Report

Supplemental Two Year Operations, Monitoring, & Maintenance Plan Buildings 1231 & 1253 NYSDEC Site #633046 Verona Research Facility Verona, New York

October 2005

Environmental, Safety and Occupational Health Office – AFRL/IFOCV

Supplemental Two Year Operations, Monitoring, & Maintenance Plan Buildings 1231 & 1253 NYSDEC Site #633046 Verona Research Facility Verona, New York

Prepared for Rome Research Site

Prepared by

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October 2005

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SUPPLEMENTAL OPERATIONS, MONITORING, AND MAINTENANCE PLAN
VERONA RESEARCH FACILITY
BUILDING 1231 & 1253
NYSDEC #633046

SECTION 1 – INTRODUCTION

This Supplemental Operations, Monitoring, and Maintenance (OM&M) Plan has been prepared to govern the implementation of an additional two years of remedial activities at the Verona Research Facility (VRF) Buildings 1231 and 1253 (NYSDEC Site I.D. #633046). Some form of remedial action is warranted in response to the detection of several chlorinated aliphatic compounds in groundwater at those buildings. The past two years of investigations regarding the nature of the detected compounds have indicated that they are being naturally degraded, or attenuated, as a result of natural chemical reactions that occur within the groundwater. These reactions are significant enough to continue to rely on natural attenuation monitoring of groundwater as the site remedy. Groundwater will be sampled on an on going basis, to demonstrate that detected constituents continue to be degraded. This portion of the plan sets forth the sampling procedures, sampling schedule, and analytical and reporting requirements for the natural attenuation monitoring program. The OM&M Plan also lays out the data evaluation criteria that will be used to verify that natural attenuation continues to be an effective site remedy. This plan will serve as an extension of the original plan submitted October 2001.

1.1 BACKGROUND

The Rome Research Site Verona Research Facility has undergone extensive groundwater testing for the last two years. The sampling and report preparation has been conducted by an A&E Firm, S&W Redevelopment, LLC, One Remington Park Drive, Cazenovia, NY 13035. Rather than restate all the information in the original OM&M Plan dated October 2001, this report will detail the proposed plan for the next round of sampling. When possible, information from the "Operations, Monitoring, & Maintenance Plan Buildings 1231 & 1253 NYSDEC Site #633046, Verona Research Facility, Verona, New York", October 2001, will be used in the course of action for the next round of sampling.

It has been determined that two additional years of sampling will be required to monitor the attenuation of the groundwater. Sampling has shown that natural attenuation is taking place, but there is still contaminants above the groundwater detection limits as stated in the NYSTOGS 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations", 6/98 Ed.

SECTION 2 – MONITORING PLAN

The monitoring plan describes the methods that will be used to measure the performance and effectiveness of the natural attenuation remedy. For natural attenuation, the

monitoring strategy will be implemented to monitor plume characteristics and movement, and the chemical reactions that naturally degrade the plume.

The monitoring program will be carried out as described below, and in accordance with the following supporting documents as found in the "Operations, Monitoring, & Maintenance Plan Buildings 1231 & 1253 NYSDEC Site #633046, Verona Research Facility, Verona, New York", October 2001

Appendix C – New York State Well Decommissioning Procedures
Appendix D – Field Sampling and Analysis Plan
Appendix E – Site Health and Safety Plan
Appendix F – Spill Prevention Control and Countermeasures Plan

2.1 MONITORING LOCATIONS

Monitoring wells for natural attenuation are located as follows:

1. At least one well needs to be located within the source area of the plume.
2. At least one well needs to be located down gradient of the source area, but still within the plume.
3. At least one well needs to be located at the fringe of the plume, defined as where impacts are below standards, criteria, or guidance (SCGs). It is allowable to have a single well to satisfy this criterion as well as criterion 2 above, depending on site specific circumstances.
4. At least on monitoring well needs to be located down gradient, as a "sentinel well beyond the impacted groundwater zone. The groundwater concentrations must remain below standards in the sentinel well for natural attenuation to be considered effective. The sentinel well should be no more than five years' travel time from the source area, based on estimated groundwater flow velocity. The sentinel well will essentially provide evidence that the remedial action objective pertaining to no offsite migration of impacts is met.
5. At least one well needs to be along the center line of the plume.

Monitoring wells to fit these criteria were installed prior to the two year round of sampling conducted May 2002 to March 2004.

2.2 BUILDING 1231 MONITORING NETWORK

Figure 2-1 illustrates the groundwater monitoring network at building 1231. Monitoring wells MW-1231C, MW-1231E, MW-1231F, and MW-1231G will be utilized to meet the requirements of items 1-5 above. This is a decrease in the number of monitoring wells as prescribed in the prior two year monitoring cycle.

MW-1231C, -1231E. These two wells are located within and close to the center of the plume, and satisfy criteria 1 and 5 above.

MW-1231F. This well exists on the fringe of the plume, and satisfies requirements 2 and 3 above.

MW-1231G. This well is located approximately 20 feet down gradient of the source area in an area that is unaffected by the plume. Considering the estimated groundwater flow velocity (25 feet per year), it would take the groundwater approximately 0.8 years to migrate from the source area to well MW-1231G. This well is suitable as a sentinel well and thus satisfies criterion 4 above.

MW-1231H, -1231I. These wells have never shown any contaminants in the last two year cycle and are going to be left in place pending the outcome of the next two years of sampling. At this time these wells will not be part of the sampling process.

2.3 BUILDING 1253 MONITORING NETWORK

Figure 2-2 illustrates the groundwater monitoring network at building 1253. Monitoring wells MW-1253H, MW-1253I, and MW-1253E will be utilized to meet the requirements of items 1-5 above. This is a decrease in the number of monitoring wells as prescribed in the prior two year monitoring cycle.

MW-1253H. This well is located on the fringe of the plume, and satisfies requirements 2 and 3 above.

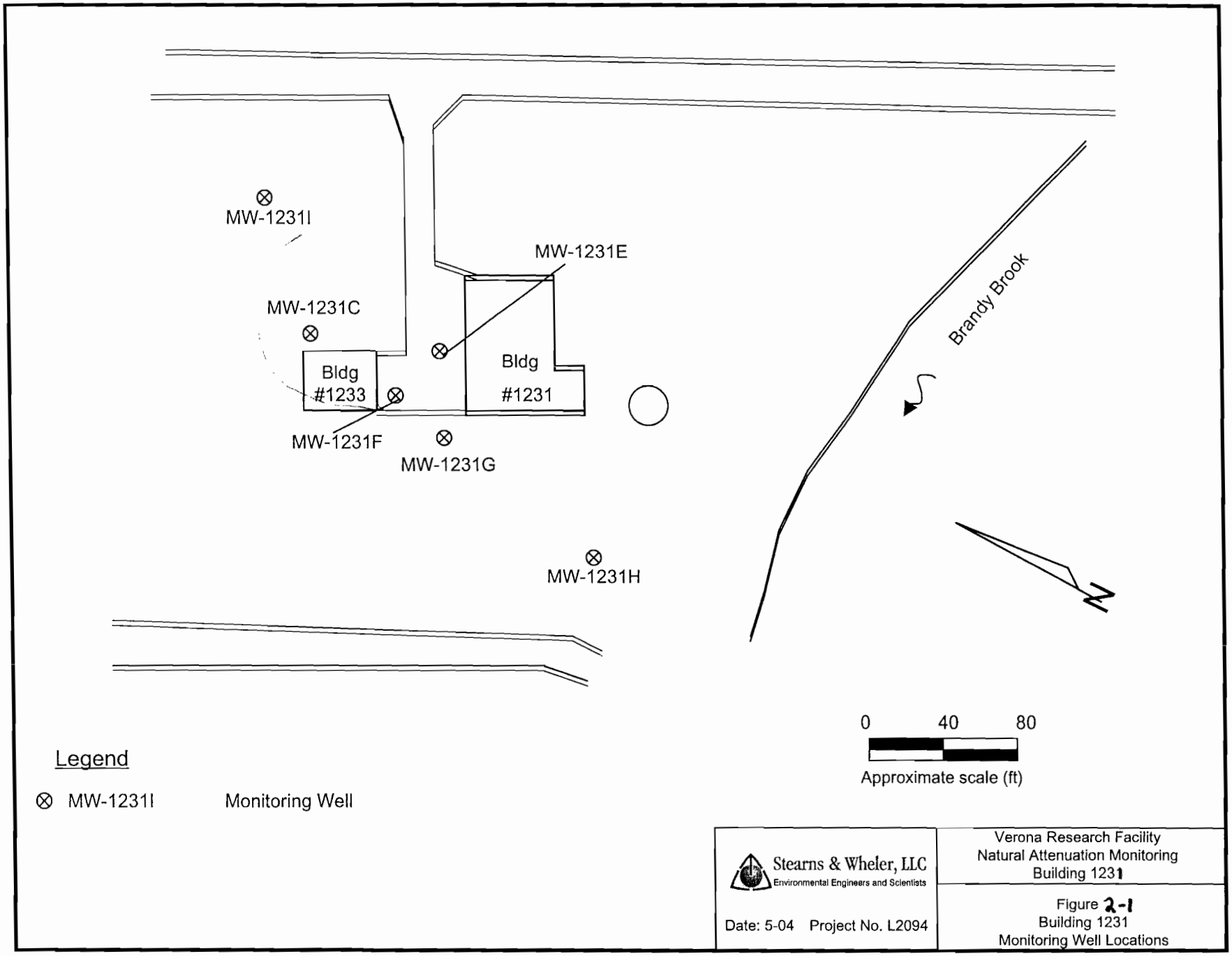
MW-1253I. This well is located within and close to the center of the plume, and satisfies criteria 1 and 5 above.

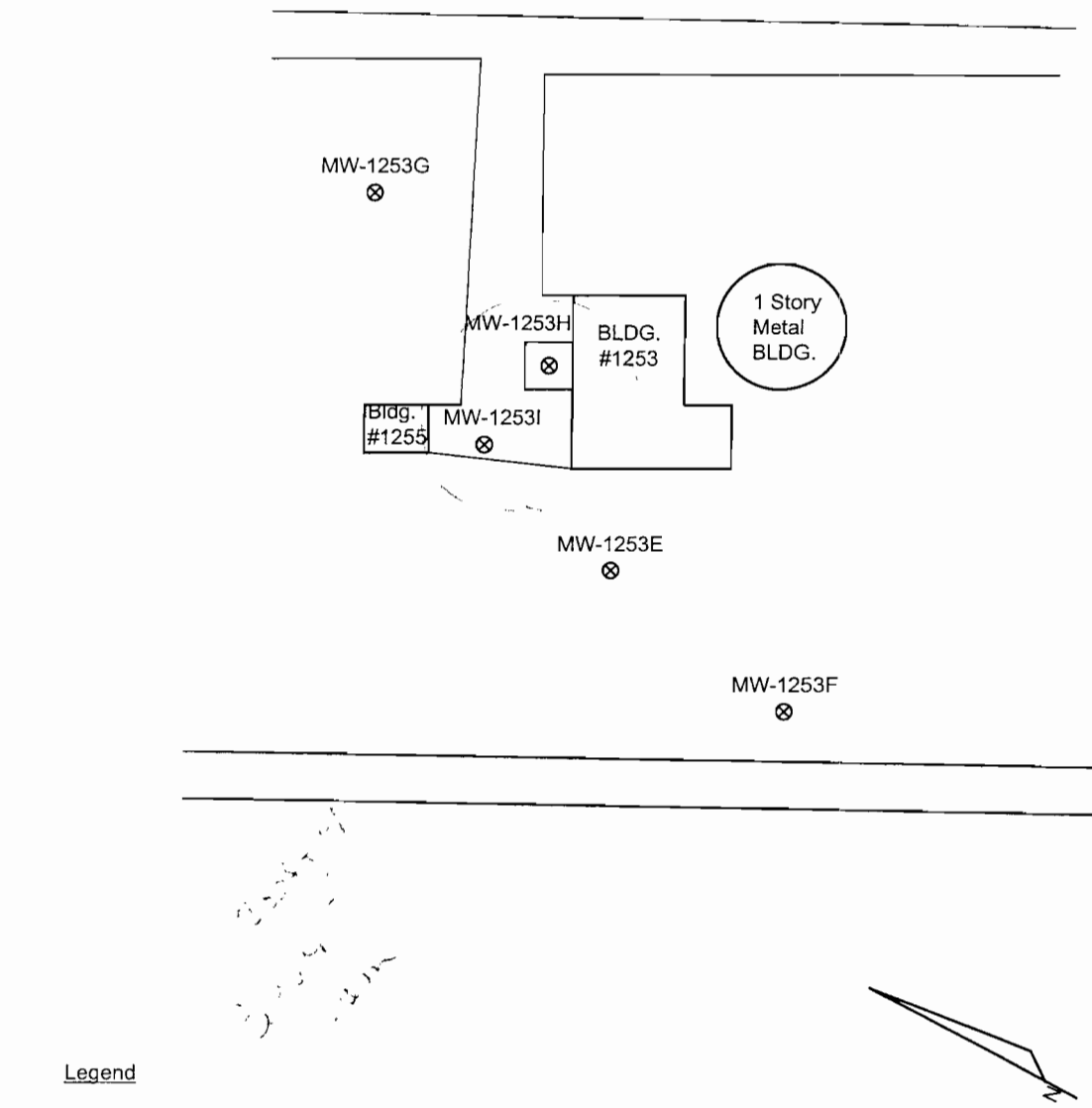
MW-1253E. This well is located approximately 20 feet down gradient of the source area in an area that is unaffected by the plume. Considering the estimated groundwater flow velocity (25 feet per year), it would take the groundwater approximately 0.8 years to migrate from the source area to well MW-1253E. This well is suitable as a sentinel well and thus satisfies criterion 4 above. This well has not shown any contaminants in the last two year cycle.

MW-1253F, -1253G. These wells have not shown any contaminants in the last two year cycle and are going to be left in place pending the outcome of the next two years of sampling. At this time these wells will not be part of the sampling process.

2.4 BRANDY BROOK

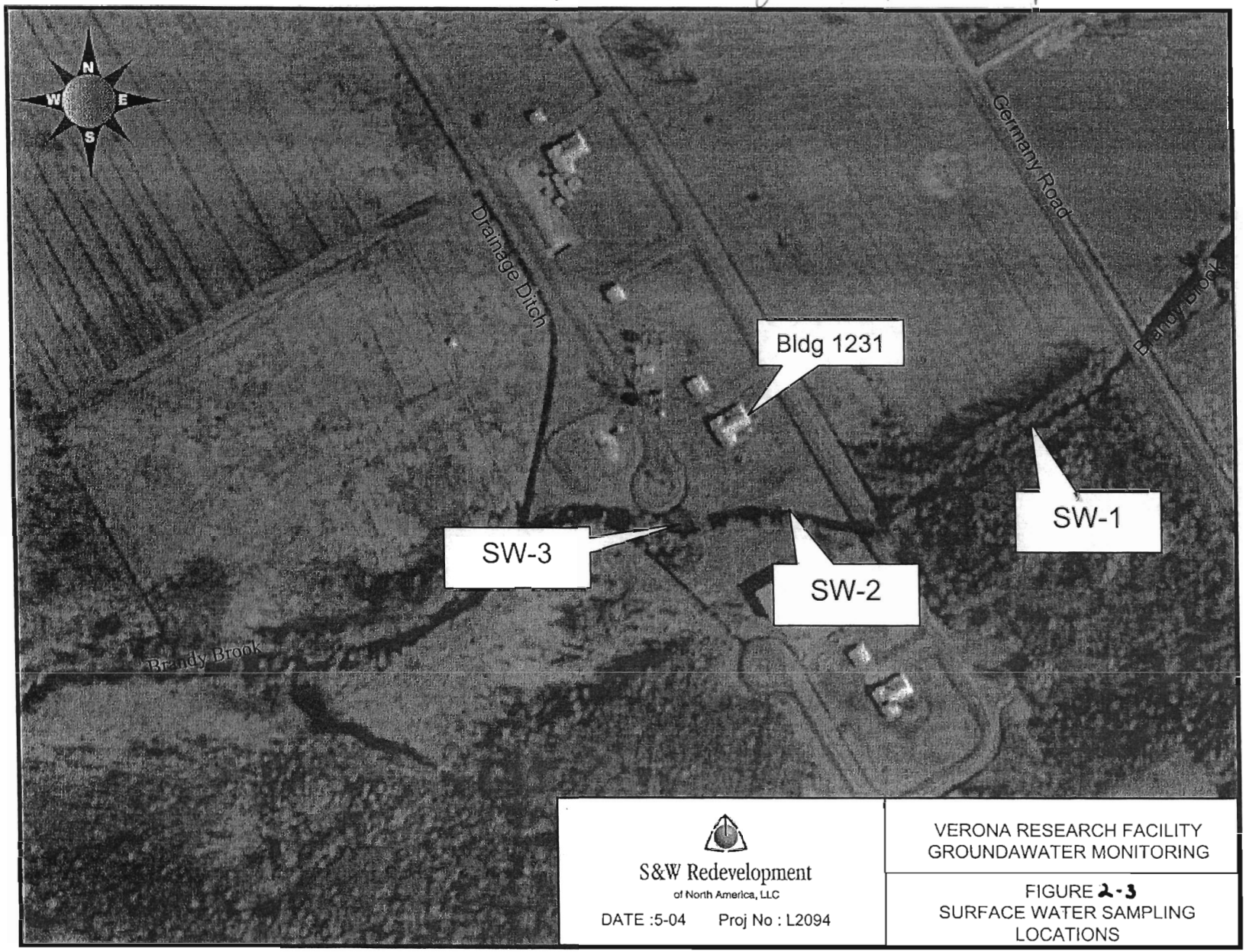
Water samples will be collected from Brandy Brook to verify that no site-related impacts occur there. In the past three (3) sample areas were chosen, this will be decreased to two (2). One sample will be taken from the SW-3 location down stream and one sample will be taken from SW-2 location just upstream. In the last two year cycle no contamination levels have been observed in any of the locations. (Figure 2-3) The stream flows in the direction from the SW-1 sampling location to the SW-3 location.


MW-1231I
MW-1231E
MW-1231C
Bldg #1233
Bldg #1231
MW-1231F
MW-1231G
MW-1231H
Brandy Brook
N
0
40
80
Approximate scale (ft)
Legend
MW-1231I
Monitoring Well
Stearns & Wheler, LLC
Environmental Engineers and Scientists
Date: 5-04 Project No. L2094
Verona Research Facility
Natural Attenuation Monitoring
Building 1231
Figure 2-1
Building 1231
Monitoring Well Locations



Stearns & Wheler, LLC Environmental Engineers and Scientists	Verona Research Facility Natural Attenuation Monitoring Building 1253
Date: 5-04 Project No. L2094	Figure 2-2 Building 1253 Monitoring Well Locations

Bldg 1253 NW of 1231 ~300 yards away not in photo



S&W Redevelopment
of North America, LLC
DATE :5-04 Proj No : L2094

VERONA RESEARCH FACILITY
GROUNDAWATER MONITORING

FIGURE 2-3
SURFACE WATER SAMPLING
LOCATIONS

2.5 SAMPLING AND ANALYSIS PLAN

This section sets forth the basic elements of the sampling and analytical programs that are to be followed during the OM&M period. Appendix A includes a detailed Field Sampling Plan for groundwater and surface water samples, which discusses equipment and materials to be used, and a step-by-step procedure for sampling.

A. SAMPLING SCHEDULE

Groundwater and surface water samples are to be collected quarterly for a minimum period of two years. After the next two years of analytical data are collected, the monitoring frequency will be reviewed, and appropriate adjustments to the monitoring schedule can be made, subject to NYSDEC approval.

B. ANALYTICAL PROGRAM

Groundwater and surface water samples will be analyzed for Target Compound List (TCL) volatile organic compounds, including the target aliphatic compounds, by USEPA Method 8260. In addition, appropriate inorganic parameters will be analyzed for, in order to provide geochemical information regarding the underlying conditions that are causing the compounds to degrade:

Dissolved oxygen
Iron
Manganese
Nitrate
Sulfate
Carbon dioxide

In addition to the EPA 8260 parameters, organic compounds ethane and ethane should be included, as they are produced during reductive dechlorination.

Finally, the field parameters pH, Eh, temperature, and conductivity should be measured at each monitoring location during each sampling event.

2.6 MONITORING WELL INSPECTION AND MAINTENANCE

Each quarter that samples are collected, the sampling personnel will complete a visual inspection of each monitoring well to determine whether repairs or replacement are needed. The inspection will include a visual examination of the following:

Locking well covers and well caps to determine whether the wells remain secure,
Concrete pad to ensure that it is not excessively cracked,
Padlocks in good working condition,
Wells areas generally clear of excessive vegetation growth,

Wells remain plumb and straight, and the interior is free of obstructions,
Bottom of well not accumulating sediments.

Any items in need of attention, repair or replacement will be called out in the quarterly reports (Section 5)

SECTION 3 – REPORTING

Quarterly monitoring reports will be prepared following the completion of each quarterly sampling event. The report will include a discussion of the methods used to collect the samples, as well as field observation sheets (Appendix A). The field observations will include the field parameter measurements. Any needed repairs or maintenance to the monitoring wells will also be described.

Water evaluation measurements from the monitoring wells will be used to produce a groundwater contour map for each of the two separate building sites.

Laboratory analysis reports will be included with the quarterly reports. In addition, the analytical results will be presented on summary tables that identify the monitoring locations and results for each parameter and which highlight the individual parameters that exceed applicable water quality standards. Separate summary tables will be presented for each of the two sites, and will include not only the current analytical results but also the results of previous sampling quarters. This will enable water quality trends to be evaluated. In addition to the tabular presentation of the data, time-dependent plots will be prepared to show the changes in concentration of key parameters over time, including PCE, TCE, and DCE, at each well location where they are present. It is noted that there are numerous sources of data variability that could cause an apparent change in concentration for a particular parameter, even in the absence of a real change. For example, fluctuations in water table elevation can cause concentration within a well to increase or decrease, depending on the water column height. Analytical precision and random errors add to the variability. For this reason, additional plots will also be prepared that reflect the relative proportions of the key constituents, including the ratios of PCE to TCE (PCE/TCE) and TCE to DCE (TCE/DCE) over time at each well. The ratio plots are necessary to demonstrate the changes in the relative proportions of each constituent with its degradation produce. It is further noted that ratios of parameters in water are less sensitive to random variability than the absolute concentration of individual parameters. For example, if the concentrations of TCE and DCE each increase due to some source of seasonal or procedural variability, their ratio will generally remain the same. Thus, ratio plots will be relied upon to filter out potential variability, as well as to help verify degradation trends.

The reports will contain a section that specifically discussed the nature of the inorganic analytical results in the context of natural attenuation reactions. The presence of electron donors and acceptors, as well as field parameter data (pH, Eh, temperature, conductance) will be evaluated to provide a geochemical model for site groundwater as it relates to sustaining natural attenuation of the organic hydrocarbons.

The report following the fourth quarter event willb e prepared as an annual report. The annual report will include:

a. A site location map
b. A site map for Buildings 1231 and 1253
c. Groundwater contour maps
d. A description of the sampling and analysis methods
e. A narrative discussion of analytical results and chemical trends, along with appropriate figures and plots as described above for the quarterly reports

A conclusions section of the quarterly and annual reports will summarize evidence of ongoing attenuation; the effectiveness of attenuation is as a remedy, and the overall effectiveness of the monitoring program.

In the event that contamination is detected in either the Building 1231 or Building 1253 sentinel wells (MW-1231G and MW-1253E), the sentinel wells will be extended out to the two sentinel wells (MW-1231H and MW-1253F) used in the prior two year study. The two reserve wells are in the direction of the groundwater flow and along the approximate center line of the plume, downgradient of the new sentinel wells.

SECTION 4 – TREND ANALYSIS

The following information is provided in support of using less monitoring wells to support Rome Research Site's natural attenuation project. Table 4-1 is used to detail which wells are going to be used, their location, contaminants of concern, proposed use, and comments. This information was derived using sampling information found in the report "Natural Attenuation Monitoring Two-year Monitoring Summary, Building 1231 & 1253, NYSDEC Site No. 633046, Verona Research Facility, Verona, New York", May 2004. MW- 1231C has been used in more than 1 two year sampling and the table reflects that in determining its trend analysis. Even though the trend analysis has show a downward trend, table 4-2, for the monitoring wells that a trend analysis could be performed, the contamination level is still above the levels found in NYSTOGS 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations", 6/98 Ed.

A trend analysis was not done for wells that did not have enough sampling data to support a trend analysis (5 data quantities). The number of data quantities was randomly chosen by the Environmental Office as a norm for trend analysis. A polynomial function was used to determine trend, using a factor of 6. The polynomial function is part of Excel, a spread sheet manufactured by Microsoft. To use this function successfully a value of zero cannot be used. In the case where there were 5 or more positive sampling results a value of detection limit minus 1 was used to complete the trend analysis when there was not data. Table 4-3 reflects all sampling data for the two year cycle May 2002 to March 2005.

SECTION 5 – CONCLUSIONS

Two years of sampling data has shown the level of contaminants to be dropping. This would support the idea that the plume is decreasing in size. In the next two year round of sampling, it will be determined if the downward trend continues. And, that this trend will eventually drop to below NYSDEC Groundwater Standards. It is the intention of this plan to develop, over the next two years of data, supporting trend analysis to chart future attenuation curves and eventual closure of the property.

TABLE 4-1

MS - # / Contaminant	**Well Location** e.g. Area-of-Concern, Sentinel, Up or Down-gradient	**Contaminants-of-Concern (list/comments)>SCGs** e.g., never, none for # rounds, yes - but statistically downward	**Proposal** e.g., Discontinue Monitoring, Decrease Frequency to Semi-annual	**Comments** e.g., statistical method used, impact due to beaver dam
Note: According to DER, Section 6.6 ©, 3, to decrease monitoring frequency, the contaminant levels in the sentinel well never exceed SCGs; the contaminant levels are as predicted by transport model in plume, and the remaining contaminants demonstrate a statistically-downward trend				
MW-1231C	Area of Concern	tetrachloroethene/yes - but statistically downward	Keep frequency to quarterly/sample for full range of contaminants	Polynomial Function
		trichloroethene/yes - but statistically downward		At this time we no longer believe there is an impact due to the beaver dam
MW-1231E	Area of Concern	chlorobenzene/yes - but statistically downward	Keep frequency to quarterly/sample for full range of contaminants	Polynomial Function
		1,4 dichlorobenzene/not enough data for statistical evaluation		At this time we no longer believe there is an impact due to the beaver dam
MW-1231F	Area of Concern	chlorobenzene/yes - but statistically downward	Keep frequency to quarterly/sample for full range of contaminants	Polynomial Function
		1,2 dichlorobenzene/yes but statistically downward		At this time we no longer believe there is an impact due to the beaver dam
		1,3 dichlorobenzene/yes but statistically downward		
		1,4 dichlorobenzene/yes but statistically downward		
MW-1231G	Sentinel well/down gradient	Never	Keep frequency to quarterly/sample for full range of contaminants	No statistical method
MW-1231H	discontinue sampling/down gradient	Never		
MW-1231I	discontinue sampling/up gradient	Never		

MS - # / Contaminant	Well Location e.g. Area-of-Concern, Sentinel, Up or Down-gradient	Contaminants-of-Concern (list/comments)>SCGs e.g., never, none for # rounds, yes - but statistically downward	Proposal e.g., Discontinue Monitoring, Decrease Frequency to Semi-annual	Comments e.g., statistical method used, impact due to beaver dam
Note: According to DER, Section 6.6 ©, 3, to decrease monitoring frequency, the contaminant levels in the sentinel well never exceed SCGs; the contaminant levels are as predicted by transport model in plume, and the remaining contaminants demonstrate a statistically-downward trend				
MW-1253H	Area of Concern	Acetone/showed up only once in 8 sampling rounds	Keep frequency to quarterly/sample for full range of contaminants	No statistical method - due to number of times contaminant showed up
		Vinyl Chloride/showed up twice in 8 sampling rounds		No statistical method - due to number of times contaminant showed up
		Trans-1,2-dichloroethene/showed up twice in 8 sampling rounds		No statistical method - due to number of times contaminant showed up
MW-1253I	Area of Concern	Cis-1,2-dichloroethene/showed up once in 8 sampling rounds	Keep frequency to quarterly/sample for full range of contaminants	No statistical method - due to number of times contaminant showed up
		Trans-1,3-Dichlorpropene/showed up twice in 8 sampling rounds		No statistical method - due to number of times contaminant showed up
		Trichloroethene/showed up four times in 8 sampling rounds		No statistical method - due to number of times contaminant showed up
MW-1253E	Sentinel well/down gradient	Never	Keep frequency to quarterly/sample for full range of contaminants	No statistical method
MW-1253F	discontinue sampling/down gradient	Never		
MW-1253G	discontinue sampling/up gradient	Never		

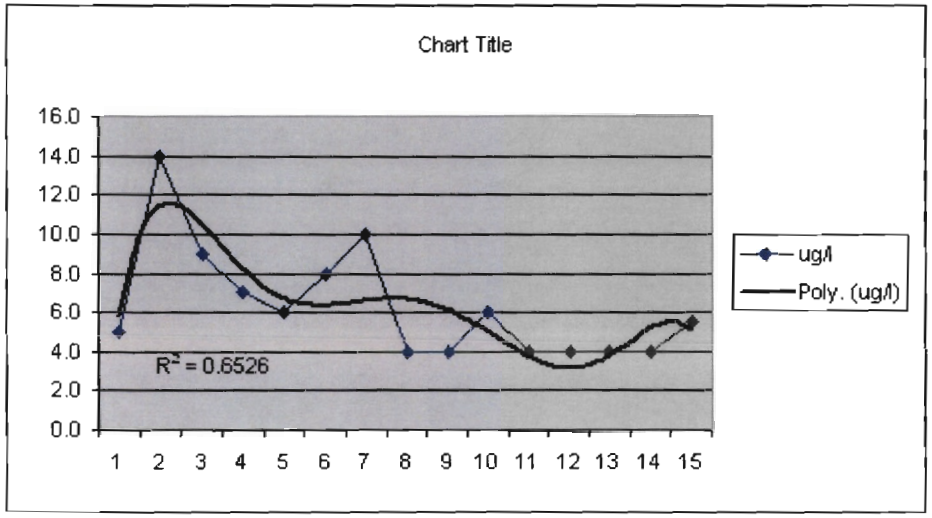
MS - # / Contaminant	**Well Location** e.g. Area-of-Concern, Sentinel, Up or Down-gradient	**Contaminants-of-Concern (list/comments)>SCGs** e.g., never, none for # rounds, yes - but statistically downward	**Proposal** e.g., Discontinue Monitoring, Decrease Frequency to Semi-annual	**Comments** e.g., statistical method used, impact due to beaver dam
Note: According to DER, Section 6.6 ©, 3, to decrease monitoring frequency, the contaminant levels in the sentinel well never exceed SCGs; the contaminant levels are as predicted by transport model in plume, and the remaining contaminants demonstrate a statistically-downward trend				
SW-1	discontinue sampling	Never		
Sw-2	Area of Concern	Never	Keep frequency to quarterly/sample for full range of contaminants	No statistical method
SW-1	discontinue sampling	Never		

TABLE 4-2

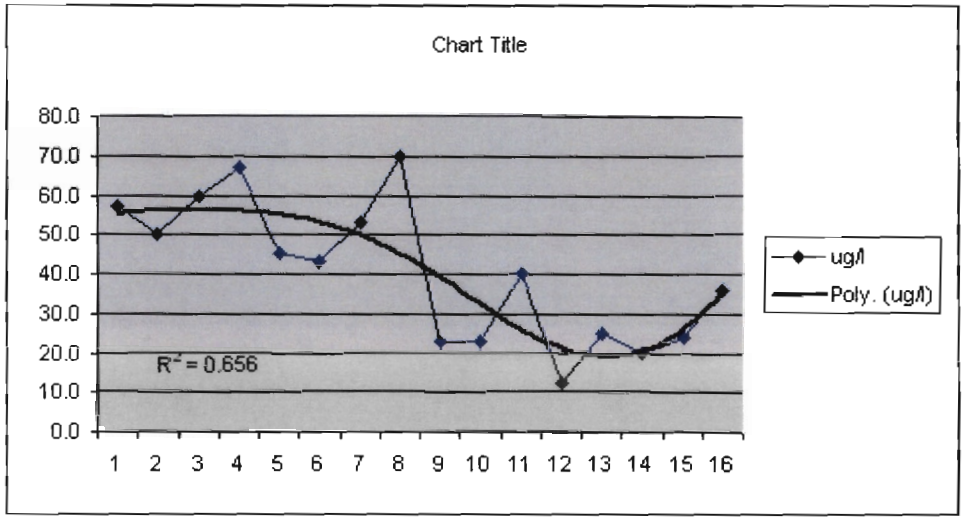
Field Measurement	Building 1231 Well Network															
	MW-1231C															
Chemical - NYSDEC TOGS	Oct-96	Oct-97	Apr-98	Jul-98	Mar-99	Sep-99	Feb-00	Sep-00	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
2- Butanone- 5	U	U	U	U	0.8	U	U	U	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride - 5	U	U	U	U	U	U	U	2	<5	<5	<5	<5	<5	<5	<5	<5
Acetone - 50	U	U	U	U	U	U	U	5	<10	<10	<10	<10	<10	<10	<10	<10
cis-1,2-Dichloroethene - 5	2	14	6	6	4	3	2	3	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene - 5	5	14	8	9	7	6	8	10	<5	<5	6	<5	<5	<5	<5	5.5
Tetrachloroethene - 5	57	50	60	67	45	43	53	70	23	23	40	12	25	20	24	36
Chlorobenzene - 5	U	U	8	U	U	U	U	U	<5	<5	<5	<5	<5	<5	<5	<5

Values are in ug/L (parts per billion - PPB)
U = not detected above detection limits (Value=0)
< = not detected above detection limits (Value=detection limit minus 1 for statistical purposes)

Trichloroethene



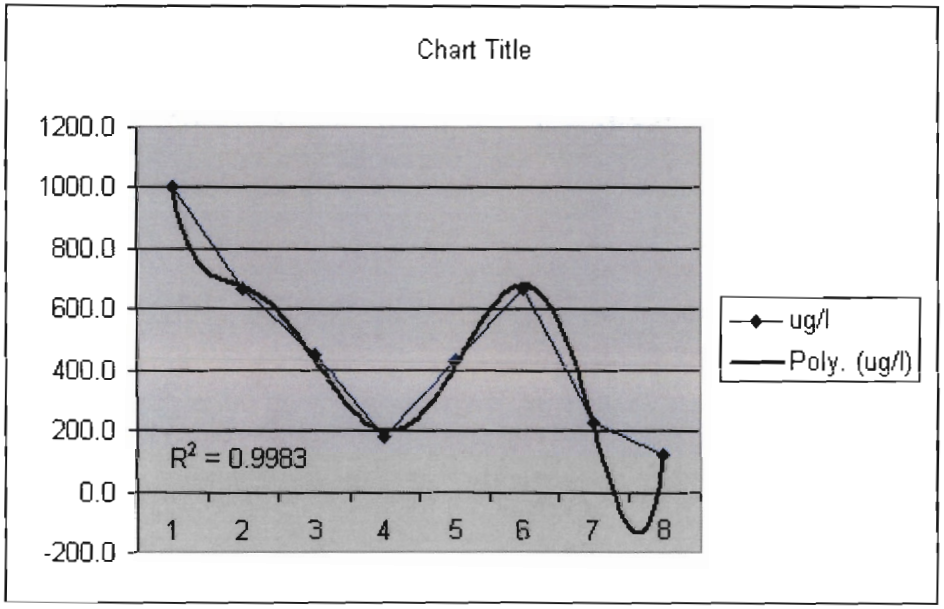
Tetrachloroethene



Field Measurement	Building 1231 Well Network							
	MW-1231E							
Chemical - NYSDEC TOGS	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Benzene - 1	63	<5	<25	<5	<25	<25	<10	<10
1,4 dichlorobenzene - 3	ND	ND	<25	<5	25	33	<10	19
cis-1,2-Dichloroethene - 5	9	<5	<25	<5	<25	<25	<10	<10
Trichloroethene - 5	17	<5	<25	<5	<25	<25	<10	<10
Tetrachloroethene - 5	100	6	<25	<5	<25	<25	<10	<10
Chlorobenzene - 5	1000	670	450	180	430	670	230	120

Values are in ug/L (parts per billion - PPB)
< = not detected above detection limits (Value=detection limit minus 1 for statistical purposes)
ND = no data

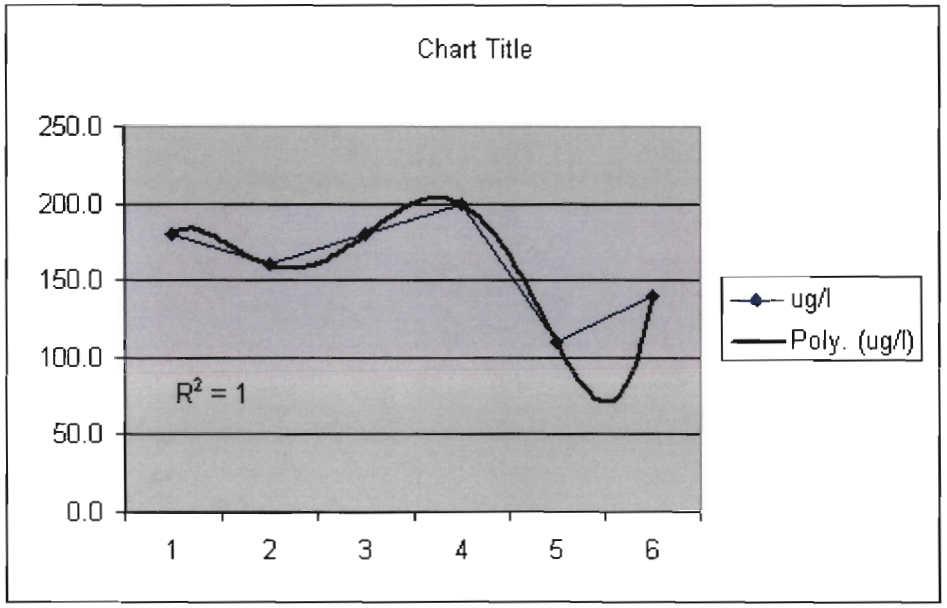
Chlorobenzene



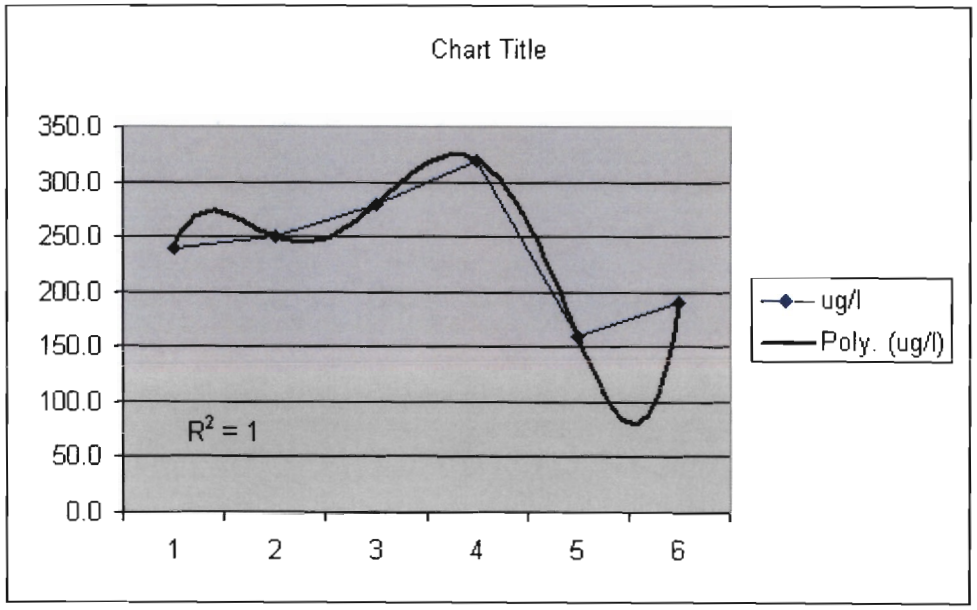
Field Measurement Chemical - NYSDEC TOGS	Building 1231 Well Network MW-1231F May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Benzene - 1	29	20	<50	<50	<50	<50	<25	<25
1,2 dichlorobenzene - 3	ND	ND	180	160	180	200	110	140
1,3 dichlorobenzene - 3	ND	ND	240	250	280	320	160	190
1,4 dichlorobenzene - 3	ND	ND	900	900	940	1000	480	460
Tetrachloroethene - 5	7	7	<50	<50	<50	<50	<25	<25
Chlorobenzene - 5	4600	3200	2100	1800	2000	2000	1000	890

Values are in ug/L (parts per billion - PPB)
< = not detected above detection limits (Value=detection limit minus 1 for statistical purposes)
ND = no data

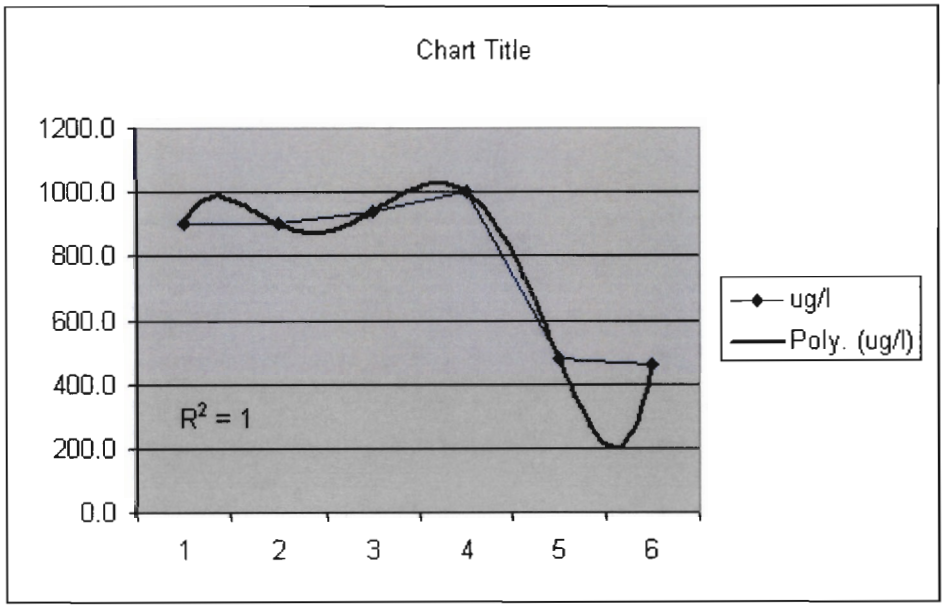
1,2 dichlorobenzene



1,3 dichlorobenzene



1,4 dichlorobenzene



chlorobenzene

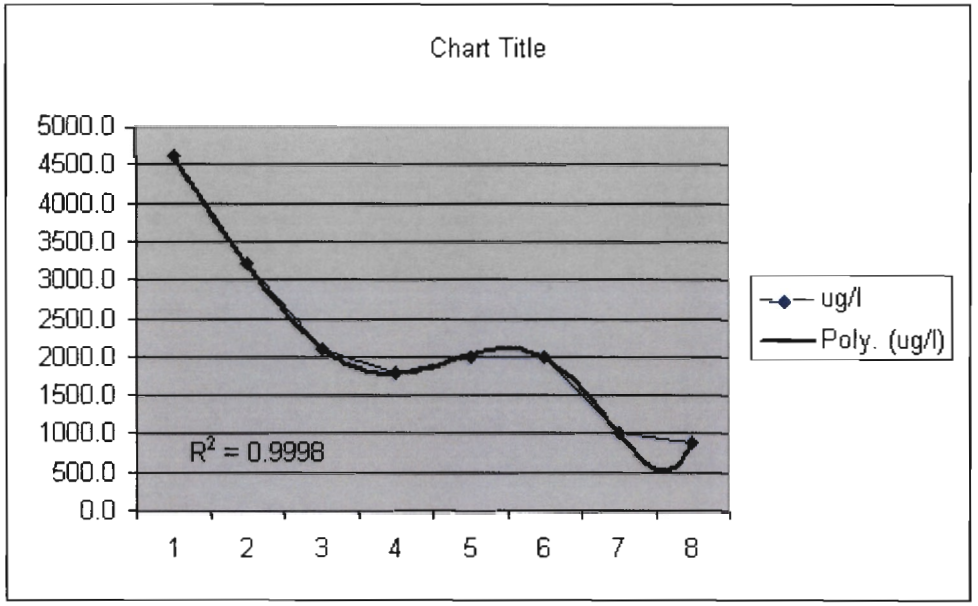
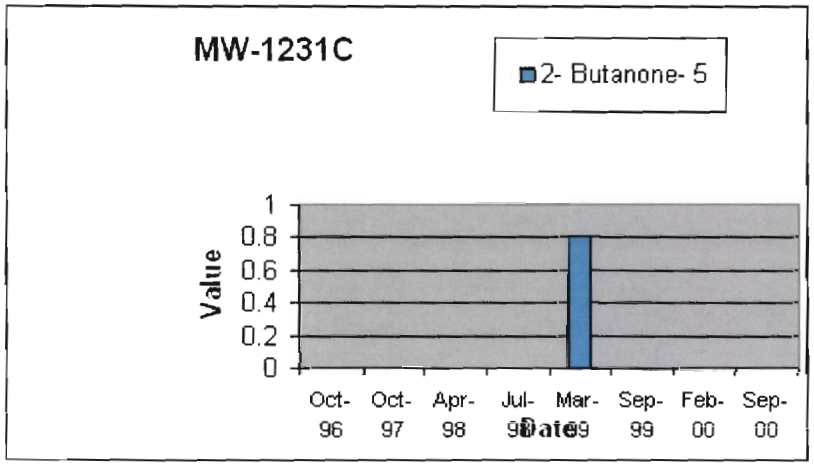
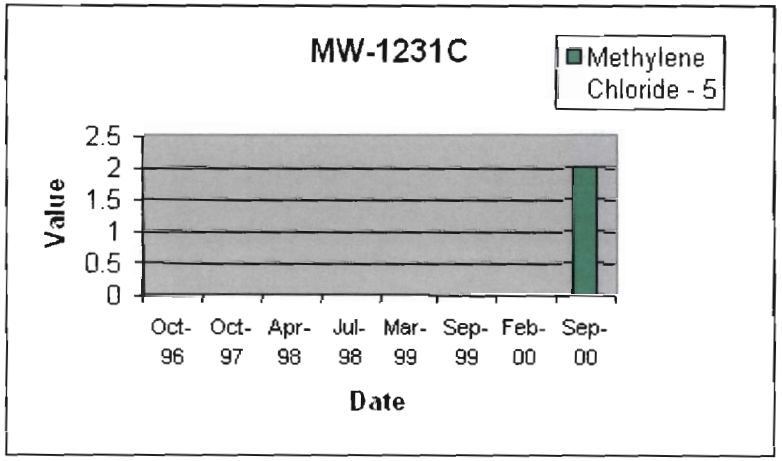


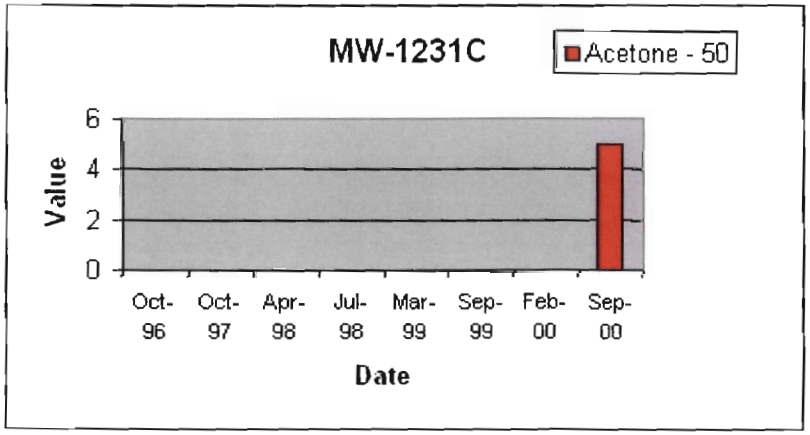
TABLE 4-3

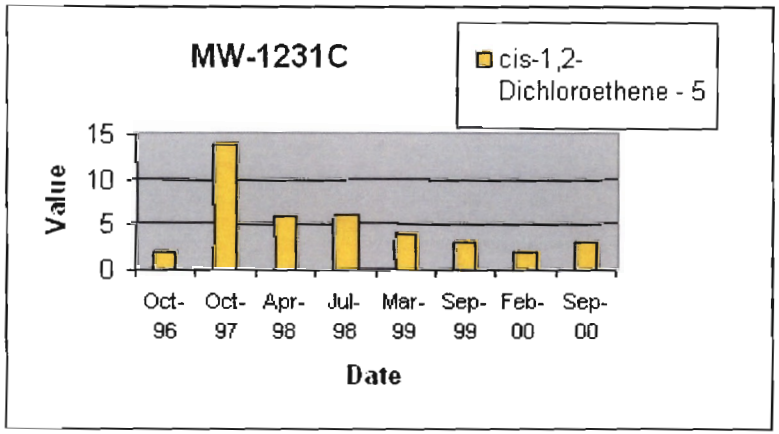
Field Measurement / Chemical - NYSDEC TOGS	Building 1231 Well Network MW-1231C															
	Oct-96	Oct-97	Apr-98	Jul-98	Mar-99	Sep-99	Feb-00	Sep-00	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
2- Butanone- 5	U	U	U	U	0.8	U	U	U	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride - 5	U	U	U	U	U	U	U	2	<5	<5	<5	<5	<5	<5	<5	<5
Acetone - 50	U	U	U	U	U	U	U	5	<10	<10	<10	<10	<10	<10	<10	<10
cis-1,2-Dichloroethene - 5	2	14	6	6	4	3	2	3	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene - 5	5	14	8	9	7	6	8	10	<5	<5	6	<5	<5	<5	<5	5.5
Tetrachloroethene - 5	57	50	60	67	45	43	53	70	23	23	40	12	25	20	24	36
Chlorobenzene - 5	U	U	8	U	U	U	U	U	<5	<5	<5	<5	<5	<5	<5	<5

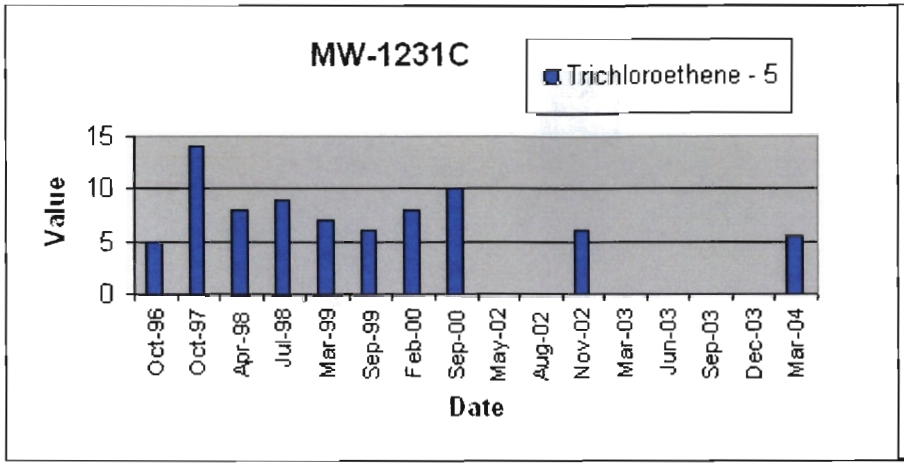
Values are in ug/L (parts per billion - PPB)
U = not detected above detection limits (Value=0)
< = not detected above detection limits (Value=0)

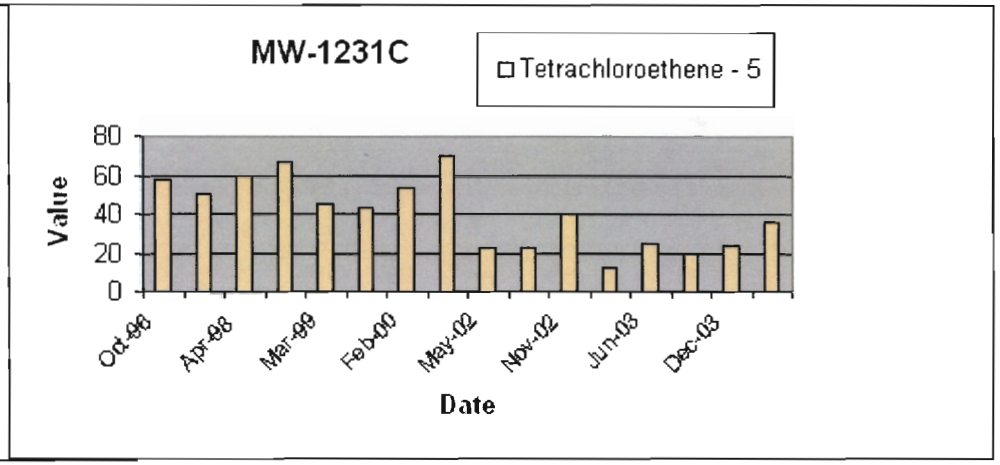


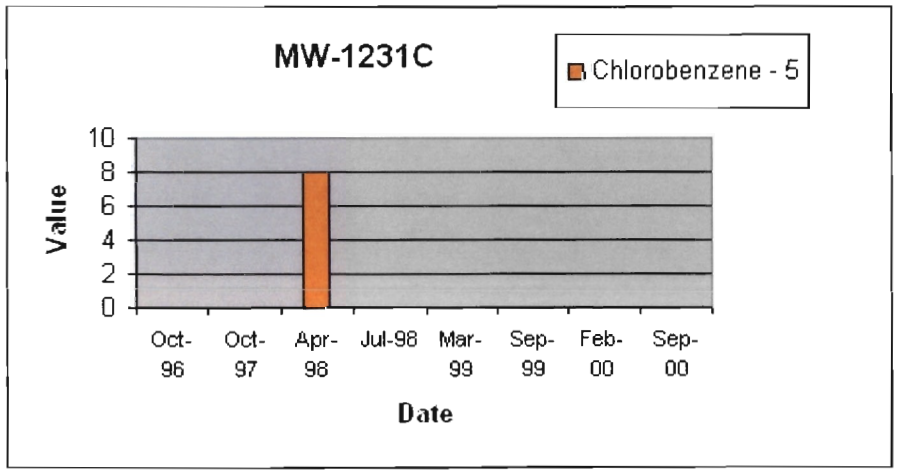






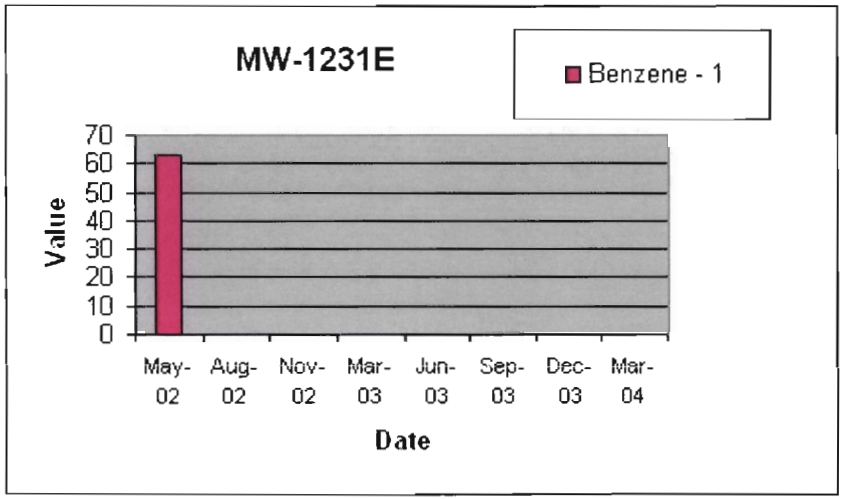

MW-1231C
Trichloroethene - 5
Value
15
10
5
0
Oct-96
Oct-97
Apr-98
Jul-98
Mar-99
Sep-99
Feb-00
Sep-00
May-02
Aug-02
Nov-02
Mar-03
Jun-03
Sep-03
Dec-03
Mar-04
Date

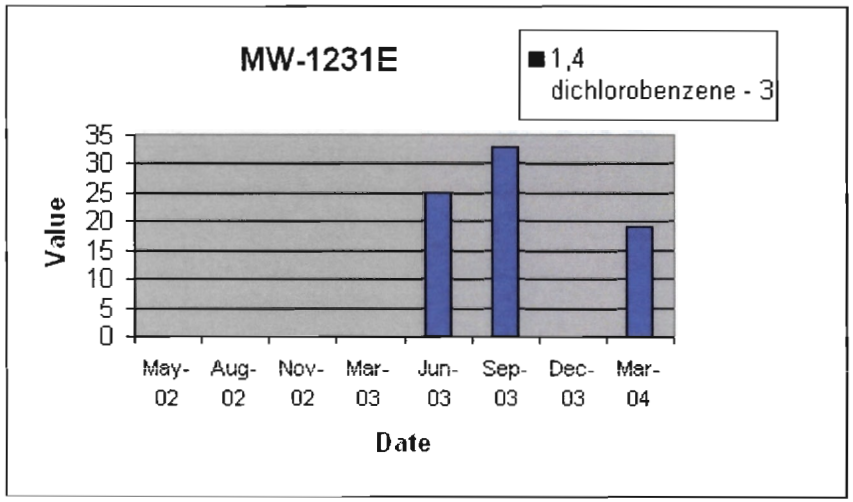

MW-1231C
Tetrachloroethene - 5
Value
80
60
40
20
0
Oct-96
Apr-98
Mar-99
Feb-00
May-02
Nov-02
Jun-03
Dec-03
Date

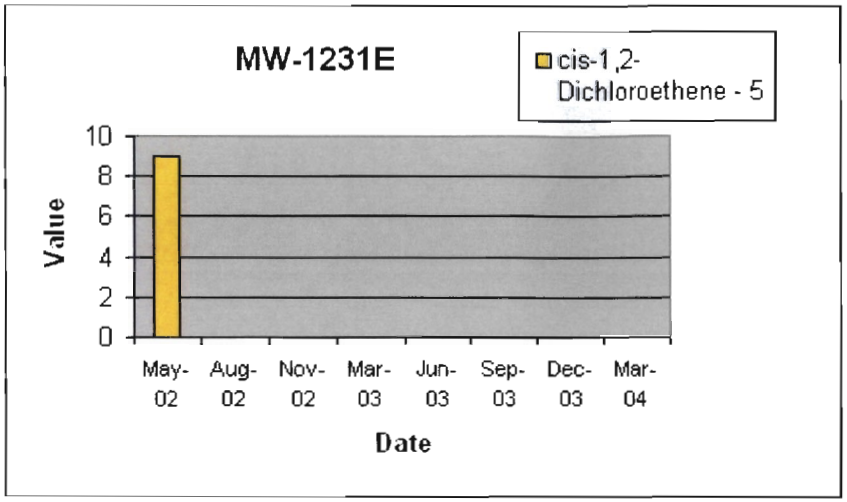

MW-1231C
Chlorobenzene - 5
Value
10
8
6
4
2
0
Oct-96
Oct-97
Apr-98
Jul-98
Mar-99
Sep-99
Feb-00
Sep-00
Date

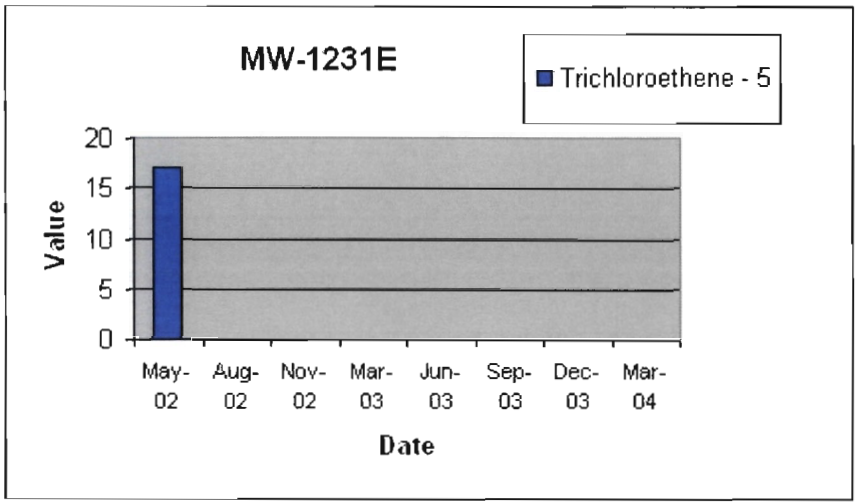
Field Measurement Chemical - NYSDEC TOGS	Building 1231 Well Network MW-1231E							
	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Benzene - 1	63	<5	<25	<5	<25	<25	<10	<10
1,4 dichlorobenzene - 3	ND	ND	<25	<5	25	33	<10	19
cis-1,2-Dichloroethene - 5	9	<5	<25	<5	<25	<25	<10	<10
Trichloroethene - 5	17	<5	<25	<5	<25	<25	<10	<10
Tetrachloroethene - 5	100	6	<25	<5	<25	<25	<10	<10
Chlorobenzene - 5	1000	670	450	180	430	670	230	120

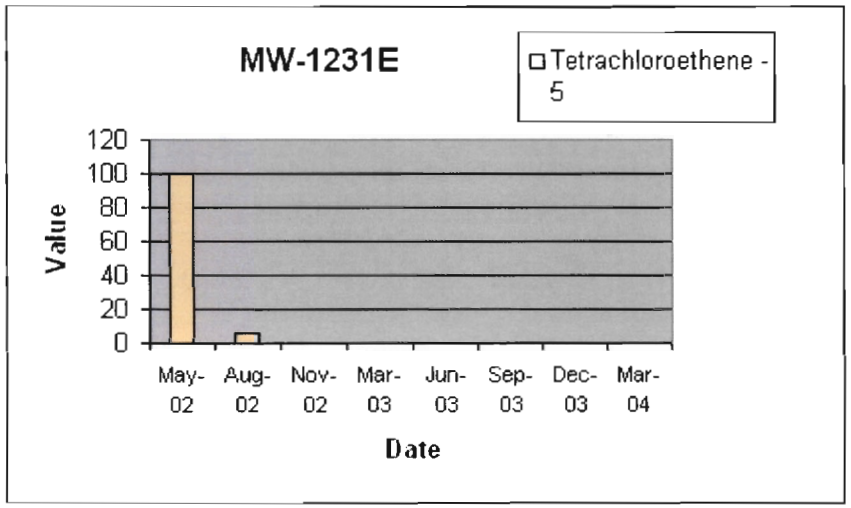
Values are in ug/L (parts per billion - PPB)
< = not detected above detection limits (Value=0)
ND = no data

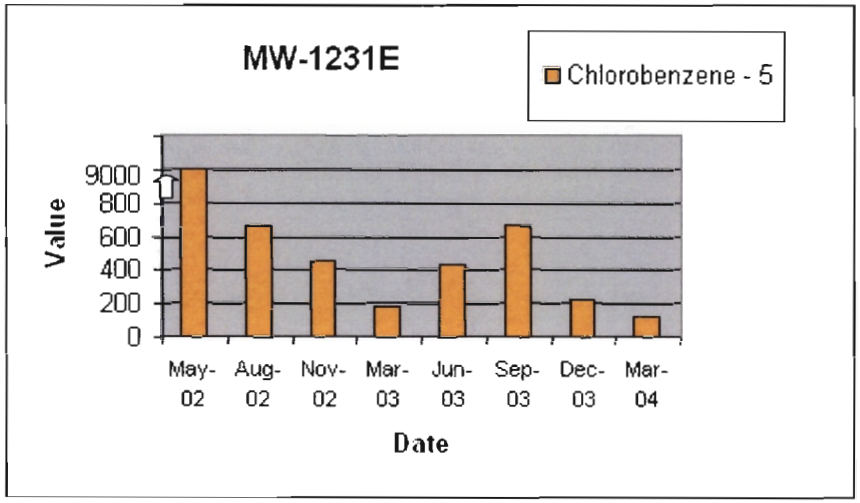





MW-1231E
cis-1,2-Dichloroethene - 5
Value
10
8
6
4
2
0
May-02
Aug-02
Nov-02
Mar-03
Jun-03
Sep-03
Dec-03
Mar-04
Date

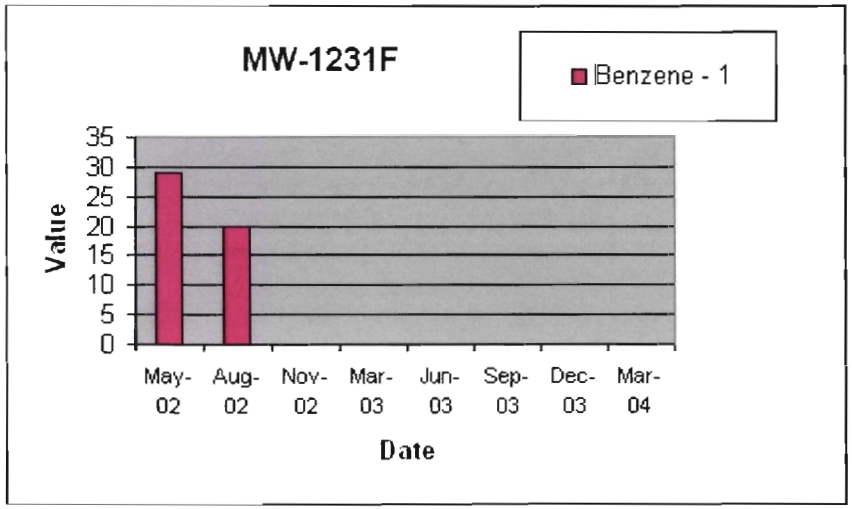

MW-1231E
Trichloroethene - 5
Value
20
15
10
5
0
May-02
Aug-02
Nov-02
Mar-03
Jun-03
Sep-03
Dec-03
Mar-04
Date

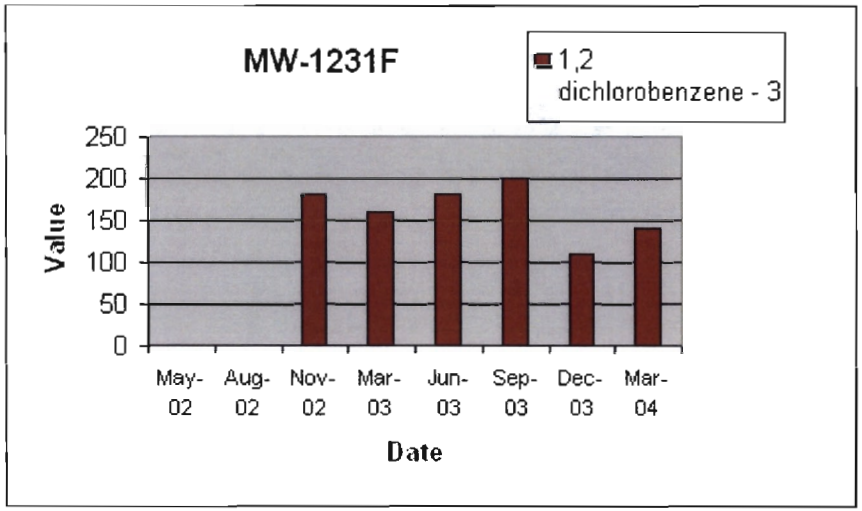

MW-1231E
Tetrachloroethene - 5
Value
120
100
80
60
40
20
0
May-02
Aug-02
Nov-02
Mar-03
Jun-03
Sep-03
Dec-03
Mar-04
Date

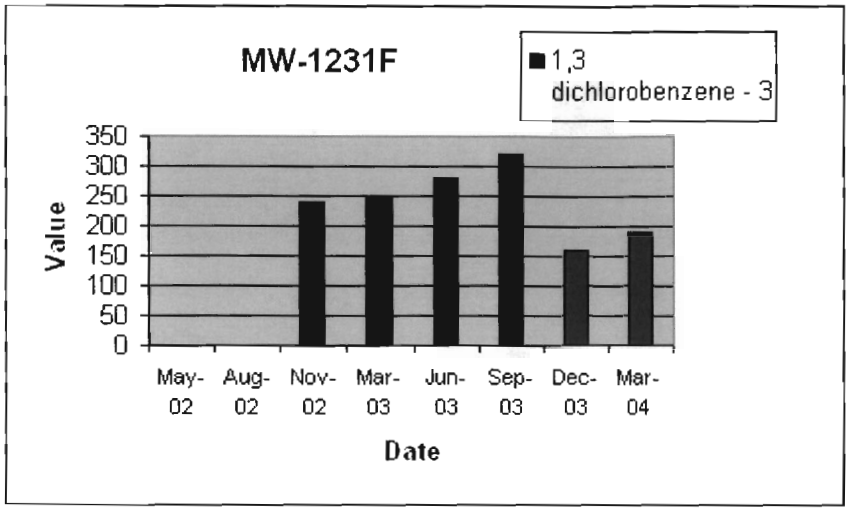

MW-1231E
Chlorobenzene - 5
Value
9000
800
600
400
200
0
May-02
Aug-02
Nov-02
Mar-03
Jun-03
Sep-03
Dec-03
Mar-04
Date

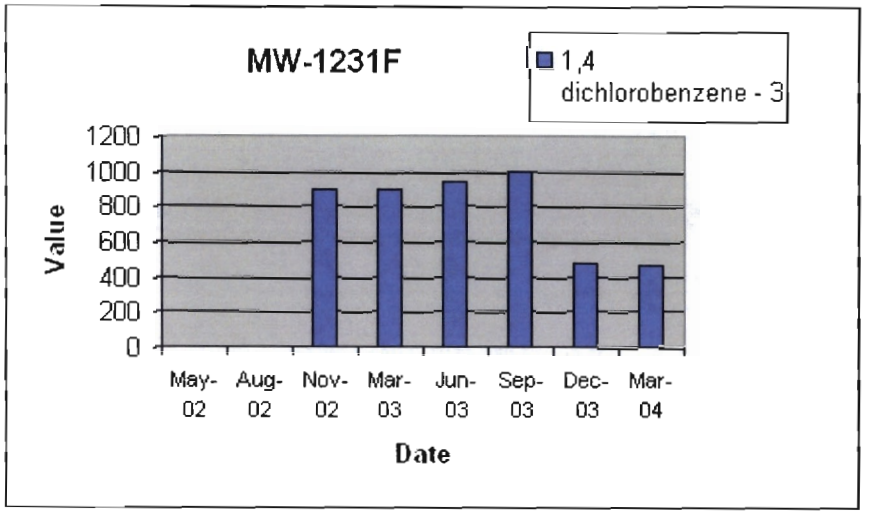
Field Measurement	Building 1231 Well Network							
	MW-1231F							
Chemical - NYSDEC TOGS	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Benzene - 1	29	20	<50	<50	<50	<50	<25	<25
1,2 dichlorobenzene - 3	ND	ND	180	160	180	200	110	140
1,3 dichlorobenzene - 3	ND	ND	240	250	280	320	160	190
1,4 dichlorobenzene - 3	ND	ND	900	900	940	1000	480	460
Tetrachloroethene - 5	7	7	<50	<50	<50	<50	<25	<25
Chlorobenzene - 5	4600	3200	2100	1800	2000	2000	1000	890

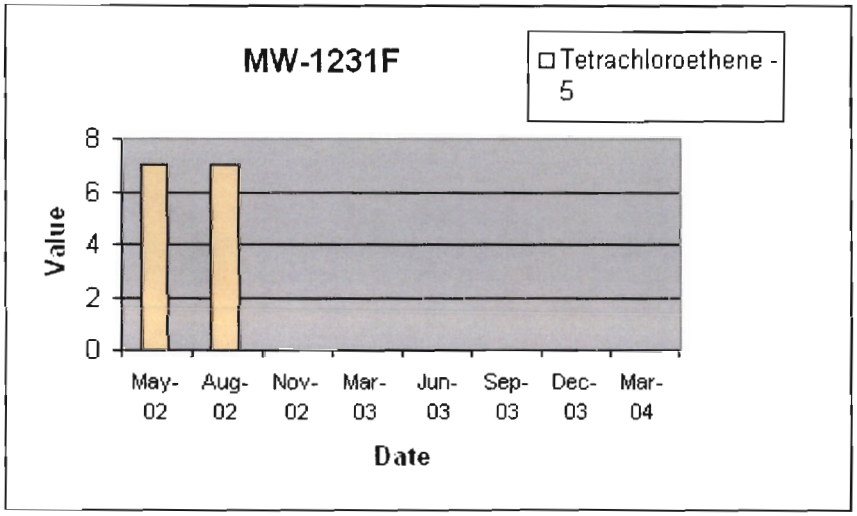
Values are in ug/L (parts per billion - PPB)
< = not detected above detection limits (Value=0)
ND = no data

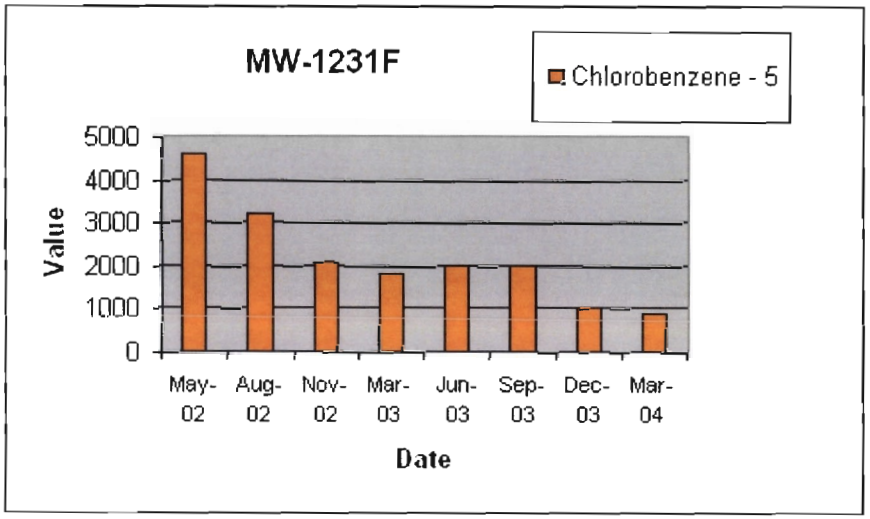





MW-1231F
1,3 dichlorobenzene - 3
350
300
250
200
150
100
50
0
Value
May-02
Aug-02
Nov-02
Mar-03
Jun-03
Sep-03
Dec-03
Mar-04
Date

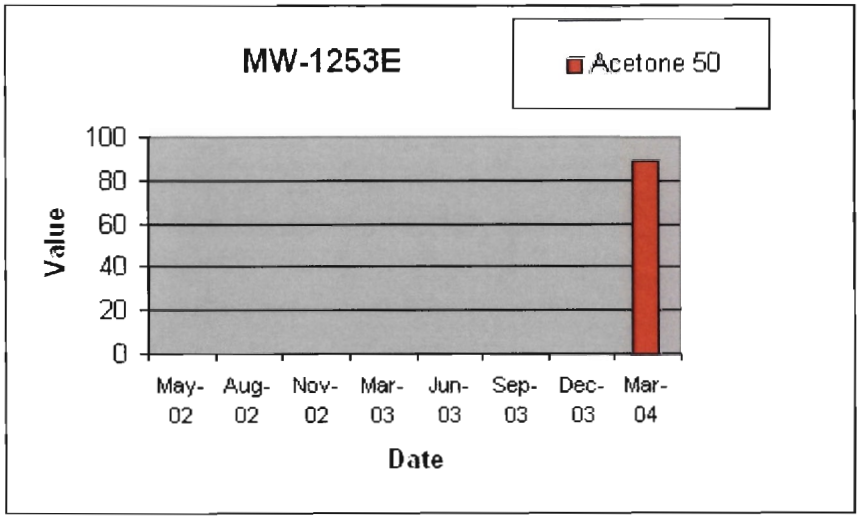

MW-1231F
1,4 dichlorobenzene - 3
1200
1000
800
600
400
200
0
Value
May-02
Aug-02
Nov-02
Mar-03
Jun-03
Sep-03
Dec-03
Mar-04
Date


MW-1231F
Tetrachloroethene - 5
8
6
4
2
0
Value
May-02
Aug-02
Nov-02
Mar-03
Jun-03
Sep-03
Dec-03
Mar-04
Date


MW-1231F
Chlorobenzene - 5
5000
4000
3000
2000
1000
0
Value
May-02
Aug-02
Nov-02
Mar-03
Jun-03
Sep-03
Dec-03
Mar-04
Date

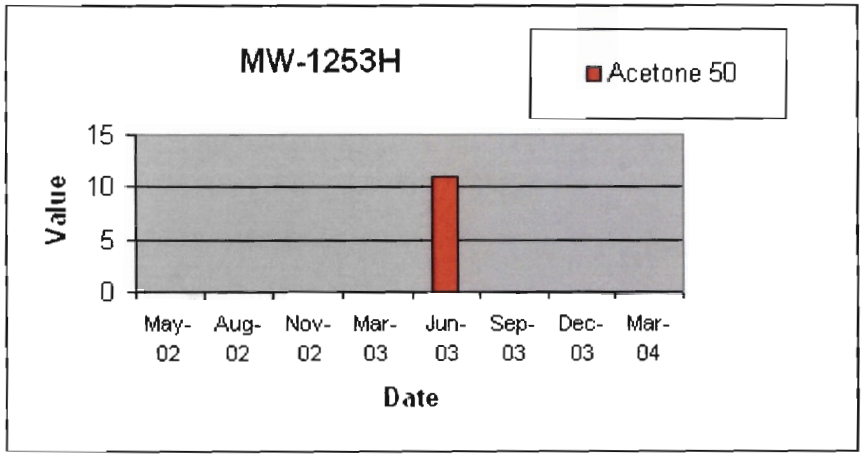
Field Measurement	Building 1253 Well Network							
	MW-1253E							
Chemical - NYSDEC TOGS	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Acetone 50	<10	<10	<10	<10	<10	<10	<10	89

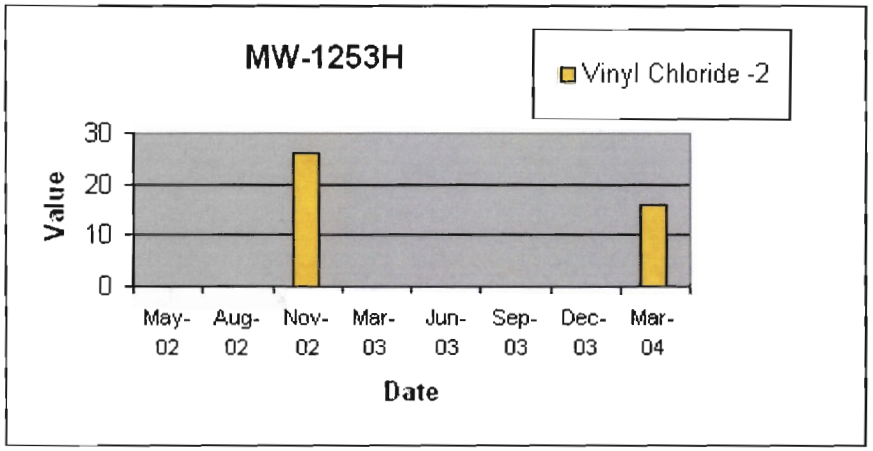
Values are in ug/L (parts per billion - PPB)
< = not detected above detection limits (Value=0)

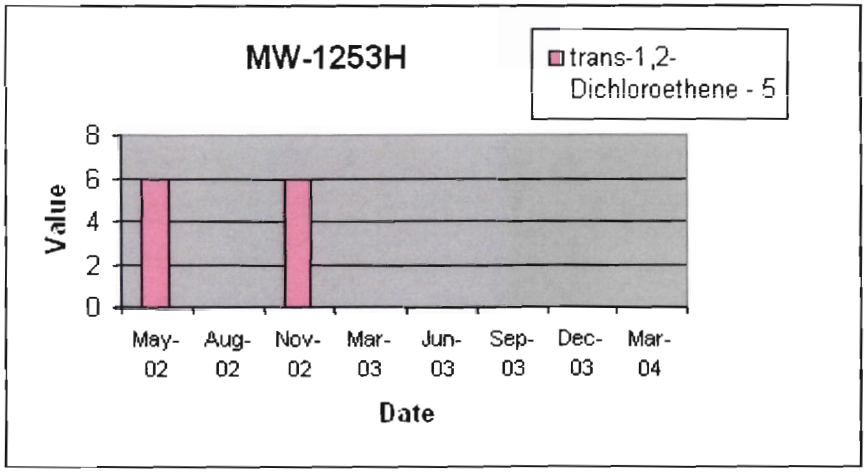


Field Measurement	Building 1253 Well Network							
	MW-1253H							
Chemical - NYSDEC TOGS	May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
Acetone - 50(G)	<10	<10	<10	<10	11	<10	<10	<10
Vinyl Chloride -2	<10	<10	26	<10	<10	<10	<10	16
trans-1,2-Dichloroethene - 5	6	<5	6	<5	<5	<5	<5	<5

Values are in ug/L (parts per billion - PPB)
< = not detected above detection limits (Value=0)







Field Measurement Chemical - NYSDEC TOGS	Building 1253 Well Network MW1253I May-02	Aug-02	Nov-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04
cis-1,2-Dichloroethene - 5	ND	ND	ND	ND	<5	9.8	<5	<5
trans-1,3-Dichloropropene - 0.4	33	<5	9	<5	<5	<5	<5	<5
Trichloroethene - 5	25	<5	<5	<5	12	17	<5	7.1

Values are in ug/L (parts per billion - PPB)
< = not detected above detection limits (Value=0)
ND = no data