Groundwater Sampling and Analysis Report October 2009 Sampling Event and Summary of 2009 Supplemental Injection 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
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Buffalo, New York 14203

November 2009

G4427F

FORMER EMCA SITE

SITE NO. 360025

MAMARONECK, NEW YORK

GROUNDWATER SAMPLING AND ANALYSIS REPORT

OCOTBER 2009 SAMPLING EVENT

&

SUMMARY OF 2009 SUPPLEMENTAL INJECTION EVENT

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ROHM AND HAAS COMPANY

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1.0 INTRODUCTION

This report presents the results of groundwater monitoring conducted on October 13, 2009 at the former EMCA site located in Mamaroneck, New York (Figure 1). The semi-annual sampling and analyses of groundwater at this site is detailed in the Draft Operation Maintenance and Monitoring Plan (URS 2007b); the monitoring program generates data used to monitor the effectiveness of remedial actions performed at the site from 2003 to 2009.

In addition, this report presents the details of a supplemental injection event completed in September 2009, before the sampling event took place.

The pilot program conducted in 2003, the interim remedial measure in 2004, the supplemental injection in 2007, and the supplemental injection in 2009, all involved the injections of food-grade emulsified soybean oil and sodium lactate into groundwater to stimulate anaerobic biodegradation and the reductive dechlorination of 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113; CAS No. 76-13-1) in site groundwater. This was the ninth groundwater sampling event since the interim remedial measure in 2004, the fourth following the supplemental injection event in 2007, and the first following the 2009 supplemental injection event.

2.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater samples were collected from a total of five monitoring wells using low-flow purging and sampling procedures. Upgradient monitoring well GZ-06 was not sampled because injected substrate was present in the well from the September injection. Static groundwater level measurements were taken prior to purging and sampling. Field purging and sampling logs are presented in Appendix A.

Chain-of-custody 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	8260B
Freon 123a	8260B
Freon 1113	8260B
Methane	Method 3810
Sulfate	375.4

3.0 RESULTS

Groundwater level data are presented in Table 1 and a groundwater elevation map is shown on Figure 2. Surface water level gauging locations WS-01, WS-02 and WS-03 were not found and were assumed to be removed. Two new surface water level gauging locations (Stream Gauge North [SGN] and Stream Gauge South [SGS]) are proposed to be established along the Sheldrake River to aid in the generation of future groundwater contour maps. As found during previous sampling events, groundwater flow was generally northwestward towards the Sheldrake River.

Groundwater monitoring results for the current event are provided in Table 2. Historical groundwater analytical results are presented in Table 3. Laboratory data sheets and a data usability summary report for the October 2009 results are provided in Appendix B. Freon 113, 123a and 1113 concentrations are shown in plan view on Figure 3 trend plots are presented for Freon 113 (Figure 4 and 5), Freon 123a (Figure 6), sulfate (Figure 7), methane (Figure 8), dissolved oxygen (Figure 9) and oxidation-reduction potential (Figure 10). Dissolved oxygen and oxidation-reduction potential were measured in the field by real-time instrumentation. Monitoring well MW-07 was not found during the injection event undertaken in August-September 2009 and was assumed to have been destroyed when the parking lot was repaved this summer (2009). Replacement well MW-07R was installed on September 3, 2009 in approximately the same location and to the same specifications as MW-07 to be able to continue the full round of sampling during ongoing sampling events.

4.0 DATA ASSESSMENT

The groundwater analytical data collected in October 2009 is the first set of data collected following the supplemental injection of food-grade emulsified soybean oil and sodium lactate completed on September 9, 2009. Monitoring well GZ-06 was not sampled because an excessive amount of residual injected substrate was found in the well. The water-substrate mix in the well was highly turbid and interfered with the function of the water level indicator. It was assumed that data from this well may be highly biased; therefore no sample was taken. The groundwater analytical results for the October 2009 sampling event indicate that Freon 113 concentrations were either at or below the remedial goal of 5 µg/L or not detected at three of the five wells sampled. A Freon 113 concentration above 5 µg/L was noted at MW-02 (1,200 µg/L), decreasing from 1300 µg/L in February 2009, and at MW-07R (580 µg/L), increasing from 46 µg/L in February 2009.

Freon 123a and Freon 1113 are the expected reductive dechlorination daughter products of Freon 113. Minor fluctuations were seen in the concentrations of both compounds compared to the previous sampling round. Freon 123a holds one less chlorine than Freon 113. Compared to the previous sampling event (February 2009), Freon 123a increased at MW-02 (34 J µg/L to 51 µg/L) and MW-07R (20 µg/L to 76 µg/L) and decreased at MW-03 (40 µg/L to 2.1 µg/L) and MW-06 (35 µg/L to non-detect). Freon 123a was not-detected at MW-04 in either the February or October 2009 events.

Freon 1113, which holds two less chlorines than Freon 113, decreased in concentration from the February 2009 event at MW-03 (38 µg/L to 20 J µg/L) and MW-06 (34 µg/L 6.4 µg/L). Concentrations increased at MW-02 (81 J µg/L to 300 µg/L), MW-04 (1.0 J µg/L to 15 µg/L) and MW-07R (150 µg/L to 370 µg/L).

The October 2009 sulfate concentrations increased slightly at wells MW-02, MW-04 and MW-07R, and decreased substantially at wells MW-03 and MW-06 compared to the previous event. Conversely, methane concentrations decreased at all locations except at well MW-04 where it increased from 1,600 µg/L to 3,100 µg/L. These two trends indicate generally less favorable reducing (less anaerobic) conditions site-wide, although the decrease in sulfate at MW-03 and MW-06 may indicate that biologically-mediated sulfate reduction is occurring at these two proximally located wells as a result of the recent injections.

Dissolved oxygen concentrations have fluctuated widely since December 2005, but in August 2008 and continuing into October 2009, concentrations dropped to 0 mg/L in all wells, except GZ-06. Dissolved oxygen concentrations dropped from 0.91 mg/L to 0 mg/L at GZ-06 between February 2009 and October 2009. Dissolved oxygen concentrations are expected to drop to or near zero following injection (as was the case following the November 2004 IRM injection).

Oxidation-reduction potentials fluctuated slightly in all wells from the previous event, generally increasing slightly to between –103 to –161 millivolts.

5.0 2009 SUPPLEMENTAL INJECTION PROGRAM

The 2003, 2004 and 2007 injections of sodium lactate and emulsified oil substrate were successful in establishing favorable conditions for reductive dechlorination of Freon compounds. The goals of the 2009 supplemental injections were to stimulate and maintain anaerobic biological processes, targeting remaining areas of contamination.

The 2009 Supplemental Injection Work Plan (URS 2009b) was approved by the NYSDEC in August 2009. Injections began in August 2009, over 1 month before the October 2009 groundwater sampling event. The target interval for the 39 proposed injection locations was the saturated zone, extending from the water table to approximately 25 feet below grade. Based on the most recent water level readings, the depths to the water table ranged from 5-9 feet below grade.

Field Program

Prior to injection activities, utilities were marked out in the vicinities of the 39 proposed injection points. Some of the injection locations were relocated slightly to avoid surface and/or subsurface obstructions.

The injections of sodium lactate and emulsified oil substrate began on August 25, 2009 using Zebra Environmental as the contractor to supply the mixing and injection equipment. URS coordinated and oversaw all fieldwork. A geoprobe rig was used to advance a pressure-activated injection probe and rod assembly. A Sidewinder™, an injection pulsing tool rented from

Wavefront Technology Solutions Inc., was placed between the high-pressure hose and rods to enhance the effectiveness of the injections by spreading the injection substrates more evenly throughout the formation. Using this equipment, only a brief stoppage was required every four feet to remove the rod sections and reconnect the Sidewinder™ to the rods.

A commercially-prepared emulsified oil substrate, EOS®598B42, purchased from EOS Remediation, Inc. (Raleigh, NC) was mixed with water, Vitamin B-12, and a pH neutralizer prior to being injected at 18 injection locations; WILCLEAR™ sodium lactate, purchased from JRW Technologies, Inc. (Lexana, KS), was mixed with water prior to being injected at 39 injection locations. The injection locations are shown on Figure 12. The volumes injected in each interval are presented in Appendix C. The injection program was completed over 10 days and a total of approximately 2,472 gallons of dilute EOS®598B42 and 3,088 gallons of dilute WILCLEAR™ were injected into the subsurface.

Because the Sidewinder™ injection tool malfunctioned twice during the 10-day event, fifteen of the injections were completed without using the tool. The use of the Sidewinder™ is noted for each location where it was successfully employed on the injection summary table presented in Appendix C and on Figure 12. The injection points in the vicinity of MW-02 were of the greatest importance to the program since the past injections have had the least impact on the Freon contamination in that area compared to the relative success elsewhere at the site. When the Sidewinder™ was not functioning, injection points away from MW-02 were executed so that the points located in proximity to MW-02 could be accomplished with the tool.

6.0 CONCLUSIONS

A relative comparison of data from the October 2009 event and the February 2009 event, including Freon 113 and its degradation products and various indicator parameters, is presented in Table 4. Comparative data from these events is also discussed in Section 4. There is a relatively long time period between the February 2009 event and the recent remedial injection event (over 6 months) and an absence of data from immediately before the injection event. It is possible that significant changes occurred in the various parameters between sampling events that were reversed but not entirely overcome as a result of the injections. Therefore, the comparison of data between the two events is of limited value in the assessment of the effectiveness of the August-September injection event.

At MW-03 and MW-06, Freon 113, Freon 123a, and Freon 1113 decreased. This may indicate an initial positive impact of the recent injections at these two locations. At MW-07R, all of the Freon compounds increased. At MW-04, Freon 1113 increased. The increase in the Freon compounds at these two locations, which are the farthest downgradient locations sampled at the site, may be a result of temporary disturbance of the soil matrix of the aquifer from the injection event (which was the most extensive event undertaken at the site to date). Overall, there are no discernible site-wide trends in the indicator parameters given the limitations of the data noted above. The decrease in Freon 113 paired with increase of its daughter products at MW-02 fits with the expected trend for reductive dechlorination; however, the decrease in Freon 113 at this location is relatively small.

The impact of the recent remedial injections at the site are expected to be more clearly discernible in the next two groundwater monitoring events, which will both occur within 1 year of the injections, in February and August 2010.

7.0 NEXT STEPS

Prior to the next groundwater-monitoring event, the following actions will be taken:

- monitoring wells MW-01, -02, -03, -04, -05, -06, -07R, GZ-03 and GZ-06 will be re-surveyed to ensure that accurate data is collected for groundwater contour maps;

- new reference points SGN and SGS will be installed along the Sheldrake River and surveyed to aid in the generation of groundwater contour maps; and

- surface seals and caps will be inspected.

The next routine groundwater-monitoring event is planned for February 2010.

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TABLES

TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS (October 2009)
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location	Measuring Point Elevation (ft.)	Depth to Water (ft.)	Water Surface Elevation (ft.)
GZ-03[1]	*102.71*	9.40	*93.31*
GZ-06	101.55	ND[2]	ND[2]
MW-01	99.22	5.59	93.63
MW-02	99.18	6.01	93.17
MW-03	99.35	6.01	93.34
MW-04[1]	*98.61*	5.93	*92.68*
MW-05	98.14	5.10	93.04
MW-06	ND	6.15	ND
MW-07R	ND	6.16	ND

Notes:

1) The riser and protective casing are damaged at monitoring well **GZ-03**. Well **MW-04** is damaged, pushed up ~2" above ground surface. The parking lot was recently repaved and all of the wells will be resurveyed prior to the next groundwater sampling event. These (italicized) water surface elevations are not included in the Groundwater Elevation Contour Map (Figure 2).
2) A water level was not determined because residual injected substrate in the well interfered with the function of the water level indicator.

ND - Not Determined

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

Location ID			MW-02	MW-03	MW-03	MW-04	MW-06
Sample ID			20091013MW-02V10N	20091013MW-03V10FD	20091013MW-03V10N	20091013MW-04V08N	20091013MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	10/13/09	10/13/09	10/13/09	10/13/09
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	300	20	19	15	6.4
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1,200 D	0.92 J	0.82 J	1 U	1 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	51	2.1	1.9	1 U	1 U
Dissolved Gases							
Methane	UG/L	-	6,100	5,300	4,800	3,100	7,300
Miscellaneous Parameters							
Sulfate	MG/L	250	36.9	4.6 J	8.7	20.8	2.8 J
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	NA	0.00	0.00	0.00
Oxidation Reduction Potential	mV	-	-161	NA	-103	-122	-139
pH	S.U.	-	6.16	NA	5.87	6.43	6.57
Specific Conductance	MS/CM	-	2.09	NA	1.85	1.83	1.79
Temperature	DEG C	-	18.88	NA	18.68	19.37	17.80
Turbidity	NTU	-	9.4	NA	8.7	4.6	2.2

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect

J - Analyte is reported below the PQL at an estimated concentration.

NA - Not Analyzed

Detection Limits shown are PQL

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

Location ID			MW-07R
Sample ID			20091013MW-07RV15N
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			10/13/09
Parameter	**Units**	**Criteria***	
Volatiles			
Chlorotrifluoroethene (Freon-1113)	UG/L	5	370 D
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	580 D
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	76
Dissolved Gases			
Methane	UG/L	-	5,900
Miscellaneous Parameters			
Sulfate	MG/L	250	6.3
Field Parameter			
Dissolved Oxygen	MG/L	-	0.00
Oxidation Reduction Potential	mV	-	-139
pH	S.U.	-	6.45
Specific Conductance	MS/CM	-	2.74
Temperature	DEG C	-	18.36
Turbidity	NTU	-	1.1

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect

J - Analyte is reported below the PQL at an estimated concentration.

NA - Not Analyzed

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**					
Volatiles						
Acetone	UG/L	NA	5.0 U	10 U	5.0 U	5.0 U
Benzene	UG/L	NA	5.0 U	10 U	5.0 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	NA	R	R	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	10 U	0 U	0 U	5.4 NJ	0 U
1,1-Dichloroethene	UG/L	NA	0.8 J	1.5 J	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	NA	5.0 U	10 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	UG/L	NA	5.0 U	10 U	5.0 U	5.0 U
Ethylbenzene	UG/L	NA	4.0 U	8 U	4.0 U	4.0 U
2-Hexanone	UG/L	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	NA	0.6 J	2 U	0.5 J	1.0 U
Trichloroethene	UG/L	NA	1.0 U	2 U	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	10 U	100	230	74	5.0 U
Vinyl Chloride	UG/L	NA	5.0 U	10 U	5.0 U	5.0 U
Xylene (total)	UG/L	NA	5.0 U	10 U	5.0 U	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	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	NA	2,390	866	517 J	173
Dissolved Metals						
Iron	UG/L	NA	2,290	778	583 J	85.3 B

Flags assigned during chemistry validation are shown.

B - Value between Instrument Detection Limit and Contract Required Detection Limit.
J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

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**					
Miscellaneous Parameters						
Chloride	MG/L	NA	559	474	477 J	218
Nitrogen, Ammonia (As N)	MG/L	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	NA	0.1 U	NA	0.58	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	0.12 J	NA	NA
Sulfate	MG/L	15.8	25.2	27.5	32.4	5.0 U
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	NA	0.1 U	0.1 U	0.1 U	0.32
Oil & Grease	MG/L	NA	NA	NA	R	NA
Field Parameter						
Dissolved Oxygen	MG/L	0.52	0.76	0.5	0.48	6.86
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

Flags assigned during chemistry validation are shown.

B - Value between Instrument Detection Limit and Contract Required Detection Limit.
J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

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					
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	24	15	10 U	13	2.0 J
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	100 J	9.0 J	10 U	74	2.0 J
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	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	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

B - Value between Instrument Detection Limit and Contract Required Detection Limit.
J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

Only Detected Results Reported.

Detection Limits shown are PQL

Advanced Selection: WG Oct09 Tab
N:\11172730.00000\DB\PROGRAM\EDMS.mde
Printed: 11/5/2009 11:53:49 AM
([LOGDATE] BETWEEN #05/01/03# AND #10/14/09#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

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					
Miscellaneous Parameters						
Chloride	MG/L	1,610	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	20.8	14.2	31.7	23.2	25.1
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	1.00 U	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	1.15	0.11	0.03	5.67	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

Flags assigned during chemistry validation are shown.

B - Value between Instrument Detection Limit and Contract Required Detection Limit.
J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

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	Field Duplicate (1-1)				
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	2.0 J	1.0 J	2.0 J	10 U	10 U
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	2.0 J	14	13	10 UJ	10 U
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	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	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

B - Value between Instrument Detection Limit and Contract Required Detection Limit.
J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

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**	Field Duplicate (1-1)				
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	25.4	29.3	50.4	5 U	28.1
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	NA	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	NA	4.17	1.18	4.1	0.91
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

Flags assigned during chemistry validation are shown.

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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	MW-01	MW-02	MW-02	MW-02
Sample ID		20090218GZ-06V10N	20070801MW-01V08N	MW02-5-20-03	MW02-5-20-03DUP	DUP-7_22_03
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/18/09	08/01/07	05/20/03	05/20/03	07/22/03
Parameter	Units				Field Duplicate (1-1)	Field Duplicate (1-1)
Volatiles						
Acetone	UG/L	NA	NA	140 J	130 J	R
Benzene	UG/L	NA	NA	50 U	25 U	50 U
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	R	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	10 U	20 U	0 U	0 U	0 U
1,1-Dichloroethene	UG/L	NA	20 U	4.4 J	5.1 J	8.2 J
cis-1,2-Dichloroethene	UG/L	NA	250	50 U	25 U	50 U
trans-1,2-Dichloroethene	UG/L	NA	4.0 J	50 U	25 U	50 U
Ethylbenzene	UG/L	NA	NA	40 U	20 U	40 U
2-Hexanone	UG/L	NA	NA	50 U	25 U	50 U
4-Methyl-2-Pentanone	UG/L	NA	NA	50 U	25 U	50 U
Tetrachloroethene	UG/L	NA	8.0 J	10 U	5.0 U	10 U
Trichloroethene	UG/L	NA	5.0 J	10 U	5.0 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	10 U	20 U	710	880	1,000
Vinyl Chloride	UG/L	NA	5.0 J	50 U	25 U	50 U
Xylene (total)	UG/L	NA	NA	50 U	25 U	7.1 J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	10 U	20 U	34 J	40	40 J
Dissolved Gases						
Methane	UG/L	8,700	98	26	32	54
Total Metals						
Iron	UG/L	NA	NA	27,800	28,300	30,100
Dissolved Metals						
Iron	UG/L	NA	NA	27,900	28,200	30,500

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		GZ-06	MW-01	MW-02	MW-02	MW-02
Sample ID		20090218GZ-06V10N	20070801MW-01V08N	MW02-5-20-03	MW02-5-20-03DUP	DUP-7_22_03
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/18/09	08/01/07	05/20/03	05/20/03	07/22/03
Parameter	Units				Field Duplicate (1-1)	Field Duplicate (1-1)
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	338	338	307
Nitrogen, Ammonia (As N)	MG/L	NA	NA	3.3	3.4	4.1
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	6.6	6.2	6.6
Nitrogen, Nitrate	MG/L	NA	NA	0.15	0.16	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	5 UJ	39.2	44.0	46.0	32.3
Ferrous Iron (field)	MG/L	NA	NA	25.3	NA	25.7
Ferric Iron (lab)	MG/L	NA	NA	2.5	3	4.4
Fluoride	MG/L	NA	NA	0.28	0.3	0.37
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0.36	0.99	0.36	NA	NA
Oxidation Reduction Potential	mV	-91	95.4	-108	NA	NA
pH	S.U.	6.12	6.25	NA	NA	NA
Specific Conductance	MS/CM	2.13	1.755	1.68	NA	NA
Temperature	DEG C	9.24	NA	NA	NA	NA
Turbidity	NTU	16	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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U - Non-Detect NA - Not Analyzed R - Rejected

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		MW02-7_22_03	MW02-091803	MW-02-121803	MW-02	MW-02
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/22/03	09/18/03	12/18/03	07/22/04	05/31/05
Parameter	**Units**					
Volatiles						
Acetone	UG/L	R	5.0 U	5.0 U	NA	NA
Benzene	UG/L	50 U	5.0 U	5.0 U	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	R	R	R	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	0 U	0 U	0 U	14	120
1,1-Dichloroethene	UG/L	7.5 J	2.0 U	2.0 U	NA	NA
cis-1,2-Dichloroethene	UG/L	50 U	5.0 U	5.0 U	NA	NA
trans-1,2-Dichloroethene	UG/L	50 U	5.0 U	5.0 U	NA	NA
Ethylbenzene	UG/L	3.4 J	4.0 U	4.0 U	NA	NA
2-Hexanone	UG/L	50 U	5.0 U	5.0 U	NA	NA
4-Methyl-2-Pentanone	UG/L	50 U	5.0 U	5.0 U	NA	NA
Tetrachloroethene	UG/L	10 U	1.0 U	1.0 U	NA	NA
Trichloroethene	UG/L	10 U	1.0 U	1.0 U	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	1,000	54	12	21 J	1,200
Vinyl Chloride	UG/L	50 U	5.0 U	5.0 U	NA	NA
Xylene (total)	UG/L	11 J	5.0 U	5.0 U	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	41 J	7.8	3.3 J	4 J	86 J
Dissolved Gases						
Methane	UG/L	52	410	320	140	2,000
Total Metals						
Iron	UG/L	30,900	63,800 J	69,000	NA	NA
Dissolved Metals						
Iron	UG/L	30,500	60,900 J	69,300	NA	NA

Flags assigned during chemistry validation are shown.

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([LOGDATE] BETWEEN #05/01/03# AND #10/14/09#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

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		MW02-7_22_03	MW02-091803	MW-02-121803	MW-02	MW-02
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/22/03	09/18/03	12/18/03	07/22/04	05/31/05
Parameter	**Units**					
Miscellaneous Parameters						
Chloride	MG/L	283	839	769	238	NA
Nitrogen, Ammonia (As N)	MG/L	3.8	11.5	11.9	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	6.1	17.1	16.9	NA	NA
Nitrogen, Nitrate	MG/L	0.1	0.1 U	0.1 U	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	32.5	4.80	5.0 U	15.2	25.2
Ferrous Iron (field)	MG/L	28.0	49.3	6.3	NA	NA
Ferric Iron (lab)	MG/L	2.9	48.3	62.7	NA	NA
Fluoride	MG/L	0.39	0.3	0.31	0.294	NA
Oil & Grease	MG/L	NA	5 U	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0.26	0.53	0 U	0.91	0 U
Oxidation Reduction Potential	mV	-190	-99	-108	-133	-140
pH	S.U.	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	1.65	3.17	3.28	2.34	1.19
Temperature	DEG C	NA	NA	NA	NA	NA
Turbidity	NTU	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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-02V06N	MW-02V15N	20061117MW02VISN	20070207MW-02V06N	20070731MW-02V15N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		12/20/05	08/14/06	11/17/06	02/07/07	07/31/07
Parameter	Units					
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	18	200	21	84	61
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	110	890	100	800	290
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	15	110	10	95	40
Dissolved Gases						
Methane	UG/L	5,800	5,500	4,300	6,300	2,900
Total Metals						
Iron	UG/L	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

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-02	MW-02	MW-02	MW-02	MW-02
Sample ID		MW-02V06N	MW-02V15N	20061117MW02VISN	20070207MW-02V06N	20070731MW-02V15N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		12/20/05	08/14/06	11/17/06	02/07/07	07/31/07
Parameter	**Units**					
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	5.0 U	27.1	5.0 U	15.9	27.6
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	NA	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0 U	4.92	NA	1.56	0.31
Oxidation Reduction Potential	mV	-137	-144	NA	-120	-97.2
pH	S.U.	NA	NA	NA	NA	6.39
Specific Conductance	MS/CM	2.51	1.55	NA	1.77	2.357
Temperature	DEG C	NA	NA	NA	NA	NA
Turbidity	NTU	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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-02	MW-02	MW-02	MW-02	MW-03
Sample ID		20080228MW02V15N	20080812MW02V10N	20090218MW-02V10N	20091013MW-02V10N	MW03_52103
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/28/08	08/12/08	02/18/09	10/13/09	05/21/03
Parameter	Units					
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	250 U
Benzene	UG/L	NA	NA	NA	NA	250 U
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	R
Chlorotrifluoroethene (Freon-1113)	UG/L	120 J	160	81 J	300	0 U
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	33 J
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	250 U
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	250 U
Ethylbenzene	UG/L	NA	NA	NA	NA	200 U
2-Hexanone	UG/L	NA	NA	NA	NA	250 U
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	250 U
Tetrachloroethene	UG/L	NA	NA	NA	NA	50 U
Trichloroethene	UG/L	NA	NA	NA	NA	50 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	830 J	700	1,300	1,200 D	5,800
Vinyl Chloride	UG/L	NA	NA	NA	NA	250 U
Xylene (total)	UG/L	NA	NA	NA	NA	250 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	72	38 J	34 J	51	78 J
Dissolved Gases						
Methane	UG/L	6,400	6,200	8,000	6,100	86
Total Metals						
Iron	UG/L	NA	NA	NA	NA	1,170
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	267

Flags assigned during chemistry validation are shown.

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U - Non-Detect NA - Not Analyzed R - Rejected

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-03
Sample ID		20080228MW02V15N	20080812MW02V10N	20090218MW-02V10N	20091013MW-02V10N	MW03_52103
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/28/08	08/12/08	02/18/09	10/13/09	05/21/03
Parameter	Units					
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	NA	NA	113
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	0.36
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	1.3
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	2
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	23.2	47.9	35.2 J	36.9	32.7
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	0.5
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	0.67
Fluoride	MG/L	NA	NA	NA	NA	0.28
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	2.87	0 U	0 U	0.00	0.58
Oxidation Reduction Potential	mV	-131.0	-119	-154	-161	40
pH	S.U.	6.38	6.40	6.26	6.16	NA
Specific Conductance	MS/CM	2.18	2.14	2.55	2.09	0.638
Temperature	DEG C	10.5	18.9	11.23	18.88	NA
Turbidity	NTU	28	3	5	9.4	NA

Flags assigned during chemistry validation are shown.

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Only Detected Results Reported.

Detection Limits shown are PQL

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([LOGDATE] BETWEEN #05/01/03# AND #10/14/09#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

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		MW03	DUP-91703	MW03-091703	DUP1_121703	MW-03_121703
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/03	09/17/03	09/17/03	12/17/03	12/17/03
Parameter	Units		Field Duplicate (1-1)		Field Duplicate (1-1)	
Volatiles						
Acetone	UG/L	78	110	110	130 J	120 J
Benzene	UG/L	2.3	2.2	1.8	10 U	10 U
Methyl ethyl ketone (2-Butanone)	UG/L	130 J	69 J	65 J	39 J	38 J
Chlorotrifluoroethene (Freon-1113)	UG/L	7.0 NJ	6.2 NJ	0 U	0 U	0 U
1,1-Dichloroethene	UG/L	2.0 U	2.0 U	2.0 U	4.0 U	4 U
cis-1,2-Dichloroethene	UG/L	5.0 U	5.0 U	5.0 U	10 U	10 U
trans-1,2-Dichloroethene	UG/L	5.0 U	5.0 U	5.0 U	10 U	10 U
Ethylbenzene	UG/L	0.3 J	4.0 U	4.0 U	8.0 U	8 U
2-Hexanone	UG/L	5.0 U	19	16	10 U	10 U
4-Methyl-2-Pentanone	UG/L	5.0 U	11	11	10 U	10 U
Tetrachloroethene	UG/L	1.0 U	1.0 U	1.0 U	4.9	4.6
Trichloroethene	UG/L	1.0 U	1.0 U	1.0 U	2.0 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	68	26	16	150	150
Vinyl Chloride	UG/L	5.0 U	5.0 U	5.0 U	10 U	10 U
Xylene (total)	UG/L	1.1 J	5.0 U	5.0 U	10 U	10 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	43	180	110	170	160
Dissolved Gases						
Methane	UG/L	56	2,400	2,500	7,200	4,900
Total Metals						
Iron	UG/L	150,000	174,000 J	178,000 J	156,000	164,000
Dissolved Metals						
Iron	UG/L	152,000	187,000 J	186,000 J	167,000	176,000

Flags assigned during chemistry validation are shown.

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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-03	MW-03	MW-03	MW-03	MW-03
Sample ID		MW03	DUP-91703	MW03-091703	DUP1_121703	MW-03_121703
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/03	09/17/03	09/17/03	12/17/03	12/17/03
Parameter	Units		Field Duplicate (1-1)		Field Duplicate (1-1)	
Miscellaneous Parameters						
Chloride	MG/L	143	99.2 J	91.5 J	224	192
Nitrogen, Ammonia (As N)	MG/L	2.7	0.86	0.95	1.4	1.2
Nitrogen, Kjeldahl, Total	MG/L	10.8	4.5	4.4	4.0	4.0
Nitrogen, Nitrate	MG/L	NA	0.1 U	0.1 U	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	0.1 UJ	NA	NA	NA	NA
Sulfate	MG/L	26.9	5.0 U	5.0 U	5.0 U	5.0 U
Ferrous Iron (field)	MG/L	3.7	25.5	27.9	23.5	30.0
Ferric Iron (lab)	MG/L	146	67.0	93.0	132	134
Fluoride	MG/L	0.44	0.27	0.2	0.22	0.25
Oil & Grease	MG/L	NA	R	R	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0 U	NA	0.01	NA	0.35
Oxidation Reduction Potential	mV	-103	NA	-90	NA	-59
pH	S.U.	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	4.35	NA	1.64	NA	1.99
Temperature	DEG C	NA	NA	NA	NA	NA
Turbidity	NTU	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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-03	MW-03	MW-03VION	MW-03V15N	20070207MW-03V10N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/04	05/31/05	12/20/05	08/14/06	02/07/07
Parameter	**Units**					
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	68 J	83	2.0 J	51	39
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	4,900 J	2.0 J	10 U	10 U	10
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	3,900	14	1.0 J	0.8 J	48
Dissolved Gases						
Methane	UG/L	2,700	6,300	10,000	7,400	15,000
Total Metals						
Iron	UG/L	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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-03	MW-03	MW-03VION	MW-03V15N	20070207MW-03V10N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/04	05/31/05	12/20/05	08/14/06	02/07/07
Parameter	**Units**					
Miscellaneous Parameters						
Chloride	MG/L	71.7	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	5.0 U	5.0 U	5.0 U	5.0 U	7.80
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	0.397	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	1.05	1.24	0 U	5.36	2.44
Oxidation Reduction Potential	mV	-143	-133	-151	-123	-116
pH	S.U.	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	2.40	3.19	1.20	0.946	0.91
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-03	MW-03	MW-03	MW-03	MW-03
Sample ID		20070731MW-03V10N	20080228MW03V10N	20080812MW03V10FD	20080812MW03V10N	20090218MW-03V10N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/31/07	02/28/08	08/12/08	08/12/08	02/18/09
Parameter	Units			Field Duplicate (1-1)		
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	54	13 J	10	10	38
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	2.0 J	0.5 J	10 U	10 U	5.0 J
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	7.0 J	4.0 J	1.0 J	1.0 J	40
Dissolved Gases						
Methane	UG/L	4,500	18,000	10,000	8,400	13,000
Total Metals						
Iron	UG/L	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

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-03	MW-03	MW-03	MW-03	MW-03
Sample ID		20070731MW-03V10N	20080228MW03V10N	20080812MW03V10FD	20080812MW03V10N	20090218MW-03V10N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/31/07	02/28/08	08/12/08	08/12/08	02/18/09
Parameter	Units			Field Duplicate (1-1)		
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	38.4	14.1	30.0	28.1	50.7 J
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	NA	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0.22	2.94	NA	0 U	0 U
Oxidation Reduction Potential	mV	-79.7	-123.0	NA	-149	-185
pH	S.U.	6.15	6.15	NA	6.36	6.06
Specific Conductance	MS/CM	1.309	1.36	NA	1.69	2.08
Temperature	DEG C	NA	11.6	NA	17.8	12.87
Turbidity	NTU	NA	41	NA	2	5

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([LOGDATE] BETWEEN #05/01/03# AND #10/14/09#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

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

Location ID		MW-03	MW-03	MW-04	MW-04	MW-04
Sample ID		20091013MW-03V10FD	20091013MW-03V10N	MW04-5-20-03	MW-04_121703	Dup1
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		10/13/09	10/13/09	05/20/03	12/17/03	07/22/04
Parameter	Units	Field Duplicate (1-1)				Field Duplicate (1-1)
Volatiles						
Acetone	UG/L	NA	NA	5.0 U	5.0 U	NA
Benzene	UG/L	NA	NA	5.0 U	5.0 U	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	R	R	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	20	19	0 U	0 U	10 U
1,1-Dichloroethene	UG/L	NA	NA	2.0 U	2.0 U	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	5.0 U	5.0 U	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	5.0 U	5.0 U	NA
Ethylbenzene	UG/L	NA	NA	4.0 U	4.0 U	NA
2-Hexanone	UG/L	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	NA	NA	1.0 U	1.0 U	NA
Trichloroethene	UG/L	NA	NA	1.0 U	1.0 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	0.92 J	0.82 J	5.0 U	5.0 U	10 UJ
Vinyl Chloride	UG/L	NA	NA	5.0 U	5.0 U	NA
Xylene (total)	UG/L	NA	NA	5.0 U	5.0 U	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	2.1	1.9	5.0 U	5.0 U	10 U
Dissolved Gases						
Methane	UG/L	5,300	4,800	380	35	69
Total Metals						
Iron	UG/L	NA	NA	18,400	3,640	NA
Dissolved Metals						
Iron	UG/L	NA	NA	18,500	3,760	NA

Flags assigned during chemistry validation are shown.

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Only Detected Results Reported.

Detection Limits shown are PQL

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

Location ID		MW-03	MW-03	MW-04	MW-04	MW-04
Sample ID		20091013MW-03V10FD	20091013MW-03V10N	MW04-5-20-03	MW-04_121703	Dup1
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		10/13/09	10/13/09	05/20/03	12/17/03	07/22/04
Parameter	Units	Field Duplicate (1-1)				Field Duplicate (1-1)
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	238	294	158
Nitrogen, Ammonia (As N)	MG/L	NA	NA	1.6	1.2	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	6.2	1.9	NA
Nitrogen, Nitrate	MG/L	NA	NA	0.1 U	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	4.6 J	8.7	5.0 U	9.40	10.8
Ferrous Iron (field)	MG/L	NA	NA	17.6	2.2	NA
Ferric Iron (lab)	MG/L	NA	NA	0.76	1.3	NA
Fluoride	MG/L	NA	NA	0.27	0.19	0.304
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	NA	0.00	0.54	0 U	NA
Oxidation Reduction Potential	mV	NA	-103	-115	0 U	NA
pH	S.U.	NA	5.87	NA	NA	NA
Specific Conductance	MS/CM	NA	1.85	1.61	0.99	NA
Temperature	DEG C	NA	18.68	NA	NA	NA
Turbidity	NTU	NA	8.7	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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-04	MW-04	MW-04VION	MW-04V15N	20070207MW-04V10N
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**					
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	10 U	1.0 J	10 U	0.7 J	0.6 J
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	0.7 J	10 U	10 U	10 U	10 U
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	10 U	10 U	10 U	10 U	10 U
Dissolved Gases						
Methane	UG/L	99	190	400	420	400
Total Metals						
Iron	UG/L	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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-04	MW-04	MW-04VION	MW-04V15N	20070207MW-04V10N
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**					
Miscellaneous Parameters						
Chloride	MG/L	161	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	10.8	14.2	6.66	5.0 U	5.0 U
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	0.302	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0.82	0 U	0 U	4.97	4.73
Oxidation Reduction Potential	mV	-136	-126	-161	-154	-81
pH	S.U.	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	1.05	1.85	1.47	1.14	0.804
Temperature	DEG C	NA	NA	NA	NA	NA
Turbidity	NTU	NA	NA	NA	NA	NA

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-04	MW-04	MW-04	MW-04	MW-04
Sample ID		20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N	20090218MW-04V08FD	20090218MW-04V08N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		08/01/07	02/28/08	08/12/08	02/18/09	02/18/09
Parameter	Units				Field Duplicate (1-1)	
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	10 U	1.0 J	10 U	1.0 J	1.0 J
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	10 U	10 UJ	10 U	10 U	10 U
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	10 U	10 U	10 U	10 U	10 U
Dissolved Gases						
Methane	UG/L	43	5,700	290	1,600	1,600
Total Metals						
Iron	UG/L	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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		20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N	20090218MW-04V08FD	20090218MW-04V08N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		08/01/07	02/28/08	08/12/08	02/18/09	02/18/09
Parameter	Units				Field Duplicate (1-1)	
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	7.0	5 U	5 U	5 UJ	5 UJ
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	NA	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0.41	2.91	0 U	NA	0 U
Oxidation Reduction Potential	mV	-79.2	-136.0	-126	NA	-158
pH	S.U.	6.59	6.45	6.65	NA	6.33
Specific Conductance	MS/CM	1.241	1.16	0.531	NA	1.75
Temperature	DEG C	NA	9.19	21.3	NA	9.36
Turbidity	NTU	NA	9	2	NA	4

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([LOGDATE] BETWEEN #05/01/03# AND #10/14/09#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

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

Location ID		MW-04	MW-05	MW-05	MW-05	MW-06
Sample ID		20091013MW-04V08N	MW05_52103	MW-05-121803	MW-05	MW06-6-10-03
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		10/13/09	05/21/03	12/18/03	07/23/04	06/10/03
Parameter	**Units**					
Volatiles						
Acetone	UG/L	NA	5.0 U	5.0 U	NA	10 U
Benzene	UG/L	NA	5.0 U	5.0 U	NA	10 U
Methyl ethyl ketone (2-Butanone)	UG/L	NA	R	R	NA	R
Chlorotrifluoroethene (Freon-1113)	UG/L	15	0 U	0 U	10 U	0 U
1,1-Dichloroethene	UG/L	NA	2.0 U	2.0 U	NA	4 U
cis-1,2-Dichloroethene	UG/L	NA	5.0 U	5.0 U	NA	10 U
trans-1,2-Dichloroethene	UG/L	NA	5.0 U	5.0 U	NA	10 U
Ethylbenzene	UG/L	NA	4.0 U	4.0 U	NA	8 U
2-Hexanone	UG/L	NA	5.0 U	5.0 U	NA	10 U
4-Methyl-2-Pentanone	UG/L	NA	5.0 U	5.0 U	NA	10 U
Tetrachloroethene	UG/L	NA	0.4 J	1.0 U	NA	2 U
Trichloroethene	UG/L	NA	1.0 U	1.0 U	NA	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	1 U	5.0 U	5.0 U	0.5 J	220
Vinyl Chloride	UG/L	NA	5.0 U	5.0 U	NA	10 U
Xylene (total)	UG/L	NA	5.0 U	5.0 U	NA	10 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	1 U	5.0 U	5.0 U	10 U	8.8 J
Dissolved Gases						
Methane	UG/L	3,100	27	6.7	47	49
Total Metals						
Iron	UG/L	NA	2,110	15,500	NA	14,400
Dissolved Metals						
Iron	UG/L	NA	1,670	39.7 U	NA	14,300

Flags assigned during chemistry validation are shown.

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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-05	MW-05	MW-05	MW-06
Sample ID		20091013MW-04V08N	MW05_52103	MW-05-121803	MW-05	MW06-6-10-03
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		10/13/09	05/21/03	12/18/03	07/23/04	06/10/03
Parameter	**Units**					
Miscellaneous Parameters						
Chloride	MG/L	NA	49.8	27.5	63.9	184
Nitrogen, Ammonia (As N)	MG/L	NA	0.25	0.1 U	NA	0.19
Nitrogen, Kjeldahl, Total	MG/L	NA	3.6	0.61	NA	0.72
Nitrogen, Nitrate	MG/L	NA	0.22	0.18	NA	0.33
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	20.8	50.1	61.4	42.3	32.0
Ferrous Iron (field)	MG/L	NA	1.7	0.07	NA	14.3
Ferric Iron (lab)	MG/L	NA	0.43	15.4	NA	0.12
Fluoride	MG/L	NA	0 U	0.12	0.103	0.46
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0.00	0.37	0 U	0.97	0.93
Oxidation Reduction Potential	mV	-122	26	121	46	-145
pH	S.U.	6.43	NA	NA	NA	NA
Specific Conductance	MS/CM	1.83	0.426	0.629	0.463	0.741
Temperature	DEG C	19.37	NA	NA	NA	NA
Turbidity	NTU	4.6	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		MW06-7_22_03	MW06-091803	MW-06_121703	MW-06	Field-Dup
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/22/03	09/18/03	12/17/03	07/23/04	05/31/05
Parameter	Units					Field Duplicate (1-1)
Volatiles						
Acetone	UG/L	5.0 U	5.0 U	10 U	NA	NA
Benzene	UG/L	5.0 U	5.0 U	10 U	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	R	R	R	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5.7 NJ	0 U	0 U	5 J	6.0 J
1,1-Dichloroethene	UG/L	1.2 J	2.0 U	4 U	NA	NA
cis-1,2-Dichloroethene	UG/L	1.7 J	1.4 J	1.3 J	NA	NA
trans-1,2-Dichloroethene	UG/L	5.0 U	5.0 U	10 U	NA	NA
Ethylbenzene	UG/L	4.0 U	4.0 U	8 U	NA	NA
2-Hexanone	UG/L	5.0 U	5.0 U	10 U	NA	NA
4-Methyl-2-Pentanone	UG/L	5.0 U	5.0 U	10 U	NA	NA
Tetrachloroethene	UG/L	1.0 U	1.0 U	2 U	NA	NA
Trichloroethene	UG/L	1.0 U	1.0 U	2 U	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	180	97	250	140 J	1.0 J
Vinyl Chloride	UG/L	1.2 J	5.0 U	10 U	NA	NA
Xylene (total)	UG/L	5.0 U	5.0 U	10 U	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	9.5	8.6	14	23	16
Dissolved Gases						
Methane	UG/L	81	99	78	40	3,600
Total Metals						
Iron	UG/L	10,500	8,370 J	7,690	NA	NA
Dissolved Metals						
Iron	UG/L	10,300	8,470 J	7,670	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		MW06-7_22_03	MW06-091803	MW-06_121703	MW-06	Field-Dup
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/22/03	09/18/03	12/17/03	07/23/04	05/31/05
Parameter	Units					Field Duplicate (1-1)
Miscellaneous Parameters						
Chloride	MG/L	82.3	74.6	84.0	60.5	NA
Nitrogen, Ammonia (As N)	MG/L	0.33	0.31	0.36	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	1.1	0.88	0.79	NA	NA
Nitrogen, Nitrate	MG/L	0.1 U	0.1 U	0.1 UJ	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	30.5	39.2	39.1	33.5	5.0 U
Ferrous Iron (field)	MG/L	8.6	6.0	8.7	NA	NA
Ferric Iron (lab)	MG/L	1.9	8.4	1.0 U	NA	NA
Fluoride	MG/L	0.56	0.37	0.42	0.467	NA
Oil & Grease	MG/L	NA	5 U	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	1.07	0 U	0 U	1.04	NA
Oxidation Reduction Potential	mV	-155	-143	-110	-64	NA
pH	S.U.	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	0.866	0.581	0.602	0.513	NA
Temperature	DEG C	NA	NA	NA	NA	NA
Turbidity	NTU	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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-06	MW-06V15FD	MW-06V15N	MW-06V15FD	MW-06V15N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/31/05	12/20/05	12/20/05	08/15/06	08/15/06
Parameter	Units		Field Duplicate (1-1)		Field Duplicate (1-1)	
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5.0 J	6.0 J	6.0 J	10 U	10 U
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	1.0 J	10 U	10 U	10 U	10 U
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	14	10 UJ	10 UJ	10 U	10 U
Dissolved Gases						
Methane	UG/L	3,300	6,700	5,600	1,600	1,700
Total Metals						
Iron	UG/L	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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-06	MW-06V15FD	MW-06V15N	MW-06V15FD	MW-06V15N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/31/05	12/20/05	12/20/05	08/15/06	08/15/06
Parameter	Units		Field Duplicate (1-1)		Field Duplicate (1-1)	
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	NA	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0 U	NA	0 U	NA	6.83
Oxidation Reduction Potential	mV	-140	NA	-140	NA	87
pH	S.U.	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	1.13	NA	1.29	NA	0.033
Temperature	DEG C	NA	NA	NA	NA	NA
Turbidity	NTU	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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		20070207MW-06V15FD	20070207MW-06V15N	20070731MW-06V15FD	20070731MW-06V15N	20080228MW06V15FD
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/07/07	02/07/07	07/31/07	07/31/07	02/28/08
Parameter	Units	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	100	100	18	21	8.0 J
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	3.0 J	3.0 J	10 U	10 U	10 UJ
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	8.0 J	8.0 J	0.5 J	0.6 J	10 U
Dissolved Gases						
Methane	UG/L	12,000	13,000	3,800	2,500	12,000
Total Metals						
Iron	UG/L	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
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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-06	MW-06	MW-06	MW-06	MW-06
Sample ID		20070207MW-06V15FD	20070207MW-06V15N	20070731MW-06V15FD	20070731MW-06V15N	20080228MW06V15FD
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/07/07	02/07/07	07/31/07	07/31/07	02/28/08
Parameter	Units	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	7.40	7.00	41.8	44.2	5 U
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	NA	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	NA	1.05	NA	0.31	NA
Oxidation Reduction Potential	mV	NA	-136	NA	-99.7	NA
pH	S.U.	NA	NA	NA	6.38	NA
Specific Conductance	MS/CM	NA	0.79	NA	1.050	NA
Temperature	DEG C	NA	NA	NA	NA	NA
Turbidity	NTU	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

B - Value between Instrument Detection Limit and Contract Required Detection Limit.
J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

Only Detected Results Reported.

Detection Limits shown are PQL

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([LOGDATE] BETWEEN #05/01/03# AND #10/14/09#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

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

Location ID		MW-06	MW-06	MW-06	MW-06	MW-07
Sample ID		20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N	MW07-6-10-03
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/28/08	08/12/08	02/19/09	10/13/09	06/10/03
Parameter	**Units**					
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	250 U
Benzene	UG/L	NA	NA	NA	NA	250 U
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	R
Chlorotrifluoroethene (Freon-1113)	UG/L	8.0 J	4.0 J	34	6.4	0 U
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	100 U
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	250 U
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	250 U
Ethylbenzene	UG/L	NA	NA	NA	NA	200 U
2-Hexanone	UG/L	NA	NA	NA	NA	250 U
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	250 U
Tetrachloroethene	UG/L	NA	NA	NA	NA	50 U
Trichloroethene	UG/L	NA	NA	NA	NA	50 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	10 U	10 U	2.0 J	1 U	5,400
Vinyl Chloride	UG/L	NA	NA	NA	NA	250 U
Xylene (total)	UG/L	NA	NA	NA	NA	250 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	10 U	10 U	35	1 U	68 J
Dissolved Gases						
Methane	UG/L	14,000	12,000	9,000	7,300	740
Total Metals						
Iron	UG/L	NA	NA	NA	NA	21,300
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	20,800

Flags assigned during chemistry validation are shown.

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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-06	MW-06	MW-06	MW-06	MW-07
Sample ID		20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N	MW07-6-10-03
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/28/08	08/12/08	02/19/09	10/13/09	06/10/03
Parameter	Units					
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	NA	NA	140
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	0.39
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	1.2
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	5 U	17.8	57.0 J	2.8 J	32.8
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	20.2
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	1
Fluoride	MG/L	NA	NA	NA	NA	0.33
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	2.61	0 U	0 U	0.00	0.9
Oxidation Reduction Potential	mV	-122.0	-117	-132	-139	-130
pH	S.U.	6.24	6.37	6.30	6.57	NA
Specific Conductance	MS/CM	1.21	1.47	0.84	1.79	0.93
Temperature	DEG C	12.2	17.0	13.23	17.80	NA
Turbidity	NTU	9	5	8	2.2	NA

Flags assigned during chemistry validation are shown.

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UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

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		MW07	MW07-91703	MW-07_121703	MW-07	MW-07
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/03	09/17/03	12/17/03	07/22/04	05/31/05
Parameter	**Units**					
Volatiles						
Acetone	UG/L	500 U	250 U	50 U	NA	NA
Benzene	UG/L	500 U	250 U	14	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	R	R	R	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	0 U	0 U	0 U	210	140
1,1-Dichloroethene	UG/L	68 J	100 U	20 U	NA	NA
cis-1,2-Dichloroethene	UG/L	500 U	250 U	50 U	NA	NA
trans-1,2-Dichloroethene	UG/L	500 U	250 U	50 U	NA	NA
Ethylbenzene	UG/L	400 U	200 U	49	NA	NA
2-Hexanone	UG/L	500 U	250 U	50 U	NA	NA
4-Methyl-2-Pentanone	UG/L	500 U	250 U	50 U	NA	NA
Tetrachloroethene	UG/L	100 U	50 U	10 U	NA	NA
Trichloroethene	UG/L	100 U	50 U	10 U	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	8,500	6,100	370	110 J	10 U
Vinyl Chloride	UG/L	500 U	250 U	50 U	NA	NA
Xylene (total)	UG/L	500 U	250 U	50 U	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	130 J	130 J	940	50	2.0 J
Dissolved Gases						
Methane	UG/L	420	1,200	1,700	2,500	5,900
Total Metals						
Iron	UG/L	21,200	32,700 J	38,900	NA	NA
Dissolved Metals						
Iron	UG/L	20,800	32,500 J	38,900	NA	NA

Flags assigned during chemistry validation are shown.

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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-07
Sample ID		MW07	MW07-91703	MW-07_121703	MW-07	MW-07
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/03	09/17/03	12/17/03	07/22/04	05/31/05
Parameter	**Units**					
Miscellaneous Parameters						
Chloride	MG/L	168	300 J	328	303	NA
Nitrogen, Ammonia (As N)	MG/L	0.6	0.66	0.99	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	1.8	2.1	2.8	NA	NA
Nitrogen, Nitrate	MG/L	NA	0.1 U	0.1 U	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	0.1 UJ	NA	NA	NA	NA
Sulfate	MG/L	31.0	23.6	5.0 U	5.0 U	5.0 U
Ferrous Iron (field)	MG/L	19.8	33.8	19.5	NA	NA
Ferric Iron (lab)	MG/L	1.4	14.1	19.4	NA	NA
Fluoride	MG/L	0.25	0.24	0.19	0.190	NA
Oil & Grease	MG/L	NA	5.44 U	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0.1	0 U	3.33	0.88	0 U
Oxidation Reduction Potential	mV	-108	-118	-115	-153	-152
pH	S.U.	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	1.11	1.44	1.94	1.69	1.75
Temperature	DEG C	NA	NA	NA	NA	NA
Turbidity	NTU	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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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-07
Sample ID		MW-07V15N	MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW07V15N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		12/20/05	08/14/06	02/07/07	07/31/07	02/28/08
Parameter	Units					
Volatiles						
Acetone	UG/L	NA	NA	NA	NA	NA
Benzene	UG/L	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	47	97	89	82	92
1,1-Dichloroethene	UG/L	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	10 U	10 U	10 U	6.0 J	10 UJ
Vinyl Chloride	UG/L	NA	NA	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	10 U	1.0 J	3.0 J	10	0.9 J
Dissolved Gases						
Methane	UG/L	9,700	6,900	6,200	4,100	7,100
Total Metals						
Iron	UG/L	NA	NA	NA	NA	NA
Dissolved Metals						
Iron	UG/L	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

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-07V15N	MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW07V15N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		12/20/05	08/14/06	02/07/07	07/31/07	02/28/08
Parameter	Units					
Miscellaneous Parameters						
Chloride	MG/L	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	5.0 U	19.3	5.0 U	6.1	5 U
Ferrous Iron (field)	MG/L	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA	NA	NA
Fluoride	MG/L	NA	NA	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	0 U	3.47	2.89	0.48	2.64
Oxidation Reduction Potential	mV	-169	-163	-121	-113.5	-137.0
pH	S.U.	NA	NA	NA	6.78	6.32
Specific Conductance	MS/CM	1.65	1.44	2.02	2.182	1.62
Temperature	DEG C	NA	NA	NA	NA	9.03
Turbidity	NTU	NA	NA	NA	NA	54

Flags assigned during chemistry validation are shown.

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([LOGDATE] BETWEEN #05/01/03# AND #10/14/09#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

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

Location ID		MW-07	MW-07	MW-07R
Sample ID		20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		08/12/08	02/18/09	10/13/09
Parameter	**Units**			
Volatiles				
Acetone	UG/L	NA	NA	NA
Benzene	UG/L	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	170	150	370 D
1,1-Dichloroethene	UG/L	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	NA	NA	NA
Ethylbenzene	UG/L	NA	NA	NA
2-Hexanone	UG/L	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	NA	NA	NA
Tetrachloroethene	UG/L	NA	NA	NA
Trichloroethene	UG/L	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	3.0 J	46	580 D
Vinyl Chloride	UG/L	NA	NA	NA
Xylene (total)	UG/L	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	16	20	76
Dissolved Gases				
Methane	UG/L	5,600	11,000	5,900
Total Metals				
Iron	UG/L	NA	NA	NA
Dissolved Metals				
Iron	UG/L	NA	NA	NA

Flags assigned during chemistry validation are shown.

B - Value between Instrument Detection Limit and Contract Required Detection Limit.
J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

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-07R
Sample ID		20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		08/12/08	02/18/09	10/13/09
Parameter	**Units**			
Miscellaneous Parameters				
Chloride	MG/L	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	NA	NA	NA
Nitrogen, Nitrate	MG/L	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA
Sulfate	MG/L	5.6	5 UJ	6.3
Ferrous Iron (field)	MG/L	NA	NA	NA
Ferric Iron (lab)	MG/L	NA	NA	NA
Fluoride	MG/L	NA	NA	NA
Oil & Grease	MG/L	NA	NA	NA
Field Parameter				
Dissolved Oxygen	MG/L	0 U	0 U	0.00
Oxidation Reduction Potential	mV	-167	-154	-139
pH	S.U.	6.48	6.18	6.45
Specific Conductance	MS/CM	1.99	2.01	2.74
Temperature	DEG C	17.3	12.11	18.36
Turbidity	NTU	25	21	1.1

Flags assigned during chemistry validation are shown.

B - Value between Instrument Detection Limit and Contract Required Detection Limit.
J - Analyte is reported below the PQL at an estimated concentration.
UJ - Not detected above the estimated quantitation limit
U - Non-Detect NA - Not Analyzed R - Rejected

Only Detected Results Reported.

Detection Limits shown are PQL

Table 4

Comparison of February 2009 to October 2009 Data

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

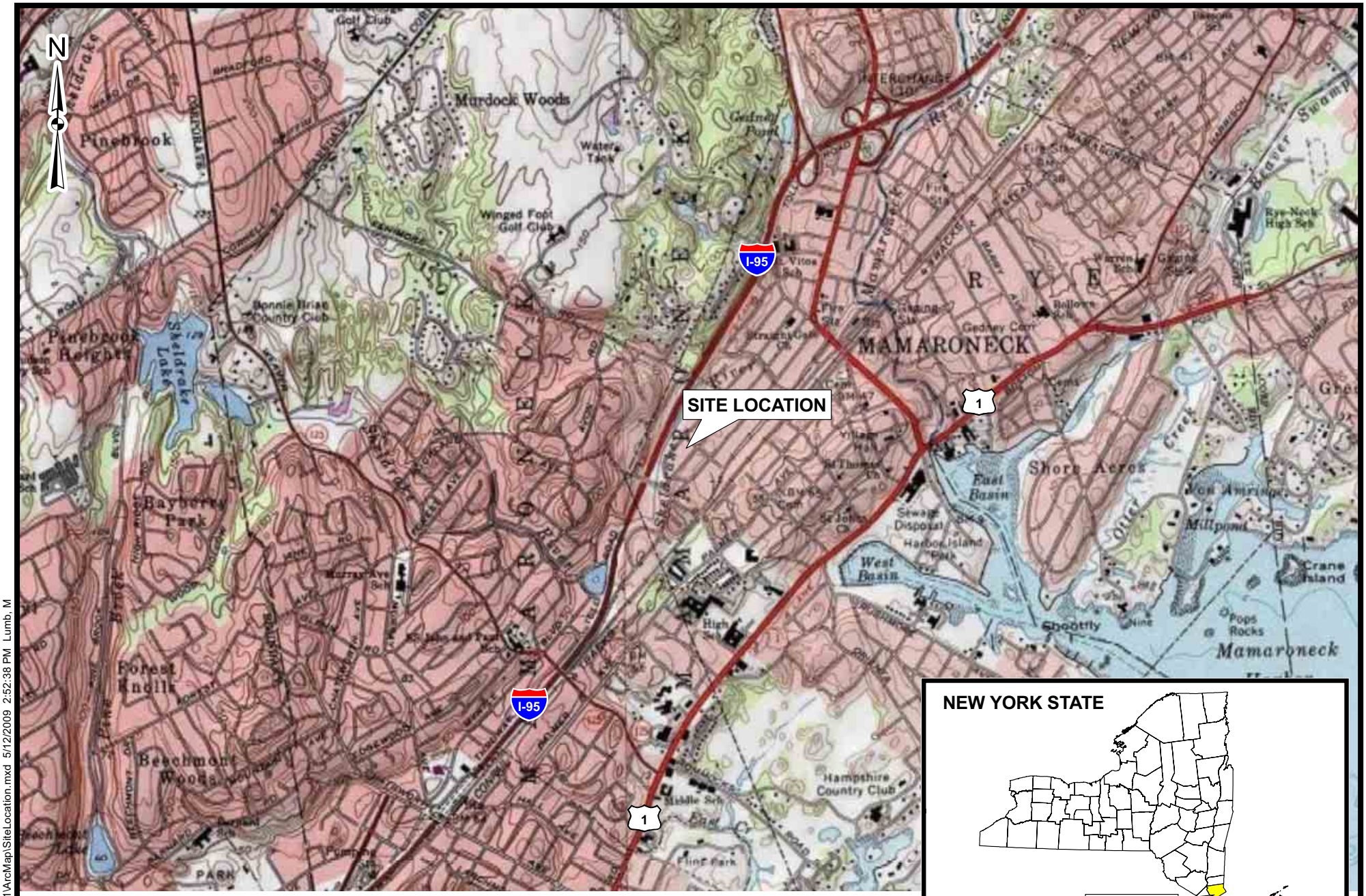
Legend

↓ 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

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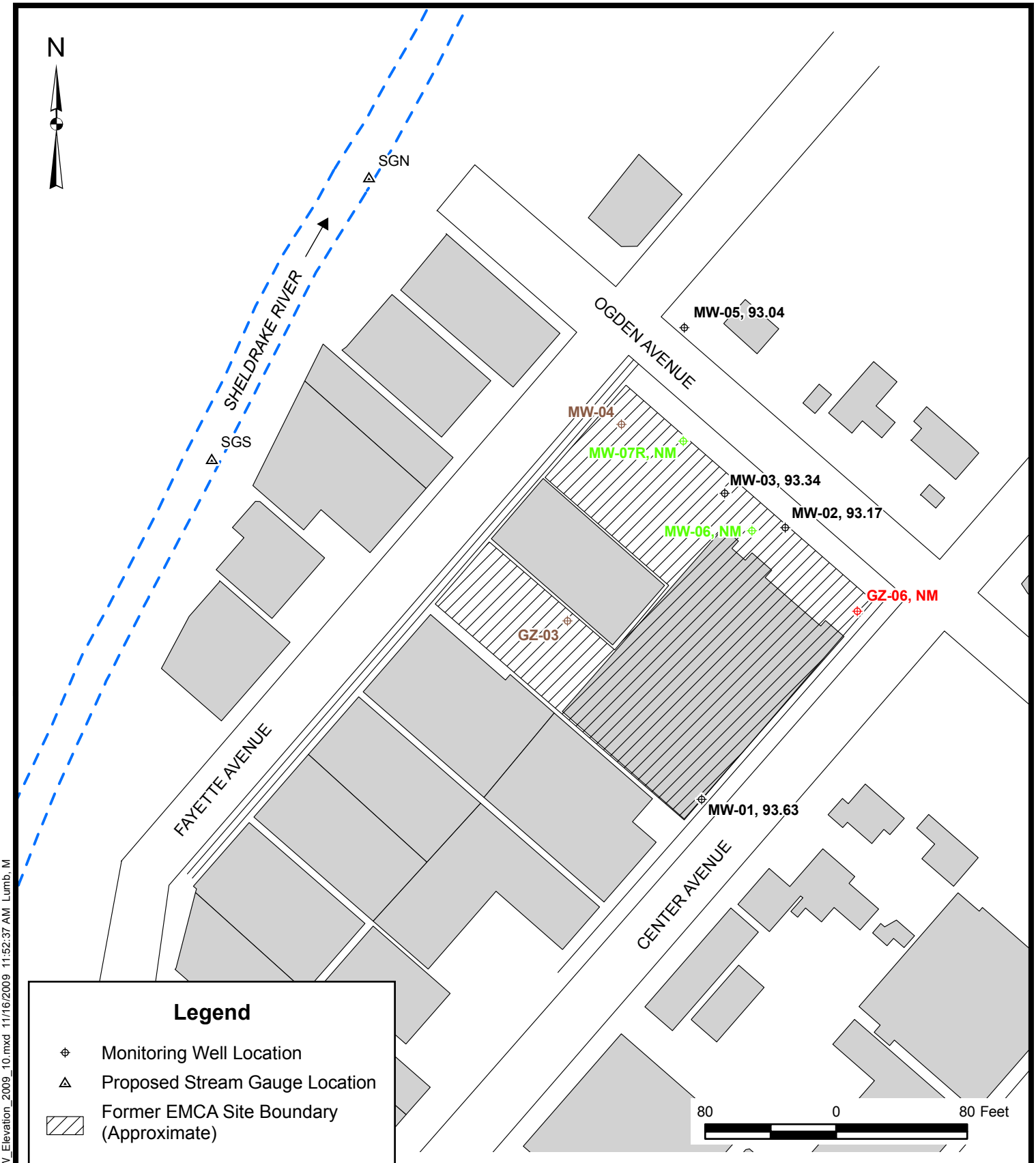

NOTES:
(1) NM - Not Measured because injected substrate was present in the well
(2) NM - Not Measured, No Reference Point Available
(3) Damaged - Not Included in Evaluation of Groundwater Elevation Contours
(4) Well MW-07 was replaced by well MW-07R on September 3, 2009

URS

GROUNDWATER ELEVATION MAP (OCTOBER 2009)

FIGURE 2

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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
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	11	ND	ND	ND	ND	0.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	ND	ND	1.0 J	ND	0.7 J	0.6 J	ND	1.0 J	ND	1.0J	15

MW-05	7/00	7/01	5/03	12/03	7/04
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	7	ND	ND	ND	0.5 J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	ND	ND
Chlorotrifluoroethene (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
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	17000	11000	13000	5800	68	26	150	4900 J	2 J	ND	ND	10	2.0 J	0.5 J	ND	5.0J	0.9J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	78 J	43	180	170	3900	14	1.0 J	0.8 J	48	7.0 J	4.0 J	1.0 J	40	2.1
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	7	6.2	ND	68 J	83	2.0 J	51	39	54	13 J	10	38	20

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
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	5400	8500	6100	370	110 J	ND	ND	ND	ND	6.0 J	ND	3.0 J	46	580
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	68 J	130 J	130 J	940	50	2.0 J	ND	1.0 J	3.0 J	10	0.9 J	16	20	76
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	210	140	47	97	89	82	92	170	150	370

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
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	740	1700	2400	880	1000	54	12	21 J	1200	110	890	100	800	290	830 J	700	1300	1200
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	40	41 J	7.8	3.3 J	4 J	86 J	15	110	10	95	40	72	38 J	34J	51
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	ND	ND	ND	14	120	18	200	21	84	61	120 J	160	81J	300

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
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	220	180	97	250	140 J	1.0 J	ND	ND	3 J	ND	ND	ND	2.0J	ND
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	8.8 J	9.5	8.6	14	23	16	ND	ND	8 J	0.6 J	ND	ND	35	ND
Chlorotrifluoroethene (Freon-1113)	ND	5.7	ND	ND	5 J	6.0 J	6.0 J	ND	100	21	8.0 J	4.0 J	34	6.4

GZ-03	8/07
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ND
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND
Chlorotrifluoroethene (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	10/09
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1274	200	49	900	250	100	230	74	ND	100 J	9 J	ND	74	2.0 J	14	13	ND	ND	ND	NS
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	ND	ND	20	41	26	0.7 J	36	4.0 J	2.0 J	23	2.0 J	4.0 J	10	ND	ND	ND	NS
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	ND	ND	ND	5.4	ND	24	15	ND	13	2.0 J	1.0 J	2.0 J	ND	ND	ND	NS

MW-01	8/07
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ND
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND
Chlorotrifluoroethene (Freon-1113)	ND

SHELDRAKE RIVER

FAYETTE AVENUE

OGDEN AVENUE

CENTER AVENUE

Legend

- Existing Monitoring Well Location
- Generalized Groundwater Flow Direction
- Concentration Exceeds NYSDEC TOGS (1.1.1) Class GA Standards

All Analytical Results are Reported in UG/L

NOTES:

Well, MW-07, was replaced by well, MW-07R, on September 3, 2009.
ND - Not Detected
NS - Not Sampled because injected substrate was present in the well.

- 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

80 0 80 Feet

FORMER EMCA SITE
SUMMARY OF FREON DETECTIONS IN GROUNDWATER

URS

FIGURE 3

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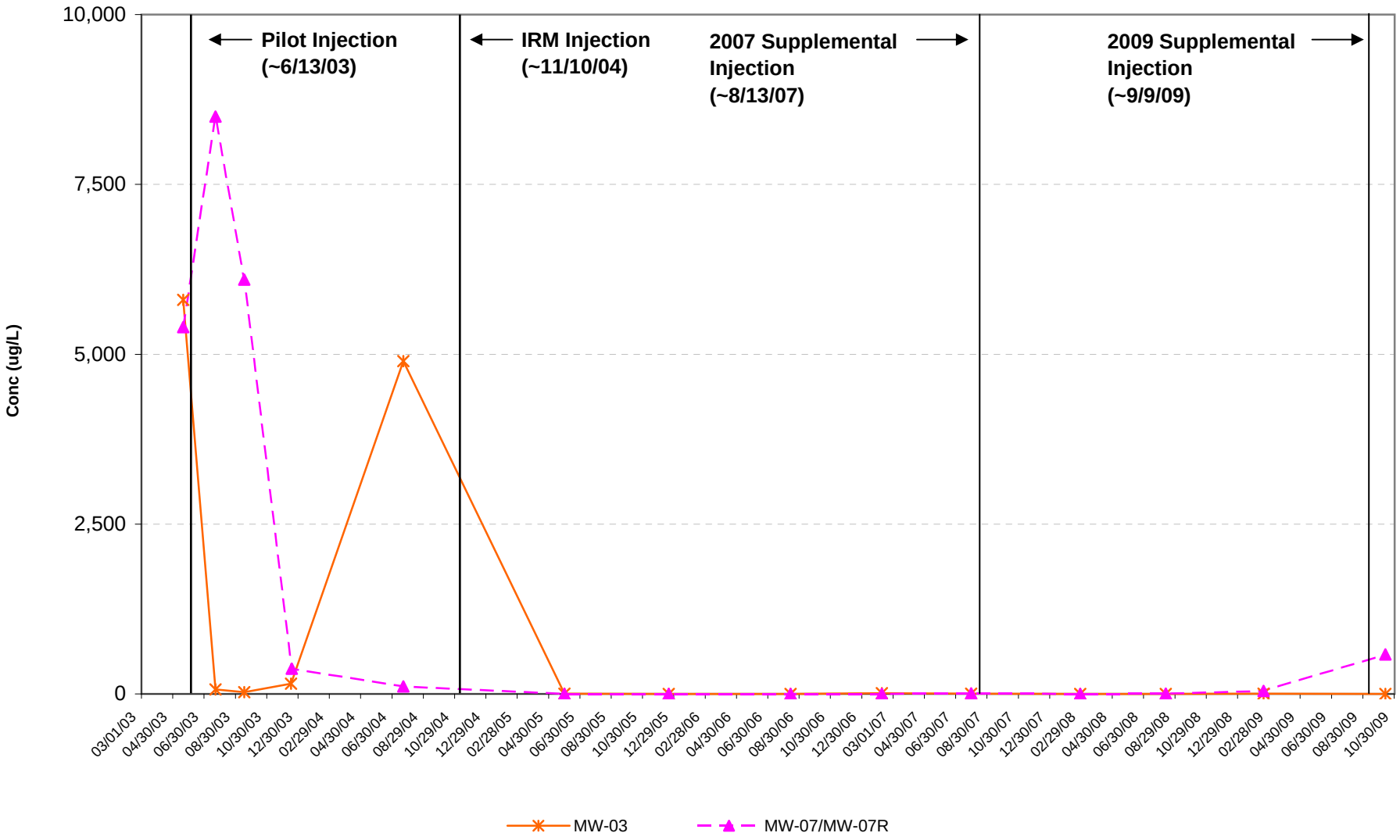
FIGURE 4
FORMER EMCA SITE
Freon 113 Concentrations, MW-03 and MW-07/07R



N:\11172730.00000\WORD\DRAFT\Oct 2009 GW SAR\Figures\GW Data Plots_Time Scaled Long_October 2009 - Figure 4

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

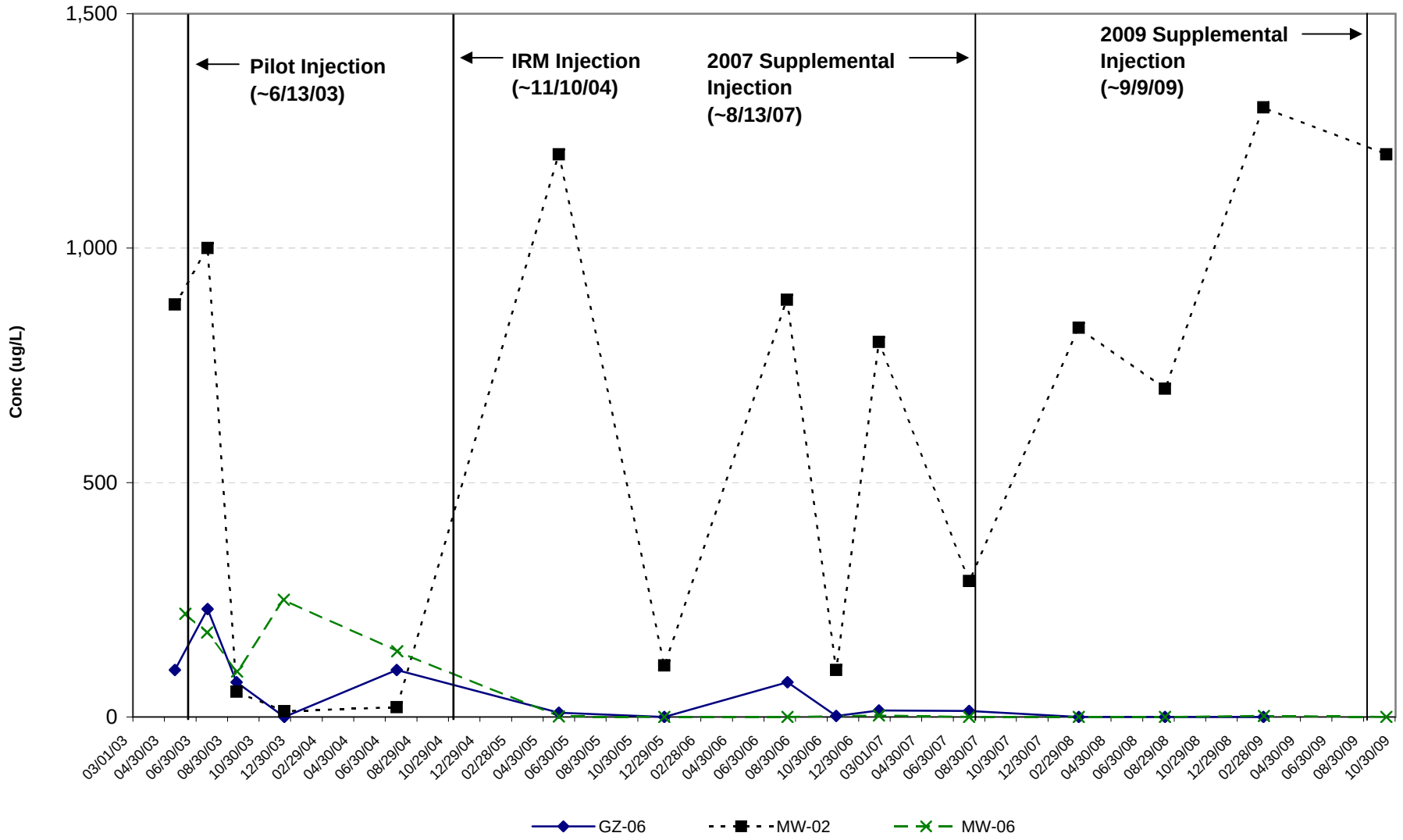


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FIGURE 6
FORMER EMCA SITE

Freon 123a Concentrations

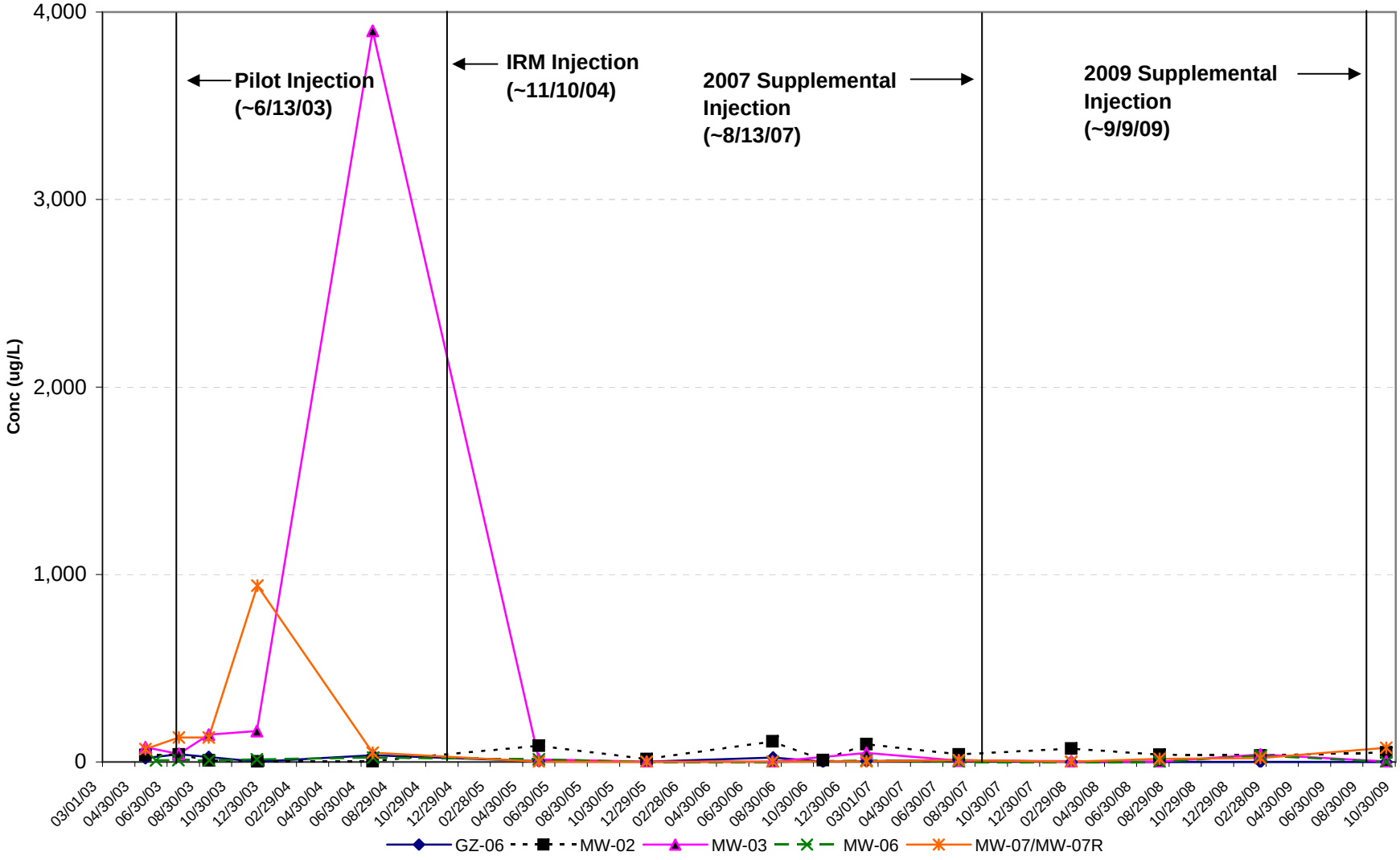

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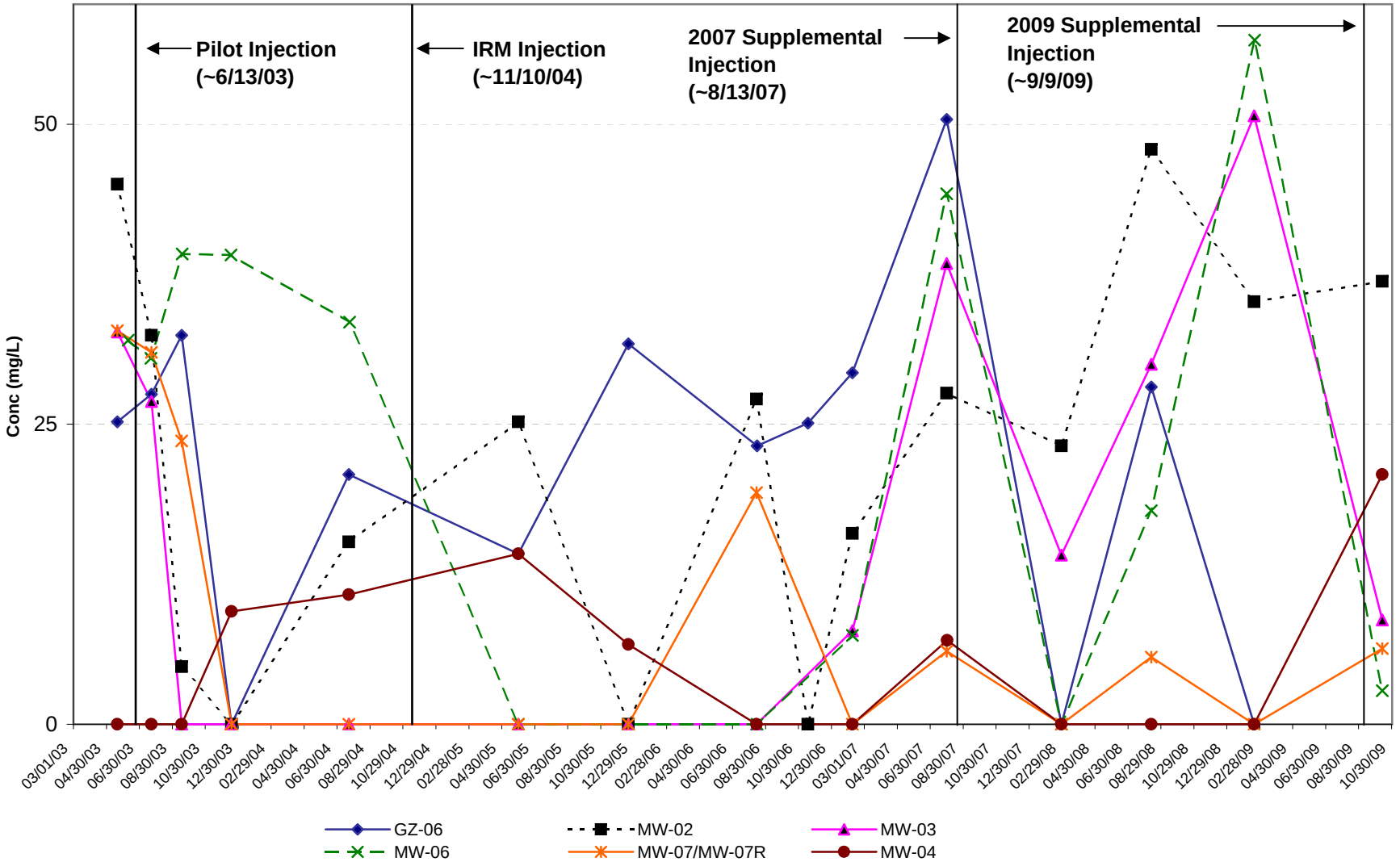
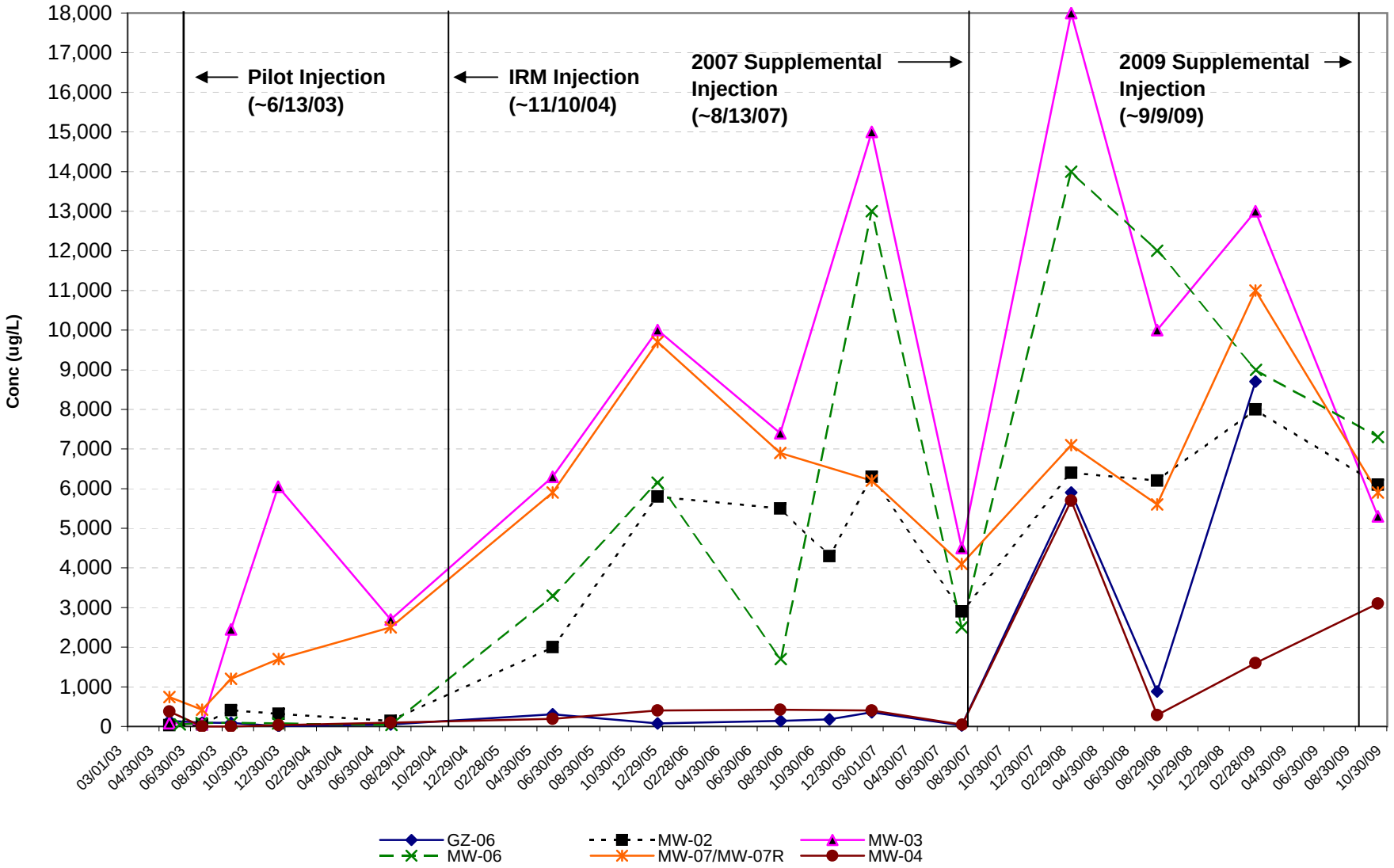
FIGURE 7
FORMER EMCA SITE
Sulfate Concentrations



N:\11172730.00000\WORD\DRAFT\Oct 2009 GW SAR\Figures\GW Data Plots_Time Scaled Long_October 2009 - Figure 7

FIGURE 8
FORMER EMCA SITE
Methane Concentrations



N:\11172730.00000\WORD\DRAFT\Oct 2009 GW SAR\Figures\GW Data Plots_Time Scaled Long_October 2009 - Figure 8

FIGURE 9
FORMER EMCA SITE
Dissolved Oxygen Concentrations

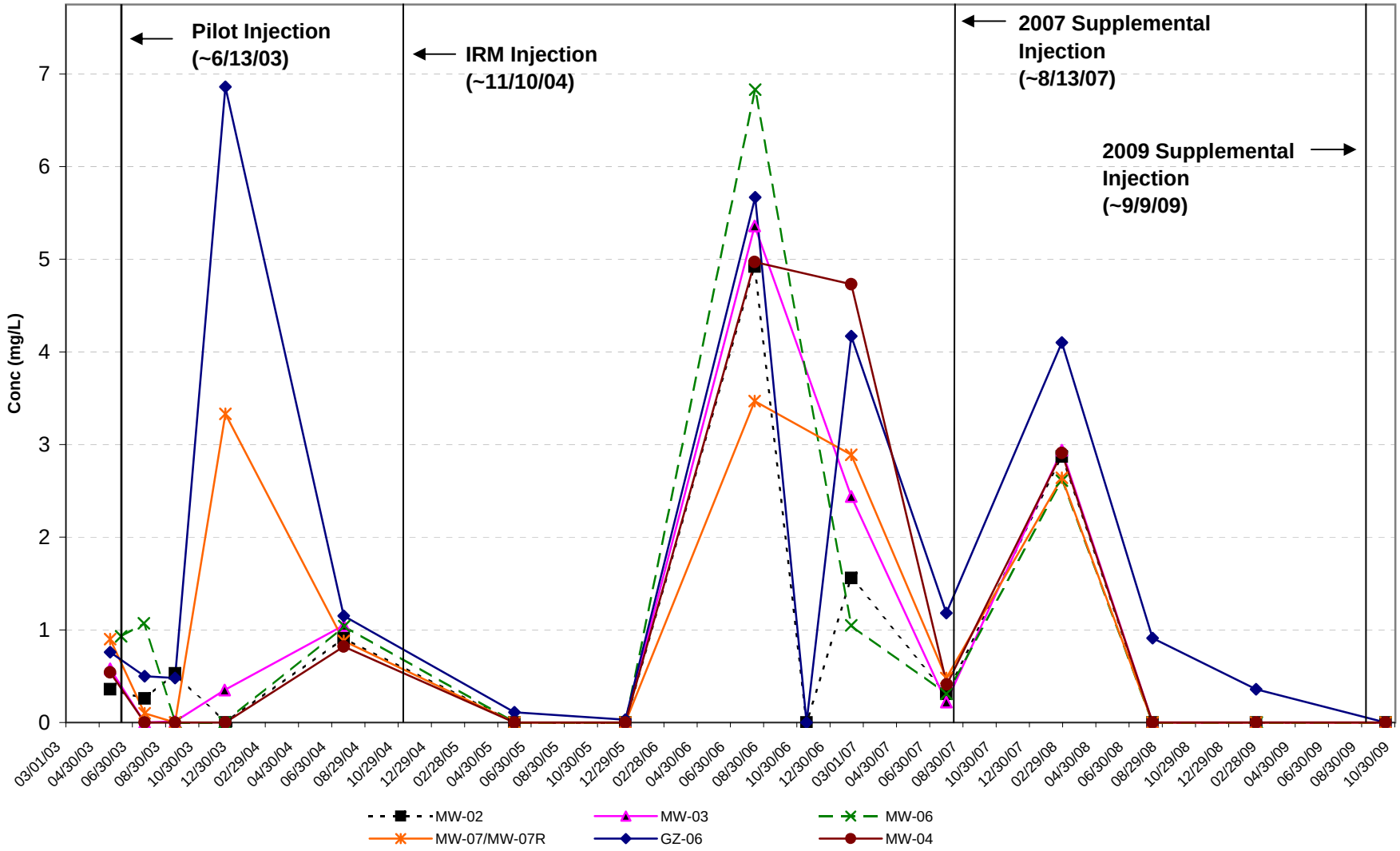


FIGURE 10
FORMER EMCA SITE
Oxidation Reduction Potential

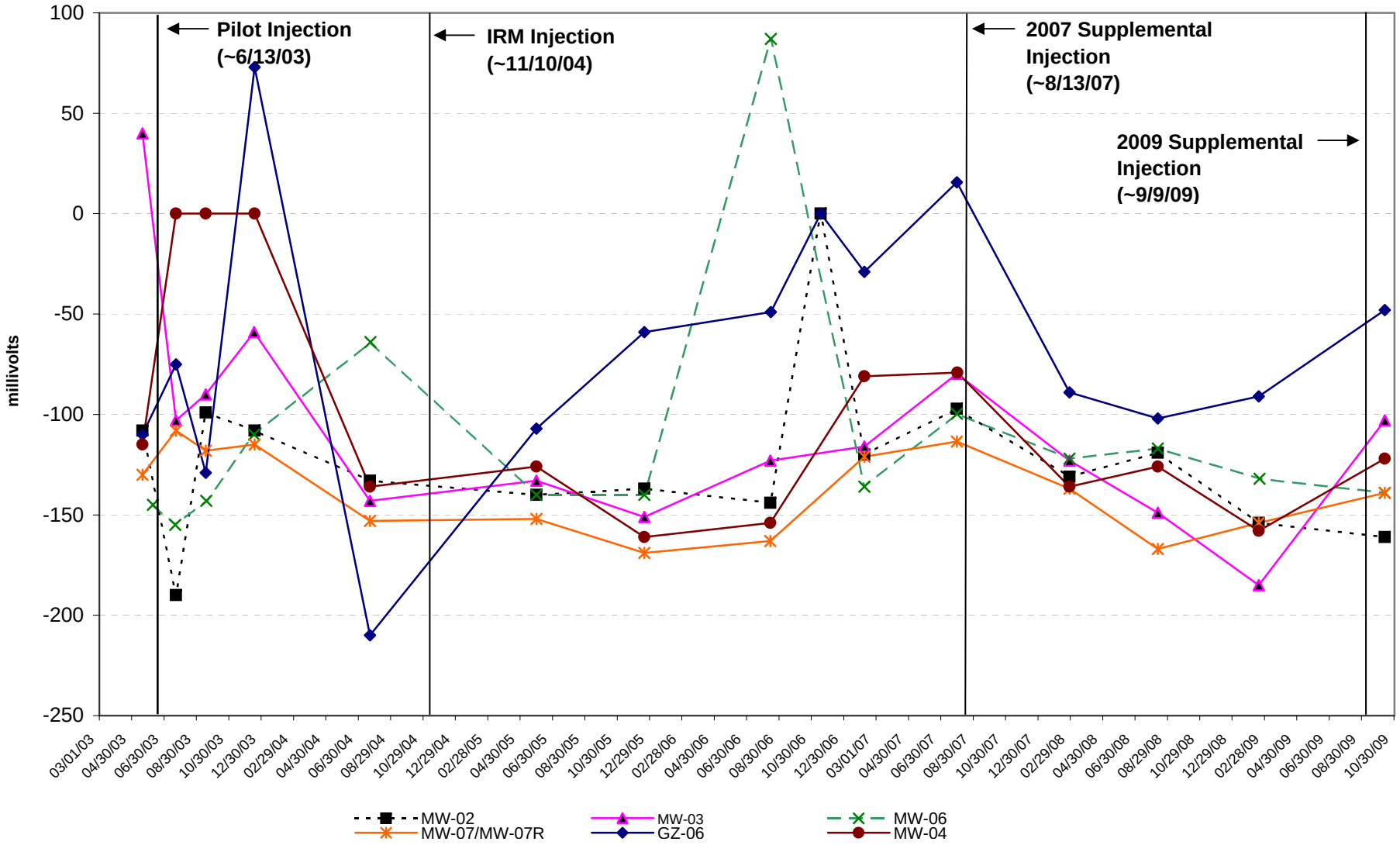


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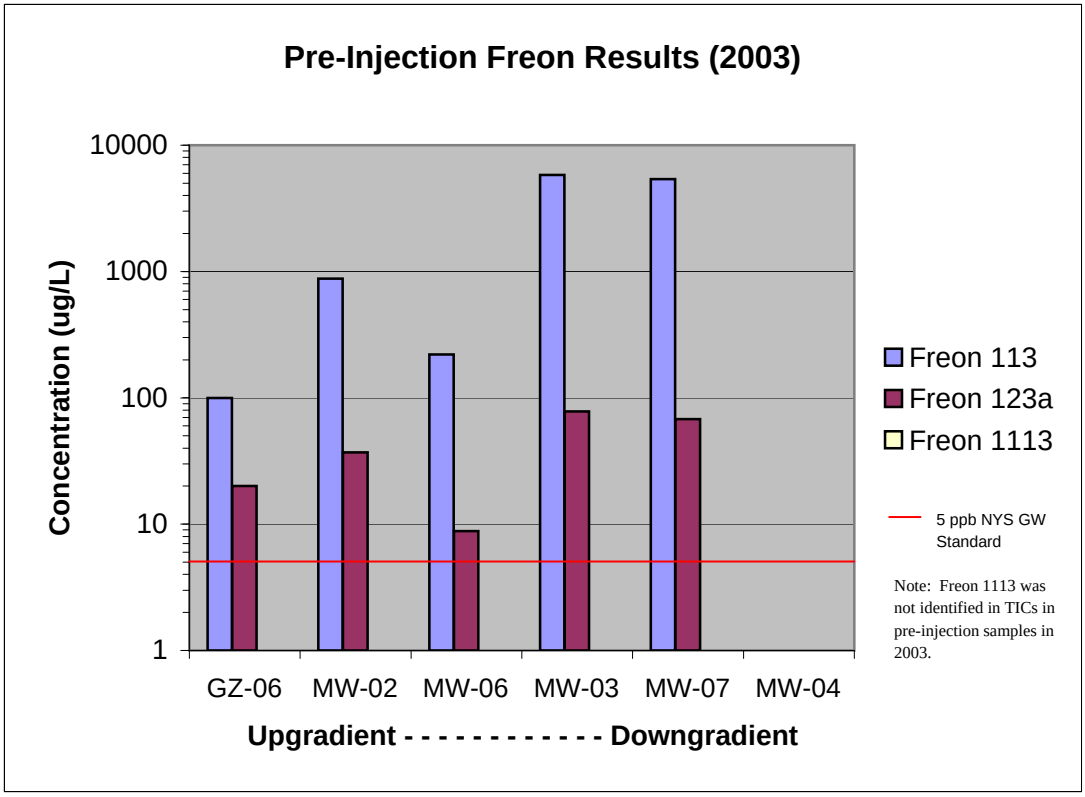
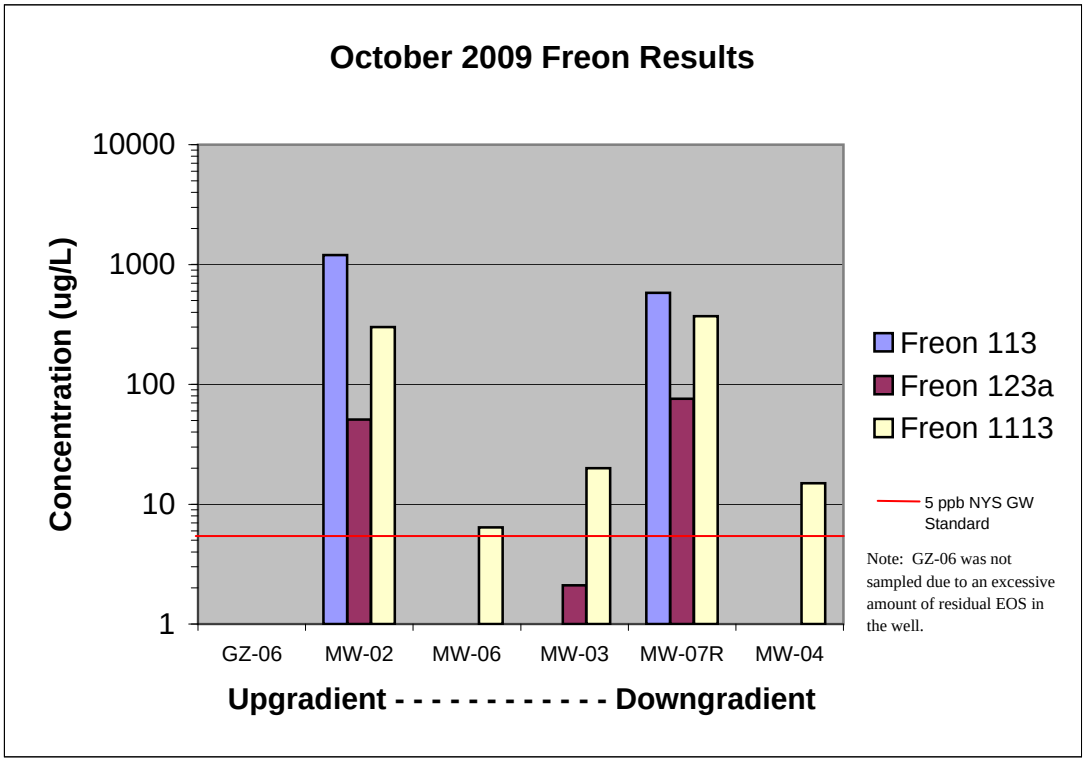
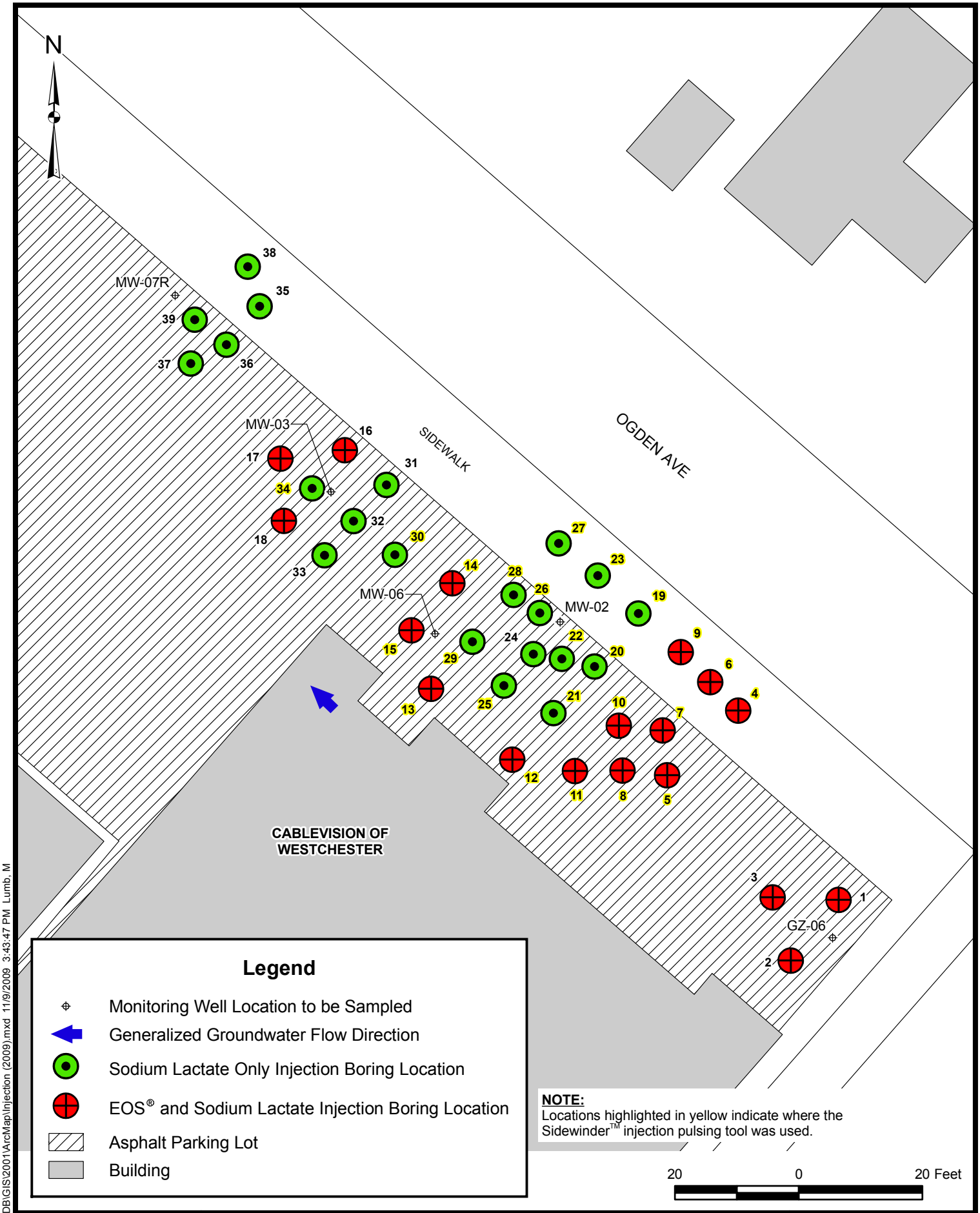
FIGURE 11
FORMER EMCA SITE - FREON CONCENTRATIONS
PRE-INJECTION AND CURRENT RESULTS







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URS

FORMER EMCA SITE
COMPLETED 2009 INJECTION LOCATIONS

FIGURE 12

APPENDIX A

LOW FLOW GROUNDWATER PURGING/SAMPLING LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-02

Date: 10/13/2009 Sampling Personnel: Tim Ifkovich Company: URS Corporation

Purging/Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: HDPE and Silicone Pump/Tubing Inlet Location: Midpoint of Saturated Screen

Measuring Point: Below Top of Riser Initial Depth to Water: 6.01 Depth to Well Bottom: 11.86 Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 0.90 Estimated Purge Volume (liters): 10.8

Sample ID: 20091013MW-02V10N Sample Time: 0950 QA/QC: --

Sample Parameters: Freon 113, 1113, 123a, Methane and Sulfate

Notes: very slight sheen, very few small balck flecks

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
0905	6.14	18.51	2.40	0.00	36.2	-154	240	6.01
0910	6.13	18.63	2.31	0.00	36.6	-154	240	6.01
0915	6.12	18.70	2.24	0.00	31.9	-155	240	6.01
0920	6.11	18.76	2.19	0.00	18.4	-156	240	6.01
0925	6.10	18.86	2.15	0.00	13.6	-156	240	6.01
0930	6.11	18.87	2.13	0.00	13.9	-156	240	6.01
0935	6.11	18.95	2.12	0.00	13.7	-157	240	6.01
0940	6.13	18.95	2.11	0.00	12.3	-158	240	6.01
0945	6.14	18.92	2.10	0.00	12.0	-159	240	6.01
0950	6.16	18.88	2.09	0.00	9.4	-161	240	6.01
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 ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-03

Date: 10/13/2009 Sampling Personnel: Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Low Flow Peristaltic Pump (GeoPump 2)			Tubing Type:	HDPE and Silicone		Pump/Tubing Inlet Location:	Midpoint of Saturated Screen	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.01	Depth to Well Bottom:	14.35	Well Diameter:	1"	Screen Length:	10'
Casing Type:	PVC			Volume in 1 Well Casing (liters):	1.28		Estimated Purge Volume (liters):	16.3	

Sample ID: 20091013MW-03V10N Sample Time: 1353 QA/QC: Field Duplicate

Sample Parameters: Freon 113, 1113, 123a, Methane and Sulfate

Notes: clear, very small black flecks

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1248	5.86	19.02	1.69	0.00	72.3	-84	250	6.01
1253	5.79	18.79	1.69	0.58	42.8	-83	250	6.01
1258	5.77	18.74	1.75	1.24	19.0	-84	250	6.01
1303	5.76	18.71	1.80	1.38	18.0	-86	250	6.01
1308	5.78	18.69	1.81	1.16	11.2	-89	250	6.01
1313	5.78	18.65	1.79	0.76	8.6	-91	250	6.01
1318	5.80	18.65	1.84	0.51	8.4	-94	250	6.01
1323	5.80	18.66	1.80	0.39	8.4	-95	250	6.01
1328	5.82	18.66	1.83	0.25	10.9	-97	250	6.01
1333	5.83	18.64	1.85	0.14	8.8	-99	250	6.01
1338	5.84	18.63	1.82	0.06	11.5	-100	250	6.01
1343	5.85	18.63	1.85	0.02	9.2	-102	250	6.01
1348	5.86	18.66	1.83	0.00	8.9	-103	250	6.01
1353	5.87	18.68	1.85	0.00	8.7	-103	250	6.01
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 ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-04

Date: 10/13/2009 Sampling Personnel: Tim Ifkovich Company: URS Corporation

Purging/Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: HDPE and Silicone Pump/Tubing Inlet Location: Midpoint of Saturated Screen

Measuring Point: Below Top of Riser Initial Depth to Water: 5.93 Depth to Well Bottom: 11.84 Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 0.91 Estimated Purge Volume (liters): 6.65

Sample ID: 20091013MW-04V08N Sample Time: 1104 QA/QC: --

Sample Parameters: Freon 113, 1113, 123a, Methane and Sulfate

Notes: clear

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1029	6.25	19.07	1.90	0.00	122.0	-103	190	5.93
1034	6.29	19.03	1.90	0.00	62.8	-107	190	5.93
1039	6.34	19.01	1.90	0.00	29.8	-111	190	5.93
1044	6.35	19.06	1.90	0.00	16.0	-113	190	5.93
1049	6.38	19.07	1.89	0.00	9.6	-117	190	5.93
1054	6.41	19.21	1.88	0.00	7.2	-119	190	5.93
1059	6.42	19.32	1.87	0.00	5.9	-121	190	5.93
1104	6.43	19.37	1.83	0.00	4.6	-122	190	5.93
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 ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-06

Date: 10/13/2009 Sampling Personnel: Tim Ifkovich Company: URS Corporation

Purging/Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: HDPE and Silicone Pump/Tubing Inlet Location: Midpoint of Saturated Screen

Measuring Point: Below Top of Riser Initial Depth to Water: 6.15 Depth to Well Bottom: 18.69 Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 1.93 Estimated Purge Volume (liters): 9.63

Sample ID: 20091013MW-06V13N Sample Time: 1500 QA/QC: MS/MSD

Sample Parameters: Freon 113, 1113, 123a, Methane and Sulfate

Notes: slight sheen

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1425	6.45	17.97	1.66	0.00	12.3	-131	275	6.15
1430	6.47	17.88	1.66	0.00	3.9	-132	275	6.15
1435	6.51	17.86	1.67	0.00	3.3	-132	275	6.15
1440	6.53	17.83	1.69	0.00	5.4	-135	275	6.15
1445	6.54	17.82	1.75	0.00	8.0	-136	275	6.15
1450	6.54	17.81	1.76	0.00	2.3	-137	275	6.15
1455	6.56	17.78	1.79	0.00	1.7	-139	275	6.15
1500	6.57	17.80	1.79	0.00	2.2	-139	275	6.15
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 ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-07R

Date: 10/13/2009 Sampling Personnel: Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Low Flow Peristaltic Pump (GeoPump 2)			Tubing Type:	HDPE and Silicone		Pump/Tubing Inlet Location:	Midpoint of Saturated Screen	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.16	Depth to Well Bottom:	20.02	Well Diameter:	1"	Screen Length:	10'
Casing Type:	PVC			Volume in 1 Well Casing (liters):	2.13		Estimated Purge Volume (liters):	7.8	

Sample ID: 20091013MW-07V15N Sample Time: 1157 QA/QC: --

Sample Parameters: Freon 113, 1113, 123a, Methane and Sulfate

Notes: clear, very slight sheen
Well MW-07R replaced the original MW-07 that was destroyed when the parking lot was repaved.

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1127	6.38	18.70	2.56	0.00	15.6	-112	260	6.16
1132	6.38	18.60	2.70	0.00	5.8	-117	260	6.16
1137	6.39	18.55	2.74	0.00	4.0	-124	260	6.16
1142	6.42	18.55	2.74	0.00	2.1	-131	260	6.16
1147	6.43	18.51	2.74	0.00	1.8	-134	260	6.16
1152	6.44	18.44	2.74	0.00	1.1	-137	260	6.16
1157	6.45	18.36	2.74	0.00	1.1	-139	260	6.16
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 ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: GZ-06

Date: 10/13/2009 Sampling Personnel: Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Low Flow Peristaltic Pump (GeoPump 2)			Tubing Type:	HDPE and Silicone		Pump/Tubing Inlet Location:	Midpoint of Saturated Screen	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	Unable to obtain a water level	Depth to Well Bottom:	15.40	Well Diameter:	1"	Screen Length:	10'
Casing Type:	PVC			Volume in 1 Well Casing (liters):	--		Estimated Purge Volume (liters):	--	

Sample ID: -- Sample Time: -- QA/QC: --

Notes: Well GZ-06 was not sampled because injected substrate was present in the well.
A water level was not determined bescause residual injected substrate in the well interfered with the function of the water level indicator.

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1557	5.51	17.58	8.60	0.00	1477	-19	105	--
1602	5.53	17.44	8.31	0.00	2136	-26	105	--
Cleaned out Horiba and Tubing of accumulated EOS.								
1622	5.54	17.00	8.29	0.00	962	-25	90	--
1627	5.58	16.97	8.56	0.00	1167	-41	90	--
1632	5.59	16.99	8.52	0.00	1142	-48	90	--
Cleaned out Horiba of accumulated EOS and replaced Tubing.								
Sampling terminated upon discussing situation with Bruce Przybyl (URS).								
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 ($vol_{cyl} = \pi r^2 h$)

APPENDIX B

DATA USABILITY SUMMARY REPORT

APPENDIX B

DATA USABILITY SUMMARY REPORT
OCTOBER 2009 SAMPLING EVENT

FORMER EMCA SITE
SITE NO. 360025
MAMARONECK, NEW YORK

Analyses Performed by:

TESTAMERICA ANALYTICAL TESTING CORPORATION
777 New Durham Road
Edison, New Jersey 08817

Prepared for:

Rohm and 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

NOVEMBER 2009

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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 *Draft DER-10, Technical Guidance for Site Investigation and Remediation, Appendix 2B - Guidance for the Development of Data Usability Summary Reports*, December 2002. 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 by URS personnel on October 13, 2009, as summarized on Table B-1. The samples were collected as part of the semi-annual groundwater monitoring event at the Former EMCA Site located in Mamaroneck, New York.

II. ANALYTICAL METHODOLOGIES

The groundwater samples were analyzed by TestAmerica Analytical Testing Corporation, located in Edison, New Jersey, for the following parameters:

Parameter	Method No.	References
Volatile Organic Compounds (VOCs)*	8260B	1
Methane	RSK-175/3810	2,3
Sulfate	375.4	1

Notes:

* - VOCs include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113), 1,2-dichloro-1,1,2-trifluoroethane (Freon-123A), and chlorotrifluoroethene (Freon-1113).

References:

1 NYSDEC Analytical Services Protocol, June 2000.

2 USEPA, R.S. Kerr Environmental Research Laboratory, March 15, 1989.

3 USEPA, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Final Update III, June 1997.

III. DATA VALIDATION

A limited data validation was performed following the guidelines in USEPA Region II *Contract Laboratory Program Organics Data Review and Preliminary Review for Statement of Work OLM04.3*, SOP No. HW-6, Revision 14, September 2006 and the intent of USEPA Region II *Evaluation of Metals Data for the Contract Laboratory Program, based on SOW – ILM05.3*, SOP No. HW-2, Revision 13, September 2006. The validated analytical results are presented in Tables B-2 and B-3. Copies of the validated laboratory results (i.e., Form 1's) are presented in Attachment A. Copies of the case narratives, chain-of-custodies, and documentation supporting the qualification of data are presented in Attachment B. Only problems affecting data usability are discussed in this report.

IV. DATA DELIVERABLE COMPLETENESS

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

V. SAMPLE PRESERVATION/RECEIPT/HOLDING TIMES

All samples were received by the laboratory intact, properly preserved, and under proper chain-of-custody, except that the sample ID for 20091013MW-07V15N was revised to 20091013MW-07RV15N because the actual monitoring well location represents a replacement well.

VI. NONCONFORMANCES

There were no analytical nonconformances noted during the limited data review.

VII. SUMMARY

All sample analyses were found to be compliant with the method and validation criteria, and the data are considered usable as reported. URS does not recommend the re-collection of any samples at this time.

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 - OCTOBER 2009
FORMER EMCA SITE, MAMARONECK, NEW YORK

SDG Nos.	Sample ID	Matrix	Date of Collection	VOCs*	Methane	Sulfate	Comments
460-6783	20091013MW-02V10N	GW	10/13/09	X	X	X	---
	20091013MW-03V10N	GW		X	X	X	---
	20091013MW-03V10FD	GW		X	X	X	Field Duplicate of MW-03
	20091013MW-04V08N	GW		X	X	X	---
	20091013MW-06V13N	GW		X	X	X	MS/MSD
	20091013MW-07RV15N	GW		X	X	X	---
	20091013TB	Water		X	X	---	Trip Blank

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

X - Parameter requested.
--- - Parameter not requested/analyzed or no comment.
GW - Groundwater
MS/MSD - Matrix Spike/Matrix Spike Duplicate

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE

Location ID			MW-02	MW-03	MW-03	MW-04	MW-06
Sample ID			20091013MW-02V10N	20091013MW-03V10ED	20091013MW-03V10N	20091013MW-04V08N	20091013MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/13/09	10/13/09	10/13/09	10/13/09	10/13/09
Parameter	Units	Criteria*		Field Duplicate (1-1)			
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	300	20	19	15	6.4
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1,200 D	0.92 J	0.82 J	1 U	1 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	51	2.1	1.9	1 U	1 U
Dissolved Gases							
Methane	UG/L	-	6,100	5,300	4,800	3,100	7,300
Miscellaneous Parameters							
Sulfate	MG/L	250	36.9	4.6 J	8.7	20.8	2.8 J
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	NA	0.00	0.00	0.00
Oxidation Reduction Potential	mV	-	-161	NA	-103	-122	-139
pH	S.U.	-	6.16	NA	5.87	6.43	6.57
Specific Conductance	MS/CM	-	2.09	NA	1.85	1.83	1.79
Temperature	DEG C	-	18.88	NA	18.68	19.37	17.80
Turbidity	NTU	-	9.4	NA	8.7	4.6	2.2

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect

J - Analyte is reported below the PQL at an estimated concentration.

D - Result reported from secondary dilution.

MADE BY: _PRF_11/03/09_ CHKD BY: _AMK_11/03/09_

Detection Limits shown are PQL

N:\11172730.00000\DB\PROGRAM\EDMS.mde
Printed: 11/5/2009 11:04:38 AM
[LOGDATE] = #10/13/2009# AND [MATRIX] = 'WG'

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE

Location ID			MW-07R
Sample ID			20091013MW-07RV1SN
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			10/13/09
Parameter	**Units**	**Criteria***	
Volatiles			
Chlorotrifluoroethene (Freon-1113)	UG/L	5	370 D
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	580 D
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	76
Dissolved Gases			
Methane	UG/L	-	5,900
Miscellaneous Parameters			
Sulfate	MG/L	250	6.3
Field Parameter			
Dissolved Oxygen	MG/L	-	0.00
Oxidation Reduction Potential	mV	-	-139
pH	S.U.	-	6.45
Specific Conductance	MS/CM	-	2.74
Temperature	DEG C	-	18.36
Turbidity	NTU	-	1.1

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

Flags assigned during chemistry validation are shown.

(oval) Concentration Exceeds Criteria

U - Non-Detect

J - Analyte is reported below the PQL at an estimated concentration.

D - Result reported from secondary dilution.

MADE BY: _PRF_11/03/09_ CHKD BY: _AMK_11/03/09_

Detection Limits shown are PQL

N:\11172730.00000\DB\PROGRAM\EDMS.mde
Printed: 11/5/2009 11:04:36 AM
[LOGDATE] = #10/13/2009# AND [MATRIX] = 'WG'

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

Location ID		FIELDQC
Sample ID		20091013TB
Matrix		Water
Depth Interval (ft)		-
Date Sampled		10/13/09
Parameter	Units	Trip Blank (1-1)
Volatiles		
Chlorotrifluoroethene (Freon-1113)	UG/L	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	1 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	1 U
Dissolved Gases		
Methane	UG/L	5 U

Flags assigned during chemistry validation are shown.

U - Non-Detect
MADE BY: __PRF_11/03/09___ CHKD BY: 11/3/09

Detection Limits shown are PQL

ATTACHMENT A

VALIDATED ANALYTICAL RESULTS (FORM 1's)

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-02V10N Lab Sample ID: 460-6783-1

Matrix: Water Lab File ID: c43012.d

Analysis Method: 8260B Date Collected: 10/13/2009 09:50

Sample wt/vol: 5(mL) Date Analyzed: 10/21/2009 02:26

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20307 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
~~76-13-1~~	~~Freon TF~~	~~1500~~	~~E~~	~~1.0~~	~~0.28~~
79-38-9	Chlorotrifluoroethene	300		1.0	0.55
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	51		1.0	0.32

CAS NO.	SURROGATE	%REC	LIMITS	Q
460-00-4	Bromofluorobenzene	104	69-135	
17060-07-0	1,2-Dichloroethane-d4 (Surr)	109	70-122	
2037-26-5	Toluene-d8 (Surr)	101	69-125	

11/03/09

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-02V10N DL Lab Sample ID: 460-6783-1 DL

Matrix: Water Lab File ID: c43047.d

Analysis Method: 8260B Date Collected: 10/13/2009 09:50

Sample wt/vol: 5(mL) Date Analyzed: 10/23/2009 18:58

Soil Aliquot Vol: Dilution Factor: 5

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20717 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	1200	D	5.0	1.4

CAS NO.	SURROGATE	%REC	LIMITS	Q
460-00-4	Bromofluorobenzene	103	69-135	
17060-07-0	1,2-Dichloroethane-d4 (Surr)	112	70-122	
2037-26-5	Toluene-d8 (Surr)	103	69-125	

11/03/09

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-04V08N Lab Sample ID: 460-6783-2

Matrix: Water Lab File ID: c43045.d

Analysis Method: 8260B Date Collected: 10/13/2009 11:04

Sample wt/vol: 5(mL) Date Analyzed: 10/23/2009 18:09

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20717 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	1.0	U	1.0	0.28
79-38-9	Chlorotrifluoroethene	15		1.0	0.55
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	1.0	U	1.0	0.32

CAS NO.	SURROGATE	%REC	LIMITS	Q
460-00-4	Bromofluorobenzene	109	69-135	
17060-07-0	1,2-Dichloroethane-d4 (Surr)	113	70-122	
2037-26-5	Toluene-d8 (Surr)	106	69-125	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-07V15N Lab Sample ID: 460-6783-3

Matrix: Water Lab File ID: c43014.d

Analysis Method: 8260B Date Collected: 10/13/2009 11:57

Sample wt/vol: 5(mL) Date Analyzed: 10/21/2009 03:14

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20307 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
~~76-13-1~~	~~Freon TF~~	~~830~~	~~E~~	~~1.0~~	~~0.28~~
~~79-38-9~~	~~Chlorotrifluoroethene~~	~~600~~	~~E~~	~~1.0~~	~~0.55~~
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	76		1.0	0.32

CAS NO.	SURROGATE	%REC	LIMITS	Q
460-00-4	Bromofluorobenzene	99	69-135	
17060-07-0	1,2-Dichloroethane-d4 (Surr)	104	70-122	
2037-26-5	Toluene-d8 (Surr)	98	69-125	

11/03/09

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-07V15N DL Lab Sample ID: 460-6783-3 DL

Matrix: Water Lab File ID: c43048.d

Analysis Method: 8260B Date Collected: 10/13/2009 11:57

Sample wt/vol: 5(mL) Date Analyzed: 10/23/2009 19:23

Soil Aliquot Vol: Dilution Factor: 5

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20717 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	580	D	5.0	1.4
79-38-9	Chlorotrifluoroethene	370	D	5.0	2.8

CAS NO.	SURROGATE	%REC	LIMITS	Q
460-00-4	Bromofluorobenzene	102	69-135	
17060-07-0	1,2-Dichloroethane-d4 (Surr)	112	70-122	
2037-26-5	Toluene-d8 (Surr)	104	69-125	

11/03/09

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-03V10N Lab Sample ID: 460-6783-4

Matrix: Water Lab File ID: c43046.d

Analysis Method: 8260B Date Collected: 10/13/2009 13:53

Sample wt/vol: 5(mL) Date Analyzed: 10/23/2009 18:34

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20717 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.82	J	1.0	0.28
79-38-9	Chlorotrifluoroethene	19		1.0	0.55
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	1.9		1.0	0.32

CAS NO.	SURROGATE	%REC	LIMITS	Q
460-00-4	Bromofluorobenzene	112	69-135	
17060-07-0	1,2-Dichloroethane-d4 (Surr)	117	70-122	
2037-26-5	Toluene-d8 (Surr)	107	69-125	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-03V10FD Lab Sample ID: 460-6783-5

Matrix: Water Lab File ID: c43016.d

Analysis Method: 8260B Date Collected: 10/13/2009 13:53

Sample wt/vol: 5(mL) Date Analyzed: 10/21/2009 04:03

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20307 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	0.92	J	1.0	0.28
79-38-9	Chlorotrifluoroethene	20		1.0	0.55
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	2.1		1.0	0.32

CAS NO.	SURROGATE	%REC	LIMITS	Q
460-00-4	Bromofluorobenzene	95	69-135	
17060-07-0	1,2-Dichloroethane-d4 (Surr)	98	70-122	
2037-26-5	Toluene-d8 (Surr)	97	69-125	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-06V13N Lab Sample ID: 460-6783-6

Matrix: Water Lab File ID: c43017.d

Analysis Method: 8260B Date Collected: 10/13/2009 15:00

Sample wt/vol: 5(mL) Date Analyzed: 10/21/2009 04:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20307 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	1.0	U	1.0	0.28
79-38-9	Chlorotrifluoroethene	6.4		1.0	0.55
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	1.0	U	1.0	0.32

CAS NO.	SURROGATE	%REC	LIMITS	Q
460-00-4	Bromofluorobenzene	97	69-135	
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103	70-122	
2037-26-5	Toluene-d8 (Surr)	101	69-125	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013TB Lab Sample ID: 460-6783-7

Matrix: Water Lab File ID: c43052.d

Analysis Method: 8260B Date Collected: 10/13/2009 00:00

Sample wt/vol: 5(mL) Date Analyzed: 10/23/2009 21:02

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20717 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
76-13-1	Freon TF	1.0	U	1.0	0.28
79-38-9	Chlorotrifluoroethene	1.0	U	1.0	0.55
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	1.0	U	1.0	0.32

CAS NO.	SURROGATE	%REC	LIMITS	Q
460-00-4	Bromofluorobenzene	105	69-135	
17060-07-0	1,2-Dichloroethane-d4 (Surr)	116	70-122	
2037-26-5	Toluene-d8 (Surr)	106	69-125	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-02V10N Lab Sample ID: 460-6783-1

Matrix: Water Lab File ID: scrf8242.d

Analysis Method: 3810M Date Collected: 10/13/2009 09:50

Sample wt/vol: 10(mL) Date Analyzed: 10/20/2009 09:54

Soil Aliquot Vol: Dilution Factor: 10

Soil Extract Vol.: GC Column: GS-Q ID: 0.53(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20251 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	6100		50	4.3

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-04V08N Lab Sample ID: 460-6783-2

Matrix: Water Lab File ID: scrf8245.d

Analysis Method: 3810M Date Collected: 10/13/2009 11:04

Sample wt/vol: 10(mL) Date Analyzed: 10/20/2009 10:29

Soil Aliquot Vol: Dilution Factor: 10

Soil Extract Vol.: GC Column: GS-Q ID: 0.53(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20251 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	3100		50	4.3

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-07V15N Lab Sample ID: 460-6783-3

Matrix: Water Lab File ID: scrf8246.d

Analysis Method: 3810M Date Collected: 10/13/2009 11:57

Sample wt/vol: 10(mL) Date Analyzed: 10/20/2009 10:40

Soil Aliquot Vol: Dilution Factor: 10

Soil Extract Vol.: GC Column: GS-Q ID: 0.53(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20251 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	5900		50	4.3

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-03V10N Lab Sample ID: 460-6783-4

Matrix: Water Lab File ID: scrf8250.d

Analysis Method: 3810M Date Collected: 10/13/2009 13:53

Sample wt/vol: 10(mL) Date Analyzed: 10/20/2009 11:20

Soil Aliquot Vol: Dilution Factor: 20

Soil Extract Vol.: GC Column: GS-Q ID: 0.53(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20251 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	4800		100	8.6

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-03V10FD Lab Sample ID: 460-6783-5

Matrix: Water Lab File ID: scrf8343.d

Analysis Method: 3810M Date Collected: 10/13/2009 13:53

Sample wt/vol: 10(mL) Date Analyzed: 10/23/2009 12:16

Soil Aliquot Vol: Dilution Factor: 20

Soil Extract Vol.: GC Column: GS-Q ID: 0.53(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20769 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	5300		100	8.6

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013MW-06V13N Lab Sample ID: 460-6783-6

Matrix: Water Lab File ID: scrf8239.d

Analysis Method: 3810M Date Collected: 10/13/2009 15:00

Sample wt/vol: 10(mL) Date Analyzed: 10/20/2009 09:24

Soil Aliquot Vol: Dilution Factor: 20

Soil Extract Vol.: GC Column: GS-Q ID: 0.53(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20251 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	7300		100	8.6

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-6783-1

SDG No.:

Client Sample ID: 20091013TB Lab Sample ID: 460-6783-7

Matrix: Water Lab File ID: scrf8244.d

Analysis Method: 3810M Date Collected: 10/13/2009 00:00

Sample wt/vol: 10(mL) Date Analyzed: 10/20/2009 10:19

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: GS-Q ID: 0.53(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 20251 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	5.0	U	5.0	0.43

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20091013MW-02V10N
Lab Sample ID: 460-6783-1
Lab Name: TestAmerica Edison
Job No.: 460-6783-1
SDG ID.:
Matrix: Water
Date Sampled: 10/13/2009 09:50
Reporting Basis: WET
Date Received: 10/15/2009 10:30

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
14808-79-8	Sulfate	36.9	10.0	0.63	mg/L			2	D516-90, 02

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20091013MW-04V08N
Lab Sample ID: 460-6783-2
Lab Name: TestAmerica Edison
Job No.: 460-6783-1
SDG ID.:
Matrix: Water
Date Sampled: 10/13/2009 11:04
Reporting Basis: WET
Date Received: 10/15/2009 10:30

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
14808-79-8	Sulfate	20.8	5.0	0.32	mg/L			1	D516-90, 02

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20091013MW-07V15N
Lab Sample ID: 460-6783-3
Lab Name: TestAmerica Edison
Job No.: 460-6783-1
SDG ID.:
Matrix: Water
Date Sampled: 10/13/2009 11:57
Reporting Basis: WET
Date Received: 10/15/2009 10:30

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
14808-79-8	Sulfate	6.3	5.0	0.32	mg/L			1	D516-90, 02

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20091013MW-03V10N
Lab Sample ID: 460-6783-4
Lab Name: TestAmerica Edison
Job No.: 460-6783-1
SDG ID.:
Matrix: Water
Date Sampled: 10/13/2009 13:53
Reporting Basis: WET
Date Received: 10/15/2009 10:30

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
14808-79-8	Sulfate	8.7	5.0	0.32	mg/L			1	D516-90, 02

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20091013MW-03V10FD
Lab Sample ID: 460-6783-5
Lab Name: TestAmerica Edison
Job No.: 460-6783-1
SDG ID.:
Matrix: Water
Date Sampled: 10/13/2009 13:53
Reporting Basis: WET
Date Received: 10/15/2009 10:30

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
14808-79-8	Sulfate	4.6	5.0	0.32	mg/L	J		1	D516-90, 02

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 20091013MW-06V13N
Lab Sample ID: 460-6783-6
Lab Name: TestAmerica Edison
Job No.: 460-6783-1
SDG ID.:
Matrix: Water
Date Sampled: 10/13/2009 15:00
Reporting Basis: WET
Date Received: 10/15/2009 10:30

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
14808-79-8	Sulfate	2.8	5.0	0.32	mg/L	J		1	D516-90, 02

ATTACHMENT B

SUPPORT DOCUMENTATION

Job# 460-6783

CHAIN OF CUSTODY RECORD

URS

PROJECT NO. 11174947.00002 | SITE NAME Former EMCA Site

SAMPLERS (PRINT/SIGNATURE) Tim Ifkovich Tim Ifkovich

DELIVERY SERVICE: Fedex AIRBILL NO.: 8645 1193 8539

LAB Test America Edison

COOLER 1 of 1

PAGE 1 of 1

LOCATION IDENTIFIER	DATE	TIME	COMP/ GRAB	SAMPLE ID	MATRIX	TOTAL NO. OF CONTAINERS	TESTS: From 1113, 1113, 1234 (8260 B)	Methane (RSK-175)	Sulfate (375.4)	BOTTLE TYPE AND PRESERVATIVE: 40ml Vial (HCL)	40ml Vial (HCL)	500ml Poly	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO. # (ERPIMS)
MW-02	10/13/09	0950	G	20091013MW-02V10N	WG	7				3	3	1	#1	N1			
MW-04	10/13/09	1104		20091013MW-04V08N		7				3	3	1	#2	N1			
MW-07	10/13/09	1157		20091013MW-07V15N		7				3	3	1	#3	N1			
MW-03	10/13/09	1353		20091013MW-03V10N		7				3	3	1	#4	N1			
MW-03	10/13/09	1353		20091013MW-03V10FD		7				3	3	1	#5	FD1			
MW-06	10/13/09	1500		20091013MW-06V13N		7				3	3	1	#6	N1			
MW-06	10/13/09	1500		20091013MW-06V13MS		7				3	3	1	#6(MS)	MS1			
MW-06	10/13/09	1500		20091013MW-06V13SD		7				3	3	1	#6(MSD)	SD1			
						~~7~~				~~3~~	~~3~~	1					
Trip Blank	–	–	–	20091013TB	WQ	~~4~~ 2				2	~~2~~ 2	–	#7				

MATRIX CODES: AA - AMBIENT AIR; SE - SEDIMENT; SH - HAZARDOUS SOLID WASTE; SL - SLUDGE; WP - DRINKING WATER; WW - WASTE WATER; WG - GROUND WATER; SO - SOIL; DC - DRILL CUTTINGS; WL - LEACHATE; GS - SOIL GAS; WC - DRILLING WATER; WO - OCEAN WATER; WS - SURFACE WATER; WQ - WATER FIELD QC; LH - HAZARDOUS LIQUID WASTE; LF - FLOATING/FREE PRODUCT ON GW TABLE

SAMPLE TYPE CODES: TB# - TRIP BLANK; SD# - MATRIX SPIKE DUPLICATE; RB# - RINSE BLANK; FR# - FIELD REPLICATE; N# - NORMAL ENVIRONMENTAL SAMPLE; MS# - MATRIX SPIKE; (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
			Fedex →		
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME
Tim Ifkovich	10/14/09	0800		10/15/09	1430

SPECIAL INSTRUCTIONS: For questions contact Peter Fairbanks @ 716-856-5636

Distribution: Original accompanies shipment, copy to coordinator field files

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URSF-075C/1 OF 1/ColCR/GCM

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10/29/2009

CASE NARRATIVE

Client: URS Corporation

Project: Rohm and Haas - Former EMCA Site

Report Number: 460-6783-1

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

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

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

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

RECEIPT
The samples were received on 10/15/2009; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.0 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.

DISSOLVED HYDROCARBON GASES
Samples 460-6783-1 through 460-6783-7 were analyzed for dissolved hydrocarbon gases in accordance with EPA Method 3810M (Methane, Ethane, Ethene, Propane). The samples were analyzed on 10/20/2009 and 10/23/2009.

Samples 460-6783-1 through 460-6783-3(10X) and 460-6783-4 through 460-6783-6(20X) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the dissolved hydrocarbon gases analyses.

All quality control parameters were within the acceptance limits.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples 460-6783-1 through 460-6783-7 were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/21/2009 and 10/23/2009.

The percent recovery data for Chlorotrifluoroethene was outside the control limits for the MS of sample 460-6783-3 in batch 460-20717.

The percent recovery data for 1,2-Dichloro-1,1,2-trifluoroethane was outside the control limits for the MSD of sample 460-6783-3 in batch 460-20717.

The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples 460-6783-1(5X) and 460-6783-3(5X) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the volatiles analyses.

All other quality control parameters were within the acceptance limits.

SULFATE
Samples 460-6783-1 through 460-6783-6 were analyzed for sulfate in accordance with ASTM Method D516-90. The samples were

analyzed on 10/21/2009.

Sample 460-6783-1(2X) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analyses.

All quality control parameters were within the acceptance limits.

APPENDIX C

2009 SUPPLEMENTAL INJECTION SUMMARY

2009 Supplemental Injection Summary
Former EMCA Site, Mamaroneck, New York
August 25 - September 9, 2009

Injection Point using EOS® 598B42 and WILCLEAR™ Sodium Lactate	Depth (ft bgs)	Approximate Volume (gal.)	Notes
1	5, 8, 11, 14, 18, 22	EOS® 598B42 - 30.3	Difficulty with seal at surface.
	5 - 16	WILCLEAR™ - 53 (~4.8 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 182**	
		WILCLEAR™ - 53	
2	5, 8, 11	EOS® 598B42 - 34	Difficulty with seal at surface while at 15 ft bgs.
	15 - 23	EOS® 598B42 - 81 (~10.1 gal/ft)	Injected substrate at 1 foot intervals.
	5 - 23	WILCLEAR™ - 53 (~2.9 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 182**	
		WILCLEAR™ - 53	
3	5 - 19.5	EOS® 598B42 - 182 (~13 gal/ft)	Injected substrate at 1 foot intervals.
		WILCLEAR™ - 53 (~3.8 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 182**	
		WILCLEAR™ - 53	
4*	5, 9, 13, 17, 21, 25	EOS® 598B42 - 19.2	
	5, 9, 13, 17, 21, 25	WILCLEAR™ - 8.8	
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
5*	5, 9, 13, 17, 21, 25	EOS® 598B42 - 19.2	
	5, 9, 13, 17, 21, 25	WILCLEAR™ - 8.8	
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
6*	5, 9, 13, 17, 21, 25	EOS® 598B42 - 19.2	
	5, 9, 13, 17, 21, 25	WILCLEAR™ - 8.8	
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
7*	5, 9, 13, 17, 21, 25	EOS® 598B42 - 19.2	
	5, 9, 13, 17, 21, 25	WILCLEAR™ - 8.8	
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
8*	5, 9, 13, 17, 21, 25	EOS® 598B42 - 19.2	
	5, 9, 13, 17, 21, 25	WILCLEAR™ - 8.8	
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
9*	5, 9, 13, 17, 21, 25	EOS® 598B42 - 19.2	
	5, 9, 13, 17, 21, 25	WILCLEAR™ - 8.8	
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
10*	5, 9, 13, 17, 21, 25	EOS® 598B42 - 19.2	
	5, 9, 13, 17, 21, 25	WILCLEAR™ - 8.8	
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
11*	5, 9, 13, 17, 21, 25	EOS® 598B42 - 19.2	
	5, 9, 13, 17, 21, 25	WILCLEAR™ - 8.8	
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
12*	5 - 25	EOS® 598B42 - 115 (~5.75 gal/ft)	Difficulty with seal at the surface. Injected substrate at 1 foot intervals.
		WILCLEAR™ - 53 (~2.65 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
13*	5 - 25	EOS® 598B42 - 115 (~5.75 gal/ft)	Injected substrate at 1 foot intervals.
		WILCLEAR™ - 53 (~2.65 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	

2009 Supplemental Injection Summary
Former EMCA Site, Mamaroneck, New York
August 25 - September 9, 2009

14*	5 - 25	EOS® 598B42 - 115 (~5.75 gal/ft)	Injected substrate at 1 foot intervals.
		WILCLEAR™ - 53 (~2.65 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
15*	5 - 25	EOS® 598B42 - 115 (~5.75 gal/ft)	Injected substrate at 1 foot intervals.
		WILCLEAR™ - 53 (~2.65 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 115**	
		WILCLEAR™ - 53	
16	5 - 25	EOS® 598B42 - 182 (~9.1 gal/ft)	Difficulty with seal at the surface while at 5 ft bgs. Injected substrate at 1 foot intervals.
		WILCLEAR™ - 53 (~2.65 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 182**	
		WILCLEAR™ - 53	
17	5 - 25	EOS® 598B42 - 182 (~9.1 gal/ft)	Difficulty with seal at the surface while at 15 ft bgs. Injected substrate at 1 foot intervals.
		WILCLEAR™ - 53 (~2.65 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 182**	
		WILCLEAR™ - 53	
18	5 - 25	EOS® 598B42 - 182 (~9.1 gal/ft)	Injected substrate at 1 foot intervals.
		WILCLEAR™ - 53 (~2.65 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**EOS® 598B42 - 182**	
		WILCLEAR™ - 53	
Injection Point using WILCLEAR™ Sodium Lactate Only	**Depth (ft bgs)**	**Volume (gal.)**	**Notes**
19*	5, 9, 13, 17, 21, 25	12.8	
	Subtotal	**77**	
20*	5, 9, 13, 17, 21, 25	12.8	
	Subtotal	**77**	
21*	5, 9, 13, 17, 21, 25	12.8	
	Subtotal	**77**	
22*	5, 9, 13, 17, 21, 25	25.7	
	Subtotal	**154**	
23*	5 - 25	77 (~3.85 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**77**	
24	5 - 25	77 (~3.85 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**77**	
25*	5 - 25	77 (~3.85 gal/ft)	Initial refusal at 9 ft bgs. Injected substrate at 1 foot intervals.
	Subtotal	**77**	
26*	5 - 25	77 (~3.85 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**77**	
27*	5 - 25	77 (~3.85 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**77**	
28*	5 - 25	77 (~3.85 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**77**	
29*	5 - 25	77 (~3.85 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**77**	
30*	5 - 25	121 (~6.05 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**121**	
31	5 - 25	121 (~6.05 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**121**	
32	5 - 25	121 (~6.05 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**121**	
33	5 - 25	121 (~6.05 gal/ft)	Difficulty with seal at surface while at 8 ft bgs. Injected substrate at 1 foot intervals.
	Subtotal	**121**	
34*	5 - 25	121 (~6.05 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**121**	

2009 Supplemental Injection Summary
Former EMCA Site, Mamaroneck, New York
August 25 - September 9, 2009

35	5 - 25	121 (~6.05 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**121**	
36	5 - 25	121 (~6.05 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**121**	
37	5 - 25	121 (~6.05 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**121**	
38	5 - 25	121 (~6.05 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**121**	
39	5 - 25	121 (~6.05 gal/ft)	Injected substrate at 1 foot intervals.
	Subtotal	**121**	

Notes:

* - Injection locations where the Sidewinder™ injection tool was used.