Groundwater Sampling and Analysis Report

April 2014 Sampling Event

Former EMCA Site
Mamaroneck, New York

Prepared for:

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

Prepared by:

URS

257 West Genesee Street, Suite 400
Buffalo, New York 14202

June 2014

G4427V

FORMER EMCA SITE

SITE NO. 360025

MAMARONECK, NEW YORK

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APRIL 2014 SAMPLING EVENT

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JUNE 2014

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1.0 INTRODUCTION

This report presents the results of groundwater monitoring conducted in April 2014 at the former EMCA site located in Mamaroneck, New York (Figure 1) pursuant to the approved Site Management Plan ([SMP], URS, 2010) and to recommendations made in the *Groundwater Sampling and Analysis Report, September 2012 Sampling Event & Summary of 2012 Supplemental Injection Event and 2012 Post-Injection Groundwater Sampling Events* (URS, 2012b). The groundwater monitoring program generates data used to monitor the effectiveness of remedial actions performed at the site from 2003 to 2014.

Remedial actions were conducted at the site on the following occasions:

- Pilot program conducted 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

All involved the injections of food-grade emulsified soybean oil and sodium lactate into groundwater to stimulate anaerobic biodegradation and reductive dechlorination of 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113; CAS No. 76-13-1) in site groundwater. The 2012 and 2013 supplemental injections 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. Soybean oil and sodium lactate were injected during the period of September 25 through October 4, 2012 followed by a KB-1 Plus® bacteria injection on November 1, 2012. The most recent injection of soybean oil, sodium lactate and KB-1 Plus® bacteria was performed during the period of June 4 to June 7, 2013.

The April 16, 2014 groundwater sampling event was the 19th site-wide sampling event since the interim remedial measure (IRM) began in November 2004 and the 2nd site-wide sampling event following the June 2013 injection.

2.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater samples were collected on April 16, 2014 from monitoring wells MW-02, MW-03, MW-06 and MW-07R using the low-flow sampling procedure. Well MW-04 was not accessible on April 16, 2014 and was sampled on April 28, 2014. The well locations are shown in Figure 2.

Groundwater level and field water quality parameter measurements of ferrous iron, dissolved oxygen, oxidation-reduction potential, pH, specific conductance, temperature, and turbidity were recorded prior to and during purging/sampling. A copy of the field purging/sampling logs is presented in Appendix A.

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

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

In addition, the following analyses were also performed on the groundwater samples to collect additional natural attenuation groundwater data and to evaluate bacteria concentrations:

Parameter	Analytical Method
Total Iron	200.7
Nitrate	SM4500-NO3 F
Hardness	SM2340C
Alkalinity	SM2320B
Total Organic Carbon	SM5310B
Dehalococcoides (MW-107R only)	SiREM Laboratories Gene-Trac® Dhc
Dehalobacter	SiREM Laboratories Gene-Trac® Dhb

A round of groundwater levels were recorded on April 28, 2014. The data are presented in Table 1 and Figure 2. The Sheldrake River water surface level was also measured. An upstream measurement was recorded at the Rockland Avenue bridge (Benchmark B) to the south

of the site and a downstream measurement was recorded at the Fenimore Road bridge (Benchmark D) to the north of the site. The water surface level in the Sheldrake River in the area west of the site, referred to as Benchmark C (Figure 2), was calculated by taking the average surface elevation of Benchmark B and Benchmark D. Typically, general groundwater flow is to the north to northeast. The April 28, 2014 data show that groundwater flow was more to the northeast with an apparent low in the groundwater surface in the MW-03 and MW-07R area.

3.0 RESULTS

The analytical results for the five wells sampled during the April 2014 sampling event are provided in Table 2. Laboratory data sheets and a data usability summary report (DUSR) are provided in Appendix B.

The analytical results presented in Table 2 are compared to groundwater standards and guidance values presented in New York State Department of Environmental Conservation's (NYSDEC's) 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 for Freon 1113 or Freon 123A. However, consistent with TOGS 1.1.1, the Freon 1113 and Freon 123A results are compared to the "principal organic contaminant" standard for groundwater of 5 micrograms per liter (µg/L).

The results presented in Table 2 and Figure 3 show that the samples from MW-03 and MW-06 contained Freon 113 at concentrations above the 5 µg/L guidance value for this compound. Freon 113 was detected at 100 µg/L in MW-03 and at 26 µg/L in MW-06.

The results also show that Freon 1113 was detected at a concentration above the 5 µg/L groundwater standard in the samples from MW-02 (210 µg/L in the primary sample, 190 µg/L in the duplicate), MW-03 (96 µg/L) and MW-06, (75 µg/L).

Similar to Freon 1113, Freon 123A was detected at concentrations above the groundwater criterion of 5 µg/L in the samples from MW-02, MW-03 and MW-06. Freon 123A was detected at 11 µg/L in the MW-02 duplicate sample (10 µg/L in the primary sample), 62 µg/L in MW-03, and 33 µg/L in MW-06.

Iron was the only other parameter detected at a concentration above the TOGS 1.1.1 groundwater criteria. Iron was detected in all five wells at concentrations ranging from 18,900 µg/L to 70,500 µg/L, compared to the TOGS 1.1.1 groundwater standard of 300 µg/L.

The groundwater samples collected from the five wells were analyzed for dehalobacter and the sample from MW-07R was also analyzed for dehalococcoides. The analytical results, presented in Table 2, indicate that the dehalobacter concentration was very low in MW-02 (70 gene copies per milliliter (GC/mL)) and MW-03 (10 CG/mL) and non-detect in MW-04, MW-06, and MW-07R. Dehalcoccoides was detected at a low concentration of 70 colony equivalents per milliliter (CEQ/mL) in MW-07R.

4.0 DATA ASSESSMENT

The groundwater analytical data for April 2014 is the second site-wide set of data collected following the June 2013 supplemental injection. The previous round of site-wide groundwater sampling occurred on October 22, 2013. Well MW-02 was also sampled in July, August, and September 2013 to more closely assess the temporal changes in groundwater conditions following the June 2013 injection event. The 2013 results were presented in the report titled *Groundwater Sampling and Analysis Report, October 2013 Sampling Event*, dated January 2014 (URS, 2014).

Appendix C presents the historical groundwater analytical data dating back to the pilot program in 2003. Using this data, Freon 113, 123a, and 1113 concentrations over time are shown in plan view in Figure 3. The historical data was also used to create trend plots for the following parameters:

- Freon 113 - Figures 4 and 5
- Freon 123a - Figure 6
- Freon 1113 - Figure 7
- Sulfate - Figure 8
- Methane - Figure 9
- Dissolved Oxygen - Figure 10
- Oxidation-Reduction Potential - Figure 11

The figures also show trendlines of parameter concentrations over time. The text below presents a discussion of the April 2014 data compared to the October 2013 data followed by an assessment of the historical results over time. Table 3 presents a tabular comparison of the results.

Freon 113

In comparison with the October 2013 results, the analytical results for the April 2014 sampling event (Figures 4 and 5) indicate that Freon 113 was:

- Detected at 3.1 µg/L in MW-02, increasing from non-detect in October 2013;
- Detected at 100 µg/L in MW-03, increasing from non-detect in October 2013;
- Not detected in MW-04, similar to October 2013;
- Detected at 26 µg/L in MW-06, increasing from non-detect in October 2013; and
- Not detected in MW-07R, decreasing from 12 µg/L in October 2013.

In well MW-02, the Freon 113 concentration fluctuated over the course of the program, with concentrations as high as 2,400 µg/L in July 2001 prior to the treatment program. Since November 2012, Freon 113 concentrations have steadily decreased and have not been detected above the groundwater criteria in the past five sampling events.

Wells MW-03 and MW-07/07R had the highest Freon 113 concentrations prior to the IRM and showed the greatest reduction in Freon 113 as a result of the IRM. The Freon 113 concentration of 100 µg/L in MW-03 was the highest concentration detected since July 2004 when Freon 113 was detected at 4,900 µg/L. During the 18 sampling events between July 2004 and April 2014, Freon 113 concentrations in MW-03 had substantially reduced, ranging from non-detect (seven events) to 32 µg/L. Based on the past data, the detection of 100 µg/L in MW-03 in April 2014 was an anomalous blip in the data acquired since the IRM program began in November 2004.

Freon 113 was detected in MW-06 at 26 µg/L, which is the third time in the past 19 sampling events that it has been detected above the groundwater criterion.

The Freon 113 concentration continues to remain low in MW-07R following the pilot program conducted in 2003. The absence of Freon 113 in the groundwater sample from MW-07R collected in April 2014 suggests that the elevated concentration detected in wells MW-03/MW-06 is localized and is not migrating. The absence of Freon 113 in well MW-04 further confirms that Freon 113 is not migrating to the downgradient wells.

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. The following text presents a discussion of the April 2014 Freon 123a results in comparison with previous results.

Compared to the October 2013 data, the analytical results for the April 2014 sampling event (Figure 6) indicate that Freon 123a was:

- Detected at 10 g/L in MW-02, increasing from non-detect in October 2013;
- Detected at 62 µg/L in MW-03, increasing from non-detect in October 2013;
- Not detected in MW-04, similar to October 2013;
- Detected at 33 µg/L in MW-06, increasing from non-detect in October 2013; and
- Not detected in MW-07R, decreasing from 1.1 µg/L in October 2013.

Historically, with two exceptions, Freon 123a concentrations have been relatively low, below 165 µg/L. The two exceptions are an anomalously elevated concentration of 3,900 µg/L in MW-03 in July 2004 and an anomalous concentration of 940 µg/L in well MW-07 in December 2003.

Freon 1113

Compared to the October 2013 data, the analytical results for the April 2014 sampling event (Figure 7) indicate that Freon 1113 was:

- Detected at 210 µg/L in MW-02, increasing from a concentration of 61 µg/L in October 2013;
- Detected at 96 µg/L in MW-03, increasing from a concentration of 58 µg/L in October 2013;
- Not detected in MW-04, decreasing from a concentration of 12 µg/L in October 2013;
- Detected at 75 µg/L in MW-06, increasing from a concentration of 27 µg/L in October 2013; and
- Detected at 2.1 µg/L in MW-07R, decreasing from a concentration of 390 µg/L in October 2013.

Prior to and at the beginning of the IRM, Freon 1113 was either not detected or present at very low concentrations. As the IRM progressed, Freon 1113 concentrations increased, indicating the successful reduction of Freon 113. As the MW-02 results indicate, where Freon 1113 was detected at a historically high concentration of 400 µg/L in January and April 2013 and then dropped to 120 µg/L in July 2013, the addition of dehlobacter and dehalococoides in June 2013 appears to have had a direct impact on reducing Freon 1113 concentrations. A slight rebound of Freon 1113 in the April 2014 samples coincides with low dehalobacter concentrations and other water quality conditions, discussed below, which are not conducive to the growth of anaerobic bacteria.

Sulfate

In comparison with the October 2013 data, the April 2014 sulfate concentrations increased slightly at MW-02, MW-03, MW-06 and MW-07R and decreased at MW-04 (Figure 8).

Studies have shown that the presence of sulfate in anaerobic environments slows the rates of dehalogenation reactions because sulfate competes with the halogenated compounds as electron acceptors (USGS 2009).

Methane

In comparison with the October 2013 data, the April 2014 methane concentrations (Figure 9) increased in MW-03 and MW-06 and decreased in MW-02, MW-04, and MW-07R.

Degradation of Freon is likely due to sulfate-reducing or methane-forming microbes (Horneman 2007). Consistent with these findings, historical site data, which show increased methane concentrations during the IRM, suggest that reduction of Freon concentrations may be due to contaminant degradation through methanogenesis, a process that was successfully stimulated as a result of the IRM injection program.

Dissolved-Oxygen

In comparison with the October 2013 data, the April 2014 dissolved oxygen concentrations (Figure 10) increased substantially in all wells. The dissolved oxygen concentrations measured in October 2013 ranged from 0.25 to 0.63 milligrams per liter (mg/L). In April 2014, dissolved oxygen concentrations ranged from 3.99 to 9.51 mg/L. Historically,

dissolved oxygen concentrations have fluctuated significantly, from highs around 7 mg/L down to non-detect levels. Review of the graphical presentation of the data in Figure 10 indicates that dissolved oxygen concentrations decreased following most of the injection events and rebounded afterwards. The elevated dissolved oxygen concentrations detected in April 2014 are consistent with this trend. High dissolved oxygen conditions are not conducive to anaerobic bacterial growth.

Temperature

Comparison of the April 2014 data with historical measurements shows an apparent correlation of groundwater temperature with seasonal weather conditions; groundwater is cooler in the winter/spring and warmer in the summer/fall. The April 2014 temperature measurements were as much as 10 degrees Celsius lower than measurements recorded in October 2013. Review of historical groundwater temperature data suggests that groundwater in the site area is influenced by changes in seasonal weather conditions/precipitation infiltration. As an example, Figure 11 presents a graphical presentation of temperature data for well MW-02 dating back to February 2008. The graph shows seasonal fluctuations in groundwater temperatures. The graph also shows dissolved oxygen concentrations in MW-02. The higher dissolved oxygen levels recorded on April 16, 2014 and the accompanying lower groundwater temperatures may have been the result of the longer and colder than average winter in the northeastern United States.

Oxidation-Reduction Potential

In comparison with the October 2013 data, the April 2014 oxidation-reduction potential values (Figure 12) increased at MW-03, MW-06, and MW-07R and decreased at MW-02 and MW-04. The April 2014 values were all negative, ranging from -77 millivolts (mV) to -149 mV. Historically, oxidation-reduction potential values have remained at negative values throughout most of the IRM program.

Dehalococcoides

The groundwater sample from MW-07R was analyzed for dehalococcoides in April 2014. The concentration detected in April was 70 CEQ/mL. Although MW-07R was not analyzed for dehalococcoides in 2013, results for multiple sampling events for MW-02 show a steady decrease in dehalococcoides from 1,000 CEQ/mL following the June 2013 injection event to 30 CEQ/mL

in October 2013. The current result of 70 CEQ/mL for MW-07R shows that dehalococcoides concentrations are low at that location.

Dehalobacter

All five wells sampled in April 2014 were analyzed for dehalobacter. The April 2014 results ranged from non-detect at MW-04, MW-06, and MW-07R to 10 GC/mL at MW-03 and 70 GC/mL in MW-02. The results for samples collected shortly following injection events show that dehalobactor concentrations were as high as 40,000 GC/mL (MW-02). The current results show a significant reduction in dehalobactor concentrations.

Iron

In April 2014, total iron concentrations ranged from 18,900 µg/L to 70,500 µg/L. Similar to previous results, the highest iron concentration was at MW-02 and the lowest at MW-04.

5.0 CONCLUSIONS

The majority of the original Freon 113 release has been remediated over the past 10 years through anaerobic bioremediation and only residual concentrations remain in site groundwater. The Freon 113 concentrations detected during the April 16, 2014 sampling event remain orders of magnitude below initial contaminant concentrations documented prior to initiating remedial activities. The residual groundwater impacts remain localized to the original release area and are not migrating. Previous investigations have documented that soil impacts and soil vapor intrusion are not concerns at this site.

Although groundwater data from the April 2014 sampling event indicate that groundwater had elevated dissolved oxygen concentrations and low temperatures, which are not very conducive for anaerobic bacterial growth, the presence of Freon 123A and Freon 1113 in four of the five wells sampled confirms that reductive dechlorination of Freon 113 continues. The data also show that concentrations of Freon 113 and the daughter products have remained low for the last two years.

However, the Freon 113 concentrations detected in April 2014 at MW-06 (26 µg/L) and MW-03 (100 µg/L) were higher than expected. It is possible that this increase was a result of lower biological activity from higher dissolved oxygen concentrations and lower groundwater temperatures lingering from the long, cold winter experienced in the northeastern United States.

6.0 CONTINGENCY TRIGGER EVALUATION

Contingency measures were triggered at the site by the April 2011 data collected at MW-02, in accordance with Section 4.0 of the SMP (URS, 2010). As a result, Rohm and Haas performed the 2012 supplemental injection event to stimulate and maintain anaerobic biological processes, targeting remaining areas of contamination. In an effort to maintain anaerobic conditions, a follow-up supplemental injection event was executed in June 2013. The details of the injection are presented in Section 5.0 of the June 2013 Groundwater Sampling and Analysis Report (URS 2013a). The subsequent monitoring data, presented in this report, indicates the successful treatment of Freon 113 in MW-02 to below criterion concentrations.

The Freon 113 concentration detected in the sample collected from well MW-03 in April 2014 was 100 µg/L. This concentration exceeds the 40 µg/L criterion listed in the SMP to trigger contingency measures. However, as discussed in detail in Section 7.0, Rohm and Haas recommends completing an additional groundwater sampling event in July 2014 to determine whether the April 2014 data is anomalous.

7.0 NEXT STEPS

Rohm and Haas recommends conducting an additional groundwater sampling event at the site in July 2014. The purpose of the additional sampling event is to collect groundwater data to assess whether the April 2014 data may be anomalous due to the unusually long, cold winter that occurred in the northeastern United States.

In accordance with the SMP, groundwater sampling will be performed on the five long-term monitoring wells (i.e., MW-02, MW-03, MW-04, MW-06 and MW-07R). Each well will be sampled for Freon-113, Freon-123a, and Freon-1113 and other water quality and natural attenuation parameters as listed in Table 4. Implementation of additional contingency measures in 2014 will be based on an evaluation of the July 2014 data.

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TABLES

TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS (April 28, 2014)
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location	Measuring Point Elevation[1] (ft.)	Depth to Water[2] (ft.)	Water Surface Elevation (ft.)
GZ-03[3]	26.16	3.54	22.62
GZ-06	28.02	7.24	20.78
MW-01	25.74	4.06	21.68
MW-02	25.63	5.62	20.01
MW-03	25.59	5.62	19.97
MW-04	25.31	5.31	20.00
MW-05	24.63	4.46	20.17
MW-06	25.77	5.67	20.10
MW-07R	25.63	5.72	19.91
Benchmark B (Sheldrake River - South [Rockaway Avenue] Bridge)	32.21	13.55	18.66
Benchmark C[4] (Sheldrake River - between North and South Bridges)	--	--	17.66
Benchmark D (Sheldrake River - North [Fenimore Road] Bridge)	27.41	10.75	16.66

Notes:

1) All of the monitoring well and benchmark locations were resurveyed on 6/25/2010.
2) Water elevations for all wells and benchmarks were collected on 4/28/2014
3) Monitoring well GZ-03 was modified from a stick-up well to a flush-mount well on 6/24/2010.
4) Benchmark C was originally established as a temporary benchmark off a tree branch overhanging the Sheldrake River between the North and South bridges. The approximate water surface elevation for this benchmark is now calculated by taking the average water surface elevation of Benchmark B and Benchmark D.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-03	MW-04	MW-06
Sample ID			20140416MW-02V09N	DUP04162014	20140416MW-03V12N	20140428MW-04V09N	20140416MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	04/16/14	04/16/14	04/28/14	04/16/14
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	210	190	96	1.0 U	75
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	3.1	2.9	100	1.0 U	26
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10	11	62	1.0 U	33
Dissolved Gases							
Methane	UG/L	-	12,000	13,000	14,000	340	11,000
Total Metals							
Iron	UG/L	300	69,900	70,500	19,700	18,900	20,900
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	456	456	220	239	240
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	456	456	220	239	240
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	70	NA	10	3 U	3 U
Hardness (as CaCO3)	MG/L	-	455	455	249	525	370
Nitrogen, Nitrate	MG/L	10	0.10 UJ	0.10 U	0.40	0.10 U	0.10 U
Nitrogen, Nitrite	MG/L	1	0.049 J	0.043 J	0.038 J	0.10 U	0.051 J
Sulfate	MG/L	250	6.6	6.5	43.0	12.2	36.1
Total Organic Carbon	MG/L	-	12.8	12.7	6.3	8.4	5.8
Field Parameter							
Dissolved Oxygen	MG/L	-	9.11	NA	4.86	9.51	3.99
Ferrous Iron	MG/L	-	3.5	NA	5.5	7.0	6.0

*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

U - Non-Detect UJ - Not detected above the estimated quantitation limit

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

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

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

Detection Limits shown are PQL

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-03	MW-04	MW-06
Sample ID			20140416MW-02V09N	DUP04162014	20140416MW-03V12N	20140428MW-04V09N	20140416MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	04/16/14	04/16/14	04/28/14	04/16/14
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Field Parameter							
Oxidation-Reduction Potential	mV	-	-149	NA	-101	-102	-92
pH	S.U.	-	7.04	NA	6.85	6.76	7.02
Specific Conductance	MS/CM	-	2.49	NA	1.12	2.65	1.73
Temperature	DEG C	-	9.66	NA	10.69	12.11	12.71
Turbidity	NTU	-	0	NA	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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Detection Limits shown are PQL

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R
Sample ID			20140416MW-07RV17N
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			04/16/14
Parameter	**Units**	**Criteria***	
Volatiles			
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.4
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	-	680
Total Metals			
Iron	UG/L	300	24,500
Miscellaneous Parameters			
Alkalinity, Total (as CaCO3)	MG/L	-	305
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	305
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	70
Dehalobacter	GC/mL	-	3 U
Hardness (as CaCO3)	MG/L	-	594
Nitrogen, Nitrate	MG/L	10	0.10 U
Nitrogen, Nitrite	MG/L	1	0.038 J
Sulfate	MG/L	250	17.9
Total Organic Carbon	MG/L	-	7.8
Field Parameter			
Dissolved Oxygen	MG/L	-	4.43
Ferrous Iron	MG/L	-	6.0

*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

U - Non-Detect UJ - Not detected above the estimated quantitation limit

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

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

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

Detection Limits shown are PQL

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R
Sample ID			20140416MW-07RV17N
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			04/16/14
Parameter	**Units**	**Criteria***	
Field Parameter			
Oxidation-Reduction Potential	mV	-	-77
pH	S.U.	-	6.89
Specific Conductance	MS/CM	-	3.31
Temperature	DEG C	-	11.39
Turbidity	NTU	-	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

U - Non-Detect UJ - Not detected above the estimated quantitation limit

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

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

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

Detection Limits shown are PQL

Table 3

Comparison of October 2013 to April 2014 Data

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

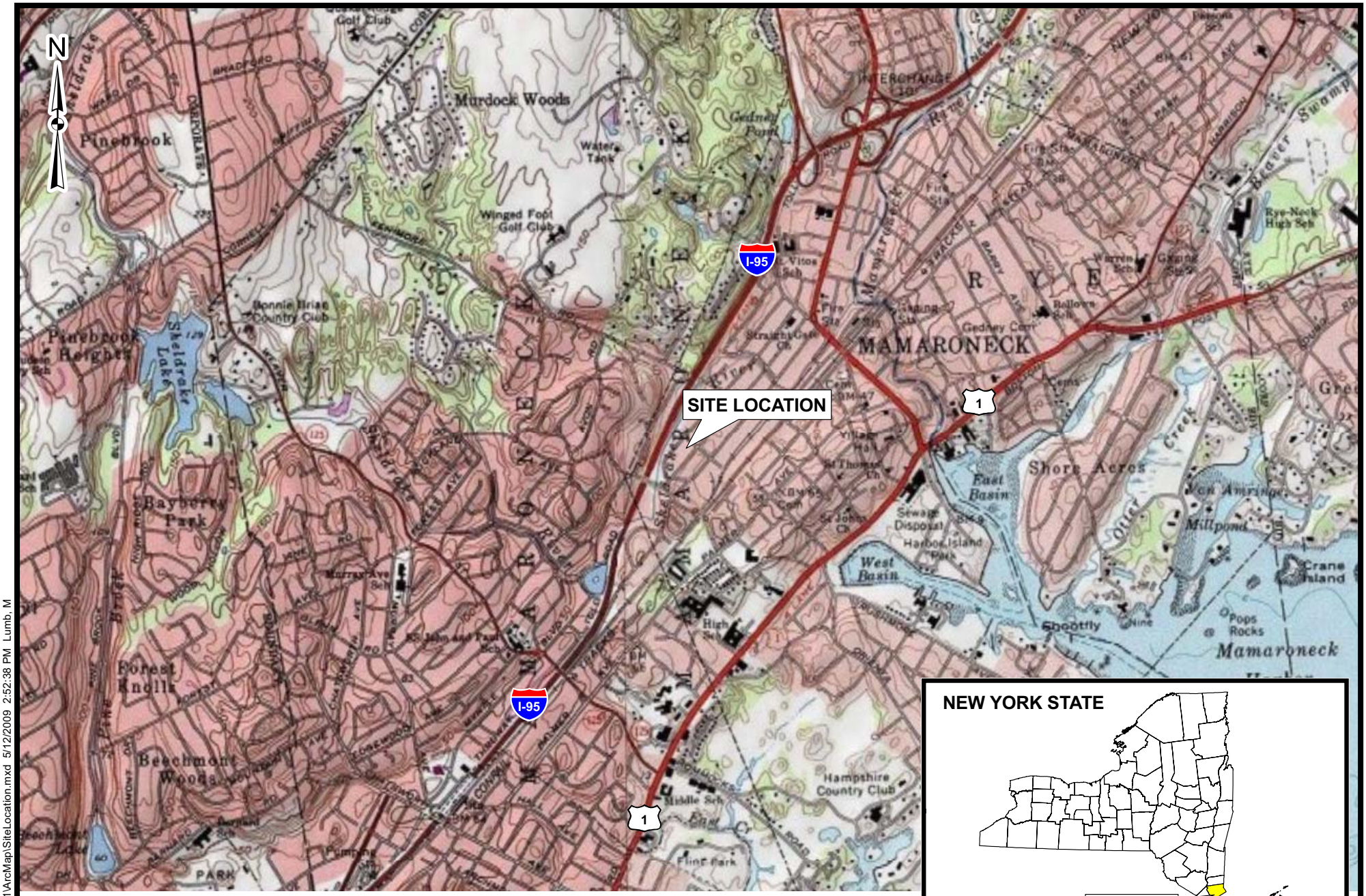
Legend

↓ Decrease from previous event

↑ Increase from previous event

↔ No significant change from previous event

FIGURES



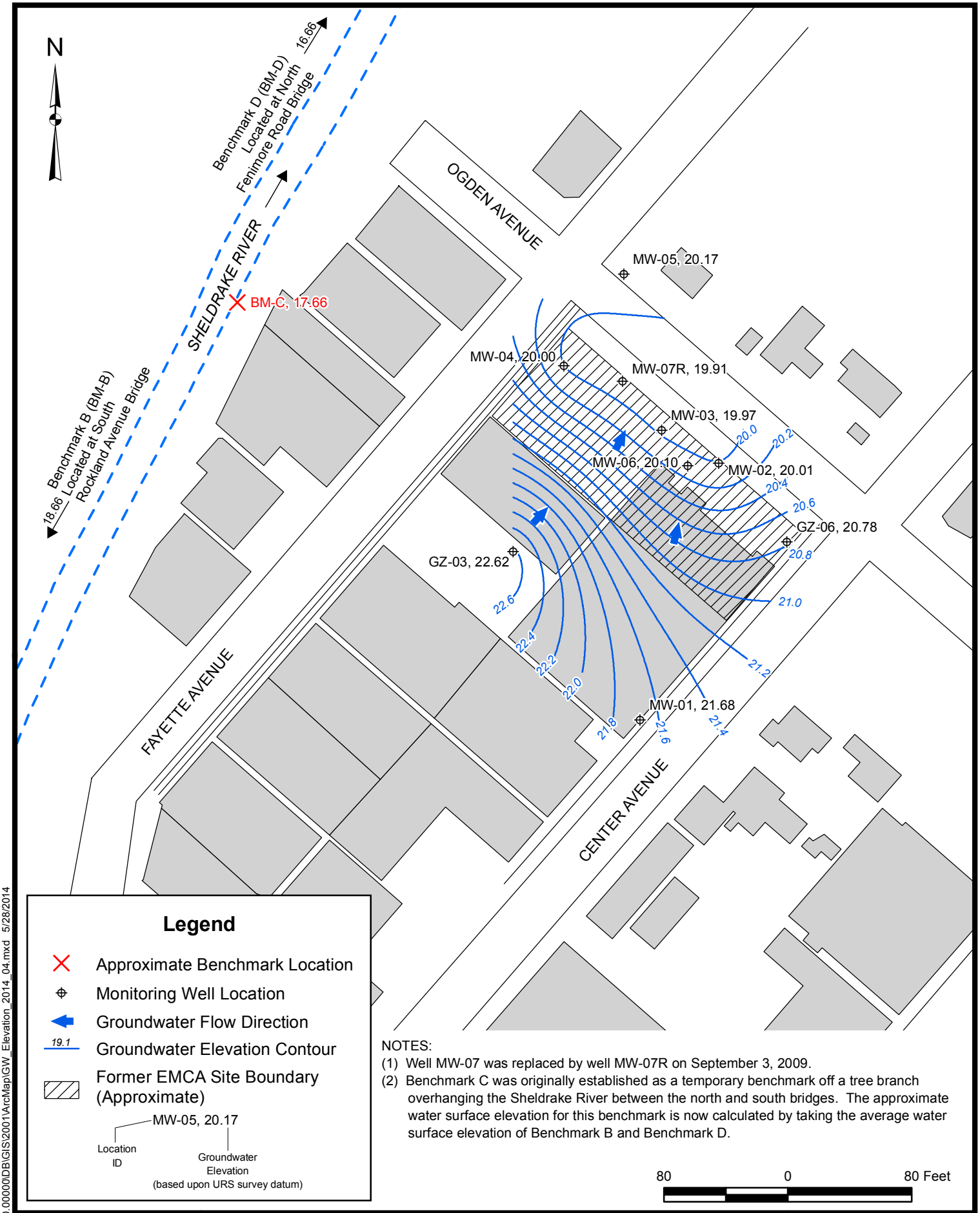
SOURCE: USGS Topographical Quadrangle Mount Vernon, New York, 1979 and Mamaroneck, New York, 1985.

URS

SITE LOCATION MAP

FIGURE 1

N:\11172730.00000\DB\GIS\2001\ArcMap\SiteLocation.mxd 5/12/2009 2:52:38 PM Lumb, M



NOTES:
(1) Well MW-07 was replaced by well MW-07R on September 3, 2009.
(2) Benchmark C was originally established as a temporary benchmark off a tree branch overhanging the Sheldrake River between the north and south bridges. The approximate water surface elevation for this benchmark is now calculated by taking the average water surface elevation of Benchmark B and Benchmark D.

URS

GROUNDWATER ELEVATION MAP (APRIL 28, 2014)

FIGURE 2

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N

SHELDRAKE RIVER

FAYETTE AVENUE

OGDEN AVENUE

CENTER AVENUE

MW-04	10/99	7/00	7/01	5/03	12/03	7/04	5/05	12/05	8/06	2/07	8/07	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
Freon-113	11	ND	ND	ND	ND	0.7J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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
Freon-1113	ND	ND	ND	ND	ND	ND	1.0J	ND	0.7J	0.6J	ND	1.0J	ND	1.0J	15	7.7J	12	2.8	5J	1.2	7.2J	2.5	4.4J	12	ND

MW-05	7/00	7/01	5/03	12/03	7/04
Freon-113	7	ND	ND	ND	0.5J
Freon-123A	ND	ND	ND	ND	ND
Freon-1113	ND	ND	ND	ND	ND

MW-03	10/99	7/00	7/01	5/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	2/07	8/07	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
Freon-113	17000	11000	13000	5800	68	26	150	4900J	2J	ND	ND	10	2.0J	0.5J	ND	5.0J	0.9J	ND	ND	ND	32	5.4	20J	1.1	27	ND	100
Freon-123A	ND	ND	ND	78J	43	180	170	3900	14	1.0J	0.8J	48	7.0J	4.0J	1.0J	40	2.1	ND	0.5J	ND	99J	9.4	36	3.2	30	ND	62
Freon-1113	ND	ND	ND	ND	7	6.2	ND	68J	83	2.0J	51	39	54	13J	10	38	20	17J	26	4.6	110J	82	150J	130	160J	58	96

MW-07/07R	6/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	2/07	8/07	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
Freon-113	5400	8500	6100	370	110J	ND	ND	ND	ND	6.0J	ND	3.0J	46	580	18J	1.1J	53J	18	1.6	67J	5.9J	5.5	12	ND
Freon-123A	68J	130J	130J	940	50	2.0J	ND	1.0J	3.0J	10	0.9J	16	20	76	8.1	1.8	9.5	6.3J	0.9J	11	2.4J	2.6	1.1	ND
Freon-1113	ND	ND	ND	ND	210	140	47	97	89	82	92	170	150	370	150J	390	350	370J	26	630J	430	310J	390	2.1

MW-02	10/99	7/00	7/01	5/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	11/06	2/07	8/07	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
Freon-113	740	1700	2400	880	1000	54	12	21J	1200	110	890	100	800	290	830J	700	1300	1200	76J	670	580	920	490	1200J	650	65	28	18	12	ND	ND	ND	ND	3.1
Freon-123A	ND	ND	ND	40	41J	7.8	3.3J	4J	86J	15	110	10	95	40	72	38J	34J	51	6.1	37	26	33J	26	57	26	29	52	30J	11	ND	ND	ND	ND	10
Freon-1113	ND	ND	ND	ND	ND	ND	ND	14	120	18	200	21	84	61	120J	160	81J	300	92J	240	180	110J	180	140J	98	380	400	330J	400J	120	66	42	61	210

GZ-03	8/07
Freon-113	ND
Freon-123A	ND
Freon-1113	ND

GZ-06	5/88	3/89	10/99	7/00	7/01	5/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	11/06	2/07	8/07	2/08	8/08	2/09
Freon-113	1274	200	49	900	250	100	230	74	ND	100J	9J	ND	74	2.0J	14	13	ND	ND	ND
Freon-123A	ND	ND	ND	ND	ND	20	41	26	0.7J	36	4.0J	2.0J	23	2.0J	4.0J	10	ND	ND	ND
Freon-1113	ND	ND	ND	ND	ND	ND	ND	5.4	ND	24	15	ND	13	2.0J	1.0J	2.0J	ND	ND	ND

MW-06	6/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	2/07	8/07	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
Freon-113	220	180	97	250	140J	1.0J	ND	ND	3J	ND	ND	ND	2.0J	ND	ND	ND	ND	33	ND	82J	3.3	0.19J	ND	26
Freon-123A	8.8J	9.5	8.6	14	23	16	ND	ND	8J	0.6J	ND	ND	35	ND	3.6	0.57J	ND	38J	4.4	28	3.6	4.9	ND	33
Freon-1113	ND	5.7	ND	ND	5J	6.0J	6.0J	ND	100	21	8.0J	4.0J	34	6.4	35J	68J	61	96J	30	230J	140	61J	27	75

MW-01	8/07
Freon-113	ND
Freon-123A	ND
Freon-1113	ND

Legend

- Existing Monitoring Well Location
- Generalized Groundwater Flow Direction
- Concentration Exceeds NYSDEC TOGS (1.1.1) Class GA Standards
- 7/00 - Pre-Pilot Injection Sampling Dates
- 12/03 - Post-Pilot Injection/Pre-IRM Injection Sampling Dates
- 12/05 - Post-IRM Injection Sampling Dates
- 2/08 - Post-2007 Supplemental Injection Sampling Dates
- 10/09 - Post-2009 Supplemental Injection Sampling Dates
- 11/12 - Post-2012 Supplemental Injection Sampling Dates
- 7/13 - Post-2013 Supplemental Injection Sampling Dates

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

100 0 100 Feet

FORMER EMCA SITE
SUMMARY OF FREON DETECTIONS IN GROUNDWATER

URS

FIGURE 3

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FIGURE 4
FORMER EMCA SITE
Freon 113 Concentrations, MW-03 , MW-04, and MW-07/07R

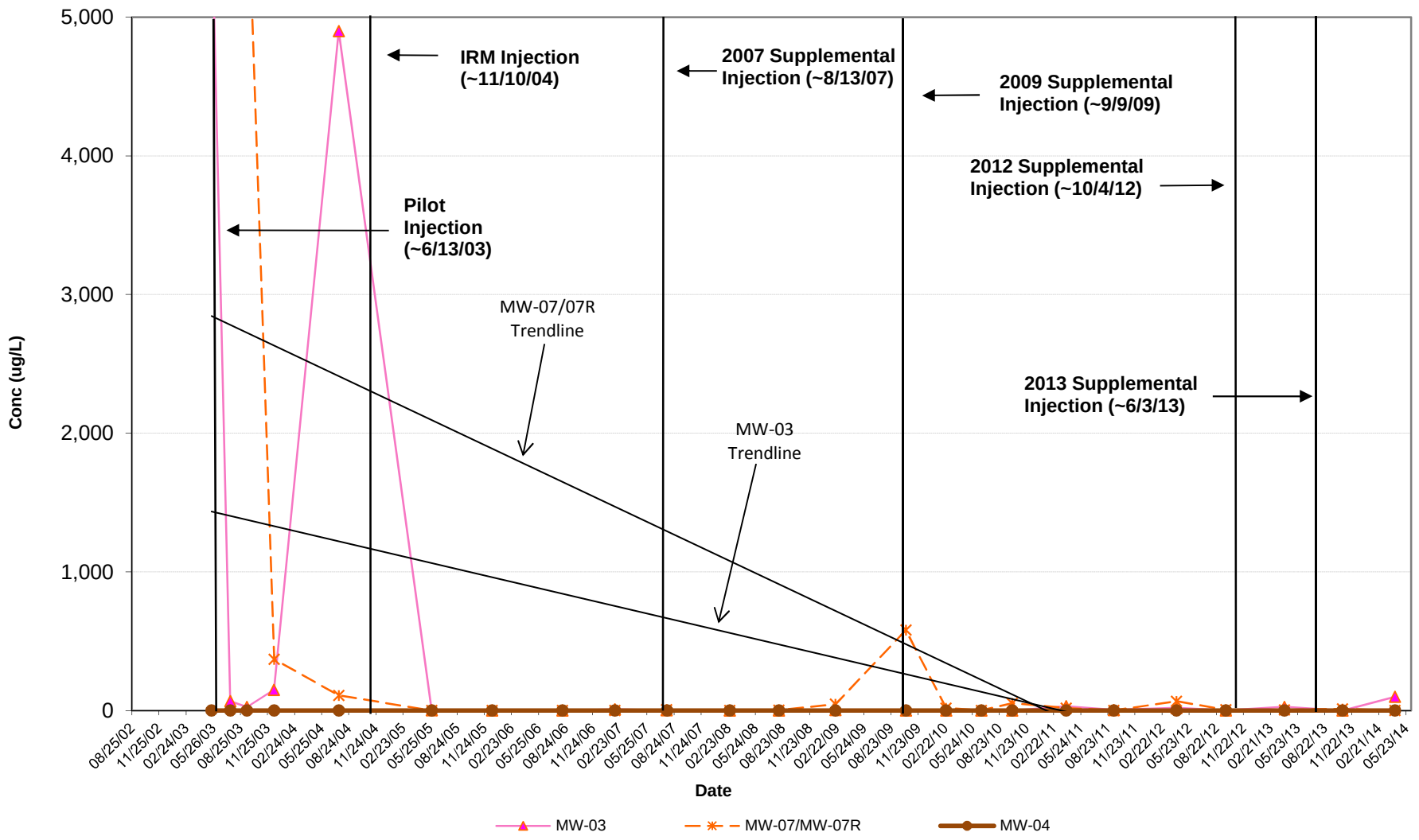

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FIGURE 5
FORMER EMCA SITE
Freon 113 Concentrations, GZ-06, MW-02, and MW-06

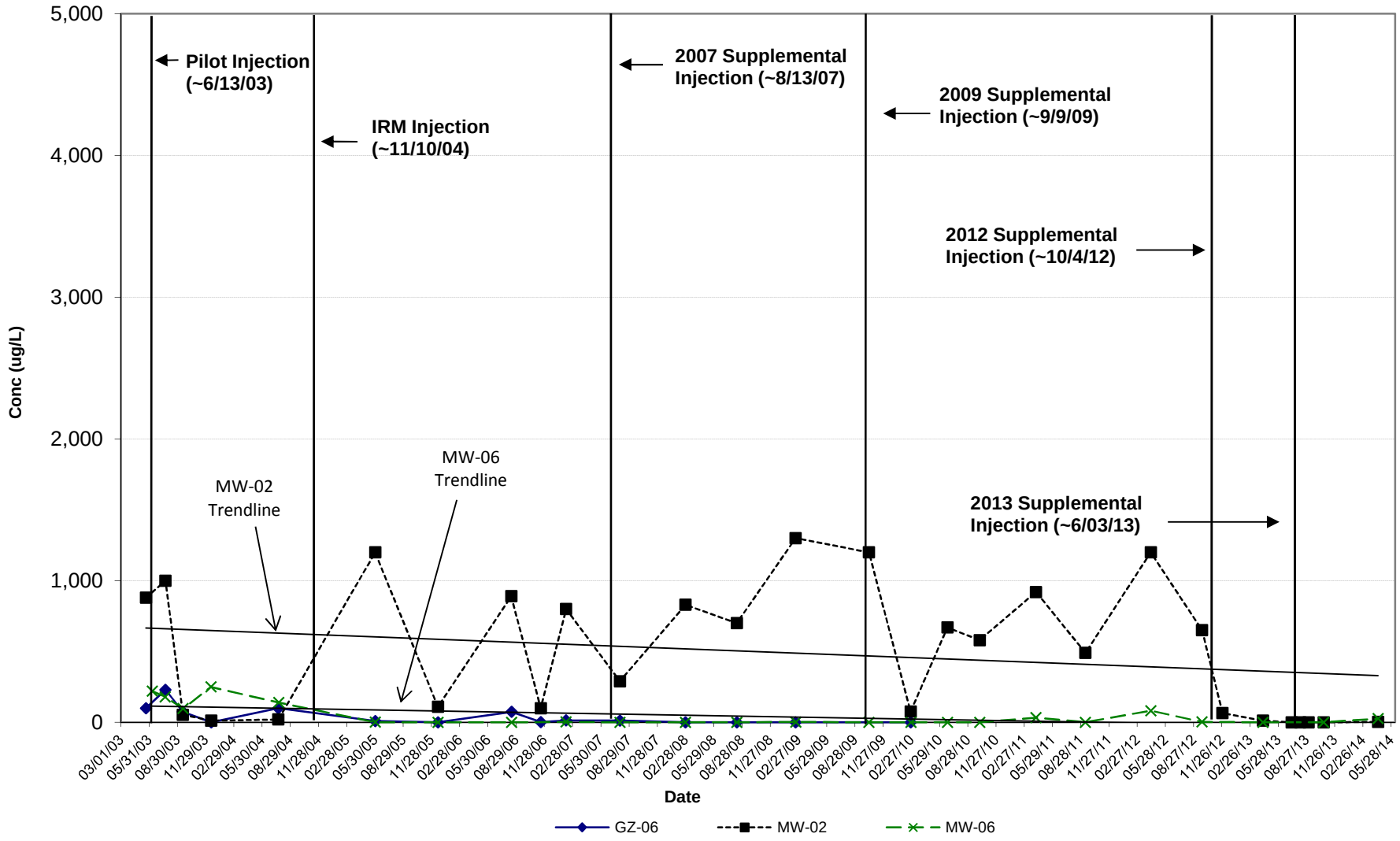

FIGURE 6
FORMER EMCA SITE
Freon 123a Concentrations

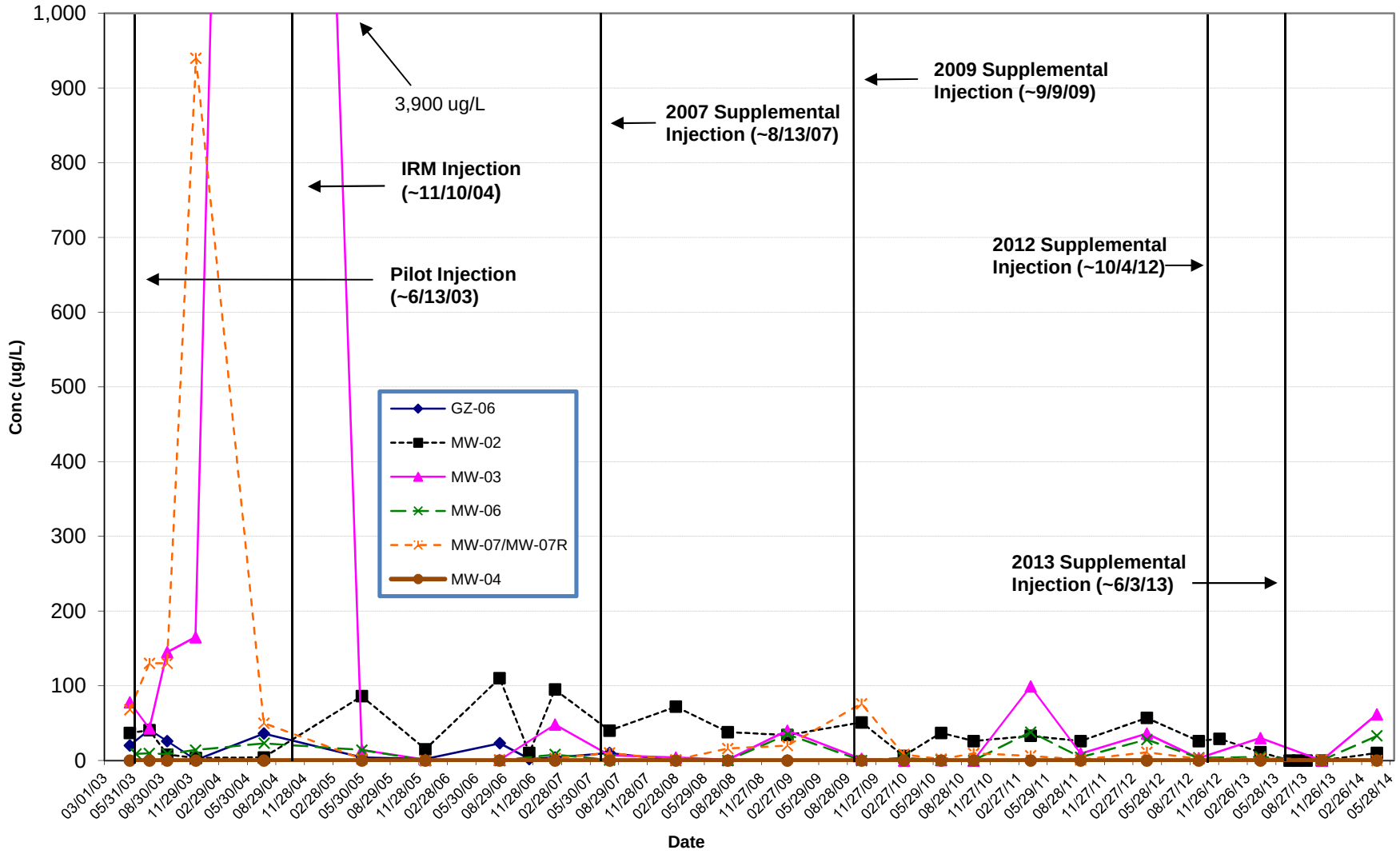

FIGURE 7
FORMER EMCA SITE
Freon 1113 Concentrations

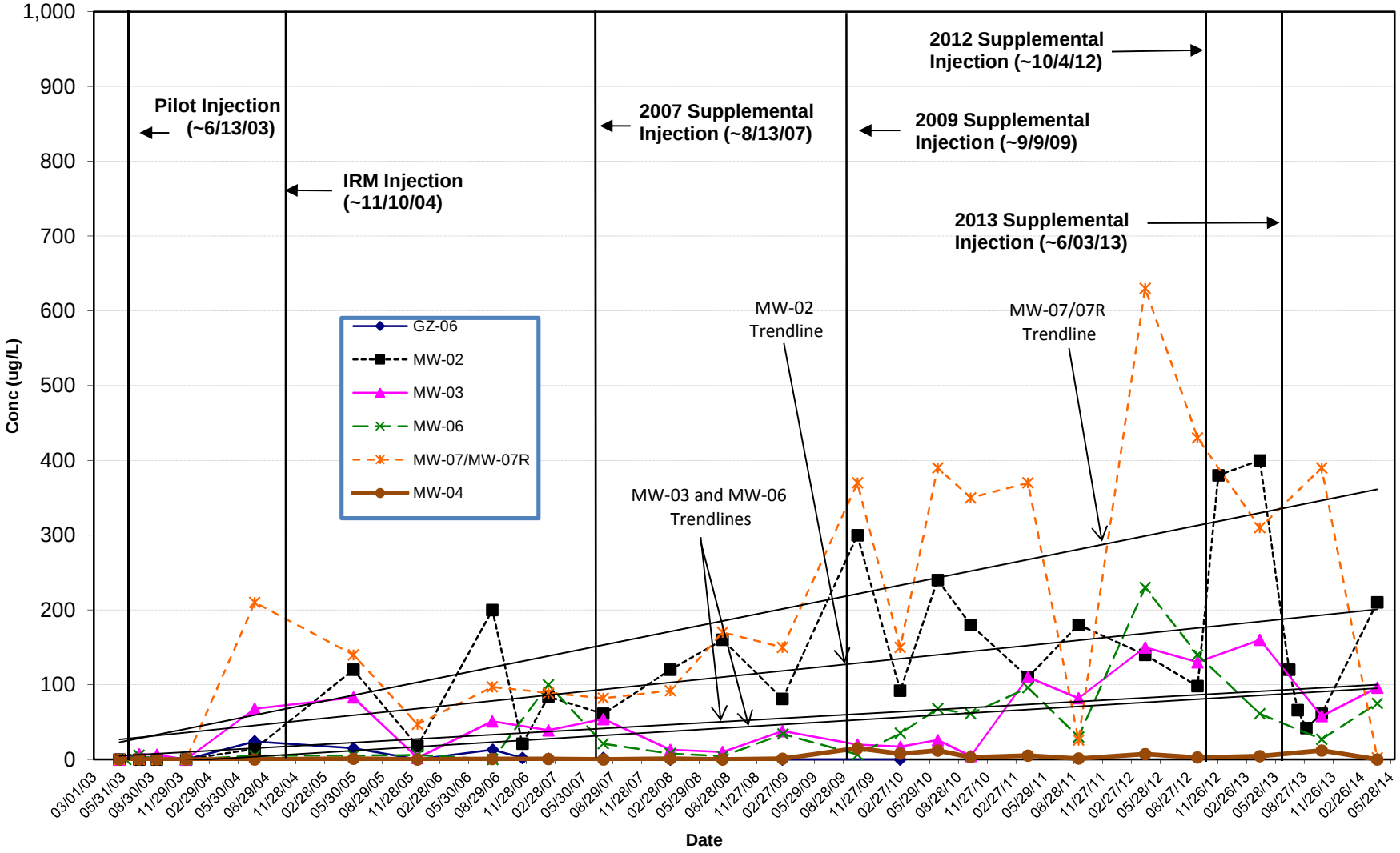

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FIGURE 8
FORMER EMCA SITE
Sulfate Concentrations

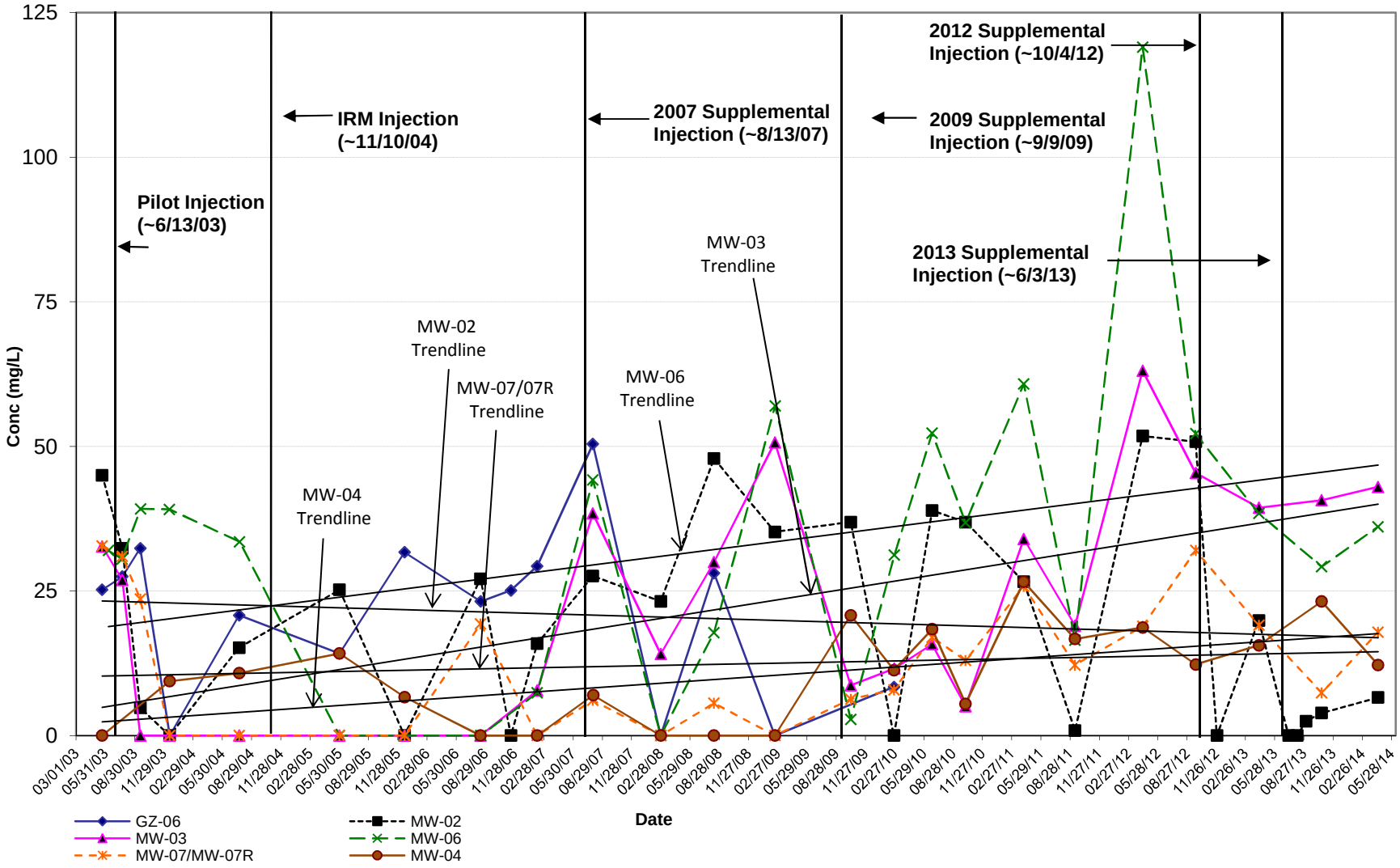

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FIGURE 9
FORMER EMCA SITE
Methane Concentrations

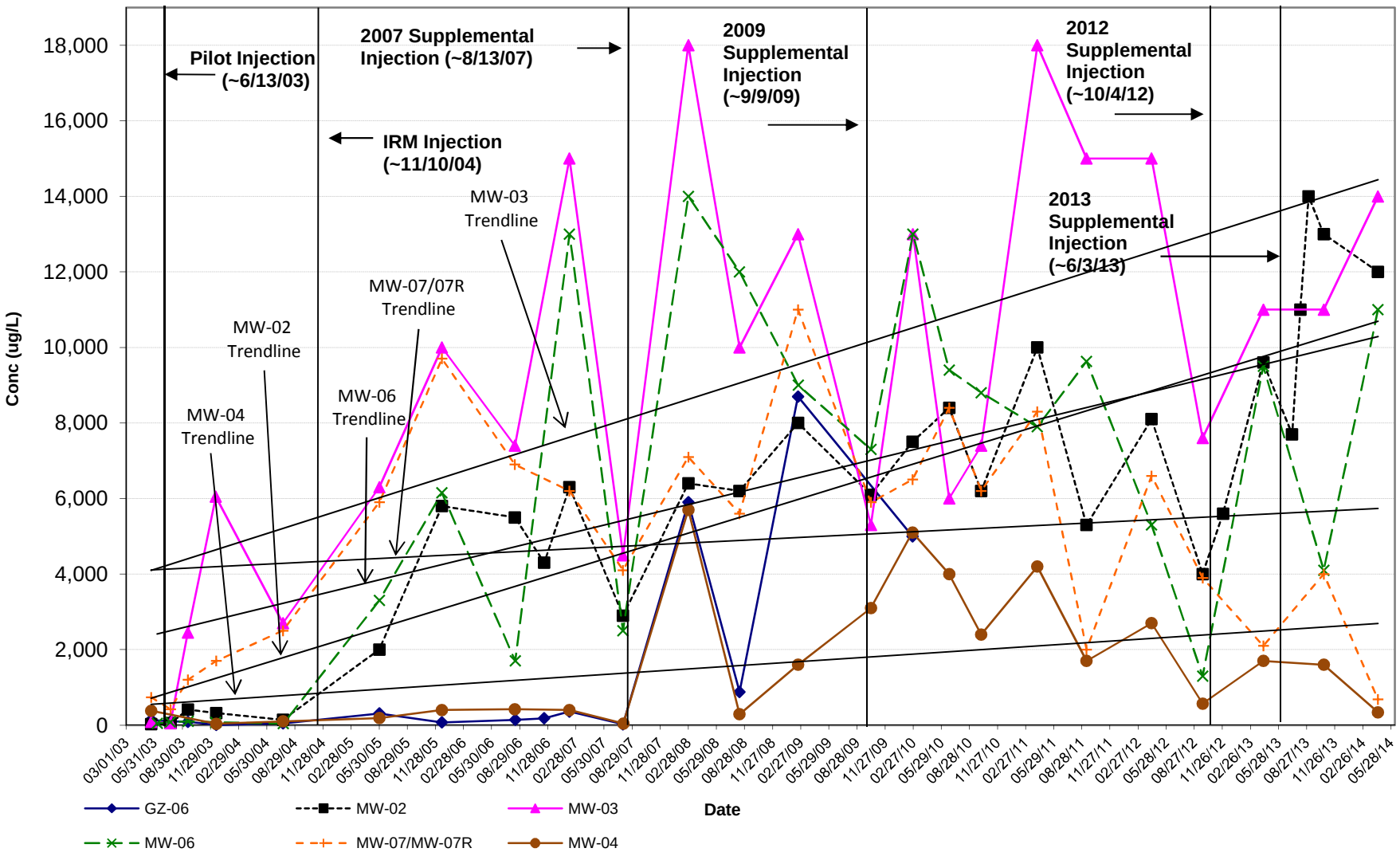

FIGURE 10
FORMER EMCA SITE
Dissolved Oxygen Concentrations

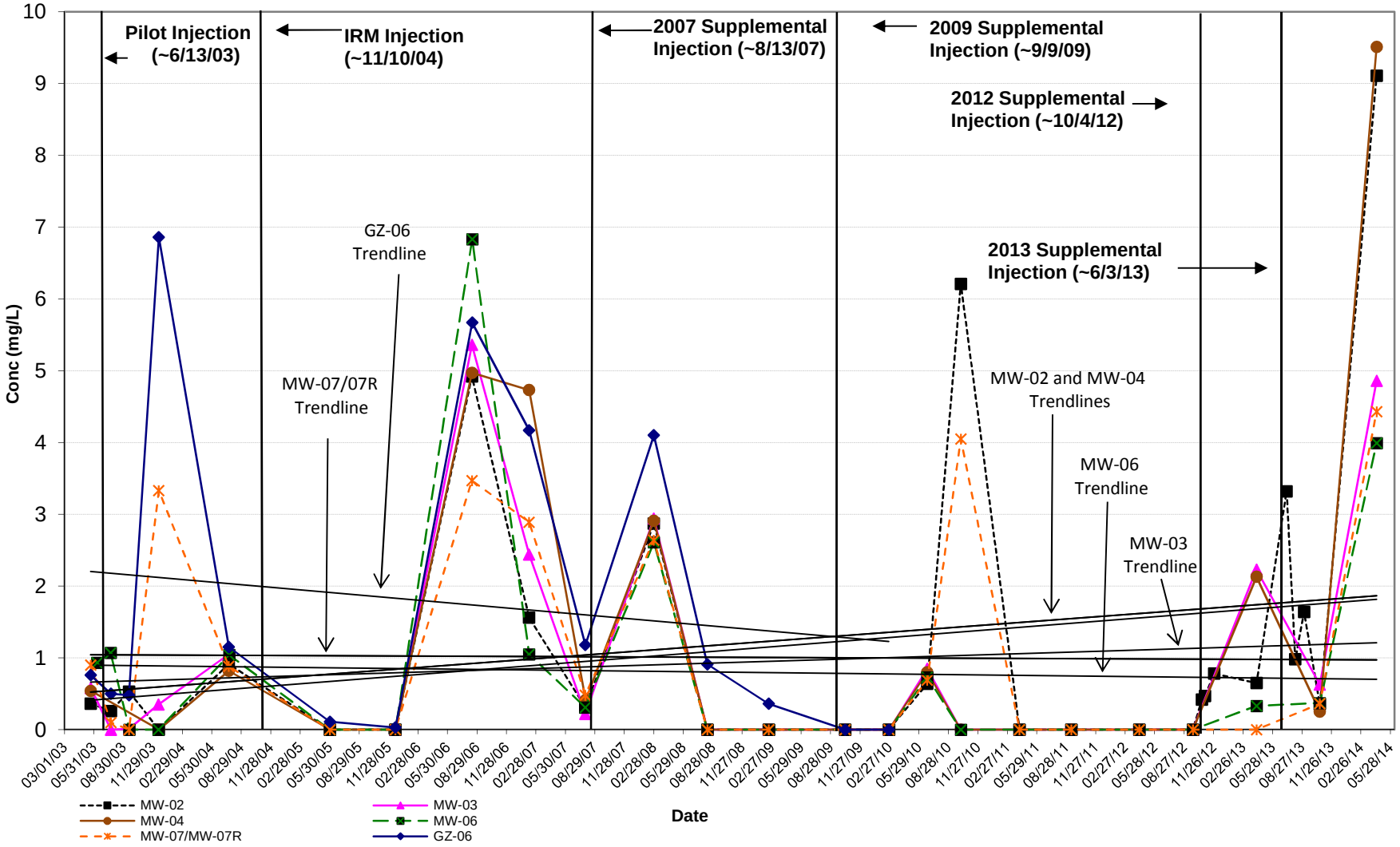

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FIGURE 11
FORMER EMCA SITE
MW-02
Dissolved Oxygen vs Temperature

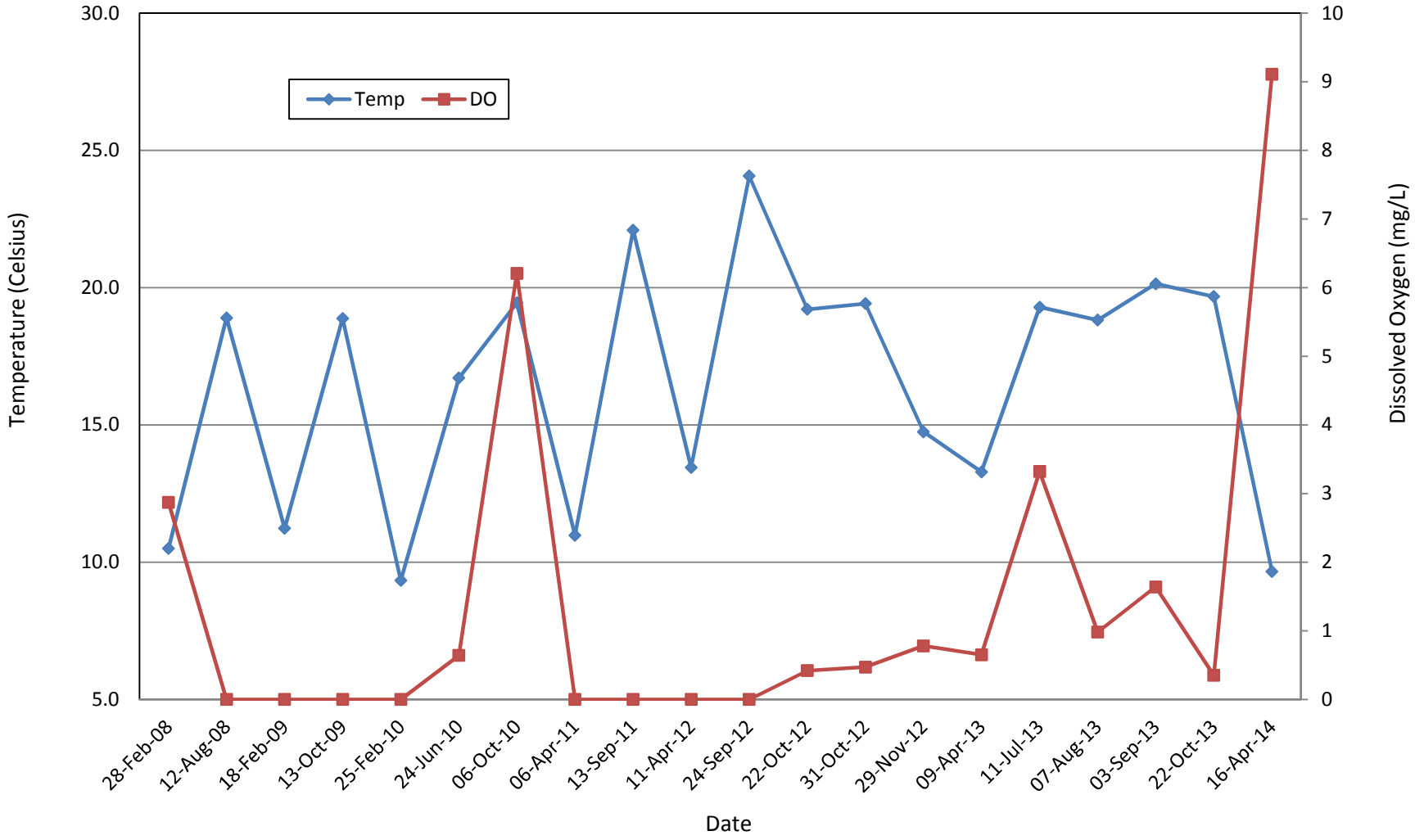

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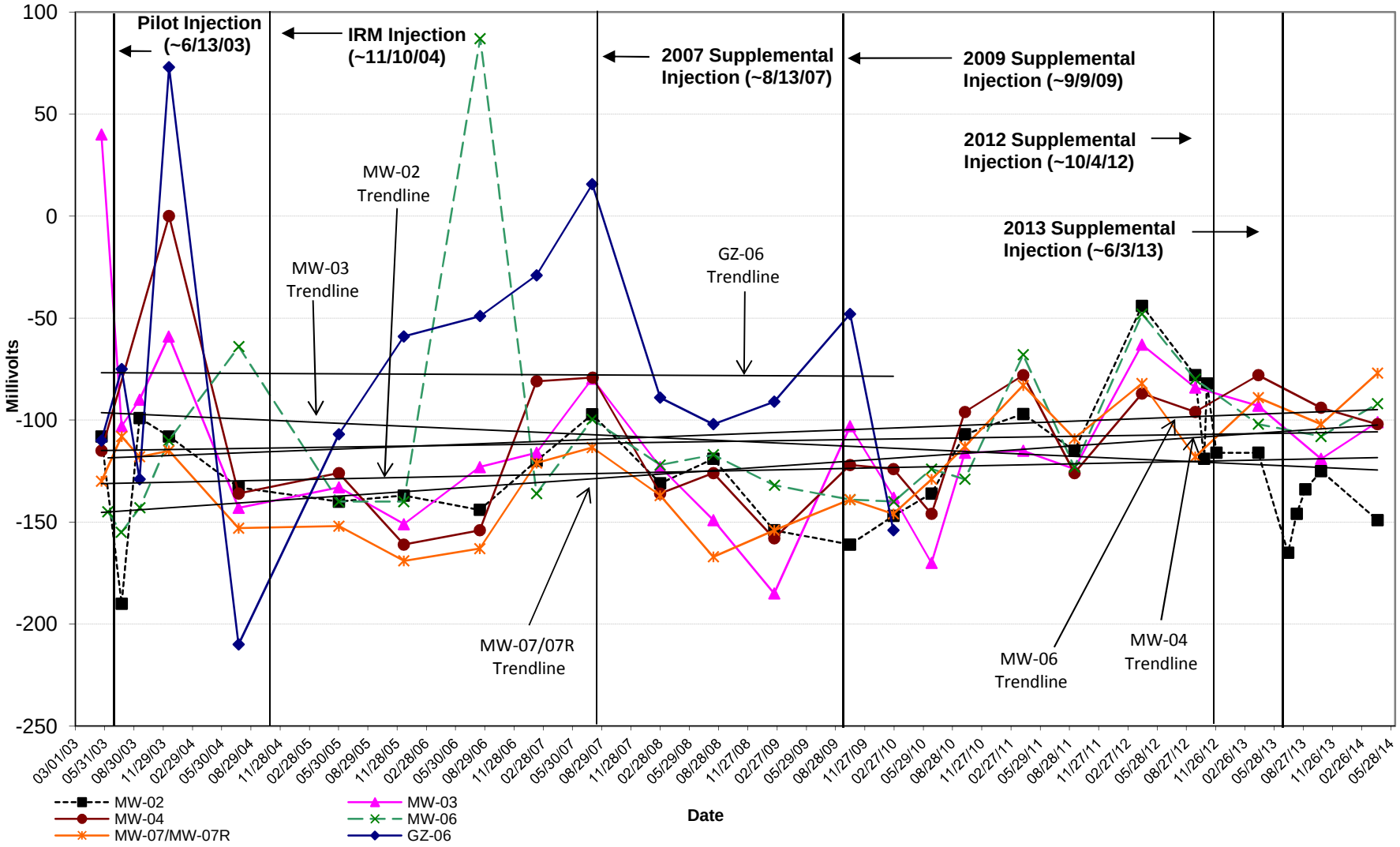
FIGURE 12
FORMER EMCA SITE
Oxidation-Reduction Potential



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APPENDIX A

LOW FLOW GROUNDWATER PURGING/SAMPLING LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: EMCA Ground Water Sampling Site: Mamaroneck, NY Well I.D.: **MW-02**

Date: 4/16/2014 Sampling Personnel: Megan Dascoli Company: URS Corporation

Purging/ Sampling Device:	Geo pump			Tubing Type:	Disposable		Pump/Tubing Inlet Location:	Screen midpoint	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.08'	Depth to Well Bottom:	11.74'	Well Diameter:	1.0"	Screen Length:	10 '
Casing Type:	PVC			Volume in 1 Well Casing (liters):	1.0		Estimated Purge Volume (liters):	9.4	

Sample ID: 20140416MW-02VO9N Sample Time: 12:45 QA/QC: DV041614

Sample Parameters: D516-Sulfate; SM4500_NO3_F-Nitrate; 200.7- Fe; 2340C- Hardness; SM5310b-TOC; 8260b (MOD) Freon; 2320B- Alkalinity; RSK_175 Methane; Dehalobacter; Dehalococcoides

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:05	7.05	11.4	3.08	20.53	60.6	-124	270	5.08
12:10	7.06	10.71	2.92	14.39	96.2	-141	270	NM
12:15	7.04	10.40	2.83	13.05	35.4	-145	270	NM
12:20	7.07	10.07	2.72	11.81	5.2	-147	270	NM
12:25	7.07	9.98	2.66	11.16	0	-147	270	NM
12:30	7.09	9.80	2.57	10.10	0	-147	270	NM
12:35	7.07	9.74	2.53	9.68	0	-149	270	NM
12:40	7.04	9.66	2.49	9.11	0	-149	270	NM
12:45	Collect sample							5.08
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

Remarks:

NM: Unabe to fit interface probe in well along side sample tubing.

Fe (II) conc.= **3.5** mg/L

Dilution Ratio = 1 mL Sample to 49 mL of DI Water

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: EMCA Ground Water Sampling | Site: Mamaroneck, NY | Well I.D.: **MW-03**

Date: 4/16/2014 | Sampling Personnel: Megan Dascoli | Company: URS Corporation

Purging/ Sampling Device:	Geo pump	Tubing Type:	Disposable		Pump/Tubing Inlet Location:	Screen midpoint	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.11'	14.31'	Well Diameter:	1.0"	Screen Length: 10 '
Casing Type:	PVC	Volume in 1 Well Casing (liters):	1.4		Estimated Purge Volume (liters):	10.7	

Sample ID: 20140416MW-03V12N | Sample Time: 10:30 | QA/QC:

Sample Parameters: D516-Sulfate; SM4500_NO3_F-Nitrate; 200.7- Fe; 2340C- Hardness; SM5310b-TOC; 8260b (MOD) Freon; 2320B- Alkalinity; RSK_175 Methane; Dehalobacter; Dehalococcoides

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:47	6.30	10.31	0.428	19.70	16.4	68	340	5.11
9:52	6.44	10.51	0.695	8.28	0	-25	340	NM
9:57	6.75	10.57	0.905	6.52	0	-75	360	NM
10:02	6.80	10.53	0.974	5.76	0	-88	220	NM
10:07	6.81	10.52	0.993	5.53	0	-91	220	NM
10:12	6.82	10.51	1.02	5.31	0	-94	220	NM
10:17	6.88	10.59	1.04	5.23	0	-98	220	NM
10:22	6.89	10.66	1.10	5.07	0	-99	220	NM
10:27	6.85	10.69	1.12	4.86	0	-101	220	NM
10:30	Collect sample							5.13
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

Remarks:

NM: Unabe to fit interface probe in well along side sample tubing.

Fe (II) conc.= **5.5** mg/L

Dilution Ratio = 5 mL Sample to 45 mL of DI Water

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: EMCA Ground Water Sampling Site: Mamaroneck, NY Well I.D.: **MW-04**

Date: 4/28/2014 Sampling Personnel: Megan Dascoli Company: URS Corporation

Purging/ Sampling Device:	Geo pump			Tubing Type:	Disposable		Pump/Tubing Inlet Location:	Screen midpoint	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.31'	Depth to Well Bottom:	11.92'	Well Diameter:	1.0"	Screen Length:	10 '
Casing Type:	PVC			Volume in 1 Well Casing (liters):	1.0		Estimated Purge Volume (liters):	7.1	

Sample ID: 201410416MW-04V09N Sample Time: 9:50 QA/QC:

Sample Parameters: D516-Sulfate; SM4500_NO3_F-Nitrate; 200.7- Fe; 2340C- Hardness; SM5310b-TOC; 8260b (MOD) Freon; 2320B- Alkalinity; RSK_175 Methane; Dehalobacter; Dehalococcoides

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:17	6.64	13.03	2.29	11.54	0	-32	200	5.31
9:22	6.70	13.95	2.50	9.81	0	-67	225	NM
9:27	6.75	13.06	2.54	9.49	0	-89	200	NM
9:32	6.75	12.10	2.63	9.75	0	-95	200	NM
9:37	6.76	11.97	2.64	9.81	0	-97	200	NM
9:42	6.76	12.07	2.63	9.68	0	-100	200	NM
9:47	6.76	12.11	2.65	9.51	0	-102	200	NM
9:50	Collect sample							5.32
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

Remarks:

NM: Unabe to fit interface probe in well along side sample tubing.

Fe (II) conc.= **7** mg/L

Dilution Ratio = 10 mL Sample to 40 mL of DI Water

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: EMCA Ground Water Sampling | Site: Mamaroneck, NY | Well I.D.: **MW-06**

Date: 4/16/2014 | Sampling Personnel: Megan Dascoli | Company: URS Corporation

Purging/ Sampling Device:	Geo pump		Tubing Type:	Disposable		Pump/Tubing Inlet Location:	Screen midpoint
Measuring Point:	Below Top of Riser	Initial Depth to Water: 5.18'	Depth to Well Bottom:	18.72'	Well Diameter: 1.0"	Screen Length:	10 '
Casing Type:	PVC		Volume in 1 Well Casing (liters):	2.1		Estimated Purge Volume (liters):	6.7

Sample ID: 20140416MW-06V15N | Sample Time: 14:10 | QA/QC: 20140114MW-06V15MS, 20140416MW-06V15MSD

Sample Parameters: D516-Sulfate; SM4500_NO3_F-Nitrate; 200.7- Fe; 2340C- Hardness; SM5310b-TOC; 8260b (MOD) Freon; 2320B- Alkalinity; RSK_175 Methane; Dehalobacter; Dehalococcoides

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:33	7.46	12.10	0.479	6.55	0.1	-82	210	5.18
13:38	7.08	12.72	0.882	5.35	0	-62	210	NM
13:43	6.99	12.96	1.21	4.77	0	-60	210	NM
13:48	7.00	12.83	1.42	4.55	0	-67	210	NM
13:53	7.00	12.71	1.60	4.34	0	-77	210	NM
13:58	7.01	12.70	1.70	4.16	0	-84	210	NM
14:03	7.02	12.76	1.72	4.08	0	-88	280	NM
14:08	7.02	12.71	1.73	3.99	0	-92	280	NM
14:10	Collect sample							5.17
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

Remarks:

NM: Unabe to fit interface probe in well along side sample tubing.

Fe (II) conc.= **6** mg/L

Dilution Ratio = 10 mL Sample to 40 mL of DI Water

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: EMCA Ground Water Sampling Site: Mamaroneck, NY Well I.D.: **MW-07R**

Date: 4/16/2014 Sampling Personnel: Megan Dascoli Company: URS Corporation

Purging/ Sampling Device:	Geo pump			Tubing Type:	Disposable		Pump/Tubing Inlet Location:	Screen midpoint	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.1'	Depth to Well Bottom:	20.03'	Well Diameter:	1.0"	Screen Length:	10 '
Casing Type:	PVC			Volume in 1 Well Casing (liters):	2.3		Estimated Purge Volume (liters):	6.0	

Sample ID: 20140416MW-07RV17N Sample Time: 13:05 QA/QC:

Sample Parameters: D516-Sulfate; SM4500_NO3_F-Nitrate; 200.7- Fe; 2340C- Hardness; SM5310b-TOC; 8260b (MOD) Freon; 2320B- Alkalinity; RSK_175 Methane; Dehalobacter; Dehalococcoides

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:35	6.96	12.04	3.27	7.44	0	-58	240	5.10
15:40	6.92	11.79	3.30	5.37	0	-65	240	NM
15:45	6.91	11.64	3.31	4.86	0	-71	240	NM
15:50	6.90	11.50	3.31	4.63	0	-74	240	NM
15:55	6.89	11.39	3.31	4.43	0	-77	240	NM
16:00	Collect sample							5.10
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

Remarks:

NM: Unabe to fit interface probe in well along side sample tubing.

Fe (II) conc.= mg/L

Dilution Ratio = mL Sample to mL of DI Water

APPENDIX B

DATA USABILITY SUMMARY REPORT

APPENDIX B

DATA USABILITY SUMMARY REPORT

APRIL 2014 SAMPLING EVENT

FORMER EMCA SITE
SITE NO. 360025
MAMARONECK, NEW YORK

Analyses Performed by:

TESTAMERICA LABORATORIES, INC.
777 New Durham Road
Edison, New Jersey 08817

Prepared for:

ROHM & HAAS Company
(A Wholly-Owned Subsidiary of The Dow Chemical Company)
3100 State Road
Croydon, PA 19021

Prepared by:

URS CORPORATION
77 Goodell Street
Buffalo, New York 14203

JUNE 2014

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TABLES
(Following Text)

ATTACHMENTS
(Following Tables)

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, one field duplicate, one matrix spike/matrix spike duplicate (MS/MSD) pair, and one trip blank collected on April 16 and 28, 2014, as summarized on Table B-1. The April 2014 samples were collected by URS personnel at the Former EMCA Site located in Mamaroneck, New York, as part of the semi-annual groundwater monitoring event.

Sample MW-04 could not be sampled on April 16, 2014 because the well location was inaccessible, hence, it was sampled on April 28, 2014.

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; and SiREM Laboratory located in Guelph, Ontario, Canada. Note, not all groundwater samples were analyzed for all parameters, as shown on Table B-1.

Parameter	**Method No.**	**References**
Volatile Organic Compounds (VOCs)*	SW8260B	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
Ferrous Iron (Fe^{+2})	Field colorimeter	6
Nitrate	SM 4500-NO3 F	4
Total Organic Carbon (TOC)	SM 5310 B	4
Bacteria [*Dehalococcoides ethenogenes (Dhc) and Dehalobacter (Dhb)*]	QPCR**	SiREM SOP

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).
** - Quantitative Polymerase Chain Reaction.

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.
6 Hach Colorimeter using 1,10-Phenanthroline.

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, SOP No. HW-24, Rev. #2,* August 2008; and

- *ICP-AES Data* Validation, SOP No. HW-2a, Revision 15, December 2012.

The validated groundwater and field quality control (QC) analytical results are presented in Tables B-2 and B-3, respectively. Copies of the validated laboratory results (i.e., Form 1's) are presented in Attachment A. Copies of the case narrative, chain-of-custody, and documentation supporting the qualification of data are presented in Attachment B. Only problems affecting data usability are discussed in this report.

IV. DATA DELIVERABLE COMPLETENESS

The laboratory deliverable data packages were in accordance with NYSDEC Analytical Services Protocol (ASP) Category B requirements.

V. PRESERVATION / SAMPLE RECEIPT / HOLDING TIMES

All samples were received by the laboratory intact, properly preserved, and under proper chain-of-custody (COC), except for the following instances.

- Methane analysis was not requested on the COC for the trip blank, but this analysis was added to the analytical program by URS after consultation with the laboratory.

- No trip blank was collected on 04/28/14. Since, the trip blanks typically have not exhibited contamination this non-conformance does not impact the usability of the data.

- For dehalobacter analysis, a MS/MSD and field duplicate were requested on the COC, but were cancelled by URS.

All sample analyses were performed within method holding times.

VI. NONCONFORMANCES

Matrix Spike/Matrix Spike Duplicate Recoveries

The nitrate and nitrite MS/MSD %Rs for sample 20140416MW-06V15N were below QC limits (<80%). The nitrate and nitrite results for this sample were qualified 'J' or 'UJ'. Documentation supporting the qualification of the data is presented in Attachment B.

VII. SUMMARY

All sample analyses were found to be compliant with the method and validation criteria, except where previously noted. Those results qualified 'J' (estimated) or 'UJ' (estimated quantitation limit) during the data validation are considered conditionally usable.

DEFINITIONS OF USEPA REGION II DATA QUALIFIERS

U – The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

D – The sample results are reported from a separate secondary dilution analysis.

TABLE B-1
SAMPLE AND ANALYSIS SUMMARY - APRIL 2014
FORMER EMCA SITE, MAMARONECK, NEW YORK

SDG Nos.	Sample ID	Matrix	Date of Collection	VOCs*	Methane	Sulfate	Alkalinity	Hardness	Total Iron	Nitrate	TOC	Dhc	Dhb	Comments
460-74511-1/ S-3171	20140416MW-02V09N	GW	04/16/14	X	X	X	X	X	X	X	X	---	X	---
	DUP04162014	GW		X	X	X	X	X	X	X	X	---	---	Field Duplicate of MW-02
	20140416MW-03V12N	GW		X	X	X	X	X	X	X	X	---	X	---
	20140416MW-06V15N	GW		X	X	X	X	X	X	X	X	---	X	MS/MSD
	20140416MW-07RV17N	GW		X	X	X	X	X	X	X	X	X	X	---
	TB041614-1	Water		X	X	---	---	---	---	---	---	---	---	Trip Blank
460-75100-1/ S-3183	20140428MW-04V09N	GW	04/28/14	X	X	X	X	X	X	X	X	---	X	---

Notes:

* - Volatile Organic Compounds (VOCs) include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113); 1,2-dichloro-1,1,2-trifluoroethane (Freon-123a); and chlorotrifluoroethene (Freon-1113).

X - Parameter requested.
--- - Parameter not requested/analyzed or no comment.
Dhc - Dehalococcoides ethenogenes
Dhb - Dehalobacter
GW - Groundwater
MS/MSD - Matrix Spike/Matrix Spike Duplicate
TOC - Total Organic Carbon

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-03	MW-04	MW-06
Sample ID			20140416MW-02V09N	DUP04162014	20140416MW-03V12N	20140428MW-04V09N	20140416MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	04/16/14	04/16/14	04/28/14	04/16/14
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	210	190	96	1.0 U	75
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	3.1	2.9	100	1.0 U	26
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10	11	62	1.0 U	33
Dissolved Gases							
Methane	UG/L	-	12,000	13,000	14,000	340	11,000
Total Metals							
Iron	UG/L	300	69,900	70,500	19,700	18,900	20,900
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	456	456	220	239	240
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	456	456	220	239	240
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	70	NA	10	3 U	3 U
Hardness (as CaCO3)	MG/L	-	455	455	249	525	370
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.40	0.10 U	0.10 UJ
Nitrogen, Nitrite	MG/L	1	0.049 J	0.043 J	0.038 J	0.10 U	0.051 J
Sulfate	MG/L	250	6.6	6.5	43.0	12.2	36.1
Total Organic Carbon	MG/L	-	12.8	12.7	6.3	8.4	5.8
Field Parameter							
Dissolved Oxygen	MG/L	-	9.11	NA	4.86	9.51	3.99
Ferrous Iron	MG/L	-	3.5	NA	5.5	7.0	6.0

*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

U - Non-Detect UJ - Not detected above the estimated quantitation limit

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

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

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

Detection Limits shown are PQL

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-03	MW-04	MW-06
Sample ID			20140416MW-02V09N	DUP04162014	20140416MW-03V12N	20140428MW-04V09N	20140416MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	04/16/14	04/16/14	04/28/14	04/16/14
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Field Parameter							
Oxidation-Reduction Potential	mV	-	-149	NA	-101	-102	-92
pH	S.U.	-	7.04	NA	6.85	6.76	7.02
Specific Conductance	MS/CM	-	2.49	NA	1.12	2.65	1.73
Temperature	DEG C	-	9.66	NA	10.69	12.11	12.71
Turbidity	NTU	-	0	NA	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

U - Non-Detect UJ - Not detected above the estimated quantitation limit

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

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

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

Detection Limits shown are PQL

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R
Sample ID			20140416MW-07RV17N
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			04/16/14
Parameter	**Units**	**Criteria***	
Volatiles			
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.4
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	-	680
Total Metals			
Iron	UG/L	300	24,500
Miscellaneous Parameters			
Alkalinity, Total (as CaCO3)	MG/L	-	305
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	305
Alkalinity, Carbonate (as CaCO3)	MG/L	-	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	70
Dehalobacter	GC/mL	-	3 U
Hardness (as CaCO3)	MG/L	-	594
Nitrogen, Nitrate	MG/L	10	0.10 U
Nitrogen, Nitrite	MG/L	1	0.038 J
Sulfate	MG/L	250	17.9
Total Organic Carbon	MG/L	-	7.8
Field Parameter			
Dissolved Oxygen	MG/L	-	4.43
Ferrous Iron	MG/L	-	6.0

*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

U - Non-Detect UJ - Not detected above the estimated quantitation limit

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

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

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

Detection Limits shown are PQL

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R
Sample ID			20140416MW-07RV17N
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			04/16/14
Parameter	**Units**	**Criteria***	
Field Parameter			
Oxidation-Reduction Potential	mV	-	-77
pH	S.U.	-	6.89
Specific Conductance	MS/CM	-	3.31
Temperature	DEG C	-	11.39
Turbidity	NTU	-	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

U - Non-Detect UJ - Not detected above the estimated quantitation limit

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

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

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

Detection Limits shown are PQL

TABLE B-3
FIELD QC ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			FIELDQC
Sample ID			TB041614-1
Matrix			Water
Depth Interval (ft)			-
Date Sampled			04/16/14
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 - Non-Detect

UG/L - Micrograms per Liter

Detection Limits shown are PQL

J:\Projects\11172730.00000\DB\PROGRAM\EDMS.md
Printed: 5/28/2014 1:38:12 PM
[LOGDATE] >= #4/16/2014# AND [MATRIX] = 'WQ

ATTACHMENT A

VALIDATED ANALYTICAL RESULTS (FORM 1's)

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-02V09N**

Lab Sample ID: 460-74511-2
Client Matrix: Water

Date Sampled: 04/16/2014 1245
Date Received: 04/17/2014 0920

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-221185	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B68136.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/28/2014 1506			Final Weight/Volume:	5 mL
Prep Date:	04/28/2014 1506				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	3.1		0.080	1.0
Chlorotrifluoroethene	210		0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	10		0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 130
Toluene-d8 (Surr)	108		70 - 130
Bromofluorobenzene	99		64 - 135
Dibromofluoromethane (Surr)	115		72 - 137

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: DUP04162014 (MW-02)

Lab Sample ID: 460-74511-5

Client Matrix: Water

Date Sampled: 04/16/2014 1200

Date Received: 04/17/2014 0920

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-221185	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B68139.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/28/2014 1616			Final Weight/Volume:	5 mL
Prep Date:	04/28/2014 1616				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	2.9		0.080	1.0
Chlorotrifluoroethene	190		0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	11		0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 130
Toluene-d8 (Surr)	96		70 - 130
Bromofluorobenzene	90		64 - 135
Dibromofluoromethane (Surr)	102		72 - 137

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-02V09N**

Lab Sample ID: 460-74511-2
Client Matrix: Water

Date Sampled: 04/16/2014 1245
Date Received: 04/17/2014 0920

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-177346	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	500			Final Weight/Volume:	17 mL
Analysis Date:	04/22/2014 1214			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	12000		500	2000

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **DUP04162014** (MW-02)

Lab Sample ID: 460-74511-5

Client Matrix: Water

Date Sampled: 04/16/2014 1200

Date Received: 04/17/2014 0920

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-177346	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	500			Final Weight/Volume:	17 mL
Analysis Date:	04/22/2014 1348			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	13000		500	2000

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-02V09N**

Lab Sample ID: 460-74511-2
Client Matrix: Water

Date Sampled: 04/16/2014 1245
Date Received: 04/17/2014 0920

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-220888	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-220587	Lab File ID:	04252014.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	04/25/2014 1602			Final Weight/Volume:	100 mL
Prep Date:	04/24/2014 0854				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	69900		77.9	150

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **DUP04162014** (MW-02)

Lab Sample ID: 460-74511-5

Client Matrix: Water

Date Sampled: 04/16/2014 1200

Date Received: 04/17/2014 0920

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-220888	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-220587	Lab File ID:	04252014.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	04/25/2014 1610			Final Weight/Volume:	100 mL
Prep Date:	04/24/2014 0854				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	70500		77.9	150

General Chemistry

Client Sample ID: **20140416MW-02V09N**

Lab Sample ID: 460-74511-2
Client Matrix: Water

Date Sampled: 04/16/2014 1245
Date Received: 04/17/2014 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	6.6		mg/L	2.2	5.0	1.0	D516-90, 02
Analysis Batch: 460-220436	Analysis Date: 04/23/2014 0828						
Bicarbonate Alkalinity as CaCO3	456		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-221297	Analysis Date: 04/28/2014 1330						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-221297	Analysis Date: 04/28/2014 1330						
Alkalinity	456		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-221297	Analysis Date: 04/28/2014 1330						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-221297	Analysis Date: 04/28/2014 1330						
Hardness as calcium carbonate	455		mg/L	5.0	5.0	1.0	SM 2340C
Analysis Batch: 460-220899	Analysis Date: 04/25/2014 1300						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1628						
Nitrite as N	0.049	J	mg/L	0.0041	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1628						
Total Organic Carbon	12.8		mg/L	0.30	1.0	1.0	SM 5310B
Analysis Batch: 460-220595	Analysis Date: 04/23/2014 0201						

General Chemistry

Client Sample ID: DUP04162014 (MW-02)

Lab Sample ID: 460-74511-5

Client Matrix: Water

Date Sampled: 04/16/2014 1200

Date Received: 04/17/2014 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	6.5		mg/L	2.2	5.0	1.0	D516-90, 02
Analysis Batch: 460-220436	Analysis Date: 04/23/2014 0828						
Bicarbonate Alkalinity as CaCO3	456		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-221297	Analysis Date: 04/28/2014 1330						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-221297	Analysis Date: 04/28/2014 1330						
Alkalinity	456		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-221297	Analysis Date: 04/28/2014 1330						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-221297	Analysis Date: 04/28/2014 1330						
Hardness as calcium carbonate	455		mg/L	5.0	5.0	1.0	SM 2340C
Analysis Batch: 460-220899	Analysis Date: 04/25/2014 1300						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1631						
Nitrite as N	0.043	J	mg/L	0.0041	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1631						
Total Organic Carbon	12.7		mg/L	0.30	1.0	1.0	SM 5310B
Analysis Batch: 460-220595	Analysis Date: 04/23/2014 0242						

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-03V12N**

Lab Sample ID: 460-74511-1
Client Matrix: Water

Date Sampled: 04/16/2014 1030
Date Received: 04/17/2014 0920

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-221185	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B68135.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/28/2014 1441			Final Weight/Volume:	5 mL
Prep Date:	04/28/2014 1441				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	100		0.080	1.0
Chlorotrifluoroethene	96		0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	62		0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
Toluene-d8 (Surr)	95		70 - 130
Bromofluorobenzene	89		64 - 135
Dibromofluoromethane (Surr)	102		72 - 137

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-03V12N**

Lab Sample ID: 460-74511-1
Client Matrix: Water

Date Sampled: 04/16/2014 1030
Date Received: 04/17/2014 0920

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-177346	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	500			Final Weight/Volume:	17 mL
Analysis Date:	04/22/2014 1157			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	14000		500	2000

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-03V12N**

Lab Sample ID: 460-74511-1
Client Matrix: Water

Date Sampled: 04/16/2014 1030
Date Received: 04/17/2014 0920

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-220888	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-220587	Lab File ID:	04252014.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	04/25/2014 1558			Final Weight/Volume:	100 mL
Prep Date:	04/24/2014 0854				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	19700		77.9	150

General Chemistry

Client Sample ID: **20140416MW-03V12N**

Lab Sample ID: 460-74511-1 Date Sampled: 04/16/2014 1030
Client Matrix: Water Date Received: 04/17/2014 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	43.0		mg/L	4.3	10.0	2.0	D516-90, 02
Analysis Batch: 460-220436	Analysis Date: 04/23/2014 0842						
Bicarbonate Alkalinity as CaCO3	220		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0907						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0907						
Alkalinity	220		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0907						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0907						
Hardness as calcium carbonate	249		mg/L	5.0	5.0	1.0	SM 2340C
Analysis Batch: 460-220899	Analysis Date: 04/25/2014 1300						
Nitrate as N	0.40		mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1627						
Nitrite as N	0.038	J	mg/L	0.0041	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1627						
Total Organic Carbon	6.3		mg/L	0.30	1.0	1.0	SM 5310B
Analysis Batch: 460-220595	Analysis Date: 04/23/2014 0101						

Client: URS Corporation

Job Number: 460-75100-1

Client Sample ID: **MW-04**

Lab Sample ID: 460-75100-1
Client Matrix: Water

Date Sampled: 04/28/2014 0950
Date Received: 04/28/2014 1340

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-223359	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B68554.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	05/09/2014 1625			Final Weight/Volume:	5 mL
Prep Date:	05/09/2014 1625				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.080	U	0.080	1.0
Chlorotrifluoroethene	0.18	U	0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.84	U	0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
Toluene-d8 (Surr)	103		70 - 130
Bromofluorobenzene	112		64 - 135
Dibromofluoromethane (Surr)	105		72 - 137

Client: URS Corporation

Job Number: 460-75100-1

Client Sample ID: **MW-04**

Lab Sample ID: 460-75100-1
Client Matrix: Water

Date Sampled: 04/28/2014 0950
Date Received: 04/28/2014 1340

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-179349	Instrument ID:	PE-03
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	50			Final Weight/Volume:	17 mL
Analysis Date:	05/01/2014 1017			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	340		50	200

Client: URS Corporation

Job Number: 460-75100-1

Client Sample ID: **MW-04**

Lab Sample ID: 460-75100-1
Client Matrix: Water

Date Sampled: 04/28/2014 0950
Date Received: 04/28/2014 1340

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-221982	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-221891	Lab File ID:	05012014A.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	05/01/2014 1409			Final Weight/Volume:	100 mL
Prep Date:	05/01/2014 0906				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	18900		77.9	150

General Chemistry

Client Sample ID: **MW-04**

Lab Sample ID: 460-75100-1
Client Matrix: Water

Date Sampled: 04/28/2014 0950
Date Received: 04/28/2014 1340

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	12.2		mg/L	2.2	5.0	1.0	D516-90, 02
Analysis Batch: 460-221963	Analysis Date: 05/01/2014 0957						
Bicarbonate Alkalinity as CaCO3	239		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-222520	Analysis Date: 05/02/2014 1711						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-222520	Analysis Date: 05/02/2014 1711						
Alkalinity	239		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-222520	Analysis Date: 05/02/2014 1711						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-222520	Analysis Date: 05/02/2014 1711						
Hardness as calcium carbonate	525		mg/L	25.0	25.0	1.0	SM 2340C
Analysis Batch: 460-221742	Analysis Date: 04/30/2014 1516						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-221667	Analysis Date: 04/30/2014 0731						
Nitrite as N	0.0041	U	mg/L	0.0041	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-221667	Analysis Date: 04/30/2014 0731						
Total Organic Carbon	8.4		mg/L	0.30	1.0	1.0	SM 5310B
Analysis Batch: 460-221743	Analysis Date: 04/30/2014 0228						

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-06V15N**

Lab Sample ID: 460-74511-3
Client Matrix: Water

Date Sampled: 04/16/2014 1410
Date Received: 04/17/2014 0920

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-221185	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B68137.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/28/2014 1529			Final Weight/Volume:	5 mL
Prep Date:	04/28/2014 1529				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	26		0.080	1.0
Chlorotrifluoroethene	75		0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	33		0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 130
Toluene-d8 (Surr)	94		70 - 130
Bromofluorobenzene	89		64 - 135
Dibromofluoromethane (Surr)	103		72 - 137

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-06V15N**

Lab Sample ID: 460-74511-3
Client Matrix: Water

Date Sampled: 04/16/2014 1410
Date Received: 04/17/2014 0920

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-177346	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	500			Final Weight/Volume:	17 mL
Analysis Date:	04/22/2014 1231			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	11000		500	2000

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-06V15N**

Lab Sample ID: 460-74511-3
Client Matrix: Water

Date Sampled: 04/16/2014 1410
Date Received: 04/17/2014 0920

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-220888	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-220587	Lab File ID:	04252014.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	04/25/2014 1448			Final Weight/Volume:	100 mL
Prep Date:	04/24/2014 0854				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	20900		77.9	150

General Chemistry

Client Sample ID: **20140416MW-06V15N**

Lab Sample ID: 460-74511-3
Client Matrix: Water

Date Sampled: 04/16/2014 1410
Date Received: 04/17/2014 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	36.1		mg/L	2.2	5.0	1.0	D516-90, 02
Analysis Batch: 460-220436	Analysis Date: 04/23/2014 0825						
Bicarbonate Alkalinity as CaCO3	240		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0855						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0855						
Alkalinity	240		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0855						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0855						
Hardness as calcium carbonate	370		mg/L	5.0	5.0	1.0	SM 2340C
Analysis Batch: 460-220899	Analysis Date: 04/25/2014 1300						
Nitrate as N	0.047	U J	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1625						
Nitrite as N	0.051	J	mg/L	0.0041	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1625						
Total Organic Carbon	5.8		mg/L	0.30	1.0	1.0	SM 5310B
Analysis Batch: 460-220595	Analysis Date: 04/23/2014 0000						

5/14/14

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-07RV17N**

Lab Sample ID: 460-74511-4
Client Matrix: Water

Date Sampled: 04/16/2014 1600
Date Received: 04/17/2014 0920

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-221185	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B68138.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/28/2014 1552			Final Weight/Volume:	5 mL
Prep Date:	04/28/2014 1552				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.080	U	0.080	1.0
Chlorotrifluoroethene	2.4		0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.84	U	0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 130
Toluene-d8 (Surr)	94		70 - 130
Bromofluorobenzene	89		64 - 135
Dibromofluoromethane (Surr)	104		72 - 137

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-07RV17N**

Lab Sample ID: 460-74511-4
Client Matrix: Water

Date Sampled: 04/16/2014 1600
Date Received: 04/17/2014 0920

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-177346	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	20			Final Weight/Volume:	17 mL
Analysis Date:	04/22/2014 1331			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	680		20	80

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **20140416MW-07RV17N**

Lab Sample ID: 460-74511-4
Client Matrix: Water

Date Sampled: 04/16/2014 1600
Date Received: 04/17/2014 0920

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-220888	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-220587	Lab File ID:	04252014.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	04/25/2014 1606			Final Weight/Volume:	100 mL
Prep Date:	04/24/2014 0854				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	24500		77.9	150

General Chemistry

Client Sample ID: **20140416MW-07RV17N**

Lab Sample ID: 460-74511-4
Client Matrix: Water

Date Sampled: 04/16/2014 1600
Date Received: 04/17/2014 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	17.9		mg/L	2.2	5.0	1.0	D516-90, 02
Analysis Batch: 460-220436	Analysis Date: 04/23/2014 0828						
Bicarbonate Alkalinity as CaCO3	305		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0919						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0919						
Alkalinity	305		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0919						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-220859	Analysis Date: 04/25/2014 0919						
Hardness as calcium carbonate	594		mg/L	5.0	5.0	1.0	SM 2340C
Analysis Batch: 460-220899	Analysis Date: 04/25/2014 1300						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1630						
Nitrite as N	0.038	J	mg/L	0.0041	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-219551	Analysis Date: 04/17/2014 1630						
Total Organic Carbon	7.8		mg/L	0.30	1.0	1.0	SM 5310B
Analysis Batch: 460-220595	Analysis Date: 04/23/2014 0222						

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **TB041614-1**

Lab Sample ID: 460-74511-6TB
Client Matrix: Water

Date Sampled: 04/16/2014 1600
Date Received: 04/17/2014 0920

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-221185	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B68134.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/28/2014 1418			Final Weight/Volume:	5 mL
Prep Date:	04/28/2014 1418				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.080	U	0.080	1.0
Chlorotrifluoroethene	0.18	U	0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.84	U	0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
Toluene-d8 (Surr)	94		70 - 130
Bromofluorobenzene	88		64 - 135
Dibromofluoromethane (Surr)	100		72 - 137

Client: URS Corporation

Job Number: 460-74511-1

Client Sample ID: **TB041614-1**

Lab Sample ID: 460-74511-6TB
Client Matrix: Water

Date Sampled: 04/16/2014 1600
Date Received: 04/17/2014 0920

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-178561	Instrument ID:	PE-03
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/28/2014 1509			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

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

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Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Peter Fairbanks, URS Corp.
Project: Rohm & Haas - Former EMCA Site
Customer Reference: 4501286332

SiREM Reference: S-3171
Report Date: 24-Apr-14
Data Files: MyiQ-DHC-QPCR-1107
MyiQ-DB-DHC-QPCR-0464

Table 1a: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhc *	*Dehalococcoides* Enumeration/Liter **
20140416 MW-07RV17N	DHC-10306	16-Apr-14	Groundwater	0.002 - 0.005 %	7×10^4 or = 70 CEQ/mL

Notes:

* Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

** Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantitation limit.
B Analyte was detected in the method blank within an order of magnitude
NA Not applicable as *Dehalococcoides* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
E Extracted genomic DNA was not detected in the sample.

Analyst: Jen Wilkinson
Jen Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

SiREM
Leading Science · Lasting Solutions

130 Research Lane, Ste 2
Guelph ON N1G 5G3
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalobacter* Assay

Customer: Peter Fairbanks, URS Corp.
Project: Rohm & Haas - Former EMCA Site
Customer Reference: 4501286332

SiREM Reference: S-3171
Report Date: 24-Apr-14
Data Files: iQ5-DHB-QPCR-0289
iQ5-DB-DHB-QPCR-0106

Table 1b: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhb*	*Dehalobacter* 16S rRNA Gene Copies/Liter
20140416 MW-03V12N	DHB-1032	16-Apr-14	Groundwater	0.0002 - 0.0007 %	1×10^4 or 10 GC/mL
20140416 MW-02V09N	DHB-1033	16-Apr-14	Groundwater	0.002 - 0.004 %	7×10^4 70
20140416 MW-06V15N	DHB-1034	16-Apr-14	Groundwater	NA	3×10^3 U 3u
20140416 MW-07RV17N	DHB-1035	16-Apr-14	Groundwater	NA	3×10^3 U 3u

Notes:

* Percent Dehalobacter (Dhb) in microbial population. This value is calculated by dividing the number of Dhb 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhb enumeration.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantitation limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
NA Not applicable as *Dehalobacter* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
E Extracted genomic DNA was not detected in the sample.

Analyst: Jen Wilkinson
Jen Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

SiREM
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130 Research Lane, Ste 2
Guelph ON N1G 5G3
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalobacter* Assay

Customer: Kevin Shanahan, URS
Project: EMCA Mamaronack
Customer Reference: 4501286332

SiREM Reference: S-3183
Report Date: 8-May-14
Data Files: iQ5-DHB-QPCR-0290
iQ5-DB-DHB-QPCR-0107

Table 1: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhb*	*Dehalobacter* 16S rRNA Gene Copies/Liter
MW-04	DHB-1044	28-Apr-14	Groundwater	NA	3×10^3 U or 3 U GC/ml

Notes:

* Percent *Dehalobacter* (Dhb) in microbial population. This value is calculated by dividing the number of Dhb 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhb enumeration.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantitation limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
NA Not applicable as *Dehalobacter* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
E Extracted genomic DNA was not detected in the sample.

Analyst: Jen Wilkinson
Jen Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

ATTACHMENT B

SUPPORT DOCUMENTATION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

460-74511 Chain of Custody

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

CHAIN OF CUST(

Page 1 of 1

Name (for report and invoice) Rohm+Haas-Former EMCA site	Samplers Name (Printed) Megan Dasold	Site/Project Identification Rohm+Haas-Former EMCA site	
Company URS Corp	P. O. # 4501286332	State (Location of site): NJ: ☐ NY: ☒ Other:	
Address 275 W Genesee	Analysis Turnaround Time: Standard ☒	Regulatory Program:	
City Buffalo State NY	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐		
Phone 7168565636 Fax			

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

Sample Identification	Date	Time	Matrix	No. of Cont.	D516 Sulfate	SM4500-NO3-F NO3	200.7 Fe	8260B(MOD) Freon	2340C Hardness	SM 5310B-TOC	2320B Alkalinity	Methane RSK-175	LAB USE ONLY Project No: / Job No: 74511 / Sample Numbers
20140416MW-03V12N	4/16/14	1030	GW	11	X	X	X	X	X	X	X	X	-1
20140416MW-02V09N	4/16/14	1245		11	X	X	X	X	X	X	X	X	-2
20140416MW-06V15N		1410		11	X	X	X	X	X	X	X	X	-3
20140416MW-06V15N MS		1410		11	X	X	X	X	X	X	X	X	-3
20140416MW-06V15N MSD		1410		11	X	X	X	X	X	X	X	X	-3
20140446MW-07RV17N		1600		10	X	X	X	X	X	X	X	X	-4
DUP04162014		1200		11	X	X	X	X	X	X	X	X	-5
TB041614-1		1600	W	2				X					-6
Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH			Soil:										
6 = Other _____, 7 = Other _____			Water:		1	1	4,1	2,1	4,1	3,1	1		

SUB Work SHORT HOLD

Special Instructions Note: For 20140446MW-07RV17N, only 5-40ml preserved vials were shipped. URS job#: 41569901.10008

Water Metals Filtered (Yes/No): _____

Relinquished by	Company	Date / Time	Received by	Company
1) Megan Dasold	URS Corp	4/16/14	1) Kim Lowe (Fedex)	TAL 4/17/14 9:20
Relinquished by 2)	Company	Date / Time	Received by 2)	Company IR#5
Relinquished by 3)	Company	Date / Time	Received by 3) No CS	Company 0.2/0.3°C
Relinquished by 4)	Company	Date / Time	Received by 4)	Company 1.1/1.2°C

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0408)

Massachusetts (M-NJ312), North Carolina (No. 578)

04/30/2014

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~~TestAmerica~~ SiREM

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Edison, New Jersey 08817
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S-3171

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

Name (for report and invoice) ~~Rohm+R~~ Rohm+Haas-EMCA site Former	Samplers Name (Printed) Megan Dascoli	Site/Project Identification Rohm+Haas-Former EMCA site
Company VRS Corp	P. O. # 4501236332	State (Location of site): NJ: ☐ NY: ☒ Other:
		Regulatory Program:
Address 275 W Genesee	Analysis Turnaround Time: Standard ☒	
City Buffalo, NY State	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	
Phone 7168565636 Fax		

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

Sample Identification	Date	Time	Matrix	No. of Cont.	Dehalobacter	Dehalococcoides	LAB USE ONLY Sample Numbers
20140416MW-03V12N	4/16/14	1030	GW	1	X		
20140416MW-02V09N		1245	GW	2	X	X	
20140416MW-06V15N		1410	GW	1	X		
20140416MW-06V15N MS/MSD		1410	GW	1	X		
~~20140416MW-06V15N MSD~~		~~1410~~	GW		X		Line Deleted
20140416MW-07RV17N		1600	GW	1	X	X	
DUP04162014		1200	GW	1	X		

LAB USE ONLY: Project No: | Job No:

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH — Soil: | Water:

6 = Other _____ 7 = Other _____

Special Instructions Please add Peter Fairbombs to confirm dehalococcoides analysis. VRS Job # 41569901. 10000

Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
1) Megan Dascoli	VRS Corp	4/16/14	1)	SiREM APR 17 14 1:45
Relinquished by 2)	Company	Date / Time	Received by 2)	Company
Relinquished by 3)	Company	Date / Time	Received by 3)	Company
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

Massachusetts (M-NJ312) North Carolina (No. 578)

Shipped to SiREM Labs via FedEx.

CASE NARRATIVE

Client: URS Corporation

Project: Rohm and Haas - Former EMCA Site

Report Number: 460-74511-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 4/17/2014 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.3° C and 1.2° C.

Except:

Received 500ml plastic preserved containers for TOC analysis.

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 ORGANICS
Samples 20140416MW-03V12N (460-74511-1), 20140416MW-02V09N (460-74511-2), 20140416MW-06V15N (460-74511-3), 20140416MW-07RV17N (460-74511-4), DUP04162014 (460-74511-5) and TB041614-1 (460-74511-6) were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 04/28/2014.

No difficulties were encountered during the Volatile organics analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES
Samples 20140416MW-03V12N (460-74511-1), 20140416MW-02V09N (460-74511-2), 20140416MW-06V15N (460-74511-3), 20140416MW-07RV17N (460-74511-4), DUP04162014 (460-74511-5) and TB041614-1 (460-74511-6) were analyzed for dissolved gases in accordance with RSK_175. The samples were analyzed on 04/22/2014 and 04/28/2014.

Samples 20140416MW-03V12N (460-74511-1)[500X], 20140416MW-02V09N (460-74511-2)[500X], 20140416MW-06V15N (460-74511-3)[500X], 20140416MW-07RV17N (460-74511-4)[20X] and DUP04162014 (460-74511-5)[500X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 20140416MW-02V09N (460-74511-2), 20140416MW-03V12N (460-74511-1), 20140416MW-07RV17N (460-74511-4), DUP04162014 (460-74511-5), 20140416MW-06V15N (460-74511-3), 20140416MW-06V15N (460-74511-3 MS), 20140416MW-06V15N (460-74511-3 MSD). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS
Samples 20140416MW-03V12N (460-74511-1), 20140416MW-02V09N (460-74511-2), 20140416MW-06V15N (460-74511-3), 20140416MW-07RV17N (460-74511-4) and DUP04162014 (460-74511-5) were analyzed for total recoverable metals in accordance with EPA Method 200.7 (ICP). The samples were prepared on 04/24/2014 and analyzed on 04/25/2014.

Iron failed the recovery criteria low for the MS of sample 20140416MW-06V15NMS (460-74511-3) in batch 460-220888.

Refer to the QC report for details.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

ALKALINITY
Samples 20140416MW-03V12N (460-74511-1), 20140416MW-02V09N (460-74511-2), 20140416MW-06V15N (460-74511-3), 20140416MW-07RV17N (460-74511-4) and DUP04162014 (460-74511-5) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 04/25/2014 and 04/28/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

HARDNESS
Samples 20140416MW-03V12N (460-74511-1), 20140416MW-02V09N (460-74511-2), 20140416MW-06V15N (460-74511-3), 20140416MW-07RV17N (460-74511-4) and DUP04162014 (460-74511-5) were analyzed for hardness in accordance with SM 2340C. The samples were analyzed on 04/25/2014.

No difficulties were encountered during the hardness analysis.

All quality control parameters were within the acceptance limits.

SULFATE
Samples 20140416MW-03V12N (460-74511-1), 20140416MW-02V09N (460-74511-2), 20140416MW-06V15N (460-74511-3), 20140416MW-07RV17N (460-74511-4) and DUP04162014 (460-74511-5) were analyzed for sulfate in accordance with ASTM Method D516-90. The samples were analyzed on 04/23/2014.

Sample 20140416MW-03V12N (460-74511-1)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRATE
Samples 20140416MW-03V12N (460-74511-1), 20140416MW-02V09N (460-74511-2), 20140416MW-06V15N (460-74511-3), 20140416MW-07RV17N (460-74511-4) and DUP04162014 (460-74511-5) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 04/17/2014.

Nitrate as N and Nitrite as N failed the recovery criteria low for the MS/MSD of sample 20140416MW-06V15NMS (460-74511-3) in batch 460-219551. ~~The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.~~

5-14-14
AC

Refer to the QC report for details.

No other difficulties were encountered during the Niitrate analysis.

All other quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples 20140416MW-03V12N (460-74511-1), 20140416MW-02V09N (460-74511-2), 20140416MW-06V15N (460-74511-3), 20140416MW-07RV17N (460-74511-4) and DUP04162014 (460-74511-5) were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 04/23/2014.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 460-74511-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 220436	Date: 04/23/2014 09:26										
D516-90, 02	460-74511-3	Sulfate	36.1		mg/L						
D516-90, 02	460-74511-3 MS	Sulfate	240.7		mg/L	200	102	48-152			
Batch ID: 219551	Date: 04/17/2014 16:38										
SM 4500 NO3 F	460-74511-3	Nitrate as N	0.047	U	mg/L						
SM 4500 NO3 F	460-74511-3 MS	Nitrate as N	0.298		mg/L	0.500	60	67-130			F1
SM 4500 NO3 F	460-74511-3	Nitrite as N	0.051	J	mg/L						
SM 4500 NO3 F	460-74511-3 MS	Nitrite as N	0.391		mg/L	0.500	68	84-109			F1
Batch ID: 220595	Date: 04/23/2014 00:20										
SM 5310B	460-74511-3	Total Organic Carbon	5.8		mg/L						
SM 5310B	460-74511-3 MS	Total Organic Carbon	53.74		mg/L	50.0	96	80-120			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 460-74511-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 220436	Date: 04/23/2014 09:26										
D516-90, 02	460-74511-3 MSD	Sulfate	241.3		mg/L	200	103	48-152	0	13	
Batch ID: 219551	Date: 04/17/2014 16:42										
SM 4500 NO3 F	460-74511-3 MSD	Nitrate as N	0.285		mg/L	0.500	57	67-130	5	34	F1
SM 4500 NO3 F	460-74511-3 MSD	Nitrite as N	0.390		mg/L	0.500	68	84-109	0	10	F1
Batch ID: 220595	Date: 04/23/2014 00:41										
SM 5310B	460-74511-3 MSD	Total Organic Carbon	53.85		mg/L	50.0	96	80-120	0	10	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUST

460-75100 Chain of Custody

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

Page 1 of 1

Name (for report and invoice): Kevin Shanahan
Company: URS Corp.
Address:
City: Buffalo State: NY
Phone: 716-856-5636 Fax:

Samplers Name (Printed): Megan Dascoli
P.O.#: 4501286332

Analysis Turnaround Time: Standard [X]
Rush Chrages Authorized For: 2 Week [ ] 1 Week [ ] Other [ ]

Site/Project Identification: EMCA Mamaroneck
State (Location of site): NJ: [ ] NY: [X] Other:
Regulatory Program:

LAB USE ONLY
Project No:
Job No: 75100

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

Sample Identification	Date	Time	Matrix	No. of. Cont.	Sulfate D516	Iron 200.7	Hardness 2340C	SM4500-NO3-F	SM5310B TOC	8260B Freon	23206 total	RSK-175				Sample Numbers
MW-04	4/28/14	950	GW		X	X	X	X	X	X	X	X				-1
Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH				Soil:												
6 = Other ______, 7 = Other ______				Water:	1	4,1	4,1	1	2,1	1,2	1	1,2				

Special Instructions: URS Job#: 41569901

Water Metals Filtered (Yes/No)? ______

Relinquished by	Company	Date / Time	Received by	Company
Megan Dascoli	URS	4/28/14 11:30 Am	1) B. Sommi T.A.	04-28-14 - 11:30 am
2) [signature]	T.A. NYC	4/28/14 13:40	2) Von Rivera	TA Ed 4/28/14 13:40
3)			3)	
4)			4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). Massachusetts (M-NJ312), North Carolina (No. 578) 1.8 / 1.7 IRH 5 NOCs

TAL - 0016 (0408)

S-3183

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

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CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

Name (for report and invoice) Kevin Shanahan	Samplers Name (Printed) Megan Dascoli	Site/Project Identification EMCA Mamaroneck
Company URS Corp	P. O. # 4501286332	State (Location of site): NJ: ☐ NY: ☒ Other:
Address	Analysis Turnaround Time: Standard ☒	Regulatory Program:
City Buffalo, NY State	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	LAB USE ONLY Project No:
Phone 716-856-5636 Fax		Job No:

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

Sample Identification	Date	Time	Matrix	No. of Cont.	Dehalobacter	Sample Numbers
MW-04	4/28/14	9:50	GW	1	X	

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH, 6 = Other _____, 7 = Other _____

Soil: | Water: 1

Special Instructions URS job#: 41569901 shipped FedEx 803510993280 Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
Megan Dascoli	URS Corp.	4/28/14 1800	1) Rita Schofield	SIREM 29 Apr 2014
Relinquished by 2)	Company	Date / Time	Received by 2)	Company
Relinquished by 3)	Company	Date / Time	Received by 3)	Company
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Certifications: New Jersey (12028), New York (11452) Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0408)

Massachusetts (M-NJ312), North Carolina (No. 578)

CASE NARRATIVE

Client: URS Corporation

Project: Former EMCA Site

Report Number: 460-75100-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The sample was received on 4/28/2014 1:40 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.9° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANICS
Sample MW-04 (460-75100-1) was analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 05/09/2014.

No difficulties were encountered during the Volatile organics analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES
Sample MW-04 (460-75100-1) was analyzed for dissolved gases in accordance with RSK_175. The samples were analyzed on 05/01/2014.

Sample MW-04 (460-75100-1)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-04 (460-75100-1). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS
Sample MW-04 (460-75100-1) was analyzed for total recoverable metals in accordance with EPA Method 200.7 (ICP). The samples were prepared and analyzed on 05/01/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ALKALINITY
Sample MW-04 (460-75100-1) was analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 05/02/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

HARDNESS
Sample MW-04 (460-75100-1) was analyzed for hardness in accordance with SM 2340C. The samples were analyzed on 04/30/2014.

No difficulties were encountered during the hardness analysis.

All quality control parameters were within the acceptance limits.

SULFATE
Sample MW-04 (460-75100-1) was analyzed for sulfate in accordance with ASTM Method D516-90. The samples were analyzed on 05/01/2014.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRATE
Sample MW-04 (460-75100-1) was analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 04/30/2014.

No difficulties were encountered during the Niitrate analysis.

All quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Sample MW-04 (460-75100-1) was analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 04/30/2014.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

APPENDIX C

HISTORICAL ANALYTICAL DATA SUMMARY

TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	R	R	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	0 U	0 U	5.4 NJ	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
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
Tetrachloroethene	UG/L	5	NA	0.6 J	2 U	0.5 J	1.0 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
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							
Methane	UG/L	-	5.0 U	140	98	89	5.9
Total Metals							
Iron	UG/L	300	NA	2,390	866	517 J	173
Dissolved Metals							
Iron	UG/L	300	NA	2,290	778	583 J	85.3 B

*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 - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	559	474	477 J	218
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	0.1 U	0.1 U	0.1 U	0.1 U
Nitrogen, Kjeldahl, Total	MG/L	-	NA	0.5 U	0.7	1.3	0.57
Nitrogen, Nitrate	MG/L	10	NA	0.1 U	NA	0.58	0.1 U
Nitrogen, Nitrite	MG/L	1	NA	0.1 U	NA	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	0.12 J	NA	NA
Sulfate	MG/L	250	15.8	25.2	27.5	32.4	5.0 U
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	R	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0.52	0.76	0.5	0.48	6.86
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	98.5	-110	-75	-129	73
pH	S.U.	-	6.05	NA	NA	NA	NA
Specific Conductance	MS/CM	-	0.599	2.27	1.99	1.98	1.11
Temperature	DEG C	-	21.6	NA	NA	NA	NA
Turbidity	NTU	-	28	NA	NA	NA	NA

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	24	15	10 U	13	2.0 J
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
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
Tetrachloroethene	UG/L	5	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
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							
Methane	UG/L	-	48	310	74	140	180
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	1,610	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	20.8	14.2	31.7	23.2	25.1
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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***					
Field Parameter							
Dissolved Oxygen	MG/L	-	1.15	0.11	0.03	5.67	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-210	-107	-59	-49	NA
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	5.25	1.43	1.16	1.28	NA
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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

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Concentration Exceeds Criteria

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

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TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.0 J	1.0 J	2.0 J	10 U	10 U
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
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
Tetrachloroethene	UG/L	5	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
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							
Methane	UG/L	-	210	360	23	5,900	880
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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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Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	25.4	29.3	50.4	5 U	28.1
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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)				
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	4.17	1.18	4.1	0.91
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-29	15.6	-89.0	-102
pH	S.U.	-	NA	NA	6.22	6.15	6.31
Specific Conductance	MS/CM	-	NA	3.06	1.671	0.89	1.59
Temperature	DEG C	-	NA	NA	NA	8.91	17.5
Turbidity	NTU	-	NA	NA	NA	1,000	18

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	1 UJ	20 U	0 U	0 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
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
Tetrachloroethene	UG/L	5	NA	NA	8.0 J	10 U	5.0 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
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							
Methane	UG/L	-	8,700	5,000	98	26	32
Total Metals							
Iron	UG/L	300	NA	NA	NA	27,800	28,300
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	27,900	28,200

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

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Concentration Exceeds Criteria

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	338	338
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	3.3	3.4
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	6.6	6.2
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	0.15	0.16
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 UJ	8.4	39.2	44.0	46.0
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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)
Field Parameter							
Dissolved Oxygen	MG/L	-	0.36	0.0	0.99	0.36	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-91	-154	95.4	-108	NA
pH	S.U.	-	6.12	6.73	6.25	NA	NA
Specific Conductance	MS/CM	-	2.13	5.49	1.755	1.68	NA
Temperature	DEG C	-	9.24	7.23	NA	NA	NA
Turbidity	NTU	-	16	300	NA	NA	NA

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

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R	R	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	0 U	0 U	14
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
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
Tetrachloroethene	UG/L	5	10 U	10 U	1.0 U	1.0 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
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							
Methane	UG/L	-	54	52	410	320	140
Total Metals							
Iron	UG/L	300	30,100	30,900	63,800 J	69,000	NA
Dissolved Metals							
Iron	UG/L	300	30,500	30,500	60,900 J	69,300	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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Only Detected Results Reported.

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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	307	283	839	769	238
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	4.1	3.8	11.5	11.9	NA
Nitrogen, Kjeldahl, Total	MG/L	-	6.6	6.1	17.1	16.9	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1	0.1 U	0.1 U	NA
Nitrogen, Nitrite	MG/L	1	0.1 U	0.1 U	0.1 U	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	32.3	32.5	4.80	5.0 U	15.2
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	5 U	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
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)				
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.26	0.53	0 U	0.91
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-190	-99	-108	-133
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	NA	1.65	3.17	3.28	2.34
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	120	18	200	21	84
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
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
Tetrachloroethene	UG/L	5	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
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							
Methane	UG/L	-	2,000	5,800	5,500	4,300	6,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	25.2	5.0 U	27.1	5.0 U	15.9
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

Only Detected Results Reported.

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TABLE 3
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***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	0 U	4.92	NA	1.56
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-140	-137	-144	NA	-120
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.19	2.51	1.55	NA	1.77
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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

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

Only Detected Results Reported.

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TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	61	120 J	160	81 J	300
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
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
Tetrachloroethene	UG/L	5	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
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							
Methane	UG/L	-	2,900	6,400	6,200	8,000	6,100
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	27.6	23.2	47.9	35.2 J	36.9
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
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***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0.31	2.87	0 U	0 U	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-97.2	-131	-119	-154	-161
pH	S.U.	-	6.39	6.38	6.40	6.26	6.16
Specific Conductance	MS/CM	-	2.357	2.18	2.14	2.55	2.09
Temperature	DEG C	-	NA	10.5	18.9	11.23	18.88
Turbidity	NTU	-	NA	28	3	5	9.4

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

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TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	92 J	240	180	110 J	180
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
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
Tetrachloroethene	UG/L	5	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
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							
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
Dissolved 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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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	361
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	1.79
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	726
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	0.1 U
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 U	38.9	36.9 J	26.6	5 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	19.1
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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
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***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.64	6.21	0.0	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	50.6
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	9.8
Oxidation-Reduction Potential	mV	-	-147	-136	-107	-97	-115
pH	S.U.	-	6.57	8.91	6.76	6.36	6.80
Specific Conductance	MS/CM	-	4.48	1.70	1.91	3.34	3.24
Temperature	DEG C	-	9.33	16.71	19.45	10.98	22.1
Turbidity	NTU	-	0.0	3.0	11.9	3.9	0.1

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TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	140 J	98	NA	NA	380
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
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
Tetrachloroethene	UG/L	5	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
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							
Methane	UG/L	-	8,100	4,000	NA	NA	5,600
Total Metals							
Iron	UG/L	300	NA	32,900	NA	NA	NA
Dissolved 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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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	245	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	245	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	100	NA	NA	2,000
Dehalobacter	GC/mL	-	NA	5	NA	NA	40,000
Hardness (as CaCO3)	MG/L	-	NA	388	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	0.10 U	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	51.8	50.8	NA	NA	2.2 U
Total Organic Carbon	MG/L	-	NA	8.4	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

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TABLE 3
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***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.0	0.42	0.47	0.78
Ferrous Iron	MG/L	-	NA	9.0	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-44	-78	-119	-82	-116
pH	S.U.	-	6.56	6.62	6.38	6.35	6.40
Specific Conductance	MS/CM	-	1.86	1.69	2.53	2.52	2.39
Temperature	DEG C	-	13.45	24.07	19.21	19.42	14.75
Turbidity	NTU	-	0.0	0.0	0.0	9.3	0.0

*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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130115MW-02V10N	20130219MW-02V10N	20130409MW-02V09FD	20130409MW-02V09N	20130711MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/15/13	02/19/13	04/09/13	04/09/13	07/11/13
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	400	330 J	400 J	280 J	120
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
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
Tetrachloroethene	UG/L	5	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
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							
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
Dissolved 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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130115MW-02V10N	20130219MW-02V10N	20130409MW-02V09FD	20130409MW-02V09N	20130711MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/15/13	02/19/13	04/09/13	04/09/13	07/11/13
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	510	249	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	510	249	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	2,000	200	NA	60	1,000
Dehalobacter	GC/mL	-	30,000	2,000	NA	1,000	6,000 J
Hardness (as CaCO3)	MG/L	-	NA	NA	673	653	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	0.10 UJ	0.10 UJ	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	14.4	13 J	9.2	19.9	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	31.1	31.1	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	1 U	NA	29.3 J	NA
n-Butyric Acid	MG/L	-	NA	0.19 J	NA	1.0 U	NA
Pyruvic Acid	MG/L	-	NA	1 U	NA	4.4	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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130115MW-02V10N	20130219MW-02V10N	20130409MW-02V09FD	20130409MW-02V09N	20130711MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/15/13	02/19/13	04/09/13	04/09/13	07/11/13
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Field Parameter							
Dissolved Oxygen	MG/L	-	1.36	4.57	NA	0.65	3.32
Ferrous Iron	MG/L	-	NA	NA	NA	44.3	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-121	-140	NA	-116	-165
pH	S.U.	-	6.58	6.82	NA	6.27	6.61
Specific Conductance	MS/CM	-	2.43	2.61	NA	8.18	2.60
Temperature	DEG C	-	13.05	10.18	NA	13.29	19.29
Turbidity	NTU	-	0.0	0.0	NA	0.0	0.0

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130807MW-02V09N	20130903MW-02V09N	20131022MW-02V09FD	20131022MW-02V09N	20140416MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/07/13	09/03/13	10/22/13	10/22/13	04/16/14
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	66 J	42	64	61	210
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
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
Tetrachloroethene	UG/L	5	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
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							
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
Dissolved 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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20130807MW-02V09N	20130903MW-02V09N	20131022MW-02V09FD	20131022MW-02V09N	20140416MW-02V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/07/13	09/03/13	10/22/13	10/22/13	04/16/14
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	230	233	456
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	456
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	800 J	50 J	NA	30	NA
Dehalobacter	GC/mL	-	10,000	3,000	NA	500	70
Hardness (as CaCO3)	MG/L	-	NA	NA	69.3	131	455
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	0.10 UJ	0.28 J	0.10 UJ
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
Total Organic Carbon	MG/L	-	NA	NA	9.5	9.5	12.8
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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

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

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

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP04162014	MW03_52103	MW03	DUP-91703	MW03-091703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	05/21/03	07/23/03	09/17/03	09/17/03
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)			Field Duplicate (1-1)	
Volatiles							
Acetone	UG/L	50	NA	250 U	78	110	110
Benzene	UG/L	1	NA	250 U	2.3	2.2	1.8
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	R	130 J	69 J	65 J
Chlorotrifluoroethene (Freon-1113)	UG/L	5	190	0 U	7.0 NJ	6.2 NJ	0 U
1,1-Dichloroethene	UG/L	5	NA	33 J	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	5	NA	250 U	5.0 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	UG/L	5	NA	250 U	5.0 U	5.0 U	5.0 U
Ethylbenzene	UG/L	5	NA	200 U	0.3 J	4.0 U	4.0 U
2-Hexanone	UG/L	50	NA	250 U	5.0 U	19	16
4-Methyl-2-Pentanone	UG/L	-	NA	250 U	5.0 U	11	11
Tetrachloroethene	UG/L	5	NA	50 U	1.0 U	1.0 U	1.0 U
Trichloroethene	UG/L	5	NA	50 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	2.9	5,800	68	26	16
Vinyl Chloride	UG/L	2	NA	250 U	5.0 U	5.0 U	5.0 U
Xylene (total)	UG/L	5	NA	250 U	1.1 J	5.0 U	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	11	78 J	43	180	110
Dissolved Gases							
Methane	UG/L	-	13,000	86	56	2,400	2,500
Total Metals							
Iron	UG/L	300	70,500	1,170	150,000	174,000 J	178,000 J
Dissolved Metals							
Iron	UG/L	300	NA	267	152,000	187,000 J	186,000 J

*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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP04162014	MW03_52103	MW03	DUP-91703	MW03-091703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	05/21/03	07/23/03	09/17/03	09/17/03
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)			Field Duplicate (1-1)	
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	456	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	456	NA	NA	NA	NA
Chloride	MG/L	250	NA	113	143	99.2 J	91.5 J
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	455	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	0.36	2.7	0.86	0.95
Nitrogen, Kjeldahl, Total	MG/L	-	NA	1.3	10.8	4.5	4.4
Nitrogen, Nitrate	MG/L	10	0.10 U	2	NA	0.1 U	0.1 U
Nitrogen, Nitrite	MG/L	1	0.043 J	0.1 U	NA	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	0.1 UJ	NA	NA
Sulfate	MG/L	250	6.5	32.7	26.9	5.0 U	5.0 U
Total Organic Carbon	MG/L	-	12.7	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	0.5	3.7	25.5	27.9
Ferric Iron (lab)	MG/L	-	NA	0.67	146	67.0	93.0
Fluoride	MG/L	1.5	NA	0.28	0.44	0.27	0.2
Oil & Grease	MG/L	-	NA	NA	NA	R	R
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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.

(oval) Concentration Exceeds Criteria

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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP04162014	MW03_52103	MW03	DUP-91703	MW03-091703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	05/21/03	07/23/03	09/17/03	09/17/03
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)			Field Duplicate (1-1)	
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.58	0 U	NA	0.01
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	40	-103	NA	-90
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	NA	0.638	4.35	NA	1.64
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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

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Concentration Exceeds Criteria

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP1_121703	MW-03_121703	MW-03	MW-03	MW-03VION
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/17/03	12/17/03	07/23/04	05/31/05	12/20/05
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	130 J	120 J	NA	NA	NA
Benzene	UG/L	1	10 U	10 U	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	39 J	38 J	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	68 J	83	2.0 J
1,1-Dichloroethene	UG/L	5	4.0 U	4 U	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	10 U	10 U	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	10 U	10 U	NA	NA	NA
Ethylbenzene	UG/L	5	8.0 U	8 U	NA	NA	NA
2-Hexanone	UG/L	50	10 U	10 U	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	10 U	10 U	NA	NA	NA
Tetrachloroethene	UG/L	5	4.9	4.6	NA	NA	NA
Trichloroethene	UG/L	5	2.0 U	2 U	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	150	150	4,900 J	2.0 J	10 U
Vinyl Chloride	UG/L	2	10 U	10 U	NA	NA	NA
Xylene (total)	UG/L	5	10 U	10 U	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	170	160	3,900	14	1.0 J
Dissolved Gases							
Methane	UG/L	-	7,200	4,900	2,700	6,300	10,000
Total Metals							
Iron	UG/L	300	156,000	164,000	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	167,000	176,000	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 Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP1_121703	MW-03_121703	MW-03	MW-03	MW-03VION
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/17/03	12/17/03	07/23/04	05/31/05	12/20/05
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	224	192	71.7	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	1.4	1.2	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	4.0	4.0	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1 U	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	0.1 U	0.1 U	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
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	23.5	30.0	NA	NA	NA
Ferric Iron (lab)	MG/L	-	132	134	NA	NA	NA
Fluoride	MG/L	1.5	0.22	0.25	0.397	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			DUP1_121703	MW-03_121703	MW-03	MW-03	MW-03VION
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/17/03	12/17/03	07/23/04	05/31/05	12/20/05
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.35	1.05	1.24	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	-	NA	-59	-143	-133	-151
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	NA	1.99	2.40	3.19	1.20
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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

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TABLE 3
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-03V15N	20070207MW-03V10N	20070731MW-03V10N	20080228MW03V10N	20080812MW03V10FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/14/06	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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	51	39	54	13 J	10
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
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
Tetrachloroethene	UG/L	5	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	2.0 J	0.5 J	10 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.8 J	48	7.0 J	4.0 J	1.0 J
Dissolved Gases							
Methane	UG/L	-	7,400	15,000	4,500	18,000	10,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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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TABLE 3
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-03V15N	20070207MW-03V10N	20070731MW-03V10N	20080228MW03V10N	20080812MW03V10FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/14/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	7.80	38.4	14.1	30.0
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
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-03V15N	20070207MW-03V10N	20070731MW-03V10N	20080228MW03V10N	20080812MW03V10FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/14/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Field Parameter							
Dissolved Oxygen	MG/L	-	5.36	2.44	0.22	2.94	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	-116	-79.7	-123	NA
pH	S.U.	-	NA	NA	6.15	6.15	NA
Specific Conductance	MS/CM	-	0.946	0.91	1.309	1.36	NA
Temperature	DEG C	-	NA	NA	NA	11.6	NA
Turbidity	NTU	-	NA	NA	NA	41	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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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD	20091013MW-03V10N	20100226MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	10/13/09	10/13/09	02/26/10
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10	38	20	19	17 J
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
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
Tetrachloroethene	UG/L	5	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	5.0 J	0.92 J	0.82 J	1 UJ
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 J	40	2.1	1.9	1 U
Dissolved Gases							
Methane	UG/L	-	8,400	13,000	5,300	4,800	13,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD	20091013MW-03V10N	20100226MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	10/13/09	10/13/09	02/26/10
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	28.1	50.7 J	4.6 J	8.7	11.6
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD	20091013MW-03V10N	20100226MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	10/13/09	10/13/09	02/26/10
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	0 U	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	-	-149	-185	NA	-103	-138
pH	S.U.	-	6.36	6.06	NA	5.87	6.32
Specific Conductance	MS/CM	-	1.69	2.08	NA	1.85	3.39
Temperature	DEG C	-	17.8	12.87	NA	18.68	8.95
Turbidity	NTU	-	2	5	NA	8.7	94

*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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N	20110913MW03V09FD	20110913MW03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/24/10	10/06/10	04/06/11	09/13/11	09/13/11
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	26	4.6	110 J	69	82
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
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
Tetrachloroethene	UG/L	5	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	32	4.2	5.4
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.5 J	1 U	99 J	8.3	9.4
Dissolved Gases							
Methane	UG/L	-	6,000	7,400	18,000	12,000	15,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	35,300	35,700
Dissolved 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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N	20110913MW03V09FD	20110913MW03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/24/10	10/06/10	04/06/11	09/13/11	09/13/11
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	596	596
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	1,820	3,780
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	520	510
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	0.1 U	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	15.8	5.1 J	34.0	19	18.2
Total Organic Carbon	MG/L	-	NA	NA	NA	27.1	26.7
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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N	20110913MW03V09FD	20110913MW03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/24/10	10/06/10	04/06/11	09/13/11	09/13/11
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Field Parameter							
Dissolved Oxygen	MG/L	-	0.85	0.0	0.0	NA	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	29.8	29.8
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	5.5	5.9
Oxidation-Reduction Potential	mV	-	-170	-116	-115	NA	-124
pH	S.U.	-	9.28	6.73	6.38	NA	6.85
Specific Conductance	MS/CM	-	1.50	1.68	1.55	NA	1.99
Temperature	DEG C	-	16.51	20.19	11.90	NA	20.7
Turbidity	NTU	-	5.1	6.3	3.6	NA	21.8

*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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20120411MW-03V09N	20120924MW-03V09N	20130409MW-03V10N	20131022MW-03V12N	20140416MW-03V12N
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	150 J	130	160 J	58	96
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
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
Tetrachloroethene	UG/L	5	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	20 J	1.1	27	1.0 U	100
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	3.2	30	1.0 U	62
Dissolved Gases							
Methane	UG/L	-	15,000	7,600	11,000	11,000	14,000
Total Metals							
Iron	UG/L	300	NA	21,800	27,900	29,400	19,700
Dissolved 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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Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20120411MW-03V09N	20120924MW-03V09N	20130409MW-03V10N	20131022MW-03V12N	20140416MW-03V12N
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	292	367	237	220
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	292	367	NA	220
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	700	40	100	10
Hardness (as CaCO3)	MG/L	-	NA	248	396	65.3	249
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	0.21 J	0.23 J	0.40
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	0.025 J	0.038 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	63.1	45.4	39.4	40.7	43.0
Total Organic Carbon	MG/L	-	NA	7.2	8.7	5.6	6.3
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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20120411MW-03V09N	20120924MW-03V09N	20130409MW-03V10N	20131022MW-03V12N	20140416MW-03V12N
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***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.0	2.23	0.63	4.86
Ferrous Iron	MG/L	-	NA	3.5	26.0	16.9	5.5
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-63	-84	-93	-119	-101
pH	S.U.	-	6.64	6.64	6.39	6.21	6.85
Specific Conductance	MS/CM	-	1.02	0.697	3.37	1.35	1.12
Temperature	DEG C	-	13.35	23.57	15.42	19.3	10.69
Turbidity	NTU	-	0.0	0.0	17.9	0.4	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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			MW04-5-20-03	MW-04_121703	Dup1	MW-04	MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/20/03	12/17/03	07/22/04	07/22/04	05/31/05
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	5.0 U	5.0 U	NA	NA	NA
Benzene	UG/L	1	5.0 U	5.0 U	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	10 U	10 U	1.0 J
1,1-Dichloroethene	UG/L	5	2.0 U	2.0 U	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	5.0 U	5.0 U	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	5.0 U	5.0 U	NA	NA	NA
Ethylbenzene	UG/L	5	4.0 U	4.0 U	NA	NA	NA
2-Hexanone	UG/L	50	5.0 U	5.0 U	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	5.0 U	5.0 U	NA	NA	NA
Tetrachloroethene	UG/L	5	1.0 U	1.0 U	NA	NA	NA
Trichloroethene	UG/L	5	1.0 U	1.0 U	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	5.0 U	5.0 U	10 UJ	0.7 J	10 U
Vinyl Chloride	UG/L	2	5.0 U	5.0 U	NA	NA	NA
Xylene (total)	UG/L	5	5.0 U	5.0 U	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	5.0 U	5.0 U	10 U	10 U	10 U
Dissolved Gases							
Methane	UG/L	-	380	35	69	99	190
Total Metals							
Iron	UG/L	300	18,400	3,640	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	18,500	3,760	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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			MW04-5-20-03	MW-04_121703	Dup1	MW-04	MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/20/03	12/17/03	07/22/04	07/22/04	05/31/05
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	238	294	158	161	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	1.6	1.2	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	6.2	1.9	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1 U	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	0.1 U	0.1 U	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	9.40	10.8	10.8	14.2
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	17.6	2.2	NA	NA	NA
Ferric Iron (lab)	MG/L	-	0.76	1.3	NA	NA	NA
Fluoride	MG/L	1.5	0.27	0.19	0.304	0.302	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			MW04-5-20-03	MW-04_121703	Dup1	MW-04	MW-04
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/20/03	12/17/03	07/22/04	07/22/04	05/31/05
Parameter	Units	Criteria*			Field Duplicate (1-1)		
Field Parameter							
Dissolved Oxygen	MG/L	-	0.54	0 U	NA	0.82	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	-	-115	0 U	NA	-136	-126
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.61	0.99	NA	1.05	1.85
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			MW-04VION	MW-04V15N	20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	08/01/07	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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	0.7 J	0.6 J	10 U	1.0 J
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
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
Tetrachloroethene	UG/L	5	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	10 U	10 UJ
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							
Methane	UG/L	-	400	420	400	43	5,700
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			MW-04VION	MW-04V15N	20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	08/01/07	02/28/08
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	6.66	5.0 U	5.0 U	7.0	5 U
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			MW-04VION	MW-04V15N	20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	08/01/07	02/28/08
Parameter	**Units**	**Criteria***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	4.97	4.73	0.41	2.91
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-161	-154	-81	-79.2	-136
pH	S.U.	-	NA	NA	NA	6.59	6.45
Specific Conductance	MS/CM	-	1.47	1.14	0.804	1.241	1.16
Temperature	DEG C	-	NA	NA	NA	NA	9.19
Turbidity	NTU	-	NA	NA	NA	NA	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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Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20080812MW04V08N	20090218MW-04V08FD	20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	02/18/09	10/13/09	02/25/10
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	1.0 J	1.0 J	15	6.6 J
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
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
Tetrachloroethene	UG/L	5	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	1 U	1 UJ
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	1 U	1 U
Dissolved Gases							
Methane	UG/L	-	290	1,600	1,600	3,100	5,200
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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

Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20080812MW04V08N	20090218MW-04V08FD	20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	02/18/09	10/13/09	02/25/10
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			Field Duplicate (1-1)
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 U	5 UJ	5 UJ	20.8	13
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20080812MW04V08N	20090218MW-04V08FD	20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	02/18/09	10/13/09	02/25/10
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			Field Duplicate (1-1)
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	NA	0 U	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	-	-126	NA	-158	-122	NA
pH	S.U.	-	6.65	NA	6.33	6.43	NA
Specific Conductance	MS/CM	-	0.531	NA	1.75	1.83	NA
Temperature	DEG C	-	21.3	NA	9.36	19.37	NA
Turbidity	NTU	-	2	NA	4	4.6	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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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20100225MW-04V08N	20100624MW-04V08N	20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	7.7 J	12	2.8	5 J	4.3 J
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
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
Tetrachloroethene	UG/L	5	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	1 U
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 U	1 U	1 UJ	1 UJ
Dissolved Gases							
Methane	UG/L	-	5,100	4,000	2,400	4,200	4,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20100225MW-04V08N	20100624MW-04V08N	20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	04/06/11
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	11.3	18.4	5.5 J	26.6	22.3
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20100225MW-04V08N	20100624MW-04V08N	20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	04/06/11
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.80	0.0	NA	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-124	-146	-96	NA	-78
pH	S.U.	-	6.50	8.99	6.86	NA	6.40
Specific Conductance	MS/CM	-	2.14	1.84	1.48	NA	2.19
Temperature	DEG C	-	8.34	18.45	21.38	NA	12.86
Turbidity	NTU	-	1.5	1.9	3.7	NA	0.0

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

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20110913MW04V08N	20120411MW-04V08N	20120924MW-04V08FD	20120924MW-04V08N	20130409MW-04V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1.2	7.2 J	2.1	2.5	4.4 J
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
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
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1 U	1 UJ	1.0 U	1.0 U	1.0 U
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 U	1.0 U	1.0 U	1.0 U
Dissolved Gases							
Methane	UG/L	-	1,700	2,700	570	550	1,700
Total Metals							
Iron	UG/L	300	NA	NA	7,430	7,280	16,100
Dissolved 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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20110913MW04V08N	20120411MW-04V08N	20120924MW-04V08FD	20120924MW-04V08N	20130409MW-04V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	211	210	5.0 U
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	211	210	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	NA	NA	4 U	3 U
Hardness (as CaCO3)	MG/L	-	NA	NA	188	185	426
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	0.10 U	0.10 UJ
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	16.7	18.7	12.3	12.0	15.6
Total Organic Carbon	MG/L	-	NA	NA	10.2	10	7.2
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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20110913MW04V08N	20120411MW-04V08N	20120924MW-04V08FD	20120924MW-04V08N	20130409MW-04V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.0	NA	0.0	2.13
Ferrous Iron	MG/L	-	14.3	NA	NA	27.7	14.9
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-126	-87	NA	-96	-78
pH	S.U.	-	6.83	6.80	NA	6.91	6.43
Specific Conductance	MS/CM	-	2.29	1.38	NA	0.519	3.98
Temperature	DEG C	-	22.5	14.07	NA	25.40	16.39
Turbidity	NTU	-	0.2	8.9	NA	8.0	1.7

*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 (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20131022MW-04V09N	20140428MW-04V09N	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/28/14	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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	R	R	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	12	1.0 U	0 U	0 U	10 U
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
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
Tetrachloroethene	UG/L	5	NA	NA	0.4 J	1.0 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
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							
Methane	UG/L	-	1,600	340	27	6.7	47
Total Metals							
Iron	UG/L	300	17,700	18,900	2,110	15,500	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	1,670	39.7 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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S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20131022MW-04V09N	20140428MW-04V09N	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/28/14	05/21/03	12/18/03	07/23/04
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	243	239	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	239	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	-	3 U	3 U	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	73.3	525	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	0.10 UJ	0.10 U	0.22	0.18	NA
Nitrogen, Nitrite	MG/L	1	0.014 J	0.10 U	0.1 U	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	23.2	12.2	50.1	61.4	42.3
Total Organic Carbon	MG/L	-	7.0	8.4	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20131022MW-04V09N	20140428MW-04V09N	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/22/13	04/28/14	05/21/03	12/18/03	07/23/04
Parameter	**Units**	**Criteria***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0.25	9.51	0.37	0 U	0.97
Ferrous Iron	MG/L	-	13.9	7.0	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-94	-102	26	121	46
pH	S.U.	-	6.44	6.76	NA	NA	NA
Specific Conductance	MS/CM	-	1.27	2.65	0.426	0.629	0.463
Temperature	DEG C	-	19.44	12.11	NA	NA	NA
Turbidity	NTU	-	5.7	0	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

Only Detected Results Reported.

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TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R	R	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	5.7 NJ	0 U	0 U	5 J
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
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
Tetrachloroethene	UG/L	5	2 U	1.0 U	1.0 U	2 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
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							
Methane	UG/L	-	49	81	99	78	40
Total Metals							
Iron	UG/L	300	14,400	10,500	8,370 J	7,690	NA
Dissolved Metals							
Iron	UG/L	300	14,300	10,300	8,470 J	7,670	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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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	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 CaCO3)	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
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	5 U	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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Only Detected Results Reported.

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TABLE 3
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***					
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
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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	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
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
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
Tetrachloroethene	UG/L	5	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
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							
Methane	UG/L	-	3,600	3,300	6,700	5,600	1,600
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
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)
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
Turbidity	NTU	-	NA	NA	NA	NA	NA

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

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Concentration Exceeds Criteria

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

Only Detected Results Reported.

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TABLE 3
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-06V15FD	20070207MW-06V15N	20070731MW-06V15FD	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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	100	100	18	21
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
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
Tetrachloroethene	UG/L	5	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
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							
Methane	UG/L	-	1,700	12,000	13,000	3,800	2,500
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

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Only Detected Results Reported.

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TABLE 3
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-06V15FD	20070207MW-06V15N	20070731MW-06V15FD	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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	7.40	7.00	41.8	44.2
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
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-06V15FD	20070207MW-06V15N	20070731MW-06V15FD	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)	
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
Turbidity	NTU	-	NA	NA	NA	NA	NA

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TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	8.0 J	8.0 J	4.0 J	34	6.4
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
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
Tetrachloroethene	UG/L	5	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
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							
Methane	UG/L	-	12,000	14,000	12,000	9,000	7,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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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Only Detected Results Reported.

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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 U	5 U	17.8	57.0 J	2.8 J
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

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TABLE 3
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)				
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
Turbidity	NTU	-	NA	9	5	8	2.2

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

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TABLE 3
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-06V13FD	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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	35 J	68 J	61	57	96 J
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
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
Tetrachloroethene	UG/L	5	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
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							
Methane	UG/L	-	13,000	9,400	8,300	8,800	7,900
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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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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

Only Detected Results Reported.

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TABLE 3
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-06V13FD	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							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	31.2	52.3	36.8 J	34.5 J	60.8
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

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TABLE 3
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-06V13FD	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)		
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
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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Concentration Exceeds Criteria

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UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

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TABLE 3
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
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	30	230 J	140	61 J	27
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
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
Tetrachloroethene	UG/L	5	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
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							
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
Dissolved 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

Only Detected Results Reported.

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TABLE 3
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							
Alkalinity, Total (as CaCO3)	MG/L	-	388	NA	304	244	245
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	304	244	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 CaCO3)	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
Total Organic Carbon	MG/L	-	10.9	NA	6.9	5.9	5.6
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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
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***					
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
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.

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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-07	MW-07	MW-07	MW-07
Sample ID			20140416MW-06V15N	MW07-6-10-03	MW07	MW07-91703	MW-07_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	06/10/03	07/23/03	09/17/03	12/17/03
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	250 U	500 U	250 U	50 U
Benzene	UG/L	1	NA	250 U	500 U	250 U	14
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	R	R	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	75	0 U	0 U	0 U	0 U
1,1-Dichloroethene	UG/L	5	NA	100 U	68 J	100 U	20 U
cis-1,2-Dichloroethene	UG/L	5	NA	250 U	500 U	250 U	50 U
trans-1,2-Dichloroethene	UG/L	5	NA	250 U	500 U	250 U	50 U
Ethylbenzene	UG/L	5	NA	200 U	400 U	200 U	49
2-Hexanone	UG/L	50	NA	250 U	500 U	250 U	50 U
4-Methyl-2-Pentanone	UG/L	-	NA	250 U	500 U	250 U	50 U
Tetrachloroethene	UG/L	5	NA	50 U	100 U	50 U	10 U
Trichloroethene	UG/L	5	NA	50 U	100 U	50 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	26	5,400	8,500	6,100	370
Vinyl Chloride	UG/L	2	NA	250 U	500 U	250 U	50 U
Xylene (total)	UG/L	5	NA	250 U	500 U	250 U	50 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	33	68 J	130 J	130 J	940
Dissolved Gases							
Methane	UG/L	-	11,000	740	420	1,200	1,700
Total Metals							
Iron	UG/L	300	20,900	21,300	21,200	32,700 J	38,900
Dissolved Metals							
Iron	UG/L	300	NA	20,800	20,800	32,500 J	38,900

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

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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-07	MW-07	MW-07	MW-07
Sample ID			20140416MW-06V15N	MW07-6-10-03	MW07	MW07-91703	MW-07_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	06/10/03	07/23/03	09/17/03	12/17/03
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	240	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	240	NA	NA	NA	NA
Chloride	MG/L	250	NA	140	168	300 J	328
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	3 U	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	370	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	0.39	0.6	0.66	0.99
Nitrogen, Kjeldahl, Total	MG/L	-	NA	1.2	1.8	2.1	2.8
Nitrogen, Nitrate	MG/L	10	0.10 U	0.1 U	NA	0.1 U	0.1 U
Nitrogen, Nitrite	MG/L	1	0.051 J	0.1 U	NA	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	0.1 UJ	NA	NA
Sulfate	MG/L	250	36.1	32.8	31.0	23.6	5.0 U
Total Organic Carbon	MG/L	-	5.8	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	20.2	19.8	33.8	19.5
Ferric Iron (lab)	MG/L	-	NA	1	1.4	14.1	19.4
Fluoride	MG/L	1.5	NA	0.33	0.25	0.24	0.19
Oil & Grease	MG/L	-	NA	NA	NA	5.44 U	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-07	MW-07	MW-07	MW-07
Sample ID			20140416MW-06V15N	MW07-6-10-03	MW07	MW07-91703	MW-07_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/16/14	06/10/03	07/23/03	09/17/03	12/17/03
Parameter	**Units**	**Criteria***					
Field Parameter							
Dissolved Oxygen	MG/L	-	3.99	0.9	0.1	0 U	3.33
Ferrous Iron	MG/L	-	6.0	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-92	-130	-108	-118	-115
pH	S.U.	-	7.02	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.73	0.93	1.11	1.44	1.94
Temperature	DEG C	-	12.71	NA	NA	NA	NA
Turbidity	NTU	-	0	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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J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07	MW-07	MW-07V15N	MW-07V15N	20070207MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/14/06	02/07/07
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	210	140	47	97	89
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
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
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	110 J	10 U	10 U	10 U	10 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	50	2.0 J	10 U	1.0 J	3.0 J
Dissolved Gases							
Methane	UG/L	-	2,500	5,900	9,700	6,900	6,200
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07	MW-07	MW-07V15N	MW-07V15N	20070207MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/14/06	02/07/07
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	303	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	5.0 U	5.0 U	19.3	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	0.190	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07	MW-07	MW-07V15N	MW-07V15N	20070207MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/14/06	02/07/07
Parameter	**Units**	**Criteria***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0.88	0 U	0 U	3.47	2.89
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-153	-152	-169	-163	-121
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.69	1.75	1.65	1.44	2.02
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect UJ - Estimated quantitation limit. NJ - Analyte is reported as tentatively identified compound at an estimated concentration.
J (or B inorganics) - Analyte is reported below the PQL at an estimated concentration. NA - Not Analyzed. R - Data rejected.
UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalvents per milliliter; GC/mL - Gene Copies per milliliter
S.U. - Standard Units; MS/CM - Microsiemens per Centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07R
Sample ID			20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	82	92	170	150	370 D
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
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
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	6.0 J	10 UJ	3.0 J	46	580 D
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10	0.9 J	16	20	76
Dissolved Gases							
Methane	UG/L	-	4,100	7,100	5,600	11,000	5,900
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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

Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07R
Sample ID			20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	6.1	5 U	5.6	5 UJ	6.3
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07R
Sample ID			20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	**Criteria***					
Field Parameter							
Dissolved Oxygen	MG/L	-	0.48	2.64	0 U	0 U	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-113.5	-137	-167	-154	-139
pH	S.U.	-	6.78	6.32	6.48	6.18	6.45
Specific Conductance	MS/CM	-	2.182	1.62	1.99	2.01	2.74
Temperature	DEG C	-	NA	9.03	17.3	12.11	18.36
Turbidity	NTU	-	NA	54	25	21	1.1

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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	150 J	350 J	390	350	370 J
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
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
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	18 J	1.1 J	1	53 J	18
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	8.1	1.7 J	1.8	9.5	6.3 J
Dissolved Gases							
Methane	UG/L	-	6,500	8,100	8,400	6,200	8,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved 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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Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	7.9	17	11.2	13 J	25.8
Total Organic Carbon	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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	06/24/10	10/06/10	04/06/11
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	NA	0.69	4.05	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-146	NA	-129	-113	-83
pH	S.U.	-	6.52	NA	8.83	6.82	6.39
Specific Conductance	MS/CM	-	2.79	NA	2.09	2.03	3.40
Temperature	DEG C	-	10.69	NA	16.45	21.42	12.08
Turbidity	NTU	-	1.1	NA	0.35	14.3	0.0

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

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N	20120924MW-07RV15N	20130409MW-07RV13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	26	630 J	540 J	430	310 J
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
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
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.6	67 J	59 J	5.9 J	5.5
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.94 J	11	9.7	2.4 J	2.6
Dissolved Gases							
Methane	UG/L	-	2,000	6,400	6,600	3,900	2,100
Total Metals							
Iron	UG/L	300	23,600	NA	NA	29,900	29,000
Dissolved 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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Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N	20120924MW-07RV15N	20130409MW-07RV13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	406	NA	NA	335	263
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	NA	NA	335	263
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	248	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	10	4
Hardness (as CaCO3)	MG/L	-	637	NA	NA	414	515
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	NA	NA	0.10 U	0.066 J
Nitrogen, Nitrite	MG/L	1	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	12.2	18.9	17.7	32.0	19.1
Total Organic Carbon	MG/L	-	11.3	NA	NA	11.8	9.3
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
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Volatile Fatty Acids							
Acetic Acid	MG/L	-	NA	NA	NA	NA	NA
n-Butyric Acid	MG/L	-	NA	NA	NA	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N	20120924MW-07RV15N	20130409MW-07RV13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	04/11/12	09/24/12	04/09/13
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	NA	0.0	0.0	0.0
Ferrous Iron	MG/L	-	20.1	NA	NA	30.4	27.5
Ferric Iron (calculated)	MG/L	-	3.5	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-109	NA	-82	-118	-89
pH	S.U.	-	6.86	NA	6.72	6.69	6.35
Specific Conductance	MS/CM	-	3.28	NA	2.10	1.78	4.84
Temperature	DEG C	-	22.4	NA	13.63	22.35	17.93
Turbidity	NTU	-	0.1	NA	8.2	0.0	53.9

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

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R
Sample ID			20131022MW-07RV17N	20140416MW-07RV17N
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			10/22/13	04/16/14
Parameter	**Units**	**Criteria***		
Volatiles				
Acetone	UG/L	50	NA	NA
Benzene	UG/L	1	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	390	2.4
1,1-Dichloroethene	UG/L	5	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA
Ethylbenzene	UG/L	5	NA	NA
2-Hexanone	UG/L	50	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA
Tetrachloroethene	UG/L	5	NA	NA
Trichloroethene	UG/L	5	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	12	1.0 U
Vinyl Chloride	UG/L	2	NA	NA
Xylene (total)	UG/L	5	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.1	1.0 U
Dissolved Gases				
Methane	UG/L	-	4,000	680
Total Metals				
Iron	UG/L	300	30,900	24,500
Dissolved Metals				
Iron	UG/L	300	NA	NA

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FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R
Sample ID			20131022MW-07RV17N	20140416MW-07RV17N
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			10/22/13	04/16/14
Parameter	**Units**	**Criteria***		
Miscellaneous Parameters				
Alkalinity, Total (as CaCO3)	MG/L	-	291	305
Alkalinity, Bicarbonate (as CaCO3)	MG/L	-	NA	305
Chloride	MG/L	250	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	70
Dehalobacter	GC/mL	-	5	3 U
Hardness (as CaCO3)	MG/L	-	208	594
Nitrogen, Ammonia (as N)	MG/L	2	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA
Nitrogen, Nitrate	MG/L	10	0.36 J	0.10 U
Nitrogen, Nitrite	MG/L	1	0.015 J	0.038 J
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA
Sulfate	MG/L	250	7.4	17.9
Total Organic Carbon	MG/L	-	12.3	7.8
Ferrous Iron (field)	MG/L	-	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA
Fluoride	MG/L	1.5	NA	NA
Oil & Grease	MG/L	-	NA	NA
Volatile Fatty Acids				
Acetic Acid	MG/L	-	NA	NA
n-Butyric Acid	MG/L	-	NA	NA
Pyruvic Acid	MG/L	-	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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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R
Sample ID			20131022MW-07RV17N	20140416MW-07RV17N
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			10/22/13	04/16/14
Parameter	**Units**	**Criteria***		
Field Parameter				
Dissolved Oxygen	MG/L	-	0.36	4.43
Ferrous Iron	MG/L	-	15.3	6.0
Ferric Iron (calculated)	MG/L	-	NA	NA
Oxidation-Reduction Potential	mV	-	-102	-77
pH	S.U.	-	6.31	6.89
Specific Conductance	MS/CM	-	1.84	3.31
Temperature	DEG C	-	19.42	11.39
Turbidity	NTU	-	0.2	0

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