromoform	UG/L	50	NA	200 U	400 U	200 U	40 U
Bromomethane	UG/L	5	NA	250 U	500 U	250 U	50 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	R	R	R	R
Carbon Disulfide	UG/L	60	NA	250 U	500 U	250 U	50 U
Carbon Tetrachloride	UG/L	5	NA	100 U	200 U	100 U	20 U
Chlorobenzene	UG/L	5	NA	250 U	500 U	250 U	50 U
Chloroethane	UG/L	5	NA	250 U	500 U	250 U	50 U
Chloroform	UG/L	7	NA	250 U	500 U	250 U	50 U
Chloromethane	UG/L	5	NA	250 U	500 U	250 U	50 U
Chlorotrifluoroethene (Freon-1113)	UG/L	5	31	0 U	0 U	0 U	0 U
Dibromochloromethane	UG/L	50	NA	250 U	500 U	250 U	50 U
1,1-Dichloroethane	UG/L	5	NA	250 U	500 U	250 U	50 U
1,2-Dichloroethane	UG/L	0.6	NA	100 U	200 U	100 U	20 U
1,1-Dichloroethene	UG/L	5	NA	100 U	68 J	100 U	20 U
cis-1,2-Dichloroethene	UG/L	5	NA	250 U	500 U	250 U	50 U
trans-1,2-Dichloroethene	UG/L	5	NA	250 U	500 U	250 U	50 U
1,2-Dichloropropane	UG/L	1	NA	50 U	100 U	50 U	10 U
cis-1,3-Dichloropropene	UG/L	0.4	NA	250 U	500 U	250 U	50 U
trans-1,3-Dichloropropene	UG/L	0.4	NA	250 U	500 U	250 U	50 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-07	MW-07	MW-07	MW-07
Sample ID			20170718MW-06	MW07-6-10-03	MW07	MW07-91703	MW-07_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/18/17	06/10/03	07/23/03	09/17/03	12/17/03
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	200 U	400 U	200 U	49
2-Hexanone	UG/L	50	NA	250 U	500 U	250 U	50 U
4-Methyl-2-Pentanone	UG/L	-	NA	250 U	500 U	250 U	50 U
Methylene Chloride	UG/L	5	NA	150 U	300 U	150 U	30 U
Styrene	UG/L	5	NA	250 U	500 U	250 U	50 U
1,1,2,2-Tetrachloroethane	UG/L	5	NA	50 U	100 U	50 U	10 U
Tetrachloroethene	UG/L	5	NA	50 U	100 U	50 U	10 U
1,1,1-Trichloroethane	UG/L	5	NA	250 U	500 U	250 U	50 U
1,1,2-Trichloroethane	UG/L	1	NA	150 U	300 U	150 U	30 U
Trichloroethene	UG/L	5	NA	50 U	100 U	50 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	4.4	5,400	8,500	6,100	370
Toluene	UG/L	5	NA	250 U	500 U	250 U	50 U
Vinyl Chloride	UG/L	2	NA	250 U	500 U	250 U	50 U
Xylene (total)	UG/L	5	NA	250 U	500 U	250 U	50 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	3.6	68 J	130 J	130 J	940
Dissolved Gases							
Ethane	UG/L	-	NA	50 U	50 U	50 U	120 U
Ethene	UG/L	-	NA	50 U	50 U	50 U	120 U
Methane	UG/L	-	560	740	420	1,200	1,700
Total Metals							
Iron	UG/L	300	16,000	21,300	21,200	32,700 J	38,900

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Advanced Selection: amk-temp
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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-07	MW-07	MW-07	MW-07
Sample ID			20170718MW-06	MW07-6-10-03	MW07	MW07-91703	MW-07_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/18/17	06/10/03	07/23/03	09/17/03	12/17/03
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	20,800	20,800	32,500 J	38,900
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	252	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	252	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	5.0 U	NA	NA	NA	NA
Chloride	MG/L	250	NA	140	168	300 J	328
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	304	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	0.39	0.6	0.66	0.99
Nitrogen, Kjeldahl, Total	MG/L	-	NA	1.2	1.8	2.1	2.8
Nitrogen, Nitrate	MG/L	10	0.10 U	0.1 U	NA	0.1 U	0.1 U
Nitrogen, Nitrite	MG/L	1	0.051 J	0.1 U	NA	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	0.1 UJ	NA	NA
Sulfate	MG/L	250	38.4	32.8	31.0	23.6	5.0 U
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	4.3	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	20.2	19.8	33.8	19.5
Ferric Iron (lab)	MG/L	-	NA	1	1.4	14.1	19.4
Fluoride	MG/L	1.5	NA	0.33	0.25	0.24	0.19

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-07	MW-07	MW-07	MW-07
Sample ID			20170718MW-06	MW07-6-10-03	MW07	MW07-91703	MW-07_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/18/17	06/10/03	07/23/03	09/17/03	12/17/03
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	5 U	5 U	NA	5.26 U
Oil & Grease	MG/L	-	NA	NA	NA	5.44 U	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.84	0.9	0.1	0 U	3.33
Ferrous Iron	MG/L	-	7.0	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-116	-130	-108	-118	-115
pH	S.U.	-	6.66	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.63	0.93	1.11	1.44	1.94
Temperature	DEG C	-	19.48	NA	NA	NA	NA
Turbidity	NTU	-	0 U	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

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Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07	MW-07	MW-07V15N	MW-07V15N	20070207MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/14/06	02/07/07
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	210	140	47	97	89
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07	MW-07	MW-07V15N	MW-07V15N	20070207MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/14/06	02/07/07
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	110 J	10 U	10 U	10 U	10 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	50	2.0 J	10 U	1.0 J	3.0 J
Dissolved Gases							
Ethane	UG/L	-	NA	250 U	NA	NA	NA
Ethene	UG/L	-	NA	250 U	NA	NA	NA
Methane	UG/L	-	2,500	5,900	9,700	6,900	6,200
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07	MW-07	MW-07V15N	MW-07V15N	20070207MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/14/06	02/07/07
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	303	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	5.0 U	5.0 U	19.3	5.0 U
Sulfide	MG/L	0.05	1.0 U	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	0.190	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.


Concentration Exceeds Criteria

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07	MW-07	MW-07V15N	MW-07V15N	20070207MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/14/06	02/07/07
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.88	0 U	0 U	3.47	2.89
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-153	-152	-169	-163	-121
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.69	1.75	1.65	1.44	2.02
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07R
Sample ID			20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	82	92	170	150	370 D
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds Criteria

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07R
Sample ID			20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	6.0 J	10 UJ	3.0 J	46	580 D
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10	0.9 J	16	20	76
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	4,100	7,100	5,600	11,000	5,900
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07R
Sample ID			20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	6.1	5 U	5.6	5 UJ	6.3
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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Detection Limits shown are PQL

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J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07R
Sample ID			20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.48	2.64	0 U	0 U	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-113.5	-137	-167	-154	-139
pH	S.U.	-	6.78	6.32	6.48	6.18	6.45
Specific Conductance	MS/CM	-	2.182	1.62	1.99	2.01	2.74
Temperature	DEG C	-	NA	9.03	17.3	12.11	18.36
Turbidity	NTU	-	NA	54	25	21	1.1

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	150 J	350 J	390	350	370 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	18 J	1.1 J	1	53 J	18
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	8.1	1.7 J	1.8	9.5	6.3 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	6,500	8,100	8,400	6,200	8,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	7.9	17	11.2	13 J	25.8
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	NA	0.69	4.05	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-146	NA	-129	-113	-83
pH	S.U.	-	6.52	NA	8.83	6.82	6.39
Specific Conductance	MS/CM	-	2.79	NA	2.09	2.03	3.40
Temperature	DEG C	-	10.69	NA	16.45	21.42	12.08
Turbidity	NTU	-	1.1	NA	0.35	14.3	0.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N	20120924MW-07RV15N	20130409MW-07RV13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	26	630 J	540 J	430	310 J
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N	20120924MW-07RV15N	20130409MW-07RV13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.6	67 J	59 J	5.9 J	5.5
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.94 J	11	9.7	2.4 J	2.6
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	2,000	6,400	6,600	3,900	2,100
Total Metals							
Iron	UG/L	300	23,600	NA	NA	29,900	29,000

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N	20120924MW-07RV15N	20130409MW-07RV13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	406	NA	NA	335	263
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	335	263
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	NA	NA	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	248	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	10	4
Hardness (as CaCO3)	MG/L	-	637	NA	NA	414	515
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	NA	NA	0.10 U	0.066 J
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	12.2	18.9	17.7	32.0	19.1
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	11.3	NA	NA	11.8	9.3
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N	20120924MW-07RV15N	20130409MW-07RV13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	NA	0.0	0.0	0.0
Ferrous Iron	MG/L	-	20.1	NA	NA	30.4	27.5
Ferric Iron (calculated)	MG/L	-	3.5	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-109	NA	-82	-118	-89
pH	S.U.	-	6.86	NA	6.72	6.69	6.35
Specific Conductance	MS/CM	-	3.28	NA	2.10	1.78	4.84
Temperature	DEG C	-	22.4	NA	13.63	22.35	17.93
Turbidity	NTU	-	0.1	NA	8.2	0.0	53.9

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20131022MW-07RV17N	20140416MW-07RV17N	20140701MW-07RV17N	20141027MW-07RV17N	20171009 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	12/07/14
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	390	2.4	69	130	NA
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20131022MW-07RV17N	20140416MW-07RV17N	20140701MW-07RV17N	20141027MW-07RV17N	20171009 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	12/07/14
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	12	1.0 U	1.0 U	15	NA
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.1	1.0 U	1.2	2.2	NA
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	4,000	680	4,400	1,300	NA
Total Metals							
Iron	UG/L	300	30,900	24,500	28,700	31,600	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20131022MW-07RV17N	20140416MW-07RV17N	20140701MW-07RV17N	20141027MW-07RV17N	20171009 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	12/07/14
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	291	305	399	394	355
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	305	399	394	NA
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	5.0 U	5.0 U	5.0 U	NA
Alkalinity, Hydroxide	MG/L	-	NA	5.0 U	5.0 U	5.0 U	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	70	NA	NA	NA
Dehalobacter	GC/mL	-	5	3 U	4 U	3	NA
Hardness (as CaCO3)	MG/L	-	208	594	545	574	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.36 J	0.10 U	0.076 J	1.0 U	NA
Nitrogen, Nitrite	MG/L	1	0.015 J	0.038 J	0.014 J	0.10 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	7.4	17.9	13.8	8.4	NA
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	12.3	7.8	11.4	15.2	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20131022MW-07RV17N	20140416MW-07RV17N	20140701MW-07RV17N	20141027MW-07RV17N	20171009 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/16/14	07/01/14	10/27/14	12/07/14
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.36	4.43	1.74	2.86	NA
Ferrous Iron	MG/L	-	15.3	6.0	6.0	4.65	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-102	-77	-68	-107	NA
pH	S.U.	-	6.31	6.89	6.64	6.56	NA
Specific Conductance	MS/CM	-	1.84	3.31	2.58	2.69	NA
Temperature	DEG C	-	19.42	11.39	19.41	18.94	NA
Turbidity	NTU	-	0.2	0	20.7	8.7	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20150304MW-07R	20150422MW-07R	20151008MW-07R	20160427MW-07R	20161005MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/04/15	04/22/15	10/08/15	04/27/16	10/05/16
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	130	10	46	22	65
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

Advanced Selection: amk-temp
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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20150304MW-07R	20150422MW-07R	20151008MW-07R	20160427MW-07R	20161005MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/04/15	04/22/15	10/08/15	04/27/16	10/05/16
Parameter	**Units**	**Criteria***					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	UG/L	5	NA	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.78 J	0.39 J	1.0 U	1.0 U	1.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	NA	1,700	9,800	2,400	2,500
Total Metals							
Iron	UG/L	300	NA	25,300	39,000	39,300	42,200

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: amk-temp
J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
Printed: 1/3/2018 1:24:38 PM
[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20150304MW-07R	20150422MW-07R	20151008MW-07R	20160427MW-07R	20161005MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/04/15	04/22/15	10/08/15	04/27/16	10/05/16
Parameter	**Units**	**Criteria***					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	240	450	357	374
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	240	450	357	374
Alkalinity, Carbonate (as CaCO3)	MG/L	-	NA	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	NA	5.0 U	5.0 U	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	300	90	20	7 J	5
Hardness (as CaCO3)	MG/L	-	NA	641	475	630	510
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	0.16	2.0 U	0.10 U	0.10 U
Nitrogen, Nitrite	MG/L	1	NA	0.018 J	0.028 J	0.072 J	0.045 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	0.18	NA	NA	NA
Sulfate	MG/L	250	NA	11.8	9.1	5.0 U	5.0 U
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	6.0	11.8	9.7	10.4
Ferrous Iron (lab)	MG/L	-	NA	2.2 J	0.49 J	NA	2.6 J
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20150304MW-07R	20150422MW-07R	20151008MW-07R	20160427MW-07R	20161005MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/04/15	04/22/15	10/08/15	04/27/16	10/05/16
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.91	0.91	0.37	0.53	0.31
Ferrous Iron	MG/L	-	NA	4.0	7.0	7.0	11
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-120	-75	-100	-95	-119
pH	S.U.	-	6.81	6.69	5.35	6.25	6.46
Specific Conductance	MS/CM	-	2.56	4.17	2.40	3.44	2.61
Temperature	DEG C	-	8.90	12.41	19.15	14.10	18.98
Turbidity	NTU	-	0.0	0.9	0.0	0.0	0 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R
Sample ID			20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			04/18/17	07/18/17
Parameter	**Units**	**Criteria***		
Volatiles				
Acetone	UG/L	50	NA	NA
Benzene	UG/L	1	NA	NA
Bromodichloromethane	UG/L	50	NA	NA
Bromoform	UG/L	50	NA	NA
Bromomethane	UG/L	5	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA
Carbon Disulfide	UG/L	60	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA
Chlorobenzene	UG/L	5	NA	NA
Chloroethane	UG/L	5	NA	NA
Chloroform	UG/L	7	NA	NA
Chloromethane	UG/L	5	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	3.6	17
Dibromochloromethane	UG/L	50	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R
Sample ID			20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			04/18/17	07/18/17
Parameter	**Units**	**Criteria***		
Volatiles				
Ethylbenzene	UG/L	5	NA	NA
2-Hexanone	UG/L	50	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA
Methylene Chloride	UG/L	5	NA	NA
Styrene	UG/L	5	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA
Tetrachloroethene	UG/L	5	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA
Trichloroethene	UG/L	5	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U
Toluene	UG/L	5	NA	NA
Vinyl Chloride	UG/L	2	NA	NA
Xylene (total)	UG/L	5	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.32 J	0.37 J
Dissolved Gases				
Ethane	UG/L	-	NA	NA
Ethene	UG/L	-	NA	NA
Methane	UG/L	-	990	830
Total Metals				
Iron	UG/L	300	29,800	33,000

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

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APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R
Sample ID			20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			04/18/17	07/18/17
Parameter	**Units**	**Criteria***		
Dissolved Metals				
Iron	UG/L	300	NA	NA
Miscellaneous Parameters				
Alkalinity, Total (as CaCO3)	MG/L	-	321	376
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	321	376
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U
Chloride	MG/L	250	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA
Dehalobacter	GC/mL	-	3	NA
Hardness (as CaCO3)	MG/L	-	560	516
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA
Nitrogen, Nitrate	MG/L	10	0.10 U	1.0 U
Nitrogen, Nitrite	MG/L	1	0.035 J	0.61 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA
Sulfate	MG/L	250	5.4	10.2
Sulfide	MG/L	0.05	NA	NA
Total Organic Carbon	MG/L	-	7.6	10.3
Ferrous Iron (lab)	MG/L	-	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA
Fluoride	MG/L	1.5	NA	NA

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

APPENDIX C
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R
Sample ID			20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			04/18/17	07/18/17
Parameter	**Units**	**Criteria***		
Miscellaneous Parameters				
TPH	MG/L	-	NA	NA
Oil & Grease	MG/L	-	NA	NA
Volatile Fatty Acids				
Acetic Acid	MG/L	-	NA	NA
Formic Acid	MG/L	-	NA	NA
Lactic Acid	MG/L	-	NA	NA
n-Butyric Acid	MG/L	-	NA	NA
Propionic Acid	MG/L	-	NA	NA
Pyruvic Acid	MG/L	-	NA	NA
Field Parameter				
Dissolved Oxygen	MG/L	-	0 U	1.53
Ferrous Iron	MG/L	-	10	9.0
Ferric Iron (calculated)	MG/L	-	NA	NA
Oxidation-Reduction Potential	mV	-	26	-125
pH	S.U.	-	6.43	6.48
Specific Conductance	MS/CM	-	3.53	3.11
Temperature	DEG C	-	12.47	18.22
Turbidity	NTU	-	0 U	0 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

J - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; GC/mL - Gene Copies per milliliter

S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

Detection Limits shown are PQL

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[LOGDATE] >= #5/01/2003# AND [LOGDATE] < #10/1/2017# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TI

APPENDIX D

DATA USABILITY SUMMARY REPORT

APPENDIX D

DATA USABILITY SUMMARY REPORT

OCTOBER AND DECEMBER 2017 SAMPLING EVENTS

FORMER EMCA SITE
SITE NO. 360025
MAMARONECK, NEW YORK

Analyses Performed by:

TESTAMERICA LABORATORIES, INC.
Edison, NJ/Amherst, NY

Prepared for:

The Rohm and Haas Company
(A Wholly-Owned Subsidiary of The Dow Chemical Company)
3100 State Road
Croydon, PA 19021

Prepared by:

AECOM
257 West Genesee Street, Suite 400
Buffalo, New York 14202-2657

JANUARY 2018

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III. DATA VALIDATION PROCEDURES D-1

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V. SAMPLE RECEIPT/PRESERVATION/HOLDING TIMES D-2

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VII. SAMPLE RESULTS AND REPORTING D-3

VIII. SUMMARY D-3

TABLES
(Following Text)

Table D-1a,b,c Sample and Analysis Summary

Table D-2 Groundwater Analytical Results

Table D-3 Field QC Analytical Results

ATTACHMENTS
(Following Tables)

Attachment A – Validated Analytical Results (Form 1's)

Attachment B – Support Documentation

I. INTRODUCTION

This Data Usability Summary Report (DUSR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10, Technical Guidance for Site Investigation and Remediation, Appendix 2B - Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, May 2010. This DUSR discusses the analytical data for twelve (12) groundwater samples, and two (2) trip blanks collected on October 9, 2017, October 23, 2017, and December 7, 2017, as summarized on Table D-1a,b,c, respectively. The samples collected on October 9, 2017 were collected using the low flow sampling method. The samples collected on October 23, 2017 and December 7, 2017 were collected using passive diffusion bags.

II. ANALYTICAL METHODOLOGIES

The groundwater samples were analyzed for one or more of the following parameters by TestAmerica Laboratories, Inc., (TA) located in Edison, New Jersey and Amherst, New York, as shown on Tables D-1a,b,c. The trip blanks were analyzed for VOCs and methane only.

Parameter	**Method No.**	**References**
Volatile Organic Compounds (VOCs)*	SW8260C	1
Methane	RSK-175	2
Sulfate	ASTM D516-90, 02	3
Alkalinity (total, bicarbonate, carbonate, hydroxide)	SM 2320 B	4
Hardness	SM 2340 C	4
Total Iron	200.7	5
Nitrate	SM 4500-NO_3	4
Nitrite	SM 4500-NO_2	4
Total Organic Carbon (TOC)	SM 5310 B	4

Notes:
* - VOCs include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113), 1,2-dichloro-1,1,2-trifluoroethane (Freon-123A), and chlorotrifluoroethene (Freon-1113).

References:

1 NYSDEC Analytical Services Protocol, July 2005.
2 USEPA, R.S. Kerr Environmental Research Laboratory, Rev. 0, August 11, 1994.
3 ASTM International, most recent version.
4 Standard Methods of Examination of Water and Wastewater, 20th Edition, 1998.
5 40 CFR Part 136, most recent version.

III. DATA VALIDATION PROCEDURES

A limited data validation was performed in accordance with the following USEPA Region II guidelines:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B & 8260C, SOP No. HW-24, Rev. #4*, September 2014;
- *ICP-AES Data* Validation, SOP No. HW-2a, Revision 15, December 2012; and
- *Mercury and Cyanide Data Validation*, SOP No. HW-2c, Revision 15, December 2012.

The validated groundwater and field quality control (QC) analytical results are presented in Tables D-2 and D-3, respectively. Copies of the validated laboratory results (i.e., Form 1's) are presented in Attachment A. Copies of the case narrative, chain-of-custody, and documentation supporting the qualification of data are presented in Attachment B. Only problems affecting data usability are discussed in this report.

IV. DATA DELIVERABLE COMPLETENESS

The laboratory deliverable data packages were in accordance with NYSDEC Analytical Services Protocol (ASP) Category B requirements.

V. SAMPLE RECEIPT/PRESERVATION/HOLDING TIMES

All samples were received by the laboratory intact, properly preserved, and under proper chain-of-custody (COC) with the following exceptions from the 10/9/17 sampling event:

Sulfate analysis was inadvertently requested twice on the COC. The trip blank vials were not labelled. The VOA vials for sample MW-06 were mislabeled.

VI. NONCONFORMANCES

Nitrite was detected in the laboratory method blank at a concentration below the reporting limit (RL). The results for nitrite in associated samples MW-04 and MW-07R, both sampled on 10/9/17, were qualified 'U' at the RL.

TOC was detected in the laboratory method blanks at a concentration below the RL. Since the TOC concentrations in the associated samples were greater than the RL, no qualification was added to the sample results. The 'B' qualifier applied by the laboratory has been removed.

Support documentation (i.e., method blank form) is provided in Attachment B.

VII. SAMPLE RESULTS AND REPORTING

All results and quantitation/detection limits were reported in accordance with method requirements and were adjusted for sample volume and dilution factors (where applicable)

Several samples were only analyzed at a dilution due to the high concentration of target compounds and/or matrix effects. The quantitation limits for the non-detect compounds are the lowest achievable at the diluted level.

VII. SUMMARY

All sample analyses were found to be compliant with the method and validation criteria, except where previously noted. Those results qualified 'U' are considered non-detect. AECOM does not recommend the recollection of any samples at this time.

Prepared By: Ann Marie Kropovitch, Chemist **Date:** 1/3/18

Reviewed By: Peter R. Fairbanks, Senior Chemist **Date:** 1/3/18

DEFINITIONS OF USEPA REGION II DATA QUALIFIERS

U – The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

D – The sample results are reported from a separate secondary dilution analysis.

TABLE D-1a
SAMPLE AND ANALYSIS SUMMARY - OCTOBER 9, 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

SDG Nos.	Sample ID	Matrix	Date of Collection	VOCs*	Methane	Sulfate	Alkalinity (Total, HCO_3^-, CO_3^-, OH^-)	Hardness	Total Iron	Nitrate	Nitrite	TOC	Comments
460-142665-1	20171009MW-02	GW	10/09/17	X	X	X	X	X	X	X	X	X	---
	20171009MW-03	GW		X	X	X	X	X	X	X	X	X	---
	20171009MW-04	GW		X	X	X	X	X	X	X	X	X	---
	20171009MW-06	GW		X	X	X	X	X	X	X	X	X	---
	20171009MW-07R	GW		X	X	X	X	X	X	X	X	X	---
	TB20171009	Water		X	X	---	---	---	---	---	---	---	Trip Blank

Notes:

* - Volatile Organic Compounds (VOCs) include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113); 1,2-dichloro-1,1,2-trifluoroethane (Freon-123a); and chlorotrifluoroethene (Freon-1113).

X - Parameter requested.
--- - Parameter not requested/analyzed or no comment.
GW - Groundwater
TOC - Total Organic Carbon

TABLE D-1b
SAMPLE AND ANALYSIS SUMMARY - OCTOBER 23, 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

SDG Nos.	Sample ID	Matrix	Date of Collection	VOCs*	Methane	Sulfate	Alkalinity (Total, HCO_3^-, CO_3^-, OH^-)	Hardness	Total Iron	TOC	Comments
460-143618-1	20171023MW-02	GW	10/23/17	X	X	X	X	X	X	X	---
	20171023MW-03	GW		X	X	X	X	X	X	X	---

Notes:

* - Volatile Organic Compounds (VOCs) include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113); 1,2-dichloro-1,1,2-trifluoroethane (Freon-123a); and chlorotrifluoroethene (Freon-1113).

X - Parameter requested.
--- - Parameter not requested/analyzed or no comment.
GW - Groundwater
TOC - Total Organic Carbon

TABLE D-1c
SAMPLE AND ANALYSIS SUMMARY - DECEMBER 7, 2017
FORMER EMCA SITE, MAMARONECK, NEW YORK

SDG Nos.	Sample ID	Matrix	Date of Collection	VOCs*	Methane	Sulfate	Alkalinity (Total, HCO_3^-, CO_3^-, OH^-)	Hardness	Total Iron	Nitrate	Nitrite	TOC	Comments
460-146527-1	20171207MW-02	GW	12/07/17	X	X	X	X	X	X	X	X	X	---
	20171207MW-03	GW		X	X	X	X	X	X	X	X	X	---
	20171207MW-04	GW		X	X	X	X	X	X	X	X	X	---
	20171207MW-06	GW		X	X	X	X	X	X	X	X	X	---
	20171207MW-07R	GW		X	X	X	X	X	X	X	X	X	---
	TB20171207	Water		X	X	---	---	---	---	---	---	---	Trip Blank

Notes:

* - Volatile Organic Compounds (VOCs) include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113); 1,2-dichloro-1,1,2-trifluoroethane (Freon-123a); and chlorotrifluoroethene (Freon-1113).

X - Parameter requested.
--- - Parameter not requested/analyzed or no comment.
GW - Groundwater
TOC - Total Organic Carbon

TABLE D-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE

Location ID			MW-02	MW-02	MW-02	MW-03	MW-03
Sample ID			20171009 MW-02	20171023 MW-02	20171207MW-02	20171009 MW-03	20171023 MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/09/17	10/23/17	12/07/17	10/09/17	10/23/17
Parameter	**Units**	*					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	690	61	2.0	230	210
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	660	0.78 J	1.0 U	17	7.6
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	37	7.2	0.33 J	5.2	7.0
Dissolved Gases							
Methane	UG/L	-	5,900	560	1,100	5,300	4,300
Total Metals							
Iron	UG/L	300	54,400	46,000	32,900	22,300	20,600
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	248	223	240	250	263
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	248	223	240	250	263
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hardness (as CaCO3)	MG/L	-	37.6	358	341	37.6	358
Nitrogen, Nitrate	MG/L	10	0.10 U	NA	0.013 J	0.10 U	NA
Nitrogen, Nitrite	MG/L	1	0.040 J	NA	0.022 J	0.026 J	NA
Sulfate	MG/L	250	50.2	49.4	36.8	42.6	39.9
Total Organic Carbon	MG/L	-	7.1	6.4	4.2	5.9	6.2

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

(oval) Concentration Exceeds

MADE BY: AMK 12/29/17 CHKD BY: PRF 01/02/18

Detection Limits shown are PQL

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[LOGDATE] >= #10/9/2017# AND NOT ([LOCID] = 'FIELDQC' OR [PRCCODE] = 'FLD'

TABLE D-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE

Location ID			MW-03	MW-04	MW-04	MW-06	MW-06
Sample ID			20171207MW-03	20171009 MW-04	20171207MW-04	20171009 MW-06	20171207MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/07/17	10/09/17	12/07/17	10/09/17	12/07/17
Parameter	**Units**	*					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1.0 U	4.5	1.0 U	63	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	1.0 U	18	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U	1.0 U	13	1.0 U
Dissolved Gases							
Methane	UG/L	-	3,800	1,700	490	4,600	2,900
Total Metals							
Iron	UG/L	300	12,400	17,800	7,130	16,900	8,390
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	248	335	216	256	258
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	248	335	216	256	258
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hardness (as CaCO3)	MG/L	-	261	5.0 U	166	307	301
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrogen, Nitrite	MG/L	1	0.014 J	0.10 U	0.013 J	0.018 J	0.013 J
Sulfate	MG/L	250	22.2	9.7	3.8 J	31.8	37.2
Total Organic Carbon	MG/L	-	2.2	12.5	8.9	4.9	1.5

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

MADE BY: AMK 12/29/17 CHKD BY: PRF 01/02/18

Detection Limits shown are PQL

J:\Projects\11172730.00000\DB\PROGRAM\EDMS.mdb
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[LOGDATE] >= #10/9/2017# AND NOT ([LOCID] = 'FIELDQC' OR [PRCCODE] = 'FLD'

TABLE D-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE

Location ID			MW-07R	MW-07R
Sample ID			20171009 MW-07R	20171207MW-07R
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			10/09/17	12/07/17
Parameter	**Units**	*		
Volatiles				
Chlorotrifluoroethene (Freon-1113)	UG/L	5	47	13
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.48 J	1.0 U
Dissolved Gases				
Methane	UG/L	-	8,100	1,800
Total Metals				
Iron	UG/L	300	39,000	38,300
Miscellaneous Parameters				
Alkalinity, Total (as CaCO3)	MG/L	-	355	338
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	355	338
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U
Hardness (as CaCO3)	MG/L	-	515	525
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U
Nitrogen, Nitrite	MG/L	1	0.10 U	0.013 J
Sulfate	MG/L	250	5.0 U	2.5 J
Total Organic Carbon	MG/L	-	11.4	11.6

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

MADE BY: AMK 12/29/17 CHKD BY: PRF 01/02/18

Detection Limits shown are PQL

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE

Location ID		FIELDQC	FIELDQC
Sample ID		TB20171009	TB20171207
Matrix		Water	Water
Depth Interval (ft)		-	-
Date Sampled		10/09/17	12/07/17
Parameter	**Units**	Trip Blank (1-1)	Trip Blank (1-1)
Volatiles			
Chlorotrifluoroethene (Freon-1113)	UG/L	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	1.0 U	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	1.0 U	1.0 U
Dissolved Gases			
Methane	UG/L	49	39

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/29/17 CHKD BY: PRF 01/02/18

Detection Limits shown are PQL

ATTACHMENT A

VALIDATED ANALYTICAL RESULTS (FORM 1's)

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-02 | Lab Sample ID: 460-142665-1

Matrix: Water | Lab File ID: E77029.D

Analysis Method: 8260C | Date Collected: 10/09/2017 11:50

Sample wt/vol: 5(mL) | Date Analyzed: 10/22/2017 01:37

Soil Aliquot Vol: | Dilution Factor: 5

Soil Extract Vol.: | GC Column: Rtx-VMS ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 471208 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	660		5.0	1.7
79-38-9	Chlorotrifluoroethene	690		5.0	1.5
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	37		5.0	0.85

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	88		74-132
2037-26-5	Toluene-d8 (Surr)	101		80-120
460-00-4	Bromofluorobenzene	88		77-124
1868-53-7	Dibromofluoromethane (Surr)	88		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-03 | Lab Sample ID: 460-142665-2

Matrix: Water | Lab File ID: E76981.D

Analysis Method: 8260C | Date Collected: 10/09/2017 10:10

Sample wt/vol: 5(mL) | Date Analyzed: 10/21/2017 04:42

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-VMS ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 470990 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	17		1.0	0.34
79-38-9	Chlorotrifluoroethene	230		1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	5.2		1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	91		74-132
2037-26-5	Toluene-d8 (Surr)	103		80-120
460-00-4	Bromofluorobenzene	84		77-124
1868-53-7	Dibromofluoromethane (Surr)	86		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-04 | Lab Sample ID: 460-142665-3

Matrix: Water | Lab File ID: E77028.D

Analysis Method: 8260C | Date Collected: 10/09/2017 13:35

Sample wt/vol: 5(mL) | Date Analyzed: 10/22/2017 01:12

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-VMS ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 471208 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.34	U	1.0	0.34
79-38-9	Chlorotrifluoroethene	4.5		1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	0.17	U	1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	89		74-132
2037-26-5	Toluene-d8 (Surr)	102		80-120
460-00-4	Bromofluorobenzene	87		77-124
1868-53-7	Dibromofluoromethane (Surr)	88		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-06 | Lab Sample ID: 460-142665-4

Matrix: Water | Lab File ID: E76983.D

Analysis Method: 8260C | Date Collected: 10/09/2017 08:50

Sample wt/vol: 5(mL) | Date Analyzed: 10/21/2017 05:33

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-VMS ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 470990 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	18		1.0	0.34
79-38-9	Chlorotrifluoroethene	63		1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	13		1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	95		74-132
2037-26-5	Toluene-d8 (Surr)	106		80-120
460-00-4	Bromofluorobenzene	87		77-124
1868-53-7	Dibromofluoromethane (Surr)	90		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-07R | Lab Sample ID: 460-142665-5

Matrix: Water | Lab File ID: E76984.D

Analysis Method: 8260C | Date Collected: 10/09/2017 14:45

Sample wt/vol: 5(mL) | Date Analyzed: 10/21/2017 05:58

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-VMS | ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 470990 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.34	U	1.0	0.34
79-38-9	Chlorotrifluoroethene	47		1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	0.48	J	1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	102		74-132
2037-26-5	Toluene-d8 (Surr)	114		80-120
460-00-4	Bromofluorobenzene	94		77-124
1868-53-7	Dibromofluoromethane (Surr)	97		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-142665-1

SDG No.:

Client Sample ID: TB20171009 | Lab Sample ID: 460-142665-6

Matrix: Water | Lab File ID: E77027.D

Analysis Method: 8260C | Date Collected: 10/09/2017 14:45

Sample wt/vol: 5(mL) | Date Analyzed: 10/22/2017 00:46

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-VMS ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 471208 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.34	U	1.0	0.34
79-38-9	Chlorotrifluoroethene	0.30	U	1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	0.17	U	1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	89		74-132
2037-26-5	Toluene-d8 (Surr)	105		80-120
460-00-4	Bromofluorobenzene	91		77-124
1868-53-7	Dibromofluoromethane (Surr)	91		72-131

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-02 | Lab Sample ID: 460-142665-1

Matrix: Water | Lab File ID: 21_01_249.D

Analysis Method: RSK-175 | Date Collected: 10/09/2017 11:50

Sample wt/vol: 17(mL) | Date Analyzed: 10/13/2017 10:12

Soil Aliquot Vol: | Dilution Factor: 44

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 381628 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	5900		180	44

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-03 | Lab Sample ID: 460-142665-2

Matrix: Water | Lab File ID: 21_01_250.D

Analysis Method: RSK-175 | Date Collected: 10/09/2017 10:10

Sample wt/vol: 17(mL) | Date Analyzed: 10/13/2017 10:29

Soil Aliquot Vol: | Dilution Factor: 44

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 381628 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	5300		180	44

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-04 | Lab Sample ID: 460-142665-3

Matrix: Water | Lab File ID: 21_01_251.D

Analysis Method: RSK-175 | Date Collected: 10/09/2017 13:35

Sample wt/vol: 17(mL) | Date Analyzed: 10/13/2017 10:47

Soil Aliquot Vol: | Dilution Factor: 44

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 381628 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	1700		180	44

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-06 | Lab Sample ID: 460-142665-4

Matrix: Water | Lab File ID: 21_01_252.D

Analysis Method: RSK-175 | Date Collected: 10/09/2017 08:50

Sample wt/vol: 17(mL) | Date Analyzed: 10/13/2017 11:04

Soil Aliquot Vol: | Dilution Factor: 44

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 381628 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	4600		180	44

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-142665-1

SDG No.:

Client Sample ID: 20171009 MW-07R | Lab Sample ID: 460-142665-5

Matrix: Water | Lab File ID: 21_01_253.D

Analysis Method: RSK-175 | Date Collected: 10/09/2017 14:45

Sample wt/vol: 17(mL) | Date Analyzed: 10/13/2017 11:22

Soil Aliquot Vol: | Dilution Factor: 44

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 381628 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	8100		180	44

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-142665-1

SDG No.:

Client Sample ID: TB20171009 | Lab Sample ID: 460-142665-6

Matrix: Water | Lab File ID: 21_01_248.D

Analysis Method: RSK-175 | Date Collected: 10/09/2017 14:45

Sample wt/vol: 17(mL) | Date Analyzed: 10/13/2017 09:54

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 381628 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	49		4.0	1.0

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171009 MW-02
Lab Sample ID: 460-142665-1
Lab Name: TestAmerica Edison
Job No.: 460-142665-1
SDG ID.:
Matrix: Water
Date Sampled: 10/09/2017 11:50
Reporting Basis: WET
Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	54400	150	78.3	ug/L			1	200.7 Rev 4.4

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171009 MW-03
Lab Sample ID: 460-142665-2
Lab Name: TestAmerica Edison
Job No.: 460-142665-1
SDG ID.:
Matrix: Water
Date Sampled: 10/09/2017 10:10
Reporting Basis: WET
Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	22300	150	78.3	ug/L			1	200.7 Rev 4.4

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171009 MW-04 | Lab Sample ID: 460-142665-3

Lab Name: TestAmerica Edison | Job No.: 460-142665-1

SDG ID.:

Matrix: Water | Date Sampled: 10/09/2017 13:35

Reporting Basis: WET | Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	17800	150	78.3	ug/L			1	200.7 Rev 4.4

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171009 MW-06
Lab Sample ID: 460-142665-4
Lab Name: TestAmerica Edison
Job No.: 460-142665-1
SDG ID.:
Matrix: Water
Date Sampled: 10/09/2017 08:50
Reporting Basis: WET
Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	16900	150	78.3	ug/L			1	200.7 Rev 4.4

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171009 MW-07R
Lab Sample ID: 460-142665-5
Lab Name: TestAmerica Edison
Job No.: 460-142665-1
SDG ID.:
Matrix: Water
Date Sampled: 10/09/2017 14:45
Reporting Basis: WET
Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	39000	150	78.3	ug/L			1	200.7 Rev 4.4

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171009 MW-02 | Lab Sample ID: 460-142665-1

Lab Name: TestAmerica Edison | Job No.: 460-142665-1

SDG ID.:

Matrix: Water | Date Sampled: 10/09/2017 11:50

Reporting Basis: WET | Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.040	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Hardness as calcium carbonate	37.6	5.0	5.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	50.2	10.0	2.7	mg/L			2	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	248	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	248	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	7.1	1.0	0.22	mg/L			1	SM 5310B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171009 MW-03 | Lab Sample ID: 460-142665-2

Lab Name: TestAmerica Edison | Job No.: 460-142665-1

SDG ID.:

Matrix: Water | Date Sampled: 10/09/2017 10:10

Reporting Basis: WET | Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.026	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Hardness as calcium carbonate	37.6	5.0	5.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	42.6	10.0	2.7	mg/L			2	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	250	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	250	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	5.9	1.0	0.22	mg/L			1	SM 5310B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171009 MW-04
Lab Sample ID: 460-142665-3
Lab Name: TestAmerica Edison
Job No.: 460-142665-1
SDG ID.:
Matrix: Water
Date Sampled: 10/09/2017 13:35
Reporting Basis: WET
Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	~~0.018~~ ND	0.10	~~0.0030~~ 0.10	mg/L	~~J~~ U	~~B~~	1	SM 4500 NO3 F
	Hardness as calcium carbonate	5.0	5.0	5.0	mg/L	U		1	SM 2340C
14808-79-8	Sulfate	9.7	5.0	1.4	mg/L			1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	335	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	335	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	12.5	1.0	0.22	mg/L			1	SM 5310B

10/24/17

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171009 MW-06
Lab Sample ID: 460-142665-4
Lab Name: TestAmerica Edison
Job No.: 460-142665-1
SDG ID.:
Matrix: Water
Date Sampled: 10/09/2017 08:50
Reporting Basis: WET
Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.018	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Hardness as calcium carbonate	307	25.0	25.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	31.8	5.0	1.4	mg/L			1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	256	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	256	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	4.9	1.0	0.22	mg/L			1	SM 5310B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171009 MW-07R
Lab Sample ID: 460-142665-5
Lab Name: TestAmerica Edison
Job No.: 460-142665-1
SDG ID.:
Matrix: Water
Date Sampled: 10/09/2017 14:45
Reporting Basis: WET
Date Received: 10/10/2017 16:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	~~0.040~~ 0.10 U	0.10	~~0.0030~~ 0.10	mg/L	J U	B	1	SM 4500 NO3 F
	Hardness as calcium carbonate	515	25.0	25.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	1.4	5.0	1.4	mg/L	U		1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	355	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	355	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	11.4	1.0	0.22	mg/L			1	SM 5310B

10/24/17

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-143618-1

SDG No.:

Client Sample ID: 20171023 MW-03 | Lab Sample ID: 460-143618-1

Matrix: Water | Lab File ID: P36720.D

Analysis Method: 8260C | Date Collected: 10/23/2017 08:10

Sample wt/vol: 5(mL) | Date Analyzed: 11/02/2017 11:58

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 473988 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	7.6		1.0	0.34
79-38-9	Chlorotrifluoroethene	210		1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	7.0		1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		74-132
2037-26-5	Toluene-d8 (Surr)	100		80-120
460-00-4	Bromofluorobenzene	97		77-124
1868-53-7	Dibromofluoromethane (Surr)	102		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-143618-1

SDG No.:

Client Sample ID: 20171023 MW-02 | Lab Sample ID: 460-143618-3

Matrix: Water | Lab File ID: P36800.D

Analysis Method: 8260C | Date Collected: 10/23/2017 09:05

Sample wt/vol: 5(mL) | Date Analyzed: 11/04/2017 11:15

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 474575 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.78	J	1.0	0.34
79-38-9	Chlorotrifluoroethene	61		1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	7.2		1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97		74-132
2037-26-5	Toluene-d8 (Surr)	98		80-120
460-00-4	Bromofluorobenzene	95		77-124
1868-53-7	Dibromofluoromethane (Surr)	100		72-131

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-143618-1

SDG No.:

Client Sample ID: 20171023 MW-02 | Lab Sample ID: 460-143618-3

Matrix: Water | Lab File ID: pe3_002_203.D

Analysis Method: RSK-175 | Date Collected: 10/23/2017 09:05

Sample wt/vol: 17(mL) | Date Analyzed: 10/30/2017 12:52

Soil Aliquot Vol: | Dilution Factor: 11

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 384536 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	560		44	11

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-143618-1

SDG No.:

Client Sample ID: 20171023 MW-03 | Lab Sample ID: 460-143618-1

Matrix: Water | Lab File ID: pe3_002_202.D

Analysis Method: RSK-175 | Date Collected: 10/23/2017 08:10

Sample wt/vol: 17(mL) | Date Analyzed: 10/30/2017 12:33

Soil Aliquot Vol: | Dilution Factor: 22

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 384536 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	4300		88	22

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171023 MW-03 | Lab Sample ID: 460-143618-2

Lab Name: TestAmerica Edison | Job No.: 460-143618-1

SDG ID.:

Matrix: Water | Date Sampled: 10/23/2017 08:50

Reporting Basis: WET | Date Received: 10/24/2017 16:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	20600	150	111	ug/L			1	200.7 Rev 4.4

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171023 MW-02 | Lab Sample ID: 460-143618-4

Lab Name: TestAmerica Edison | Job No.: 460-143618-1

SDG ID.:

Matrix: Water | Date Sampled: 10/23/2017 12:25

Reporting Basis: WET | Date Received: 10/24/2017 16:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	46000	150	111	ug/L			1	200.7 Rev 4.4

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171023 MW-02 | Lab Sample ID: 460-143618-4

Lab Name: TestAmerica Edison | Job No.: 460-143618-1

SDG ID.:

Matrix: Water | Date Sampled: 10/23/2017 12:25

Reporting Basis: WET | Date Received: 10/24/2017 16:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Hardness as calcium carbonate	358	5.0	5.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	49.4	10.0	2.7	mg/L			2	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	223	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	223	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	6.4	1.0	0.22	mg/L		B	1	SM 5310B

11/14/17

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171023 MW-03 | Lab Sample ID: 460-143618-2

Lab Name: TestAmerica Edison | Job No.: 460-143618-1

SDG ID.:

Matrix: Water | Date Sampled: 10/23/2017 08:50

Reporting Basis: WET | Date Received: 10/24/2017 16:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Hardness as calcium carbonate	358	5.0	5.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	39.9	5.0	1.4	mg/L			1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	263	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	263	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	6.2	1.0	0.22	mg/L		B	1	SM 5310B

11/4/17

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-146527-1
SDG No.:
Client Sample ID: 20171207MW-02 | Lab Sample ID: 460-146527-1
Matrix: Water | Lab File ID: N61661.D
Analysis Method: 8260C | Date Collected: 12/07/2017 11:30
Sample wt/vol: 5(mL) | Date Analyzed: 12/14/2017 17:08
Soil Aliquot Vol: | Dilution Factor: 1
Soil Extract Vol.: | GC Column: Rtx-624 ID: 0.25(mm)
% Moisture: | Level: (low/med) Low
Analysis Batch No.: 484152 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.34	U	1.0	0.34
79-38-9	Chlorotrifluoroethene	2.0		1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	0.33	J	1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94		74-132
2037-26-5	Toluene-d8 (Surr)	106		80-120
460-00-4	Bromofluorobenzene	97		77-124
1868-53-7	Dibromofluoromethane (Surr)	98		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-146527-1
SDG No.:
Client Sample ID: 20171207MW-03 | Lab Sample ID: 460-146527-3
Matrix: Water | Lab File ID: N61662.D
Analysis Method: 8260C | Date Collected: 12/07/2017 07:30
Sample wt/vol: 5(mL) | Date Analyzed: 12/14/2017 17:31
Soil Aliquot Vol: | Dilution Factor: 1
Soil Extract Vol.: | GC Column: Rtx-624 ID: 0.25(mm)
% Moisture: | Level: (low/med) Low
Analysis Batch No.: 484152 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.34	U	1.0	0.34
79-38-9	Chlorotrifluoroethene	0.30	U	1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	0.17	U	1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	93		74-132
2037-26-5	Toluene-d8 (Surr)	106		80-120
460-00-4	Bromofluorobenzene	96		77-124
1868-53-7	Dibromofluoromethane (Surr)	98		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG No.:

Client Sample ID: 20171207MW-04 | Lab Sample ID: 460-146527-5

Matrix: Water | Lab File ID: N61663.D

Analysis Method: 8260C | Date Collected: 12/07/2017 13:20

Sample wt/vol: 5(mL) | Date Analyzed: 12/14/2017 17:54

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 484152 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.34	U	1.0	0.34
79-38-9	Chlorotrifluoroethene	0.30	U	1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	0.17	U	1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	95		74-132
2037-26-5	Toluene-d8 (Surr)	106		80-120
460-00-4	Bromofluorobenzene	95		77-124
1868-53-7	Dibromofluoromethane (Surr)	99		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG No.:

Client Sample ID: 20171207MW-06 | Lab Sample ID: 460-146527-7

Matrix: Water | Lab File ID: N61664.D

Analysis Method: 8260C | Date Collected: 12/07/2017 10:25

Sample wt/vol: 5(mL) | Date Analyzed: 12/14/2017 18:17

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 484152 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.34	U	1.0	0.34
79-38-9	Chlorotrifluoroethene	0.30	U	1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	0.17	U	1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94		74-132
2037-26-5	Toluene-d8 (Surr)	105		80-120
460-00-4	Bromofluorobenzene	98		77-124
1868-53-7	Dibromofluoromethane (Surr)	98		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG No.:

Client Sample ID: 20171207MW-07R | Lab Sample ID: 460-146527-9

Matrix: Water | Lab File ID: N61665.D

Analysis Method: 8260C | Date Collected: 12/07/2017 09:05

Sample wt/vol: 5(mL) | Date Analyzed: 12/14/2017 18:53

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 484152 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.34	U	1.0	0.34
79-38-9	Chlorotrifluoroethene	13		1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	0.17	U	1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	92		74-132
2037-26-5	Toluene-d8 (Surr)	105		80-120
460-00-4	Bromofluorobenzene	97		77-124
1868-53-7	Dibromofluoromethane (Surr)	99		72-131

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG No.:

Client Sample ID: TB20171207 | Lab Sample ID: 460-146527-11

Matrix: Water | Lab File ID: N61660.D

Analysis Method: 8260C | Date Collected: 12/07/2017 00:00

Sample wt/vol: 5(mL) | Date Analyzed: 12/14/2017 16:46

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 484152 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.34	U	1.0	0.34
79-38-9	Chlorotrifluoroethene	0.30	U	1.0	0.30
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	0.17	U	1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94		74-132
2037-26-5	Toluene-d8 (Surr)	104		80-120
460-00-4	Bromofluorobenzene	97		77-124
1868-53-7	Dibromofluoromethane (Surr)	99		72-131

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-146527-1

SDG No.:

Client Sample ID: 20171207MW-02 | Lab Sample ID: 460-146527-1

Matrix: Water | Lab File ID: 21_05_071.D

Analysis Method: RSK-175 | Date Collected: 12/07/2017 11:30

Sample wt/vol: 17(mL) | Date Analyzed: 12/13/2017 10:13

Soil Aliquot Vol: | Dilution Factor: 11

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 391749 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	1100		44	11

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-146527-1

SDG No.:

Client Sample ID: 20171207MW-03 | Lab Sample ID: 460-146527-3

Matrix: Water | Lab File ID: 21_05_072.D

Analysis Method: RSK-175 | Date Collected: 12/07/2017 07:30

Sample wt/vol: 17(mL) | Date Analyzed: 12/13/2017 10:31

Soil Aliquot Vol: | Dilution Factor: 11

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 391749 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	3800		44	11

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-146527-1

SDG No.:

Client Sample ID: 20171207MW-04 | Lab Sample ID: 460-146527-5

Matrix: Water | Lab File ID: 21_05_073.D

Analysis Method: RSK-175 | Date Collected: 12/07/2017 13:20

Sample wt/vol: 17(mL) | Date Analyzed: 12/13/2017 10:48

Soil Aliquot Vol: | Dilution Factor: 11

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 391749 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	490		44	11

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-146527-1

SDG No.:

Client Sample ID: 20171207MW-06 | Lab Sample ID: 460-146527-7

Matrix: Water | Lab File ID: 21_05_076.D

Analysis Method: RSK-175 | Date Collected: 12/07/2017 10:25

Sample wt/vol: 17(mL) | Date Analyzed: 12/13/2017 11:41

Soil Aliquot Vol: | Dilution Factor: 22

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 391749 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	2900		88	22

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-146527-1

SDG No.:

Client Sample ID: 20171207MW-07R | Lab Sample ID: 460-146527-9

Matrix: Water | Lab File ID: 21_05_077.D

Analysis Method: RSK-175 | Date Collected: 12/07/2017 09:05

Sample wt/vol: 17(mL) | Date Analyzed: 12/13/2017 12:06

Soil Aliquot Vol: | Dilution Factor: 22

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 391749 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	1800		88	22

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 460-146527-1

SDG No.:

Client Sample ID: TB20171207 | Lab Sample ID: 460-146527-11

Matrix: Water | Lab File ID: pe3_003_179.D

Analysis Method: RSK-175 | Date Collected: 12/07/2017 00:00

Sample wt/vol: 17(mL) | Date Analyzed: 12/13/2017 09:41

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: Alumina ID: 0.53(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 391750 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	39		4.0	1.0

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171207MW-02 | Lab Sample ID: 460-146527-2

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG ID.:

Matrix: Water | Date Sampled: 12/07/2017 12:28

Reporting Basis: WET | Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	32900	150	111	ug/L			1	200.7 Rev 4.4

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171207MW-03 | Lab Sample ID: 460-146527-4

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG ID.:

Matrix: Water | Date Sampled: 12/07/2017 08:17

Reporting Basis: WET | Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	12400	150	111	ug/L			1	200.7 Rev 4.4

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171207MW-04 | Lab Sample ID: 460-146527-6

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG ID.:

Matrix: Water | Date Sampled: 12/07/2017 14:03

Reporting Basis: WET | Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	7130	150	111	ug/L			1	200.7 Rev 4.4

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171207MW-06 | Lab Sample ID: 460-146527-8

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG ID.:

Matrix: Water | Date Sampled: 12/07/2017 11:10

Reporting Basis: WET | Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	8390	150	111	ug/L			1	200.7 Rev 4.4

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 20171207MW-07R
Lab Sample ID: 460-146527-10
Lab Name: TestAmerica Edison
Job No.: 460-146527-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 10:00
Reporting Basis: WET
Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	38300	150	111	ug/L			1	200.7 Rev 4.4

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171207MW-02 | Lab Sample ID: 460-146527-2

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG ID.:

Matrix: Water | Date Sampled: 12/07/2017 12:28

Reporting Basis: WET | Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.013	0.10	0.010	mg/L	J		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.022	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Hardness as calcium carbonate	341	10.0	10.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	36.8	5.0	1.4	mg/L			1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	240	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	240	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	4.2	1.0	0.22	mg/L			1	SM 5310B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171207MW-03 | Lab Sample ID: 460-146527-4

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG ID.:

Matrix: Water | Date Sampled: 12/07/2017 08:17

Reporting Basis: WET | Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.014	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Hardness as calcium carbonate	261	10.0	10.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	22.2	5.0	1.4	mg/L			1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	248	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	248	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	2.2	1.0	0.22	mg/L			1	SM 5310B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171207MW-04 | Lab Sample ID: 460-146527-6

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG ID.:

Matrix: Water | Date Sampled: 12/07/2017 14:03

Reporting Basis: WET | Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.013	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Hardness as calcium carbonate	166	5.0	5.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	3.8	5.0	1.4	mg/L	J		1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	216	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	216	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	8.9	1.0	0.22	mg/L			1	SM 5310B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171207MW-06 | Lab Sample ID: 460-146527-8

Lab Name: TestAmerica Edison | Job No.: 460-146527-1

SDG ID.:

Matrix: Water | Date Sampled: 12/07/2017 11:10

Reporting Basis: WET | Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.013	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Hardness as calcium carbonate	301	10.0	10.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	37.2	10.0	2.7	mg/L			2	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	258	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	258	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	1.5	1.0	0.22	mg/L		B	1	SM 5310B

12/26/17

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20171207MW-07R
Lab Sample ID: 460-146527-10
Lab Name: TestAmerica Edison
Job No.: 460-146527-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 10:00
Reporting Basis: WET
Date Received: 12/07/2017 20:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.013	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Hardness as calcium carbonate	525	25.0	25.0	mg/L			1	SM 2340C
14808-79-8	Sulfate	2.5	5.0	1.4	mg/L	J		1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	338	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	338	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
7440-44-0	Total Organic Carbon	11.6	1.0	0.22	mg/L			1	SM 5310B

ATTACHMENT B

SUPPORT DOCUMENTATION

Chain of Custody Record

TAL-4124 (1007)

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Job No. 142665

10/23/2017

Client	Project Manager	Date	Chain of Custody Number
AECOM	Kevin Shanahan	10/9/17	274494
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
	716-923-1215		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
		Allison Bennett	
Project Name and Location (State)	**Carrier/Waybill Number**		
Dow former EMCA, Mamaroneck, NY			
Contract/Purchase Order/Quote No.			
Dow PO#4505503059			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): 8260C From	ASK-175 Methane	D516 Sulfate	SM4500 Nitrate	2320B Alkalinity	2340C Hardness	200.7 Iron	SM5310B TOC	D516 Sulfate	Special Instructions/ Conditions of Receipt
~~MW-02~~ 20171009 MW-02	10/9/17	1150		X			3	1	1	6			X	X	X	X	X	X	X	X	X	1
~~MW~~ 20171009 MW-03		1010		X			3	1	1	6			X	X	X	X	X	X	X	X	X	2
20171009 MW-04		1335		X			3	1	1	6			X	X	X	X	X	X	X	X	X	3
20171009 MW-06		0850		X			3	1	1	6			X	X	X	X	X	X	X	X	X	4
20171009 MW-07R	10/9/17	1445		X			3	1	1	6			X	X	X	X	X	X	X	X	X	5
TB 20171009	10/9/17	1445		X			4			6			X	X								6

460-142665 Chain of Custody

SHORT HOLD

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

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
Megan Daniel	10/10/17	13:00		10/10/17	13:00
2. Relinquished By	Date	Time	2. Received By	Date	Time
	10/10/17	16:40		10/10/17	16:40
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

2.9/2.9 IRFP NOC

TestAmerica Edison
777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record

TestAmerica

Client Information (Sub Contract Lab)	Sampler	Lab PM: Bennett, Allison L	Carrier Tracking No(s):	COC No: 460-49715.1
Client Contact: Shipping/Receiving	Phone	E-Mail: allison.bennett@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 460-142665-1
Address: 10 Hazelwood Drive, .	Due Date Requested: 10/20/2017			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #			
Email	WO #			
Project Name: DOW Former EMCA, Mamaroneck, NY	Project #: 46004368			
Site: URS - EMCA	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ Methane	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X		X	
20171009 MW-02 (460-142665-1)	10/9/17	11:50 Eastern		Water			X	3	
20171009 MW-03 (460-142665-2)	10/9/17	10:10 Eastern		Water			X	3	
20171009 MW-04 (460-142665-3)	10/9/17	13:35 Eastern		Water			X	3	
20171009 MW-06 (460-142665-4)	10/9/17	08:50 Eastern		Water			X	3	
20171009 MW-07R (460-142665-5)	10/9/17	14:45 Eastern		Water			X	3	
TB20171009 (460-142665-6)	10/9/17	14:45 Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/11/17 1800			10/12/17 0930	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: #1 3.5°

10/23/2017

CASE NARRATIVE

Client: URS Corporation

Project: DOW Former EMCA, Mamaroneck, NY

Report Number: 460-142665-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 10/10/2017 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

Receipt Exceptions

Trip blank sample vials were not labeled

Three container labels (voa vials)l for the following sample did not match the information listed on the Chain-of-Custody (COC): 20171009 MW-06 (460-142665-4). The container labels list 20171009, while the COC lists 20171009 MW-04.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed: Sulfate is on the COC twice.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples 20171009 MW-02 (460-142665-1), 20171009 MW-03 (460-142665-2), 20171009 MW-04 (460-142665-3), 20171009 MW-06 (460-142665-4), 20171009 MW-07R (460-142665-5) and TB20171009 (460-142665-6) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 10/21/2017 and 10/22/2017.

Sample 20171009 MW-02 (460-142665-1)[5X] required dilution prior to analysis to bring the concentration of target analytes within the calibration range. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES
Samples 20171009 MW-02 (460-142665-1), 20171009 MW-03 (460-142665-2), 20171009 MW-04 (460-142665-3), 20171009 MW-06 (460-142665-4), 20171009 MW-07R (460-142665-5) and TB20171009 (460-142665-6) were analyzed for dissolved gases in accordance with RSK_175. The samples were analyzed on 10/13/2017.

Samples 20171009 MW-02 (460-142665-1)[44X], 20171009 MW-03 (460-142665-2)[44X], 20171009 MW-04 (460-142665-3)[44X], 20171009 MW-06 (460-142665-4)[44X] and 20171009 MW-07R (460-142665-5)[44X] required dilution prior to analysis to bring the concentration of target analytes within the calibration range. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS

Samples 20171009 MW-02 (460-142665-1), 20171009 MW-03 (460-142665-2), 20171009 MW-04 (460-142665-3), 20171009 MW-06 (460-142665-4) and 20171009 MW-07R (460-142665-5) were analyzed for total recoverable metals in accordance with EPA Method 200.7 (ICP). The samples were prepared on 10/14/2017 and 10/18/2017 and analyzed on 10/15/2017 and 10/18/2017.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ALKALINITY
Samples 20171009 MW-02 (460-142665-1), 20171009 MW-03 (460-142665-2), 20171009 MW-04 (460-142665-3), 20171009 MW-06 (460-142665-4) and 20171009 MW-07R (460-142665-5) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 10/12/2017.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

HARDNESS
Samples 20171009 MW-02 (460-142665-1), 20171009 MW-03 (460-142665-2), 20171009 MW-04 (460-142665-3), 20171009 MW-06 (460-142665-4) and 20171009 MW-07R (460-142665-5) were analyzed for hardness in accordance with SM 2340C. The samples were analyzed on 10/20/2017.

No difficulties were encountered during the hardness analysis.

All quality control parameters were within the acceptance limits.

SULFATE
Samples 20171009 MW-02 (460-142665-1), 20171009 MW-03 (460-142665-2), 20171009 MW-04 (460-142665-3), 20171009 MW-06 (460-142665-4) and 20171009 MW-07R (460-142665-5) were analyzed for sulfate in accordance with ASTM Method D516-90. The samples were analyzed on 10/20/2017.

Samples 20171009 MW-02 (460-142665-1)[2X] and 20171009 MW-03 (460-142665-2)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRATE
Samples 20171009 MW-02 (460-142665-1), 20171009 MW-03 (460-142665-2), 20171009 MW-04 (460-142665-3), 20171009 MW-06 (460-142665-4) and 20171009 MW-07R (460-142665-5) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 10/11/2017.

Nitrite as N was detected in method blank MB 460-468401/9 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Nitrite as N was detected in method blank MB 460-468509/9 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Nitrate as N, Nitrate as N and Nitrite as N failed the recovery criteria low for the MS of sample 460-142604-3 in batch 460-468509.

Nitrate as N and Nitrite as N failed the recovery criteria low for the MSD of sample 460-142604-3 in batch 460-468509. Nitrate as N exceeded the RPD limit.

Refer to the QC report for details.

No other difficulties were encountered during the nitrate analysis.

All other quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples 20171009 MW-02 (460-142665-1), 20171009 MW-03 (460-142665-2), 20171009 MW-04 (460-142665-3), 20171009 MW-06 (460-142665-4) and 20171009 MW-07R (460-142665-5) were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 10/13/2017.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 460-142665-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 470965 Date: 10/20/2017 11:20							
D516-90, 02	MB 460-470965/12	Sulfate	1.4	U	mg/L	5.0	1
Batch ID: 470965 Date: 10/20/2017 13:50							
D516-90, 02	MB 460-470965/60	Sulfate	1.4	U	mg/L	5.0	1
Batch ID: 468829 Date: 10/12/2017 10:48							
SM 2320B	MB 460-468829/2	Bicarbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	1
SM 2320B	MB 460-468829/2	Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	1
SM 2320B	MB 460-468829/2	Alkalinity	5.0	U	mg/L	5.0	1
SM 2320B	MB 460-468829/2	Hydroxide Alkalinity	5.0	U	mg/L	5.0	1
Batch ID: 468829 Date: 10/12/2017 13:28							
SM 2320B	MB 460-468829/25	Bicarbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	1
SM 2320B	MB 460-468829/25	Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	1
SM 2320B	MB 460-468829/25	Alkalinity	5.0	U	mg/L	5.0	1
SM 2320B	MB 460-468829/25	Hydroxide Alkalinity	5.0	U	mg/L	5.0	1
Batch ID: 470984 Date: 10/20/2017 15:56							
SM 2340C	MB 460-470984/1	Hardness as calcium carbonate	5.0	U	mg/L	5.0	1
Batch ID: 468400 Date: 10/11/2017 03:31							
SM 4500 NO3 F	MB 460-468400/9	Nitrate as N	0.010	U	mg/L	0.10	1
SM 4500 NO3 F	MB 460-468400/9	Nitrite as N	0.0030	U	mg/L	0.10	1
Batch ID: 468401 Date: 10/11/2017 05:16							
SM 4500 NO3 F	MB 460-468401/9	Nitrate as N	0.010	U	mg/L	0.10	1
SM 4500 NO3 F	MB 460-468401/9	Nitrite as N	0.00314	J	mg/L	0.10	1
Batch ID: 468509 Date: 10/11/2017 14:07							
SM 4500 NO3 F	MB 460-468509/9	Nitrate as N	0.010	U	mg/L	0.10	1
SM 4500 NO3 F	MB 460-468509/9	Nitrite as N	0.00371	J	mg/L	0.10	1
Batch ID: 469338 Date: 10/13/2017 16:21							
SM 5310B	MB 460-469338/3	Total Organic Carbon	0.22	U	mg/L	1.0	1

FORM III-IN

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

Name (for report and invoice) AECOM Corp.	Samplers Name (Printed) A. Dascoli, J. Crespo	Site/Project Identification Dow, Former EMCA, Mamaroneck, NY
Company Kevin Shanahan	P. O. #	State (Location of site): NJ: ☐ NY: ☒ Other:
Address	Analysis Turnaround Time: Standard ☒	Regulatory Program: DKQP: ☐
City Buffalo State N.Y.	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	
Phone Fax		

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

Sample Identification	Date	Time	Matrix	No. of Cont.	8260C Freon	RSK 175 Methane	TOC	Iron, Hardness	Alkalinity	Sulfate, Sulfide	LAB USE ONLY Sample Numbers
20171023 MW-03	10/23/17	8:10	GW	5	X	X					1
20171023 MW-03	10/23/17	8:50	GW	4			X	X	X	X	2
20171023 MW-02	10/23/17	9:05	GW	5	X	X					3
20171023 MW-02	10/23/17	1225	GW	4			X	X	X	X	4

LAB USE ONLY Project No: Job No: 143618

460-143618 Chain of Custody

SUB Work

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH Soil:
6 = Other _____, 7 = Other _____ Water: 1, 2 1, 2, 3 1, 4 1 1

Special Instructions TestAmerica PM - Allison Bennett; use DOW charge # Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
1)	AECOM	10/24/17 12:3	1)	T. A
Relinquished by 2)	Company T. A	Date / Time 10/24/17 16:20	Received by 2)	Company TA 60
Relinquished by 3)	Company	Date / Time	Received by 3)	Company
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0715)

Massachusetts (M-NJ312), North Carolina (No. 578) 1.3 / 1.3 IR # N. C.

TestAmerica Edison
777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record

TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bennett, Allison L	Carrier Tracking No(s):	COC No: 460-49835.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: allison.bennett@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 460-143618-1
Address: 10 Hazelwood Drive,	Due Date Requested: 11/3/2017			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: DOW Former EMCA Site	Project #: 46004368			
Site: URS - EMCA	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ Methane, Ethane, Ethene	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
20171023 MW-03 (460-143618-1)	10/23/17	08:10 Eastern		Water			X	2	
20171023 MW-02 (460-143618-3)	10/23/17	09:05 Eastern		Water			X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 10/25/17 1800	Company: TAL	Received by:	Date/Time: 10/26/17 1000	Company: TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No:	Cooler Temperature(s) °C and Other Remarks: #1 3.2°

Ver: 09/20/2016

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CASE NARRATIVE

Client: URS Corporation

Project: DOW Former EMCA Site

Report Number: 460-143618-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 10/24/2017 4:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples 20171023 MW-03 (460-143618-1) and 20171023 MW-02 (460-143618-3) were analyzed for Volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 11/02/2017 and 11/04/2017.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES
Samples 20171023 MW-03 (460-143618-1) and 20171023 MW-02 (460-143618-3) were analyzed for dissolved gases in accordance with RSK_175. The samples were analyzed on 10/30/2017.

Samples 20171023 MW-03 (460-143618-1)[22X] and 20171023 MW-02 (460-143618-3)[11X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS
Samples 20171023 MW-03 (460-143618-2) and 20171023 MW-02 (460-143618-4) were analyzed for total recoverable metals in accordance with EPA Method 200.7 (ICP). The samples were prepared on 10/27/2017 and analyzed on 10/28/2017.

Iron failed the recovery criteria low for the Matrix Spike (MS) of sample 20171023 MW-03MS (460-143618-2) in batch 460-472898.

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

Refer to the QC report for details.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

ALKALINITY

Samples 20171023 MW-03 (460-143618-2) and 20171023 MW-02 (460-143618-4) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 10/26/2017.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

HARDNESS
Samples 20171023 MW-03 (460-143618-2) and 20171023 MW-02 (460-143618-4) were analyzed for hardness in accordance with SM 2340C. The samples were analyzed on 10/30/2017.

No difficulties were encountered during the hardness analysis.

All quality control parameters were within the acceptance limits.

SULFATE
Samples 20171023 MW-03 (460-143618-2) and 20171023 MW-02 (460-143618-4) were analyzed for sulfate in accordance with ASTM Method D516-90. The samples were analyzed on 10/25/2017.

Sample 20171023 MW-02 (460-143618-4)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples 20171023 MW-03 (460-143618-2) and 20171023 MW-02 (460-143618-4) were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 10/28/2017.

Total Organic Carbon was detected in method blank MB 460-472927/53 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Refer to the QC report for details.

No other difficulties were encountered during the TOC analysis.

All other quality control parameters were within the acceptance limits.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Kevin Shanahan	Samplers Name (Printed) MDascoli / J Crespo	Site/Project Identification Dow, Former EMCA, Memaroneck, NY
Company AECOM	P. O. # 60538245	State (Location of site): NJ: ☐ NY: ☒ Other:
Address	Analysis Turnaround Time: Standard ☒	Regulatory Program: DKQP: ☐
City State	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	LAB USE ONLY Project No:
Phone 716-856-5636 Fax		Job No: 146527

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

Sample Identification	Date	Time	Matrix	No. of Cont.	Freon 8260c	methane RSK 175	Sulfate	Nitrate	Alkalinity	Total Hardness	Total Fe	Total Organic Carbon	Sample Numbers
~~MW-02~~ 20171207 MW-02 (12/7/17)	12/7/17	1130	WT	5	X	X							1
20171207 MW-02		1228		5			X	X	X	X	X	X	2
20171207 MW-03		0730		5	X	X							3
20171207 MW-03		0817		5			X	X	X	X	X	X	4
20171207 MW-04		1320		65	X	X							5
20171207 MW-04		1403		5			X	X	X	X	X	X	6
20171207 MW-06		1025		5	X	X							7
20171207 MW-06		1110		5			X	X	X	X	X	X	8
20171207 MW-07R		0905		5	X	X							9
20171207 MW-07R		1000		5			X	X	X	X	X	X	10

SHORT HOLD

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH, 6 = Other _____, 7 = Other _____

Soil:									
Water:	1,2	1,2	1	1	1	1,4	1,4	1,3	

Special Instructions

Water Metals Filtered (Yes/No)? _____

Relinquished by 1)	Company AECOM	Date / Time 12/7/17 | 4:10	Received by 1)	Company TANYC
Relinquished by 2)	Company TA	Date / Time 12/7/17 | 20:20	Received by 2)	Company TA
Relinquished by 3)	Company	Date / Time |	Received by 3)	Company
Relinquished by 4)		Date / Time |	Received by 4)	Company

460-146527 Chain of Custody

Laboratory C… k (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

Massachusetts (M-NJ012), North Carolina (No. 578)

TAL - 0016 (0715)

IR# 9 9.8°C

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Kevin Shanahan	Samplers Name (Printed) MDascoli & J Crespo	Site/Project Identification Dow Former EMEA Mamaroneck, NY
Company	P. O. # 60538245	State (Location of site): NJ: ☐ NY: ☒ Other:
		Regulatory Program: DKQP: ☐
Address	Analysis Turnaround Time: Standard ☒	LAB USE ONLY Project No:
City State	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	Job No: 146527
Phone Fax		

Sample Identification	Date	Time	Matrix	No. of Cont.	Freon 11	Methane	Sample Numbers
TB20171207	12/7/17		W	6	X	X	11

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH 6 = Other _____, 7 = Other _____

Soil: | Water: 1, 2 | 1, 2

Special Instructions Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
1)		12/7/17 4:10	1) DWoody	TAN YC
Relinquished by	Company	Date / Time	Received by	Company
2)	TA	12/7/17 2020	2)	TA-Edi
Relinquished by	Company	Date / Time	Received by	Company
3)			3)	
Relinquished by	Company	Date / Time	Received by	Company
4)			4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). Massachusetts (M-NJ312), North Carolina (No. 578)

TAL - 0016 (0715)

TestAmerica Edison
777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record

TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bennett, Allison L	Carrier Tracking No(s):	COC No. 460-50253.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: allison.bennett@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 460-146527-1
Address: 10 Hazelwood Drive,	Due Date Requested: 12/19/2017			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: DOW Former EMCA Site	Project #: 46004368			
Site: URS - EMCA	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ Methane, Ethane, Ethene	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
20171207MW-02 (460-146527-1)	12/7/17	11:30 Eastern		Water			X	2	
20171207MW-03 (460-146527-3)	12/7/17	07:30 Eastern		Water			X	2	
20171207MW-04 (460-146527-5)	12/7/17	13:20 Eastern		Water			X	2	
20171207MW-06 (460-146527-7)	12/7/17	10:25 Eastern		Water			X	2	
20171207MW-07R (460-146527-9)	12/7/17	09:05 Eastern		Water			X	2	
TB20171207 (460-146527-11)	12/7/17	Eastern		Water			X	3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		12/8/17 1800	TAEDI			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: H 3.1

CASE NARRATIVE

Client: URS Corporation

Project: DOW Former EMCA, Mamaroneck, NY

Report Number: 460-146527-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 12/7/2017 8:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.8° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples 20171207MW-02 (460-146527-1), 20171207MW-03 (460-146527-3), 20171207MW-04 (460-146527-5), 20171207MW-06 (460-146527-7), 20171207MW-07R (460-146527-9) and TB20171207 (460-146527-11) were analyzed for Volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 12/14/2017.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES
Samples 20171207MW-02 (460-146527-1), 20171207MW-03 (460-146527-3), 20171207MW-04 (460-146527-5), 20171207MW-06 (460-146527-7), 20171207MW-07R (460-146527-9) and TB20171207 (460-146527-11) were analyzed for dissolved gases in accordance with RSK_175. The samples were analyzed on 12/13/2017.

Samples 20171207MW-02 (460-146527-1)[11X], 20171207MW-03 (460-146527-3)[11X], 20171207MW-04 (460-146527-5)[11X], 20171207MW-06 (460-146527-7)[22X] and 20171207MW-07R (460-146527-9)[22X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS
Samples 20171207MW-02 (460-146527-2), 20171207MW-03 (460-146527-4), 20171207MW-04 (460-146527-6), 20171207MW-06 (460-146527-8) and 20171207MW-07R (460-146527-10) were analyzed for total recoverable metals in accordance with EPA Method 200.7 (ICP). The samples were prepared and analyzed on 12/18/2017.

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

Refer to the QC report for details.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

ALKALINITY
Samples 20171207MW-02 (460-146527-2), 20171207MW-03 (460-146527-4), 20171207MW-04 (460-146527-6), 20171207MW-06 (460-146527-8) and 20171207MW-07R (460-146527-10) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 12/13/2017.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

HARDNESS
Samples 20171207MW-02 (460-146527-2), 20171207MW-03 (460-146527-4), 20171207MW-04 (460-146527-6), 20171207MW-06 (460-146527-8) and 20171207MW-07R (460-146527-10) were analyzed for hardness in accordance with SM 2340C. The samples were analyzed on 12/19/2017.

No difficulties were encountered during the hardness analysis.

All quality control parameters were within the acceptance limits.

SULFATE
Samples 20171207MW-02 (460-146527-2), 20171207MW-03 (460-146527-4), 20171207MW-04 (460-146527-6), 20171207MW-06 (460-146527-8) and 20171207MW-07R (460-146527-10) were analyzed for sulfate in accordance with ASTM Method D516-90. The samples were analyzed on 12/11/2017 and 12/13/2017.

Sample 20171207MW-06 (460-146527-8)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRATE
Samples 20171207MW-02 (460-146527-2), 20171207MW-03 (460-146527-4), 20171207MW-04 (460-146527-6), 20171207MW-06 (460-146527-8) and 20171207MW-07R (460-146527-10) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 12/09/2017.

No difficulties were encountered during the nitrate analysis.

All quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples 20171207MW-02 (460-146527-2), 20171207MW-03 (460-146527-4), 20171207MW-04 (460-146527-6), 20171207MW-06 (460-146527-8) and 20171207MW-07R (460-146527-10) were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 12/14/2017.

The method blank for 484253 contained TOC above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Replicate injection exceeds 10% RPD for 20171207MW-06 (460-146527-8)

Refer to the QC report for details.

No other difficulties were encountered during the TOC analysis.

All other quality control parameters were within the acceptance limits.