

Groundwater Sampling and Analysis Report

July 2018 Sampling 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**



Prepared by:

AECOM

257 West Genesee Street, Suite 400
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August 2018

FORMER EMCA SITE
SITE NO. 360025
MAMARONECK, NEW YORK

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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 Altice – USA.

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 initial 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 using this technology 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 using PlumeStop® Liquid Activated Carbon™ (PlumeStop). PlumeStop is a remediation amendment manufactured by Regenesis Corporation (Regenesis) composed of very fine activated carbon particles that adsorb contaminants and promote bioremediation processes. The injections were conducted between October 23 and November 3, 2017. Details of the PlumeStop injections are presented in Groundwater Sampling and Analysis Report for the October and December 2017 Sampling Events and Summary of 2017 Supplemental Injection Event (AECOM, 2018).

The groundwater monitoring program generates data used to monitor the effectiveness of remedial actions performed at the site. The frequency of groundwater sampling was temporarily increased from semi-annually to quarterly following a discussion with Rohm and Haas, AECOM, and the NYSDEC in January 2017. The July 2018 groundwater sampling event was the thirtieth site-wide sampling event since the interim remedial measure (IRM) began in November 2004 and the third site-wide sampling event following the October/November 2017 PlumeStop injections.

2.0 GROUNDWATER SAMPLING AND ANALYSIS

On July 10, 2018, 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 from passive diffusion bags (PDBs) installed in each well for analysis of Freon compounds and methane. The PDBs were installed in the wells immediately following sampling on January 30, 2018. Low-flow sampling procedures were used for the collection of samples for all other parameters listed below.

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

During the July 2018 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 A.

Groundwater levels were recorded from site wells on July 10, 2018. The data are presented in Table 1. Groundwater elevation contours for the July 10, 2018 sampling event are shown on Figure 3.

Typically, general groundwater flow is to the north. The groundwater contours for the July 2018 data as shown in Figure 3 show flow from the south to a low point in the vicinity of wells MW-03 and MW-07R, which is somewhat typical for the site. Regional groundwater flow is expected to be to the north toward the Sheldrake River. Monitoring of the Sheldrake River water surface level from the Benchmark B location was discontinued in 2015 due to traffic safety concerns for the field personnel taking the measurements. A surface water measurement was recorded from the Benchmark D location.

3.0 RESULTS

The analytical results for the July 2018 sampling event are provided in Table 2. Historical groundwater analytical results are presented in Appendix B. Laboratory data sheets and a data usability summary report (DUSR) for the July 2018 samples are provided in Appendix C.

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.

The sampling results for all parameters are presented in Table 2. Figure 4 presents only the Freon 113, 123a, and 1113 results. None of the samples contained Freon 113 or Freon 123a. Freon 1113 was only detected in the samples collected from wells MW-02 and MW-07R, at concentrations of 2.3 µg/L and 3.7 µg/L, respectively, which are below the 5 µg/L NYSDEC standard.

4.0 DATA ASSESSMENT

Appendix B 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 4 for the 10-year period between 2008 and 2018. The historical data were also used to create trend plots for the following parameters:

- Freon 113 - Figures 5 and 6
- Freon 123a - Figure 7
- Freon 1113 - Figure 8
- Sulfate - Figure 9
- Methane - Figure 10
- Dissolved Oxygen - Figure 11
- Dissolved Oxygen vs. Temperature in MW-02 – Figure 12
- Oxidation-Reduction Potential - Figure 13

The text below presents a discussion of the July 2018 data compared to the December 2017 data, followed by an assessment of the historical results over time. Table 3 presents a summary comparison of January and July 2018 parameter concentration trends.

Freon 113

In comparison with the January 2018 results, the analytical results for the July 2018 sampling event (Table 2 and Figures 5 and 6) indicate that Freon 113:

- Remained non-detect in MW-02 in January and July 2018;
- Remained non-detect in MW-03 in January and July 2018;
- Remained non-detect in MW-04 in January and July 2018;
- Remained non-detect in MW-06 in January and July 2018; and
- Remained non-detect in MW-07R in January and July 2018.

In well MW-02, the Freon 113 concentration has decreased over the course of the treatment program. As shown in Appendix B, 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, that increase did not indicate a new release, but was likely due to groundwater impacts from a residual source. The samples collected following PlumeStop treatment have shown no Freon 113.

Wells MW-03 and MW-07R had the highest Freon 113 concentrations prior to the remediation program and showed the greatest reduction as a result of the treatment program. 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 11 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 and January and July 2018.

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 July 2018 Freon 123a results in comparison with the January 2018 results.

Compared to the January 2018 data, the analytical results for the July 2018 sampling event (Figure 7) indicate that Freon 123a:

- Remained non-detect in MW-02 in January and July 2018;
- Remained non-detect in MW-03 in January and July 2018;
- Remained non-detect in MW-04 in January and July 2018;
- Remained non-detect in MW-06 in January and July 2018; and
- Remained non-detect in MW-07R in January and July 2018.

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 results show a significant decrease since April 2017 to below criterion in December 2017 and non-detect in January and July 2018.

The highest Freon 123a concentration in well MW-03 (140 µg/L) was detected in April 2017; concentrations have steadily decreased since that time to non-detect since 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 in MW-06 has been non-detected since 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 January 2018 data, the analytical results for the July 2018 sampling event (Figure 8) indicate that Freon 1113:

- Increased in MW-02 from a concentration of 1.6 µg/L in January 2018 to 2.3 µg/L in July 2018;
- Remained non-detect in MW-03 in January and July 2018;
- Remained non-detect in MW-04 in January and July 2018;
- Remained non-detect in MW-06 in January and July 2018; and

- Decreased in MW-07R from a concentration of 5.1 µg/L in January 2018 to 3.7 µg/L in July 2018.

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 ever detected in those wells.

Sulfate

In comparison with the January 2018 data, the July 2018 sulfate concentrations decreased in all wells except MW-02 (Figure 9).

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). Sulfate concentrations in groundwater at the site have remained 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.

Methane concentrations were above 3,000 µg/L in wells MW-02 and MW-06 in April 2017, suggesting increased methanogenesis. The concentrations in these wells decreased significantly in July 2017. In October 2017, methane concentrations increased to above 3,000 µg/L in wells MW-02, MW-03, MW-06, and MW-07R; 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. In January 2018, methane concentrations were considerably lower in wells MW-03 and MW-04, but increased to above 3,000 µg/L

in wells MW-02, MW-06, and MW-07. In July 2018, the methane concentration decreased to well below 3,000 µg/L in well MW-02 and remained below 3,000 µg/L in well MW-04. Methane concentrations were above 3,000 µg/L in wells MW-03, MW-06, and MW-07R (Figure 10).

Dissolved Oxygen

The dissolved oxygen levels have been below detection limits in all of the wells since December 2017 (Figure 11). 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

Historical temperature measurements show 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 12 presents a graphical presentation of temperature data for well MW-02 dating back to February 2008. The July 2018 temperature measurements were approximately 11 degrees Celsius higher than measurements recorded in January 2018. The temperature data suggests that groundwater at the site area is influenced by changes in seasonal weather conditions/precipitation infiltration. Figure 12 also shows dissolved oxygen concentrations in MW-02; dissolved oxygen is typically inversely proportional to temperature.

Oxidation-Reduction Potential

In comparison with the January 2018 data, the July 2018 oxidation-reduction potential values increased in wells MW-02, MW-03, and MW-07R and decreased in wells MW-04 and MW-06; the oxidation-reduction potential values remain negative in all five wells (Figure 13). Oxidation-reduction potential values have typically been negative throughout most of the treatment program.

Dehalococcoides and Dehalobacter

Between 2012 and 2017, select wells were 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 July 2018 event.

5.0 CONCLUSIONS

In October and November 2017, a total of 9,600 pounds of PlumeStop was injected at the site to adsorb residual Freon compounds and promote bioremediation processes. The treatment area focused on the vicinity of wells MW-02, MW-03, and MW-06. After the last PlumeStop injection (November 2017) PDBs have been used to obtain groundwater samples without PlumeStop constituents (e.g., carbon).

The absence of Freon 113 and Freon 123a in the groundwater demonstrates the success of the PlumeStop treatment program. Although the July 2018 results show the presence of Freon 1113, detected in wells MW-02 and MW-07R (at concentrations of 2.3 µg/L and 3.7 µg/L), those concentrations are below the criterion (5 µg/L) and should continue to decrease as the parent products are no longer present.

6.0 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 and November 2017. Section 4.0 of the Site Management Plan (SMP) (URS, 2010) specifies criteria that would trigger additional remediation measures. Based on the groundwater sampling data collected in July 2018, no additional remediation is required.

Section 2.2.2 of the SMP specifies criteria to terminate groundwater monitoring activities. In order to achieve these criteria, Freon 113, Freon 123a, and Freon 1113 concentrations must be at or below 5 µg/L for three consecutive sampling events. Groundwater sampling data from wells MW-02, MW-03, MW-04, and MW-06 have achieved these criteria. The MW-07R Freon 113 and 123a results from the last two sampling events have also met these criteria. The Freon 1113 in the sample collected from well MW-07R in December 2017 was slightly above the criterion (13 µg/L), just above the criterion in January 2018, and below the criterion in July 2018.

AECOM recommends discontinuing the Freon remediation and groundwater sampling activities and delisting the site because the intent of the Consent Order remediation program has been met; all of the wells have achieved the goal of contaminant concentrations below the groundwater criterion of 5 µg/L. While Freon 1113 was detected in well MW-07R at concentrations slightly above the groundwater criterion in December 2017 and January 2018, it can be expected that concentrations will continue to decrease because the parent products (Freon 113 and Freon 123a) are no longer present. Furthermore, the minimal residual Freon 1113 present in well MW-07R does not pose a potential risk to human health as the area is supplied with public drinking water.

It is noted that NYSDEC is compiling data for emerging contaminants 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS) from sites across New York State. In accordance with NYSDEC's letter request dated April 6, 2018, AECOM will sample upgradient well GZ-06 and downgradient wells MW-04 and MW-05 for 1,4-dioxane and PFAS analyses.

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TABLES

TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS (JULY 10, 2018)
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location	Measuring Point Elevation¹ (ft.)	Depth to Water (ft.)	Water Surface Elevation (ft.)
GZ-03 ²	26.16	6.20	19.96
GZ-06	28.02	7.42	20.60
MW-01	25.74	4.73	21.01
MW-02	25.63	5.53	20.10
MW-03	25.59	6.07	19.52
MW-04	25.31	5.57	19.74
MW-05	24.63	5.16	19.47
MW-06	25.77	6.1	19.67
MW-07R	25.63	6.11	19.52
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	10.38	17.03

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 JULY 2017 TO JULY 2018
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02	MW-02
Date Sampled			07/18/17	10/09/17	10/23/17	12/07/17	01/30/18	07/10/18
Parameter	Units	Criteria*						
Volatiles								
Chlorotrifluoroethene (Freon-1113)	UG/L	5	470	690	61	2	1.6	2.3
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	2100	660	0.78 J	1.0 U	1.0 U	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	68	37	7.2	0.33 J	1.0 U	1.0 U
Dissolved Gases								
Methane	UG/L	-	1200	5900	560	1100	4300	1400
Total Metals								
Iron	UG/L	300	48300	54400	46000	32900	57100	50500
Miscellaneous Parameters								
Alkalinity, Total (as CaCO ₃)	MG/L	-	325	248	223	240	280	246
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	325	248	223	240	280	246
Alkalinity, Carbonate (as CaCO ₃)	MG/L	-	5.0 U	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	5.0 U
Hardness (as CaCO ₃)	MG/L	-	420	37.6	358	341	487	402
Nitrogen, Nitrate	MG/L	10	1.0 U	0.10 U	NA	0.013 J	0.040 J	0.040 J
Nitrogen, Nitrite	MG/L	1	0.42 J	0.040 J	NA	0.022 J	0.040 J	0.042 J
Sulfate	MG/L	250	30.3	50.2	49.4	36.8	37.1	44.4
Total Organic Carbon	MG/L	-	10.8	7.1	6.4	4.2	5.7	5.1
Field Parameter								
Dissolved Oxygen	MG/L	-	1.07	0.75	2.39	0 U	0 U	0 U
Ferrous Iron	MG/L	-	7	6.5	6.5	NA	6.5	4
Oxidation-Reduction Potential	mV	-	-134	-113	-173	-114	-95	-77
pH	S.U.	-	6.59	6.51	6.9	6.44	6.59	6.89
Specific Conductance	MS/CM	-	2.63	2.46	2.44	2.12	2.91	2.51
Temperature	DEG C	-	19.18	19.89	20.01	16.17	10.81	21.47
Ferrous Iron	MG/L	-	7	6.5	6.5	NA	6.5	4
Turbidity	NTU	-	5.2	1.7	0 U	280	4.5	14.1

*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.

U - Non-Detect NA - Not Analyzed

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter

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 JULY 2017 TO JULY 2018
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03	MW-03
Date Sampled			07/18/17	10/09/17	10/23/17	12/07/17	01/30/18	07/10/18
Parameter	Units	Criteria*						
Volatiles								
Chlorotrifluoroethene (Freon-1113)	UG/L	5	160	230	210	1.0 U	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	80	17	7.6	1.0 U	1.0 U	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	17	5.2	7	1.0 U	1.0 U	1.0 U
Dissolved Gases								
Methane	UG/L	-	1200	5300	4300	3800	270	3700
Total Metals								
Iron	UG/L	300	24700	22300	20600	12400	17600	15400
Miscellaneous Parameters								
Alkalinity, Total (as CaCO ₃)	MG/L	-	276	250	263	248	236	233
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	276	250	263	248	236	233
Alkalinity, Carbonate (as CaCO ₃)	MG/L	-	5.0 U	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	5.0 U
Hardness (as CaCO ₃)	MG/L	-	376	37.6	358	261	723	284
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	NA	0.10 U	0.018 J	0.026 J
Nitrogen, Nitrite	MG/L	1	0.034 J	0.026 J	NA	0.014 J	0.018 J	0.025 J
Sulfate	MG/L	250	48.3	42.6	39.9	22.2	39.2	22.7
Total Organic Carbon	MG/L	-	6.4	5.9	6.2	2.2	1.6	1.6
Field Parameter								
Dissolved Oxygen	MG/L	-	1.35	0.77	2.84	0 U	0 U	0 U
Ferrous Iron	MG/L	-	6	4.5	5.5	NA	6	3.5
Oxidation-Reduction Potential	mV	-	-119	-106	-194	-133	-88	-75
pH	S.U.	-	6.55	6.48	6.74	6.55	6.41	6.94
Specific Conductance	MS/CM	-	1.96	1.93	1.95	1.53	5.61	1.05
Temperature	DEG C	-	19.12	19.62	19.11	11.53	11.23	18.91
Ferrous Iron	MG/L	-	6	4.5	5.5	NA	6	3.5
Turbidity	NTU	-	0 U	1.8	0 U	245	17.5	22.8

*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.

U - Non-Detect NA - Not Analyzed

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter

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 JULY 2017 TO JULY 2018
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Date Sampled			07/18/17	10/09/17	12/07/17	01/30/18	07/10/18
Parameter	Units	Criteria*					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0.90 J	4.5	1.0 U	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	1.0 U	1.0 U
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							
Methane	UG/L	-	210	1700	490	260	2000
Total Metals							
Iron	UG/L	300	17600	17800	7130	12700	30600
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	323	335	216	185	382
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	323	335	216	185	382
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	-	420	5.0 U	166	222	774
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	0.023 J	0.025 J
Nitrogen, Nitrite	MG/L	1	0.042 J	0.10 U	0.013 J	0.023 J	0.024 J
Sulfate	MG/L	250	7.3	9.7	3.8 J	4.0 J-	5.0 U
Total Organic Carbon	MG/L	-	12.6	12.5	8.9	6.9	16.5
Field Parameter							
Dissolved Oxygen	MG/L	-	1.01	0.71	0 U	0 U	0 U
Ferrous Iron	MG/L	-	7	7	4.5	5.5	4
Oxidation-Reduction Potential	mV	-	-117	-96	-71	-46	-62
pH	S.U.	-	6.6	6.56	6.51	6.4	6.86
Specific Conductance	MS/CM	-	2.49	2.39	1.2	1.46	3.76
Temperature	DEG C	-	21.81	21.8	16.17	8.99	21.85
Ferrous Iron	MG/L	-	7	7	4.5	5.5	4
Turbidity	NTU	-	9.5	1.9	17	4.3	9.5

*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.

U - Non-Detect NA - Not Analyzed

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter

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 JULY 2017 TO JULY 2018
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Date Sampled			07/18/17	10/09/17	12/07/17	01/30/18	07/10/18
Parameter	Units	Criteria*					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	31	63	1.0 U	1.0 U	1.0 U
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	1.0 U	1.0 U
Dissolved Gases							
Methane	UG/L	-	560	4600	2900	14000	15000
Total Metals							
Iron	UG/L	300	16000	16900	8390	6120	13900
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	252	256	258	224	261
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	252	256	258	224	261
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	MG/L	-	304	307	301	297	314
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	0.10 U	0.016 J-
Nitrogen, Nitrite	MG/L	1	0.051 J	0.018 J	0.013 J	0.021 J	0.022 J
Sulfate	MG/L	250	38.4	31.8	37.2	48.2	47.9
Total Organic Carbon	MG/L	-	4.3	4.9	1.5	1.0 U	1.7
Field Parameter							
Dissolved Oxygen	MG/L	-	0.84	1.06	0 U	0 U	0 U
Ferrous Iron	MG/L	-	7	5	NA	4.5	4.5
Oxidation-Reduction Potential	mV	-	-116	-126	-126	-28	-74
pH	S.U.	-	6.66	6.5	6.5	6.54	7.04
Specific Conductance	MS/CM	-	1.63	1.76	1.64	1.21	1.14
Temperature	DEG C	-	19.48	19.09	15.2	10.94	23.84
Ferrous Iron	MG/L	-	7	5	NA	4.5	4.5
Turbidity	NTU	-	0 U	0 U	1,000 >	12.9	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.

U - Non-Detect NA - Not Analyzed

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter

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 JULY 2017 TO JULY 2018
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Date Sampled			07/18/17	10/09/17	12/07/17	01/30/18	07/10/18
Parameter	Units	Criteria*					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	17	47	13	5.1	3.7
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
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.37 J	0.48 J	1.0 U	1.0 U	1.0 U
Dissolved Gases							
Methane	UG/L	-	830	8100	1800	6000	4500
Total Metals							
Iron	UG/L	300	33000	39000	38300	42300	30700
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	376	355	338	346	372
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	376	355	338	346	372
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	-	516	515	525	624	608
Nitrogen, Nitrate	MG/L	10	1.0 U	0.10 U	0.10 U	0.040 J	0.037 J
Nitrogen, Nitrite	MG/L	1	0.61 J	0.10 U	0.013 J	0.040 J	0.039 J
Sulfate	MG/L	250	10.2	5.0 U	2.5 J	6.1	5.0 U
Total Organic Carbon	MG/L	-	10.3	11.4	11.6	10.5	8.8
Field Parameter							
Dissolved Oxygen	MG/L	-	1.53	0.7	0 U	0 U	0 U
Ferrous Iron	MG/L	-	9	8	7	7	3
Oxidation-Reduction Potential	mV	-	-125	-99	-97	-82	-47
pH	S.U.	-	6.48	6.45	6.41	6.37	6.71
Specific Conductance	MS/CM	-	3.11	2.81	2.64	3.42	3.05
Temperature	DEG C	-	18.22	19.9	15.77	11.08	18.55
Ferrous Iron	MG/L	-	9	8	7	7	3
Turbidity	NTU	-	0 U	0.1	4.5	3.2	5.9

*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.

U - Non-Detect NA - Not Analyzed

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter

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 3
Comparison of July 2018 to January 2018 Data

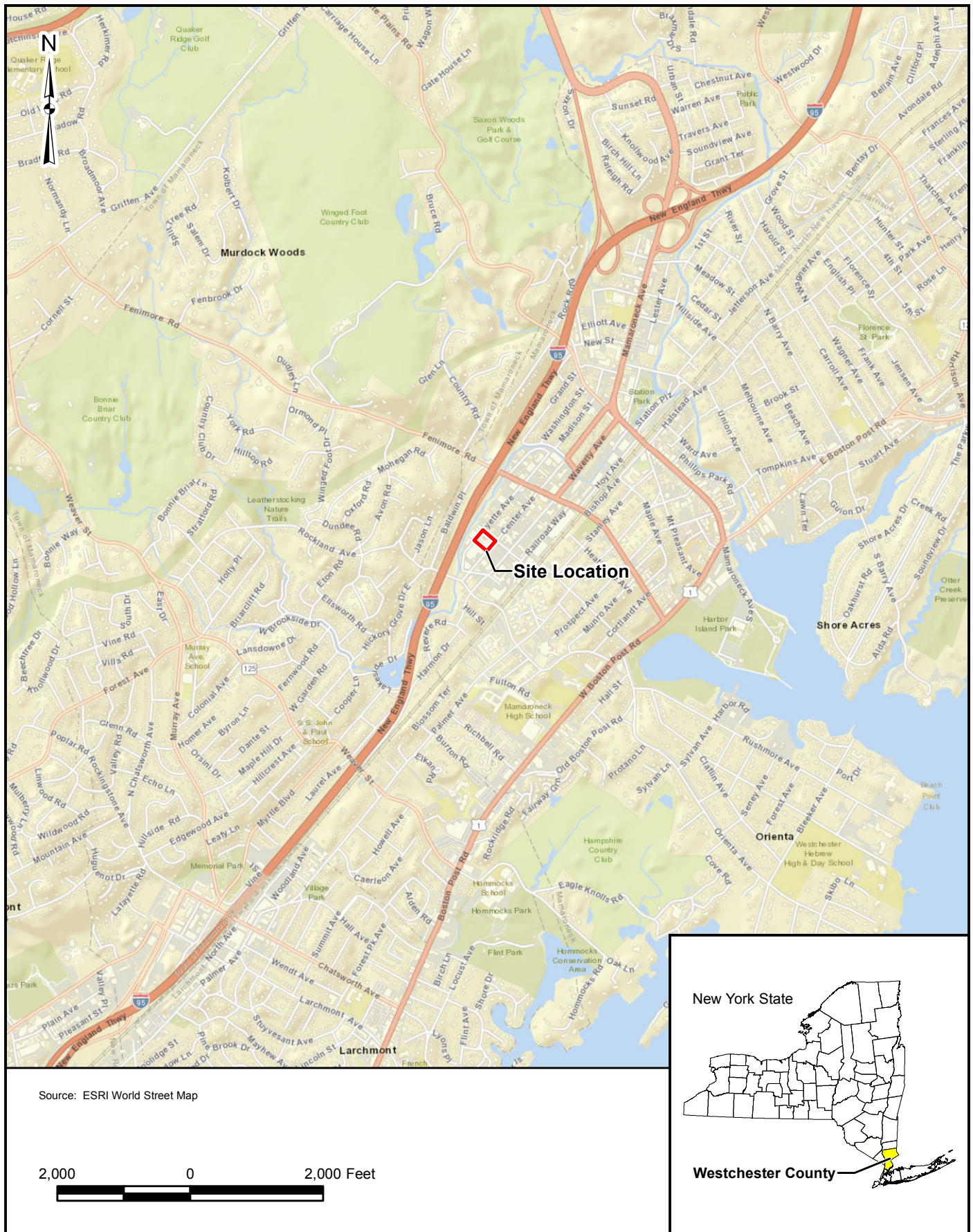
Location	Freon 113	Freon 123a	Freon 1113	Methane	Sulfate	ORP	DO
MW-02	↔	↔	↑	↓	↑	↑	↔
MW-03	↔	↔	↔	↑	↓	↑	↔
MW-04	↔	↔	↔	↑	↓	↓	↔
MW-06	↔	↔	↔	↑	↔	↓	↔
MW-07/07R	↔	↔	↓	↓	↓	↑	↔

Legend

- ↓ Decrease from previous event
- ↑ Increase from previous event
- ↔ No significant change from previous event

FIGURES

J:\Projects\1172730.00\000\DB\GIS\2001\ArcMap\Site Location (Portrait).mxd 1/2/2018

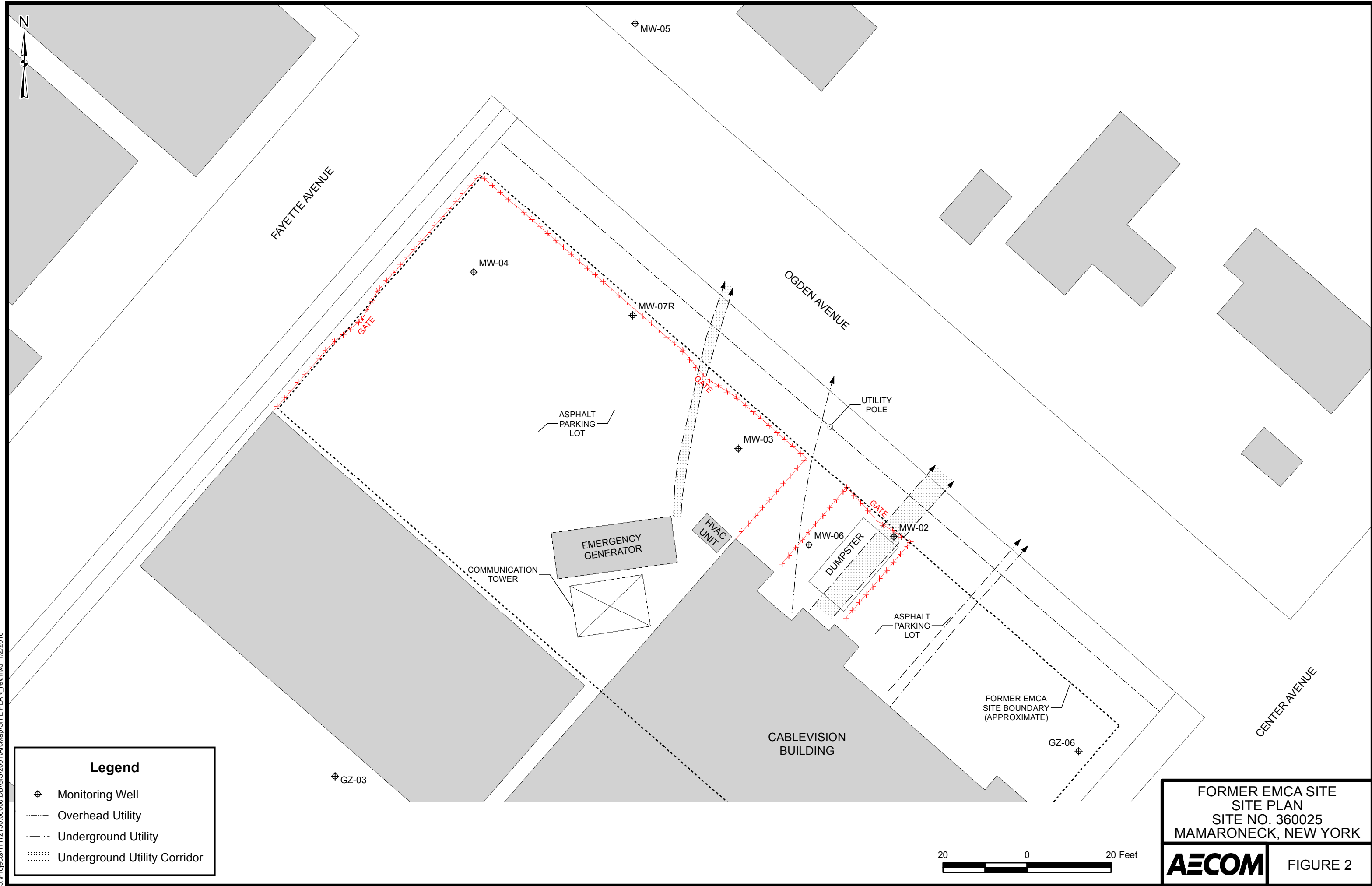


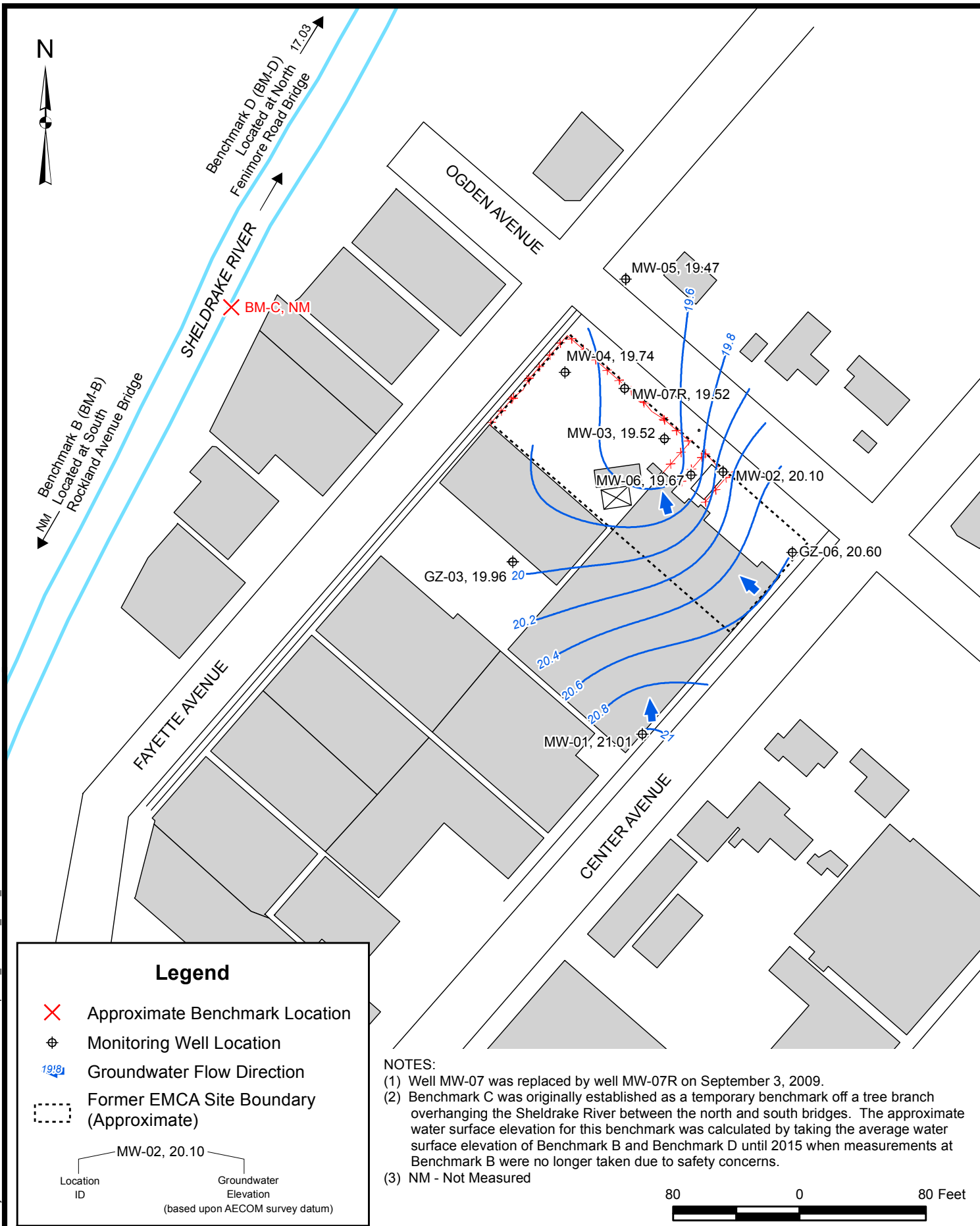
AECOM

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

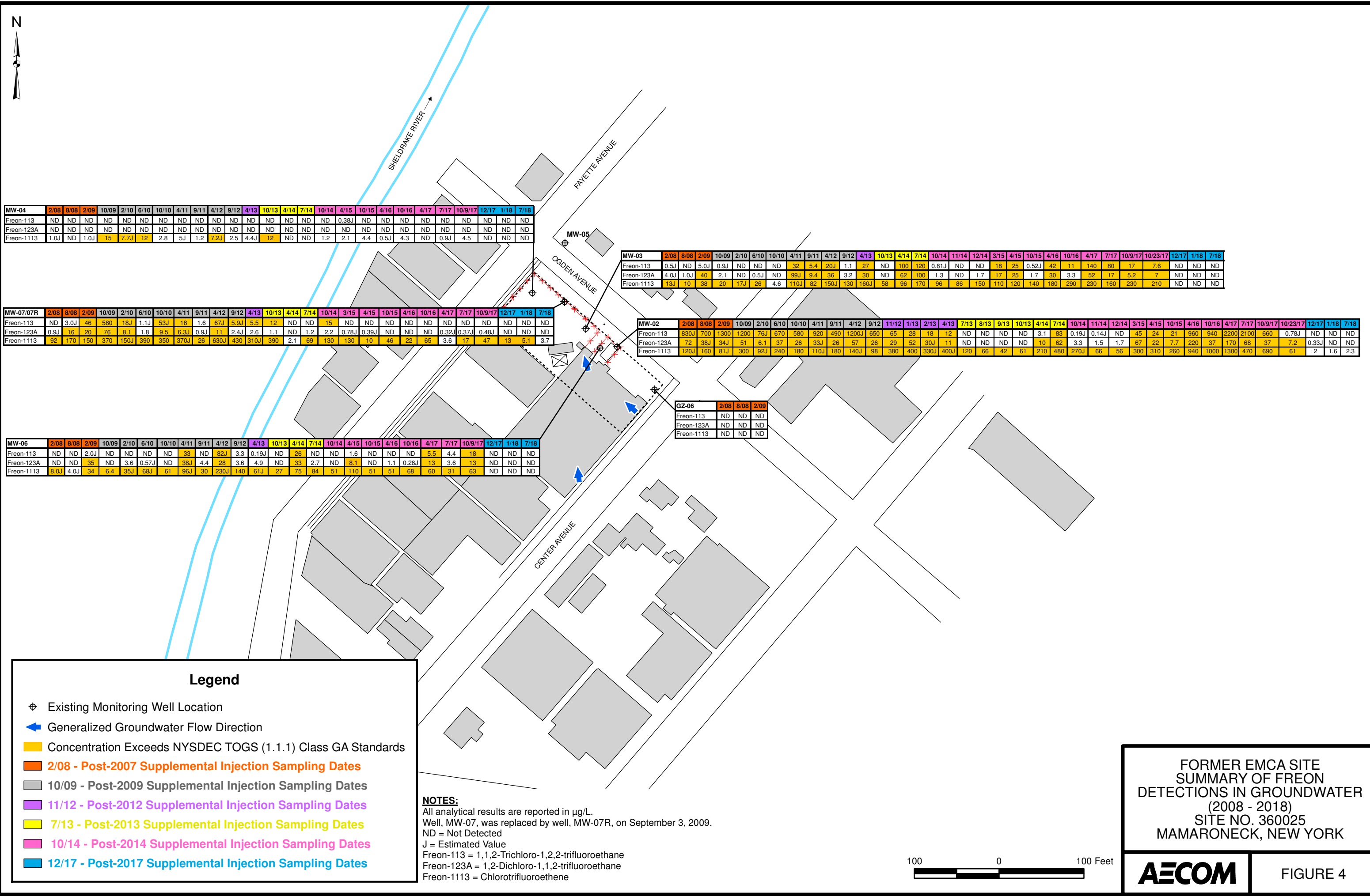
FIGURE 1

J:\Projects\1172730.00\000\00\GIS\200\1\ArcMap\SITE PLAN_rev.mxd 1/2/2018





\\URSBUFFALO\Buffalo\Projects\11172730_000000\GIS\2001\ArcMap\Chemical_Update_2018_07.mxd 7/26/2018



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	1/18	7/18
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	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	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	ND	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	1/18	7/18
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	ND	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	ND	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	ND	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	1/18	7/18
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	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	0.32J	0.37J	0.48J	ND	ND	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	5.1	3.7

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	1/18	7/18
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	ND	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	ND	ND
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	1.6	2.3

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	1/18	7/18
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	ND	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	ND	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	ND	ND

FIGURE 5
FORMER EMCA SITE
Freon 113 Concentrations - MW-03, MW-04, and MW-07/07R

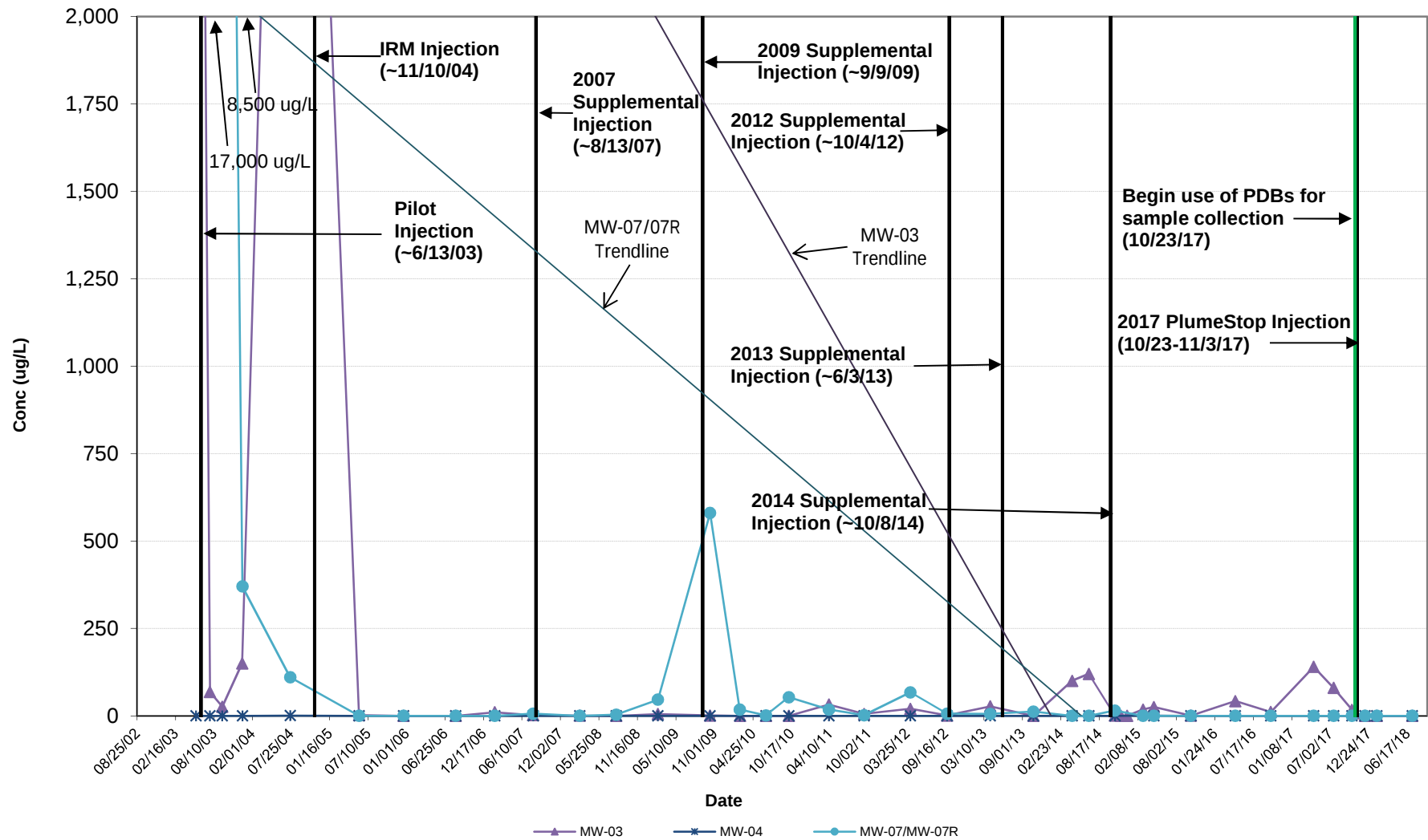


FIGURE 6 FORMER EMCA SITE

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

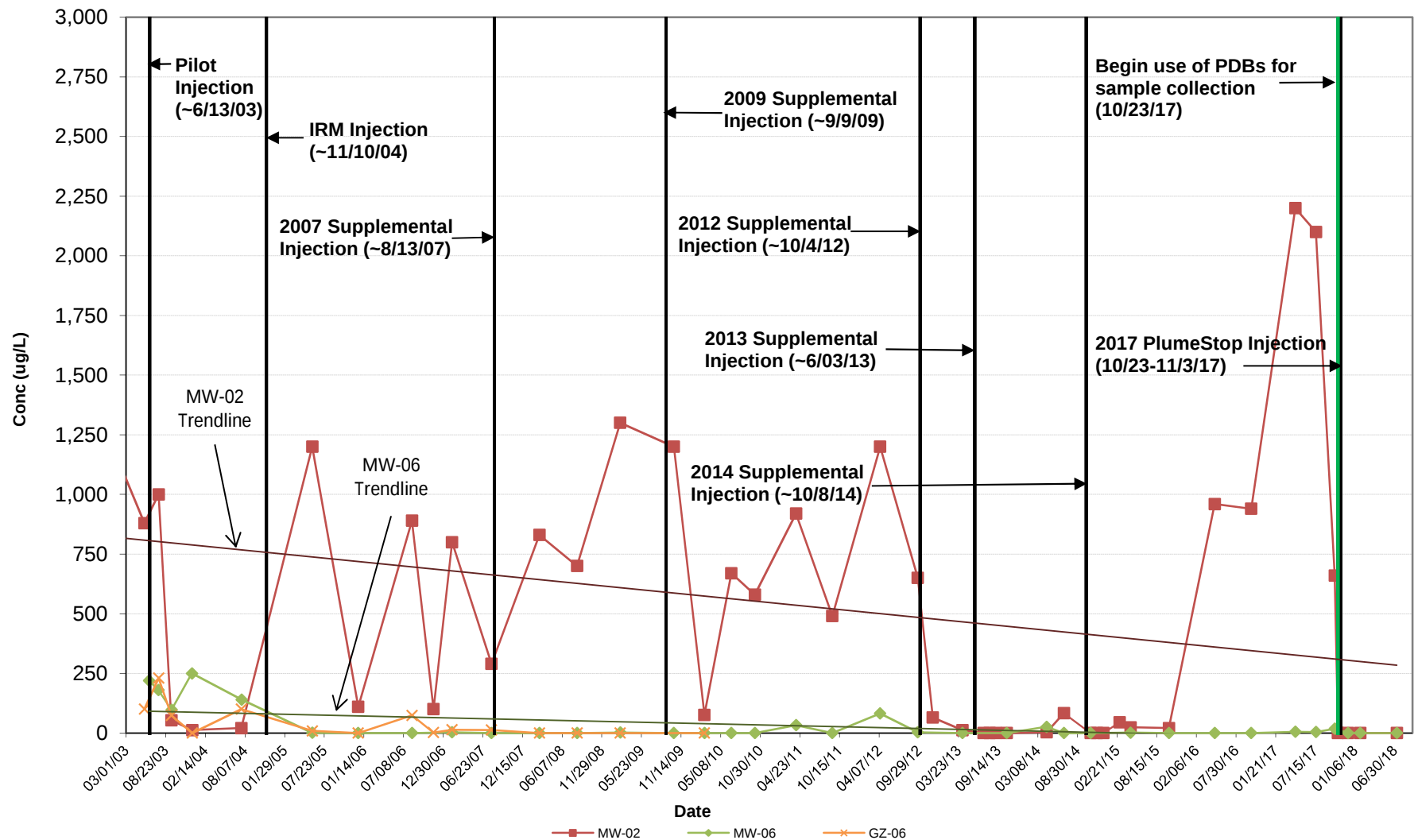


FIGURE 7
FORMER EMCA SITE
Freon 123a Concentrations

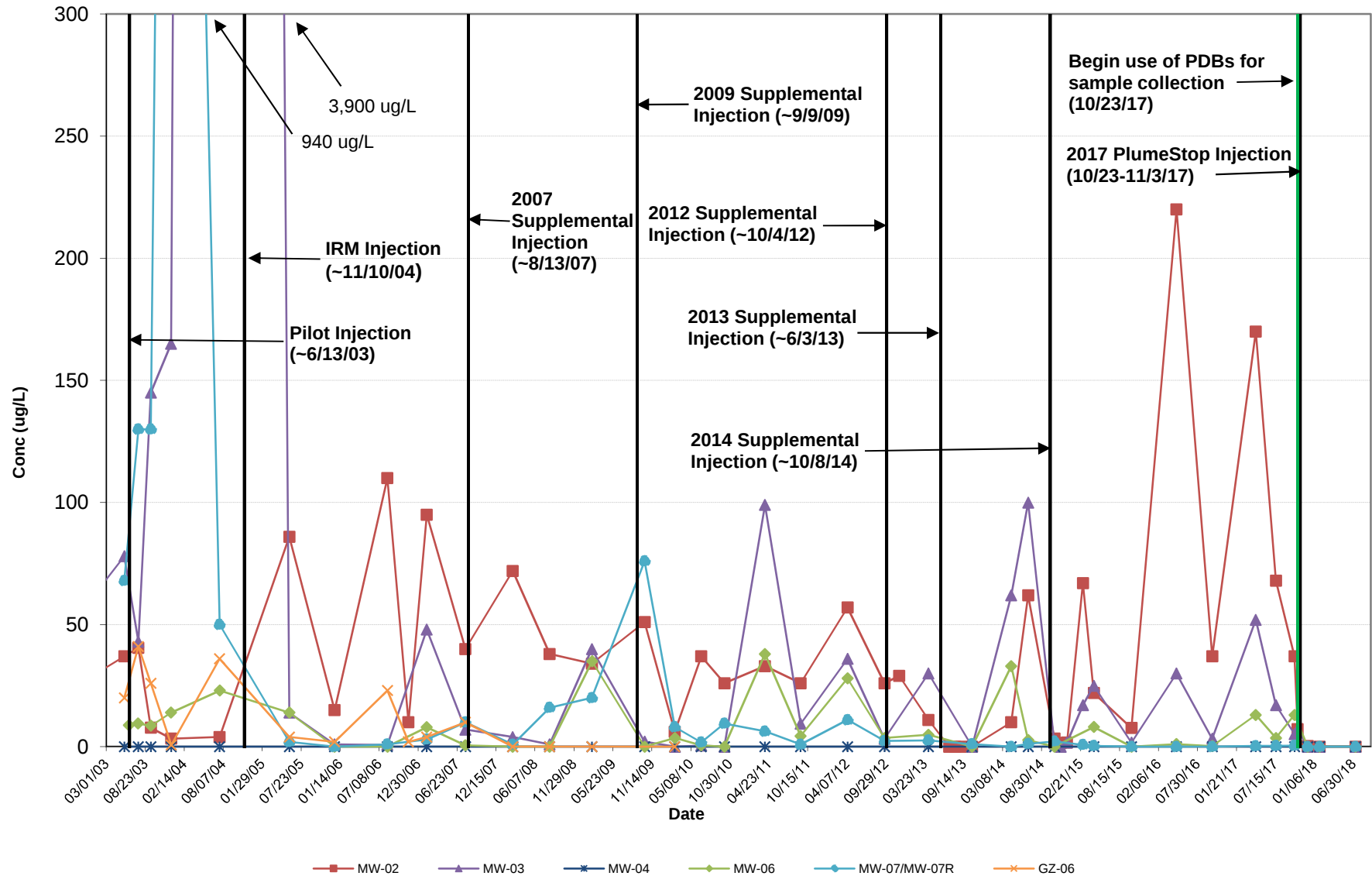


FIGURE 8
FORMER EMCA SITE
Freon 1113 Concentrations

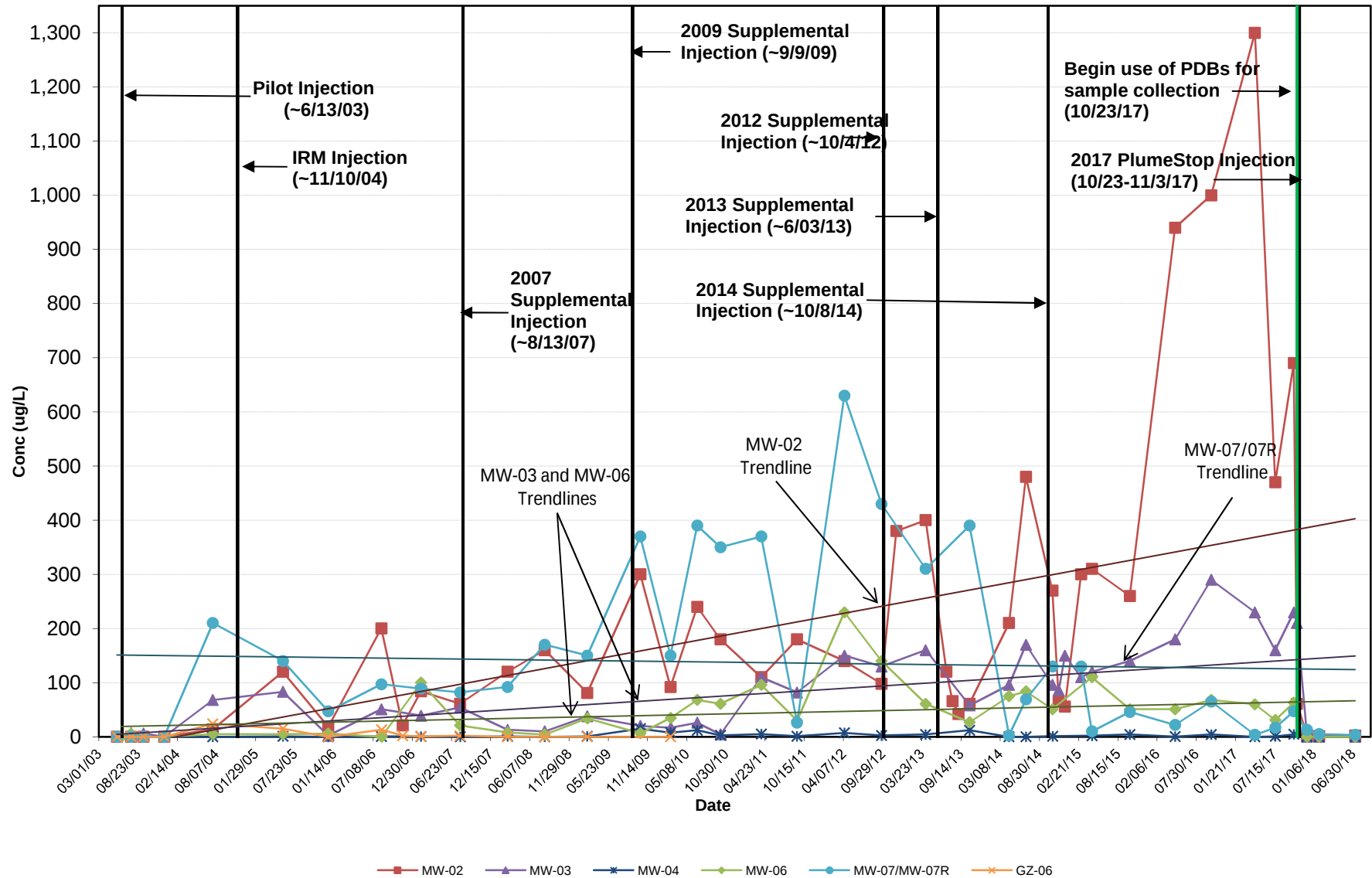


FIGURE 9 FORMER EMCA SITE

Sulfate Concentrations

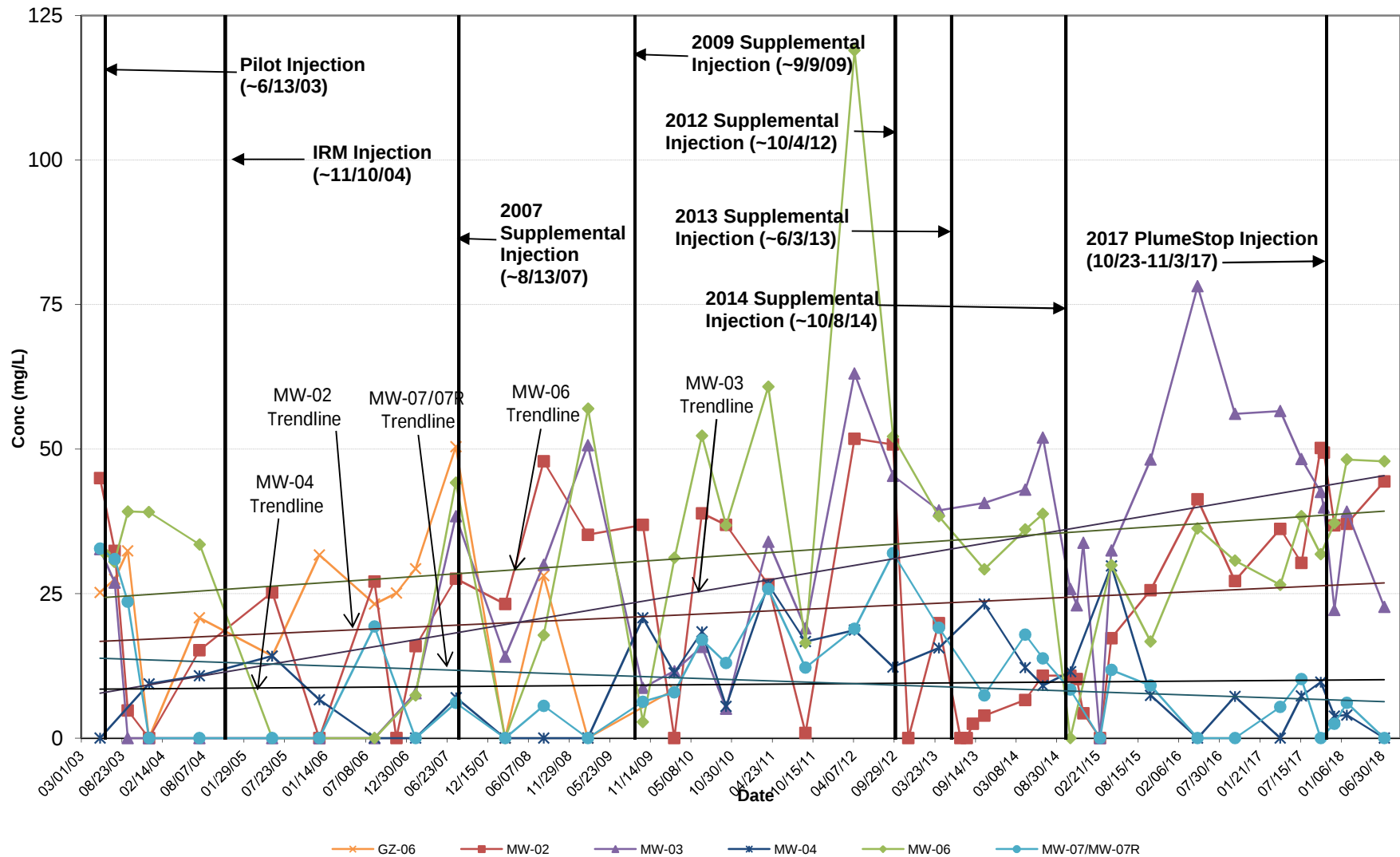


FIGURE 10
FORMER EMCA SITE
Methane Concentrations

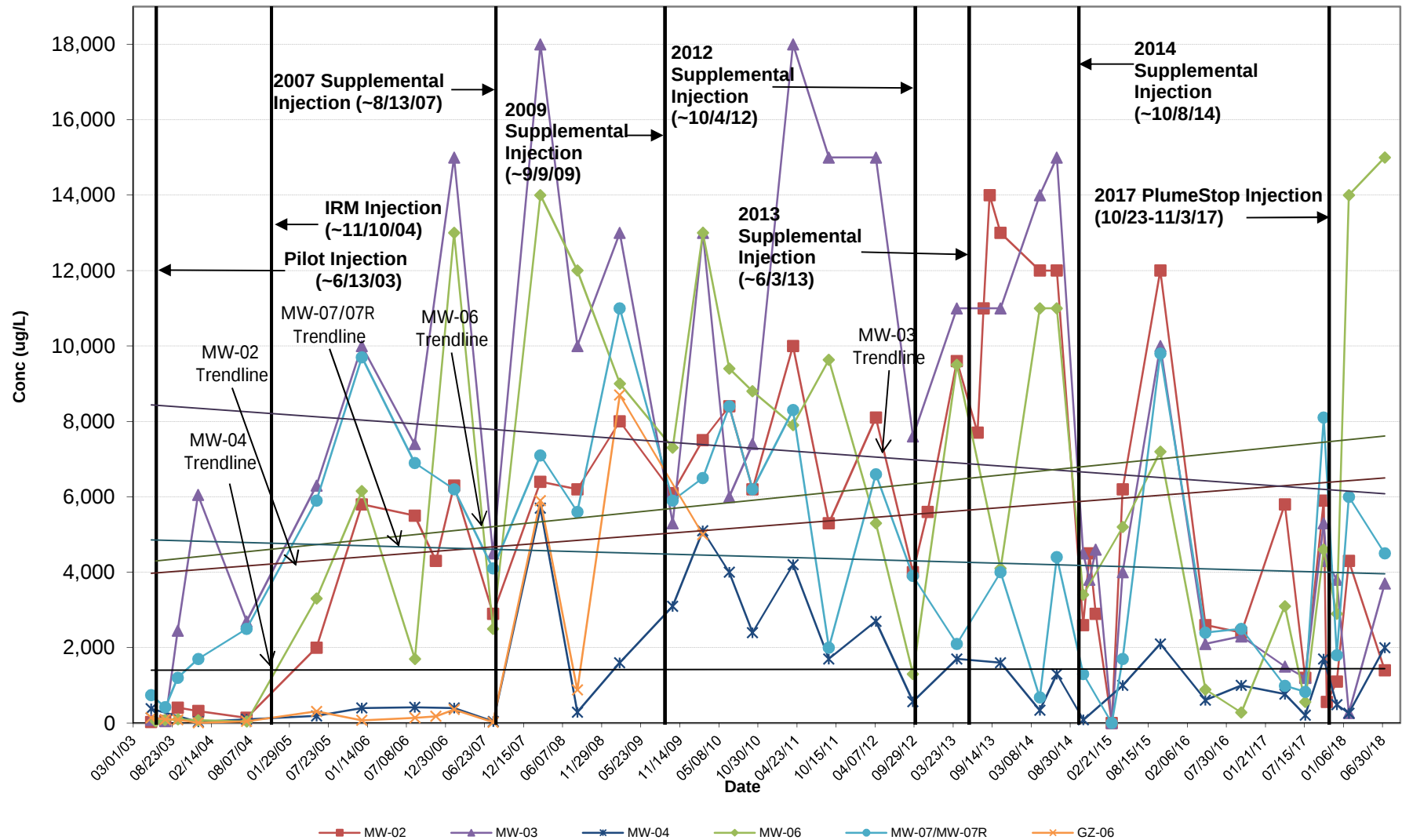


FIGURE 11 FORMER EMCA SITE

Dissolved Oxygen Concentrations

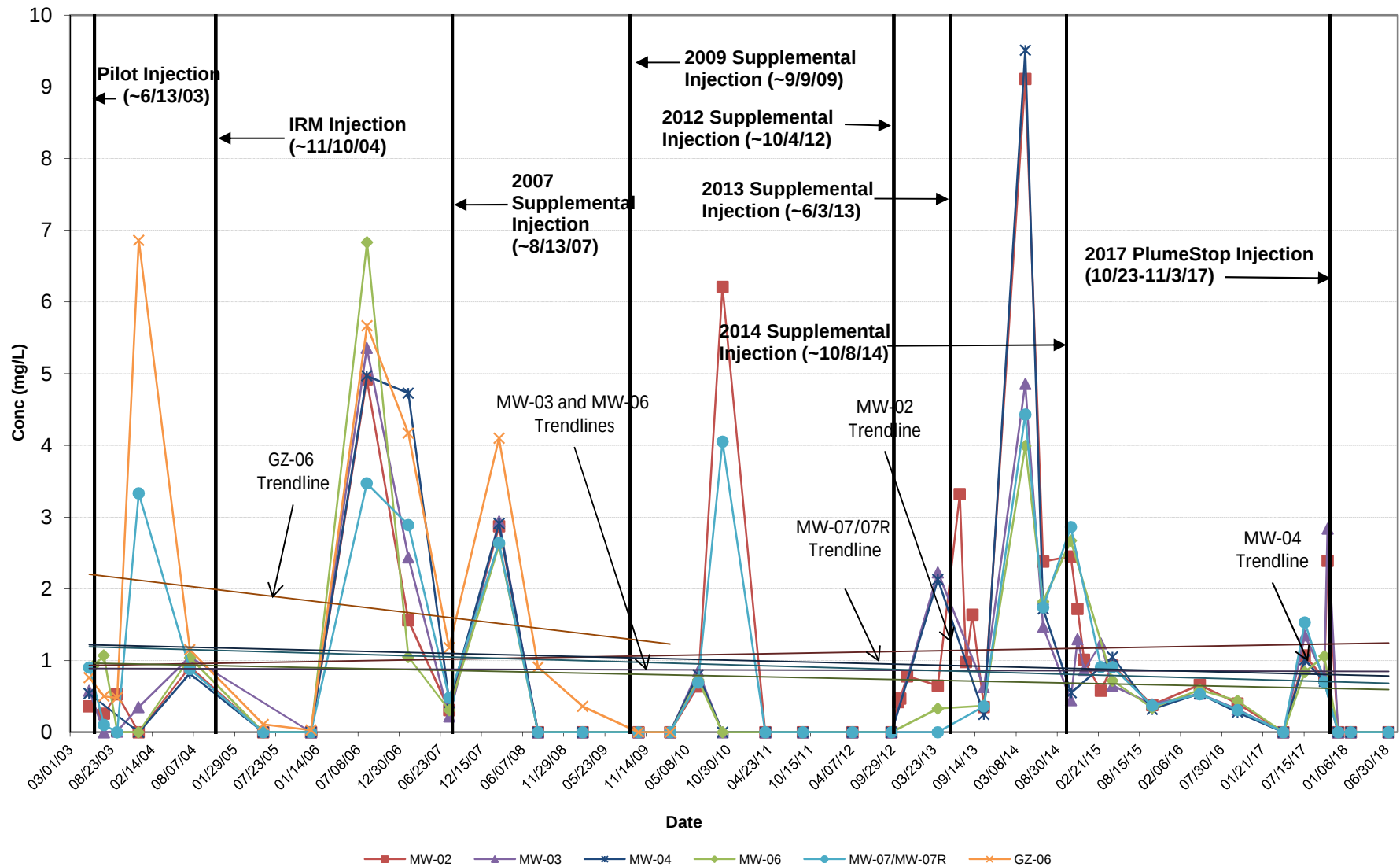


FIGURE 12
FORMER EMCA SITE
MW-02
Dissolved Oxygen vs Temperature

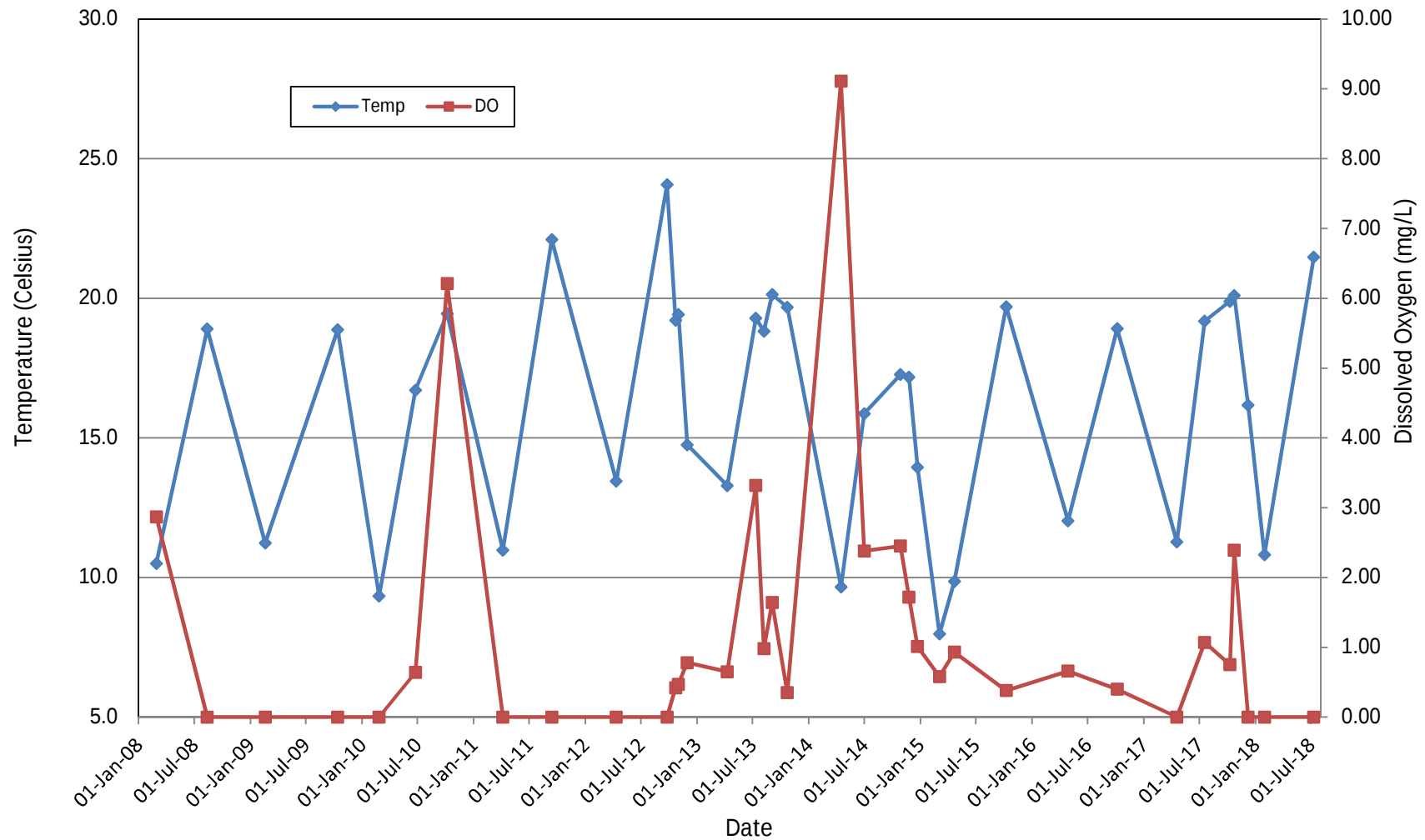
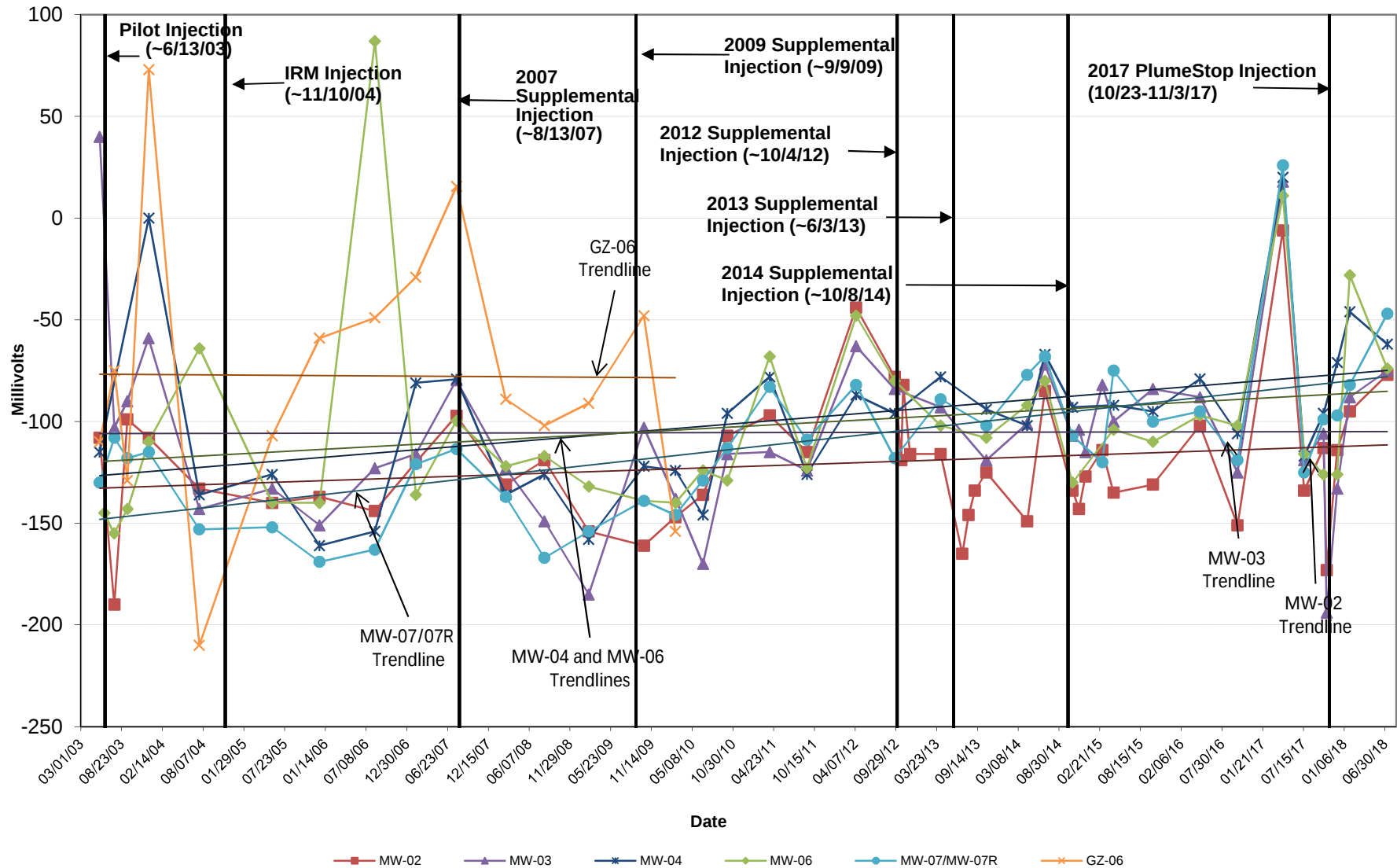


FIGURE 13
FORMER EMCA SITE
Oxidation-Reduction Potential



APPENDIX A

LOW FLOW GROUNDWATER PURGING/SAMPLING LOGS

EMCA

Mamaroneck, NY

Date:

07/10/18

MD + JC

July 10, 2018

Well ID	DTP	DTW 4Q16	DTB 4Q16	DTW	DTB
GZ-03	x	6.69	9.81	6.20	9.02
GZ-06	x	8.09	15.20	7.42	15.19
MW-01	x	5.48	8.02	4.73	7.73
MW-02	x	6.11	11.99	5.93 5.53	12.06
MW-03	x	5.99	13.98	6.07	13.98
MW-04	x	5.01	11.59	5.57	11.61
MW-05	x	5.44	15.18	5.07	15.32
MW-06	x	6.52	18.49	6.10	18.49
MW-07R	x	6.48	19.74	6.11	19.72
BM D	x	10.39	10.79	10.69	11.15

4/16"

13mm

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-02
Date: 7/10/18 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:	10.5'
Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.93	Depth to Well Bottom:	12.06
				Well Diameter:	1"
				Screen Length:	10'
Casing Type:	PVC	Volume in 1 Well Casing (liters):		Estimated Purge Volume (liters):	

Sample ID: 20180710 MW-02 Sample Time: 1345 Permit Methane (4)
14:55 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

[illegible]

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 ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

Remarks:

START - ~~MADE~~ DARK Gray color swampy odor
END - ~~off~~ color, faint odor (swamp)

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-03
Date: 7/10/18 Sampling Personnel: Megan Dascoli + John Cespo Company: AECOM/URS

Measuring Point: Below Top of Riser Initial Depth to Water: 6.07 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: 20180710 MW-03 Sample Time: 830- Freon(2) Methane(2)
920 sulfate QA/QC: Alk. hardness. nitrate, TOC, Fe
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

[illegible]

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 ($vol_{wt} = \pi r^2 h$)

Remarks: initial water - dk gray w/ suspended particles, swampy smell
observation @ sample time - clean, some suspended particles,
swampy odor

Project: Dgw/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-04
Date: 2/10/18 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:	10'
Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.57	Depth to Well Bottom:	11.61
				Well Diameter:	1"
				Screen Length:	10'
Casing Type:	PVC	Volume in 1 Well Casing (liters):		Estimated Purge Volume (liters):	

PURGE PARAMETERS

[illegible]

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 ($vol_{wd} = \pi r^2 h$)

Remarks:

START = Crown, no down
END = Crown, no down

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-06
Date: 7/10/18 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:	17'				
Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.10		Depth to Well Bottom:	18.49		Well Diameter:	1"	Screen Length:	10'
Casing Type:	PVC		Volume in 1 Well Casing (liters):		Estimated Purge Volume (liters):						

Sample ID: 20180710 MW-06 Sample Time: 1305 Front Methane (3 total) Remaining 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

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)
13:17	30.79	7.14	-72	1.02	15.2	0.92	200		
13:22	25.98	7.07	-71	1.13	16.0	0.15	200	6.29	
13:27	24.37	7.08	-72	1.15	6.5	0.0	225	6.29	
13:32	23.77	7.08	-72	1.17	3.1	0.0			
13:37	23.85	7.07	-72	1.16	1.5	0.0	225	6.29	
13:42	23.30	7.06	-73	1.17	0.7	0.0		6.31	
13:47	23.29	7.05	-73	1.17	0.0	0.0			
13:52	23.71	7.05	-74	1.16	0.0	0.0	225	6.31	
13:57	23.84	7.04	-74	1.14	0.0	0.0			
Tolerance:	--	0.1	+ or - 10	3%	10%	10%	--		

4 inch diameter well = 2470 ml/ft ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

Remarks:

meter well = 2470 ml/ft ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

Stems - clean; no odor 10 min into practice

Bud - " " "

Project: Dow/ Rohm& Haas, former EMCA Site: Mamaroneck, NY Well I.D.: MW-07R
Date: 7/10/18 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:	18'
Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.11	Depth to Well Bottom:	19.72
				Well Diameter:	1"
				Screen Length:	10'
Casing Type:	PVC	Volume in 1 Well Casing (liters):		Estimated Purge Volume (liters):	

PURGE PARAMETERS

[illegible]

Remarks:

NOTE: AT STRUT bottom was clean, PAINT ODD (JUMP). REMON
NO SUSPENDED PARTICLES
AT END - CLEAN, NO ODD

APPENDIX B

HISTORICAL ANALYTICAL DATA SUMMARY

APPENDIX B **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

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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 B

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.

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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 B **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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.

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Detection Limits shown are PQL

APPENDIX B

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
Ferrous Iron	MG/L	-	NA	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.

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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 B

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.

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Detection Limits shown are PQL

APPENDIX B

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.

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APPENDIX B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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

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 B

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
Ferrous Iron	MG/L	-	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 B

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.

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 B

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.



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

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.

Flags assigned during chemistry validation are shown.



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Detection Limits shown are PQL

APPENDIX B

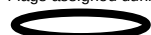
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
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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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 B **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.

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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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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 B

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.

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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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Detection Limits shown are PQL

APPENDIX B **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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.



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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 B

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
Ferrous Iron	MG/L	-	NA	NA	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.

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APPENDIX B

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.

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Detection Limits shown are PQL

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

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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Detection Limits shown are PQL

APPENDIX B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.

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APPENDIX B

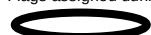
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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
Ferrous Iron	MG/L	-	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 B

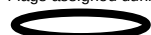
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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.

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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 B

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.

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APPENDIX B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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

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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] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

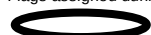
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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
Ferrous Iron	MG/L	-	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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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 B

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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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 B

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.

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Detection Limits shown are PQL

APPENDIX B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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Detection Limits shown are PQL

APPENDIX B

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
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	28	3	5	9.4

*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 B

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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APPENDIX B

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.

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APPENDIX B

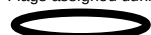
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	361
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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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 B

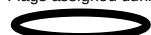
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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
Ferrous Iron	MG/L	-	NA	NA	NA	NA	50.6
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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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 B **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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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 B

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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Detection Limits shown are PQL

APPENDIX B

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 CaCO ₃)	MG/L	-	NA	245	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	245	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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 B

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
Ferrous Iron	MG/L	-	NA	9.0	NA	NA	NA
Turbidity	NTU	-	0.0	0.0	0.0	9.3	0.0

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APPENDIX B

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-02V09N	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 B

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-02V09N	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.

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APPENDIX B

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-02V09N	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 CaCO ₃)	MG/L	-	NA	NA	510	249	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	510	249	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.



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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

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

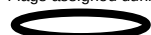
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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-02V09N	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
Ferrous Iron	MG/L	-	NA	NA	NA	44.3	NA
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.

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 B

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-02V09N	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 B

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-02V09N	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 B

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-02V09N	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 CaCO ₃)	MG/L	-	NA	NA	230	233	456
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	456
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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Detection Limits shown are PQL

APPENDIX B

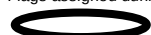
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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-02V09N	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
Ferrous Iron	MG/L	-	NA	NA	NA	46.5	3.5
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 B

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.

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 B **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.



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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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APPENDIX B

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 CaCO ₃)	MG/L	-	456	254	292	367	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	456	254	292	367	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.

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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] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

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
Ferrous Iron	MG/L	-	NA	3.0	NA	7.8	NA
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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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 B

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 B

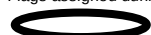
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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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Detection Limits shown are PQL

APPENDIX B

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 CaCO ₃)	MG/L	-	NA	NA	432	292	261
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	432	292	261
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

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
Ferrous Iron	MG/L	-	NA	NA	5.5	7.0	4.5
Turbidity	NTU	-	0.0	0.0	8.0	0.0	7.2

*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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20161005MW-02	20170418MW-02	20170718MW-02	20171009 MW-02	20171023 MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	10/23/17
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	1,000	1,300	470	690	61
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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20161005MW-02	20170418MW-02	20170718MW-02	20171009 MW-02	20171023 MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	10/23/17
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	940	2,200	2,100	660	0.78 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	37	170	68	37	7.2
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	2,400	5,800	1,200	5,900	560
Total Metals							
Iron	UG/L	300	53,800	61,800	48,300	54,400	46,000

*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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APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20161005MW-02	20170418MW-02	20170718MW-02	20171009 MW-02	20171023 MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	10/23/17
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	250	281	325	248	223
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	250	281	325	248	223
Alkalinity, Carbonate (as CaCO ₃)	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	-	90	400 J	NA	NA	NA
Dehalobacter	GC/mL	-	30	3.0 U	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	470	410	420	37.6	358
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	0.28	0.10 UJ	1.0 U	0.10 U	NA
Nitrogen, Nitrite	MG/L	1	0.037 J	0.049 J-	0.42 J	0.040 J	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	27.2	36.2	30.3	50.2	49.4
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	6.2	7.1	10.8	7.1	6.4
Ferrous Iron (lab)	MG/L	-	0.25 J	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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20161005MW-02	20170418MW-02	20170718MW-02	20171009 MW-02	20171023 MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	10/23/17
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	-	0.40	0 U	1.07	0.75	2.39
Ferrous Iron	MG/L	-	11	11	7.0	6.5	6.5
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-151	-6	-134	-113	-173
pH	S.U.	-	6.49	6.40	6.59	6.51	6.90
Specific Conductance	MS/CM	-	2.69	2.23	2.63	2.46	2.44
Temperature	DEG C	-	18.91	11.27	19.18	19.89	20.01
Ferrous Iron	MG/L	-	11	11	7.0	6.5	6.5
Turbidity	NTU	-	0.1	0 U	5.2	1.7	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

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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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-02	MW-02	MW-02	MW-03	MW-03
Sample ID			20171207MW-02	20180130MW-02	20180710 MW-02	MW03_52103	MW03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/07/17	01/30/18	07/10/18	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	2.0	1.6	2.3	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.

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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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-02	MW-02	MW-02	MW-03	MW-03
Sample ID			20171207MW-02	20180130MW-02	20180710 MW-02	MW03_52103	MW03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/07/17	01/30/18	07/10/18	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	1.0 U	1.0 U	1.0 U	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	0.33 J	1.0 U	1.0 U	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	-	1,100	4,300	1,400	86	56
Total Metals							
Iron	UG/L	300	32,900	57,100	50,500	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.

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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-03	MW-03
Sample ID			20171207MW-02	20180130MW-02	20180710 MW-02	MW03_52103	MW03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/07/17	01/30/18	07/10/18	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 CaCO ₃)	MG/L	-	240	280	246	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	240	280	246	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	341	487	402	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	0.013 J	0.040 J	0.040 J	2	NA
Nitrogen, Nitrite	MG/L	1	0.022 J	0.040 J	0.042 J	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	0.1 UJ
Sulfate	MG/L	250	36.8	37.1	44.4	32.7	26.9
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	4.2	5.7	5.1	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	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.

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Detection Limits shown are PQL

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-03	MW-03
Sample ID			20171207MW-02	20180130MW-02	20180710 MW-02	MW03_52103	MW03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/07/17	01/30/18	07/10/18	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 U	0 U	0 U	0.58	0 U
Ferrous Iron	MG/L	-	NA	6.5	4.0	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-114	-95	-77	40	-103
pH	S.U.	-	6.44	6.59	6.89	NA	NA
Specific Conductance	MS/CM	-	2.12	2.91	2.51	0.638	4.35
Temperature	DEG C	-	16.17	10.81	21.47	NA	NA
Ferrous Iron	MG/L	-	NA	6.5	4.0	NA	NA
Turbidity	NTU	-	280	4.5	14.1	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 B **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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APPENDIX B

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 B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.

Flags assigned during chemistry validation are shown.



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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

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[LOGDATE] >= /5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

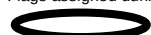
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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
Ferrous Iron	MG/L	-	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

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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 B

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-03V10N	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.

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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 B

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-03V10N	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.

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Detection Limits shown are PQL

APPENDIX B

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-03V10N	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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

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-03V10N	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
Ferrous Iron	MG/L	-	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 B **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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Detection Limits shown are PQL

APPENDIX B **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 B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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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 B

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
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	41	NA	2	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. 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

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Detection Limits shown are PQL

APPENDIX B

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.

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

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

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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Detection Limits shown are PQL

APPENDIX B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.

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Detection Limits shown are PQL

APPENDIX B

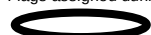
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
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 B **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.

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 B **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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Concentration Exceeds Criteria

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Detection Limits shown are PQL

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

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 CaCO ₃)	MG/L	-	596	596	NA	292	367
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	292	367
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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APPENDIX B

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
Ferrous Iron	MG/L	-	29.8	29.8	NA	3.5	26.0
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.

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 B **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-03V012N	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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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

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Detection Limits shown are PQL

APPENDIX B

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-03V012N	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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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 B

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-03V012N	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 CaCO ₃)	MG/L	-	237	220	253	329	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	220	253	329	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.

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Detection Limits shown are PQL

APPENDIX B

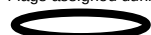
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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-03V012N	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
Ferrous Iron	MG/L	-	16.9	5.5	4.5	8.3	NA
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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Detection Limits shown are PQL

APPENDIX B

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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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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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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APPENDIX B

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 CaCO ₃)	MG/L	-	NA	NA	196	279	313
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	196	279	313
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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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
Ferrous Iron	MG/L	-	NA	NA	6.0	6.5	6.5
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.

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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20161005MW-03	20170418MW-03	20170718MW-03	20171009 MW-03	20171023 MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	10/23/17
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	290	230	160	230	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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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

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20161005MW-03	20170418MW-03	20170718MW-03	20171009 MW-03	20171023 MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	10/23/17
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	11	140	80	17	7.6
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	3.3	52	17	5.2	7.0
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	2,300	1,500	1,200	5,300	4,300
Total Metals							
Iron	UG/L	300	22,200	24,200	24,700	22,300	20,600

*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 B

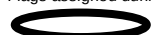
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20161005MW-03	20170418MW-03	20170718MW-03	20171009 MW-03	20171023 MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	10/23/17
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	297	264	276	250	263
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	297	264	276	250	263
Alkalinity, Carbonate (as CaCO ₃)	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	-	10	6	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	420	390	376	37.6	358
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	0.13	0.10 U	0.10 U	0.10 U	NA
Nitrogen, Nitrite	MG/L	1	0.036 J	0.031 J	0.034 J	0.026 J	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	56.1	56.6	48.3	42.6	39.9
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	5.8	6.0	6.4	5.9	6.2
Ferrous Iron (lab)	MG/L	-	0.35 J	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

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20161005MW-03	20170418MW-03	20170718MW-03	20171009 MW-03	20171023 MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	10/23/17
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	-	0.32	0 U	1.35	0.77	2.84
Ferrous Iron	MG/L	-	5.5	10	6.0	4.5	5.5
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-125	18	-119	-106	-194
pH	S.U.	-	6.52	6.51	6.55	6.48	6.74
Specific Conductance	MS/CM	-	2.03	1.63	1.96	1.93	1.95
Temperature	DEG C	-	20.15	12.91	19.12	19.62	19.11
Ferrous Iron	MG/L	-	5.5	10	6.0	4.5	5.5
Turbidity	NTU	-	0 U	0 U	0 U	1.8	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

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20171207MW-03	20180130MW-03	20180710 MW-03	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/07/17	01/30/18	07/10/18	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	1.0 U	1.0 U	1.0 U	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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Detection Limits shown are PQL

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20171207MW-03	20180130MW-03	20180710 MW-03	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/07/17	01/30/18	07/10/18	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	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	25 U	5.0 U
Ethene	UG/L	-	NA	NA	NA	25 U	5.0 U
Methane	UG/L	-	3,800	270	3,700	380	35
Total Metals							
Iron	UG/L	300	12,400	17,600	15,400	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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Detection Limits shown are PQL

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20171207MW-03	20180130MW-03	20180710 MW-03	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/07/17	01/30/18	07/10/18	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 CaCO ₃)	MG/L	-	248	236	233	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	248	236	233	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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	-	NA	NA	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	261	723	284	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	0.10 U	0.018 J	0.026 J	0.1 U	0.1 U
Nitrogen, Nitrite	MG/L	1	0.014 J	0.018 J	0.025 J	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	22.2	39.2	22.7	5.0 U	9.40
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	2.2	1.6	1.6	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	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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Detection Limits shown are PQL

APPENDIX B

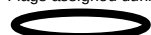
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20171207MW-03	20180130MW-03	20180710 MW-03	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/07/17	01/30/18	07/10/18	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 U	0 U	0 U	0.54	0 U
Ferrous Iron	MG/L	-	NA	6.0	3.5	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-133	-88	-75	-115	0 U
pH	S.U.	-	6.55	6.41	6.94	NA	NA
Specific Conductance	MS/CM	-	1.53	5.61	1.05	1.61	0.99
Temperature	DEG C	-	11.53	11.23	18.91	NA	NA
Ferrous Iron	MG/L	-	NA	6.0	3.5	NA	NA
Turbidity	NTU	-	245	17.5	22.8	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 B

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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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 B

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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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 B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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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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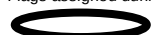
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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
Ferrous Iron	MG/L	-	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 B

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-04V005N
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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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 B **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-04V005N
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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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 B **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-04V005N
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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.

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Detection Limits shown are PQL

APPENDIX B

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-04V005N
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
Ferrous Iron	MG/L	-	NA	NA	NA	NA	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 B **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 B

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.

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 B

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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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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 B

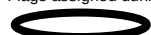
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

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
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
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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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 B **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-04V08N	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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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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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-04V08N	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

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 B **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-04V08N	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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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.



Concentration Exceeds Criteria

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Detection Limits shown are PQL

APPENDIX B

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-04V08N	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
Ferrous Iron	MG/L	-	NA	NA	NA	14.3	NA
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

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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 B **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-04V08N	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.

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 B

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-04V09N	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.

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] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

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-04V09N	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 CaCO ₃)	MG/L	-	211	210	5.0 U	243	239
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	211	210	5.0 U	NA	239
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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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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 B

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-04V09N	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
Ferrous Iron	MG/L	-	NA	27.7	14.9	13.9	7.0
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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Detection Limits shown are PQL

APPENDIX B

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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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 B

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.

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 B

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*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	295	208	338	303	255
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	295	208	338	303	255
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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

*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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APPENDIX B

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
Ferrous Iron	MG/L	-	6.5	5.2	5.5	6.0	5.5
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

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APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20161005MW-04	20170418MW-04	20170718MW-04	20171009 MW-04	20171207MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	12/07/17
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	4.3	1.0 U	0.90 J	4.5	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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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] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20161005MW-04	20170418MW-04	20170718MW-04	20171009 MW-04	20171207MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	12/07/17
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	1.0 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	-	1,000	770	210	1,700	490
Total Metals							
Iron	UG/L	300	10,900	21,700	17,600	17,800	7,130

*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

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APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20161005MW-04	20170418MW-04	20170718MW-04	20171009 MW-04	20171207MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	12/07/17
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	277	400	323	335	216
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	277	400	323	335	216
Alkalinity, Carbonate (as CaCO ₃)	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	3.0 U	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	320	540	420	5.0 U	166
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	0.10 U	0.10 U
Nitrogen, Nitrite	MG/L	1	0.046 J	0.028 J	0.042 J	0.10 U	0.013 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	7.2	5.0 U	7.3	9.7	3.8 J
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	9.8	13.2	12.6	12.5	8.9
Ferrous Iron (lab)	MG/L	-	0.10 UJ	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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20161005MW-04	20170418MW-04	20170718MW-04	20171009 MW-04	20171207MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/05/16	04/18/17	07/18/17	10/09/17	12/07/17
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	-	0.28	0 U	1.01	0.71	0 U
Ferrous Iron	MG/L	-	6.0	8.0	7.0	7.0	4.5
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-106	20	-117	-96	-71
pH	S.U.	-	6.61	6.56	6.60	6.56	6.51
Specific Conductance	MS/CM	-	2.02	2.15	2.49	2.39	1.20
Temperature	DEG C	-	21.54	13.83	21.81	21.80	16.17
Ferrous Iron	MG/L	-	6.0	8.0	7.0	7.0	4.5
Turbidity	NTU	-	1.5	0 U	9.5	1.9	17.0

*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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20180130MW-04	20180710 MW-04	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/30/18	07/10/18	05/21/03	12/18/03	07/23/04
Parameter	Units	Criteria*					
Volatiles							
Acetone	UG/L	50	NA	NA	5.0 U	5.0 U	NA
Benzene	UG/L	1	NA	NA	5.0 U	5.0 U	NA
Bromodichloromethane	UG/L	50	NA	NA	1.0 U	1.0 U	NA
Bromoform	UG/L	50	NA	NA	4.0 U	4.0 U	NA
Bromomethane	UG/L	5	NA	NA	5.0 U	5.0 U	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	R	R	NA
Carbon Disulfide	UG/L	60	NA	NA	5.0 U	5.0 U	NA
Carbon Tetrachloride	UG/L	5	NA	NA	2.0 U	2.0 U	NA
Chlorobenzene	UG/L	5	NA	NA	5.0 U	5.0 U	NA
Chloroethane	UG/L	5	NA	NA	5.0 U	5.0 U	NA
Chloroform	UG/L	7	NA	NA	5.0 U	5.0 U	NA
Chloromethane	UG/L	5	NA	NA	5.0 U	5.0 U	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1.0 U	1.0 U	0 U	0 U	10 U
Dibromochloromethane	UG/L	50	NA	NA	5.0 U	5.0 U	NA
1,1-Dichloroethane	UG/L	5	NA	NA	5.0 U	5.0 U	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	2.0 U	2.0 U	NA
1,1-Dichloroethene	UG/L	5	NA	NA	2.0 U	2.0 U	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	5.0 U	5.0 U	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	5.0 U	5.0 U	NA
1,2-Dichloropropane	UG/L	1	NA	NA	1.0 U	1.0 U	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	5.0 U	5.0 U	NA
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	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.

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APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20180130MW-04	20180710 MW-04	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/30/18	07/10/18	05/21/03	12/18/03	07/23/04
Parameter	Units	Criteria*					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	4.0 U	4.0 U	NA
2-Hexanone	UG/L	50	NA	NA	5.0 U	5.0 U	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	5.0 U	5.0 U	NA
Methylene Chloride	UG/L	5	NA	NA	3.0 U	3.0 U	NA
Styrene	UG/L	5	NA	NA	5.0 U	5.0 U	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	1.0 U	1.0 U	NA
Tetrachloroethene	UG/L	5	NA	NA	0.4 J	1.0 U	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	5.0 U	5.0 U	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	3.0 U	3.0 U	NA
Trichloroethene	UG/L	5	NA	NA	1.0 U	1.0 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	5.0 U	5.0 U	0.5 J
Toluene	UG/L	5	NA	NA	5.0 U	5.0 U	NA
Vinyl Chloride	UG/L	2	NA	NA	5.0 U	5.0 U	NA
Xylene (total)	UG/L	5	NA	NA	5.0 U	5.0 U	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U	5.0 U	5.0 U	10 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	5.0 U	5.0 U	NA
Ethene	UG/L	-	NA	NA	5.0 U	5.0 U	NA
Methane	UG/L	-	260	2,000	27	6.7	47
Total Metals							
Iron	UG/L	300	12,700	30,600	2,110	15,500	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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20180130MW-04	20180710 MW-04	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/30/18	07/10/18	05/21/03	12/18/03	07/23/04
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	1,670	39.7 U	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	185	382	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	185	382	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	MG/L	-	5.0 U	5.0 U	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	NA	NA	NA
Chloride	MG/L	250	NA	NA	49.8	27.5	63.9
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	222	774	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	0.25	0.1 U	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	3.6	0.61	NA
Nitrogen, Nitrate	MG/L	10	0.023 J	0.025 J	0.22	0.18	NA
Nitrogen, Nitrite	MG/L	1	0.023 J	0.024 J	0.1 U	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	4.0 J-	5.0 U	50.1	61.4	42.3
Sulfide	MG/L	0.05	NA	NA	NA	NA	1.0 U
Total Organic Carbon	MG/L	-	6.9	16.5	NA	NA	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	1.7	0.07	NA
Ferric Iron (lab)	MG/L	-	NA	NA	0.43	15.4	NA
Fluoride	MG/L	1.5	NA	NA	0 U	0.12	0.103

*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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20180130MW-04	20180710 MW-04	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/30/18	07/10/18	05/21/03	12/18/03	07/23/04
Parameter	Units	Criteria*					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	5 U	5 U	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	0.37	0 U	0.97
Ferrous Iron	MG/L	-	5.5	4.0	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-46	-62	26	121	46
pH	S.U.	-	6.40	6.86	NA	NA	NA
Specific Conductance	MS/CM	-	1.46	3.76	0.426	0.629	0.463
Temperature	DEG C	-	8.99	21.85	NA	NA	NA
Ferrous Iron	MG/L	-	5.5	4.0	NA	NA	NA
Turbidity	NTU	-	4.3	9.5	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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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

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Detection Limits shown are PQL

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703	MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/10/03	07/22/03	09/18/03	12/17/03	07/23/04
Parameter	Units	Criteria*					
Volatiles							
Acetone	UG/L	50	10 U	5.0 U	5.0 U	10 U	NA
Benzene	UG/L	1	10 U	5.0 U	5.0 U	10 U	NA
Bromodichloromethane	UG/L	50	2 U	1.0 U	1.0 U	2 U	NA
Bromoform	UG/L	50	8 U	4.0 U	4.0 U	8 U	NA
Bromomethane	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R	R	NA
Carbon Disulfide	UG/L	60	10 U	5.0 U	5.0 U	10 U	NA
Carbon Tetrachloride	UG/L	5	4 U	2.0 U	2.0 U	4 U	NA
Chlorobenzene	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
Chloroethane	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
Chloroform	UG/L	7	10 U	5.0 U	5.0 U	10 U	NA
Chloromethane	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	5.7 NJ	0 U	0 U	5 J
Dibromochloromethane	UG/L	50	10 U	5.0 U	5.0 U	10 U	NA
1,1-Dichloroethane	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
1,2-Dichloroethane	UG/L	0.6	4 U	2.0 U	2.0 U	4 U	NA
1,1-Dichloroethene	UG/L	5	4 U	1.2 J	2.0 U	4 U	NA
cis-1,2-Dichloroethene	UG/L	5	10 U	1.7 J	1.4 J	1.3 J	NA
trans-1,2-Dichloroethene	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
1,2-Dichloropropane	UG/L	1	2 U	1.0 U	1.0 U	2 U	NA
cis-1,3-Dichloropropene	UG/L	0.4	10 U	5.0 U	5.0 U	10 U	NA
trans-1,3-Dichloropropene	UG/L	0.4	10 U	5.0 U	5.0 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.

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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703	MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/10/03	07/22/03	09/18/03	12/17/03	07/23/04
Parameter	Units	Criteria*					
Volatiles							
Ethylbenzene	UG/L	5	8 U	4.0 U	4.0 U	8 U	NA
2-Hexanone	UG/L	50	10 U	5.0 U	5.0 U	10 U	NA
4-Methyl-2-Pentanone	UG/L	-	10 U	5.0 U	5.0 U	10 U	NA
Methylene Chloride	UG/L	5	6 U	3.0 U	3.0 U	6 U	NA
Styrene	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
1,1,2,2-Tetrachloroethane	UG/L	5	2 U	1.0 U	1.0 U	2 U	NA
Tetrachloroethene	UG/L	5	2 U	1.0 U	1.0 U	2 U	NA
1,1,1-Trichloroethane	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
1,1,2-Trichloroethane	UG/L	1	6 U	3.0 U	3.0 U	6 U	NA
Trichloroethene	UG/L	5	2 U	1.0 U	1.0 U	2 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	220	180	97	250	140 J
Toluene	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
Vinyl Chloride	UG/L	2	10 U	1.2 J	5.0 U	10 U	NA
Xylene (total)	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	8.8 J	9.5	8.6	14	23
Dissolved Gases							
Ethane	UG/L	-	5.0 U	5 U	5.0 U	5.0 U	NA
Ethene	UG/L	-	5.0 U	5 U	5.0 U	5.0 U	NA
Methane	UG/L	-	49	81	99	78	40
Total Metals							
Iron	UG/L	300	14,400	10,500	8,370 J	7,690	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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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703	MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/10/03	07/22/03	09/18/03	12/17/03	07/23/04
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	14,300	10,300	8,470 J	7,670	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	184	82.3	74.6	84.0	60.5
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	0.19	0.33	0.31	0.36	NA
Nitrogen, Kjeldahl, Total	MG/L	-	0.72	1.1	0.88	0.79	NA
Nitrogen, Nitrate	MG/L	10	0.33	0.1 U	0.1 U	0.1 UJ	NA
Nitrogen, Nitrite	MG/L	1	0.1 U	0.1 U	0.1 U	0.1 UJ	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	32.0	30.5	39.2	39.1	33.5
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	-	14.3	8.6	6.0	8.7	NA
Ferric Iron (lab)	MG/L	-	0.12	1.9	8.4	1.0 U	NA
Fluoride	MG/L	1.5	0.46	0.56	0.37	0.42	0.467

*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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703	MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/10/03	07/22/03	09/18/03	12/17/03	07/23/04
Parameter	Units	Criteria*					
Miscellaneous Parameters							
TPH	MG/L	-	5 U	5 U	NA	5.26 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	-	0.93	1.07	0 U	0 U	1.04
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-145	-155	-143	-110	-64
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	0.741	0.866	0.581	0.602	0.513
Temperature	DEG C	-	NA	NA	NA	NA	NA
Ferrous Iron	MG/L	-	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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			Field-Dup	MW-06	MW-06V15FD	MW-06V15N	MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	05/31/05	12/20/05	12/20/05	08/15/06
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	6.0 J	5.0 J	6.0 J	6.0 J	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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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			Field-Dup	MW-06	MW-06V15FD	MW-06V15N	MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	05/31/05	12/20/05	12/20/05	08/15/06
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	1.0 J	1.0 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	16	14	10 UJ	10 UJ	10 U
Dissolved Gases							
Ethane	UG/L	-	250 U	250 U	NA	NA	NA
Ethene	UG/L	-	250 U	250 U	NA	NA	NA
Methane	UG/L	-	3,600	3,300	6,700	5,600	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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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			Field-Dup	MW-06	MW-06V15FD	MW-06V15N	MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	05/31/05	12/20/05	12/20/05	08/15/06
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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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	5.0 U	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	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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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 B

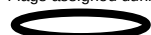
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			Field-Dup	MW-06	MW-06V15FD	MW-06V15N	MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	05/31/05	12/20/05	12/20/05	08/15/06
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	0 U	NA	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	-	NA	-140	NA	-140	NA
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	NA	1.13	NA	1.29	NA
Temperature	DEG C	-	NA	NA	NA	NA	NA
Ferrous Iron	MG/L	-	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 B **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-06V15N	20070207MW-06V15N	20070207MW-06V15N	20070731MW-06V15N	20070731MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	02/07/07	02/07/07	07/31/07	07/31/07
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	10 U	100	100	18	21
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 B **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-06V15N	20070207MW-06V15N	20070207MW-06V15N	20070731MW-06V15N	20070731MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	02/07/07	02/07/07	07/31/07	07/31/07
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	10 U	3.0 J	3.0 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	10 U	8.0 J	8.0 J	0.5 J	0.6 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	1,700	12,000	13,000	3,800	2,500
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

APPENDIX B

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-06V15N	20070207MW-06V15N	20070207MW-06V15N	20070731MW-06V15N	20070731MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	02/07/07	02/07/07	07/31/07	07/31/07
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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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	7.40	7.00	41.8	44.2
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 B

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-06V15N	20070207MW-06V15N	20070207MW-06V15N	20070731MW-06V15N	20070731MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	02/07/07	02/07/07	07/31/07	07/31/07
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	-	6.83	NA	1.05	NA	0.31
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	87	NA	-136	NA	-99.7
pH	S.U.	-	NA	NA	NA	NA	6.38
Specific Conductance	MS/CM	-	0.033	NA	0.79	NA	1.050
Temperature	DEG C	-	NA	NA	NA	NA	NA
Ferrous Iron	MG/L	-	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.

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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	02/28/08	08/12/08	02/19/09	10/13/09
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	8.0 J	8.0 J	4.0 J	34	6.4
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.

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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	02/28/08	08/12/08	02/19/09	10/13/09
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 UJ	10 U	10 U	2.0 J	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	10 U	10 U	35	1 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	12,000	14,000	12,000	9,000	7,300
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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	02/28/08	08/12/08	02/19/09	10/13/09
Parameter	Units	Criteria*	Field Duplicate (1-1)				
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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 U	5 U	17.8	57.0 J	2.8 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.

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

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	02/28/08	08/12/08	02/19/09	10/13/09
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	-	NA	2.61	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	-	NA	-122	-117	-132	-139
pH	S.U.	-	NA	6.24	6.37	6.30	6.57
Specific Conductance	MS/CM	-	NA	1.21	1.47	0.84	1.79
Temperature	DEG C	-	NA	12.2	17.0	13.23	17.80
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	9	5	8	2.2

*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.

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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13N	20101006MW-06V13N	20110406MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	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	35 J	68 J	61	57	96 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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13N	20101006MW-06V13N	20110406MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	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	1 UJ	1 U	1 U	1 U	33
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	3.6	0.57 J	1 U	1 U	38 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	13,000	9,400	8,300	8,800	7,900
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.

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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13N	20101006MW-06V13N	20110406MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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	31.2	52.3	36.8 J	34.5 J	60.8
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.

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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 B

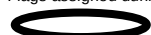
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13N	20101006MW-06V13N	20110406MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	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	0.73	NA	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	-	-140	-124	NA	-129	-68
pH	S.U.	-	6.46	8.81	NA	6.97	7.08
Specific Conductance	MS/CM	-	2.48	0.958	NA	0.879	1.61
Temperature	DEG C	-	11.80	17.79	NA	18.25	12.46
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	39	0.45	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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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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	20130409MW-06V12N	20131022MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	04/09/13	10/22/13
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	30	230 J	140	61 J	27
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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	20130409MW-06V12N	20131022MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	04/09/13	10/22/13
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	1 U	82 J	3.3	0.19 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	4.4	28	3.6	4.9	1.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	1,800	5,300	1,300	9,500	4,100
Total Metals							
Iron	UG/L	300	9,630	NA	12,100	24,700	20,500

*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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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	20130409MW-06V12N	20131022MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	04/09/13	10/22/13
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	388	NA	304	244	245
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	304	244	NA
Alkalinity, Carbonate (as CaCO ₃)	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	-	353,000 J	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	1 J	3 U	2 J
Hardness (as CaCO ₃)	MG/L	-	235	NA	308	337	99.0
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	0.10 U	0.25 J	0.10 UJ
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	0.017 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	16.5	119	52.2	38.4	29.2
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	10.9	NA	6.9	5.9	5.6
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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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units; mV - Millivolts

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APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	20130409MW-06V12N	20131022MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	04/09/13	10/22/13
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	0.33	0.37
Ferrous Iron	MG/L	-	7.4	NA	9.9	23.7	3.6
Ferric Iron (calculated)	MG/L	-	2.23	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-123	-48	-80	-102	-108
pH	S.U.	-	7.08	6.81	6.82	6.47	6.45
Specific Conductance	MS/CM	-	0.801	1.06	0.636	2.91	1.4
Temperature	DEG C	-	22.4	14.04	22.01	16.34	18.41
Ferrous Iron	MG/L	-	7.4	NA	9.9	23.7	3.6
Turbidity	NTU	-	5.3	0.0	0.0	0.2	1.4

*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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20140416MW-06V15N	20140701MW-06V15N	20141027MW-06V15N	DUP20141027	20150422MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	07/01/14	10/27/14	10/27/14	04/22/15
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	75	84	51	44	110
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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20140416MW-06V15N	20140701MW-06V15N	20141027MW-06V15N	DUP20141027	20150422MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	07/01/14	10/27/14	10/27/14	04/22/15
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	26	1.0 U	1.0 U	1.0 U	1.6
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	33	2.7	1.0 U	1.0 U	8.1
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	11,000	11,000	3,400	2,700	5,200
Total Metals							
Iron	UG/L	300	20,900	17,100	31,000	33,200	26,400

*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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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCCODE] <> 'TIC'

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20140416MW-06V15N	20140701MW-06V15N	20141027MW-06V15N	DUP20141027	20150422MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	07/01/14	10/27/14	10/27/14	04/22/15
Parameter	Units	Criteria*				Field Duplicate (1-1)	
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	240	259	740	726	311
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	240	259	740	726	311
Alkalinity, Carbonate (as CaCO ₃)	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 U	80	NA	3.0 U
Hardness (as CaCO ₃)	MG/L	-	370	317	297	564	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	0.10 UJ	0.10 U	1.0 U	0.58 J	0.10 U
Nitrogen, Nitrite	MG/L	1	0.051 J	0.0092 J	0.10 U	0.10 U	0.10 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	0.050 U
Sulfate	MG/L	250	36.1	38.8	5.0 U	5.0 U	29.9
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	5.8	6.0	314	298	5.1
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	0.90 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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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20140416MW-06V15N	20140701MW-06V15N	20141027MW-06V15N	DUP20141027	20150422MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	07/01/14	10/27/14	10/27/14	04/22/15
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	-	3.99	1.82	2.67	NA	0.72
Ferrous Iron	MG/L	-	6.0	5.0	6.7	NA	4.5
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-92	-80	-130	NA	-104
pH	S.U.	-	7.02	6.78	6.66	NA	6.83
Specific Conductance	MS/CM	-	1.73	1.33	2.34	NA	2.67
Temperature	DEG C	-	12.71	19.20	17.32	NA	12.18
Ferrous Iron	MG/L	-	6.0	5.0	6.7	NA	4.5
Turbidity	NTU	-	0	7.3	5.6	NA	4.1

*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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Detection Limits shown are PQL

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20151008MW-06	20160427MW-06	20161005MW-06	20170418MW-06	20170718MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/08/15	04/27/16	10/05/16	04/18/17	07/18/17
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	51	51	68	60	31
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

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

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

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20151008MW-06	20160427MW-06	20161005MW-06	20170418MW-06	20170718MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/08/15	04/27/16	10/05/16	04/18/17	07/18/17
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	1.0 U	1.0 U	1.0 U	5.5	4.4
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	1.1	0.28 J	13	3.6
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	7,200	890	280	3,100	560
Total Metals							
Iron	UG/L	300	20,200	20,600	14,900	20,200	16,000

*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.



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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] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20151008MW-06	20160427MW-06	20161005MW-06	20170418MW-06	20170718MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/08/15	04/27/16	10/05/16	04/18/17	07/18/17
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	312	277	256	290	252
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	312	277	256	290	252
Alkalinity, Carbonate (as CaCO ₃)	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	-	1 J	3 J	4	3.0 U	NA
Hardness (as CaCO ₃)	MG/L	-	337	380	320	360	304
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	2.0 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrogen, Nitrite	MG/L	1	0.020 J	0.098 J	0.031 J	0.024 J	0.051 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	16.7	36.3	30.7	26.5	38.4
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	5.5	4.9	4.3	5.1	4.3
Ferrous Iron (lab)	MG/L	-	0.44 J	NA	0.10 UJ	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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20151008MW-06	20160427MW-06	20161005MW-06	20170418MW-06	20170718MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/08/15	04/27/16	10/05/16	04/18/17	07/18/17
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	-	0.34	0.59	0.44	0 U	0.84
Ferrous Iron	MG/L	-	7.0	7.0	4.5	6.0	7.0
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-110	-97	-102	11	-116
pH	S.U.	-	5.50	6.35	6.66	6.63	6.66
Specific Conductance	MS/CM	-	1.60	1.97	1.59	1.76	1.63
Temperature	DEG C	-	18.70	13.61	17.83	12.04	19.48
Ferrous Iron	MG/L	-	7.0	7.0	4.5	6.0	7.0
Turbidity	NTU	-	0.0	0.0	0 U	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.



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Detection Limits shown are PQL

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-07
Sample ID			20171009 MW-06	20171207MW-06	20180130MW-06	20180710 MW-06	MW07-6-10-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/09/17	12/07/17	01/30/18	07/10/18	06/10/03
Parameter	Units	Criteria*					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	250 U
Benzene	UG/L	1	NA	NA	NA	NA	250 U
Bromodichloromethane	UG/L	50	NA	NA	NA	NA	50 U
Bromoform	UG/L	50	NA	NA	NA	NA	200 U
Bromomethane	UG/L	5	NA	NA	NA	NA	250 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	R
Carbon Disulfide	UG/L	60	NA	NA	NA	NA	250 U
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA	100 U
Chlorobenzene	UG/L	5	NA	NA	NA	NA	250 U
Chloroethane	UG/L	5	NA	NA	NA	NA	250 U
Chloroform	UG/L	7	NA	NA	NA	NA	250 U
Chloromethane	UG/L	5	NA	NA	NA	NA	250 U
Chlorotrifluoroethene (Freon-1113)	UG/L	5	63	1.0 U	1.0 U	1.0 U	0 U
Dibromochloromethane	UG/L	50	NA	NA	NA	NA	250 U
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA	250 U
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA	100 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	100 U
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	250 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	250 U
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA	50 U
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	250 U
trans-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA	250 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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-07
Sample ID			20171009 MW-06	20171207MW-06	20180130MW-06	20180710 MW-06	MW07-6-10-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/09/17	12/07/17	01/30/18	07/10/18	06/10/03
Parameter	Units	Criteria*					
Volatiles							
Ethylbenzene	UG/L	5	NA	NA	NA	NA	200 U
2-Hexanone	UG/L	50	NA	NA	NA	NA	250 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	250 U
Methylene Chloride	UG/L	5	NA	NA	NA	NA	150 U
Styrene	UG/L	5	NA	NA	NA	NA	250 U
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA	50 U
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	50 U
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA	250 U
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA	150 U
Trichloroethene	UG/L	5	NA	NA	NA	NA	50 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	18	1.0 U	1.0 U	1.0 U	5,400
Toluene	UG/L	5	NA	NA	NA	NA	250 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	250 U
Xylene (total)	UG/L	5	NA	NA	NA	NA	250 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	13	1.0 U	1.0 U	1.0 U	68 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	50 U
Ethene	UG/L	-	NA	NA	NA	NA	50 U
Methane	UG/L	-	4,600	2,900	14,000	15,000	740
Total Metals							
Iron	UG/L	300	16,900	8,390	6,120	13,900	21,300

*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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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-07
Sample ID			20171009 MW-06	20171207MW-06	20180130MW-06	20180710 MW-06	MW07-6-10-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/09/17	12/07/17	01/30/18	07/10/18	06/10/03
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	20,800
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	256	258	224	261	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	256	258	224	261	NA
Alkalinity, Carbonate (as CaCO ₃)	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	140
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	307	301	297	314	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	0.39
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	1.2
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	0.016 JF1	0.1 U
Nitrogen, Nitrite	MG/L	1	0.018 J	0.013 J	0.021 J	0.022 J	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	31.8	37.2	48.2	47.9	32.8
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	4.9	1.5	1.0 U	1.7	NA
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	20.2
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	1
Fluoride	MG/L	1.5	NA	NA	NA	NA	0.33

*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 B

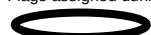
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-07
Sample ID			20171009 MW-06	20171207MW-06	20180130MW-06	20180710 MW-06	MW07-6-10-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/09/17	12/07/17	01/30/18	07/10/18	06/10/03
Parameter	Units	Criteria*					
Miscellaneous Parameters							
TPH	MG/L	-	NA	NA	NA	NA	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	-	1.06	0 U	0 U	0 U	0.9
Ferrous Iron	MG/L	-	5.0	NA	4.5	4.5	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-126	-126	-28	-74	-130
pH	S.U.	-	6.50	6.50	6.54	7.04	NA
Specific Conductance	MS/CM	-	1.76	1.64	1.21	1.14	0.93
Temperature	DEG C	-	19.09	15.20	10.94	23.84	NA
Ferrous Iron	MG/L	-	5.0	NA	4.5	4.5	NA
Turbidity	NTU	-	0 U	1,000 >	12.9	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.

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Detection Limits shown are PQL

APPENDIX B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW07	MW07-91703	MW-07_121703	MW-07	MW-07
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/03	09/17/03	12/17/03	07/22/04	05/31/05
Parameter	Units	Criteria*					
Volatiles							
Acetone	UG/L	50	500 U	250 U	50 U	NA	NA
Benzene	UG/L	1	500 U	250 U	14	NA	NA
Bromodichloromethane	UG/L	50	100 U	50 U	10 U	NA	NA
Bromoform	UG/L	50	400 U	200 U	40 U	NA	NA
Bromomethane	UG/L	5	500 U	250 U	50 U	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R	NA	NA
Carbon Disulfide	UG/L	60	500 U	250 U	50 U	NA	NA
Carbon Tetrachloride	UG/L	5	200 U	100 U	20 U	NA	NA
Chlorobenzene	UG/L	5	500 U	250 U	50 U	NA	NA
Chloroethane	UG/L	5	500 U	250 U	50 U	NA	NA
Chloroform	UG/L	7	500 U	250 U	50 U	NA	NA
Chloromethane	UG/L	5	500 U	250 U	50 U	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	0 U	210	140
Dibromochloromethane	UG/L	50	500 U	250 U	50 U	NA	NA
1,1-Dichloroethane	UG/L	5	500 U	250 U	50 U	NA	NA
1,2-Dichloroethane	UG/L	0.6	200 U	100 U	20 U	NA	NA
1,1-Dichloroethene	UG/L	5	68 J	100 U	20 U	NA	NA
cis-1,2-Dichloroethene	UG/L	5	500 U	250 U	50 U	NA	NA
trans-1,2-Dichloroethene	UG/L	5	500 U	250 U	50 U	NA	NA
1,2-Dichloropropane	UG/L	1	100 U	50 U	10 U	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	500 U	250 U	50 U	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	500 U	250 U	50 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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Detection Limits shown are PQL

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[LOGDATE] >= #5/1/2003# AND [MATRIX] = 'WG' AND [PRCODE] <> 'TIC'

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

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW07	MW07-91703	MW-07_121703	MW-07	MW-07
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/03	09/17/03	12/17/03	07/22/04	05/31/05
Parameter	Units	Criteria*					
Volatiles							
Ethylbenzene	UG/L	5	400 U	200 U	49	NA	NA
2-Hexanone	UG/L	50	500 U	250 U	50 U	NA	NA
4-Methyl-2-Pentanone	UG/L	-	500 U	250 U	50 U	NA	NA
Methylene Chloride	UG/L	5	300 U	150 U	30 U	NA	NA
Styrene	UG/L	5	500 U	250 U	50 U	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	100 U	50 U	10 U	NA	NA
Tetrachloroethene	UG/L	5	100 U	50 U	10 U	NA	NA
1,1,1-Trichloroethane	UG/L	5	500 U	250 U	50 U	NA	NA
1,1,2-Trichloroethane	UG/L	1	300 U	150 U	30 U	NA	NA
Trichloroethene	UG/L	5	100 U	50 U	10 U	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	8,500	6,100	370	110 J	10 U
Toluene	UG/L	5	500 U	250 U	50 U	NA	NA
Vinyl Chloride	UG/L	2	500 U	250 U	50 U	NA	NA
Xylene (total)	UG/L	5	500 U	250 U	50 U	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	130 J	130 J	940	50	2.0 J
Dissolved Gases							
Ethane	UG/L	-	50 U	50 U	120 U	NA	250 U
Ethene	UG/L	-	50 U	50 U	120 U	NA	250 U
Methane	UG/L	-	420	1,200	1,700	2,500	5,900
Total Metals							
Iron	UG/L	300	21,200	32,700 J	38,900	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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW07	MW07-91703	MW-07_121703	MW-07	MW-07
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/03	09/17/03	12/17/03	07/22/04	05/31/05
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	20,800	32,500 J	38,900	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Hydroxide	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	168	300 J	328	303	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	0.6	0.66	0.99	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	1.8	2.1	2.8	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	0.1 U	0.1 U	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	0.1 U	0.1 U	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	0.1 UJ	NA	NA	NA	NA
Sulfate	MG/L	250	31.0	23.6	5.0 U	5.0 U	5.0 U
Sulfide	MG/L	0.05	NA	NA	NA	1.0 U	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	-	19.8	33.8	19.5	NA	NA
Ferric Iron (lab)	MG/L	-	1.4	14.1	19.4	NA	NA
Fluoride	MG/L	1.5	0.25	0.24	0.19	0.190	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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW07	MW07-91703	MW-07_121703	MW-07	MW-07
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/03	09/17/03	12/17/03	07/22/04	05/31/05
Parameter	Units	Criteria*					
Miscellaneous Parameters							
TPH	MG/L	-	5 U	NA	5.26 U	NA	NA
Oil & Grease	MG/L	-	NA	5.44 U	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	-	0.1	0 U	3.33	0.88	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	-	-108	-118	-115	-153	-152
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.11	1.44	1.94	1.69	1.75
Temperature	DEG C	-	NA	NA	NA	NA	NA
Ferrous Iron	MG/L	-	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 B **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-07V15N	MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	07/31/07	02/28/08
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	47	97	89	82	92
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

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 B **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-07V15N	MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	07/31/07	02/28/08
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	10 U	10 U	10 U	6.0 J	10 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	10 U	1.0 J	3.0 J	10	0.9 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	9,700	6,900	6,200	4,100	7,100
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

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 B **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-07V15N	MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	07/31/07	02/28/08
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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	19.3	5.0 U	6.1	5 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	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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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 B

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-07V15N	MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	07/31/07	02/28/08
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	3.47	2.89	0.48	2.64
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-169	-163	-121	-113.5	-137
pH	S.U.	-	NA	NA	NA	6.78	6.32
Specific Conductance	MS/CM	-	1.65	1.44	2.02	2.182	1.62
Temperature	DEG C	-	NA	NA	NA	NA	9.03
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	54

*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.

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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07	MW-07	MW-07R	MW-07R	MW-07R
Sample ID			20080812MW07V09N	20090218MW-07V09N	20091013MW-07V09N	20100225MW-07V09N	20100624MW-07V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	10/13/09	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	170	150	370 D	150 J	350 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

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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07	MW-07	MW-07R	MW-07R	MW-07R
Sample ID			20080812MW07V09N	20090218MW-07V09N	20091013MW-07V09N	20100225MW-07V09N	20100624MW-07V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	10/13/09	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	3.0 J	46	580 D	18 J	1.1 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	16	20	76	8.1	1.7 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	5,600	11,000	5,900	6,500	8,100
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

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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07	MW-07	MW-07R	MW-07R	MW-07R
Sample ID			20080812MW07V09N	20090218MW-07V09N	20091013MW-07V09N	20100225MW-07V09N	20100624MW-07V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	10/13/09	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 CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	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	5.6	5 UJ	6.3	7.9	17
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

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 B

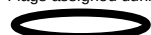
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07R	MW-07R	MW-07R
Sample ID			20080812MW07V09N	20090218MW-07V09N	20091013MW-07V09N	20100225MW-07V09N	20100624MW-07V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	10/13/09	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 U	0.0	0.0	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-167	-154	-139	-146	NA
pH	S.U.	-	6.48	6.18	6.45	6.52	NA
Specific Conductance	MS/CM	-	1.99	2.01	2.74	2.79	NA
Temperature	DEG C	-	17.3	12.11	18.36	10.69	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	25	21	1.1	1.1	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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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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N	20110913MW07RV15N	20120411MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/24/10	10/06/10	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	390	350	370 J	26	630 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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N	20110913MW07RV15N	20120411MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/24/10	10/06/10	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	53 J	18	1.6	67 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	1.8	9.5	6.3 J	0.94 J	11
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	8,400	6,200	8,300	2,000	6,400
Total Metals							
Iron	UG/L	300	NA	NA	NA	23,600	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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N	20110913MW07RV15N	20120411MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/24/10	10/06/10	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 CaCO ₃)	MG/L	-	NA	NA	NA	406	NA
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Carbonate (as CaCO ₃)	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	248	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	NA	NA	NA	637	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	0.1 U	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	11.2	13 J	25.8	12.2	18.9
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	NA	NA	11.3	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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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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N	20110913MW07RV15N	20120411MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/24/10	10/06/10	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	-	0.69	4.05	0.0	0.0	NA
Ferrous Iron	MG/L	-	NA	NA	NA	20.1	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	3.5	NA
Oxidation-Reduction Potential	mV	-	-129	-113	-83	-109	NA
pH	S.U.	-	8.83	6.82	6.39	6.86	NA
Specific Conductance	MS/CM	-	2.09	2.03	3.40	3.28	NA
Temperature	DEG C	-	16.45	21.42	12.08	22.4	NA
Ferrous Iron	MG/L	-	NA	NA	NA	20.1	NA
Turbidity	NTU	-	0.35	14.3	0.0	0.1	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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20120411MW-07R0411N	20120924MW-07R0411N	20130409MW-07R0411N	20131022MW-07R0411N	20140416MW-07R0411N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	04/09/13	10/22/13	04/16/14
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	540 J	430	310 J	390	2.4
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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20120411MW-07R0411EN	20120924MW-07R0411EN	20130409MW-07R0411EN	20131022MW-07R0411EN	20140416MW-07R0411EN
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	04/09/13	10/22/13	04/16/14
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	59 J	5.9 J	5.5	12	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	9.7	2.4 J	2.6	1.1	1.0 U
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	6,600	3,900	2,100	4,000	680
Total Metals							
Iron	UG/L	300	NA	29,900	29,000	30,900	24,500

*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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20120411MW-07R0411N	20120924MW-07R0411N	20130409MW-07R0411N	20131022MW-07R0411N	20140416MW-07R0411N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	04/09/13	10/22/13	04/16/14
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	NA	335	263	291	305
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	NA	335	263	NA	305
Alkalinity, Carbonate (as CaCO ₃)	MG/L	-	NA	5.0 U	5.0 U	NA	5.0 U
Alkalinity, Hydroxide	MG/L	-	NA	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	70
Dehalobacter	GC/mL	-	NA	10	4	5	3 U
Hardness (as CaCO ₃)	MG/L	-	NA	414	515	208	594
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	0.066 J	0.36 J	0.10 U
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	0.015 J	0.038 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	17.7	32.0	19.1	7.4	17.9
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	NA	11.8	9.3	12.3	7.8
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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20120411MW-07R0412N	20120924MW-07R0412N	20130409MW-07R0412N	20131022MW-07R0412N	20140416MW-07R0412N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	04/09/13	10/22/13	04/16/14
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	-	0.0	0.0	0.0	0.36	4.43
Ferrous Iron	MG/L	-	NA	30.4	27.5	15.3	6.0
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-82	-118	-89	-102	-77
pH	S.U.	-	6.72	6.69	6.35	6.31	6.89
Specific Conductance	MS/CM	-	2.10	1.78	4.84	1.84	3.31
Temperature	DEG C	-	13.63	22.35	17.93	19.42	11.39
Ferrous Iron	MG/L	-	NA	30.4	27.5	15.3	6.0
Turbidity	NTU	-	8.2	0.0	53.9	0.2	0

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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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20140701MW-07R047N	20141027MW-07R047N	20171009 MW-07R	20150304MW-07R	20150422MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/01/14	10/27/14	12/07/14	03/04/15	04/22/15
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	69	130	NA	130	10
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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20140701MW-07R047N	20141027MW-07R047N	20171009 MW-07R	20150304MW-07R	20150422MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/01/14	10/27/14	12/07/14	03/04/15	04/22/15
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	15	NA	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	1.2	2.2	NA	0.78 J	0.39 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	4,400	1,300	NA	NA	1,700
Total Metals							
Iron	UG/L	300	28,700	31,600	NA	NA	25,300

*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 B **HISTORICAL GROUNDWATER ANALYTICAL RESULTS** **FORMER EMCA SITE, MAMARONECK, NEW YORK**

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20140701MW-07R047N	20141027MW-07R047N	20171009 MW-07R	20150304MW-07R	20150422MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/01/14	10/27/14	12/07/14	03/04/15	04/22/15
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	399	394	355	NA	240
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	399	394	NA	NA	240
Alkalinity, Carbonate (as CaCO ₃)	MG/L	-	5.0 U	5.0 U	NA	NA	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	NA	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	-	4 U	3	NA	300	90
Hardness (as CaCO ₃)	MG/L	-	545	574	NA	NA	641
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	0.076 J	1.0 U	NA	NA	0.16
Nitrogen, Nitrite	MG/L	1	0.014 J	0.10 U	NA	NA	0.018 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	0.18
Sulfate	MG/L	250	13.8	8.4	NA	NA	11.8
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	11.4	15.2	NA	NA	6.0
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA	2.2 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.

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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20140701MW-07R047N	20141027MW-07R047N	20171009 MW-07R	20150304MW-07R	20150422MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/01/14	10/27/14	12/07/14	03/04/15	04/22/15
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	-	1.74	2.86	NA	0.91	0.91
Ferrous Iron	MG/L	-	6.0	4.65	NA	NA	4.0
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-68	-107	NA	-120	-75
pH	S.U.	-	6.64	6.56	NA	6.81	6.69
Specific Conductance	MS/CM	-	2.58	2.69	NA	2.56	4.17
Temperature	DEG C	-	19.41	18.94	NA	8.90	12.41
Ferrous Iron	MG/L	-	6.0	4.65	NA	NA	4.0
Turbidity	NTU	-	20.7	8.7	NA	0.0	0.9

*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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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20151008MW-07R	20160427MW-07R	20161005MW-07R	20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/08/15	04/27/16	10/05/16	04/18/17	07/18/17
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	46	22	65	3.6	17
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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20151008MW-07R	20160427MW-07R	20161005MW-07R	20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/08/15	04/27/16	10/05/16	04/18/17	07/18/17
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	1.0 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	0.32 J	0.37 J
Dissolved Gases							
Ethane	UG/L	-	NA	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA	NA
Methane	UG/L	-	9,800	2,400	2,500	990	830
Total Metals							
Iron	UG/L	300	39,000	39,300	42,200	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.

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Detection Limits shown are PQL

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

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20151008MW-07R	20160427MW-07R	20161005MW-07R	20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/08/15	04/27/16	10/05/16	04/18/17	07/18/17
Parameter	Units	Criteria*					
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	450	357	374	321	376
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	450	357	374	321	376
Alkalinity, Carbonate (as CaCO ₃)	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	-	20	7 J	5	3	NA
Hardness (as CaCO ₃)	MG/L	-	475	630	510	560	516
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	2.0 U	0.10 U	0.10 U	0.10 U	1.0 U
Nitrogen, Nitrite	MG/L	1	0.028 J	0.072 J	0.045 J	0.035 J	0.61 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	9.1	5.0 U	5.0 U	5.4	10.2
Sulfide	MG/L	0.05	NA	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	11.8	9.7	10.4	7.6	10.3
Ferrous Iron (lab)	MG/L	-	0.49 J	NA	2.6 J	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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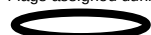
Detection Limits shown are PQL

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

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20151008MW-07R	20160427MW-07R	20161005MW-07R	20170418MW-07R	20170718MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/08/15	04/27/16	10/05/16	04/18/17	07/18/17
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	-	0.37	0.53	0.31	0 U	1.53
Ferrous Iron	MG/L	-	7.0	7.0	11	10	9.0
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-100	-95	-119	26	-125
pH	S.U.	-	5.35	6.25	6.46	6.43	6.48
Specific Conductance	MS/CM	-	2.40	3.44	2.61	3.53	3.11
Temperature	DEG C	-	19.15	14.10	18.98	12.47	18.22
Ferrous Iron	MG/L	-	7.0	7.0	11	10	9.0
Turbidity	NTU	-	0.0	0.0	0 U	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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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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20171009 MW-07R	20171207MW-07R	20180130MW-07R	20180710 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-
Date Sampled			10/09/17	12/07/17	01/30/18	07/10/18
Parameter	Units	Criteria*				
Volatiles						
Acetone	UG/L	50	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA
Bromodichloromethane	UG/L	50	NA	NA	NA	NA
Bromoform	UG/L	50	NA	NA	NA	NA
Bromomethane	UG/L	5	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA
Carbon Disulfide	UG/L	60	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	5	NA	NA	NA	NA
Chlorobenzene	UG/L	5	NA	NA	NA	NA
Chloroethane	UG/L	5	NA	NA	NA	NA
Chloroform	UG/L	7	NA	NA	NA	NA
Chloromethane	UG/L	5	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	47	13	5.1	3.7
Dibromochloromethane	UG/L	50	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	5	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	0.6	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	1	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	0.4	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	0.4	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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20171009 MW-07R	20171207MW-07R	20180130MW-07R	20180710 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-
Date Sampled			10/09/17	12/07/17	01/30/18	07/10/18
Parameter	Units	Criteria*				
Volatiles						
Ethylbenzene	UG/L	5	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA
Methylene Chloride	UG/L	5	NA	NA	NA	NA
Styrene	UG/L	5	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	5	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	5	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	1	NA	NA	NA	NA
Trichloroethene	UG/L	5	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
Toluene	UG/L	5	NA	NA	NA	NA
Vinyl Chloride	UG/L	2	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.48 J	1.0 U	1.0 U	1.0 U
Dissolved Gases						
Ethane	UG/L	-	NA	NA	NA	NA
Ethene	UG/L	-	NA	NA	NA	NA
Methane	UG/L	-	8,100	1,800	6,000	4,500
Total Metals						
Iron	UG/L	300	39,000	38,300	42,300	30,700

*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.

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 Equivalent 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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20171009 MW-07R	20171207MW-07R	20180130MW-07R	20180710 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-
Date Sampled			10/09/17	12/07/17	01/30/18	07/10/18
Parameter	Units	Criteria*				
Dissolved Metals						
Iron	UG/L	300	NA	NA	NA	NA
Miscellaneous Parameters						
Alkalinity, Total (as CaCO ₃)	MG/L	-	355	338	346	372
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	355	338	346	372
Alkalinity, Carbonate (as CaCO ₃)	MG/L	-	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
Chloride	MG/L	250	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA
Hardness (as CaCO ₃)	MG/L	-	515	525	624	608
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.040 J	0.037 J
Nitrogen, Nitrite	MG/L	1	0.10 U	0.013 J	0.040 J	0.039 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	2.5 J	6.1	5.0 U
Sulfide	MG/L	0.05	NA	NA	NA	NA
Total Organic Carbon	MG/L	-	11.4	11.6	10.5	8.8
Ferrous Iron (lab)	MG/L	-	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA
Fluoride	MG/L	1.5	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 B

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20171009 MW-07R	20171207MW-07R	20180130MW-07R	20180710 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-
Date Sampled			10/09/17	12/07/17	01/30/18	07/10/18
Parameter	Units	Criteria*				
Miscellaneous Parameters						
TPH	MG/L	-	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA
Volatile Fatty Acids						
Acetic Acid	MG/L	-	NA	NA	NA	NA
Formic Acid	MG/L	-	NA	NA	NA	NA
Lactic Acid	MG/L	-	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA
Propionic Acid	MG/L	-	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	-	0.70	0 U	0 U	0 U
Ferrous Iron	MG/L	-	8	7.0	7.0	3.0
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-99	-97	-82	-47
pH	S.U.	-	6.45	6.41	6.37	6.71
Specific Conductance	MS/CM	-	2.81	2.64	3.42	3.05
Temperature	DEG C	-	19.90	15.77	11.08	18.55
Ferrous Iron	MG/L	-	8	7.0	7.0	3.0
Turbidity	NTU	-	0.1	4.5	3.2	5.9

*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

DATA USABILITY SUMMARY REPORT

APPENDIX C

DATA USABILITY SUMMARY REPORT

JULY 2018 SAMPLING EVENT

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

JULY 2018

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III. DATA VALIDATION PROCEDURES	C-2
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TABLES (Following Text)

Table C-1	Sample and Analysis Summary
Table C-2	Groundwater Analytical Results
Table C-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 five (5) groundwater samples and one (1) trip blank collected on July 10, 2018, as summarized on Table C-1. The sample aliquots for volatile organic compounds (VOCs) and methane were collected using passive diffusion bags. The aliquots for the remaining parameters were collected using a low-flow peristaltic pump sampling method.

II. ANALYTICAL METHODOLOGIES

The groundwater samples were analyzed for the following parameters by TestAmerica Laboratories, Inc., (TA) located in Edison, New Jersey and Amherst, New York, as shown on Table C-1. The trip blank was analyzed for VOCs and methane only.

Parameter	Method No.	References
Volatile Organic Compounds *	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, October 2014;*
- *ICP-AES Data Validation, SOP No. HW-3a, Revision 1, September 2016; and*
- *Mercury and Cyanide Data Validation, SOP No. HW-3c, Revision 1, September 2016.*

The validated groundwater and field quality control (QC) analytical results are presented in Tables C-2 and C-3, respectively. Field parameters collected during this sampling event are also presented on Table C-2. 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 package was 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).

VI. NONCONFORMANCES

Sulfate was detected in the laboratory initial calibration blank at a concentration below the reporting limit (RL). Since the associated sample results were either above the RL or non-detect, no qualification of the data was necessary.

The nitrate matrix spike/matrix spike duplicate (MS/MSD) performed on sample MW-06 exhibited slightly low percent recoveries. The result for sulfate in this sample has been qualified 'J'.

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). Results greater than the method detection limits but less than the RLs were qualified 'J' by the laboratory.

All groundwater samples were analyzed at dilutions for methane due to high concentrations. Two groundwater samples were analyzed at dilutions for sulfate.

VII. SUMMARY

All sample analyses were found to be compliant with the method and validation criteria, except where previously noted. Those results qualified 'J-' are considered estimated with a low bias. AECOM does not recommend the recollection of any samples at this time.

Prepared By:

Peter R. Fairbanks, Senior Chemist

PF

Date:

7/31/18

Reviewed By:

George E. Kisluk, Senior Chemist

GEL

Date:

7/31/18

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.
- J- – The result is an estimated quantity, but the result may be biased low.
- 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 C-1
SAMPLE AND ANALYSIS SUMMARY - JULY 10, 2018
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
460-160263-1	20180710MW-02	GW	07/10/18	X	X	X	X	X	X	X	X	X	---
	20180710W-03	GW		X	X	X	X	X	X	X	X	X	---
	20180710MW-04	GW		X	X	X	X	X	X	X	X	X	---
	20180710MW-06	GW		X	X	X	X	X	X	X	X	X	---
	20180710MW-07R	GW		X	X	X	X	X	X	X	X	X	---
	TB20180710	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 C-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE

Location ID			MW-02	MW-03	MW-04	MW-06	MW-07R
Sample ID			20180710 MW-02	20180710 MW-03	20180710 MW-04	20180710 MW-06	20180710 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/10/18	07/10/18	07/10/18	07/10/18	07/10/18
Parameter	Units	Criteria*					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.3	1.0 U	1.0 U	1.0 U	3.7
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
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							
Methane	UG/L	-	1,400	3,700	2,000	15,000	4,500
Total Metals							
Iron	UG/L	300	50,500	15,400	30,600	13,900	30,700
Miscellaneous Parameters							
Alkalinity, Total (as CaCO ₃)	MG/L	-	246	233	382	261	372
Alkalinity, Bicarbonate (as CaCO ₃)	MG/L	-	246	233	382	261	372
Alkalinity, Carbonate (as CaCO ₃)	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 CaCO ₃)	MG/L	-	402	284	774	314	608
Nitrogen, Nitrate	MG/L	10	0.040 J	0.026 J	0.025 J	0.016 J-	0.037 J
Nitrogen, Nitrite	MG/L	1	0.042 J	0.025 J	0.024 J	0.022 J	0.039 J
Sulfate	MG/L	250	44.4	22.7	5.0 U	47.9	5.0 U
Total Organic Carbon	MG/L	-	5.1	1.6	16.5	1.7	8.8
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	0 U	0 U	0 U	0 U
Oxidation-Reduction Potential	mV	-	-77	-75	-62	-74	-47
pH	S.U.	-	6.89	6.94	6.86	7.04	6.71
Specific Conductance	MS/CM	-	2.51	1.05	3.76	1.14	3.05

*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 - Not Detect; UG/L - Micrograms per Liter; MG/L - Milligrams per Liter

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

MADE BY: __PRF_07/30/18__ CHKD BY: __AMK_07/30/18__

Detection Limits shown are PQL

TABLE C-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE

Location ID			MW-02	MW-03	MW-04	MW-06	MW-07R
Sample ID			20180710 MW-02	20180710 MW-03	20180710 MW-04	20180710 MW-06	20180710 MW-07R
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/10/18	07/10/18	07/10/18	07/10/18	07/10/18
Parameter	Units	Criteria*					
Field Parameter							
Temperature	DEG C	-	21.47	18.91	21.85	23.84	18.55
Ferrous Iron	MG/L	-	4.0	3.5	4.0	4.5	3.0
Turbidity	NTU	-	14.1	22.8	9.5	0 U	5.9

*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. (J-) - Estimated result biased low.

U - Not Detect; UG/L - Micrograms per Liter; MG/L - Milligrams per Liter

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

MADE BY: __PRF_07/30/18__ CHKD BY: __AMK_07/30/18__

Detection Limits shown are PQL

TABLE C-3
FIELD QC ANALYTICAL RESULTS
FORMER EMCA SITE

Location ID			FIELDQC
Sample ID			TB20180710
Matrix			Water
Depth Interval (ft)			-
Date Sampled			07/10/18
Parameter	Units	Criteria*	Trip Blank (1-1)
Volatiles			
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U
Dissolved Gases			
Methane	UG/L	-	4.0 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

U - Not Detect; UG/L - Micrograms per Liter

MADE BY: __PRF_07/30/18__ CHKD BY: __AMK_07/30/18__

Detection Limits shown are PQL

ATTACHMENT A

VALIDATED ANALYTICAL RESULTS (FORM 1's)

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-02

Lab Sample ID: 460-160263-1

Client Matrix: Water

Date Sampled: 07/10/2018 1345

Date Received: 07/11/2018 1950

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 460-538097

Instrument ID: CVOAMS11

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: N69273.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 07/20/2018 1121

Final Weight/Volume: 5 mL

Prep Date: 07/20/2018 1121

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.31	U	0.31	1.0
Chlorotrifluoroethene	2.3		0.46	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.28	U	0.28	1.0
Surrogate	%Rec	Qualifier	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)	113		74 - 132	
Toluene-d8 (Surr)	104		80 - 120	
Bromofluorobenzene	100		77 - 124	
Dibromofluoromethane (Surr)	100		72 - 131	

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-03

Lab Sample ID: 460-160263-2

Client Matrix: Water

Date Sampled: 07/10/2018 0830

Date Received: 07/11/2018 1950

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 460-538097

Instrument ID: CVOAMS11

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: N69274.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 07/20/2018 1143

Final Weight/Volume: 5 mL

Prep Date: 07/20/2018 1143

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.31	U	0.31	1.0
Chlorotrifluoroethene	0.46	U	0.46	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.28	U	0.28	1.0
Surrogate	%Rec	Qualifier	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)	114		74 - 132	
Toluene-d8 (Surr)	103		80 - 120	
Bromofluorobenzene	99		77 - 124	
Dibromofluoromethane (Surr)	101		72 - 131	

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-04

Lab Sample ID: 460-160263-3

Client Matrix: Water

Date Sampled: 07/10/2018 1055

Date Received: 07/11/2018 1950

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 460-538097	Instrument ID: CVOAMS11
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: N69275.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 07/20/2018 1215		Final Weight/Volume: 5 mL
Prep Date: 07/20/2018 1215		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.31	U	0.31	1.0
Chlorotrifluoroethene	0.46	U	0.46	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.28	U	0.28	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115		74 - 132
Toluene-d8 (Surr)	102		80 - 120
Bromofluorobenzene	101		77 - 124
Dibromofluoromethane (Surr)	100		72 - 131

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-06

Lab Sample ID: 460-160263-4

Date Sampled: 07/10/2018 1305

Client Matrix: Water

Date Received: 07/11/2018 1950

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 460-538097

Instrument ID:

CVOAMS11

Prep Method: 5030C

Prep Batch: N/A

Lab File ID:

N69276.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 07/20/2018 1238

Final Weight/Volume: 5 mL

Prep Date: 07/20/2018 1238

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.31	U	0.31	1.0
Chlorotrifluoroethene	0.46	U	0.46	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.28	U	0.28	1.0
Surrogate	%Rec	Qualifier	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)	112		74 - 132	
Toluene-d8 (Surr)	100		80 - 120	
Bromofluorobenzene	98		77 - 124	
Dibromofluoromethane (Surr)	96		72 - 131	

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-07R

Lab Sample ID: 460-160263-5

Date Sampled: 07/10/2018 0935

Client Matrix: Water

Date Received: 07/11/2018 1950

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 460-538097	Instrument ID: CVOAMS11
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: N69277.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 07/20/2018 1300		Final Weight/Volume: 5 mL
Prep Date: 07/20/2018 1300		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.31	U	0.31	1.0
Chlorotrifluoroethene	3.7		0.46	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.28	U	0.28	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		74 - 132
Toluene-d8 (Surr)	102		80 - 120
Bromofluorobenzene	98		77 - 124
Dibromofluoromethane (Surr)	97		72 - 131

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: TB20180710

Lab Sample ID: 460-160263-6TB

Client Matrix: Water

Date Sampled: 07/10/2018 1455

Date Received: 07/11/2018 1950

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 460-538097	Instrument ID: CVOAMS11
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: N69266.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 07/20/2018 0845		Final Weight/Volume: 5 mL
Prep Date: 07/20/2018 0845		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.31	U	0.31	1.0
Chlorotrifluoroethene	0.46	U	0.46	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.28	U	0.28	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		74 - 132
Toluene-d8 (Surr)	106		80 - 120
Bromofluorobenzene	102		77 - 124
Dibromofluoromethane (Surr)	99		72 - 131

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-02

Lab Sample ID: 460-160263-1

Client Matrix: Water

Date Sampled: 07/10/2018 1345

Date Received: 07/11/2018 1950

RSK-175 Dissolved Gases (GC)

Analysis Method: RSK-175

Analysis Batch: 480-424508

Instrument ID: HP5890-21

N/A

N/A

Initial Weight/Volume: 17 mL

Dilution: 88

Final Weight/Volume: 17 mL

Analysis Date: 07/15/2018 1725

Injection Volume: 5 mL

Prep Date: N/A

Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	1400		88	350

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-03

Lab Sample ID: 460-160263-2

Client Matrix: Water

Date Sampled: 07/10/2018 0830

Date Received: 07/11/2018 1950

RSK-175 Dissolved Gases (GC)

Analysis Method: RSK-175

Analysis Batch: 480-424508

Instrument ID: HP5890-21

N/A

N/A

Initial Weight/Volume: 17 mL

Dilution: 88

Final Weight/Volume: 17 mL

Analysis Date: 07/15/2018 1742

Injection Volume: 5 mL

Prep Date: N/A

Result Type: PRIMARY

Analyte

Result (ug/L)

Qualifier

MDL

RL

Methane

3700

88

350

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-04

Lab Sample ID: 460-160263-3

Client Matrix: Water

Date Sampled: 07/10/2018 1055

Date Received: 07/11/2018 1950

RSK-175 Dissolved Gases (GC)

Analysis Method: RSK-175

Analysis Batch: 480-424508

Instrument ID: HP5890-21

N/A

N/A

Initial Weight/Volume: 17 mL

Dilution: 22

Final Weight/Volume: 17 mL

Analysis Date: 07/15/2018 1557

Injection Volume: 5 mL

Prep Date: N/A

Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	2000		22	88

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-06

Lab Sample ID: 460-160263-4

Client Matrix: Water

Date Sampled: 07/10/2018 1305

Date Received: 07/11/2018 1950

RSK-175 Dissolved Gases (GC)

Analysis Method: RSK-175

Analysis Batch: 480-424508

Instrument ID: HP5890-21

N/A

N/A

Initial Weight/Volume: 17 mL

Dilution: 88

Final Weight/Volume: 17 mL

Analysis Date: 07/15/2018 1800

Injection Volume: 5 mL

Prep Date: N/A

Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	15000		88	350

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-07R

Lab Sample ID: 460-160263-5

Date Sampled: 07/10/2018 0935

Client Matrix: Water

Date Received: 07/11/2018 1950

RSK-175 Dissolved Gases (GC)

Analysis Method: RSK-175

Analysis Batch: 480-424508

Instrument ID: HP5890-21

N/A

N/A

Initial Weight/Volume: 17 mL

Dilution: 22

Final Weight/Volume: 17 mL

Analysis Date: 07/15/2018 1632

Injection Volume: 5 mL

Prep Date: N/A

Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	4500		22	88

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: TB20180710

Lab Sample ID: 460-160263-6TB

Client Matrix: Water

Date Sampled: 07/10/2018 1455

Date Received: 07/11/2018 1950

RSK-175 Dissolved Gases (GC)

Analysis Method: RSK-175

Analysis Batch: 480-424508

Instrument ID: HP5890-21

N/A

N/A

Initial Weight/Volume: 17 mL

Dilution: 1.0

Final Weight/Volume: 17 mL

Analysis Date: 07/15/2018 1650

Injection Volume: 5 mL

Prep Date: N/A

Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	1.0	U	1.0	4.0

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-02

Lab Sample ID: 460-160263-7

Client Matrix: Water

Date Sampled: 07/10/2018 1455

Date Received: 07/11/2018 1950

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method: 200.7 Rev 4.4

Analysis Batch: 460-536445

Instrument ID: ICP5

Prep Method: 200.7

Prep Batch: 460-536330

Lab File ID: 536330D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/14/2018 1012

Final Weight/Volume: 50 mL

Prep Date: 07/13/2018 2145

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	50500		111	150

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-03

Lab Sample ID: 460-160263-8

Client Matrix: Water

Date Sampled: 07/10/2018 0920

Date Received: 07/11/2018 1950

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method: 200.7 Rev 4.4

Analysis Batch: 460-536445

Instrument ID: ICP5

Prep Method: 200.7

Prep Batch: 460-536330

Lab File ID: 536330D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/14/2018 1016

Final Weight/Volume: 50 mL

Prep Date: 07/13/2018 2145

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	15400		111	150

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-04

Lab Sample ID: 460-160263-9

Client Matrix: Water

Date Sampled: 07/10/2018 1205

Date Received: 07/11/2018 1950

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method: 200.7 Rev 4.4

Analysis Batch: 460-536445

Instrument ID: ICP5

Prep Method: 200.7

Prep Batch: 460-536330

Lab File ID: 536330D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/14/2018 1020

Final Weight/Volume: 50 mL

Prep Date: 07/13/2018 2145

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	30600		111	150

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-06

Lab Sample ID: 460-160263-10

Client Matrix: Water

Date Sampled: 07/10/2018 1400

Date Received: 07/11/2018 1950

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method: 200.7 Rev 4.4

Analysis Batch: 460-536445

Instrument ID: ICP5

Prep Method: 200.7

Prep Batch: 460-536330

Lab File ID: 536330D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/14/2018 1024

Final Weight/Volume: 50 mL

Prep Date: 07/13/2018 2145

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	13900		111	150

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

Client Sample ID: 20180710 MW-07R

Lab Sample ID: 460-160263-11

Client Matrix: Water

Date Sampled: 07/10/2018 1035

Date Received: 07/11/2018 1950

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method: 200.7 Rev 4.4

Analysis Batch: 460-536445

Instrument ID: ICP5

Prep Method: 200.7

Prep Batch: 460-536330

Lab File ID: 536330D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/14/2018 1028

Final Weight/Volume: 50 mL

Prep Date: 07/13/2018 2145

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	30700		111	150

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

General Chemistry**Client Sample ID: 20180710 MW-02**

Lab Sample ID: 460-160263-7

Client Matrix: Water

Date Sampled: 07/10/2018 1455

Date Received: 07/11/2018 1950

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	44.4		mg/L	2.7	10.0	2.0	D516-90, 02
	Analysis Batch: 460-538914	Analysis Date: 07/23/2018	1150				
Bicarbonate Alkalinity as CaCO3	246		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1627				
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1627				
Alkalinity	246		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1627				
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1627				
Hardness as calcium carbonate	402		mg/L	25.0	25.0	1.0	SM 2340C
	Analysis Batch: 460-537260	Analysis Date: 07/17/2018	1432				
Nitrate as N	0.040	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-535690	Analysis Date: 07/12/2018	0920				
Nitrite as N	0.042	J	mg/L	0.0030	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-535690	Analysis Date: 07/12/2018	0920				
Total Organic Carbon	5.1		mg/L	0.22	1.0	1.0	SM 5310B
	Analysis Batch: 460-536780	Analysis Date: 07/13/2018	2046				

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

General Chemistry**Client Sample ID: 20180710 MW-03**

Lab Sample ID: 460-160263-8

Date Sampled: 07/10/2018 0920

Client Matrix: Water

Date Received: 07/11/2018 1950

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	22.7		mg/L	1.4	5.0	1.0	D516-90, 02
	Analysis Batch: 460-537578	Analysis Date: 07/18/2018	1259				
Bicarbonate Alkalinity as CaCO3	233		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1634				
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1634				
Alkalinity	233		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1634				
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1634				
Hardness as calcium carbonate	284		mg/L	12.5	12.5	1.0	SM 2340C
	Analysis Batch: 460-537260	Analysis Date: 07/17/2018	1432				
Nitrate as N	0.026	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-535690	Analysis Date: 07/12/2018	0917				
Nitrite as N	0.025	J	mg/L	0.0030	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-535690	Analysis Date: 07/12/2018	0917				
Total Organic Carbon	1.6		mg/L	0.22	1.0	1.0	SM 5310B
	Analysis Batch: 460-536780	Analysis Date: 07/13/2018	2104				

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

General Chemistry

Client Sample ID: 20180710 MW-04

Lab Sample ID: 460-160263-9

Client Matrix: Water

Date Sampled: 07/10/2018 1205

Date Received: 07/11/2018 1950

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	1.4	U	mg/L	1.4	5.0	1.0	D516-90, 02
Analysis Batch: 460-537578 Analysis Date: 07/18/2018 1259							
Bicarbonate Alkalinity as CaCO3	382		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-536020 Analysis Date: 07/12/2018 1643							
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-536020 Analysis Date: 07/12/2018 1643							
Alkalinity	382		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-536020 Analysis Date: 07/12/2018 1643							
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-536020 Analysis Date: 07/12/2018 1643							
Hardness as calcium carbonate	774		mg/L	25.0	25.0	1.0	SM 2340C
Analysis Batch: 460-537260 Analysis Date: 07/17/2018 1432							
Nitrate as N	0.025	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-535690 Analysis Date: 07/12/2018 0919							
Nitrite as N	0.024	J	mg/L	0.0030	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-535690 Analysis Date: 07/12/2018 0919							
Total Organic Carbon	16.5		mg/L	0.22	1.0	1.0	SM 5310B
Analysis Batch: 460-536780 Analysis Date: 07/13/2018 2123							

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

General Chemistry

Client Sample ID: 20180710 MW-06

Lab Sample ID: 460-160263-10

Client Matrix: Water

Date Sampled: 07/10/2018 1400

Date Received: 07/11/2018 1950

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	47.9		mg/L	2.7	10.0	2.0	D516-90, 02
	Analysis Batch: 460-537578	Analysis Date: 07/18/2018	1319				
Bicarbonate Alkalinity as CaCO3	261		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1650				
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1650				
Alkalinity	261		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1650				
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1650				
Hardness as calcium carbonate	314		mg/L	25.0	25.0	1.0	SM 2340C
	Analysis Batch: 460-537260	Analysis Date: 07/17/2018	1432				
Nitrate as N	0.016	J- JF1	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-535690	Analysis Date: 07/12/2018	0919				
Nitrite as N	0.022	J	mg/L	0.0030	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-535690	Analysis Date: 07/12/2018	0919				
Total Organic Carbon	1.7		mg/L	0.22	1.0	1.0	SM 5310B
	Analysis Batch: 460-536842	Analysis Date: 07/16/2018	0942				

7/26/18
2

Analytical Data

Client: URS Corporation

Job Number: 460-160263-1

General Chemistry**Client Sample ID: 20180710 MW-07R**

Lab Sample ID: 460-160263-11

Client Matrix: Water

Date Sampled: 07/10/2018 1035

Date Received: 07/11/2018 1950

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	1.4	U	mg/L	1.4	5.0	1.0	D516-90, 02
	Analysis Batch: 460-537578	Analysis Date: 07/18/2018	1259				
Bicarbonate Alkalinity as CaCO3	372		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1658				
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1658				
Alkalinity	372		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1658				
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 460-536020	Analysis Date: 07/12/2018	1658				
Hardness as calcium carbonate	608		mg/L	25.0	25.0	1.0	SM 2340C
	Analysis Batch: 460-537260	Analysis Date: 07/17/2018	1432				
Nitrate as N	0.037	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-535690	Analysis Date: 07/12/2018	0918				
Nitrite as N	0.039	J	mg/L	0.0030	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-535690	Analysis Date: 07/12/2018	0918				
Total Organic Carbon	8.8		mg/L	0.22	1.0	1.0	SM 5310B
	Analysis Batch: 460-536780	Analysis Date: 07/13/2018	2201				

ATTACHMENT B

SUPPORT DOCUMENTATION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

460501

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 2

Name (for report and invoice) Kevin Shanahan		Samplers Name (Printed) MDascoli + JCrespo		Site/Project Identification Dow, Former EMCA, Mamaroneck	
Company AECOM		P. O. # 4505503059		State (Location of site): NJ: ☐ NY: ☒ Other: ☐	
Address		Analysis Turnaround Time Standard ☒ Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐		Regulatory Program: ☐ DKQP: ☐	
City		State		LAB USE ONLY Project No:	
Phone		Fax		Job No: 1602263	
716-923-1215					
Sample Identification		Date	Time	Matrix	No. of Cont.
20180710 MW-02		7/10/18	1345	GW	4
20180710 MW-03			0830	GW	4
20180710 MW-04			1055	GW	5
20180710 MW-06			1305	GW	3
20180710 MW-07R			935	GW	5
TB 20180710			1455	W	6
20180710 MW-02			1455	GW	4
20180710 MW-03			920	GW	4
20180710 MW-04			1205	GW	4
20180710 MW-06		7/10/18	1400	GW	4
Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH		Soil:			
6 = Other _____, 7 = Other _____		Water:		1,2 1,2 1 1 1 1,4 1,4 1,3	

SHORT HOLD



460-160263 Chain of Custody 1 of 326

Special Instructions

Relinquished by Melvin Descol	Company AECOM	Date / Time 7/11/18 10:40	Received by 1) J. W. [Signature]	Water Metals Filtered (Yes/No)?
Relinquished by 2) [Signature]	Company TA	Date / Time 7/11/18 11:00	Received by 2) [Signature]	
Relinquished by 3) [Signature]	Company	Date / Time	Received by 3) [Signature]	
Relinquished by 4) [Signature]	Company	Date / Time	Received by 4) [Signature]	

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)

IR 11 2.5°C

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

Page 2 of 2

[illegible]

Special Instructions

Water Metals Filtered (Yes/No)?

Relinquished by	Company	Date / Time	Received by	Company
1) <i>[Signature]</i>	AECOM	7/11/18 10:40	1) <i>[Signature]</i>	TA
2) <i>[Signature]</i>	TA	7/11/18 1600	2) <i>[Signature]</i>	Company
3) <i>[Signature]</i>	Company		3) <i>[Signature]</i>	Company
4) <i>[Signature]</i>	Company		4) <i>[Signature]</i>	TAFOI

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)

(The following information was obtained from a review of the file maintained by the FBI concerning the activities of the Communist Party, USA, District No. 7, Chicago Office.)

TestAmerica

[illegible]

CASE NARRATIVE

Client: URS Corporation

Project: DOW Former EMCA, Mamaroneck

Report Number: 460-160263-1

Revision #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.

REVISION #1

The following report required a revision: 460-160263-1. Details are as follows: The TOC batch MS/MSD (159911-1) was incorrectly calculated and reported as missing input in the original report.

RECEIPT

The samples were received on 7/11/2018 7:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.5° C.

Receipt Exceptions

Limited sample volume was provided for the following samples for the Methane/VOC analysis: 20180710 MW-02 (460-160263-1), 20180710 MW-03 (460-160263-2), 20180710 MW-04 (460-160263-3), 20180710 MW-06 (460-160263-4) and 20180710 MW-07R (460-160263-5).

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 20180710 MW-02 (460-160263-1), 20180710 MW-03 (460-160263-2), 20180710 MW-04 (460-160263-3), 20180710 MW-06 (460-160263-4), 20180710 MW-07R (460-160263-5) and TB20180710 (460-160263-6) were analyzed for Volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 07/20/2018.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES

Samples 20180710 MW-02 (460-160263-1), 20180710 MW-03 (460-160263-2), 20180710 MW-04 (460-160263-3), 20180710 MW-06 (460-160263-4), 20180710 MW-07R (460-160263-5) and TB20180710 (460-160263-6) were analyzed for dissolved gases in accordance with RSK_175. The samples were analyzed on 07/15/2018.

Methane failed the recovery criteria low for the MSD of sample 460-160271-4 in batch 480-424508.

Refer to the QC report for details.

Samples 20180710 MW-02 (460-160263-1)[88X], 20180710 MW-03 (460-160263-2)[88X], 20180710 MW-04 (460-160263-3)[22X], 20180710 MW-06 (460-160263-4)[88X] and 20180710 MW-07R (460-160263-5)[22X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the dissolved gases analysis.

All other quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS

Samples 20180710 MW-02 (460-160263-7), 20180710 MW-03 (460-160263-8), 20180710 MW-04 (460-160263-9), 20180710 MW-06 (460-160263-10) and 20180710 MW-07R (460-160263-11) were analyzed for total recoverable metals in accordance with EPA Method 200.7 (ICP). The samples were prepared on 07/13/2018 and analyzed on 07/14/2018.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ALKALINITY

Samples 20180710 MW-02 (460-160263-7), 20180710 MW-03 (460-160263-8), 20180710 MW-04 (460-160263-9), 20180710 MW-06 (460-160263-10) and 20180710 MW-07R (460-160263-11) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 07/12/2018.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

HARDNESS

Samples 20180710 MW-02 (460-160263-7), 20180710 MW-03 (460-160263-8), 20180710 MW-04 (460-160263-9), 20180710 MW-06 (460-160263-10) and 20180710 MW-07R (460-160263-11) were analyzed for hardness in accordance with SM 2340C. The samples were analyzed on 07/17/2018.

No difficulties were encountered during the hardness analysis.

All quality control parameters were within the acceptance limits.

SULFATE

Samples 20180710 MW-02 (460-160263-7), 20180710 MW-03 (460-160263-8), 20180710 MW-04 (460-160263-9), 20180710 MW-06 (460-160263-10) and 20180710 MW-07R (460-160263-11) were analyzed for sulfate in accordance with ASTM Method D516-90. The samples were analyzed on 07/18/2018 and 07/23/2018.

Sulfate failed the recovery criteria low for the MSD of sample 460-160396-1 in batch 460-537578.

Refer to the QC report for details.

Samples 20180710 MW-02 (460-160263-7)[2X] and 20180710 MW-06 (460-160263-10)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the sulfate analysis.

All other quality control parameters were within the acceptance limits.

NITROGEN-NITRATE

Samples 20180710 MW-02 (460-160263-7), 20180710 MW-03 (460-160263-8), 20180710 MW-04 (460-160263-9), 20180710 MW-06 (460-160263-10) and 20180710 MW-07R (460-160263-11) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 07/12/2018.

Nitrate as N failed the recovery criteria low for the MS/MSD of sample 20180710 MW-06 (460-160263-10) in batch 460-535690.

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 nitrate analysis.

All other quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON

Samples 20180710 MW-02 (460-160263-7), 20180710 MW-03 (460-160263-8), 20180710 MW-04 (460-160263-9), 20180710 MW-06 (460-160263-10) and 20180710 MW-07R (460-160263-11) were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 07/13/2018 and 07/16/2018.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

Quality Control Results

Client: URS Corporation

Job Number: 460-160263-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-535690**

**Method: SM 4500 NO3 F
Preparation: N/A**

(MW-06)
MS Lab Sample ID: 460-160263-10
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/12/2018 0943
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 460-535690
Prep Batch: N/A
Leach Batch: N/A

Instrument ID: Lachat 4
Lab File ID: OM_7-12-2018_09-02-3
Initial Weight/Volume:
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 460-160263-10
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/12/2018 0947
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 460-535690
Prep Batch: N/A
Leach Batch: N/A

Instrument ID: Lachat 4
Lab File ID: OM_7-12-2018_09-02-3
Initial Weight/Volume:
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	81	82	85 - 115	1	17	F1	F1
Nitrite as N	96	95	85 - 117	1	10		

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-535690**

**Method: SM 4500 NO3 F
Preparation: N/A**

MS Lab Sample ID: 460-160263-10
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/12/2018 0943
Prep Date: N/A
Leach Date: N/A

Units: mg/L

MSD Lab Sample ID: 460-160263-10
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/12/2018 0947
Prep Date: N/A
Leach Date: N/A

Analyte	Sample		MS Spike Amount	MSD Spike Amount	MS		MSD	
	Result/Qual				Result/Qual		Result/Qual	
Nitrate as N	0.016	J	0.500	0.500	0.423	F1	0.428	F1
Nitrite as N	0.022	J	0.500	0.500	0.499		0.495	