# 2004 ANNUAL PERFORMANCE MONITORING REPORT

# CIRCUITRON SUPERFUND SITE EAST FARMINGDALE, NEW YORK

*Prepared for*
USACE, New York

Contract No. DACW41-01-D-0004
Delivery Order No. 002

October 2004

URS

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Project 41554919.660510

**URS**

October 18, 2004

Mr. Shewen Bian
U.S. Army Corps of Engineers
Building 408 Pershing Loop
Point Hamilton Military Community
Brooklyn, NY 11252

**Re:** Circuitron Corporation Superfund Site
2004 Annual Performance Monitoring Report

Dear Shewen:

Please find enclosed one copy of the 2004 Annual Performance Monitoring Report, which evaluates the June 2004 monitoring well sampling results and water levels obtained through June 2004.

Please do not hesitate to contact me if you have any questions.

Very truly yours,

Anne Fung, P.E.
Senior Project Manager
Remediation Operating Services

CC. Ms. Sharon Trocher - USEPA (1 copy)
Mr. Rob Alvey – USEPA (1 copy)
Mr. Jeff Trad – NYSDEC (1 copy)
Greg Gangemi - Site File (1 copy)
41554919 File

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## List of Acronyms

| | |
|---|---|
| 1,1,1-TCA | 1,1,1-trichloroethane |
| 1,1-DCA | 1,1-dichloroethane |
| 1,1-DCE | 1,1-dichloroethene |
| 1,2-DCE | 1,2-dichloroethene (total) |
| Bgs | below ground surface |
| FFS | Focused Feasibility Study |
| Gpm | gallons per minute |
| OU-2 | Operable Unit Two |
| PCE | tetrachloroethene |
| RCRA | Resource Conservation Recovery Act |
| ROD | Record of Decision |
| TCE | Trichloroethene |
| USEPA | United States Environmental Protection Agency |
| USACE | United States Army Corps of Engineers |
| VOC | Volatile organic compound |

## 1.0 INTRODUCTION

This is the 2004 Annual Performance Monitoring Report for the Circuitron Corporation Superfund Site located in East Farmingdale, New York (Figure 1-1). This report presents an assessment of the groundwater data collected to-date for the period January 1999 to June 2004, in accordance with the selected remedy for the site as described in the Record of Decision (ROD) (USEPA, 1994) for Operable Unit Two (OU-2). The annual reports are prepared on a regular schedule incorporating new performance monitoring data. Since metals analysis was eliminated after the 2003 sampling event, this report does not contain all the historical metals data previously presented. Refer to the 2003 Annual Performance Monitoring Report for the metals data collected from January 1999 to April 2003.

This section of the report provides background information for the site, including a description of the extraction well system, the network of performance monitoring wells, and the monitoring schedule. Section 2 introduces the technical approach for the performance monitoring evaluation. Section 3 provides an assessment of the groundwater flow patterns for the site with respect to the modeled and the observed zones of capture for the OU-2 remedy. Section 4 is an evaluation of the groundwater quality data for the site. Section 5 presents a summary of the findings and conclusions. Section 6 presents recommendations for the site, and Section 7 provides the reference materials used for the preparation of this report.

## 1.1 BACKGROUND

Based on the results of the Focused Feasibility Study (FFS) for OU-2, completed by Roy F. Weston (Weston, 1994), elevated levels of both organic and inorganic compounds were detected in the Upper Glacial Aquifer below and near the Circuitron site. The Upper Glacial Aquifer is described as the water table aquifer that extends to a depth of 70 to 80 feet below the ground surface (bgs) at the site and overlies the Magothy Aquifer. Elevated levels (exceeding Federal and State Groundwater Drinking Water Standards) of 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethene (1,1-DCE), chromium, and copper were detected in the groundwater in the upper portions (less than 40 feet below the ground surface) of the Upper Glacial Aquifer. These detections were attributed to the Circuitron facility (see Figure 1-2). Similar compounds were also detected at elevated levels in the deeper portions (greater than 60 feet bgs) of the Upper Glacial Aquifer and in the underlying

Magothy Aquifer in wells located on-site in addition to the wells located upgradient and downgradient of the site. These detections in the deeper zone are believed to be the result of off-site sources other than Circuitron (Weston, 1994). After the FFS was completed, a ROD for OU-2 was signed on September 30, 1994. The selected remedy consists of the removal of organics and inorganics from the groundwater within the upper portion of the Upper Glacial Aquifer via air stripping and metal precipitation, respectively, and re-injection of the treated groundwater. Groundwater extraction for treatment from the deeper portion of the Upper Glacial Aquifer, and the Magothy Aquifer was not included as part of the OU-2 remedy for the site. The major components of the OU-2 remedy include the following:

- Extraction of the site-related groundwater contaminant plume present in the upper 40 feet (top portion) of the saturated Upper Glacial Aquifer;
- Treatment, via precipitation and air stripping, of contaminated groundwater to drinking water standards;
- Re-injection of the treated groundwater into the Upper Glacial Aquifer via an infiltration gallery, and
- Disposal of treatment residuals at a Resource Conservation Recovery Act (RCRA) Subtitle C Facility.

## 1.2 GROUNDWATER EXTRACTION SYSTEM

For the OU-2 remedy, groundwater flow and contaminant transport modeling was performed (Radian, 1999) to assist in the final design of the treatment system. Specifically, modeling was used to determine the placement and pumping rates of proposed extraction wells. Several scenarios of groundwater extraction well placement and pumping rates were considered for the OU-2 remedy design. The selected design consists of three (3) extraction wells pumping at a total rate of 80 gallons per minute (gpm), a treatment system, and re-injecting treated groundwater into a trench located at the northern (upgradient) end of the site.

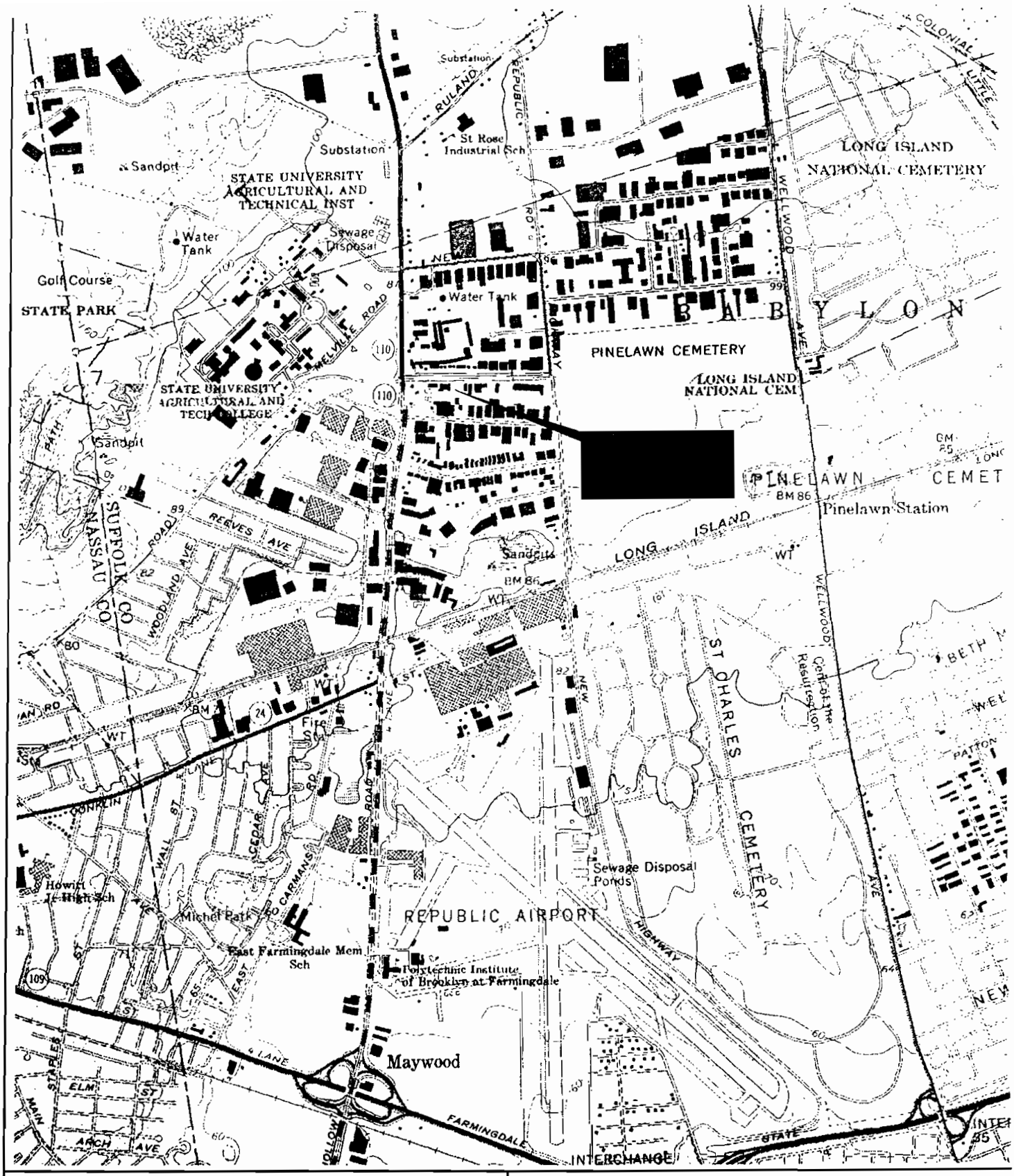
The groundwater extraction system consists of three (3) extraction wells (RW-1, RW-2, and RW-3) each equipped with a submersible well pump and piping that discharges groundwater to an on-site treatment plant. The extraction wells are positioned to pump groundwater from three areas to accomplish groundwater capture around the subject site area. Each well is constructed with a 15-feet long ASTM–A-304 stainless steel screen connected to ASTM-A-304 Schedule 40 stainless steel riser. The bottom of the well screens

for RW-1, RW-2, and RW-3 were installed at depths of 56 feet, 56 feet, and 54 feet bgs, respectively. The extraction well locations are presented in Figure 1-2. Each extraction well is pumped intermittently based on water levels in the extraction wells and the water levels in both the equalization tank and in the building sump inside the groundwater treatment plant (remediation system) building. The design total flow rate of the three extraction wells is 80 gpm, where RW-1, RW-2, and RW-3 are pumped individually at 30 gpm, 20 gpm, and 30 gpm, respectively. The system began operation on June 28, 2000.

## 1.3 GROUNDWATER MONITORING SYSTEM

Currently, there is a network of 19 monitoring wells located at and around the Circuitron site that are used for groundwater monitoring of the OU-2 remedy. Shallow wells are those wells screened in the shallow portion of the Upper Glacial Aquifer that are 34 to 40 feet deep. Deep wells are those wells screened in the deep Upper Glacial Aquifer or Magothy Aquifer that are 99 to 101 feet deep. Of the 19 wells, 12 wells are shallow and seven are deep. For the Performance Monitoring period of June 2000 to June 2004, water level data and groundwater quality data were collected from each well in the network. Water levels were measured monthly from each well in the network and groundwater samples were collected quarterly for volatile organic compounds (VOCs) and semi-annually for inorganic analyses. In 2003, well sampling was reduced to annual sampling for VOCs and Metals.

Based on URS's recommendations in the 2003 Annual Performance Monitoring Report, the United States Environmental Protection Agency (USEPA) eliminated the requirement for annual metals sampling in the monitoring wells. The sampling method was also changed from the low-flow method to the diffusive bag method. To facilitate comparison of these sampling methods, replicate samples were collected on select wells using the low-flow method. These data are used to assess the performance of the treatment system and are discussed in Sections 3 and 4 of this report.




0 2000 4000

SCALE (FEET)

N

MAP SOURCE:

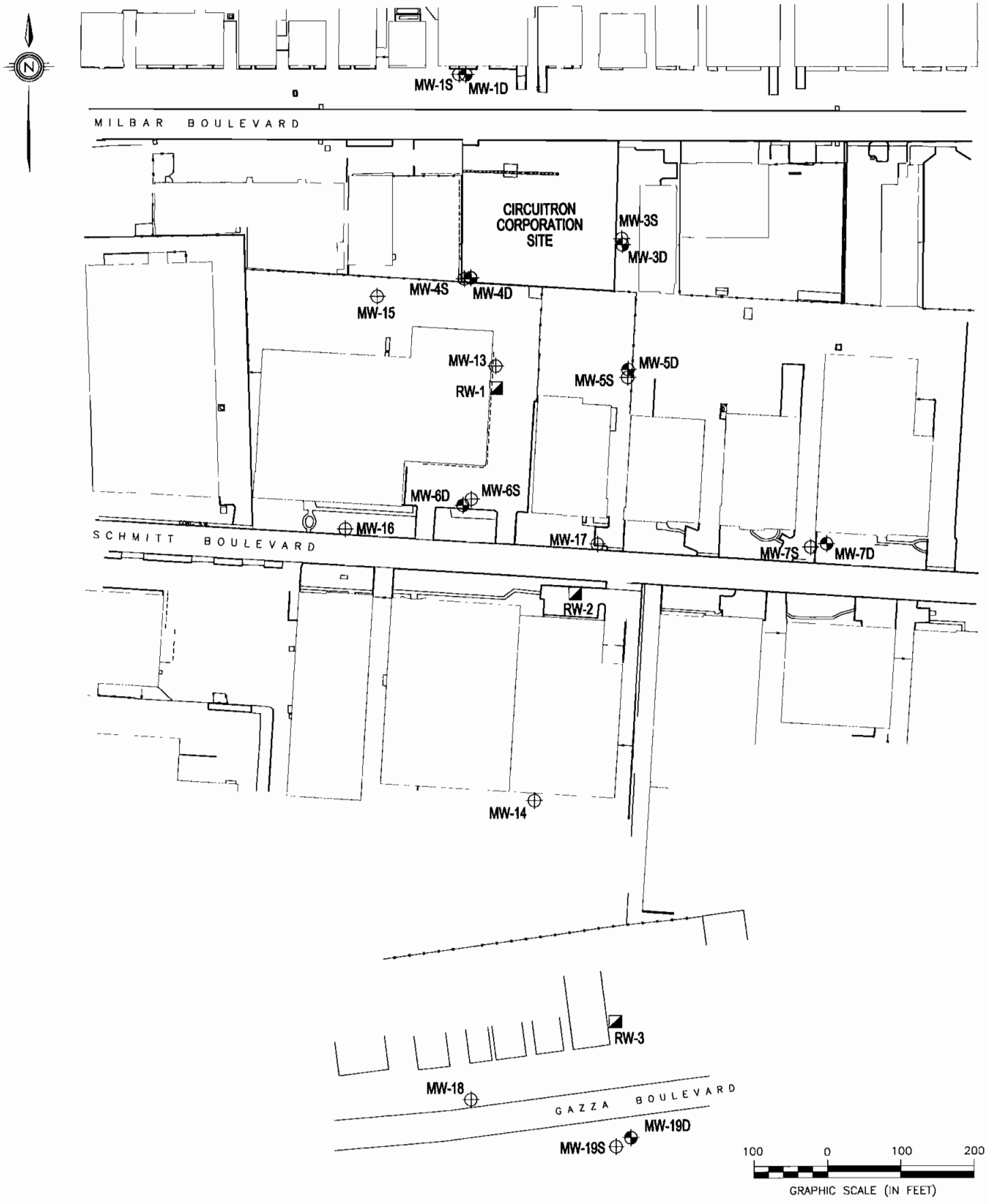
U.S.G.S. 7.5 MINUTE SERIES QUADRANGLES OF HUNTINGTON, N.Y., DATED 1967, PHOTOREVISED 1979 AND AMITTYVILLE, N.Y. DATED 1969, PHOTOREVISED 1979.

# SITE LOCATION MAP
# CIRCUITRON CORPORATION SUPERFUND SITE
# EAST FARMINGDALE, NEW YORK

**URS**

WAYNE, NEW JERSEY

| | | | | | |
|---|---|---|---|---|---|
| DR. BY | JL | SCALE AS SHOWN | DWG. CIT-AREA-MAP.DWG | PROJ. NO. | 196838 |
| CK'D. BY | BB | DATE | DEC 17, 2002 | FIG. NO. | 1-1 |




LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- RECOVERY WELL
- REINJECTION TRENCH AND MANHOLE

# Site Map

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-SITE-MAP.DWG | DATE: 2-11-04 | FIGURE #: 1-2 |
|---|---|---|

## 2.0 TECHNICAL APPROACH

This evaluation assesses changes in the concentrations of compounds dissolved in groundwater relative to the observed zone of capture using hydraulic and water quality data collected during the Performance Monitoring period, which extended from January 1999 to June 2004. Isoconcentration maps, groundwater elevation contour and flow maps, and geochemical time-series graphs are used to assess the effectiveness of the remediation system for treating the groundwater present in the shallow portion of the Upper Glacial aquifer. Portions of the deep Upper Glacial Aquifer and the Magothy Aquifer are being monitored for changes in groundwater chemistry over time; therefore, time-series graphs were prepared for wells screened within this zone. However, the overall effectiveness of the remediation system is based solely on the results in the Upper Glacial Aquifer, as described in the Record of Decision (ROD).

## 2.1 GROUNDWATER CONTOUR AND FLOW MAPS

Groundwater elevation contour maps were prepared for the groundwater present in the shallow portion of the Upper Glacial aquifer beneath the site. The effectiveness of the remediation system to induce groundwater capture is indicated by comparing the groundwater flow pattern under pumping conditions to the modeled capture zone. Compounds dissolved in groundwater obtained from wells within the capture zone will be transported toward one of three pumping wells. Groundwater capture is demonstrated if groundwater flow lines are directed toward one of the three extraction wells, as indicated by groundwater elevation contour maps prepared under pumping conditions. This assessment is presented in Section 3.

## 2.2 GROUNDWATER QUALITY

Groundwater quality was evaluated by preparing isoconcentration maps and geochemical time-series graphs from the sampling data obtained during the Performance Monitoring Period. Data from sampling events that occurred prior to startup of the remediation system, May 1993/Feb 1994 and mid-June 2000, were used as the benchmark to represent pre-remediation baseline groundwater quality conditions. These data were used to identify which volatile organic compounds (VOCs) are potentially related to historical

activities at the site (site-related) or believed to not have been related to historical activities at the site (non site-related). This is discussed more fully in Section 4 of this report.

Isoconcentration contour maps were prepared using data obtained from the June 2000, January/February 2002, April 2003, and June 2004 sampling events for various VOCs and inorganic analytes for groundwater obtained from the shallow aquifer. Beginning in June 2004, only VOC samples were collected for analysis as agreed to by USEPA. Previous data were submitted to the USEPA and United States Army Corps of Engineers (USACE) as part of the Operation and Maintenance Monthly Progress Reports for the site. Comparison of the isoconcentration maps to groundwater flow paths can be used to document that the remediation system is effectively remediating compounds dissolved in groundwater. This evaluation is presented in Section 4 of this report.

Geochemical time-series graphs provide an effective technique for documenting trends over time in groundwater quality from a given well. Time-series graphs were prepared by plotting concentration levels versus time for compounds detected in groundwater samples from both the shallow and deep monitoring wells. Data obtained from the deeper Upper Glacial and Magothy Aquifer wells were prepared to document changes in groundwater chemistry over time because these wells are included in the Performance Monitoring program. However, the assessment of the OU-2 remedy is solely based on the results from the shallow Upper Glacial Aquifer.

# 3.0 GROUNDWATER FLOW

Water levels measurements from each accessible monitoring well were collected in January 1999, prior to the startup of the full-scale remediation system operation in late June 2000. Groundwater level data from January 1999 (Figure 3-1a) and mid-June 2000 (Figure 3-1b) were used to establish baseline conditions of groundwater flow within the upper portion of the Upper Glacial Aquifer under non-pumping conditions. After commencement of the remediation system operation in late June 2000, water level measurements were collected monthly from each accessible monitoring well.

Evaluation of the groundwater flow pattern is limited to the Upper Glacial Aquifer because this zone is the target of the remediation system. Therefore, to evaluate groundwater flow patterns within the upper portion of the Upper Glacial Aquifer, groundwater contour maps were prepared to show hydraulic gradients and flow patterns under pumping and non-pumping conditions. In addition, groundwater flow patterns for August 2002 (Figure 3-1c), April 2003 (Figure 3-1d), and for March 2004 (Figure 3-1e) are compared to the modeled capture zone estimated from the groundwater modeling (Radian, 1999). Water levels from March 2004 versus June 2004 were selected for contouring because the March water level data represent active pumping conditions. The comparison of measured versus modeled capture zones for August 2002, April 2003, and March 2004 are presented in Figures 3-2, 3-3, and 3-4, respectively.

Hydrographs showing groundwater elevation over time were prepared for each well (Appendix C). These graphs indicate that the hydrographs for the individual wells generally (with a few notable exceptions) parallel one another and the hydraulic gradient has remained essentially constant during the Performance Monitoring Period. Additionally, the hydrographs show that groundwater levels in the shallow and deep wells measured during the August 2002 and March 2004 sampling events are from one to six feet lower than the pre-pumping conditions measured in June 2000.

## 3.1 BASELINE CONDITIONS

The baseline groundwater flow pattern recorded in January 1999 (Figure 3-1a) and June 2000 (Figure 3-1b) represent hydraulic conditions prior to operating the remediation system. These data show that groundwater flow is to the south/southeast with a hydraulic

gradient between 0.002 ft/ft and 0.004 ft/ft within the upper portion of the Upper Glacial Aquifer during January 1999 and June 2000.

## 3.2 PUMPING CONDITIONS

Figure 3-1c to Figure 3-1e show the groundwater contour map and the flow pattern within the upper portion of the Upper Glacial Aquifer under pumping conditions during August 2002, April 2003, and March 2004 while the system was fully operational. In early 2004, flow rates in recovery well RW-2 was very low. After eliminating potential pump problems, URS made plans to clean the header pipes. However, prior to this cleaning event, the flow rates suddenly increased. No exact explanation can be provided for this phenomenon. In the spring of 2004, flow rates in all 3 recovery wells indicated very high numbers. After further evaluation, it was determined that a PLC input/output card had malfunctioned. After replacement of this card, all flow rates were recorded to be in the normal design rates.

The groundwater flow pattern indicates transport toward the south with a bi-directional flow component on either side of a north-south line connecting the three recovery wells. West of this line, flow is predominantly to the southeast. East of this line, flow is to the southwest. The effects of pumping groundwater are evident as groundwater contours are partially wrapped around each recovery well. Groundwater flow patterns and zone of capture for August 2002, April 2003, and March 2004 are presented in Figures 3-2, 3-3, and 3-4 respectively. The groundwater flow paths leading to a recovery well indicates capture by that recovery well.

Table 3-1 presents hydraulic gradients observed in June 2000 (pre-pumping), August 2002, April 2003, and March 2004 (pumping) conditions. A comparison of the gradients measured in August 2002, April 2003, and March 2004 at which time the treatment system was operational, shows that gradients in the northern portion of the site are very similar but that gradients are steeper around well MW-14 during the April 2003 measurements.

## 3.3 CAPTURE ZONE: MODELED VS. OBSERVED

Groundwater flow and contaminant transport modeling was performed by Radian International in 1999 to assist in the final design of the OU-2 remediation system. The

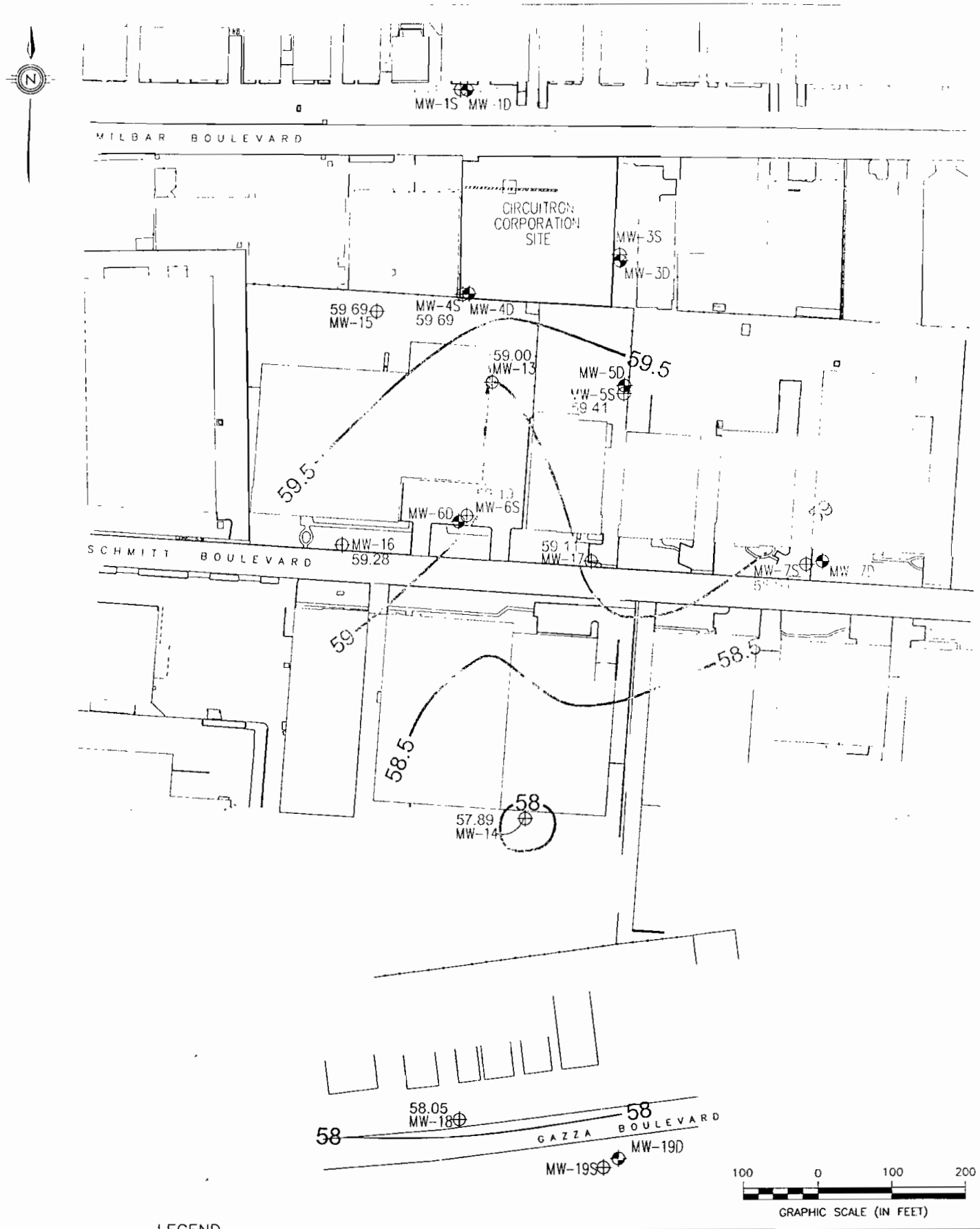
selected design model predicts the extent of the capture zone as a result of pumping groundwater for treatment (Radian, 1999).

Figures 3-2, 3-3, and 3-4 show the modeled capture zone within the upper portion of the Upper Glacial Aquifer for a total pumping rate of 100 gpm and the groundwater contours and flow paths from August 2002, April 2003, and March 2004, respectively, superimposed on the modeled capture zone. Each flow path within the modeled capture zone is flowing towards one of the recovery wells, showing the complete capture of groundwater within the target area by the remediation system. The August 2002 capture zone is slightly larger than the modeled capture zone because flow paths near wells MW-7S and MW-16 are directed into the modeled capture zone. The March 2004 capture zone is slightly larger than the one in August 2002.

**Table 3-1. Horizontal Gradients (feet/feet) Upper Glacial Aquifer, Circuitron Corporation Superfund Site**

| Date | Traverse* | | | |
|---|---|---|---|---|
| | MW-15 (Northwest) | MW-5 (Northeast) | MW-14 (Southwest) | MW-14 (Southeast) |
| June 2000 (pre-pumping) | 0.002 | 0.002 | 0.004 | 0.004 |
| August 2002 (pumping) | 0.003 | 0.005 | 0.004 | 0.005 |
| April 2003 (pumping) | 0.004 | 0.004 | 0.006 | 0.008 |
| March 2004 (pumping) | 0.002 | 0.002 | 0.006 | 0.006 |

*Traverses used to calculate gradients are centered on these wells and follow the flow paths which are at right angles to groundwater contours.




LEGEND

- ⊕ SHALLOW MONITORING WELL
- ◆ DEEP MONITORING WELL
- 58.05 GROUNDWATER ELEVATION
- —— GROUNDWATER ELEVATION CONTOUR LINE
- REINJECTION TRENCH AND MANHOLE

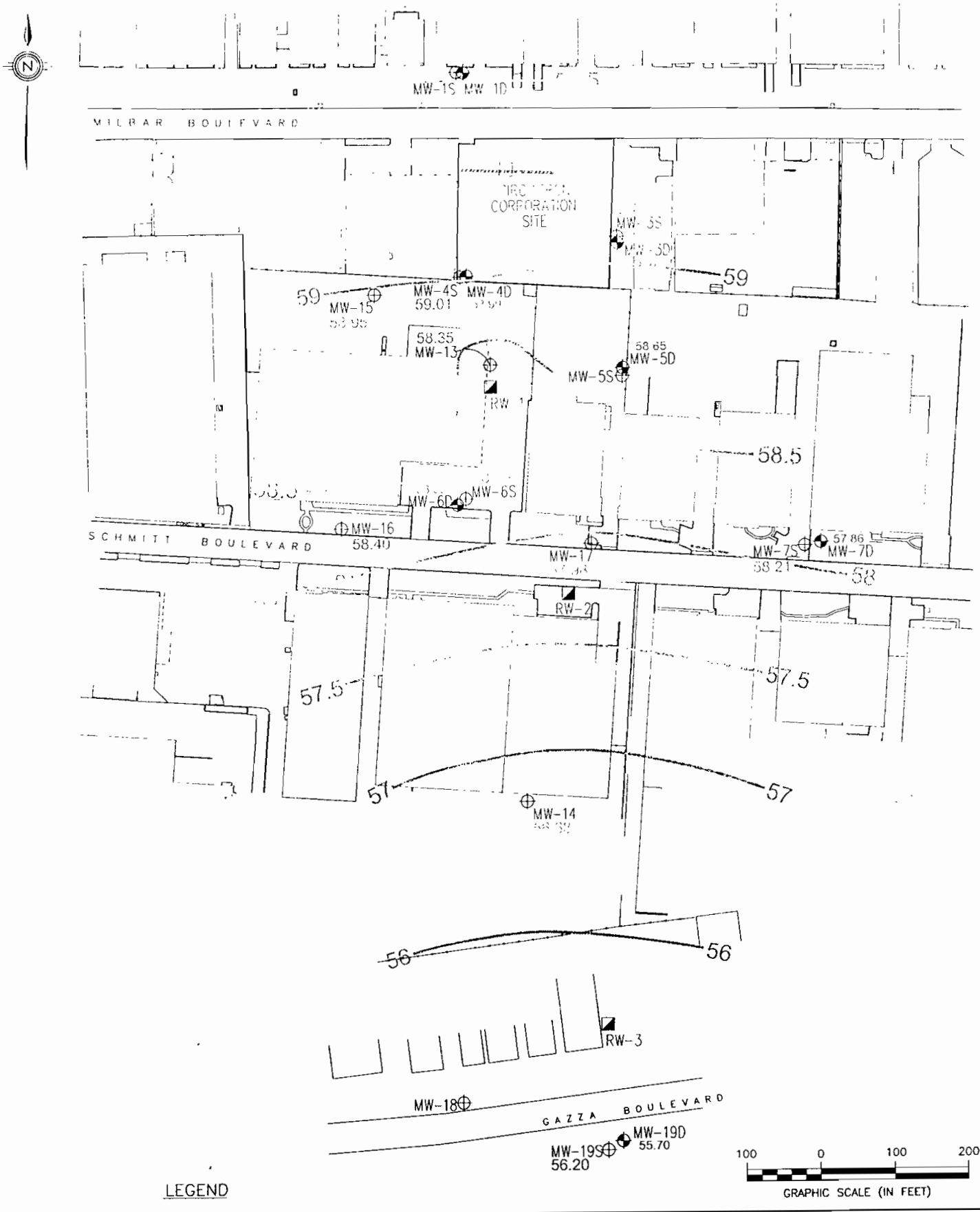
# January 1999

## Groundwater Elevation Contour Map (Non-pumping) Upper Glacial Aquifer

**Circuitron Corporation Superfund Site**
**East Farmingdale, New York**

URS

| FILENAME: CIR-1.DWG | DATE: 4-29-03 | FIGURE #: 3-1a |
|---|---|---|




LEGEND

- ⊕ SHALLOW MONITORING WELL
- ◆ DEEP MONITORING WELL
- ◪ RECOVERY WELL
- 56.20 GROUNDWATER ELEVATION
- —— GROUNDWATER ELEVATION CONTOUR LINE
- REINJECTION TRENCH AND MANHOLE

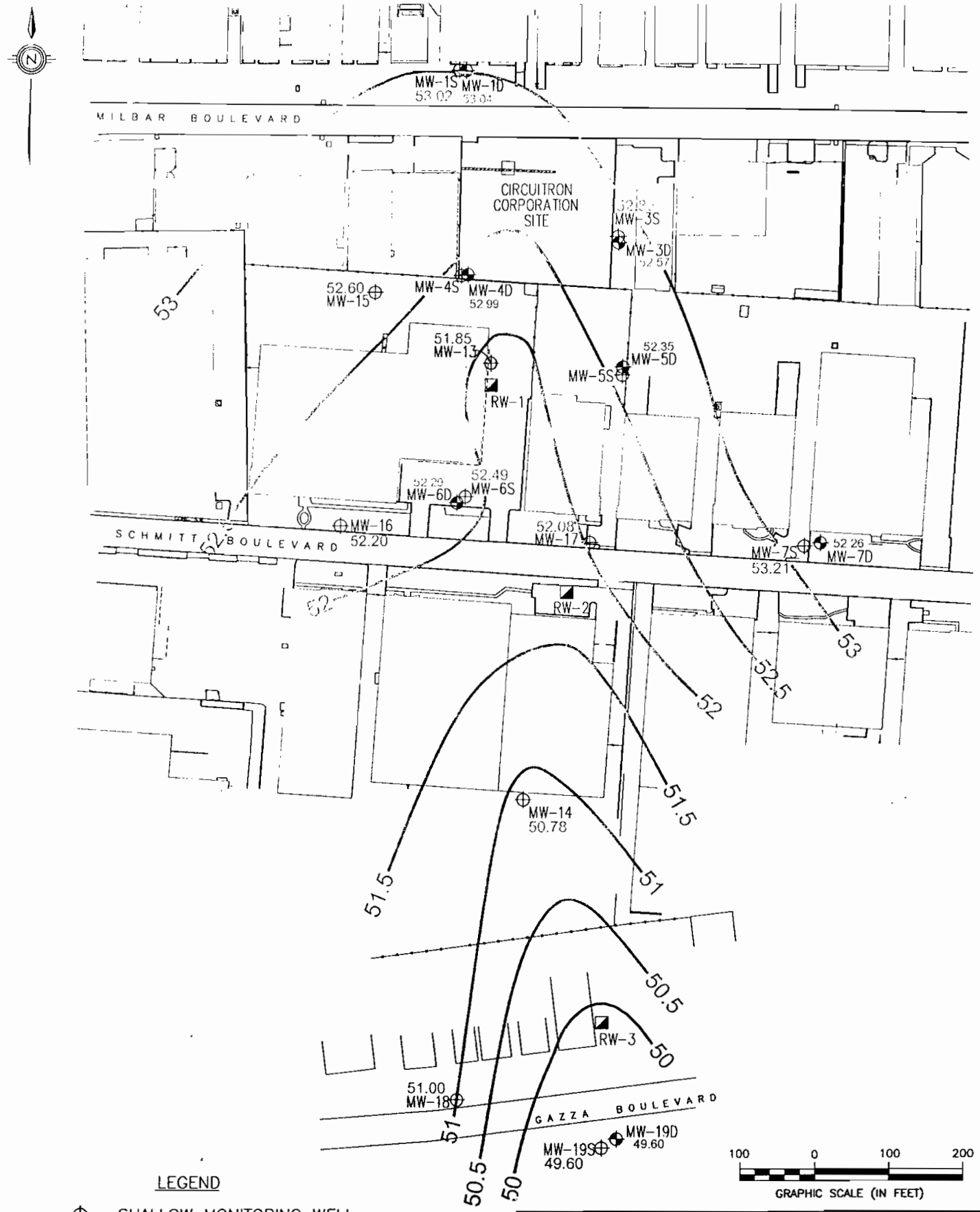
# June 2000

## Groundwater Elevation Contour Map (Non-pumping) Upper Glacial Aquifer

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-3.DWG | DATE: 4-29-03 | FIGURE #: 3-1b |
|---|---|---|




LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- RECOVERY WELL
- 51.00 GROUNDWATER ELEVATION
- GROUNDWATER ELEVATION CONTOUR LINE
- REINJECTION TRENCH AND MANHOLE

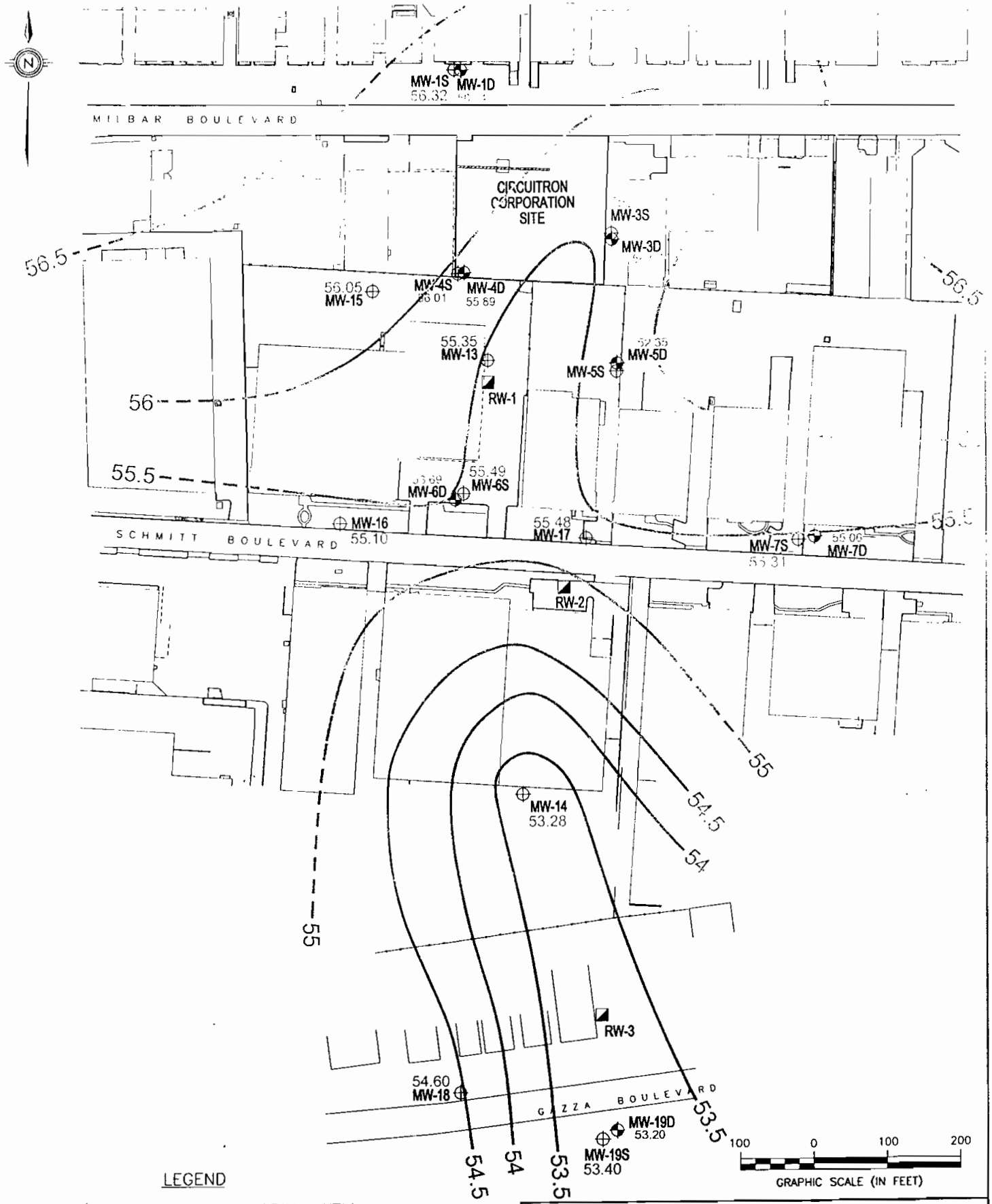
# August 2002

## Groundwater Elevation Contour Map (Pumping) Upper Glacial Aquifer

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-2.DWG | DATE: 4-29-03 | FIGURE #: 3-1c |
|---|---|---|



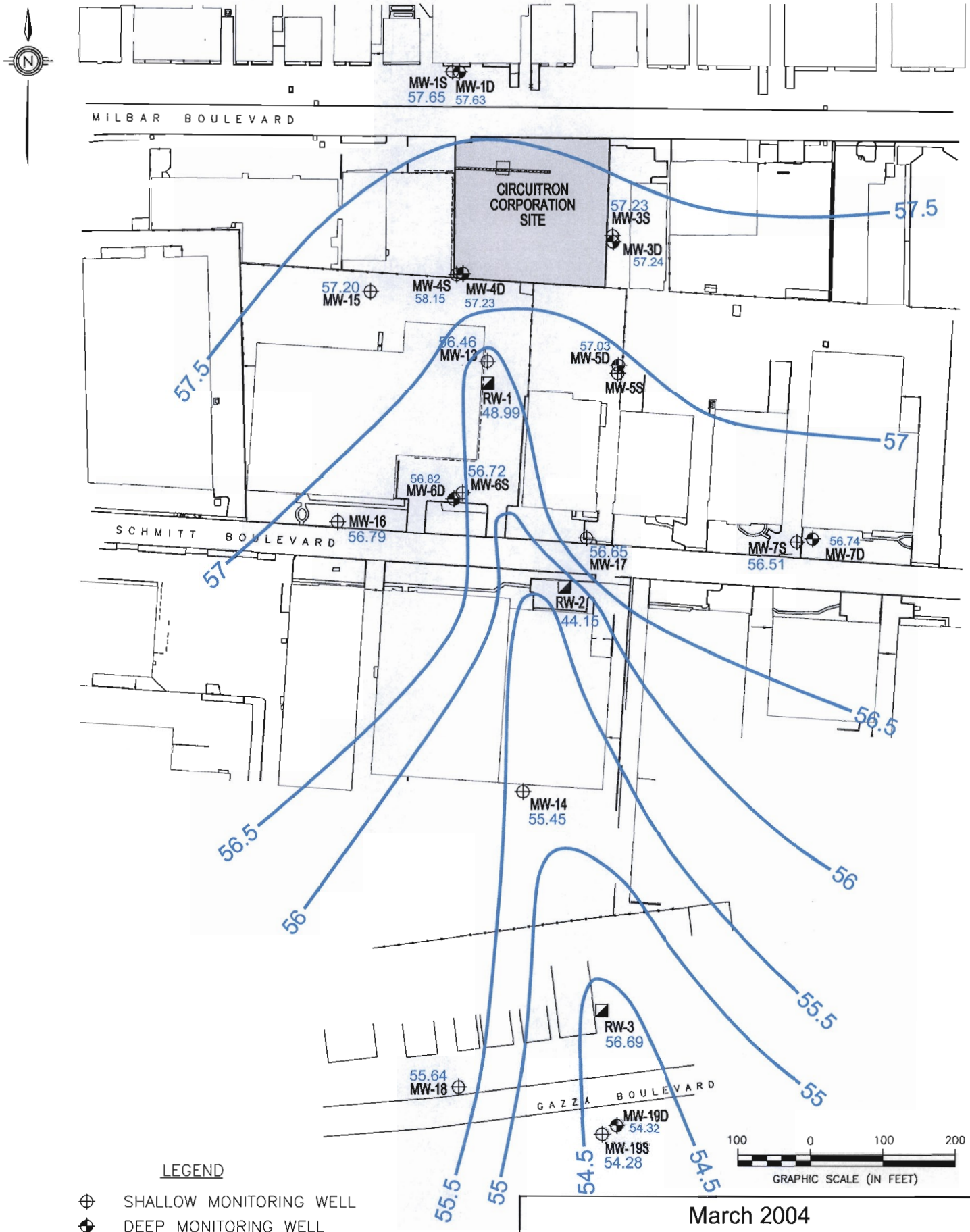

# April 2003

## Groundwater Elevation Contour Map (Pumping) Upper Glacial Aquifer

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-23.DWG | DATE: 2-2-04 | FIGURE #: 3-1d |
|---|---|---|




LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- RECOVERY WELL
- 55.64 GROUNDWATER ELEVATION
- GROUNDWATER ELEVATION CONTOUR LINE
- REINJECTION TRENCH AND MANHOLE

# March 2004

## Groundwater Elevation Contour Map (Pumping) Upper Glacial Aquifer

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-26.DWG | DATE: 8-19-04 | FIGURE #: 3-1e |
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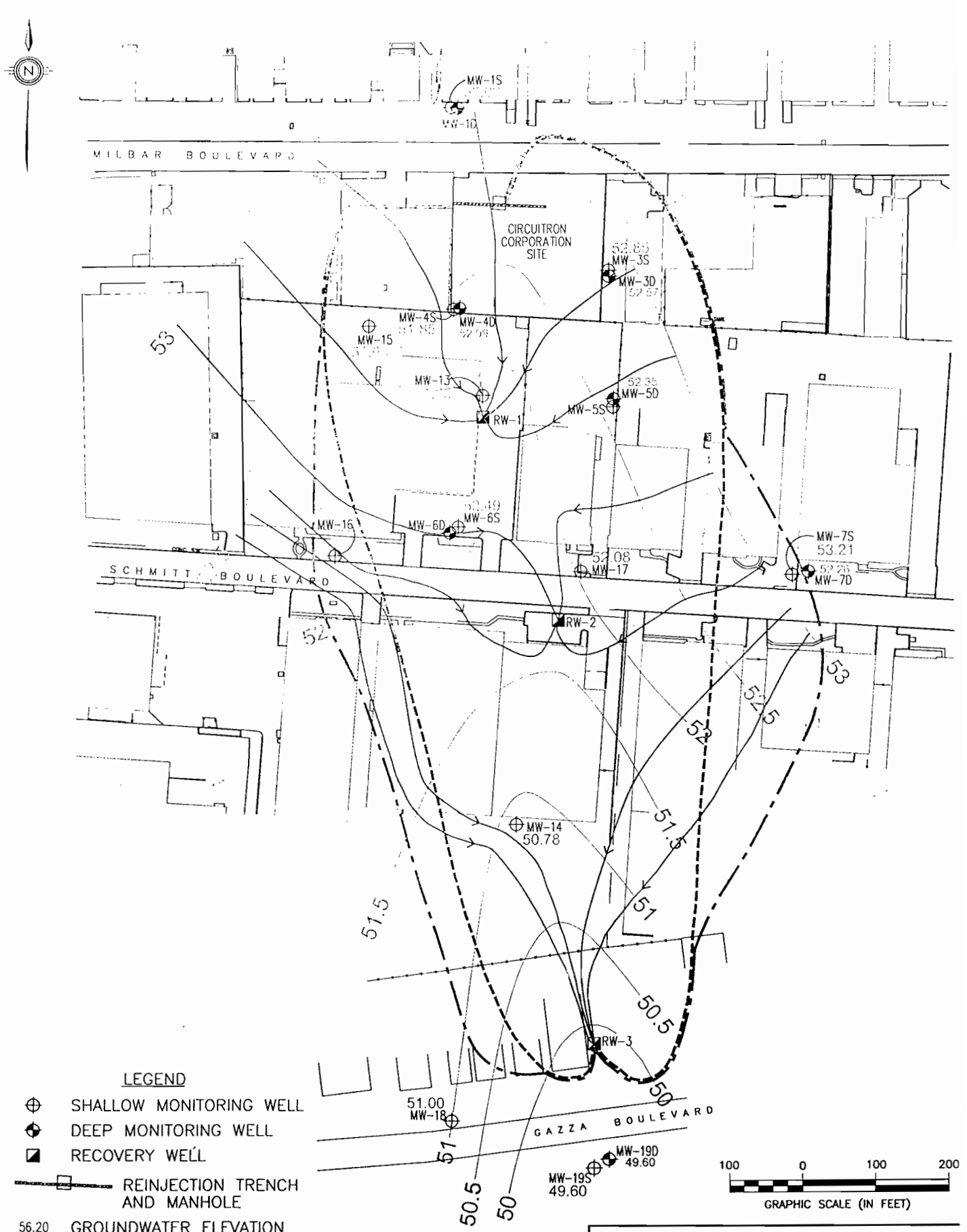


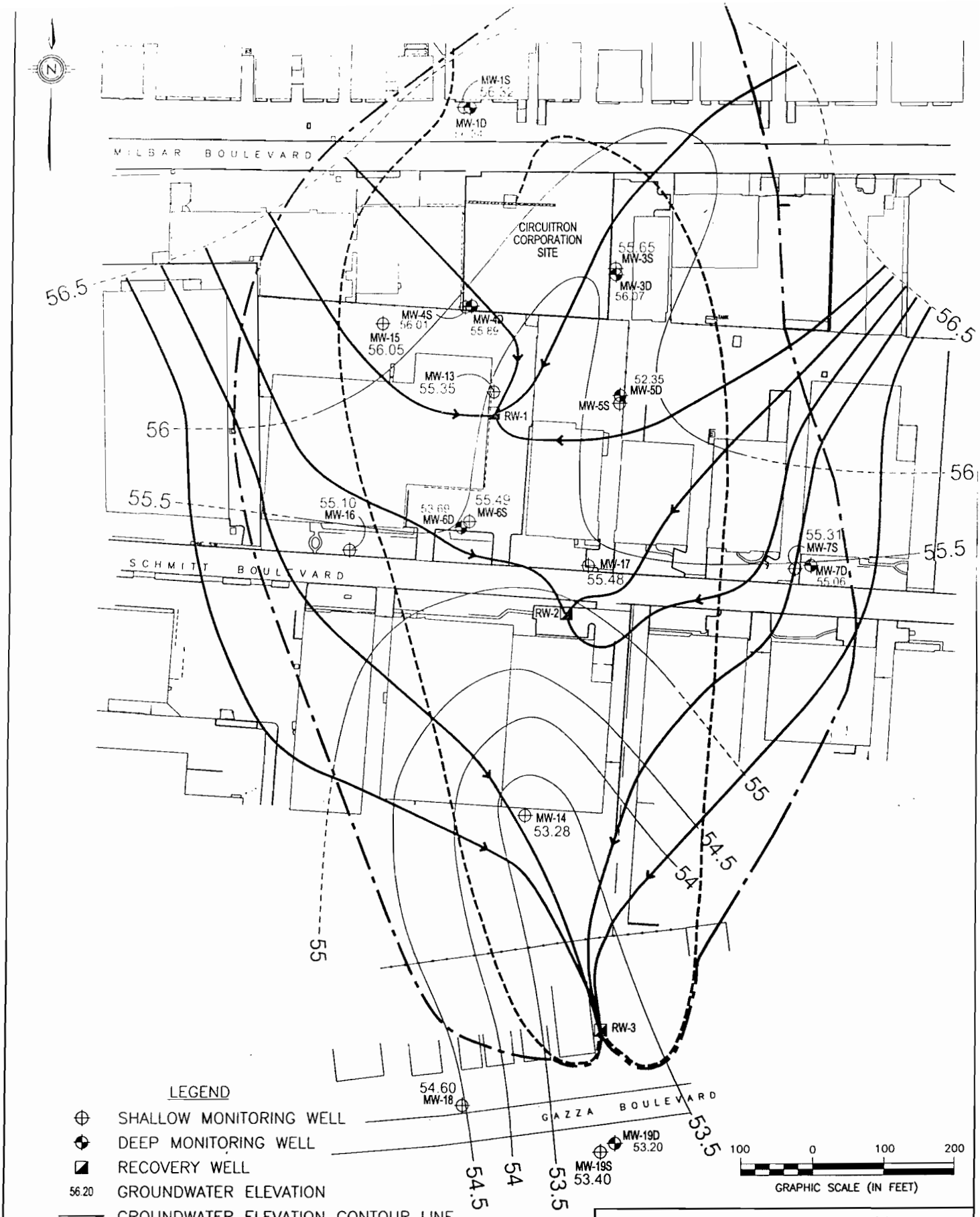

LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- RECOVERY WELL
- REINJECTION TRENCH AND MANHOLE
- 56.20 GROUNDWATER ELEVATION
- GROUNDWATER ELEVATION CONTOUR LINE
- NORTHERN INJECTION TRENCH
- GROUNDWATER FLOW DIRECTION
- MODELED ZONE OF CAPTURE (RADIAN, 1999)
- OBSERVED ZONE OF CAPTURE, AUGUST 2002

Groundwater Flow Pattern and Zone of Captu
August 2002
Upper Glacial Aquifer
Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

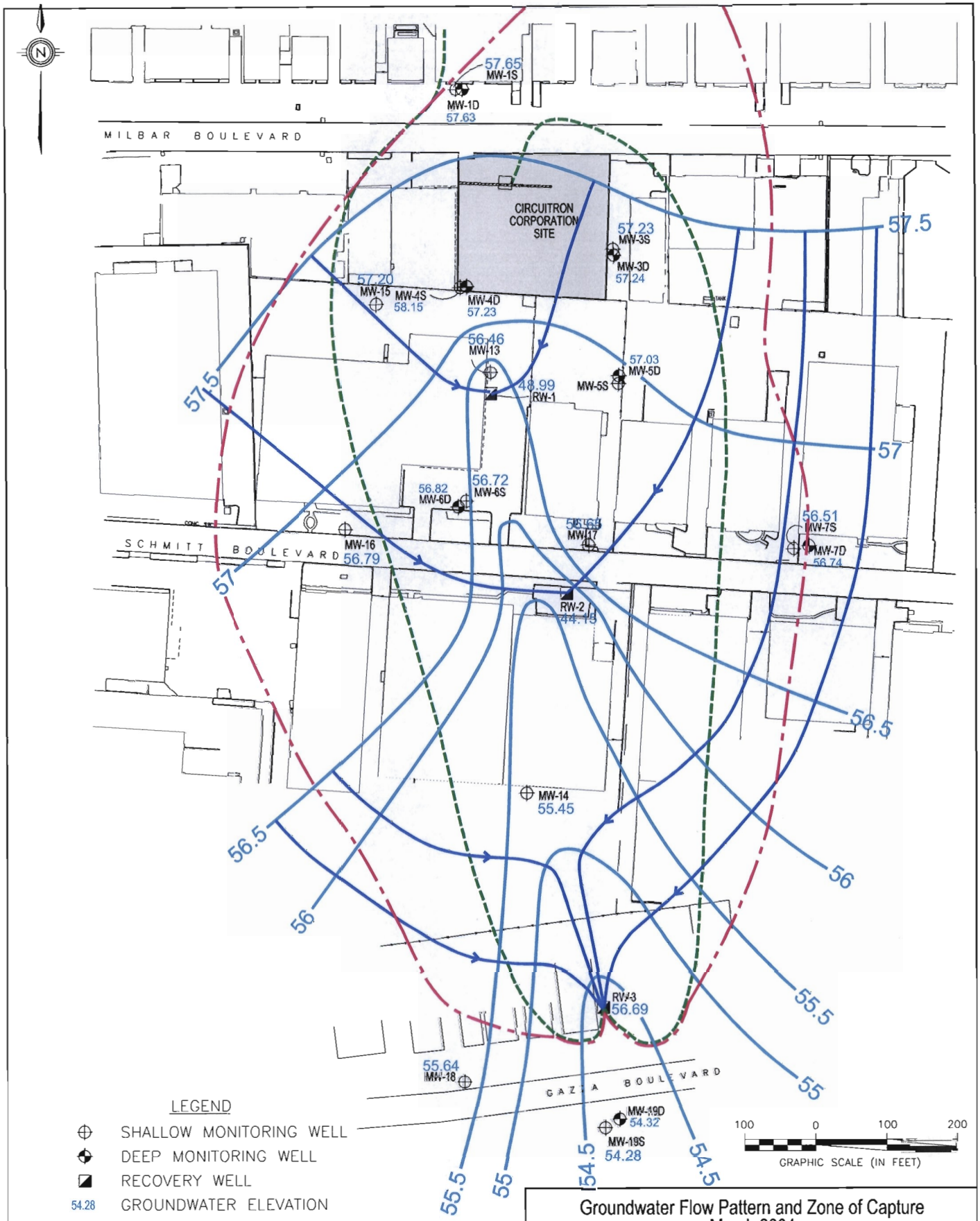
| FILENAME: CIR-0.DWG | DATE: 4-29-03 | FIGURE #: 3-2 |
|---|---|---|




**Groundwater Flow Pattern and Zone of Capture**
**April 2003**
**Upper Glacial Aquifer**
Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-25.DWG | DATE: 2-5-04 | FIGURE #: 3-3 |
|---|---|---|




# Groundwater Flow Pattern and Zone of Capture March 2004

## Upper Glacial Aquifer

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-25.DWG | DATE: 2-5-04 | FIGURE #: 3-4 |
|---|---|---|

## 4.0 GROUNDWATER QUALITY

During the period from June 28, 2000 to June 2004, when the OU-2 remedy was operating, groundwater samples were collected from up to 19 monitoring wells at the site. These data (presented in Appendices A-1, A-2, and A-3) were used to evaluate changes of the concentrations of compounds dissolved in the groundwater during the Performance Monitoring Period. Data from sampling events that occurred prior to startup of the remediation system, May 1993/Feb 1994 and mid-June 2000, were used as the benchmark to represent pre-remediation baseline groundwater quality conditions.

This section discusses the distribution of compounds detected in the shallow groundwater using isoconcentration contour maps and time-series graphs. Time-series graphs for seven deep wells included in the Performance Monitoring program were also prepared to show trends in the deeper zone of the Upper Glacial Aquifer over time and are presented in Appendix B.

## 4.1 EXCEEDANCES OF ACTION LEVELS

Exceedances are defined for the purposes of this report as groundwater samples analyzed that have volatile organic compounds (VOCs) or metals detected at levels exceeding the applicable Federal or State Groundwater Drinking Water Standards. These standards are referred to in this report as Action Levels. Multiple exceedances observed in groundwater from wells located outside the observed capture zone may provide data to allow recommending a change in the operation of the remediation system. Single exceedances may be anomalous and therefore recommendations for changing the operation of the remediation system will be based on only a pattern of multiple exceedances. Table 4-1 summarizes the exceedances observed in groundwater from each well and Figures 4-1a and 4-2a show exceedances of VOC compounds observed in groundwater sampled from shallow and deep wells in map view. Appendix A-2 contains the historical summary data for each monitoring well.

Of all the shallow wells, there are two, MW-18 and MW-19S that are located outside the capture zone. In the past, groundwater samples collected from MW-18 showed multiple exceedances of methylene chloride (see Appendix A-2). Groundwater samples collected from MW-19S showed multiple exceedances of methylene chloride, and single

exceedances of 1,1-dichlorethane (1,1-DCA) and 1,1,1-trichlorethane (1,1,1-TCA) (see Appendix A-2). Methylene chloride is not representative of groundwater contamination because most of the associated method blanks also showed detections of methylene chloride, and therefore, such exceedances were not used in this evaluation and not shown on Figure 4-1a.

## 4.2 SITE-RELATED VS. NON SITE-RELATED COMPOUNDS

For the purposes of this document, the following criteria was used to determine if a compound is potentially related to historical activities at the site (site-related) or believed to not have been related to historical activities at the site (non site-related). The effectiveness of the remediation system will be evaluated by the presence of compounds that are believed to be site-related. Compounds that are judged to be non site-related will not be used to determine the remediation system effectiveness.

A compound will be considered site-related if:

a) It was not observed as an exceedance in groundwater obtained from the upgradient well prior to remediation system startup (May 1993/Feb 1994 and June 2000 sampling events) and was observed as an exceedance in groundwater from a site well during more than one sampling event.

**OR**

b) It formed from naturally occurring biodegradation, such as dichloroethenes and dichloroethanes, if the parent compound (e.g., PCE, TCE or 1,1,1-TCA) is considered to be site-related (i.e., not observed as an exceedance in groundwater from the upgradient well).

A compound will be considered as non site-related if:

a) It was observed as an exceedance in groundwater from the upgradient well prior to remediation system startup (May 1993/Feb 1994 and June 2000 sampling events); such compounds are considered to be background.

**OR**

b) If formed from naturally occurring biodegradation, such as dichloroethenes and dichloroethanes, if the parent compound (e.g., PCE, TCE or 1,1,1-TCA) is

considered to be non site-related, (i.e., observed as an exceedance in groundwater from the upgradient well).

Data presented in Section 3 has shown that the remediation system has captured groundwater within the target zone. Therefore, site-related compounds that are observed as exceedances in groundwater from site wells are being captured by the remediation system. Additionally, site-related compounds which have been observed as exceedances in groundwater from downgradient well MW-19S have not been captured by the remediation system.

## 4.3 ISOCONCENTRATION MAPS

Isoconcentration maps were prepared for sampling events conducted in June 2000, January/February 2002, April 2003, and June 2004 and are presented in Figures 4-3 (a-d) and 4-4 (a-d). Data from January/February 2002 was used in place of August 2002 data because dry conditions prevented sampling of shallow monitoring wells (MW-4S, MW-6S, and MW-7S) at that time. Isoconcentration maps were created for organic (1,1-DCA and 1,1,1-TCA), which had exceedances observed in the groundwater from downgradient well MW-19S.

### 4.3.1 VOC Exceedances in Shallow Wells

Figure 4-1a and Table 4-1 provide a summary of the exceedances of VOCs observed to have been present in the groundwater samples from shallow wells. Concentrations of 1,1-dichloroethane (1,1-DCA) and 1,1,1-trichloroethane (1,1,1-TCA) exceeded their respective Action Levels in the groundwater samples collected from the downgradient well MW-19S.

Isoconcentration contours of these compounds were prepared for the June 2000, January/February 2002, April 2003, and June 2004 data and are presented in Figures 4-3a, 4-3b, 4-3c, and 4-3d (1,1-DCA) and Figures 4-4a, 4-4b, 4-4c, and 4-4d (1,1,1-TCA). Concentrations of 1,1-DCA in groundwater for February 2002, April 2003, and June 2004 are considerably less than the levels present in June 2000, and in all cases were below the action level of 5 µg/L. The most notable change in the isoconcentration maps for 1,1,1-TCA is the area encompassed by the 5 µg/L action limit contour. In April 2003 and June 2004 this

area is less than one quarter of the size that it was in June 2000. These significant reductions in the mass of 1,1,1-TCA in groundwater are evidence that the remediation system is effectively capturing this constituent in the shallow groundwater at the site.

### 4.3.2 VOC Exceedances in Deep Wells

Figure 4-2a and Table 4-1 provide a summary of the exceedances of VOCs present in groundwater samples from the deep wells. These data show that multiple exceedances of 1,1-DCA, 1,1-DCE, 1,1,1-TCA, PCE, TCE, 1,2-dichloroethene (total) (1,2-DCE), and methylene chloride were observed in groundwater from various deep wells. These data also show that multiple exceedances of 1,1-DCE, 1,1,1-TCA, PCE and TCE were present in groundwater from upgradient well MW-1D, indicating these specific compounds are non site-related. These same compounds were also shown to be multiple exceedances in groundwater from downgradient well MW-19D, indicating these compounds are being transported in deeper groundwater across the site. Appendix A-2 contains the historical summary data for each monitoring well.

Figure 4-5 presents these VOCs in a cross-sectional view and shows data for wells screened in the Upper Glacial Aquifer and the deeper Magothy Aquifer for the April 2003 and June 2004 sampling events and for baseline values from before the system was activated in June 2000. It is apparent from this cross-section that the PCE and TCE detected in groundwater in the Magothy Aquifer is being transported within the Magothy Aquifer under the site and that these compounds originate from a source upgradient of the subject property.

Multiple exceedances of 1,2-DCE were observed in groundwater from downgradient well MW-19D. 1,2-DCE is a daughter product of natural biodegradation of PCE and TCE (both of which were observed as exceedances in groundwater from upgradient well MW-1D); therefore, 1,2-DCE is not considered a site-related compound.

1,1-Dichloroethane was detected as multiple exceedances in groundwater from MW-7D. 1,1-Dichloroethane is a daughter product of natural biodegradation of 1,1,1-TCA, which was observed as an exceedance in groundwater from upgradient well MW-1D; therefore, 1,1-DCA is not considered a site-related compound.

Methylene chloride is believed not to be representative of groundwater contamination due to its widespread detection in method blank samples and therefore these data were not evaluated in this report.

## 4.4 GEOCHEMICAL TIME-SERIES GRAPHS

Trends in groundwater quality over time are apparent in geochemical time-series graphs prepared for each monitoring well. Time-series graphs were prepared by plotting concentration levels versus time for select compounds detected in groundwater samples collected during the period extending from June 2000 through June 2004. Time-series graphs and the associated data are presented in Appendix B.

In general, the time-series graphs show the following:

- The VOCs detected in groundwater from the shallow wells show either slight decrease or no change over the Performance Monitoring Period;
- The VOCs detected in groundwater from the deep wells show either slight increase or no change over the Performance Monitoring Period; and

The difference in trends observed in VOCs levels between the shallow and the deep groundwater could be due to the remediation system treating groundwater from the shallow zone, while leaving the deeper zone unaffected.

Trends over time in the levels of compounds observed as exceedances in groundwater from downgradient shallow well MW-19S are useful to evaluate the effectiveness of the remediation system. The only VOC compound observed as an exceedance in groundwater from MW-19S and not observed as exceedances in groundwater from MW-1S is 1,1-DCA.

The time-series graph shows that the levels of 1,1-DCA decreased over the Performance Monitoring Period, indicating the remediation system is effective in mitigating the VOC compound.

## Table 4-1. Site-Related and Non Site-Related Compounds, Circuitron Corporation Superfund Site

(Page 1 of 4)

| Media | Location | Compound | Number of Exceedance Occurrences[2] | Site-Related | Rationale[1] |
|---|---|---|---|---|---|
| Shallow Groundwater | MW-1S (Upgradient well) | 1,1 Dichloroethene | 1 | No | These four compounds were not observed as exceedances prior to remediation system startup. |
| | | 1,1,1 Trichloroethane | 1 | No | |
| | | Tetrachloroethene | 1 | No | |
| | | Trichloroethene | 1 | No | |
| | | Methylene chloride | 1 | No | Method blank artifact |
| | | Iron | 7 | No | Baseline exceedance in MW-1S |
| | | Manganese | 6 | No | Baseline exceedance in MW-1S |
| | MW-3S | 1,1,1 Trichloroethane | 2 | Yes | |
| | | Iron | 6 | No | Baseline exceedance in MW-1S |
| | MW-4S | 1,1 Dichloroethane | 4 | Yes | |
| | | 1,1 Dichloroethene | 2 | Yes | |
| | | 1,1,1 Trichloroethane | 9 | Yes | |
| | | Tetrachloroethene | 9 | Yes | |
| | | Methylene chloride | 3 | No | Method blank artifact |
| | | Chromium | 5 | Yes | |
| | | Iron | 5 | No | Baseline exceedance in MW-1S |
| | MW-6S | 1,1 Dichloroethene | 1 | Yes | |
| | | 1,1,1 Trichloroethane | 9 | Yes | |
| | | Methylene chloride | 2 | No | Method blank artifact |
| | | Antimony | 1 | No | Single exceedance |
| | | Chromium | 3 | Yes | |
| | | Iron | 3 | No | Baseline exceedance in MW-1S |
| | MW-7S | Methylene chloride | 1 | No | Method blank artifact |
| | | Chromium | 2 | Yes | |
| | | Iron | 3 | No | Baseline exceedance in MW-1S |
| | MW-13 | 1,1 Dichloroethane | 5 | Yes | |
| | | 1,1 Dichloroethene | 2 | Yes | |
| | | 1,1,1 Trichloroethane | 10 | Yes | |
| | | Methylene chloride | 2 | No | Method blank artifact |
| | | Iron | *6 | No | Baseline exceedance in MW-1S |
| | | Manganese | 1 | No | Baseline exceedance in MW-1S |

## Table 4-1. Site-Related and Non Site-Related Compounds, Circuitron Corporation Superfund Site

(Page 2 of 4)

| Media | Location | Compound | Number of Exceedance Occurrences[2] | Site-Related | Rationale[1] |
|---|---|---|---|---|---|
| Shallow Groundwater (Continued) | MW-14 | 1,1,1 Trichloroethane | 6 | Yes | |
| | | Methylene chloride | 1 | No | Method blank artifact |
| | | Iron | 6 | No | Baseline exceedance in MW-1S |
| | | Manganese | 3 | No | Baseline exceedance in MW-1S |
| | MW-15 | 1,2 Dichloroethene (total) | 3 | Yes | |
| | | Tetrachloroethene | 2 | Yes | |
| | | Trichloroethene | 1 | Yes | |
| | | Iron | 6 | No | Baseline exceedance in MW-1S |
| | | Manganese | 5 | No | Baseline exceedance in MW-1S |
| | MW-16 | Arsenic | 1 | No | Single exceedance |
| | | Iron | 6 | No | Baseline exceedance in MW-1S |
| | | Lead | 1 | No | Single exceedance |
| | | Manganese | 5 | No | Baseline exceedance in MW-1S |
| | MW-17 | 1,1 Dichloroethane | 1 | Yes | |
| | | 1,1,1 Trichloroethane | 7 | Yes | |
| | | 1,1,2 Trichloroethane | 2 | Yes | |
| | | Methylene chloride | 1 | No | Method blank artifact |
| | | Chromium | 1 | No | Single exceedance |
| | | Iron | 6 | No | Baseline exceedance in MW-1S |
| | | Lead | 1 | No | Single exceedance |
| | | Manganese | 2 | No | Baseline exceedance in MW-1S |
| | MW-18 | Methylene chloride | 2 | No | Method blank artifact |
| | | Chromium | 1 | No | Single exceedance |
| | | Iron | 6 | No | Baseline exceedance in MW-1S |
| | MW-19S | 1,1 Dichloroethane | 1 | Yes | |
| | | 1,1,1 Trichloroethane | 2 | Yes | |
| | | Methylene chloride | 4 | No | Method blank artifact |
| | | Chromium | 2 | Yes | |
| | | Iron | 6 | No | Baseline exceedance in MW-1S |
| | | Lead | 1 | No | Single exceedance |
| | | Manganese | 6 | No | Baseline exceedance in MW-1S |
| | | Mercury | 1 | No | Single exceedance |

## Table 4-1. Site-Related and Non Site-Related Compounds, Circuitron Corporation Superfund Site

(Page 3 of 4)

| Media | Location | Compound | Number of Exceedance Occurrences[2] | Site-Related | Rationale[1] |
|---|---|---|---|---|---|
| Deep Groundwater | MW-1D (Upgradient well) | 1,1 Dichloroethene | 10 | No | Upgradient well |
| | | 1,1,1 Trichloroethane | 10 | No | |
| | | Tetrachloroethene | *5 | No | |
| | | Trichloroethene | 9 | No | |
| | | Methylene chloride | 2 | No | |
| | | Chromium | 5 | No | Upgradient well |
| | | Iron | 8 | No | |
| | | Lead | 1 | No | |
| | MW-3D | Methylene chloride | 1 | No | Method blank artifact |
| | | Chromium | 3 | No | Baseline exceedance in MW-1D |
| | | Iron | 4 | No | Baseline exceedance in MW-1D |
| | | Manganese | 1 | No | Not site-related in shallow aquifer |
| | MW-4D | 1,1 Dichloroethane | 1 | No | Biodegradation product of 1,1,1-TCA |
| | | 1,1 Dichloroethene | 9 | No | Baseline exceedance in MW-1D |
| | | 1,1,1 Trichloroethane | 10 | No | Baseline exceedance in MW-1D |
| | | Tetrachloroethene | 2 | No | Baseline exceedance in MW-1D |
| | | Trichloroethene | 8 | No | Baseline exceedance in MW-1D |
| | | Methylene chloride | 2 | No | Method blank artifact |
| | | Iron | 6 | No | Baseline exceedance in MW-1D |
| | MW-5D | Methylene chloride | 2 | No | Method blank artifact |
| | | Iron | 4 | No | Baseline exceedance in MW-1D |
| | | Manganese | 6 | No | Not site-related in shallow aquifer |
| | MW-6D | 1,1 Dichloroethene | 2 | No | Baseline exceedance in MW-1D |
| | | 1,1,1 Trichloroethane | 5 | No | Baseline exceedance in MW-1D |
| | | Trichloroethene | 5 | No | Baseline exceedance in MW-1D |
| | | Methylene chloride | 2 | No | Method blank artifact |
| | | Chromium | 5 | No | Baseline exceedance in MW-1D |
| | | Iron | 5 | No | Baseline exceedance in MW-1D |
| | | Nickel | 5 | No | Not site-related in shallow aquifer |

## Table 4-1. Site-Related and Non Site-Related Compounds, Circuitron Corporation Superfund Site

(Page 4 of 4)

| Media | Location | Compound | Number of Exceedance Occurrences[2] | Site-Related | Rationale[1] |
|---|---|---|---|---|---|
| Deep Groundwater (Continued) | MW-7D | 1,1 Dichloroethane | 6 | No | Biodegradation product of 1,1,1-TCA |
| | | 1,1 Dichloroethene | 1 | No | Baseline exceedance in MW-1D |
| | | 1,1,1 Trichloroethane | 2 | No | Baseline exceedance in MW-1D |
| | | Trichloroethene | 1 | No | Baseline exceedance in MW-1D |
| | | Methylene chloride | 2 | No | Method blank artifact |
| | | Iron | *3 | No | Baseline exceedance in MW-1D |
| | MW-19D | 1,1 Dichloroethene | 10 | No | Baseline exceedance in MW-1D |
| | | 1,1,1 Trichloroethane | 10 | No | Baseline exceedance in MW-1D |
| | | 1,2 Dichloroethene (total) | 8 | No | Biodegradation product of PCE and TCE |
| | | Tetrachloroethene | 10 | No | Baseline exceedance in MW-1D |
| | | Trichloroethene | 10 | No | Baseline exceedance in MW-1D |
| | | Chloroform | 4 | No | Biodegradation product of 1,1,1-TCA |
| | | Methylene chloride | 4 | No | Method blank artifact |
| | | Chromium | 3 | No | Baseline exceedance in MW-1D |
| | | Iron | 6 | No | Baseline exceedance in MW-1D |
| | | Lead | 4 | No | Baseline exceedance in MW-1D |
| | | Manganese | 5 | No | Not site-related in shallow aquifer |
| | | Nickel | 1 | No | Single exceedance |

**Notes:** *Data considered in this table includes volatile organics through June 2004 and inorganics through April 2003. With concurrence from the USEPA, metals analysis was discontinued prior to the June 2004 sampling event.*

(1) Rationale:
Method blank artifact: The compound was detected in several method blanks and will not be considered site-related.
Baseline exceedance in MW-1S: The compound was observed to exceed action levels prior to remediation system startup in groundwater samples collected from the upgradient well and will not be considered site-related.
Single exceedance: The compound was observed as an exceedance in groundwater collected from a site well during only one sampling event and will not be considered site related.
Upgradient well: If a compound is observed exceeding action levels in this well, the compound will not be considered site-related in any downgradient well.
Baseline exceedance in MW-1D: The compound was observed to exceed action levels prior to remediation system startup in groundwater samples collected from the upgradient well and will not be considered site-related.
Not site-related in shallow aquifer: If a compound is determined to be non site-related in the shallow groundwater, it will not be considered site-related in deeper groundwater.
Biodegradation product: The compound is a biodegradation product of a compound that has been determined non site-related.

* Values that appear with an asterisk indicate that a duplicate sample showed a detection of the compound exceeding the action level, but analysis of the normal sample showed either a detection less than the action level or was not detected in excess of the detection limit. The number includes the duplicate exceedance.

**MW-1S**

| Analyte | AL | Feb-94 | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | 1.00 U | <5 | <5 | <5 | <5 | **10** | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,1-TCA | 5 | 0.40 J | <5 | <5 | <5 | <5 | **15** | <5 | <5 | <5 | <5 | <5 | <5 |
| [redacted] | 5 | 1.00 U | <5 | <5 | <5 | <5 | **8** | <5 | <5 | <5 | <5 | <5 | <5 |
| [redacted] | 5 | 1.00 U | <5 | <5 | <5 | <5 | **12** | <5 | <5 | <5 | <5 | <5 | <5 |

MW-1S MW-1D

MILBAR BOULEVARD

**MW-3S**

| Analyte | AL | Feb-94 | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1 TCA | 5 | 4 J | **10** | 5 | **7** | 4 J | 3 J | 3 J | 5 J | *4 J | 4J | 2J |

**MW-4S**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (DB) | Jun-04 (LF) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | **14 JD** | **14 JD** | **7 JD** | **7 JD** | 2 J | 2 JD | 4 JD | NS | 2J | <5 | <5 |
| [redacted] | 5 | **40 JD** | **22 JD** | <5 | <5 | <5 | 3 JD | 5 JD | NS | <5 | *4J | 5 |
| 1,1,1 TCA | 5 | **1000 D** | **860 D** | **630D** | **260 D** | **80** | **280 D** | **320 D** | NS | **190** | ***205** | **260** |
| [redacted] | 5 | **13 JD** | **19 JD** | **14 JD** | **12 D** | **11** | **15 D** | **14 D** | NS | **26** | ***11** | **12** |

CIRCUITRON CORPORATION SITE

MW-3S MW-3D

MW-15 MW-4S MW-4D

TANK

**MW-15**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2 DCE (t) | 5 | **42** | *1J | ***19** | **24** | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| [redacted] | 5 | **11** | <5 | ***8** | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| [redacted] | 5 | **14** | <5 | *4J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |

MW-13 MW-5D MW-5S

RW-1

**MW-5S**
Abandoned

**MW-13**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | **14** | **40 D** | **9** | **8** | **7** | 2 J | <5 | *3 J | 4J | <5 | <5 |
| [redacted] | 5 | **8** | **7 JD** | 2 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,1 TCA | 5 | **120** | **350 D** | **110** | **34** | **34** | **15** | **34** | ***12** | **30** | **14** | **6** |

**MW-6S**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | <5 | **14 JD** | <5 | <5 | <5 | 1 J | 1 J | NS | <5 | 1J |
| 1,1,1 TCA | 5 | **15** | **360 D** | **110** | **85** | ***110** | **92** | **54** | NS | **19** | **24** |

MW-6D MW-6S

MW-16

SCHMITT BOULEVARD

MW-17

MW-7S MW-7D

**MW-16**
No Exceedances

RW-2

**MW-7S**
No Exceedances

**MW-17**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | 5 | **7** | 3 J | 2 J | 1 J | 1 J | 2 J | 3 J | <5 | <5 | <5 |
| 1,1,1 TCA | 5 | **39** | **58** | **33** | **9** | **12** | **19** | **22** | 5 J | 4J | <5 | <5 |
| 1,1,2 TCA | 1 | <5 | **3 J** | <5 | <5 | 1 J | **2 J** | <5 | <5 | <5 | <5 | <5 |

**MW-14**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1 TCA | 5 | **21** | **8** | **15** | 5 J | **12** | **6** | **15** | 1 J | 2J | 3J | <5 |

MW-14

**MW-19S**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | **6** | 4 J | 3 J | 4 J | 5 J | 3 J | 3 J | 3 J | 4J | <5 | <5 |
| 1,1,1 TCA | 5 | **8** | 5 J | 1 J | <5 | 1 J | 2 J | 1 J | <5 | **6** | <5 | <5 |

RW-3

**MW-18**
No Exceedances

MW-18

GAZZA BOULEVARD

MW-19D

MW-19S

LEGEND

| | | | |
|---|---|---|---|
| ⊕ | SHALLOW MONITORING WELL | PCE | TETRACHLOROETHENE |
| ⊕ | DEEP MONITORING WELL | TCE | TRICHLOROETHENE |
| ◪ | RECOVERY WELL | AL | ACTION LEVEL: APPLICABLE FEDERAL & STATE GROUNDWATER DRINKING WATER STANDARD |
| 1,1 DCA | 1,1 DICHLOROETHANE | B | ANALYTE WAS DETECTED IN ASSOCIATED BLANK |
| 1,1 DCE | 1,1 DICHLOROETHENE | J | ESTIMATED |
| 1,1,1 TCA | 1,1,1 TRICHLOROETHANE | D | RESULTS REPORTED FROM DILUTED SAMPLE |
| 1,1,2 TCA | 1,1,2 TRICHLOROETHANE | NS | NOT SAMPLED, WELL DRY |
| 1,2 DCE(t) | 1,2 DICHLOROETHENE (TOTAL) | | |

REINJECTION TRENCH AND MANHOLE

N

100 0 100 200

GRAPHIC SCALE (IN FEET)

NOTES:

BOLDED VALUES EXCEED ACTION LEVEL

* VALUES MARKED WITH ASTERISK ARE THE ARITHMETIC MEAN OF NORMAL AND DUPLICATE SAMPLES

ALL CONCENTRATIONS PRESENTED IN ug/L

FOR JUNE 2004, DIFFUSION BAG SAMPLING WAS PERFORMED:

T–TOPMOST BAG; B–BOTTOM BAG

FOR MW–4S IN JUNE 2004, DIFFUSION BAG (DB) & LOW FLOW (LF) SAMPLES WERE COLLECTED AS PER USEPA'S REQUEST.

# Volatile Organic Compound Concentrations Exceeding Screening Criteria Shallow Wells

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR–4.DWG | DATE: 8–20–04 | FIGURE #: 4–1a |
|---|---|---|

**MW-1D**

| Analyte | AL | May-93 | Feb-94 | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | 31.00 J | 24.00 | 9 | 10 | 7 | *8 | <5 | *10 | 11 | 10 | 7 | 7 | 7 |
| 1,1,1-TCA | 5 | 84.00 J | 99.00 | 16 | 14 | 13 | *13 | <5 | *16 | 14 | 12 | 8 | 7 | 7 |
| [redacted] | 5 | 38.00 J | 18.00 | 5 J | 6 | 4 J | *5 | <5 | *6 | 6 | 5 | 3J | 2J | 1J |
| [redacted] | 5 | 76.00 J | 82.00 | 13 | 15 | 10 | *10 | <5 | *11 | 11 | 12 | 5J | 5 | 5 |

**MW-4D**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | *8 | 5 | 4 J | 2 J | 4 J | 3 J | 4 J | 4 J | *3J | 3J | 4J |
| [redacted] | 5 | *14 | 8 | 6 | 6 | 8 | 6 | 8 | 9J | *5J | 8 | 9 |
| 1,1,1 TCA | 5 | *27 | 20 | 13 | 23 | 11 | 12 | 12 | 13J | *8 | 8 | 10 |
| [redacted] | 5 | *8 | 6 | 4 J | <5 | 5 J | 3 J | 3 J | 2 J | *2J | 2J | 2J |
| [redacted] | 5 | *24 | 17 | 11 | 3 J | 11 | 9 | 10 | 8J | *5J | 6 | 7 |

**MW-6D**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | 5 J | 4 J | 3 J | 3 J | 3 J | 3 J | 4 J | 7 | 5 | 6 | 6 |
| 1,1,1 TCA | 5 | 10 | 8 | 5 | 5 J | 4 J | 5 | 5 | 9 | 6 | 6 | 7 |
| [redacted] | 5 | 8 | 6 | 5 | 4 J | 4 J | 4 J | 4 J | 7 | 6 | 7 | 7 |

**MW-7D**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | 8 | 8 | 8 | 2 J | 8 | 8 | *7 | 5J | *4J | 1J | 2J |
| [redacted] | 5 | 4 J | 5 | 3 J | 11 | 3 | 3 J | *3 J | 4 J | *1J | <5 | 1J |
| 1,1,1 TCA | 5 | 7 | 5 J | 3 J | 15 | 2 J | 2 J | *2 J | 3 J | *<5J | <5 | <5 |
| [redacted] | 5 | 5 | 6 | 4 JB | 5 J | 3 J | 3 J | *3 J | 3 J | *2J | <5 | 1J |

**MW-19D**

| Analyte | AL | Jun-00 | Oct-00 | Jan-01 | Apr-01 | Jul-01 | Oct-01 | Jan-02 | Jul-02 | Apr-03 | Jun-04 (T) | Jun-04 (B) | Jun-04 (LF) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | 5 | 14 | 14 | 12 | 18 | 19 | *18 | 23 | 24 | 11 | <5 | *22 | 19 |
| 1,1,1 TCA | 5 | 23 | 19 | 17 | 27 | 27 | *28 | 30 | 28 | 16 | 2J | *23 | 22 |
| [redacted] | 5 | 3J | 6 | <5 | 7 | 8 | *8 | 8 | 10 | 8 | <5 | *8 | 7 |
| Chloroform | 7 | 2J | 2 J | <5 | 5 J | 7 | *7 | 10 | 14 | 19 | 2J | *32 | 25 |
| [redacted] | 5 | 46 | 47 | 50 | 55 | 65 | *62 | 77 | 62 | 57 | 2J | *24 | 39 |
| [redacted] | 5 | 40 | 34 | 37 | 36 | 46 | *43 | 55 | 57 | 33 | 2J | *34 | 32 |

MILBAR BOULEVARD

SCHMITT BOULEVARD

GAZZA BOULEVARD

CIRCUITRON CORPORATION SITE

MW-1S MW-1D

MW-3S MW-3D

**MW-3D**
No Exceedances

MW-15

MW-4S MW-4D

TANK

**MW-5D**
No Exceedances

MW-13

RW-1

MW-5S MW-5D

MW-6S MW-6D

MW-16

MW-17

MW-7S MW-7D

RW-2

MW-14

RW-3

MW-18

MW-19S MW-19D

LEGEND

- ⊕ SHALLOW MONITORING WELL
- ◆ DEEP MONITORING WELL
- ◪ RECOVERY WELL
- 1,1 DCA 1,1 DICHLOROETHANE
- 1,1 DCE 1,1 DICHLOROETHENE
- 1,1,1 TCA 1,1,1 TRICHLOROETHANE
- 1,2 DCE(t) 1,2 DICHLOROETHENE (TOTAL)
- PCE TETRACHLOROETHENE
- TCE TRICHLOROETHENE
- AL ACTION LEVEL: APPLICABLE FEDERAL & STATE GROUNDWATER DRINKING WATER STANDARD
- B ANALYTE WAS DETECTED IN ASSOCIATED BLANK
- J ESTIMATED

REINJECTION TRENCH AND MANHOLE

N

100 0 100 200

GRAPHIC SCALE (IN FEET)

NOTES:

BOLDED VALUES EXCEED ACTION LEVEL

* VALUES MARKED WITH ASTERISK ARE THE ARITHMETIC MEAN OF NORMAL AND DUPLICATE SAMPLES

ALL CONCENTRATIONS PRESENTED IN ug/L

FOR JUNE 2004, DIFFUSION BAG SAMPLING WAS PERFORMED:

T–TOPMOST BAG; B–BOTTOM BAG

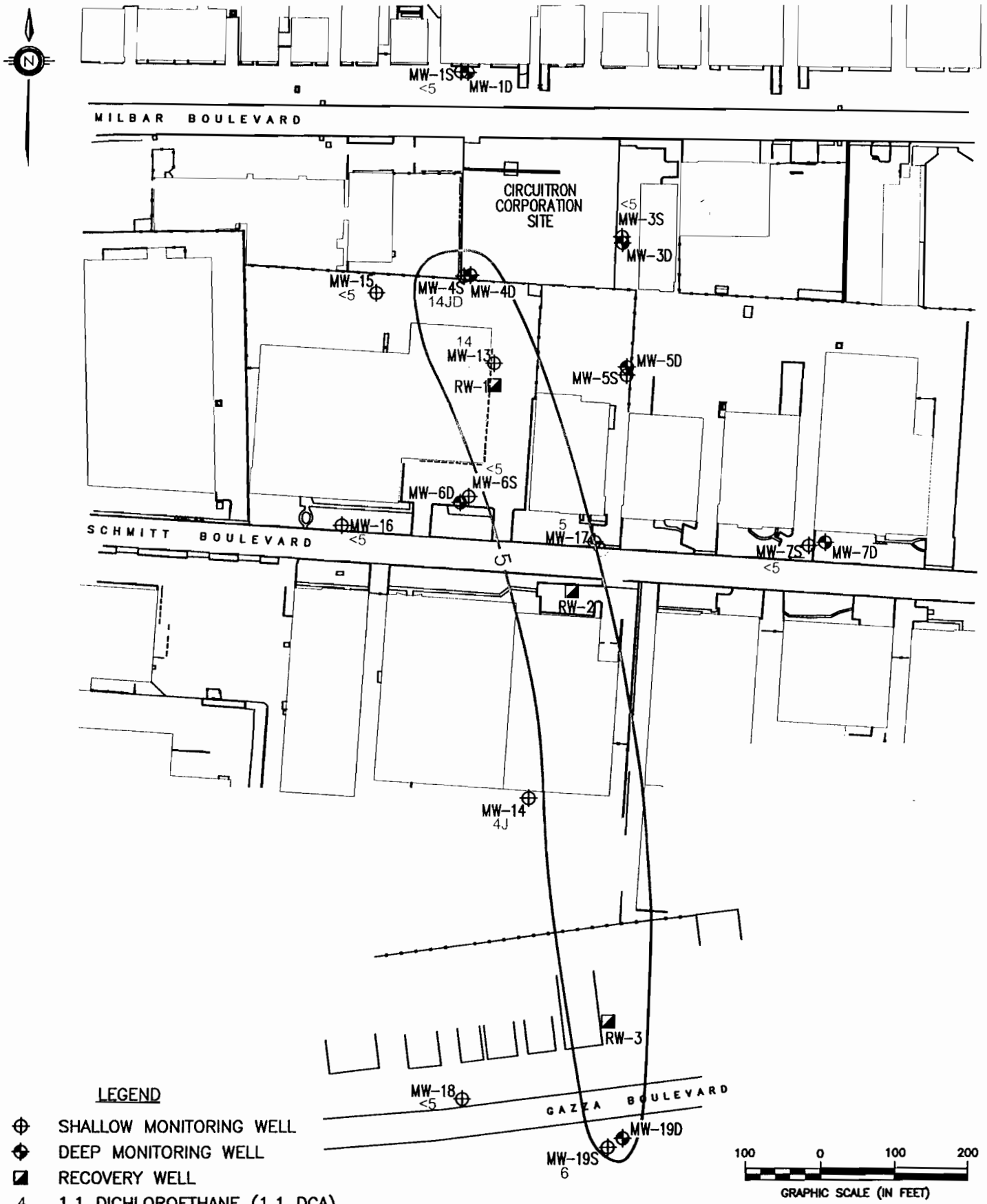
FOR MW–19D IN JUNE 2004, DIFFUSION BAG & LOW FLOW (LF) SAMPLES WERE COLLECTED AS PER USEPA'S REQUEST.

# Volatile Organic Compound Concentrations Exceeding Screening Criteria Deep Wells

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR–5.DWG | DATE: 8–20–04 | FIGURE #: 4–2a |
|---|---|---|




LEGEND

- ⊕ SHALLOW MONITORING WELL
- ◆ DEEP MONITORING WELL
- ◪ RECOVERY WELL
- 4 1,1 DICHLOROETHANE (1,1 DCA) CONCENTRATION VALUE (ug/L)
- —— 1,1 DCA CONCENTRATION CONTOUR LINE

QUALIFERS:

- D RESULTS ARE REPORTED FOR THE DILUTED SAMPLES
- J ASSOCIATED VALUE IS AN ESTIMATED QUANTITY

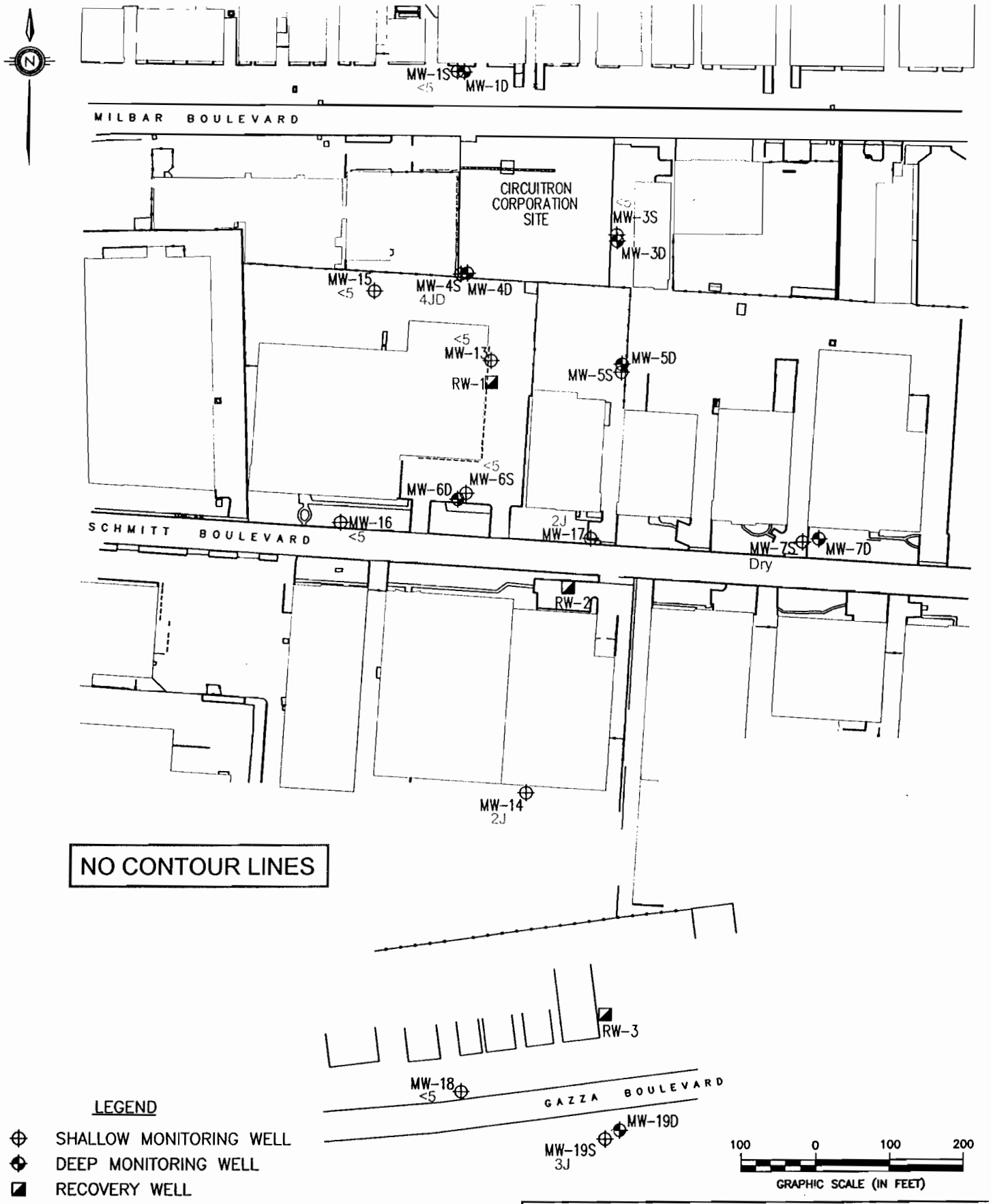
—⊡— REINJECTION TRENCH AND MANHOLE

# 1,1 DCA June 2000

Isoconcentration Map (ug/L)
Upper Glacial Aquifer
Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-8.DWG | DATE: 4-29-03 | FIGURE #: 4-3a |
|---|---|---|




LEGEND

- ⊕ SHALLOW MONITORING WELL
- ◆ DEEP MONITORING WELL
- ◪ RECOVERY WELL
- <5 1,1 DICHLOROETHANE (1,1 DCA) CONCENTRATION VALUE (ug/L)
- REINJECTION TRENCH AND MANHOLE

QUALIFERS:

- D RESULTS ARE REPORTED FOR THE DILUTED SAMPLES
- J ASSOCIATED VALUE IS AN ESTIMATED QUANTITY

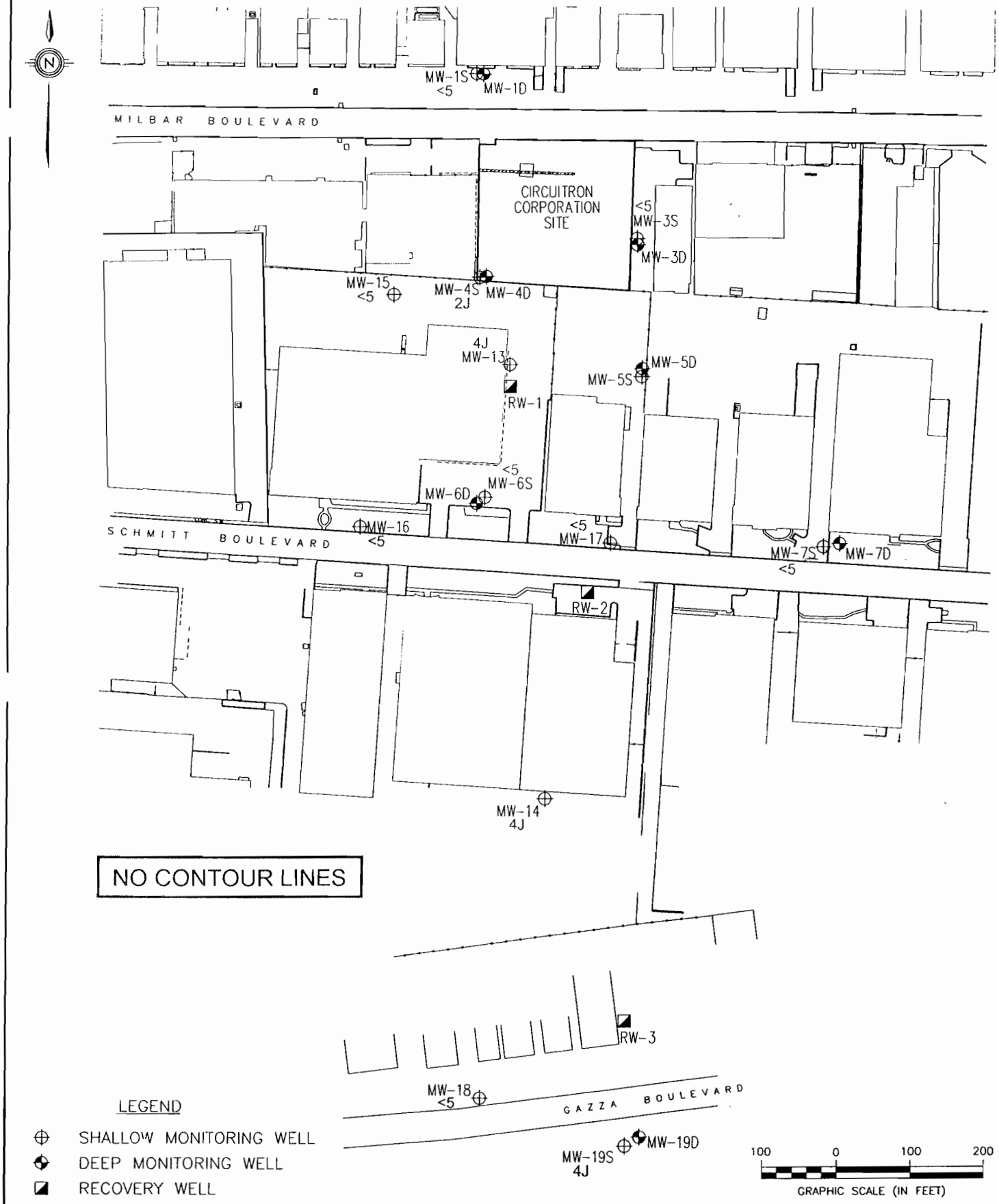
# 1,1 DCA February 2002

## Isoconcentration Map (ug/L) Upper Glacial Aquifer

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-9.DWG | DATE: 4-29-03 | FIGURE #: 4-3b |
|---|---|---|




LEGEND

- ⊕ SHALLOW MONITORING WELL
- ◆ DEEP MONITORING WELL
- ◪ RECOVERY WELL
- REINJECTION TRENCH AND MANHOLE
- 4 1,1 DICHLOROETHANE (1,1 DCA) CONCENTRATION VALUE (ug/L)
- 1,1 DCA CONCENTRATION CONTOUR LINE

QUALIFERS:

- D RESULTS ARE REPORTED FOR THE DILUTED SAMPLES
- J ASSOCIATED VALUE IS AN ESTIMATED QUANTITY

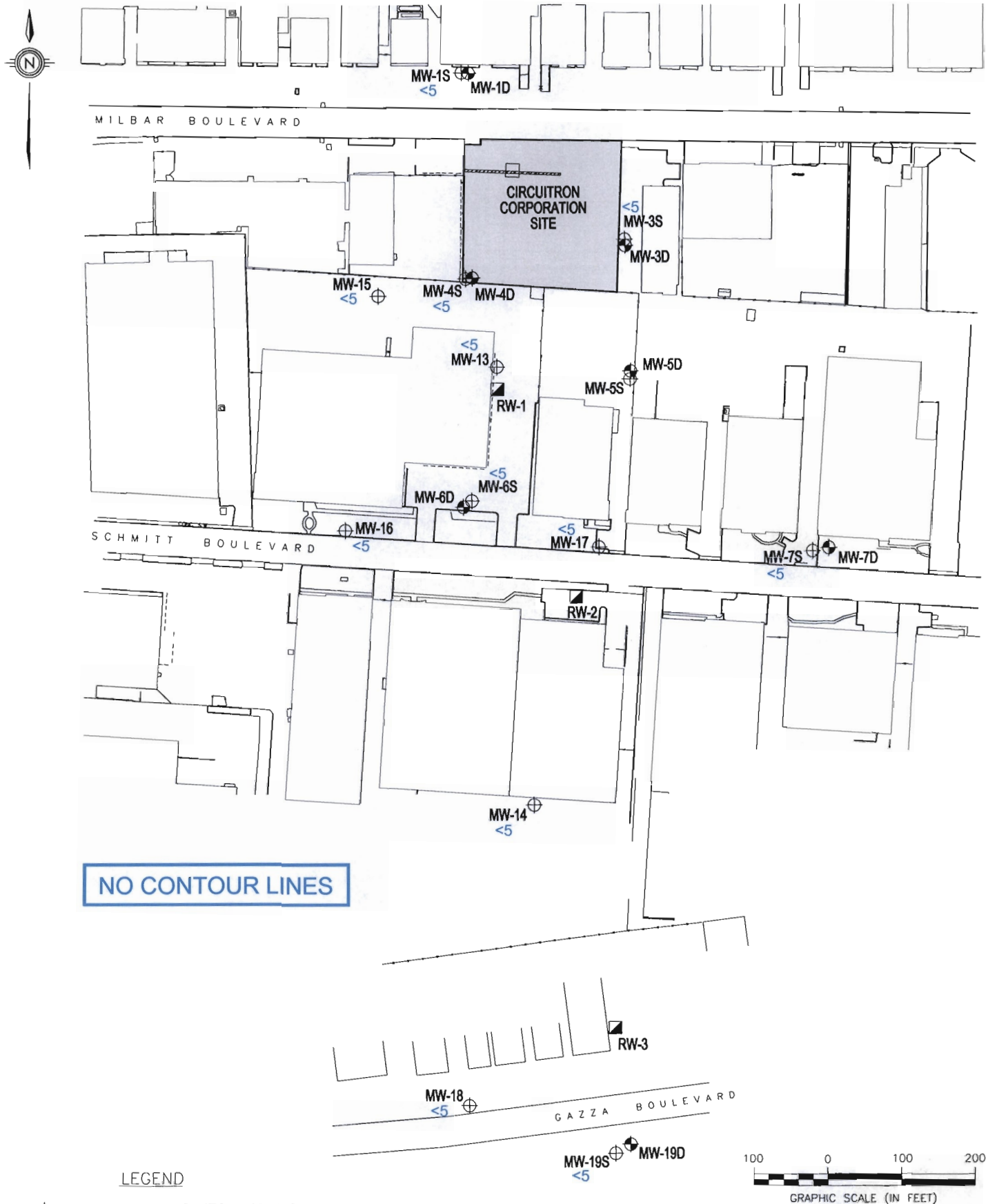
# 1,1 DCA April 2003

**Isoconcentration Map (ug/L)**
**Upper Glacial Aquifer**

**Circuitron Corporation Superfund Site**
**East Farmingdale, New York**

URS

| FILENAME: CIR-18.DWG | DATE: 2-2-04 | FIGURE #: 4-3c |
|---|---|---|




LEGEND

- ⊕ SHALLOW MONITORING WELL
- ◆ DEEP MONITORING WELL
- ◪ RECOVERY WELL
- REINJECTION TRENCH AND MANHOLE
- 4 1,1 DICHLOROETHANE (1,1 DCA) CONCENTRATION VALUE (ug/L)
- 1,1 DCA CONCENTRATION CONTOUR LINE

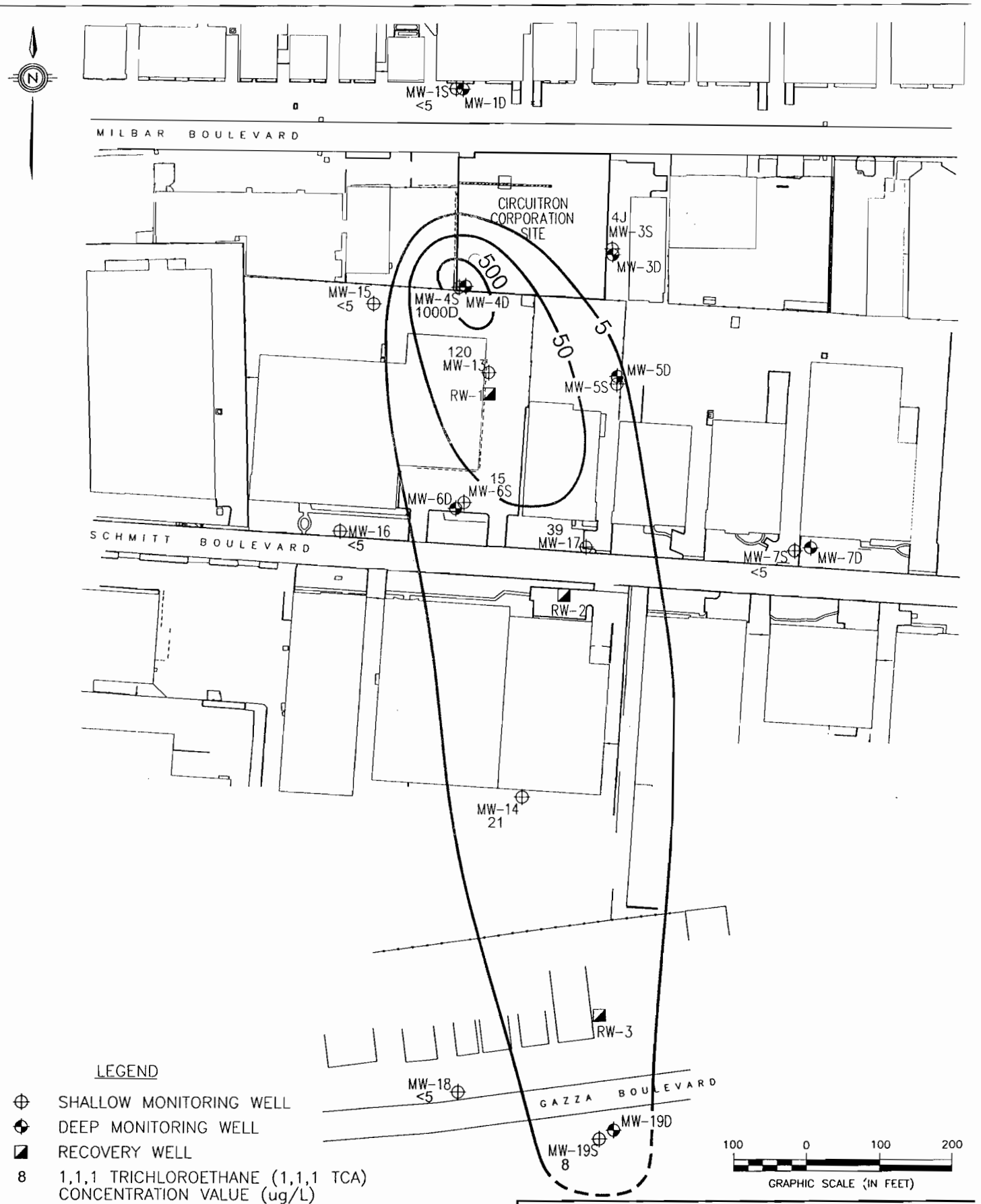
# 1,1 DCA June 2004

## Isoconcentration Map (ug/L) Upper Glacial Aquifer

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-27.DWG | DATE: 8-20-04 | FIGURE #: 4-3d |
|---|---|---|




LEGEND

- ⊕ SHALLOW MONITORING WELL
- ⊕ DEEP MONITORING WELL
- ◪ RECOVERY WELL
- 8 1,1,1 TRICHLOROETHANE (1,1,1 TCA) CONCENTRATION VALUE (ug/L)
- —— 1,1,1 TCA CONCENTRATION CONTOUR LINE (DASHED WHERE INFERRED)
- REINJECTION TRENCH AND MANHOLE

QUALIFERS:

- D RESULTS ARE REPORTED FOR THE DILUTED SAMPLES
- J ASSOCIATED VALUE IS AN ESTIMATED QUANTITY

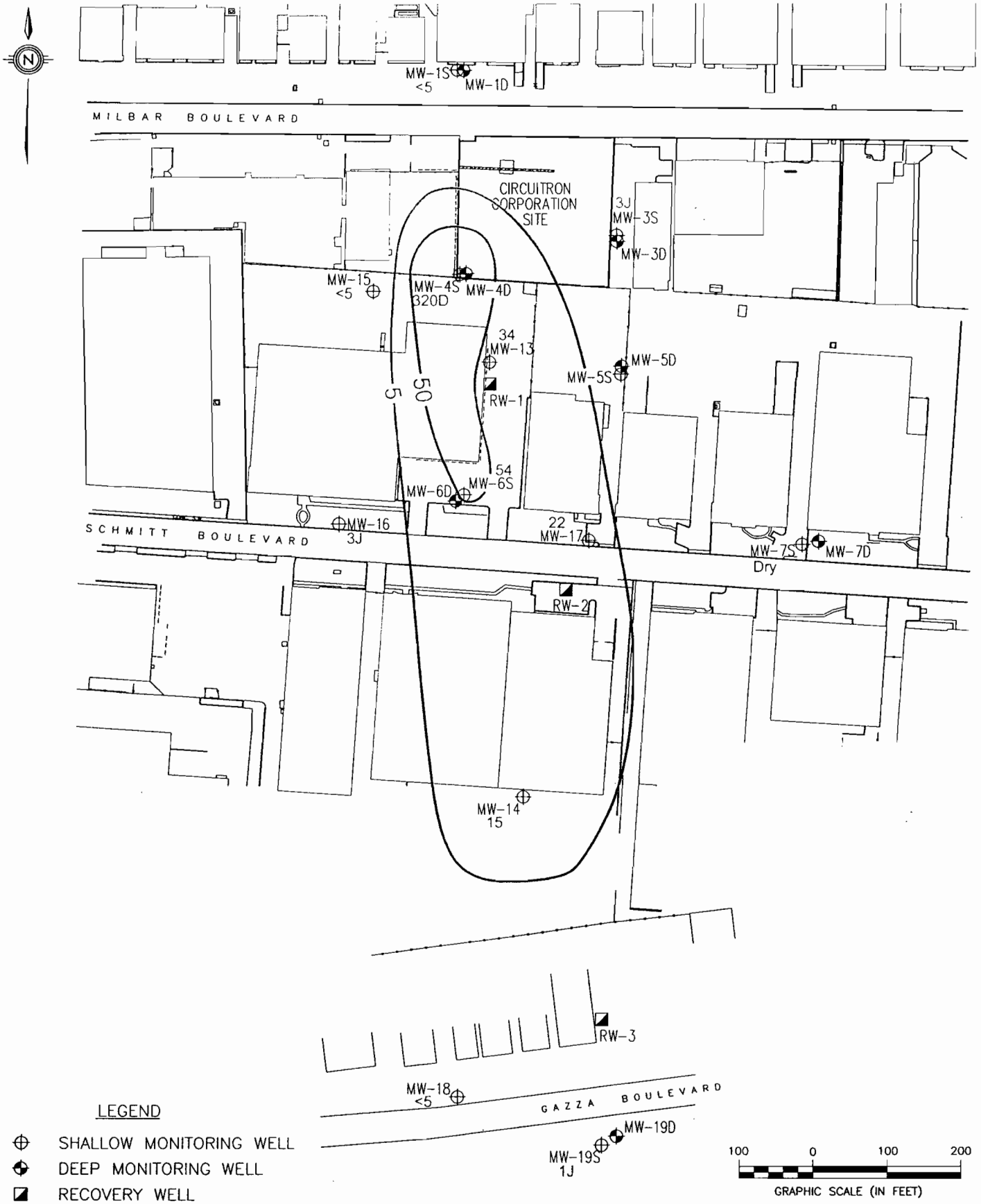
# 1,1,1 TCA June 2000

## Isoconcentration Map (ug/L) Upper Glacial Aquifer

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-10.DWG | DATE: 4-29-03 | FIGURE #: 4-4a |
|---|---|---|




LEGEND

- ⊕ SHALLOW MONITORING WELL
- ⊕ DEEP MONITORING WELL
- ◪ RECOVERY WELL
- 15 1,1,1 TRICHLOROETHANE (1,1,1 TCA) CONCENTRATION VALUE (ug/L)
- ——— 1,1,1 TCA CONCENTRATION CONTOUR LINE
- ——— REINJECTION TRENCH AND MANHOLE

QUALIFERS:

- D RESULTS ARE REPORTED FOR THE DILUTED SAMPLES
- J ASSOCIATED VALUE IS AN ESTIMATED QUANTITY

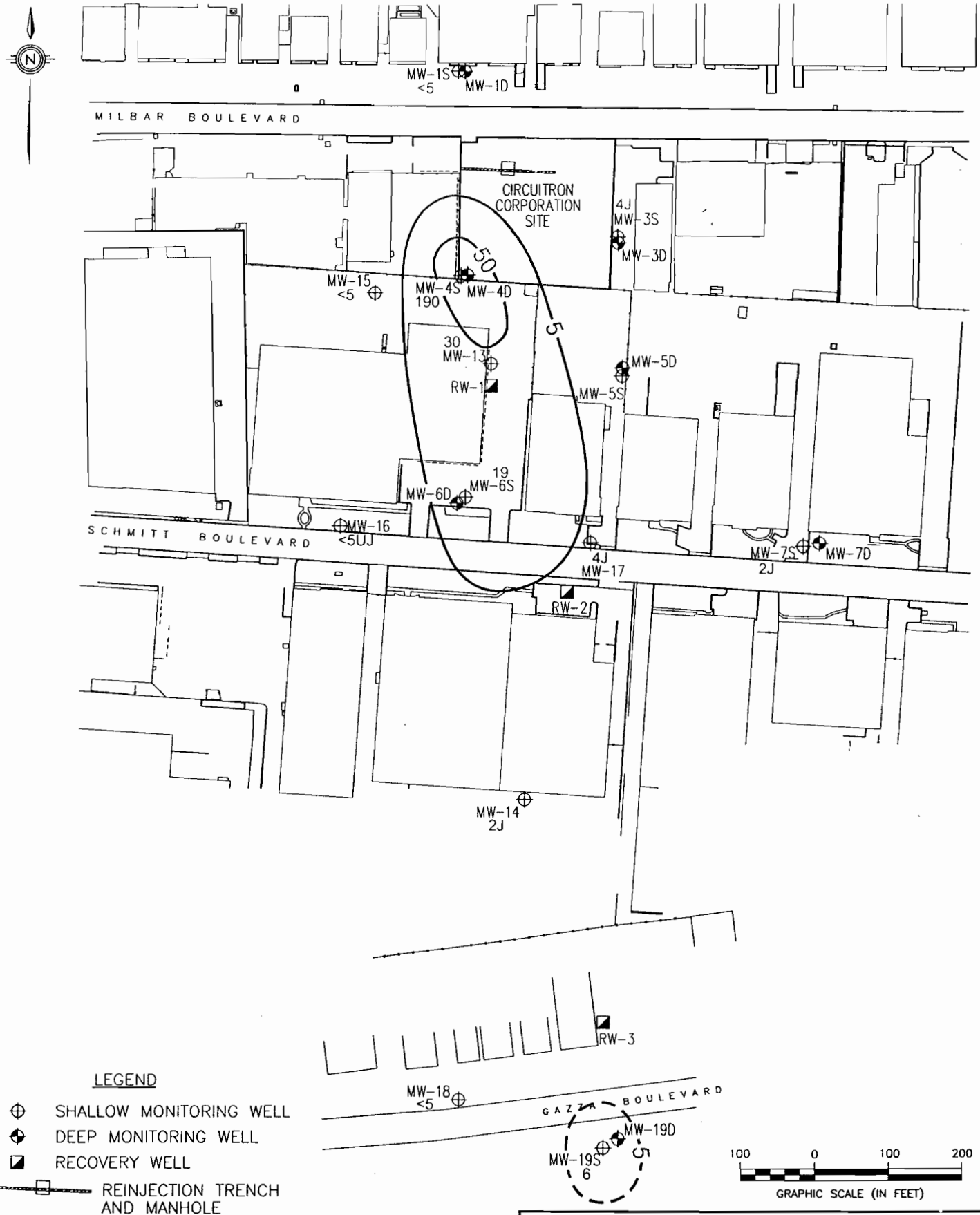
# 1,1,1 TCA JANUARY-FEBRUARY 2002

**Isoconcentration Map (ug/L)**
**Upper Glacial Aquifer**

**Circuitron Corporation Superfund Site**
**East Farmingdale, New York**

URS

| FILENAME: CIR-11.DWG | DATE: 4-29-03 | FIGURE #: 4-4b |
|---|---|---|




LEGEND

- ⊕ SHALLOW MONITORING WELL
- ◆ DEEP MONITORING WELL
- ◪ RECOVERY WELL
- REINJECTION TRENCH AND MANHOLE
- 8 1,1,1 TRICHLOROETHANE (1,1,1 TCA) CONCENTRATION VALUE (ug/L)
- 1,1,1 TCA CONCENTRATION CONTOUR LINE (DASHED WHERE INFERRED)

QUALIFERS:

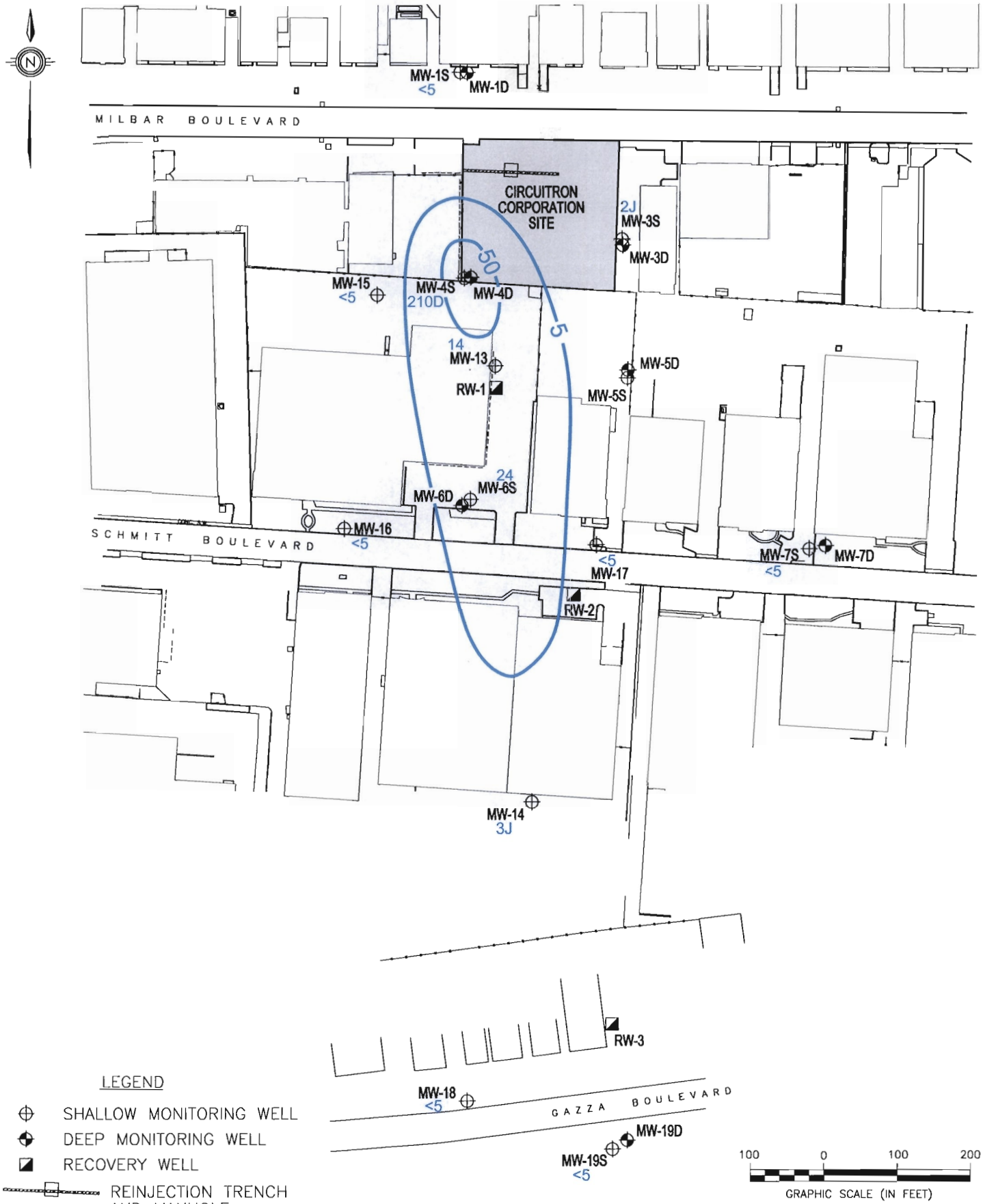
- D RESULTS ARE REPORTED FOR THE DILUTED SAMPLES
- J ASSOCIATED VALUE IS AN ESTIMATED QUANTITY

# 1,1,1 TCA April 2003

**Isoconcentration Map (ug/L)**
**Upper Glacial Aquifer**
**Circuitron Corporation Superfund Site**
**East Farmingdale, New York**

URS

| FILENAME: CIR-19.DWG | DATE: 2-2-04 | FIGURE #: 4-4c |
|---|---|---|




LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- RECOVERY WELL
- REINJECTION TRENCH AND MANHOLE
- 8 — 1,1,1 TRICHLOROETHANE (1,1,1 TCA) CONCENTRATION VALUE (ug/L)
- 1,1,1 TCA CONCENTRATION CONTOUR LINE (DASHED WHERE INFERRED)

QUALIFERS:

- D RESULTS ARE REPORTED FOR THE DILUTED SAMPLES
- J ASSOCIATED VALUE IS AN ESTIMATED QUANTITY

# 1,1,1 TCA June 2004

## Isoconcentration Map (ug/L) Upper Glacial Aquifer

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-28.DWG | DATE: 8-20-04 | FIGURE #: 4-4d |
|---|---|---|

NORTH

SOUTH

| MW-6S | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | <5 | <5 | 1J |
| 1,1,1-TCA (ug/L) | **15** | **19** | **24** |
| PCE (ug/L) | <5 | <5 | <5 |
| TCE (ug/L) | <5 | <5 | <5 |

℄ MILBAR BLVD.

CIRCUITRON CORPORATION SITE

℄ SCHMITT BLVD.

APPROXIMATE EXISTING GRADE ELEVATION 86.00'

FORMER BUILDING

MW-1S MW-1D MW-4S MW-4D MW-15 (PROJECTED) MW-13 MW-6S MW-6D MW-16 (PROJECTED) MW-17 (PROJECTED) MW-14 MW-18 MW-19D MW-19S

ELEVATION, FT.

80 70 60 50 40 30 20 10 0

WATER TABLE (APPROXIMATE)

UPPER GLACIAL AQUIFER

MAGOTHY AQUIFER

PREDOMINANT GROUNDWATER FLOW DIRECTION

| MW-17 | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | <5 | <5 | <5 |
| 1,1,1-TCA (ug/L) | **39** | 4J | <5 |
| PCE (ug/L) | <5 | <5 | <5 |
| TCE (ug/L) | <5 | <5 | <5 |

| MW-14 | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | 1J | <5 | <5 |
| 1,1,1-TCA (ug/L) | **21** | 2J | 3J |
| PCE (ug/L) | 2J | <5 | <5 |
| TCE (ug/L) | 1J | <5 | <5 |

| MW-4S | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | **40JD** | <5 | 5 |
| 1,1,1-TCA (ug/L) | **1000D** | **190** | **260** |
| PCE (ug/L) | **13JD** | **26** | **12** |
| TCE (ug/L) | <5 | <5 | **<5** |

| MW-13 | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | **8** | <5 | <5 |
| 1,1,1-TCA (ug/L) | **120** | **30** | **14** |
| PCE (ug/L) | <5 | <5 | <5 |
| TCE (ug/L) | <5 | <5 | <5 |

| MW-16 | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | <5 | <5 | <5 |
| 1,1,1-TCA (ug/L) | <5 | <5J | <5 |
| PCE (ug/L) | <5 | <5 | <5 |
| TCE (ug/L) | <5 | <5 | <5 |

| MW-18 | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | <5 | <5 | <5 |
| 1,1,1-TCA (ug/L) | <5 | <5 | <5 |
| PCE (ug/L) | <5 | <5 | <5 |
| TCE (ug/L) | <5 | <5 | <5 |

| MW-15 | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | <5 | <5 | <5 |
| 1,1,1-TCA (ug/L) | <5 | <5 | <5 |
| PCE (ug/L) | **11** | <5 | <5 |
| TCE (ug/L) | **14** | <5 | <5 |

| MW-6D | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | 5J | 5 | **6** |
| 1,1,1-TCA (ug/L) | **10** | **6** | **7** |
| PCE (ug/L) | 3J | 3J | 2J |
| TCE (ug/L) | **8** | **6** | **7** |

| MW-19S | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | 1J | <5 | <5 |
| 1,1,1-TCA (ug/L) | **8** | **6** | <5 |
| PCE (ug/L) | <5 | <5 | <5 |
| TCE (ug/L) | <5 | <5 | <5 |

| MW-4D | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | **14** | 5 | **9** |
| 1,1,1-TCA (ug/L) | **27** | **8** | **10** |
| PCE (ug/L) | **8** | 2J | 2J |
| TCE (ug/L) | **24** | 5J | **7** |

| MW-19D | | | |
|---|---|---|---|
| Analyte | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | **14** | **11** | **22** |
| 1,1,1-TCA (ug/L) | **23** | **16** | **23** |
| PCE (ug/L) | **46** | **57** | **39** |
| TCE (ug/L) | **40** | **33** | **35** |

| MW-1S | | | | |
|---|---|---|---|---|
| Analyte | Feb-94 | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | <1 | <5 | <5 | <5 |
| 1,1,1-TCA (ug/L) | 0.4J | <5 | <5 | <5 |
| PCE (ug/L) | <1 | <5 | <5 | <5 |
| TCE (ug/L) | <1 | <5 | <5 | <5 |

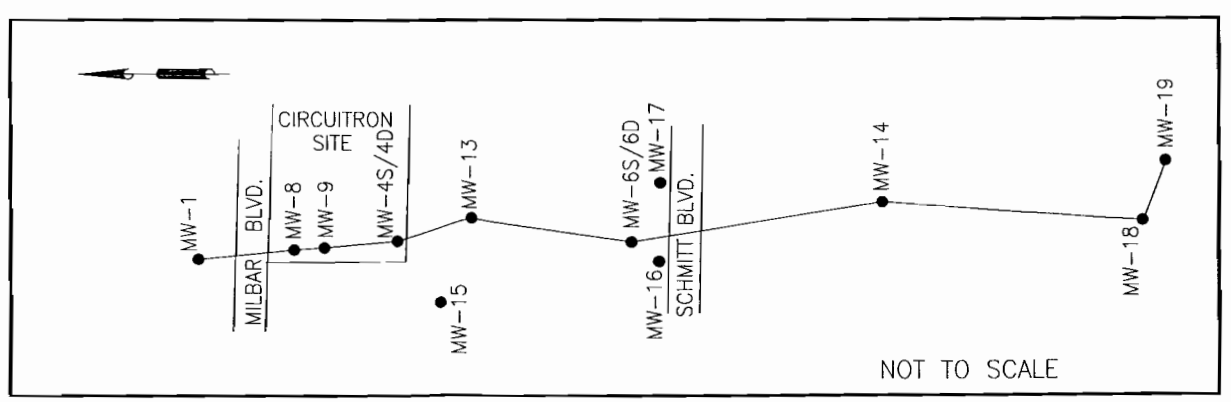
| MW-1D | | | | | |
|---|---|---|---|---|---|
| Analyte | May-93 | Feb-94 | Jun-00 | Apr-03 | Jun-04 |
| 1,1-DCE (ug/L) | **31J** | **24** | **9** | 7 | **7** |
| 1,1,1-TCA (ug/L) | **84J** | **99** | **16** | 8 | 7 |
| PCE (ug/L) | **38J** | **18** | 5J | 3J | 2J |
| TCE (ug/L) | **76J** | **82** | **13** | 5J | **5** |

LEGEND:

— — — — UNCONFORMABLE GEOLOGIC FORMATION CONTACT

MONITORING WELL SCREENED INTERVAL

| | |
|---|---|
| 1,1-DCE | 1,1 DICHLOROETHENE |
| 1,1,1-TCA | 1,1,1 TRICHLOROETHANE |
| PCE | TETRACHLOROETHENE |
| TCE | TRICHLOROETHENE |
| J | ESTIMATED CONCENTRATION |




CROSS SECTION KEY MAP

SOURCE: WESTON, 1994

NOTE: **BOLDED** VALUES EXCEED ACTION LEVEL

NOTE: NOT TO SCALE

# Cross-section

Circuitron Corporation Superfund Site
East Farmingdale, New York

URS

| FILENAME: CIR-24.DWG | DATE: 8-20-04 | FIGURE #: 4-5 |
|---|---|---|

# 5.0 SUMMARY AND CONCLUSIONS

This section presents a summary of the findings and conclusions for this Annual Performance Evaluation.

## 5.1 GROUNDWATER FLOW

The groundwater flow pattern for the upper portion of the Upper Glacial Aquifer has changed as a result of the remediation system operation. Shallow groundwater contamination located within the observed zone of capture is being directed to the remediation system for treatment. The groundwater flow paths from August 2002 and March 2004 also indicate that the observed zone of capture during that period extends beyond the modeled capture zone to include wells MW-16 and MW-7S.

## 5.2 GROUNDWATER QUALITY

Monitoring well MW-1S is located upgradient of the site with respect to groundwater flow direction and is the background well for the shallow portion of the Upper Glacial Aquifer for the site. Comparison of the results from each shallow well located downgradient of well MW-1S provides a benchmark to determine if the concentrations detected in the downgradient wells are site-related. A compound is considered site-related if it is observed as an exceedance in groundwater from a site well and not observed as an exceedance in groundwater obtained from the upgradient well prior to remediation system startup (February 1994 and June 2000 sampling events).

Monitoring well MW-1D is located upgradient of the site and is screened within the deep portion of the Upper Glacial Aquifer. Comparison of the results from each deep well located downgradient of well MW-1D provides a benchmark to determine if the concentrations detected in the downgradient deep wells are site-related. A compound is considered site-related if it is observed as an exceedance in groundwater from a site well and not observed as an exceedance in groundwater obtained from the upgradient well prior to remediation system startup (May 1993, February 1994 and June 2000 sampling events). The May 1993 data was also used along with the February 1994 data in this comparison because of the lead that exceeded the action level during that sampling event. A compound will not

be considered site-related in groundwater from the deep aquifer unless it is determined to be site-related in shallow groundwater.

### 5.2.1 Shallow Wells - VOCs

VOCs present in the groundwater from the shallow portion of the Upper Glacial Aquifer within this area appear to be captured by the remediation system. Evidence for this is:

a) The levels of 1,1,1-TCA and 1,1-DCA present in January/February 2002 and June 2004 are considerably less than the levels present in June 2000.

b) Both 1,1-DCA and 1,1,1-TCA were observed as an exceedance in groundwater from downgradient well MW-19S sampled prior to remediation system start-up (June 2000) and once again in April 2003 at a concentration just above the detection limit for 1,1,1-TCA of 5 ug/L. Other than this single exceedance in April 2003, these compounds were not observed as exceedances in groundwater sampled from this well during sampling events after the startup of the remediation system.

### 5.2.2 Deep Wells - VOCs

Exceedances of 1,1-DCE, 1,1,1-TCA, PCE, and TCE were observed in groundwater from upgradient well MW-1D, sampled prior to start-up of the remediation system, indicating these compounds are not site-related. These same compounds were also shown to be multiple exceedances in groundwater from downgradient well MW-19D, indicating these compounds are being transported in the deeper groundwater across the site.

In addition, multiple exceedances of 1,2-DCE were observed in groundwater from downgradient well MW-19D. The presence of 1,2-DCE will not be considered site-related because this compound is a breakdown product of PCE or TCE due to naturally occurring biodegradation. Neither PCE nor TCE were shown as site-related.

The compound 1,1-DCA was observed as a multiple exceedance in groundwater from MW-7D. The presence of 1,1-DCA will not be considered site-related because this compound is a naturally occurring biodegradation product of 1,1,1-TCA. 1,1,1-Trichloroethane is determined to be not site-related.

### 5.2.3 Water Quality Trends Over Time

The concentrations of VOCs have decreased in groundwater from a majority of the shallow wells located at the site during the Performance Monitoring period. The decrease in VOC concentrations during this time frame is attributable to the successful operation of the remediation system.

## 6.0 RECOMMENDATIONS

1) Continued operation of the remediation system under the current pumping conditions and performance monitoring is recommended for the Circuitron site because the remediation system is causing a decrease in the levels of VOCs in the shallow groundwater at the site.

2) Stop sampling and chemical analyses of groundwater samples from the deep wells.

## 7.0 REFERENCES

Radian International, July 13, 1999. Final Report OU#2 Groundwater Investigation Report, Circuitron Corporation, East Farmingdale, New York.

Roy F. Weston, Inc., 1994. Focused Feasibility Study, Second Operable Unit for the Circuitron Corporation Site, East Farmingdale, New York.

URS Corporation, September 6, 2000. Operation and Maintenance Manual, Groundwater Treatment System, Circuitron Corporation, East Farmingdale, New York.

URS Corporation, August 12, 2002. Monthly Progress Report for O&M June 1, 2002 to June 30, 2002, Groundwater Treatment System, Circuitron Corporation, East Farmingdale, New York.

United States Environmental Protection Agency, Region II, September 1994. Record of Decision, Operable Unit Two (OU-2), Circuitron Corporation, East Farmingdale, Suffolk County, New York.

# APPENDIX A

# Appendix A-1

# Total VOC Concentrations

Appendix A-1
Total VOC Concentrations

| Well Type | Monitoring Well | Jun 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | Jul - Aug 2001 | Oct 2001 | Jan - Feb 2002 | Jul - Aug 2002 | Apr-03 | Jun-04 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Shallow | MW-1S | 16 | | 5 | | 56 | 4 | 8 | | 5 | |
| Shallow | MW-3S | 20 | 13 | 5 | 7 | 8 | 8 | 6 | *4 | 4 | 2 |
| Shallow | MW-4S | 1155 | 915 | 720 | 279 | 93 | 328 | 347 | | 219 | *239 |
| Shallow | MW-6S | 15 | 374 | 119 | 89 | *112 | 107 | 64 | | 19 | *25 |
| Shallow | MW-7S | | *2 | *2 | | | 11 | | | | |
| Shallow | MW-13 | 154 | 397 | 124 | 47 | 41 | 31 | 35 | *14 | 34 | *10 |
| Shallow | MW-14 | 30 | 10 | 17 | 13 | 14 | 15 | 21 | 1 | 6 | *3 |
| Shallow | MW-15 | 68 | *1 | *35 | 29 | | 5 | *2 | | | |
| Shallow | MW-16 | | | | * | | 1 | 3 | | | |
| Shallow | MW-17 | 44 | 71 | 37 | 11 | 14 | 32 | 26 | 8 | 4 | |
| Shallow | MW-18 | | | 13 | 13 | * | 10 | | | | |
| Shallow | MW-19S | 17 | 34 | 21 | 14 | 13 | 16 | 5 | 5 | 10 | |
| Deep | MW-1D | 61 | 52 | 45 | *41 | 7 | *53 | 57 | 45 | 27 | *26 |
| Deep | MW-3D | 5 | 2 | 7 | 4 | 5 | 5 | 8 | 1 | 1 | |
| Deep | MW-4D | *94 | 57 | 49 | 50 | 41 | 38 | 43 | 37 | *23 | *34 |
| Deep | MW-5D | *10 | 30 | 4 | 7 | 4 | 8 | | | | |
| Deep | MW-6D | 30 | 24 | 35 | 14 | 20 | 31 | 17 | 37 | 25 | *28 |
| Deep | MW-7D | 30 | 35 | 29 | 36 | 23 | 32 | *28 | 19 | *8.5 | *3 |
| Deep | MW-19D | 133 | 139 | 136 | 158 | 176 | *180 | 214 | 199 | 146 | *111 |

Note: VOC: Volatile Organic Compound
All concentrations in ug/L
Blank cells indicate no VOCs detected
Values marked with an asterisk are the arithmetic mean of normal and duplicate samples
* For June 2004, values with asterisk are the arithmetic mean of multiple bag samples. For MW-4S and MW-19D, values are arithmetic mean of bag samples, duplicates, and low flow samples.

# Appendix A-2

## Groundwater Sampling Results by Well

Groundwater Sampling Results for
MW-1S

| Analyte | NY Water Quality Criteria | Feb 1994* | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | 0.70 J | <5 | <5 | <5 | <5 | 5 J | <5 | <5 | <5 | <5 | <5 |
| 1,1 Dichloroethene | 5 | 1.00 U | <5 | <5 | <5 | <5 | **10** | <5 | <5 | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | 0.40 J | <5 | <5 | <5 | <5 | **15** | <5 | <5 | <5 | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | 1.00 U | <5 | <5 | <5 | <5 | 2 J | <5 | <5 | <5 | <5 | <5 |
| Acetone | NP | 3.00 J | 11 B | <10 | 3 JB | <10 | <10 | <10 | <10 | <10 | 5J | <7UJ |
| Chloroform | 7 | 1.00 U | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Methylene Chloride | 5 | 2.00 U | 5 B | <5 | 2 JB | <5 | 4 J | 4 JB | **8 B** | <5 | <5 | <3U |
| Tetrachloroethene | 5 | 1.00 U | <5 | <5 | <5 | <5 | **8** | <5 | <5 | <5 | <5 | <5 |
| Toluene | 5 | 1.00 U | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | 1.00 U | <5 | <5 | <5 | <5 | **12** | <5 | <5 | <5 | <5 | <5 |
| Turbidity | 5 | NR | **229** | NR | **27** | 0 | 0.1 | NR | **33.1** | 0 | **83** | NR |
| Antimony | 3 | 28.30 U | <2.2 | NR | <2.3 | NR | 2.2 J | NR | <1.9 | <2.2 | <2.5 | NR |
| Arsenic | 25 | R | 12.1 | NR | 18.5 | NR | 8.2 | NR | 6.0 | 11.1 | <3.5 | NR |
| Beryllium | 3 | 0.20 U | <0.10 | NR | 0.37 J | NR | <0.20 | NR | <0.10 | 0.22U | <0.66U | NR |
| Chromium | 50 | 7.70 B | 2.2 | NR | 2.2 J | NR | 1.2 | NR | 3.3 | 3.1U | 12.4 | NR |
| Copper | 200 | 17.80 B | 7.3 | NR | 1.9 | NR | 1.3 | NR | 3.3 | <0.30 | 8.6 | NR |
| Iron | 300 | **52600.00** | **19400** | NR | **31200** | NR | **22000** | NR | **20000** | **24300** | **8990** | NR |
| Lead | 15 | 2.90 BJ | <2.3 UJ | NR | <2.1 | NR | <2.6 | NR | 2.5 | <1.7 | <2.6 | NR |
| Manganese | 300 | **714.00** | **393** | NR | **559** | NR | **429** | NR | **366** | **403** | 289 | NR |
| Mercury | 0.7 | 0.20 U | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | <0.10 | NR |
| Nickel | 100 | 10.80 U | 2.2 | NR | 2.2 | NR | <1.2 | NR | 3.0 | 4.1U | 7.8 | NR |
| Top of Screen Elevation: 62.04 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 52.04 feet | | | 59.52 | 58.62 | 57.42 | 59.82 | 60.72 | 56.61 | 51.92 | 53.02 | 56.32 | 58.49 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Location of center of bag is 1.0 feet from the bottom of the well.
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
*Data presented from February 1994 is published in the Record of Decision (USEPA 1994). These data provide a benchmark of pre-remediation conditions for the upgradient wells.
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level
UJ: Compound is not detected and the associated quantitation limit is uncertain
R: Rejected during data validation

Groundwater Sampling Analytical Results for
MW-1D

| Analyte | NY Water Quality Criteria | May 1993* | Feb 1994* | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | Apr - May 2001 Duplicate | July - Aug 2001 | Oct 2001 | Oct 2001 Duplicate | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | 4.00 J | **6.00** | 5 J | 5 J | 4 J | 4 J | 4 J | < 5 | 4 J | 4 J | 4 J | 4 J | 3J | 3J | 3J |
| 1,1 Dichloroethene | 5 | **31.00 J** | **24.00** | **9** | **10** | **7** | **8** | **8** | < 5 | **10** | **10** | **11** | **10** | **7** | **7** | **7** |
| 1,1,1 Trichloroethane | 5 | **84.00 J** | **99.00** | **16** | **14** | **13** | **13** | **13** | <5 | **16** | **17** | **14** | **12** | **8** | **7** | **7** |
| 1,2 Dichloroethene (total) | 5 | 4.00 J | 4.00 | 1 J | 2 J | <5 | 1 J | 1 J | <5 | 1 J | 1 J | 1 J | 2 J | 1J | 2J | 1J |
| Acetone | NP | 5.00 R | 5.00 R | 8 JB | <10 | 3 JB | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10UJ | <10UJ |
| Chloroform | 7 | 3.00 UJ | 1.00 U | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Methylene Chloride | 5 | 2.00 R | 2.00 U | 4 JB | <5 | 4 JB | <5 | <5 | **7 J** | 5 B | 5 JB | **10 B** | <5 | <5J | <4U | <4U |
| Tetrachloroethene | 5 | **38.00 J** | **18.00** | 5 J | **6** | 4 J | 5 | 5 | <5 | 5 | **6** | **6** | 5 | 3J | 2J | 1J |
| Toluene | 5 | 1.00 UJ | 1.00 U | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | **76.00 J** | **82.00** | **13** | **15** | **10** | **10** | **10** | <5 | **11** | **11** | **11** | **12** | 5J | 5 | 5 |
| Turbidity | 5 | NR | NR | **35.5** | NR | **580** | 0 | 0 | 0.0 | NR | NR | **34.7** | 0 | **12** | NR | NR |
| Antimony | 3 | 17.90U | 28.30 UJ | <2.2 | NR | <2.3 | NR | NR | <1.9 | NR | NR | <1.9 | <2.2 | <2.5 | NR | NR |
| Arsenic | 25 | 2.30 U | 1.30 UJ | <3.2 | NR | <2.4 | NR | NR | <2.3 | NR | NR | <3.0 | <2.5 | <3.5 | NR | NR |
| Beryllium | 3 | 0.50 U | 0.20 U | 0.14 | NR | 0.14 J | NR | NR | <0.20 | NR | NR | <0.10 | 0.24U | <0.10 | NR | NR |
| Chromium | 50 | 31.40 | 36.20 | **567** | NR | **255 J** | NR | NR | 34.9 | NR | NR | **55.7** | **153** | **145** | NR | NR |
| Copper | 200 | 16.50 B | 9.00 B | 16.6 | NR | 13.4 | NR | NR | 5.9 | NR | NR | 7.2 | 4.9 | 7 | NR | NR |
| Iron | 300 | **659** | **621** | **3020** | NR | **1110** | NR | NR | **302** | NR | NR | **456** | **1170** | **637** | NR | NR |
| Lead | 15 | **16.4** | 5.30 J | 7.6 UJ | NR | <2.1 | NR | NR | <2.6 | NR | NR | 4.0 | 2.2U | <2.6 | NR | NR |
| Manganese | 300 | 31.20 | 60.10 | 211 | NR | 177 | NR | NR | 138 | NR | NR | 149 | 160 | 164 | NR | NR |
| Mercury | 0.7 | 0.10 UJ | 0.20 U | <0.10 | NR | <0.10 | NR | NR | <0.10 | NR | NR | <0.10 | <0.10 | <0.10 | NR | NR |
| Nickel | 100 | 10.60 B | 10.80 U | 52 | NR | 88.2 | NR | NR | 16.0 | NR | NR | 10.8 | 38.3 | 17 | NR | NR |
| Top of Screen Elevation: -3.00 feet | | | | | | | | | | | | | | | | |
| Groundwater Elevation (feet): | | | | 59.44 | 58.54 | 57.44 | 59.80 | 59.80 | 58.24 | 56.54 | 56.54 | 54.74 | 53.04 | 56.34 | 58.47 | 58.47 |
| Bottom of Screen Elevation: -13.00 feet | | | | | | | | | | | | | | | | |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
*Data presented from May 1993 and February 1994 is published in the Record of Decision (USEPA 1994). These data provide a benchmark of pre-remediation conditions for the upgradient wells.
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level
UJ: Compound is not detected and the associated quantitation limit is uncertain
R: Rejected during data validation

Groundwater Sampling Analytical Results for
MW-3S

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | July - Aug 2002 Duplicate | Apr-03 | Jun-04 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5J | <5 | <5 |
| 1,1 Dichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5J | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | 4 J | **10** | 5 | **7** | 4 J | 3 J | 3 J | 5 J | 4 J | 4J | 2J |
| 1,1,2 Trichloroethane | 1 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5J | <5 | <5 |
| Acetone | NP | 11 B | 3 JB | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10UJ |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | 5 B | <5 | <5 | <5 | 4 J | 5 JB | 3 J | <5J | <5J | <5 | <3U |
| Tetrachloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5J | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5J | <5 | <5 |
| Trichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5J | <5 | <5 |
| Turbidity | 5 | **57.4** | NR | **47** | 4 | 0.0 | NR | **13.3** | **10.1** | **10.1** | **30** | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | <1.9 | NR | <1.9 | 3.1U | <2.2 | <2.5 | NR |
| Arsenic | 25 | 3.4 | NR | <3.4 | NR | <2.3 | NR | <3.0 | <2.5 | <2.5 | <3.5 | NR |
| Beryllium | 3 | 0.15 | NR | <0.10 | NR | <0.20 | NR | <0.10 | 0.14U | 0.22U | <0.42U | NR |
| Chromium | 50 | 10.5 | NR | 11.7 J | NR | 1.6 | NR | 9.7 | 16.2 | 27.2 | 14.5 | NR |
| Copper | 200 | 68.6 | NR | 34.2 | NR | 10.6 | NR | 28.0 | 26.4 | 27.0 | 29.1J | NR |
| Iron | 300 | **4460** | NR | **3160** | NR | **885** | NR | **1290** | **2140** | **2400** | **1810** | NR |
| Lead | 15 | 11.6 J | NR | <2.1 | NR | <2.6 | NR | <2.2 | 5.0 | 6.0 | 4.9 | NR |
| Manganese | 300 | 56.8 | NR | 100 | NR | 36.7 | NR | 33.7 | 31.4 | 79.9 | 24 | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | 0.27 | <0.10 | NR |
| Nickel | 100 | 12.4 | NR | 19.4 | NR | 4.4 | NR | 10.6 | 24.4 | 23.0 | 11.6 | NR |
| Top of Screen Elevation: 60.53 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 50.53 feet | | 59.15 | 57.45 | 57.22 | 59.34 | 58.25 | 56.10 | 54.35 | 52.85 | 52.85 | 55.65 | 58.10 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations reference mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Location of center of bag is 1.0 feet from the bottom of the well.
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

Groundwater Sampling Analytical Results for
MW-3D

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5 | <5 | <5 |
| 1,1 Dichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | <5 | 1 J | 1 J | <5 | <5 | 1 J | 1 J | 1 J | 1J | <5 | <5 |
| 1,1,2 Trichloroethane | 1 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5 | <5 | <5 |
| Acetone | NP | <10 | <10 | 2 JB | 4 J | <10 | <10 | <10 | <10 | <10 | <10UJ | <10UJ |
| Chloroform | 7 | <5 | 1 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | 5 JB | <5 | 4 JB | <5 | 5 J | 4 JB | **7** | <5J | <5 | <3U | <3U |
| Tetrachloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5 | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5 | <5 | <5 |
| Trichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5 | <5 | <5 |
| Turbidity | 5 | **23.3** | NR | 2 | **21** | 0.0 | NR | **114** | 4.2 | 4 | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | 2.1 J | NR | <1.9 | 2.5U | <2.5 | NR | NR |
| Arsenic | 25 | <3.2 | NR | <2.4 | NR | <2.3 | NR | <3.0 | 3.6U | <3.5 | NR | NR |
| Beryllium | 3 | <0.10 | NR | 0.15 J | NR | <0.20 | NR | <0.10 | <0.10 | <0.49U | NR | NR |
| Chromium | 50 | **86.1** | NR | 7.1 J | NR | 2.3 | NR | **212** | **50.9** | 49.7 | NR | NR |
| Copper | 200 | 10.3 | NR | 3.9 | NR | 3.2 | NR | 17.9 | 14.9 | 8.5 | NR | NR |
| Iron | 300 | **600** | NR | 176 | NR | 105 | NR | **962** | **1080** | **793** | NR | NR |
| Lead | 15 | 7.9 J | NR | 3.9 | NR | <2.6 | NR | 11.0 | 10.6 | 6.7 | NR | NR |
| Manganese | 300 | 144 | NR | **418** | NR | 269 | NR | 197 | 206 | 276 | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | <0.10 | NR | NR |
| Nickel | 100 | 58.1 | NR | 12.6 | NR | 8.2 | NR | 32.8 | 23.0 | 30.9 | NR | NR |
| Top of Screen Elevation: -1.65 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: -11.65 feet | | 59.07 | 57.97 | 56.92 | 59.32 | 57.77 | 56.07 | 54.15 | 52.57 | 56.07 | 57.70 | 57.70 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not Required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

Groundwater Sampling Analytical Results for
MW-4S

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 | Jun-04 (duplicate) | Jun-04 (Low Flow) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | **14 JD** | **14 JD** | **7 JD** | **7 JD** | 2 J | 2 JD | 4 JD | NS | 2J | <5 | <5 | <5 |
| 1,1 Dichloroethene | 5 | **40 JD** | **22 JD** | <5 | <5 | <5 | 3 JD | 5 JD | NS | <5 | 4J | 4J | 5 |
| 1,1,1 Trichloroethane | 5 | **1000 D** | **860 D** | **630D** | **260 D** | **80** | **280 D** | **320 D** | NS | **190** | **200** | **210** | **260** |
| 1,2 Dichloroethene (total) | 5 | <5 | < 50 | <5 | <5 | <5 | <10 | <10 | NS | <5 | <5 | <5 | <5 |
| Acetone | NP | 37 JBD | <10 | 28 JBD | <20 | <10 | <10 | <10 | NS | <10 | <4U | <4U | <10 |
| Chloroform | 7 | <50 | <5 | <5 | <5 | <5 | <5 | <5 | NS | 1J | <5 | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | <20 | <10 | <10 | <10 | NS | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | **51 BD** | <5 | **41 BD** | <10 | <5 | **28 BD** | 4 JBD | NS | <5J | <1U | <2U | <2U |
| Tetrachloroethene | 5 | **13 JD** | **19 JD** | **14 JD** | **12 D** | **11** | **15 D** | **14 D** | NS | **26** | **11** | **11** | **12** |
| Toluene | 5 | <50 | <5 | <5 | <5 | <5 | <5 | <5 | NS | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | <5 | <50 | <5 | <10 | <5 | <10 | <10 | NS | <5 | <5 | <5 | <5 |
| Turbidity | 5 | **311** | NR | 0 | **12** | 0.0 | NR | **15.1** | NS | **50** | NR | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | 2.3 J | NR | 2.1 | NS | <2.5 | NR | NR | NR |
| Arsenic | 25 | <3.2 | NR | 3.0 | NR | <2.3 | NR | <3.0 | NS | <3.5 | NR | NR | NR |
| Beryllium | 3 | <0.10 | NR | 0.15 | NR | <0.20 | NR | <0.10 | NS | <0.10 | NR | NR | NR |
| Chromium | 50 | **674** | NR | **114** | NR | **1110** | NR | **90.8** | NS | **380** | NR | NR | NR |
| Copper | 200 | 35.1 | NR | 14.9 | NR | 35.2 | NR | 11.0 | NS | 16 | NR | NR | NR |
| Iron | 300 | **3720** | NR | **632** | NR | **3740** | NR | **430** | NS | **1790** | NR | NR | NR |
| Lead | 15 | 4.1 J | NR | <2.1 | NR | <2.6 | NR | <2.2 | NS | <2.7U | NR | NR | NR |
| Manganese | 300 | 97 | NR | 15.3 | NR | 37.3 | NR | 5.3 | NS | 24.2 | NR | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | NS | <0.10 | NR | NR | NR |
| Nickel | 100 | 28.3 | NR | 9.4 | NR | 83.7 | NR | 15.4 | NS | 29.9 | NR | NR | NR |
| | | | 10x Dilution | 5x Dilution | 2x Dilution | | 2x Dilution | 2x Dilution | | | | | |
| Top of Screen Elevation: 63.32 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 53.32 feet | | 59.01 | 58.31 | 57.31 | 59.37 | 57.31 | 56.19 | 54.41 | 53.41 | 56.01 | 58.08 | 58.08 | 58.36 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations reference mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
For MW-4S, an additional VOC sample was collected using Low Flow sampling method right after diffusion bag sampling as per USEPA's request.
Location of center of bag is 1.0 feet from the bottom of the well.
NS: Not sampled
Monitoring well MW-4S was not sampled during Jul - Aug 2002 due to insufficient water
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
D: Results are reported for the diluted samples
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

Groundwater Sampling Analytical Results for
MW-4D

| Analyte | NY Water Quality Criteria | June 2000 | June 2000 Duplicate | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | April 2003 Duplicate | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | **7** | **8** | 5 | 4 J | 2 J | 4 J | 3 J | 4 J | 4 J | 3J | 3J | 3J | 4J |
| 1,1 Dichloroethene | 5 | **14** | **15** | **8** | **6** | **6** | **8** | **6** | **8** | **9J** | 5J | 5 | **8** | **9** |
| 1,1,1 Trichloroethane | 5 | **26** | **28** | **20** | **13** | **23** | **11** | **12** | **12** | **13J** | **8** | **8** | **8** | **10** |
| 1,2 Dichloroethene (total) | 5 | 2 J | 2 J | 1 J | 1 J | <5 | 2 J | 1 J | <5 | 1 J | <5 | <5 | 1J | 2J |
| Acetone | NP | 7 JB | 8 JB | <10 | 3 JB | 6 J | <10 | <10 | <10 | <10 | <10 | <10 | <10UJ | <10UJ |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | <10 | 10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | 3 JB | 4 JB | <5 | **7 JB** | <5 | <5 | 4 JB | **6** | <5J | <5J | <5J | <4U | <3U |
| Tetrachloroethene | 5 | **8** | **8** | **6** | 4 J | <5 | 5 J | 3 J | 3 J | 2 J | 2J | 2J | 2J | 2J |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | **24** | **25** | **17** | **11** | 3 J | **11** | **9** | **10** | **8J** | 5J | 5 | **6** | **7** |
| Turbidity | 5 | **11.8** | **11.8** | NR | 0 | **18** | 0.0 | NR | 3.6 | 0.8 | **6** | **6** | NR | NR |
| Antimony | 3 | <2.2 | <2.2 | NR | <2.3 | NR | <1.9 | NR | <1.9 | 2.4U | <2.5 | <2.5 | NR | NR |
| Arsenic | 25 | <3.2 | <3.2 | NR | <2.4 | NR | <2.3 | NR | <3.0 | <2.5 | <3.5 | <3.5 | NR | NR |
| Beryllium | 3 | 0.1 | <0.10 | NR | 0.24 | NR | <0.20 | NR | <0.10 | 0.25U | <0.10 | <0.10 | NR | NR |
| Chromium | 50 | 4.1 | 4.7 | NR | 6.6 | NR | 1.4 | NR | 7.9 | 19.9 | 24.5 | 18.4 | NR | NR |
| Copper | 200 | 3.9 | 5.3 | NR | 5.5 | NR | 3.1 | NR | 6.8 | 6.4 | 5.9 | 4.6 | NR | NR |
| Iron | 300 | **1190** | **1510** | NR | **827** | NR | **1080** | NR | **333** | **429** | **393** | 268 | NR | NR |
| Lead | 15 | 6.2 | 3.4 | NR | 2.4 | NR | <2.6 | NR | <2.2 | 2.7U | <2.6 | <2.6 | NR | NR |
| Manganese | 300 | 118 | 120 | NR | 96.5 | NR | 137 | NR | 120 | 116 | 29.9 | 27.5 | NR | NR |
| Mercury | 0.7 | <0.10 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | <0.10 | <0.10 | NR | NR |
| Nickel | 100 | 12 | 11 | NR | 7.3 | NR | 5.6 | NR | 10.9 | 11.8 | 16.2 | 14.8 | NR | NR |
| Top of Screen Elevation: -3.00 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: -13.00 feet | | 58.99 | 58.99 | 58.29 | 57.24 | 59.45 | 57.19 | 56.19 | 54.39 | 52.99 | 56.09 | 56.09 | 58.08 | 58.08 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations reference mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

Groundwater Sampling Analytical Results for
MW-5D

| Analyte | NY Water Quality Criteria | June 2000 | June 2000 Duplicate | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | 3J | 3 J | 3 J | 2 J | 2 J | 1 J | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1 Dichloroethene | 5 | 2 J | 1 JB | 3 J | 1 J | 1 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | 3 J | 3 J | 3 J | 1 J | 2 J | 1 J | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,2 Trichloroethane | 1 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Acetone | NP | <10 | 1 JB | <10 | <10 | <10 | <10 | <10 | <5 | <10 | <10 | <10UJ | <7UJ |
| Carbon Disulfide | NP | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chlorobenzene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Methylene Chloride | 5 | <5 | <5 | **16 B** | <5 | <5 | <5 | **8 B** | <5 | <5 | <5 | <3U | <3U |
| Tetrachloroethene | 5 | 1 J | <5 | 2 J | <5 | 1 J | 1 J | <5 | <5 | <5 | <5 | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | 2 J | 2 J | 3 J | <5 | 1 J | 1 J | <5 | <5 | <5 | <5 | <5 | <5 |
| Turbidity | 5 | 0 | 0 | NR | **11** | 0 | 0.1 | NR | 2 | 0 | 0 | NR | NR |
| Antimony | 3 | <2.2 | <2.2 | NR | <2.3 | NR | 2.3 UJ | NR | <1.9 | <2.2 | <2.5 | NR | NR |
| Arsenic | 25 | <3.2 | <3.2 | NR | <3.4 | NR | 3.9 UJ | NR | <3.0 | <2.5 | <3.5 | NR | NR |
| Beryllium | 3 | <0.10 | <0.10 | NR | <0.10 | NR | <0.20 | NR | <0.10 | 0.17U | <0.38U | NR | NR |
| Chromium | 50 | 31.8 | 35.8 | NR | 16.2 J | NR | 2.6 J | NR | 16.1 | 34.2 | 23.9 | NR | NR |
| Copper | 200 | 59.5 | 65.8 | NR | 50.6 | NR | 47.9 | NR | 45.4 | 28.5J | 35.5 | NR | NR |
| Iron | 300 | **2130 J** | **2750 J** | NR | **713** | NR | **236** | NR | **245 J** | **344** | **1660** | NR | NR |
| Lead | 15 | 9.4 | 10.5 | NR | 2.6 | NR | <2.4 | NR | 3.8 | 2.0U | <6.5U | NR | NR |
| Manganese | 300 | **529** | **529** | NR | **465** | NR | **628** | NR | **575** | **690** | **1200** | NR | NR |
| Mercury | 0.7 | <0.10 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | 0.11 | <0.13U | NR | NR |
| Nickel | 100 | 33 | 40.8 | NR | 13.2 | NR | 4.6 | NR | 11.5 | 5.4U | 10.2 | NR | NR |
| Top of Screen Elevation: -3.00 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: -13.00 feet | | 58.65 | 58.65 | 57.85 | 57.01 | 59.10 | 57.15 | 55.70 | 54.00 | 52.35 | 55.85 | 57.86 | 57.86 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations reference mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level
UJ: Compound is not detected and the associated quantitation limit is uncertain

## Groundwater Sampling Analytical Results for MW-6S

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | July - Aug 2001 Duplicate | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | <5 | <25 | 2 J | 1 J | 1 J | <5 | <5 | <5 | NS | <5 | <5 |
| 1,1 Dichloroethene | 5 | <5 | **14 JD** | <5 | <5 | <5 | <5 | 1 J | 1 J | NS | <5 | 1J |
| 1,1,1 Trichloroethane | 5 | **15** | **360 D** | **110** | **85** | **110** | **110** | **92** | **54** | NS | **19** | **24** |
| 1,2 Dichloroethene (total) | 5 | <5 | <25 | <5 | <5 | <5 | <5 | <5 | <5 | NS | <5 | <5 |
| 2-Butanone | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | NS | <10 | <10 |
| Acetone | NP | <10 | <10 | 3 JB | 3 J | <10 | <10 | <10 | <10 | NS | <10 | <2UJ |
| Chlorobenzene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | <5 | <5 |
| Methylene Chloride | 5 | <5 | <5 | 3 JB | <5 | 3 J | <5 | **14 B** | **9 B** | NS | <5 | <4U |
| Tetrachloroethene | 5 | <5 | <25 | 1 J | <5 | <5 | <5 | <5 | <5 | NS | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | <5 | <5 |
| Trichloroethene | 5 | <5 | <25 | <5 | <5 | <5 | <5 | <5 | <5 | NS | <5 | <5 |
| Turbidity | 5 | 0 | NR | 0 | 0 | 0.0 | NR | NR | **25.5** | NS | 0 | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | <1.9 | <1.9 | NR | **3.4** | NS | <2.5 | NR |
| Arsenic | 25 | <3.2 | NR | <2.4 | NR | <2.3 | <2.3 | NR | <3.0 | NS | <3.5 | NR |
| Beryllium | 3 | <0.10 | NR | 0.27 | NR | <0.20 | <0.20 | NR | <0.10 | NS | <0.16U | NR |
| Chromium | 50 | **159** | NR | **77.7** | NR | 3.9 | 4.2 | NR | **836** | NS | 38.8 | NR |
| Copper | 200 | 9.7 | NR | 6.5 | NR | 3.0 | 3.5 | NR | 9.8 | NS | <3.4U | NR |
| Iron | 300 | **899 J** | NR | **463** | NR | 37.3 J | 27.5 J | NR | **4760** | NS | 291 | NR |
| Lead | 15 | <2.3 | NR | <2.1 | NR | <2.6 | <2.6 | NR | <2.2 | NS | <2.6 | NR |
| Manganese | 300 | 16.7 | NR | 53.4 | NR | 28.7 | 28.7 | NR | 14.9 | NS | <5.4U | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | NR | <0.10 | NS | <0.10 | NR |
| Nickel | 100 | 7.9 | NR | 17.4 | NR | 7.6 | 7.2 | NR | 20.6 | NS | <1.8 | NR |
| | | | 5x Dilution | | | | | | | | | |
| Top of Screen Elevation: 62.37 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 52.37 feet | | 58.29 | 58.29 | 56.79 | 58.95 | 57.59 | 57.59 | 55.69 | 53.89 | 52.49 | 55.49 | 57.72 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations reference mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Location of center of bag is 1.0 feet from the bottom of the well.
NS: Not sampled
Monitoring well MW-6S was not sampled during Jul - Aug 2002 due to insufficient water
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
D: Results are reported for the diluted samples
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

Groundwater Sampling Analytical Results for
MW-6D

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | 4 J | 3 J | <5 | 2 J | 2 J | 2 J | 2 J | 4 J | 3J | 3J | 4J |
| 1,1 Dichloroethene | 5 | 5 J | 4 J | 3 J | 3 J | 3 J | 3 J | 4 J | **7** | 5 | **6** | **6** |
| 1,1,1 Trichloroethane | 5 | **10** | **8** | 5 | 5 J | 4 J | 5 | 5 | **9** | **6** | **6** | **7** |
| 1,2 Dichloroethene (total) | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | 1 J | <5 | 1J | 1J |
| 2-Butanone | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Acetone | NP | <10 | <10 | 6 JB | <5 | <10 | <10 | <10 | <10 | <10 | <10UJ | <10 |
| Chlorobenzene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | 5 J | 2J | 1J | 1J |
| Methylene Chloride | 5 | <5 | <5 | **13 B** | <5 | 3 J | **15 B** | <5 | <5 | <5 | <4U | **<6U** |
| Tetrachloroethene | 5 | 3 J | 3 J | 3 J | <5 | 4 J | 2 J | 2 J | 4 J | 3J | 2J | 2J |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | **8** | **6** | 5 | 4 J | 4 J | 4 J | 4 J | **7** | **6** | **7** | **7** |
| Turbidity | 5 | 0 | NR | 0 | **6** | 0.1 | NR | **27.0** | **73** | 0 | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | <1.9 | NR | 2.0 | <2.2 | <2.5 | NR | NR |
| Arsenic | 25 | <3.2 | NR | <2.4 | NR | <2.3 | NR | 4.2 J | <2.5 | <3.5 | NR | NR |
| Beryllium | 3 | <0.10 | NR | 0.24 | NR | <0.20 | NR | <0.10 | 0.16U | <0.21U | NR | NR |
| Chromium | 50 | **458** | NR | **157** | NR | 23.1 | NR | **378** | **479** | **300** | NR | NR |
| Copper | 200 | 19.3 | NR | 9.7 | NR | 8.8 | NR | 28.8 | 15.1 | <11.4U | NR | NR |
| Iron | 300 | **3670 J** | NR | **534** | NR | 180 J | NR | **1480 J** | **870** | **1500** | NR | NR |
| Lead | 15 | 2.6 | NR | 2.5 | NR | <2.6 | NR | 5.7 | 5.2 | <2.6U | NR | NR |
| Manganese | 300 | 243 | NR | 146 | NR | 79.4 | NR | 110 | 130 | 102 | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | < 0.10 | <0.10 | NR | NR |
| Nickel | 100 | **449** | NR | **121** | NR | 67.3 | NR | **110** | **133** | **235** | NR | NR |
| Top of Screen Elevation: -3.04 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: -13.04 feet | | 58.39 | 57.89 | 56.96 | 59.05 | 57.09 | 55.79 | 53.79 | 52.29 | 53.69 | 57.78 | 57.78 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations reference mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

## Groundwater Sampling Analytical Results for MW-7S

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Oct 2000 Duplicate | Jan - Feb 2001 | Jan - Feb 2001 Duplicate | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | NS | <5 | <5 |
| 1,1 Dichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | NS | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | NS | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | NS | <5 | <5 |
| 2-Butanone | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | NS | NS | <10 | <10 |
| Acetone | NP | <10 | <10 | 2 J | <10 | 2 JB | <5 | <10 | <10 | NS | NS | <10 | <10UJ |
| Chlorobenzene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | NS | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | NS | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | NS | NS | <10 | <10 |
| Methylene Chloride | 5 | <5 | <5 | <5 | 2 JB | 1 JB | <5 | <5 | **11 B** | NS | NS | <5 | <3U |
| Tetrachloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | NS | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | NS | <5 | <5 |
| Trichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NS | NS | <5 | <5 |
| Turbidity | 5 | 0 | NR | NR | **190** | **190** | 0 | 0.0 | NR | NS | NS | 5 | NR |
| Antimony | 3 | <2.2 | NR | NR | <2.3 | <2.3 | NR | <1.9 | NR | NS | NS | <2.5 | NR |
| Arsenic | 25 | <3.2 | NR | NR | <3.4 | <3.4 | NR | <2.3 | NR | NS | NS | <3.5 | NR |
| Beryllium | 3 | <0.10 | NR | NR | <0.10 | <0.10 | NR | <0.20 | NR | NS | NS | <0.62U | NR |
| Chromium | 50 | **57.3** | NR | NR | 49.4 J | 39.1 J | NR | <0.90 | NR | NS | NS | **126** | NR |
| Copper | 200 | 15 | NR | NR | 10.1 | 12.2 | NR | 3.0 | NR | NS | NS | 2.9 | NR |
| Iron | 300 | **912 J** | NR | NR | **498** | **427** | NR | <15.7 | NR | NS | NS | **787** | NR |
| Lead | 15 | <2.3 | NR | NR | <2.1 | <2.1 | NR | <2.6 | NR | NS | NS | <2.6 | NR |
| Manganese | 300 | 245 | NR | NR | 155 | 162 | NR | 1.4 | NR | NS | NS | 88.2 | NR |
| Mercury | 0.7 | <0.10 | NR | NR | <0.10 | <0.10 | NR | <0.10 | NR | NS | NS | <0.10 | NR |
| Nickel | 100 | 22.5 | NR | NR | 9.7 | 7.3 | NR | 1.5 | NR | NS | NS | 9.1 | NR |
| Top of Screen Elevation: 63.06 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 53.06 feet | | 58.21 | 57.41 | 57.41 | 56.51 | 56.51 | 58.81 | 57.01 | 55.41 | 53.57 | 53.21 | 55.31 | 57.44 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations reference mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Location of center of bag is 1.0 feet from the bottom of the well.
NS: Not sampled
Monitoring well MW-7S was not sampled during Feb 2002 or Jul - Aug 2002 due to insufficient water volume
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

## Groundwater Sampling Analytical Results for MW-7D

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | Jan - Feb 2002 Duplicate | July - Aug 2002 | Apr-03 | April 2003 Duplicate | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | **8** | **8** | **8** | 2 J | **8** | **8** | **7** | **7** | 5J | 4J | 4J | 1J | 2J |
| 1,1 Dichloroethene | 5 | 4 J | 5 | 3 J | **11** | 3 | 3 J | 3 J | 3 J | 4 J | 1J | 1J | <5 | 1J |
| 1,1,1 Trichloroethane | 5 | **7** | 5 J | 3 J | **15** | 2 J | 2 J | 2 J | 2 J | 3 J | <5J | <5J | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | 2 J | 3 J | 2 J | 1 J | 3 J | 2 J | 2 J | 2 J | 2 J | <5 | 1J | <5 | <5 |
| 2-Butanone | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Acetone | NP | <10 | <10 | 2 JB | <5 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10UJ | <10UJ |
| Chlorobenzene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | 2 J | <5 | <5 | <5 | <5 | < 5 | <5 | <5 | <5 | <5 |
| Chloromethane | NP | <10 | 3 J | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | <5 | <5 | 4 JB | <5 | 1 J | **11 B** | **8 B** | **8 B** | <5J | <5 | <5 | <3U | <3U |
| Tetrachloroethene | 5 | 4 J | 5 J | 3 J | <5 | 3 J | 3 J | 3 J | 3 J | 2 J | 1J | 1J | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5J | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | 5 | **6** | 4 JB | 5 J | 3 J | 3 J | 3 J | 3 J | 3 J | 2J | 2J | <5 | 1J |
| Turbidity | 5 | 0 | NR | **10** | **10** | 0.0 | NR | **19.3** | **19.3** | 0.0 | **6** | **6** | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | <1.9 | NR | <1.9 | 2.1 | <2.2 | <2.5 | <2.5 | NR | NR |
| Arsenic | 25 | <3.2 | NR | <2.4 | NR | <2.3 | NR | <3.0 | <3.0 | <2.5 | <3.5 | <3.5 | NR | NR |
| Beryllium | 3 | <0.10 | NR | 0.25 J | NR | <0.20 | NR | <0.10 | <0.10 | 0.23U | <0.60U | <0.62U | NR | NR |
| Chromium | 50 | 19.9 | NR | 2.7 J | NR | 7.1 | NR | 3.3 | 3.6 | 18.6 | <6.7U | <8.3U | NR | NR |
| Copper | 200 | 13.7 | NR | 3.1 | NR | 4.6 | NR | 5.8 | 7.3 | 13.2 | 3.2 | 4 | NR | NR |
| Iron | 300 | **544 J** | NR | 94.2 | NR | 209 J | NR | 86.0 | 98.8 | **306** | 289 | **409** | NR | NR |
| Lead | 15 | 2.8 | NR | <2.1 | NR | <2.6 | NR | <2.2 | <2.2 | <1.7 | <2.9U | <2.6 | NR | NR |
| Manganese | 300 | 47.4 | NR | 61.4 | NR | 69.3 | NR | 62.1 | 60.9 | 60.9 | 62.2 | 64.7 | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | NR | NR |
| Nickel | 100 | 13.8 | NR | 3.1 | NR | 3.7 | NR | 6.5 | 6.7 | 17.3 | 4.8 | 6.2 | NR | NR |
| Top of Screen Elevation: 0.38 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: -9.62 feet | | 57.86 | 57.46 | 56.46 | 58.74 | 56.96 | 56.01 | 54.46 | 54.46 | 52.26 | 55.06 | 55.06 | 57.21 | 57.21 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations reference mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

Groundwater Sampling Analytical Results for
MW-13

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | July - Aug 2002 Duplicate | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | **14** | **40 D** | **9** | **8** | **7** | 2 J | <5 | 3 J | 3 J | 4J | <5 | <5 |
| 1,1 Dichloroethene | 5 | **8** | **7 JD** | 2 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | **120** | **350 D** | **110** | **34** | **34** | **15** | **34** | **12** | **11** | **30** | **14** | **6** |
| 1,1,2 Trichloroethane | 1 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | <5 | < 25 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Acetone | NP | 8 JB | <10 | 2 JB | 4 J | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | 1 J | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | 4 JB | <5 | 1 JB | <5 | <5 | **14 B** | 1 JB | <5 | <5 | <5J | <5U | **<6U** |
| Tetrachloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Turbidity | 5 | **200** | NR | 0 | 0 | 0.1 | NR | **22.5** | **110** | **110.0** | **45** | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | 2.3 J | NR | <1.9 | <2.2 | <2.2 | <2.5 | NR | NR |
| Arsenic | 25 | 4.3 | NR | <3.4 | NR | 4.7 J | NR | 4.1 J | <2.5 | <2.5 | <3.5 | NR | NR |
| Beryllium | 3 | <0.10 | NR | <0.10 | NR | <0.20 | NR | 0.12 | 0.10U | 0.10U | <0.10 | NR | NR |
| Chromium | 50 | 6.3 | NR | 2.3 J | NR | 1.5 J | NR | 3.5 | 0.52U | 16.3 | <3.1U | NR | NR |
| Copper | 200 | 12.7 | NR | 5.6 | NR | 3.1 | NR | 10.2 | 1.8 | 2.8 | 4.1 | NR | NR |
| Iron | 300 | **17200** | NR | **687** | NR | **634** | NR | **2050 J** | <14.5 | **707** | **919** | NR | NR |
| Lead | 15 | 5.2 | NR | <2.1 | NR | <2.4 | NR | <2.2 | <1.7 | <1.7 | <2.6 | NR | NR |
| Manganese | 300 | **365** | NR | 54.9 | NR | 17.3 | NR | 26.6 | 32.1 | 31.8 | 28 | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | <0.10 | <0.10 | NR | NR |
| Nickel | 100 | 12.2 | NR | 7.2 | NR | 4.7 | NR | 6.7 | 3.2 | 5.3 | <5.1U | NR | NR |
| | | | 5x Dilution | | | | | | | | | | |
| Top of Screen Elevation: 53.65 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 43.65 feet | | 58.35 | 57.45 | 57.65 | 58.71 | 56.45 | 55.44 | 53.55 | 51.85 | 51.85 | 55.35 | 57.46 | 57.46 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
D: Results are reported for the diluted samples
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

Groundwater Sampling Analytical Results for
MW-14

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | 4J | 2 J | 1 J | 2 J | 2 J | <5 | 2 J | <5 | 4J | <5 | <5 |
| 1,1 Dichloroethene | 5 | 1J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | **21** | **8** | **15** | 5 J | **12** | **6** | **15** | 1 J | 2J | 3J | <5 |
| 1,1,2 Trichloroethane | 1 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | 1J | <5 | <5 | 1 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 2-Butanone | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Acetone | NP | <10 | <10 | 1 JB | <5 | <10 | <10 | <10 | <10 | <10 | <10 | <3U |
| Carbon Disulfide | NP | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chlorobenzene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | <5 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | <5 | <5 | <5 | 5 J | <5 | **9 B** | 4JB | <5 | <5 | <2U | <2U |
| Tetrachloroethene | 5 | 2J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | 1J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Turbidity | 5 | **75** | NR | 0 | 0 | 0.0 | NR | **25.7** | 0 | **95** | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | <1.9 | NR | <1.9 | <2.2 | <2.5 | NR | NR |
| Arsenic | 25 | <3.2 | NR | <3.4 | NR | <2.3 | NR | <3.0 | <2.5 | <3.5 | NR | NR |
| Beryllium | 3 | <0.10 | NR | <0.10 | NR | <0.20 | NR | <0.10 | 0.22U | <0.69U | NR | NR |
| Chromium | 50 | 3.1 | NR | 2.6 J | NR | <0.90 | NR | 3.3 | 3.6U | <6.4U | NR | NR |
| Copper | 200 | 3.2 | NR | 2.3 | NR | 0.87 | NR | 3.0 | 1.5 | 2.9 | NR | NR |
| Iron | 300 | **14100** | NR | **7870** | NR | **6830 J** | NR | **12200** | **14600** | **18100** | NR | NR |
| Lead | 15 | 2.8 | NR | <2.1 | NR | <2.6 | NR | <2.2 | <1.7 | <2.6 | NR | NR |
| Manganese | 300 | **1090** | NR | 217 | NR | **421** | NR | **374** | 221 | 284 | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | 0.11 | NR | NR |
| Nickel | 100 | 6.5 | NR | 2.9 | NR | 3.6 | NR | 5.5 | 3.8U | 6.5 | NR | NR |
| Top of Screen Elevation: 52.58 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 42.58 feet | | 56.68 | 56.28 | 55.48 | 57.06 | 55.78 | 54.28 | 52.58 | 50.78 | 53.26 | 56.45 | 56.45 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

Groundwater Sampling Analytical Results for
MW-15

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Oct 2000 Duplicate | Jan - Feb 2001 | Jan - Feb 2001 Duplicate | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | Jan - Feb 2002 Duplicate | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1 Dichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,2 Trichloroethane | 1 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | **42** | 1 J | 1 J | **18** | **20** | **24** | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Acetone | NP | <10 | <10 | <10 | <10 | 3 JB | <5 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <3U |
| Chlorobenzene | 5 | 1 J | <5 | <5 | 1J | 1 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | <10 | <10 | <5 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | <5 | <5 | <5 | <5 | 1 JB | 5 J | <5 | 5 B | 2 JB | 2 JB | <5 | <5J | <2U | <2U |
| Tetrachloroethene | 5 | **11** | <5 | <5 | **9** | **8** | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | **14** | <5 | <5 | 4 J | 5 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Turbidity | 5 | 0 | NR | NR | **190** | **190** | 0 | 0.1 | NR | **19.4** | NR | 0 | **36** | NR | NR |
| Antimony | 3 | <3.2 | NR | NR | <2.3 | <2.3 | NR | 2.3 UJ | NR | <1.9 | <1.9 | <2.2 | <2.5 | NR | NR |
| Arsenic | 25 | 10.6 | NR | NR | 6.4 | 6.8 | NR | 6.9 J | NR | 4.9 | 7 2 J | 2.5 | <3.8U | NR | NR |
| Beryllium | 3 | 0.21 | NR | NR | <0.10 | <0.10 | NR | <0.20 | NR | <0.10 | 0.12 | 0.13U | <0.10 | NR | NR |
| Chromium | 50 | 19.5 | NR | NR | 4.4 J | 3.8 J | NR | 1.4 UJ | NR | 2.4 | 4.2 | 2.7U | 8.9 | NR | NR |
| Copper | 200 | 9.7 | NR | NR | 8.9 | 7.3 | NR | <0.50 | NR | 3.8 | 8.5 | 1.3 | 7.8 | NR | NR |
| Iron | 300 | **39100 J** | NR | NR | **36400** | **34900** | NR | **27800** | NR | **19800 J** | **19700 J** | **29300** | **22700** | NR | NR |
| Lead | 15 | 4.6 | NR | NR | 4.6 | 3.4 | NR | <2.4 | NR | 2.9 | 4.4 | <1.7 | <3.2U | NR | NR |
| Manganese | 300 | **405** | NR | NR | **417** | **403** | NR | **344** | NR | 199 | 194 | **339** | **309** | NR | NR |
| Mercury | 0.7 | <0.10 | NR | NR | <0.10 | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | <0.10 | <0.10 | NR | NR |
| Nickel | 100 | 13 | NR | NR | 4.8 | 3.8 | NR | 2.7 | NR | 3.1 | 3.3 | 1.6U | 9.3 | NR | NR |
| Top of Screen Elevation: 54.60 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 44.60 feet | | 58.95 | 58.25 | 58.25 | 57.15 | 57.15 | 59.31 | 57.35 | 56.15 | 54.25 | 54.25 | 52.60 | 56.05 | 58.15 | 58.15 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level
UJ: Compound is not detected and the associated quantitation limit is uncertain

Groundwater Sampling Analytical Results for
MW-16

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | Apr - May 2001 Duplicate | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1 Dichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | 3 J | <5 | <5J | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 2-Butanone | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Acetone | NP | <10 | <10 | <10 | <5 | <5 | <10 | <10 | <10 | <10 | <10 | <2U | <10 |
| Chlorobenzene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | <5 | <5 | <5 | <5 | <5 | <5 | 1 JB | <5 | <5 | <5 | <2U | <2U |
| Tetrachloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Turbidity | 5 | **133** | NR | **47** | 0 | 0 | 0.0 | NR | **26.4** | **97** | **170** | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | NR | <1.9 | NR | <1.9 | 2.2U | <2.5 | NR | NR |
| Arsenic | 25 | 17.2 | NR | 10.4 | NR | NR | 5.7 | NR | 10.3 J | **39.8** | 6.6 | NR | NR |
| Beryllium | 3 | <0.10 | NR | <0.10 | NR | NR | <0.20 | NR | <0.10 | 1.30U | <0.68U | NR | NR |
| Chromium | 50 | 6.9 | NR | 3.6 J | NR | NR | <0.90 | NR | 4.4 | 43.6 | <6.5U | NR | NR |
| Copper | 200 | 11.8 | NR | 7.2 | NR | NR | 0.89 | NR | 7.2 | 54.7 | <0.60 | NR | NR |
| Iron | 300 | **33700 J** | NR | **25200** | NR | NR | **25400 J** | NR | **24600 J** | **58400** | **20900** | NR | NR |
| Lead | 15 | 3.9 | NR | <2.1 | NR | NR | <2.6 | NR | 2.7 | **28.6** | <2.6 | NR | NR |
| Manganese | 300 | **524** | NR | **426** | NR | NR | **430** | NR | **363** | **438** | 293 | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | NR | <0.10 | NR | <0.10 | <0.10 | <0.10 | NR | NR |
| Nickel | 100 | 5.2 | NR | 2.7 | NR | NR | 1.9 | NR | 4.1 | 23.4U | 5.7 | NR | NR |
| Top of Screen Elevation: 54.75 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 44.75 feet | | 58.40 | 57.80 | 56.76 | 56.90 | 56.90 | 56.80 | 55.58 | 53.70 | 52.20 | 55.10 | 57.77 | 57.77 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level

Groundwater Sampling Analytical Results for
MW-17

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | 5 | **7** | 3 J | 2 J | 1 J | 1 J | 2 J | 3 J | <5 | <5 | <5 |
| 1,1 Dichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | **39** | **58** | **33** | **9** | **12** | **19** | **22** | 5 J | 4J | <5 | <5 |
| 1,1,2 Trichloroethane | 1 | <5 | **3 J** | <5 | <5 | 1 J | **2 J** | <5 | <5 | <5 | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Acetone | NP | <10 | <10 | <5 | <5 | <10 | <10 | <5 | <10 | <10 | <7UJ | <10UJ |
| Carbon Disulfide | NP | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chlorobenzene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Methylene Chloride | 5 | <5 | <5 | <5 | <5 | <5 | **9 B** | 1 JB | <5 | <5 | <3U | <4U |
| Tetrachloroethene | 5 | <5 | 3 J | 1 J | <5 | < 1 | 1 J | 1 J | <5 | <5 | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Turbidity | 5 | **15.9** | NR | **35** | **10** | 0.1 | NR | **18** | 0 | **200** | NR | NR |
| Antimony | 3 | 2.5 | NR | <2.3 | NR | 2.3 UJ | NR | <1.9 | <2.2 | <2.5 | NR | NR |
| Arsenic | 25 | 6.5 | NR | <3.4 | NR | 3.9 UJ | NR | <3.0 | <2.5 | <3.5 | NR | NR |
| Beryllium | 3 | 0.26 | NR | <0.10 | NR | <0.20 | NR | <0.10 | 0.26U | <0.64U | NR | NR |
| Chromium | 50 | 25.9 | NR | 7.6 J | NR | 2.6 J | NR | 2.8 | 4.8 | **65** | NR | NR |
| Copper | 200 | 79.1 | NR | 42.6 | NR | 29.2 | NR | 18.5 | 20.1 | 108 | NR | NR |
| Iron | 300 | **16900 J** | NR | **1600** | NR | **409** | NR | **662 J** | **982** | **11100** | NR | NR |
| Lead | 15 | **20.1** | NR | <2.1 | NR | <2.4 | NR | 2.3 | <1.7 | 14.6 | NR | NR |
| Manganese | 300 | **386** | NR | 73.8 | NR | 176 | NR | 108 | 53.7 | **401** | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | <0.12 | NR | NR |
| Nickel | 100 | 61.9 | NR | 47.4 | NR | 49.5 | NR | 22.7 | 14.2U | 59.6 | NR | NR |
| Top of Screen Elevation: 58.08 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 48.08 feet | | 57.98 | 57.38 | 57.65 | 58.81 | 56.88 | 58.81 | 51.78 | 52.08 | 55.48 | 57.38 | 57.38 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 6.0 feet
Bottom bag - 1.0 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level
UJ: Compound is not detected and the associated quantitation limit is uncertain

## Groundwater Sampling Analytical Results for MW-18

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | July - Aug 2001 Duplicate | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1 Dichloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,1,2 Trichloroethane | 1 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Acetone | NP | <10 | <10 | 7 JB | 6 J | <10 | <10 | <10 | <10 | <10 | <10 | <4U | <4U |
| Carbon Disulfide | NP | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chlorobenzene | 5 | <5 | <5 | 1 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Methylene Chloride | 5 | <5 | <5 | 2 JB | **7** | <5 | <5 | **10 B** | <5 | <5 | <5 | <1U | <2U |
| Tetrachloroethene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Toluene | 5 | <5 | <5 | 2 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | <5 | <5 | 1 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Turbidity | 5 | **247** | NR | 0 | 0 | 0.0 | NR | NR | **16.4** | 0 | 0 | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | 2.3 UJ | 2.3 UJ | NR | <1.9 | <2.2 | <2.5 | NR | NR |
| Arsenic | 25 | 6.1 | NR | 8.1 | NR | 3.9 UJ | 3.9 UJ | NR | <3.0 | <2.5 | <3.5 | NR | NR |
| Beryllium | 3 | 0.1 | NR | 0.55 | NR | <0.20 | <0.20 | NR | <0.10 | 0.26U | <0.19U | NR | NR |
| Chromium | 50 | 31.2 | NR | **80** | NR | 3.2 J | 3.1 J | NR | 5.3 | 6.7 | 25.7 | NR | NR |
| Copper | 200 | 9.7 | NR | 13.6 | NR | 0.52 | <0.50 | NR | 3.4 | 0.55 | <4.6U | NR | NR |
| Iron | 300 | **9060** | NR | **13500** | NR | **905** | **381** | NR | **1170 J** | **1100** | **3850** | NR | NR |
| Lead | 15 | 4.2 | NR | 7.5 | NR | <2.4 | <2.4 | NR | <2.2 | 1.9U | <3.2U | NR | NR |
| Manganese | 300 | 164 | NR | 269 | NR | 15.4 | 10.6 | NR | 16.6 | 23.4 | 70.4 | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | <0.10 | NR | <0.10 | <0.10 | <0.10 | NR | NR |
| Nickel | 100 | 16.4 | NR | 46.6 | NR | 2.9 | 1.9 | NR | 4.8 | 4.8U | 15.6 | NR | NR |
| Top of Screen Elevation: 58.03 feet<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: 48.03 feet | | 47.30 | 56.30 | 55.50 | 57.73 | 55.60 | 55.60 | 54.20 | 52.52 | 51.00 | 54.60 | 56.67 | 56.67 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 6.0 feet
Bottom bag - 1.0 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level
UJ: Compound is not detected and the associated quantitation limit is uncertain

Groundwater Sampling Analytical Results for
MW-19S

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | **6** | 4 J | 3 J | 4 J | 5 J | 3 J | 3 J | 3 J | 4J | <5 | <5 |
| 1,1 Dichloroethene | 5 | 1J | 2 J | 1 J | 2 J | 3 J | 1 J | 1 J | <5 | <5 | <5 | <5 |
| 1,1,1 Trichloroethane | 5 | **8** | 5 J | 1 J | <5 | 1 J | 2 J | 1 J | <5 | **6** | <5 | <5 |
| 1,2 Dichloroethene (total) | 5 | <5 | 1 J | <5 | 2 J | 2 J | 1 J | <5 | 2 J | <5 | <5 | <5 |
| 2-Butanone | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Acetone | NP | <10 | 4 J | 4 JB | <10 | <10 | <10 | <10 | <10 | <10 | <4U | <10 |
| Carbon Disulfide | NP | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chlorobenzene | 5 | 2J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloromethane | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | <5 | **14 B** | **12 B** | **6** | <5 | **9 B** | <5 | <5 | <5 | <2U | <2U |
| Tetrachloroethene | 5 | <5 | 2 J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Toluene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | <5 | 2 J | <5 | <5 | 2 J | <5 | <5 | <5 | <5 | <5 | <5 |
| Turbidity | 5 | **64.9** | NR | 0 | 0 | 0.1 | NR | **62** | 0 | 0 | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | 2.3 UJ | NR | <1.9 | <2.2 | <2.5 | NR | NR |
| Arsenic | 25 | 4.1 | NR | 4.7 | NR | 3.9 UJ | NR | 5.1 J | <2.5 | <3.5 | NR | NR |
| Beryllium | 3 | 0.37 | NR | 0.60 | NR | <0.20 | NR | 0.16 | 0.61U | <0.10 | NR | NR |
| Chromium | 50 | **96.6** | NR | 36.5 | NR | 1.4 UJ | NR | 40.2 | **121** | <6.6U | NR | NR |
| Copper | 200 | 109 | NR | 13.7 | NR | <0.50 | NR | 16.4 | 6.3 | <3.4U | NR | NR |
| Iron | 300 | **21600** | NR | **29400** | NR | **15400** | NR | **26000 J** | **18600** | **14700** | NR | NR |
| Lead | 15 | **34** | NR | 4.6 | NR | <2.4 | NR | 6.3 | <1.7 | <2.6 | NR | NR |
| Manganese | 300 | **2100** | NR | **1050** | NR | **786** | NR | **966** | **683** | **1020** | NR | NR |
| Mercury | 0.7 | 0.34 | NR | 0.34 | NR | <0.10 | NR | **0.76** | 0.14 | <0.15U | NR | NR |
| Nickel | 100 | 66.9 | NR | 26.7 | NR | 3.9 | NR | 29.1 | 86.8 | 4.0 | NR | NR |
| Top of Screen Elevation: Unknown | | | | | | | | | | | | |
| Groundwater Elevation (feet): | | 56.20 | 55.00 | 54.20 | 56.40 | 54.30 | 53.00 | 51.10 | 49.60 | 53.40 | 55.30 | 55.30 |
| Bottom of Screen Elevation: Unknown | | | | | | | | | | | | |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
U: Compound was not detected above the associated level
UJ: Compound is not detected and the associated quantitation limit is uncertain

Groundwater Sampling Analytical Results for
MW-19D

| Analyte | NY Water Quality Criteria | June 2000 | Oct 2000 | Jan - Feb 2001 | Apr - May 2001 | July - Aug 2001 | Oct 2001 | Oct 2001 Duplicate | Jan - Feb 2002 | July - Aug 2002 | Apr-03 | Jun-04 (topmost bag) | Jun-04 (bottom bag) | Jun-04 (bottom bag duplicate) | Jun-04 (Low Flow) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1 Dichloroethane | 5 | 3J | 4 J | 4 J | 4 J | 4 J | 4 J | 4 J | 3 J | 4 J | 2J | <5 | 2J | 2J | 3J |
| 1,1 Dichloroethene | 5 | **14** | **14** | **12** | **18** | **19** | **19** | **18** | **23** | **24** | **11** | <5 | **22** | **22** | **19** |
| 1,1,1 Trichloroethane | 5 | **23** | **19** | **17** | **27** | **27** | **28** | **28** | **30** | **28** | **16** | 2J | **23** | **23** | **22** |
| 1,2 Dichloroethene (total) | 5 | 3J | **6** | <5 | **7** | **8** | **8** | **7** | **8** | **10** | **8** | <5 | **8** | **8** | **7** |
| 2-Butanone | NP | <10 | <10 | <10 | <10 | <10 | 4 J | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Acetone | NP | <10 | <10 | 4 JB | <10 | <10 | <10 | <10 | 8 JB | <10 | <10 | <4U | <4U | <3U | <1U |
| Carbon Disulfide | NP | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chlorobenzene | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Chloroform | 7 | 2J | 2 J | <5 | 5 J | 7 | 7 | 7 | **10** | **14** | **19** | 2J | **31** | **32** | **25** |
| Chloromethane | NP | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Methylene Chloride | 5 | <5 | **13 B** | **12 B** | **6** | <5 | **9 B** | **9 B** | <5 | <5 | <5 | <5U | <4U | <3U | <4U |
| Tetrachloroethene | 5 | **46** | **47** | **50** | **55** | **65** | **62** | **61** | **77** | **62** | **57** | 2J | **24** | **24** | **39** |
| Toluene | 5 | 2J | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 5 | **40** | **34** | **37** | **36** | **46** | **43** | **43** | **55** | **57** | **33** | 2J | **33** | **35** | **32** |
| Turbidity | 5 | **238** | NR | 0 | **230** | 0.1 | NR | NR | **659** | **250** | **990** | NR | NR | NR | NR |
| Antimony | 3 | <2.2 | NR | <2.3 | NR | 2.3 UJ | NR | NR | <1.9 | <2.2 | <2.5 | NR | NR | NR | NR |
| Arsenic | 25 | <3.2 | NR | 10.4 | NR | 5.4 J | NR | NR | 12.5 J | 7.8 | <10.9U | NR | NR | NR | NR |
| Beryllium | 3 | 0.3 | NR | 1.1 | NR | <0.20 | NR | NR | 0.47 | 2.60 | <1.1U | NR | NR | NR | NR |
| Chromium | 50 | 43.9 | NR | 47.4 | NR | 49.5 J | NR | NR | **86.4** | **55.7** | **163** | NR | NR | NR | NR |
| Copper | 200 | 14.2 | NR | 26.1 | NR | 7.8 | NR | NR | 38.2 | 21.0 | 114 | NR | NR | NR | NR |
| Iron | 300 | **7240** | NR | **15000** | NR | **4730** | NR | NR | **27300 J** | **18900** | **33800** | NR | NR | NR | NR |
| Lead | 15 | 10.3 | NR | **18.0** | NR | 3.8 | NR | NR | **22.7** | **16.3** | **34.1** | NR | NR | NR | NR |
| Manganese | 300 | **557** | NR | **646** | NR | 295 | NR | NR | **568** | **429** | **724** | NR | NR | NR | NR |
| Mercury | 0.7 | <0.10 | NR | <0.10 | NR | <0.10 | NR | NR | <0.10 | <0.10 | <0.16U | NR | NR | NR | NR |
| Nickel | 100 | 32 | NR | 32.9 | NR | 36.0 | NR | NR | 59.1 | 35.7 | **115** | NR | NR | NR | NR |
| Top of Screen Elevation: Unknown<br>Groundwater Elevation (feet):<br>Bottom of Screen Elevation: Unknown | | 55.70 | 55.10 | 54.26 | 56.45 | 54.00 | 53.10 | 53.10 | 51.10 | 49.60 | 53.20 | 55.36 | 55.36 | 55.36 | 55.45 |

Notes: Volatile and metal concentrations presented in micrograms per liter; turbidity measurements presented in nephelometric turbidity units
Elevations referenced to mean sea level
For June 2004, monitoring wells were sampled for VOC's only using the diffusion bag sampling method as per USEPA's request.
For MW-19S, an additional VOC sample was collected using Low Flow sampling method right after diffusion bag sampling as per USEPA's request.
Center of bag location (measured from the bottom of the well):
Topmost bag - 7.5 feet
Bottom bag - 2.5 feet
NS: Not sampled
NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999)
NP: No proposed quantification level available
NR: Not required
Bolded values exceed the NY Water Quality Criteria
Data Qualifiers:
B: The analyte was detected in the blank sample
J: Associated value is an estimated quantity
UJ: Compound is not detected and the associated quantitation limit is uncertain
U: Compound was not detected above the associated level

# Appendix A-3

# Laboratory Summary Report (Validated)

**SUMMARY REPORT (Validated)**
**Lab: Lionville Labs**
**Circuitron Corporation Superfund Site**
**Monitoring Wells Sampling: June 2004**

| Sample ID | CC-18-MW-1S-10-1 | CC-18-MW-1D-10-1A | CC-18-MW-1D-10-1B | CC-18-MW-4D-10-1A | CC-18-MW-4D-10-1B | CC-18-MW-3S-10-1 | NY Water Quality |
|---|---|---|---|---|---|---|---|
| Lab Sample ID | 0406L776-001 | 0406L776-002 | 0406L776-003 | 0406L776-004 | 0406L776-005 | 0406L776-006 | Criteria |
| Sampling Date | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | |
| Center of Bag (feet) | 1.0 | 7.5 | 2.5 | 7.5 | 2.5 | 1.0 | |
| Volatiles (µg/L) | | | | | | | |
| Methylene Chloride | <3U | <4U | <4U | <4U | <3U | <3U | 5 |
| Acetone | <7UJ | <10UJ | <10UJ | <10UJ | <10UJ | <10UJ | NP |
| 1,1-Dichloroethene | <5 | 7 | 7 | 8 | 9 | <5 | 5 |
| 1,1-Dichloroethane | <5 | 3J | 3J | 3J | 4J | <5 | 5 |
| 1,2-Dichlorothene (Total) | <5 | 2J | 1J | 1J | 2J | <5 | 5 |
| 1,1,1-Trichloroethane | <5 | 7 | 7 | 8 | 10 | 2J | 5 |
| Trichloroethene | <5 | 5 | 5 | 6 | 7 | <5 | 5 |
| Tetrachloroethene | <5 | 2J | 1J | 2J | 2J | <5 | 5 |

NOTES:

**Only those compounds detected above the laboratory method detection limit are displayed.**
**Center of bags are measured from the bottom of the well.**
**Diffusion bags were deployed from May 10-11, 2004 and were sampled on June 2-3, 2004.**
**NR: Not Required**
**ND: Not Detected**
**NP: No Proposed Quantitation Level available**
**<...: Laboratory Detection Limit**
**BOLD: Value exceeds the Proposed Quantitation Level**
**D: Results are reported for the diluted samples**
**U: Compound was not detected above associated level; blank contamination exists**
**J: Associated value is an estimated quantity**
**UJ: Element is not detected and the associated quantitation limit is uncertain.**
**B: The analyte was detected in the blank sample**
**E: Compound was detected beyond the calibration range and was subsequently analyzed at a dilution**
**SampleID Designation:**
**-1: Collected using Diffusion Bag Sampling Method**
**-1A: Collected from top bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**-1B: Collected from bottom bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999).**

**SUMMARY REPORT (Validated)**
**Lab: Lionville Labs**
**Circuitron Corporation Superfund Site**
**Monitoring Wells Sampling: June 2004**

| Sample ID | CC-18-MW-3D-10-1A | CC-18-MW-3D-10-1B | CC-18-MW-7S-10-1 | CC-18-MW-7D-10-1A | CC-18-MW-7D-10-1B | CC-18-MW-5D-10-1A | CC-18-MW-5D-10-1B | NY Water Quality |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | 0406L776-007 | 0406L776-008 | 0406L776-009 | 0406L776-010 | 0406L776-011 | 0406L776-012 | 0406L776-013 | Criteria |
| Sampling Date | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | |
| Center of Bag (feet) | 7.5 | 2.5 | 1.0 | 7.5 | 2.5 | 7.5 | 2.5 | |
| **Volatiles (µg/L)** | | | | | | | | |
| Methylene Chloride | <3U | <3U | <3U | <3U | <3U | <3U | <3U | 5 |
| Acetone | <10UJ | <10UJ | <10UJ | <10UJ | <10UJ | <10UJ | <7UJ | NP |
| 1,1-Dichloroethene | <5 | <5 | <5 | <5 | 1J | <5 | <5 | 5 |
| 1,1-Dichloroethane | <5 | <5 | <5 | 1J | 2J | <5 | <5 | 5 |
| Trichloroethene | <5 | <5 | <5 | <5 | 1J | <5 | <5 | 5 |

NOTES:

**Only those compounds detected above the laboratory method detection limit are displayed.**
**Center of bags are measured from the bottom of the well.**
**Diffusion bags were deployed from May 10-11, 2004 and were sampled on June 2-3, 2004.**
**NR: Not Required**
**ND: Not Detected**
**NP: No Proposed Quantitation Level available**
**<...: Laboratory Detection Limit**
**BOLD: Value exceeds the Proposed Quantitation Level**
**D: Results are reported for the diluted samples**
**U: Compound was not detected above associated level; blank contamination exists**
**J: Associated value is an estimated quantity**
**UJ: Element is not detected and the associated quantitation limit is uncertain.**
**B: The analyte was detected in the blank sample**
**E: Compound was detected beyond the calibration range and was subsequently analyzed at a dilution**
**Sample ID Designation:**
**-1: Collected using Diffusion Bag Sampling Method**
**-1A: Collected from top bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**-1B: Collected from bottom bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999).**

**SUMMARY REPORT (Validated)**
**Lab: Lionville Labs**
**Circuitron Corporation Superfund Site**
**Monitoring Wells Sampling: June 2004**

| Sample ID | CC-18-MW-17-10-1A | CC-18-MW-17-10-1B | CC-18-MW-6S-10-1 | CC-18-MW-6D-10-1A | CC-18-MW-6D-10-1B | CC-18-MW-13-10-1A | CC-18-MW-13-10-1B | NY Water Quality |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | 0406L776-014 | 0406L776-015 | 0406L776-016 | 0406L776-017 | 0406L776-018 | 0406L776-019 | 0406L776-020 | Criteria |
| Sampling Date | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | 06/02/2004 | |
| Center of Bag (feet) | 6.0 | 1.0 | 1.0 | 7.5 | 2.5 | 7.5 | 2.5 | |
| **Volatiles (µg/L)** | | | | | | | | |
| Methylene Chloride | <3U | <4U | <4U | <4U | **<6U** | <5U | **<6U** | 5 |
| Acetone | <7UJ | <10UJ | <2UJ | <10UJ | <10 | <10 | <10 | NP |
| 1,1-Dichloroethene | <5 | <5 | 1J | **6** | **6** | <5 | <5 | 5 |
| 1,1-Dichloroethane | <5 | <5 | <5 | 3J | 4J | <5 | <5 | 5 |
| 1,2-Dichlorothene (Total) | <5 | <5 | <5 | 1J | 1J | <5 | <5 | 5 |
| Chloroform | <5 | <5 | <5 | 1J | 1J | <5 | <5 | 7 |
| 1,1,1-Trichloroethane | <5 | <5 | **24** | **6** | **7** | **14** | **6** | 5 |
| Trichloroethene | <5 | <5 | <5 | **7** | **7** | <5 | <5 | 5 |
| Tetrachloroethene | <5 | <5 | <5 | 2J | 2J | <5 | <5 | 5 |

NOTES:

**Only those compounds detected above the laboratory method detection limit are displayed.**
**Center of bags are measured from the bottom of the well.**
**Diffusion bags were deployed from May 10-11, 2004 and were sampled on June 2-3, 2004.**
**NR: Not Required**
**ND: Not Detected**
**NP: No Proposed Quantitation Level available**
**<...: Laboratory Detection Limit**
**BOLD: Value exceeds the Proposed Quantitation Level**
**D: Results are reported for the diluted samples**
**U: Compound was not detected above associated level; blank contamination exists**
**J: Associated value is an estimated quantity**
**UJ: Element is not detected and the associated quantitation limit is uncertain.**
**B: The analyte was detected in the blank sample**
**E: Compound was detected beyond the calibration range and was subsequently analyzed at a dilution**
**Sample ID Designation:**
**-1: Collected using Diffusion Bag Sampling Method**
**-1A: Collected from top bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**-1B: Collected from bottom bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999).**

**SUMMARY REPORT (Validated)**
**Lab: Lionville Labs**
**Circuitron Corporation Superfund Site**
**Monitoring Wells Sampling: June 2004**

| Sample ID | CC-18-MW-15-10-1A | CC-18-MW-15-10-1B | CC-18-MW-16-10-1A | CC-18-MW-16-10-1B | CC-18-MW-14-10-1A | CC-18-MW-14-10-1B | NY Water Quality |
|---|---|---|---|---|---|---|---|
| Lab Sample ID | 0406L777-001 | 0406L777-002 | 0406L777-003 | 0406L777-004 | 0406L777-005 | 0406L777-006 | Criteria |
| Sampling Date | 06/03/2004 | 06/03/2004 | 06/03/2004 | 06/03/2004 | 06/03/2004 | 06/03/2004 | |
| Center of Bag (feet) | 7.5 | 2.5 | 7.5 | 2.5 | 7.5 | 2.5 | |
| **Volatiles (µg/L)** | | | | | | | |
| Methylene Chloride | <2U | <2U | <2U | <2U | <2U | <2U | 5 |
| Acetone | <10 | <3U | <2U | <10 | <10 | <3U | NP |
| 1,1,1-Trichloroethane | <5 | <5 | <5 | <5 | 3J | <5 | 5 |

NOTES:

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**Center of bags are measured from the bottom of the well.**
**Diffusion bags were deployed from May 10-11, 2004 and were sampled on June 2-3, 2004.**
**NR: Not Required**
**ND: Not Detected**
**NP: No Proposed Quantitation Level available**
**<...: Laboratory Detection Limit**
**BOLD: Value exceeds the Proposed Quantitation Level**
**D: Results are reported for the diluted samples**
**U: Compound was not detected above associated level; blank contamination exists**
**J: Associated value is an estimated quantity**
**UJ: Element is not detected and the associated quantitation limit is uncertain.**
**B: The analyte was detected in the blank sample**
**E: Compound was detected beyond the calibration range and was subsequently analyzed at a dilution**
**Sample ID Designation:**
**-1: Collected using Diffusion Bag Sampling Method**
**-1A: Collected from top bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**-1B: Collected from bottom bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999).**

**SUMMARY REPORT (Validated)**
**Lab: Lionville Labs**
**Circuitron Corporation Superfund Site**
**Monitoring Wells Sampling: June 2004**

| Sample ID | CC-18-MW-18-10-1A | CC-18-MW-18-10-1B | CC-18-MW-4S-10-1 | CC-18-MW-4S-10-3 | CC-18-MW-4S-10-1LF | NY Water Quality |
|---|---|---|---|---|---|---|
| Lab Sample ID | 0406L777-007 | 0406L777-008 | 0406L777-009 | 0406L777-010 | 0406L777-011 | Criteria |
| Sampling Date | 06/03/2004 | 06/03/2004 | 06/03/2004 | 06/03/2004 | 06/03/2004 | |
| Center of Bag (feet) | 6.0 | 1.0 | 1.0 | 1.0 | --- | |
| **Volatiles (µg/L)** | | | | | | |
| Chloroethane | <10UJ | <10UJ | <10UJ | 2J | <10UJ | 5 |
| Methylene Chloride | <1U | <2U | <1U | <2U | <2U | 5 |
| Acetone | <4U | <4U | <4U | <4U | <10 | NP |
| 1,1-Dichloroethene | <5 | <5 | 4J | 4J | 5 | 5 |
| 2-Butanone | <10 | <10 | <10 | 2J | <10 | NP |
| 1,1,1-Trichloroethane | <5 | <5 | **200D** | **210D** | **260D** | 5 |
| Tetrachloroethene | <5 | <5 | **11** | **11** | **12** | 5 |

NOTES:

**Only those compounds detected above the laboratory method detection limit are displayed.**
**Center of bags are measured from the bottom of the well.**
**Diffusion bags were deployed from May 10-11, 2004 and were sampled on June 2-3, 2004.**
**NR: Not Required**
**ND: Not Detected**
**NP: No Proposed Quantitation Level available**
**<...: Laboratory Detection Limit**
**BOLD: Value exceeds the Proposed Quantitation Level**
**D: Results are reported for the diluted samples**
**U: Compound was not detected above associated level; blank contamination exists**
**J: Associated value is an estimated quantity**
**UJ: Element is not detected and the associated quantitation limit is uncertain.**
**B: The analyte was detected in the blank sample**
**E: Compound was detected beyond the calibration range and was subsequently analyzed at a dilution**
**Sample ID Designation:**
**-1: Collected using Diffusion Bag Sampling Method**
**-1A: Collected from top bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**-1B: Collected from bottom bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**CC-18-MW-4S-10-3 is a duplicate sample taken diffusion bag of MW-4S.**
**CC-18-MW-4S-10-1LF is a sample of MW-4S collected using Low Flow Sampling Method.**
**NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999).**

**SUMMARY REPORT (Validated)**
**Lab: Lionville Labs**
**Circuitron Corporation Superfund Site**
**Monitoring Wells Sampling: June 2004**

| Sample ID | CC-18-MW-19S-10-1A | CC-18-MW-19S-10-1B | CC-18-MW-19D-10-1A | CC-18-MW-19D-10-1B | CC-18-MW-19D-10-3B | CC-18-MW-19D-10-1LF | TB06032004 | NY Water Quality |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | 0406L777-012 | 0406L777-013 | 0406L777-014 | 0406L777-015 | 0406L777-016 | 0406L777-017 | 0406L777-018 | Criteria |
| Sampling Date | 06/03/2004 | 06/03/2004 | 06/03/2004 | 06/03/2004 | 06/03/2004 | 06/03/2004 | 06/03/2004 | |
| Center of Bag (feet) | 7.5 | 2.5 | 7.5 | 2.5 | 2.5 | --- | --- | |
| **Volatiles (µg/L)** | | | | | | | | |
| Methylene Chloride | <2U | <2U | <5U | <4U | <3U | <4U | 4J | 5 |
| Acetone | <4U | <10 | <4U | <4U | <3U | <1U | 3J | NP |
| 1,1-Dichloroethene | <5 | <5 | <5 | **22** | **22** | **19** | <5 | 5 |
| 1,1-Dichloroethane | <5 | <5 | <5 | 2J | 2J | 3J | <5 | 5 |
| 1,2-Dichlorothene (Total) | <5 | <5 | <5 | **8** | **8** | **7** | <5 | 5 |
| Chloroform | <5 | <5 | 2J | **31** | **32** | **25** | <5 | 7 |
| 1,1,1-Trichloroethane | <5 | <5 | 2J | **23** | **23** | **22** | <5 | 5 |
| Trichloroethene | <5 | <5 | 2J | **33** | **35** | **32** | <5 | 5 |
| Tetrachloroethene | <5 | <5 | 2J | **24** | **24** | **39** | <5 | 5 |

NOTES:

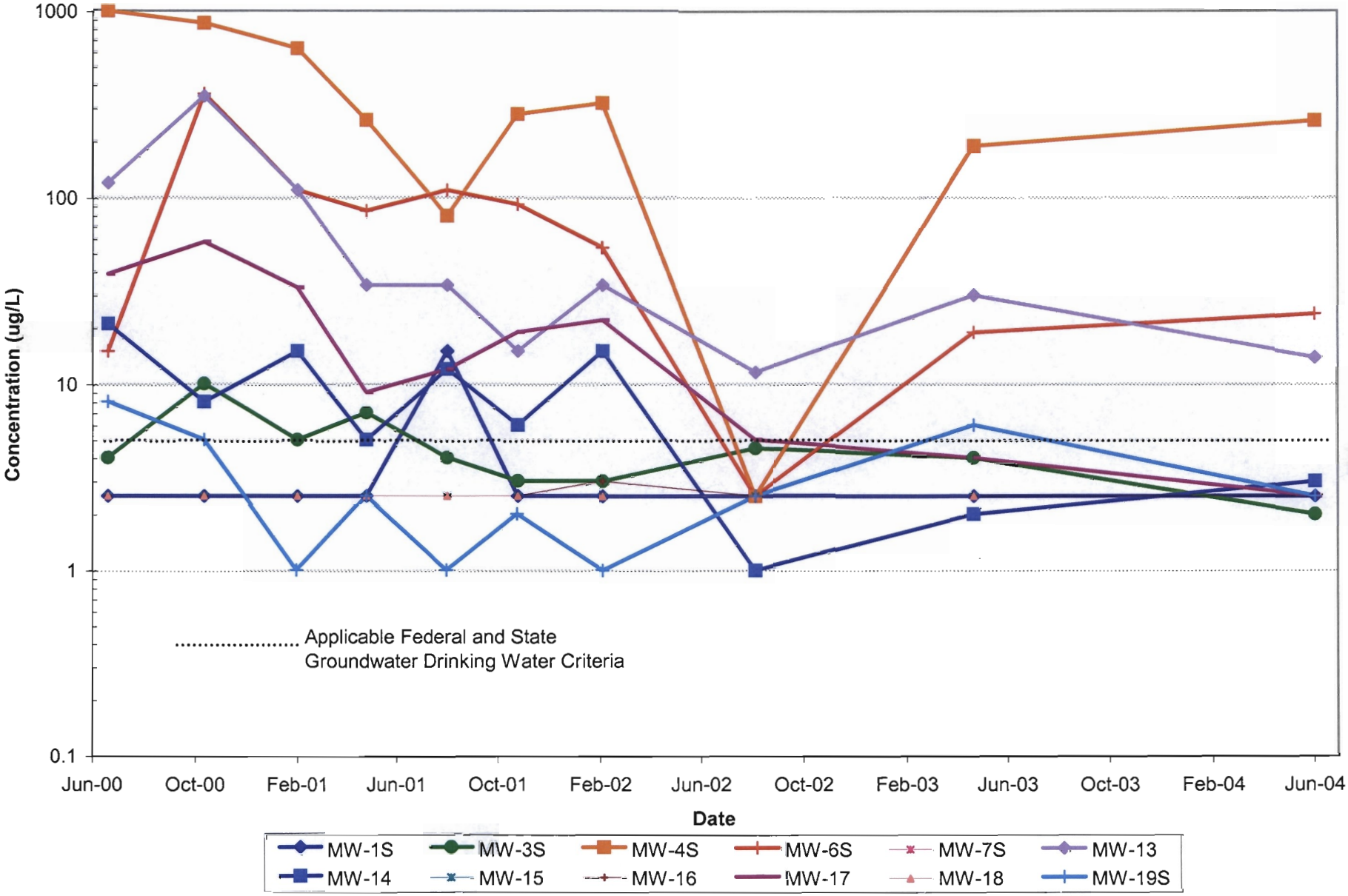
**Only those compounds detected above the laboratory method detection limit are displayed.**
**Center of bags are measured from the bottom of the well.**
**Diffusion bags were deployed from May 10-11, 2004 and were sampled on June 2-3, 2004.**
**NR: Not Required**
**ND: Not Detected**
**NP: No Proposed Quantitation Level available**
**<...: Laboratory Detection Limit**
**BOLD: Value exceeds the Proposed Quantitation Level**
**D: Results are reported for the diluted samples**
**U: Compound was not detected above associated level; blank contamination exists**
**J: Associated value is an estimated quantity**
**UJ: Element is not detected and the associated quantitation limit is uncertain.**
**B: The analyte was detected in the blank sample**
**E: Compound was detected beyond the calibration range and was subsequently analyzed at a dilution**
**Sample ID Designation:**
**-1: Collected using Diffusion Bag Sampling Method**
**-1A: Collected from top bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**-1B: Collected from bottom bag using Diffusion Bag Sampling Method (2 bags deployed in well)**
**CC-18-MW-19D-10-3B is a duplicate sample taken from bottom bag of MW-19D.**
**CC-18-MW-19D-10-1LF is a sample of MW-19D collected using Low Flow Sampling Method.**
**NY Water Quality Criteria: NYSDEC Regulation for Surface Waters and Groundwater, Section 703.5 (August 1999).**

# APPENDIX B

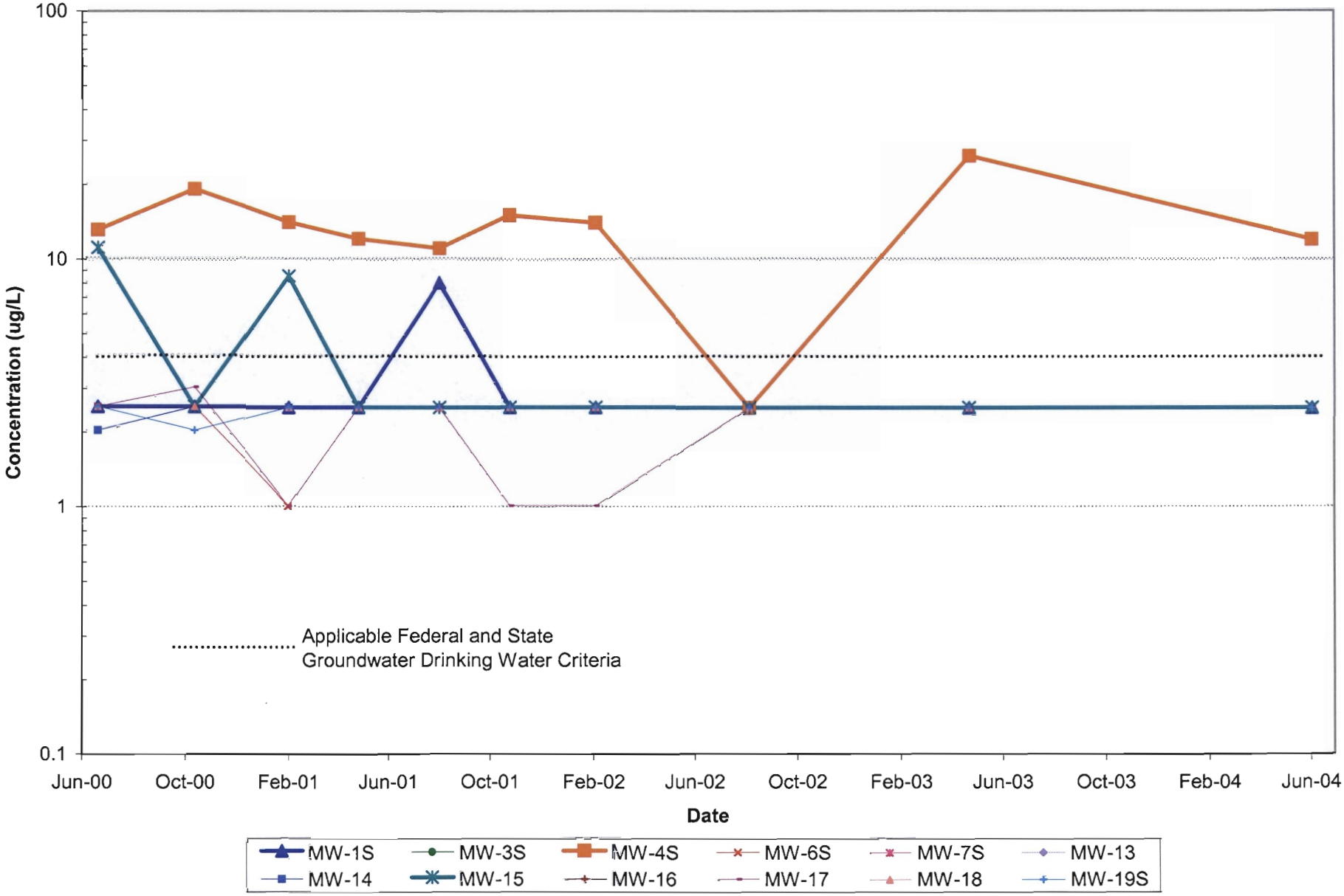
# Appendix B

## Time-Series Geochemical Graphs for Shallow and Deep Wells

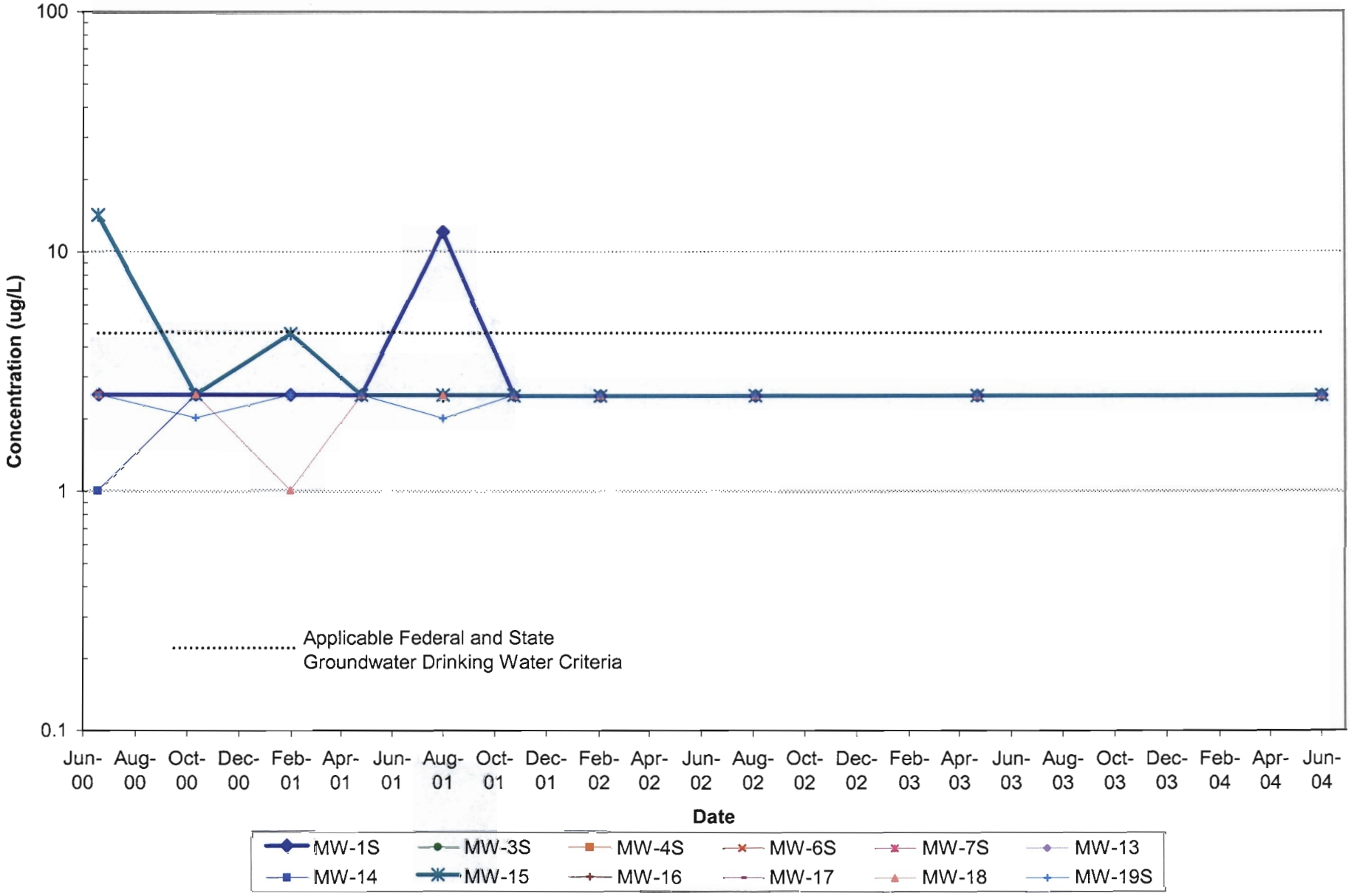
# 1,1,1-Trichloroethane Time-Series Graph
## Shallow Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



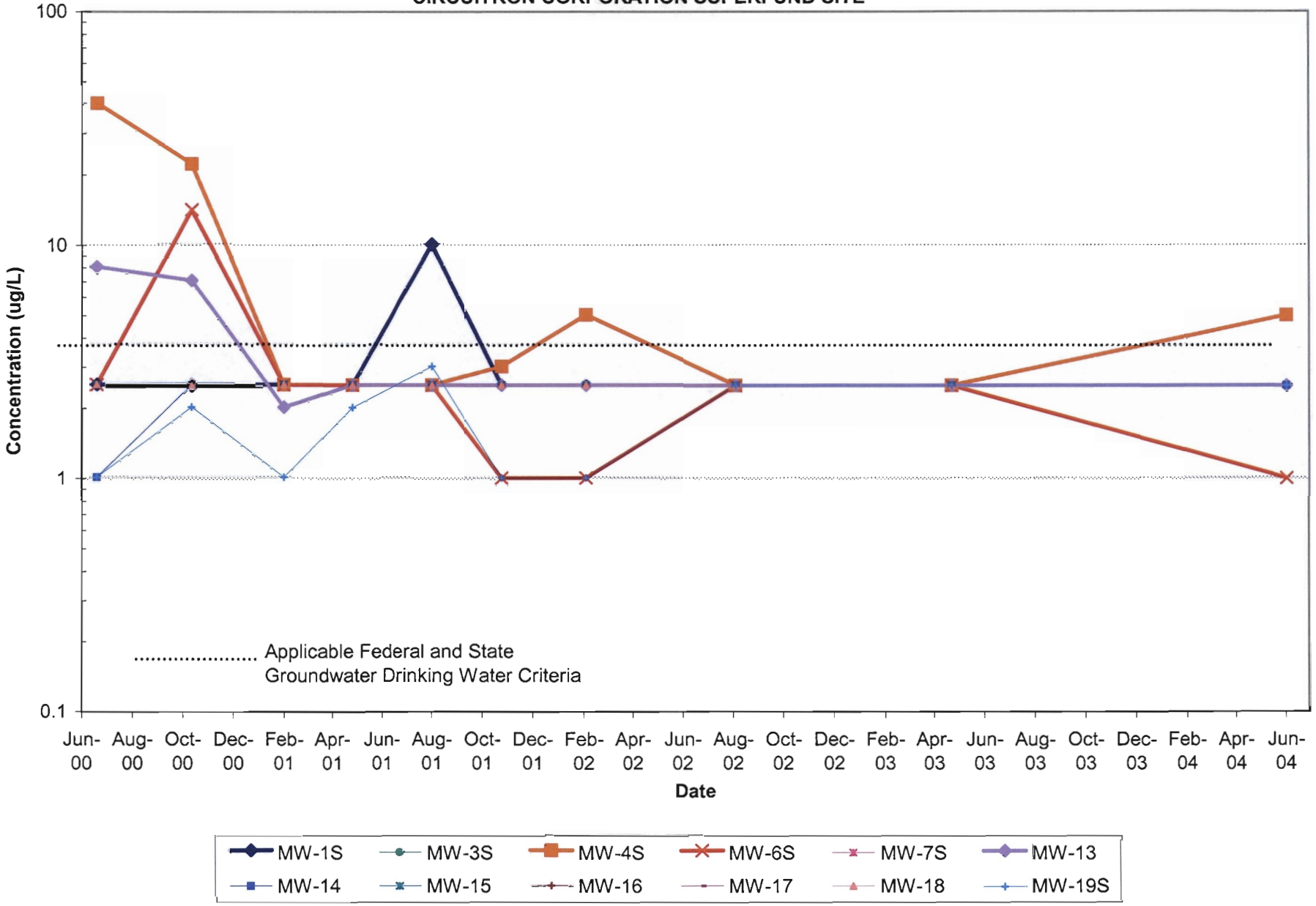
## Tetrachloroethene Time-Series Graph
## Shallow Wells
## CIRCUITRON CORPORATION SUPERFUND SITE



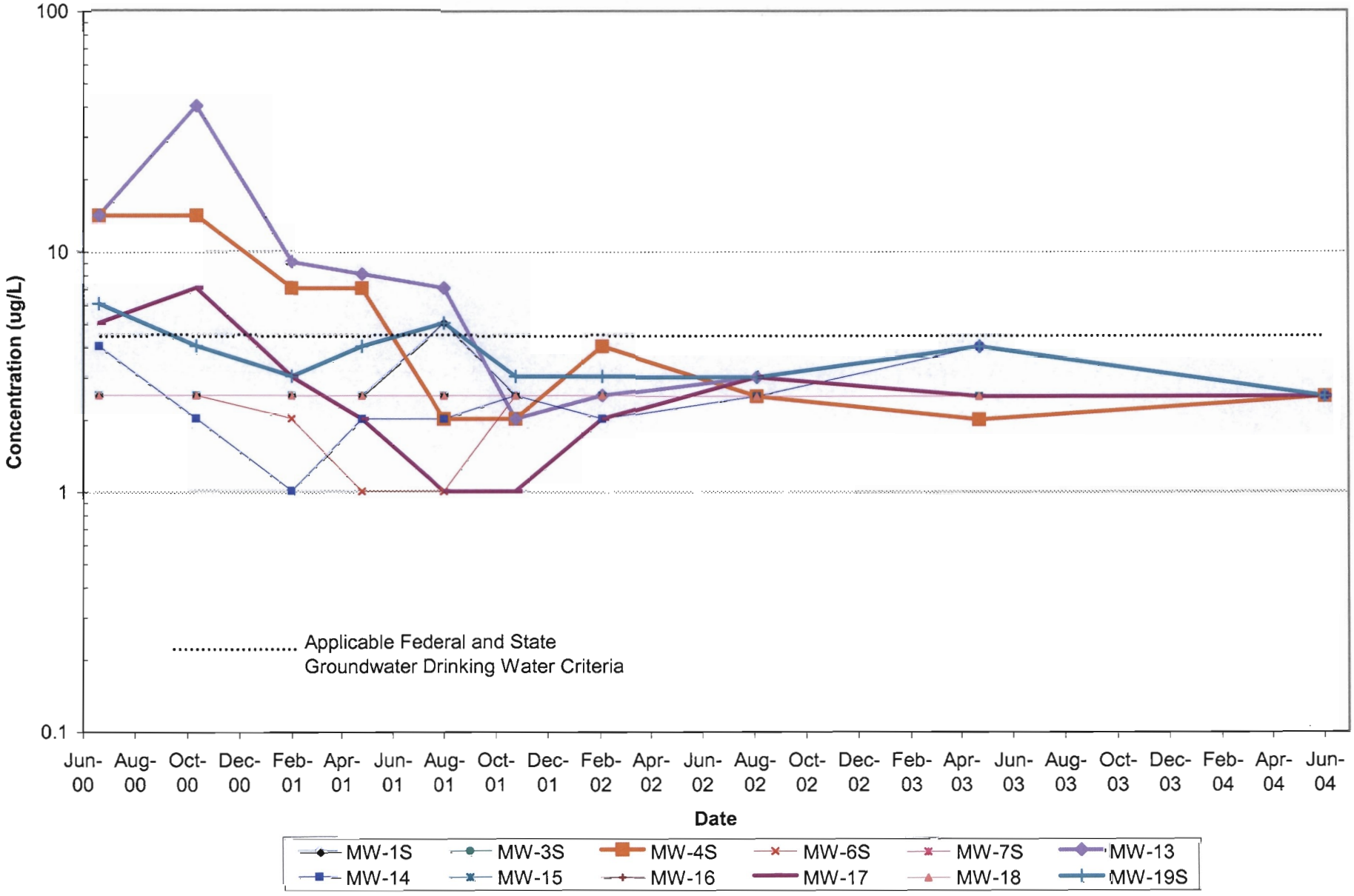
## Trichloroethene Time-Series Graph
## Shallow Wells
## CIRCUITRON CORPORATION SUPERFUND SITE



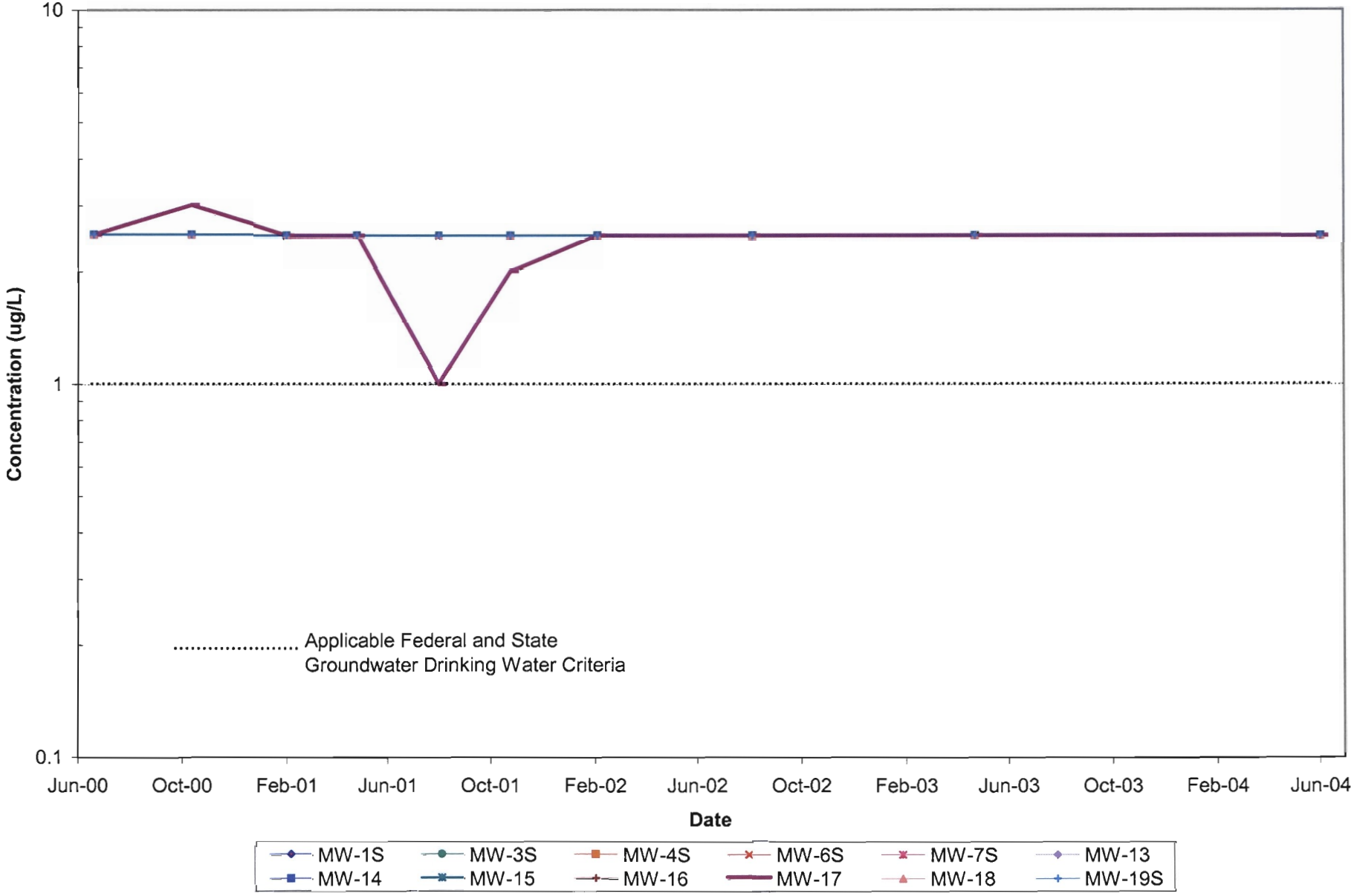
# 1,1-Dichloroethene Time-Series Graph
## Shallow Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



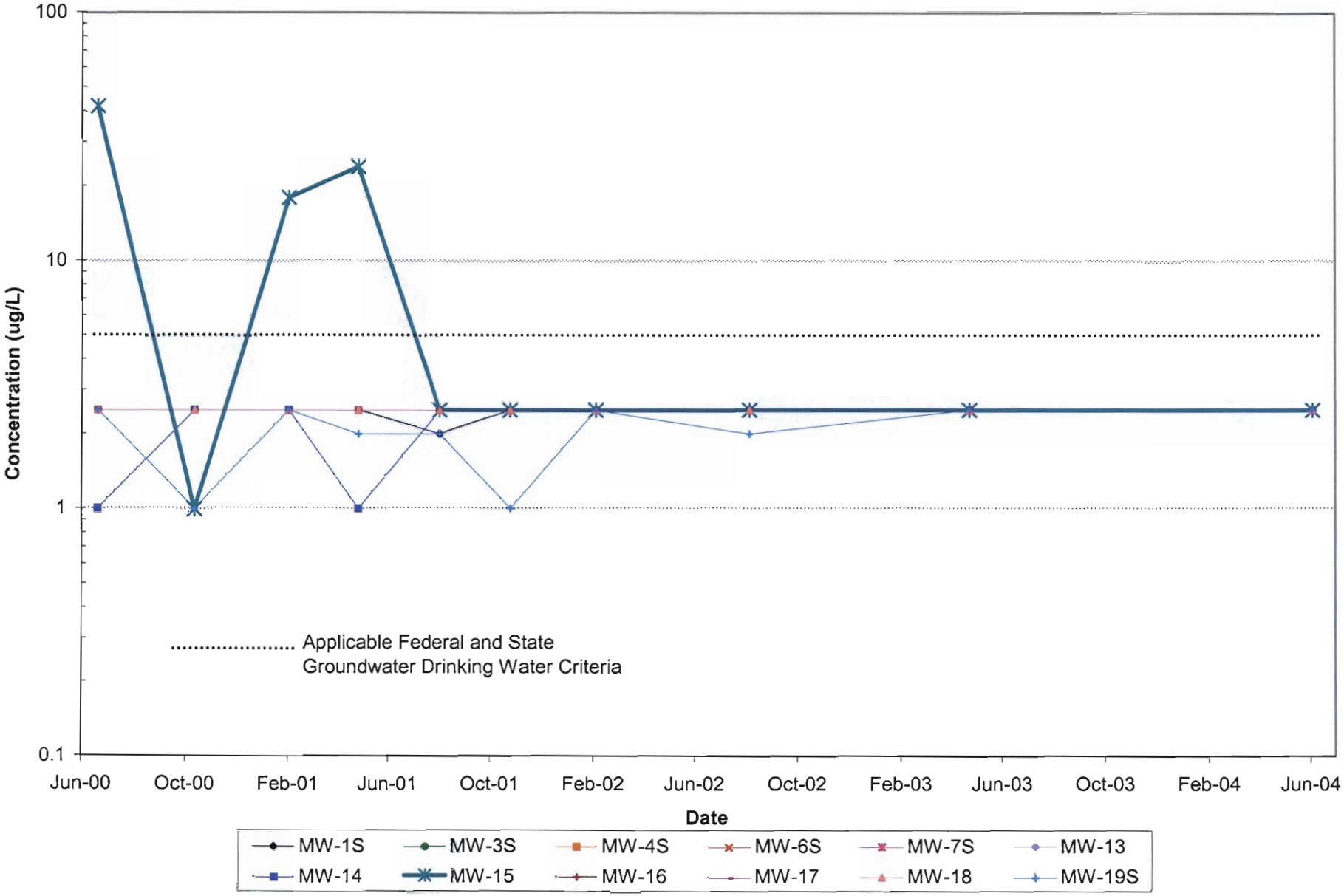
## 1,1-Dichloroethane Time-Series Graph
## Shallow Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



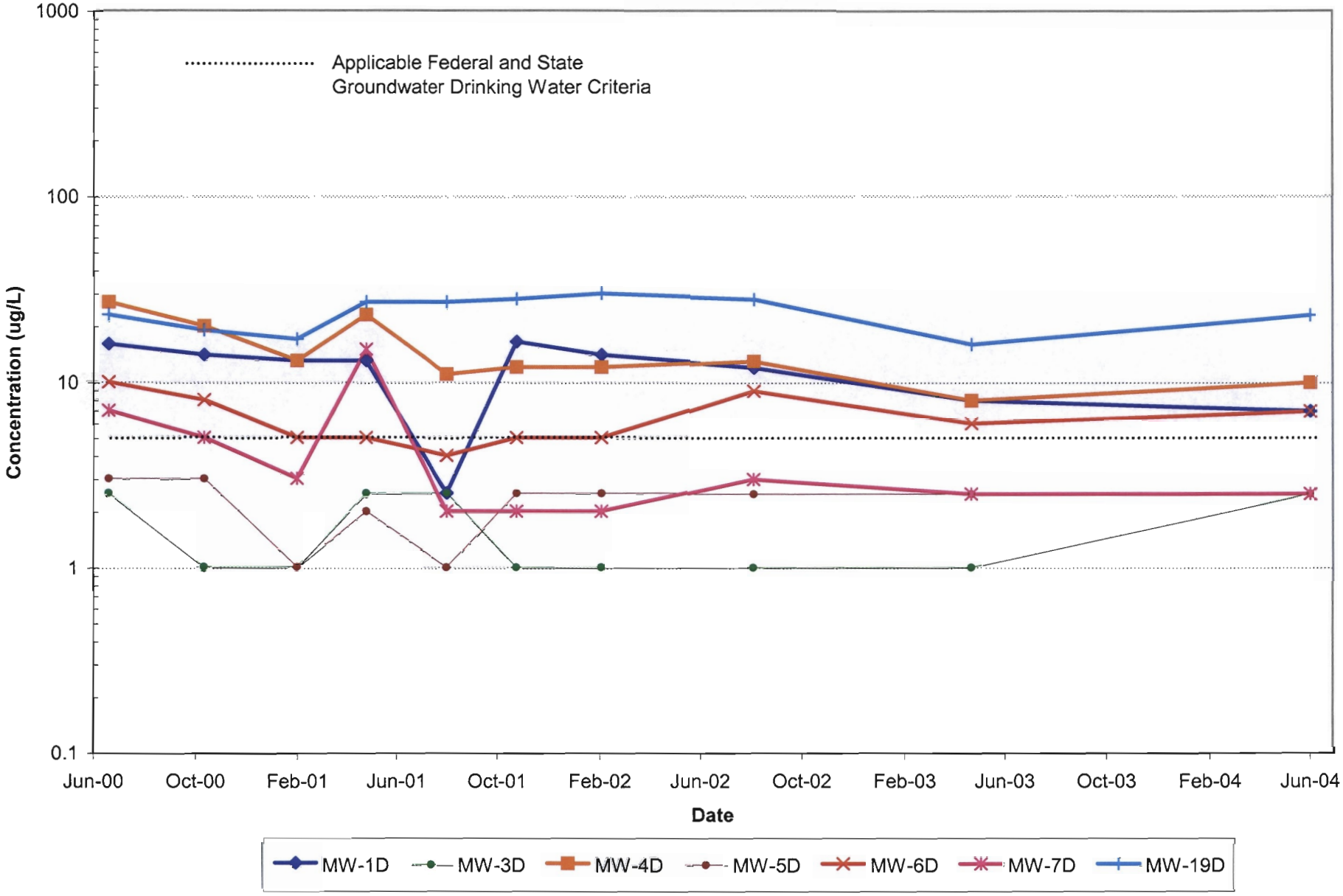
## 1,1,2 Trichloroethane Time-Series Graph
## Shallow Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



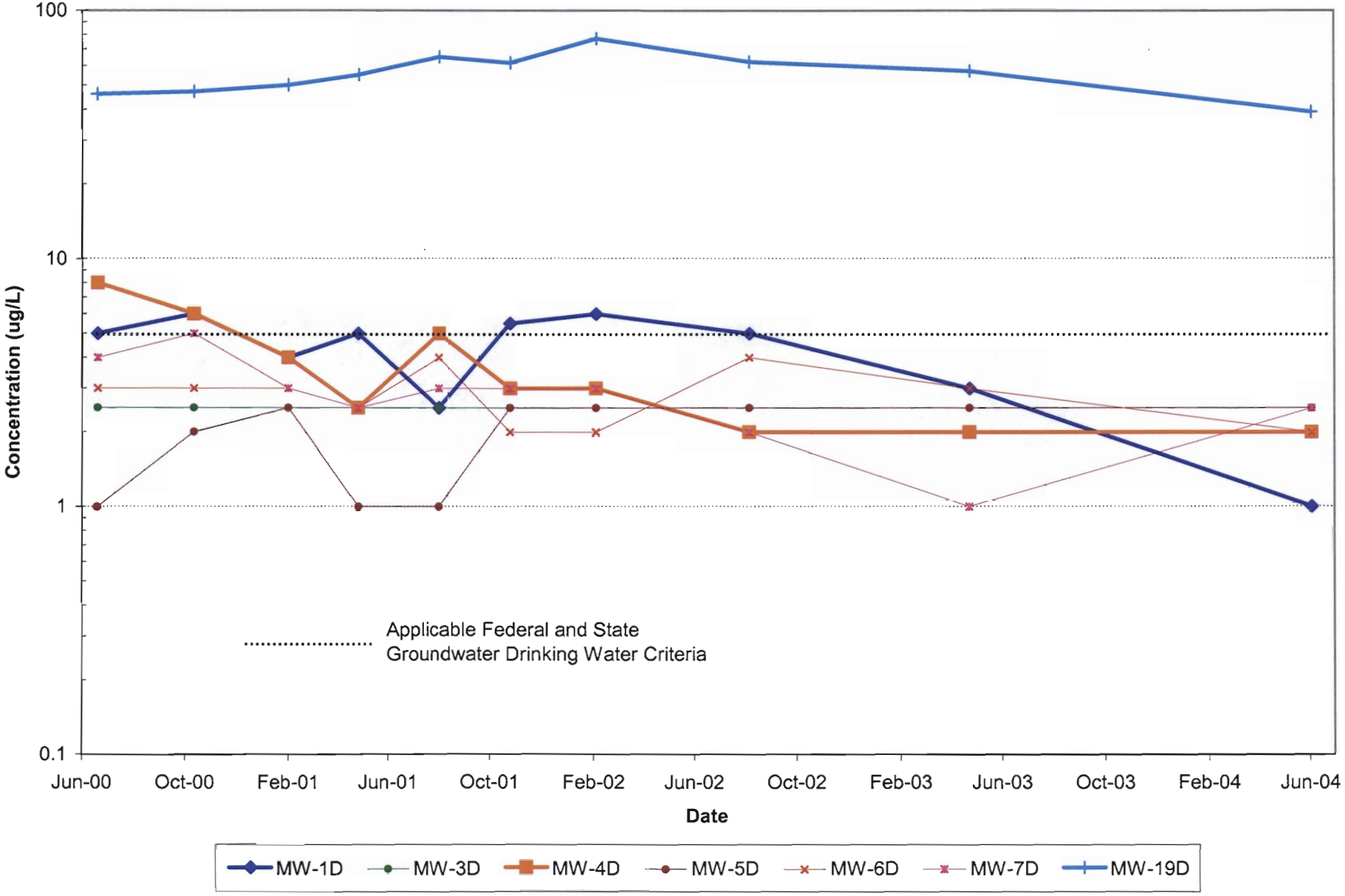
## 1,2 Dichloroethene (total) Time-Series Graph
## Shallow Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



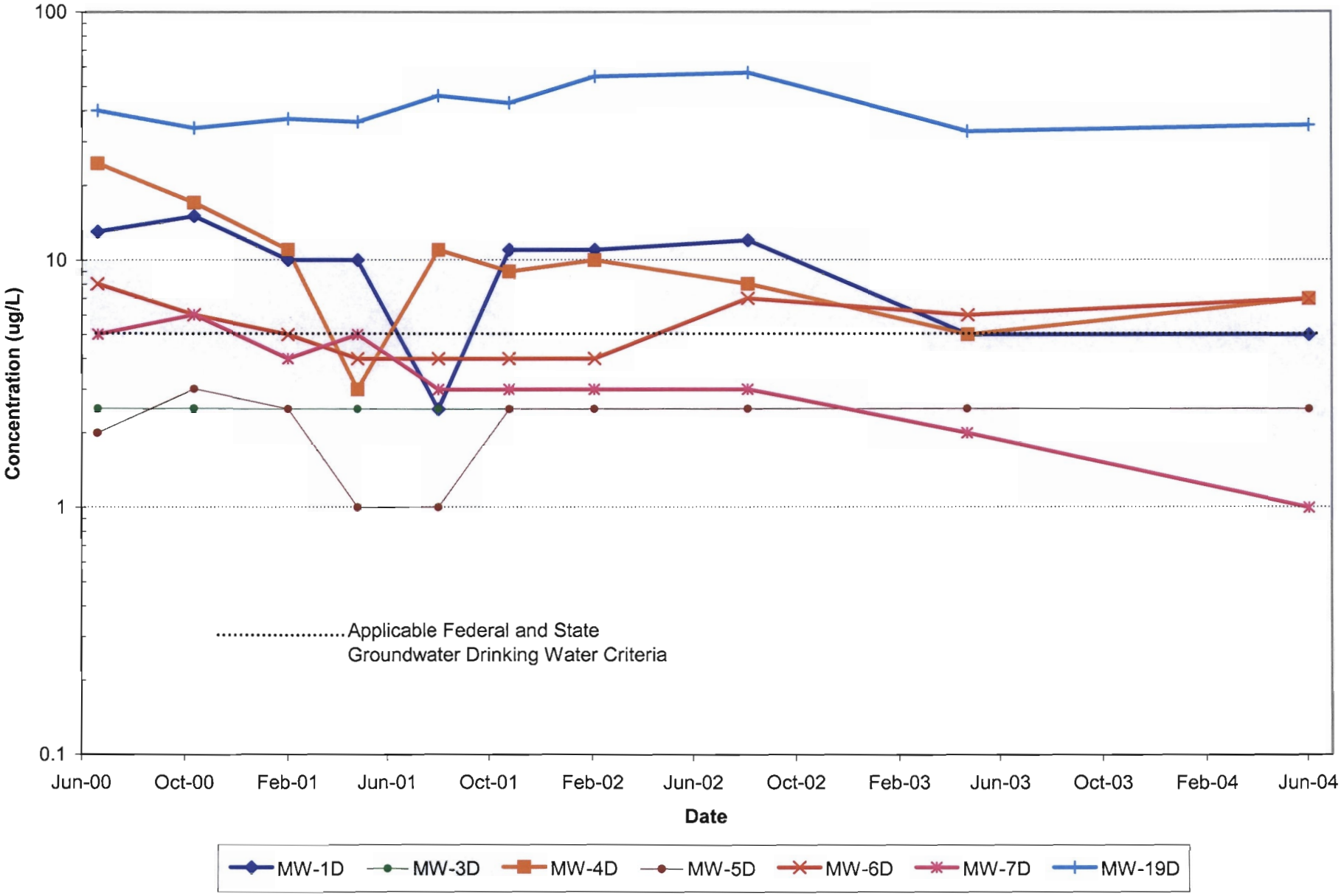
## 1,1,1-Trichloroethane Time-Series Graph
## Deep Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



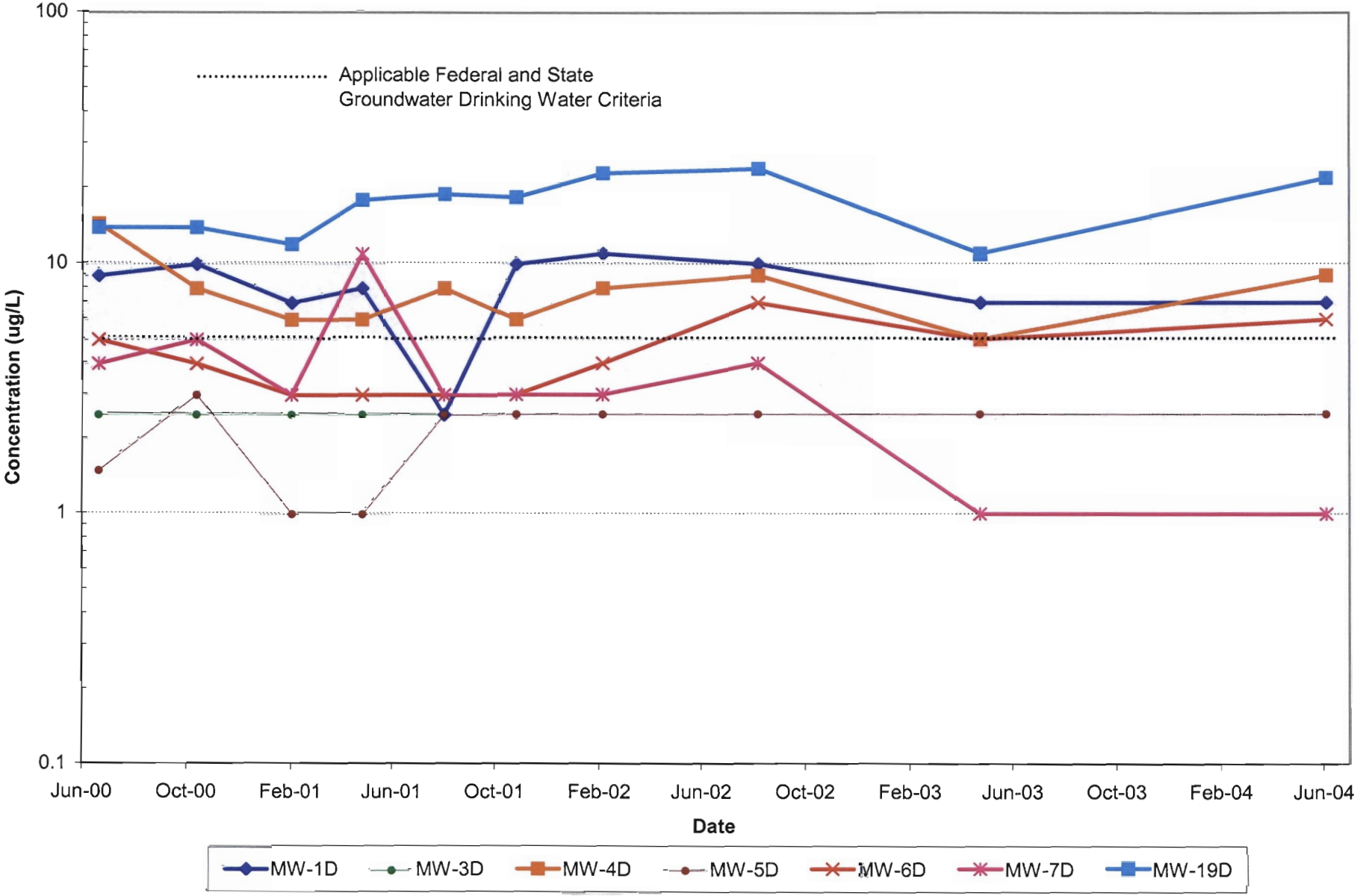
## Tetrachloroethene Time-Series Graph
## Deep Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



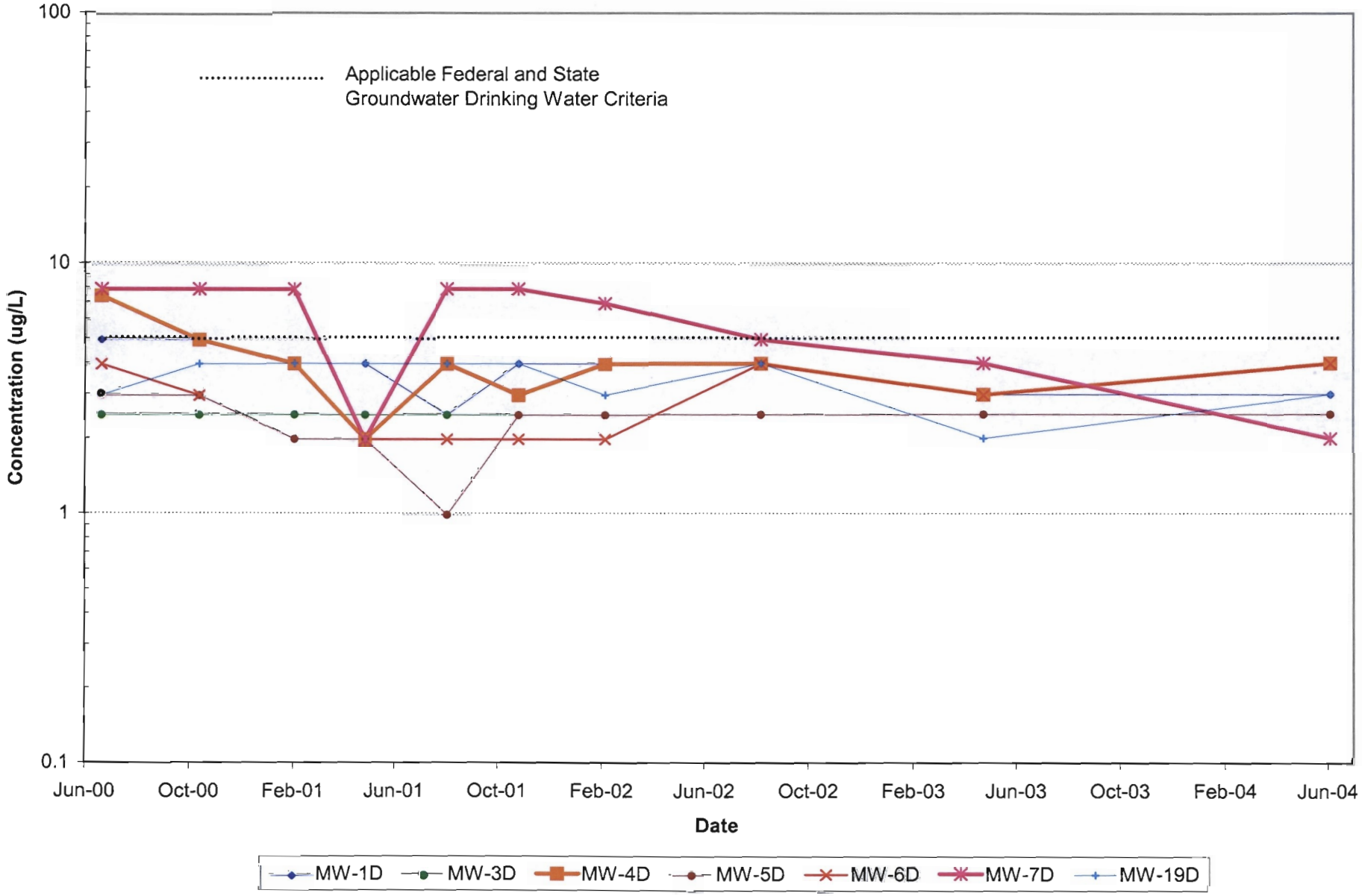
## Trichloroethene Time-Series Graph
## Deep Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



## 1,1-Dichloroethene Time-Series Graph
## Deep Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



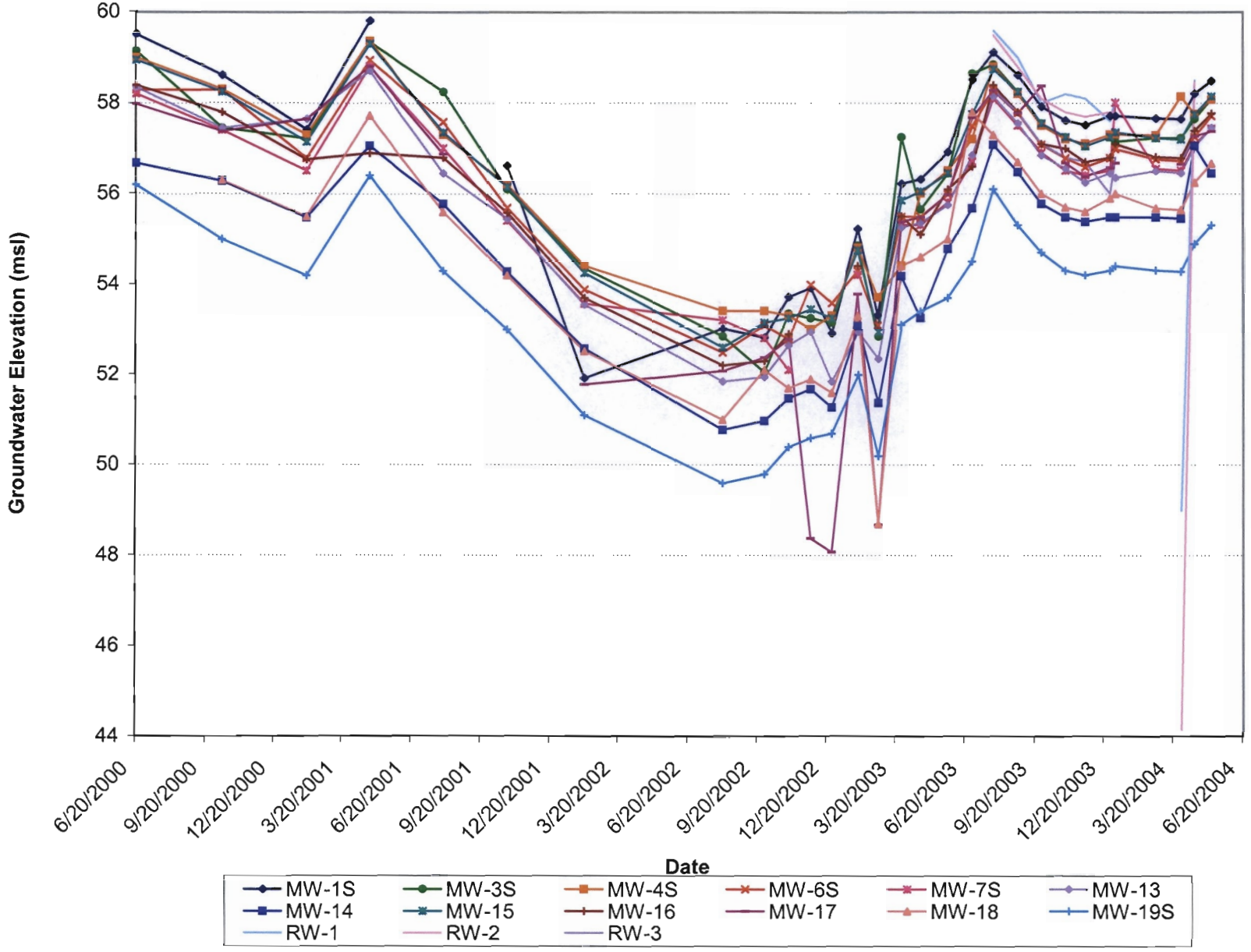
## 1,1-Dichloroethane Time-Series Graph
## Deep Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



# Appendix C

## Hydrographs for Shallow & Deep Wells

## Hydrograph of Shallow Wells
### CIRCUITRON CORPORATION SUPERFUND SITE



## Hydrograph of Deep Wells
### CIRCUITRON SUPERFUND SITE