Woodward-Clyde Consultants

Engineering & sciences applied to the earth & its environment

October 15, 1992

Mr. Eliott Duffney
Xerox Corporation
800 Phillips Road
Webster, New York 14580

Re: Remedial Investigation Report
Blauvelt, New York

Dear Eliott:

Woodward-Clyde Consultants (WCC) is pleased to provide you with this Report of the Remedial Investigation conducted at your facility in Blauvelt, New York. The work was conducted in accordance with the Work Plan dated September 13, 1989 prepared by WCC and approved by the New York Department of Environmental Conservation (NYSDEC). The scope of work conducted at the site included investigations of soil and groundwater contamination on the property and its migration off-site, impacts to the surface water system and benthic community, and air quality.

This report includes a compilation of the data generated during the remedial investigation, and presents WCC's assessment of the extent of contamination and areas where remediation will be necessary. These areas are based on exceedances of regulatory criteria and assessment of impacts to the human health or the environment.

It has been our pleasure to assist Xerox on this project. It is our opinion that the work has been effective in defining the nature, extent and impact of contamination at the site. If you have any questions, or wish to discuss any aspect of this report in greater detail, please do not hesitate to call.

Very truly yours,

Robert G. Ehlenberger
Project Manager

92C2193/XEROX.40/XB-D22/pm

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REMEDIAL INVESTIGATION REPORT
XEROX CORPORATION
BLAUVELT, NEW YORK

Prepared for:

Xerox Corporation
800 Phillips Road
Webster, NY 14580
October 15, 1992

Prepared by:

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Project No. 89C2827/89C2828

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1.0
INTRODUCTION

This report presents the results of the Remedial Investigation (RI) conducted at the Xerox Corporation facility in Blauvelt, New York. The location of the site is shown on Figure 1-1, Regional Location Plan. As subsequently described, environmental conditions at the site were impacted by releases of chlorinated solvents and mineral spirits. The releases, which were associated with product use and storage areas, impacted soil, groundwater, and surface water and sediment quality at and in the vicinity of the site. The investigative area for the RI included on- and off-site locations, as shown on Figure 1-2.

This Remedial Investigation was conducted under the review of the New York State Department of Environmental Conservation (NYSDEC) in accordance with the Consent Order Index No. W3-0007-82-04 dated April 16, 1990. The work was conducted in accordance with the Work Plan approved by the NYSDEC. Modifications to the Scope of Work detailed in the approved Work Plan were authorized by the NYSDEC. The modifications were iterative as they were based on data collected during the on- and off-site soil gas surveys, and from the first phase of off-site wells. The scope of work conducted is subsequently detailed within this report. In general, the modifications to the on-site program included a reduction in the number of on-site monitoring wells (as the soil-gas survey indicated a less extensive area of impact than anticipated), and an increase in the network of off-site wells (as the extent of contamination detected in the first phase of off-site monitoring wells was larger than originally anticipated).

This report has been prepared to summarize the results of the RI in accordance with the report format dictated in the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA.

1.1 PURPOSE OF THE REPORT

Based upon investigative work conducted at the site prior to formulation of an RI Work Plan, and discussions between NYSDEC and Xerox personnel, a scope of investigative tasks was formalized into a Remedial Investigation Work Plan for the Blauvelt facility. As stated in the Work Plan, the primary goal of the RI was to better define the lateral and vertical extent of contamination in several environmental media to allow for evaluation of remedial alternatives.

The RI included an investigation of all potential contaminant source areas on the Xerox property. The potential contaminant source areas were identified through an historical evaluation of former site operations and materials storage practices. Therefore, some of the work was confirmatory in nature, to address potential source areas which had a minimal likelihood of contributing contaminants to the subsurface.

As stated in the Work Plan the purpose of the off-site investigations was to extend the existing on-site monitoring well network to surrounding areas downgradient from the facility boundary. In addition, the RI was formulated to meet objectives, intent, and standards of work of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), the Superfund Amendments and Reauthorization Act (SARA) and the National Contingency Plan (NCP).

The objectives of the RI Work Plan have been met during the investigative work detailed in subsequent sections of this report. The objectives as stated in the RI Work Plan are detailed below:

- Establishment of upgradient groundwater quality to provide a baseline for comparison to samples collected in zones of known or possible contamination

- Investigation of additional on-site contamination sources such as the Former Paint Booths, Former Solvent Storage Room, and the Centralized Refurbishing Center (CRC)

- Evaluation of the lateral and vertical extent of soil contamination by a soil-gas survey in order to define the extent of the groundwater contamination plume

- Additional borings to confirm soil conditions at selected locations of the site

- Delineation of the lateral and vertical extent of the groundwater contamination plume at the site by evaluating existing and newly installed monitoring wells

- Development of data necessary to support a feasibility study and evaluate the possible impacts to human health and the environment

1.2 SITE BACKGROUND

1.2.1 Site Description

The Xerox facility is located at the southwest corner of the intersection of Route 303 and Bradley Hill Road in Blauvelt, Rockland County, New York, as shown on Figure 1-1. Previous studies conducted at the site have indicated the presence of chlorinated solvents and mineral spirits in the soil and groundwater at and downgradient of the site. The previous investigations have included studies and interim remedial activities conducted by RECRA Research, 1980 to 1984; Dames and Moore, 1985; and Woodward-Clyde Consultants, 1986 to 1992.

The site is situated in a valley formed by elevated ridges trending generally north-south. The topography has a significant influence on surface water flow and groundwater flow as subsequently discussed within the report.

The on-site property consists of a large single-story warehouse facility, with office areas surrounded by asphalt parking areas. The northern portion of the property consists of wooded areas and cleared grassy areas. Operations previously existed in several areas of the site which had the potential for release of materials which could impact the soil and groundwater quality at the site. These areas consisted of the former paint booths, the former solvent storage room, the former CRC area, and the former underground storage tanks which contained virgin and scrap solvent. The locations of these former operations are shown on Figure 1-3.

The former underground storage tanks were approximately 8 feet in diameter and 27 feet long. They were anchored on a concrete pad 30 feet long, 16 feet wide and 2.5 feet thick. The solvents were stored in one tank and were transported to the CRC through an underground pipeline. The spent solvent (scrap solvent) was used as a degreaser in refurbishing activities where it became mixed with water and returned to the second underground storage tank through a separate buried pipeline as spent solvent.

The off-site area which has been investigated during this RI includes wooded and vacant lands to the west of the site, and a light industrial park and swim club located to the north of the site. The areas to the south and east of the site consist of wooded commercial and residential areas. These areas were not included in the RI, as the topography and groundwater/surface water flow of these areas is such that they would not be impacted by activities which could impact the environment at the Xerox facility.

1.2.2 Site History

Xerox Corporation leases the facility which is currently used for warehousing and distribution of copiers, parts and supplies. The site was initially leased by Xerox for the purposes of refurbishing and distributing copier machines.

Beginning in 1970, a variety of blended solvents and mineral spirits was used for solvent spray cleaning of electrostatic copiers and associated parts. Various blends of solvents were used which were supplied by Inland Chemical. The constituents of these blends have been reported to the NYSDEC in previous submittals, including the December 1980 Investigative Program Report prepared by RECRA Research, Inc.

The solvents previously discussed were stored in underground storage tanks as shown on Figure 1-3. There were reported releases of solvent on or about June 16, 1977 and June

7, 1979. The releases were reportedly the result of overflows from the waste solvent storage tank. In the RI Work Plan formulation it was presumed that the solvents flowed overland, following the slope of the land, pooled on the Xerox property and seeped into the ground. This supposition is supported by the distribution of non-aqueous phase liquids (NAPL) on the Xerox property and lack of NAPL on the off-site properties. The NYSDEC also assumes that there have been additional minor spills of solvent blend (including the time of tank removal) which have seeped into the soil and groundwater at the site.

The two underground storage tanks were removed in December 1979.

1.2.3 Previous Investigations

Xerox initiated environmental investigations of the site in 1980 by retaining RECRA Research, Inc. RECRA conducted investigations of soil and groundwater quality through the drilling of soil borings and installation of monitoring wells in studies conducted in 1980 and 1984. These investigations were summarized in a report entitled "Hydrogeologic/Investigative Program, Xerox Corporation, Blauvelt, New York Facility," Volumes I and II, dated January 15, 1985.

The characteristics of the geologic materials on the site were evaluated through an aquifer testing program conducted by Dames and Moore. The results of their investigations were presented in "Report, Interim Remedial Response, Xerox Corporation, Blauvelt, New York" dated November 1985. The aquifer characteristics were evaluated through advancement of soil borings for monitoring well installation, a static water level monitoring program, and pump tests conducted in wells completed in the overburden and bedrock.

Woodward-Clyde Consultants conducted investigations and well installation at the site prior to the on- and off-site RI in 1986 and 1987. The work conducted by WCC was summarized in the "Data Summary Report, Blauvelt Facility," dated February 1987. The work included:

1. The installation of ten groundwater recovery wells as part of an interim system to control off-site migration of contaminated groundwater

2. The advancement of eleven soil borings to evaluate the existence and distribution of NAPL

3. The advancement of six soil borings to investigate potential sources of contamination at the Blauvelt site

4. A limited NAPL recovery program was conducted in five wells where NAPL had been detected.

5. A reconnaissance-level soil gas survey was conducted to evaluate the applicability of this technique to upgradient and downgradient areas in addition to the site area.

6. Groundwater elevations were monitored to define the direction and gradients of groundwater flow across the site, and to help evaluate the relationship between groundwater in the bedrock versus groundwater in the overburden.

In 1989 a Groundwater Treatment System (GTS) was completed at the site. The GTS treats recovered groundwater to reduce the levels of volatile organic solvents to levels allowable for discharge by a site State Pollutant Discharge Elimination System (SPDES) permit. Pumping was initiated from the ten recovery wells with discharge of treated groundwater to the stream adjacent to the site.

In 1990/1991 Xerox initiated pilot demonstrations of a high vacuum dual-phase system at the site to demonstrate the system's ability to remove contaminants adsorbed onto soil particles in the on-site source area and to remove NAPL which has been routinely detected in certain on-site monitoring wells.

In 1990 the on-site RI was conducted following final approval of the Work Plan by the NYSDEC and signing of the Consent Order for the site by Xerox and the NYSDEC. The off-site RI was not conducted at this time due to lack of access to the off-site property.

Off-site access agreements were finalized in 1991, and the off-site RI was initiated through performance of the soil-gas survey, stream water/sediment sampling and the benthic survey. Following review of the soil-gas survey data, a first phase of off-site groundwater monitoring wells was installed on properties of the Bradley Industrial Park and Oratamin Swim Club. The number, placement and depth of the wells was changed from the approved Work Plan as per a technical agreement reached between Xerox and the NYSDEC. A second supplemental phase of off-site groundwater monitoring wells were installed in 1992 following the sampling and analysis of groundwater samples from the first phase off-site wells that indicated the plume of groundwater contamination had not yet been adequately defined.

1.3 REPORT ORGANIZATION

This RI Report describes the field investigations conducted, presents field results and laboratory analytical data generated from samples collected during the RI, provides interpretations made through review and evaluation of these data and results, and presents our conclusions about the environmental conditions at the site. This RI Report has been prepared and structured in accordance with the United States Environmental Protection Agency (USEPA) Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA dated October 1988.

This RI Report is being submitted to the NYSDEC pursuant to and in accordance with the requirements of the Administrative Consent Order (ACO) for the site. The following sections are included in the RI Report:

- 1.0 Introduction
- 2.0 Study Area Investigation

- 3.0 Physical Characteristics of the Study Area
- 4.0 Nature and Extent of Contamination
- 5.0 Contaminant Fate and Transport
- 6.0 Baseline Risk Assessment
- 7.0 Summary and Conclusions

The **Introduction** section (Section 1.0) describes information concerning site history including a site description and review of previous investigations. The **Study Area Investigation** section (Section 2.0) describes the field investigations associated with site characterization, including physical and chemical monitoring. The **Physical Characteristics of the Study Area** section (Section 3.0) describes the results of field activities to determine physical characteristics of the site and environmentally impacted areas. The **Nature and Extent of Contamination** section (Section 4.0) presents the results of site and contaminant characterization. The **Contaminant Fate and Transport** section (Section 5.0) describes contaminant persistence in the environment and potential routes of migration. The **Baseline Risk Assessment** section (Section 6.0) presents an evaluation of potential risks to human health and the environment associated with site contaminants. The **Summary and Conclusions** section (Section 7.0) integrates the results of physical site characterization with the analytical results and environmental evaluations to describe current site conditions.

2.0 STUDY AREA INVESTIGATION

2.1 FIELD ACTIVITIES

2.1.1 Surface Features

Detailed field reconnaissance, review of aerial photographs, and topographic mapping of the area surrounding the Xerox Blauvelt site was conducted as an initial part of the RI. The site topographic map is presented as Figure 2-1. A summary of surface features in the area is presented in Section 3.1.1. A more detailed review of surface features is presented in Appendix A.

2.1.2 Contaminant Source Investigations

It is currently believed that the primary source of environmental impacts to the soil, groundwater and surface water identified at the site resulted from two recorded releases of chlorinated solvents from two former underground storage tanks. The releases reportedly relate to overflow from the waste solvent storage tank. The overflow appeared to have resulted from a valve within the facility being left open, and waste solvent continuing to enter the tank after its capacity had been reached. The result was waste solvent spilling out onto the ground surface and pooling on site. Subsurface soil and groundwater contamination has also been identified associated with the former Centralized Refurbishing Center (CRC) area of the existing building.

Two additional areas were identified prior to the remedial investigation as potential sources at the site. These areas consisted of former spray paint booths where solvent-based paints were used, and the former solvent storage room located at the northeast corner of the building (Figure 1-3). Investigation of these areas was included in the RI Work Plan prepared for the site.

Prior to the RI, previous studies of the contaminant source areas were conducted by Xerox at the site including work done by RECRA Research, 1980, 1984; Dames and Moore, 1985; WCC, 1986 and 1987; and Target Environmental, 1990. The investigations of contaminant sources included exploratory borings and soil sampling, monitoring well installation and groundwater sampling and soil-gas surveys.

2.1.3 Meteorological Investigations

The significant environmental impacts at the site have been to the subsurface soil and groundwater at the site. It was assumed, in preparation of the Work Plan, that impacts to air would be insignificant at the site, or in the vicinity of the site. Therefore, there was no substantial level of meteorological investigations scheduled for the RI.

To confirm the assumption of minimal impacts to air, air sampling was conducted during the RI to assess ambient air quality. Meteorological observations at the site were recorded as part of the "Ambient Air Toxic Monitoring Program" conducted by WCC in May 1992. The meteorological observations pertained to potential impacts to the sampling program. The results of the air monitoring program are summarized in Section 3.1.2 and are presented in Appendix B.

2.1.4 Surface Water and Sediment Investigations

To document the nature and extent of environmental impacts to the surface water system in the vicinity of the site, and the potential for impacts to aquatic habitats, surface water and stream sediment samples were collected. Nine locations were sampled for surface water and/or sediment to provide information on background conditions (upstream of the site) and areas of the stream that receive surface water runoff, and/or groundwater infiltration from the site or areas of associated groundwater contamination. The results of the surface water and sediment sampling are summarized in Section 3.1.3, with analytical data presented in Appendix A.

2.1.5 Hydrogeological Investigations

RI field activities included extensive subsurface investigations to understand the hydrogeologic conditions at, and in the vicinity of the site. The investigations included the drilling of exploratory borings, installation and sampling of groundwater monitoring wells, and field permeability testing (slug tests) of off-site monitoring wells.

The objectives of the hydrogeologic investigations were to characterize the nature and extent of soil and groundwater contamination on the site, define the extent of off-site soil impacts, characterize the extent to which contaminants have migrated off the site, and to understand the subsurface pathways by which contaminants can migrate away from the site. Drilling services were provided by Rochester Drilling Company of Rochester, New York.

A combination of hollow-stem auger (HSA) and water rotary coring and drilling techniques were used to collect soil and rock samples for geologic evaluation of the overburden soils, shallow bedrock, and deep bedrock. These zones were of interest due to the potential for contaminants to migrate within these separate but interconnected flow zones.

Forty-eight exploratory borings were drilled during the investigation. Forty-two of these exploratory borings were converted to groundwater monitoring wells as subsequently discussed. Exploratory boring and monitoring well locations are presented on Figures 2-2 and 2-3.

Exploratory borings were advanced through the unconsolidated overburden soils utilizing HSA drilling techniques, with soil samples collected continuously (2-foot-long split-spoon samples at 2-foot intervals) to the bottom of the boring using a 2-inch diameter split-spoon sampler. At locations where the exploratory boring was not converted to a monitoring well, upon completion of sampling the borehole was backfilled with a cement/bentonite grout installed via tremie pipe placed at the bottom of the borehole.

The grout was pumped into the borehole until it discharged at the surface, at which point the tremie pipe was withdrawn.

Borings converted to overburden monitoring wells were completed in accordance with specifications in the Work Plan. The wells were constructed of 2-inch-diameter stainless steel well screen (0.010-inch slot) and flush-joint stainless steel riser pipe. All wells were installed with an appropriately graded sand pack surrounding the well screen to a height of approximately 2 feet above the screen, a 2-foot-thick bentonite pellet seal above the sand pack, and a cement/bentonite grout installed via tremie pipe to the surface. Well screen completion intervals for RI overburden wells were set to intercept the water table so that any floating non-aqueous phase liquids on the water table could be detected. The completion intervals account for reasonable seasonal variations of the water table.

Borings converted to shallow or deep bedrock monitoring wells were advanced to the top of competent bedrock by HSA, then continued using water rotary drilling techniques to obtain intact rock core samples and advance the borehole through bedrock.

Shallow bedrock well installations utilized a temporary 6-inch-diameter casing seated into competent bedrock case off the overburden to minimize the potential for cross-contamination to occur between the overburden and shallow bedrock. Intact rock core samples were obtained through the use of a double-tube NX-core barrel with diamond cutting bit. The rock core samples were obtained and evaluated to assess the density of fractures within the bedrock, so that impacts on flow could be assessed. Following the collection of the rock cores, the borehole was reamed to an approximate diameter of 6 inches using a tri-cone rotary drill bit. The borehole was advanced by coring and reaming approximately 14 feet into competent bedrock. After reaching the designed completion depth, rock cuttings and sediments were cleared from the borehole by flushing with potable water. The monitoring wells were completed with 2-inch-diameter stainless steel well screen (0.020-inch slot) and flush-joint riser pipe. The well screen and riser pipe were installed with a centralizer placed approximately 1 foot from the bottom of the well screen. All wells were completed with an appropriately graded sand pack, bentonite pellet seal, and cement/bentonite grout (installed via tremie pipe) to the surface in conformance to specifications in the approved Work Plan.

Deep bedrock well installations utilized a permanent double-casing technique. A 6-inch-diameter outer carbon steel casing was installed through the overburden to the top of competent bedrock to minimize the potential for cross-contamination between the overburden and bedrock intervals. In a similar fashion to the shallow bedrock wells, rock cores were obtained using a double-tube NX-core barrel with a diamond bit. The borehole was cored and reamed to a depth of approximately 20 feet below the bottom of the completion interval of the adjacent shallow bedrock well. After reaching the design depth, the borehole was cleared by flushing with potable water. A cement/bentonite grout was then mixed and tremied to fill the bottom portion of the borehole. A 4-inch-diameter stainless steel riser casing, fitted with a PVC end cap to prevent formation materials and grout from entering the casing, displaced the grout as the casing was lowered into the borehole. The cement/bentonite grout was allowed to set-up overnight and the monitoring well was completed with a 10-foot-long open NX-core hole which was advanced through the PVC end cap into the bedrock.

The monitoring wells were developed by several methods in order to remove fines and silty materials from the sand pack and from within the well. Development improves the hydraulic connection between the formation and the well, and facilitates collection of representative groundwater samples. Initial well development consisted of hand bailing to remove any materials from the bottom of the well and to help break up sediment plugs in the sand pack or well screen that may have entered during installation of the well materials. Well development also included use of a centrifugal pump to remove water lost to the formation during drilling activities and fine-grained materials from the sand pack and the formation.

All soil, drilling cuttings and water generated during drilling and monitoring well development were contained in DOT-approved 55-gallon drums. The drums were placed in a designated drum storage area on the site for subsequent disposal by Xerox in accordance with applicable federal and state regulations.

2.1.6 Soil and Vadose Zone Investigations

RI field activities were initiated through a soil-gas survey which was conducted in two parts: one directly preceding the on-site investigation, and one preceding the off-site investigation. The soil gas surveys were conducted by Target Environmental Services, Inc. The surveys included collection and laboratory analysis of soil gas samples. The on- and off-site soil gas surveys were conducted to optimize placement of soil borings and monitoring wells. The results of the surveys are presented in Appendix C.

The characterization of the vadose zone also included soil samples collected during the advancement of exploratory borings. Soil samples collected during drilling were initially screened through field observations and by evaluation of the presence of volatile organic solvents in the air within sample jars. This evaluation, which is referred to as a headspace analysis, was conducted using a photoionization detector (PID) or a flame ionization detector (FID) in conformance with the approach specified in the Work Plan. Field observations and the results of the headspace analysis have been recorded on boring logs included with this report. The boring logs are presented in Appendix D.

Seventy-six soil samples from 30 borings were sent to General Testing Corporation (GTC) for chemical analysis. A minimum of two soil samples for laboratory analysis were collected from each drilling location. Analytical samples were generally selected using a positive-bias criteria based on the results of field observations and soil headspace analysis (samples with higher headspace readings were selected where appropriate). Samples were also collected from just above the water table and additional samples were collected from directly under the floor slab in exploratory borings drilled inside the Xerox building (in the former Paint Booth and CRC areas). Soil samples were also collected from one exploratory boring located outside of the building immediately north of and downgradient from the former solvent storage room.

2.1.7 Groundwater Investigations

RI field activities included several rounds of groundwater sampling and analysis, groundwater elevation measurements, and hydraulic conductivity testing. Groundwater sampling and groundwater level monitoring was conducted by General Testing Corporation (GTC) of Rochester, New York. Hydraulic conductivity testing (slug testing) was conducted in all off-site monitoring wells by WCC.

All groundwater elevation data were collected with reference to the top of the stainless steel inner casing surveyed by James M. Stewart, Inc. of Philadelphia, Pennsylvania, a licensed surveyor. The riser pipe was surveyed for location with reference to a site grid system established for the project, and for elevation referenced to the National Geodetic Vertical Datum (NGVD - Mean Sea Level = 0.0 feet).

Forty-two exploratory borings were converted into monitoring wells. Seventeen of these wells were installed as overburden monitoring wells (4 on-site and 13 off-site), 21 as shallow bedrock monitoring wells (6 on-site and 15 off-site), and four as deep bedrock monitoring wells (1 on-site and 3 off-site). The monitoring wells were installed to allow for monitoring of groundwater conditions at the site, including chemistry through groundwater sampling, and flow through measurement of groundwater elevations. A summary of well construction details is presented in Table 2-1. All monitoring well locations are presented on Figure 2-3. Monitoring well locations by completion interval (i.e., overburden, shallow bedrock, and deep bedrock) are presented on Figures 2-4, 2-5, and 2-6. As-built monitoring well construction diagrams are presented in Appendix E.

Subsequent to monitoring well installation and development, quarterly groundwater level data and groundwater samples were collected by GTC. Groundwater sampling was conducted in accordance with the general guidelines established by the USEPA, as detailed in "RCRA Ground-Water Monitoring Technical Enforcement Guidance Document" dated September 1986. Samples were analyzed for site-specific contaminants including chlorinated volatile organic solvents, mineral spirits, and lead. In accordance with requirements of the NYSDEC, samples from selected monitoring wells were analyzed for Target Compound List (TCL) parameters with USEPA Contract Laboratory Program (CLP) deliverables to assess the potential for site contaminants other than the referenced parameters to impact environmental conditions at the site.

2.1.8 Human Population Surveys

Pre-RI field activities included a potable well survey conducted through a review of NYSDEC, Rockland County Department of Health (DOH), and Spring Valley Water Company (SVWC) records. Field reconnaissance of the area was conducted to verify and supplement the recorded information. The results of the well survey are presented in Appendix F.

2.1.9 Ecological Investigation

RI field activities included stream water and sediment sampling, and an aquatic biology study of the pond and unnamed tributary which flows adjacent to the site. As previously stated, stream water and/or sediment samples were collected at nine locations. The sampling locations are shown on Figure 2-7. Benthic macroinvertebrates were collected at four of the locations shown on Figure 2-7. The locations were selected to be upstream and downstream of the site to allow for an assessment of the impact of the site on the benthic community. The sampling locations were selected within stationing approved in the Work Plan based on a similarity of habitat characteristics such as flow rates and velocities, shade, and the presence of macrophytes. Three replicate samples were collected at each of the four stations using a Surber stream bottom sampler with a sampling area of 1 square foot. Replicate samples were carefully selected so that the physical parameters were kept as similar as possible among the replicates. Specific details of sample handling and the results of the study are summarized in the June 23, 1992 Draft Benthic Macroinvertebrate Data Summary Report submitted to Xerox, which is included with this RI Report in Appendix G.

3.0
PHYSICAL SITE CHARACTERISTICS

3.1 RESULTS OF FIELD ACTIVITIES

3.1.1 Surface Features and Land Use

The Xerox Blauvelt facility is located in Rockland County in southeastern New York State, near the town of Blauvelt and about two miles west of the Hudson River (Figure 1-1).

The facility is located at the upland apex of a small "V"-shaped valley that slopes from the apex at the southern end of the valley toward the north, where the valley floor becomes flatter and wider. Surface water in the valley drains into two first-order streams that combine on the valley floor and discharge into the Hackensack River. The altitude within a one-half mile radius of the site varies from about 75 to 250 feet above mean sea level. A topographic survey of the site is presented on Figure 2-1. Man-made features including buildings, roadways, and paved parking areas dominate the land use within a one-half mile radius of the site. The remainder of the area consists of fragments of natural habitats interspersed between the man-made features.

The northern portion and periphery of the Xerox facility is paved or covered with vegetation (either grass or woods). The remainder of the property is occupied by the facility building. Land immediately north of the site is occupied by the Bradley Industrial Park, which contains numerous small to large industrial/commercial buildings and an operating restaurant on Bradley Hill Road, across from the site, and a privately owned swim club which is generally undeveloped, except for a swimming pool, clubhouse and tennis court. East of the site are commercial facilities and residences. The area to the west of the site is undeveloped and is owned by and used as a storage area for the Bradley Corporate Park. There are no residential areas immediately adjacent to the site.

A small creek which flows to the north is directly adjacent to the western site boundary. The creek is a small stream which, although mapped as an intermittent water body, has had continuous flow throughout WCC investigations at the site (since 1986). This stream does not have a sustained fish population. A small landscaped pond (about 25 by 30 feet) exists north of the main building of the Bradley Industrial Park, and is connected to the creek.

3.1.2 Meteorology

Rockland County is humid and temperate, and has a continental climate that is influenced very little by the Atlantic Ocean. Temperatures in summer rarely exceed 100°F, but temperatures in the middle or upper 90s occur frequently. Temperatures in winter are generally not below 10°F for long periods. Sometimes temperatures are not low enough to keep the ground frozen throughout the winter. The average annual precipitation ranges from about 47 to 54 inches, and monthly averages indicate that precipitation is well distributed throughout the year.

As part of the "Ambient Air Toxic Monitoring Program" (WCC, 1992 - Appendix B), baseline meteorological conditions (wind speed, wind direction, air temperature, relative humidity, and sky conditions) were recorded to document weather conditions at the site. The ambient air monitoring was conducted over an 8-hour period, between 10 a.m. and 6 p.m. on May 28, 1992.

Throughout the monitoring period winds were generally light and variable, ranging in speeds of three to seven miles per hour, with calm periods. The wind direction was predominantly from the north to northwest, but switched to a south to east direction during the last three hours of the monitoring program. The air temperature was fairly constant, ranging from 61° to 66°F, while the relative humidity dropped off sharply from 61 to 63 percent in the morning to 42 to 46 percent in the afternoon. The sky cover was approximately 10 percent in the morning, increasing to almost 100 percent, with a light shower in the late afternoon.

3.1.3 Surface Water Hydrology

Two small freshwater streams drain the area within a one-half mile radius of the site. The larger of the two streams drains an area northeast of the site. The smaller stream is an unnamed first-order stream that flows past the west side of the site and north through the one-half mile area. The hydrologic conditions of this stream are discussed below.

The drainage basin area upstream from the site is small and the stream is identified on the USGS topographic map as having intermittent flow. During the course of WCC's six-year involvement at the site, this stream has had continuous flow. It is, therefore, WCC's opinion that the mapping of this stream as intermittent may be erroneous. The stream in the vicinity of the site contains no major springs that sustain flow during dry periods, but infrequent local smaller groundwater seeps likely contribute in some degree to base flow in the stream. For most of its length within the study area, the stream is a "losing stream." WCC has reviewed groundwater elevations in the overburden and shallow bedrock aquifers in the vicinity of the stream. Along most areas of the stream in the vicinity of the site, the elevation of the stream is above the elevation of the groundwater. This will result in water seeping out of the stream bed and banks, and infiltrating the overburden, eventually entering the overburden and bedrock aquifers.

Although some of the basin area has deciduous forest covertype, most of the basin is composed of man-made features that induce rapid runoff of storm waters. Field observations confirm that storms induce extremely abrupt changes in water flow rates in the stream, and it is subject to "flash flooding" during major rain events.

The stream channel is roughly "V"-shaped and incised into the surrounding land surface in most areas. The top of the stream channel, where it passes through the site area, varies in width from about 5 to 10 feet, while the channel bottom varies from about 2 to 4 feet. The channel depth ranges from about 3 to 6 feet, while the water depth during low flow is only a few inches. The stream flows downslope through the area from an elevation of about 110 feet above mean sea level (MSL) to about 70 feet above MSL in a distance of about 0.6 mile. The average stream gradient is about 1 foot/80 feet. The combination of the narrow and incised channel and this steep gradient act to produce rapid flow of water through the channel, particularly during runoff of major storm events.

The rapid flow of storm runoff has eroded the stream channel, and the stream bottom consists of gravel, cobbles, boulders, and some exposed bedrock in the numerous riffle areas. Some occasional pools are present and the bottom consists mainly of coarse sands, gravel, and cobbles. Little fine-grained sediments are present in the pools or elsewhere in the stream, indicative of strong erosional forces present in the stream.

3.1.4 Geology

Underlying the site are Triassic-aged sedimentary rocks consisting of interbedded red and gray sandstone, shale, and conglomerate of the Brunswick Formation of the Newark Supergroup. Bedrock is moderately to deeply weathered in areas, and generally dips west and northwest at low angles, usually less than 10 degrees. High angle fractures and joints that cut across the bedding planes are also present. Rock core logs are presented in Appendix H.

Unconsolidated deposits of Pleistocene and Recent age material form an irregular cover over the bedrock. During stages of glacial advance the ice sheets eroded the surface of the bedrock, and during melting stages the glaciers deposited an unsorted mixture of clay, sand, gravel, and boulders (till) on the bedrock surface. Glacial lakes and streams reworked the till and deposited stratified drift and outwash in the valleys. Thicknesses of the unconsolidated overburden materials in the study area range from approximately 12 to 27 feet. Soil boring logs are presented in Appendix D.

Stratigraphic traverses and the associated cross-sections extending north-south and east-west across the site are presented on Figures 3-1, 3-2.1, 3-2.2, and 3-2.3.

3.1.5 Hydrogeology

The bedrock of the Brunswick Formation is generally well cemented and the primary permeability and porosity of the rock is low, with groundwater flow occurring almost exclusively in the more permeable openings along bedding planes, joints, and irregular fractures. The overlying till has a low porosity and permeability due to the poor sorting of its constituent particles and the large percentage of fine-grained material present. As such, the till acts to retard the downward percolation of water to the underlying bedrock and can cause a localized semi-confined condition to exist in the shallow bedrock. Water in the stratified drift overlying the till occurs under water table conditions.

Water level monitoring and in-situ permeability testing (slug testing) were conducted to determine basic aquifer characteristics. Groundwater level data from overburden, shallow bedrock, and deep bedrock monitoring wells is presented as contour maps on Figures 3-3 through 3-5. The results of slug testing are presented in Table 3-1.

Groundwater in the overburden, shallow bedrock, and deep bedrock zones all flow generally in a northwest direction under moderate to low flow gradients. Groundwater flow directions appear to be under topographic control, locally impacted by the surface water system rather than gravity flow along bedding planes and fractures. These flow directions have been confirmed by the measurement of groundwater elevations in monitoring wells installed in the vicinity of the site. WCC has not encountered any evidence (water levels or inspection of rock core samples) to suggest that groundwater flow at the site is preferentially following fracture zones or the bedrock structure (migrating down the dip of the bedrock unit to the west). Therefore, based on the data available, it is the professional opinion of WCC that groundwater flow at the site in the three flow zones investigated is to the north/northwest.

Overburden and shallow bedrock flow gradients are similar at approximately 0.026 foot/foot. Deep bedrock groundwater flows under a lower gradient of approximately 0.012 foot/foot.

The permeability and transmissivity of the overburden, shallow bedrock, and deep bedrock aquifers were evaluated by conducting single borehole slug tests. Overburden permeabilities ranged from 7.90×10^{-2} ft/min to 2.35×10^{-3} ft/min. Shallow bedrock permeabilities ranged from 4.80×10^{-2} ft/min to 1.63×10^{-3} ft/min. Deep bedrock permeabilities ranged from 9.03×10^{-3} ft/min to 4.92×10^{-3} ft/min.

3.1.6 Ecology

Man-made features dominate the land use within a one-half mile radius of the site. The remainder of this area consists of small sections of natural habitats interspersed between man-made features. The natural habitat within the one-half mile radius includes forest, brushland, a small stream, and a pond.

On the upland slopes, some deciduous forest community is present and early succession stages of herb and shrub communities persist in areas where trees have been removed. The forested areas in the vicinity of the site are interspersed with large buildings and manicured grass. This vegetation does not provide any significant uninterrupted vegetated corridors for animal movement through the area. The forest in this area may provide resting areas for a few transient individuals from time to time, but due to the nature of its size, it lacks the resources to support any more than a few individuals at one time. The species that may possibly use the forested area within one-half mile of the site would normally use the canopy layer for forage and nesting sites (e.g. squirrels, birds, etc.). The human population utilizes the area for aesthetic pleasure and recreation.

Surface water runoff from these upland areas collects in both man-made ditches and a small natural stream that flows from north to south along the western edge of the site. A small landscaped pond (less than 50 feet in diameter) is located behind the main office of the Bradley Corporate Park. The pond discharges to the small stream that traverses the site. The stream becomes dendritic north of the site and flows into a small wetland located 0.6 mile north of the site.

The fish and wildlife resources in the small stream are limited by the physical characteristics of the streambed, and periods of low or intermittent flow during the dry season, and scouring of the streambed from runoff during periods of significant rainfall (flash flooding). The periodic extreme conditions restrict the development of aquatic biota in the stream to organisms specifically adapted for survival in this type of environment. Field reconnaissance of the stream and pond revealed no submerged natural aquatic vegetation or fish during the survey, although WCC was informed that attempts have been made to stock the pond. However, benthic-dwelling macroinvertebrates (algae, worms, crayfish, clams and snails) were abundant and appeared to dominate the biota of the stream.

4.0
NATURE AND EXTENT OF CONTAMINATION

4.1 CONTAMINATION SOURCES

The Remedial Investigation data were evaluated to determine the extent of site-related chemical constituents in the on- and off-site soils, groundwater, surface water, and stream sediments. As previously detailed the introduction of volatile organic chlorinated solvents relates to the known contaminant source (overflow from underground storage tanks and copier refurbishing activities) on the Xerox Blauvelt Site. Prior to the performance of this remedial investigation, previous studies (Recra Research, 1980 and 1984; Dames and Moore, 1985; WCC, 1986 to 1989) performed at the Xerox Blauvelt Site indicated the presence of organic solvents in the soil and groundwater.

The primary source of soil and groundwater contamination identified at the site resulted from two recorded releases of chlorinated solvents from underground solvent storage tanks. Subsurface contamination has also previously been identified in the Centralized Refurbishing Center (CRC) area. Table 4-1 summarizes the constituents included in the solvent blends used at the facility.

Two additional areas were initially identified as potential sources for contamination at the site based on their use including the former paint booths, where solvent-based paints were used, and the former solvent storage room located at the northeast corner of the building.

The original contaminant sources at the site are no longer present. The use of chlorinated organic solvents at the site has been eliminated. The site is no longer used for refurbishing of copiers. At the current time, operations at the Xerox facility are limited to warehousing and distribution. The former underground storage tanks and associated piping have also been removed from the site.

However, secondary contaminant sources exist at the site in the presence of a layer of Light Non-Aqueous Phase Liquids (LNAPL) consisting of mineral spirits and chlorinated organic solvents. The LNAPL will remain a potential contaminant source while it is present in significant quantity. Xerox has been conducting an interim remediation program since 1991 by use of the on-site vapor extraction system targeting extraction from the upper portion of the water table. In addition, LNAPL has been, and continues to be, removed by the pumping from the on-site recovery well system. The extent of the secondary source is limited to the areas on-site where LNAPL is present. No LNAPL has been observed or is suspected to exist off-site. Therefore, no off-site source of contamination exists.

4.2 SOILS AND VADOSE ZONE

Distribution of contaminant concentrations in the soils and vadose zone were first evaluated using both on- and off-site soil-gas surveys. The on-site soil-gas survey was conducted inside the building within the former paint spray booths and CRC areas, and extended outside the building to provide coverage of the northern portion of the site. The on-site survey was utilized to optimize soil boring placement and to better characterize the extent of contamination in the soils and vadose zone.

The soil-gas surveys were also conducted to attempt to differentiate between areas of non-aqueous phase liquid (NAPL) contamination and the dissolved phase groundwater contamination (based on the levels of contaminants detected in the soil-gas). The off-site survey data were also used to finalize off-site monitoring well placement based on characterizing the extent of contamination detected.

Upon completion of the soil-gas surveys, soil samples were collected during both the soil boring and monitoring well installation programs. Soil samples were submitted for laboratory analysis of priority pollutant list volatile organic compounds, xylenes, and mineral spirits. Sample selection was based on criteria established in the work plan for vertical intervals in relation to the groundwater, and upon field screening of replicate samples (headspace analyses). (The headspace analyses also aided in assessing patterns of contamination in the vadose zone and soils.) In addition, one soil sample was analyzed in the laboratory for lead from each borehole advanced within the vicinity of the former paint booths and former solvent storage room.

The RI groundwater quality data were evaluated for both on- and off-site monitoring wells to establish the lateral and vertical extent of contamination. Groundwater samples were collected from all new and existing wells and were laboratory analyzed for Priority Pollutant List (PPL) volatile organic compounds, xylenes, and mineral spirits.

Surface water and stream sediment samples were collected from off-site locations, and were evaluated to establish the potential of groundwater and surface water interactions and the potential of surface water as a contaminant migration mechanism. Each surface water and stream sediment sample was laboratory analyzed for priority pollutant list volatile organic compounds, xylenes, and mineral spirits.

4.2.1 On-site Soils

As part of the on-site soils RI data acquisition, soil contamination conditions were initially evaluated using the soil-gas survey. The on-site soil-gas survey was conducted on June 25-27, 1990 by Target Environmental Services, Inc. of Columbia, Maryland. Analysis of the samples by GC/FID for petroleum hydrocarbons (such as mineral spirits) and GC/ECD for chlorinated hydrocarbons indicated that mineral spirits and chlorinated solvents were present in the former underground storage tank (UST) and CRC areas. The most prominent chlorinated hydrocarbons detected within the UST area were tetrachloroethene and cis-1,2-dichloroethene. The most prominent chlorinated hydrocarbons detected in the CRC area were tetrachloroethene, trichloroethene, and 1,1,1-trichloroethane. Low levels of tetrachloroethene and 1,1,1-trichloroethane were detected in the former paint spray booth area. No contamination was indicated in the area of the former solvent storage room.

The on-site soil-gas survey report conducted by Target Environmental Services is provided in Appendix C.

A total of 17 exploratory borings were drilled as part of the on-site RI. Sixteen of the 17 borings drilled on-site had soil samples which were submitted for laboratory analysis. Eleven borings were subsequently completed as monitoring wells (Figure 2-2).

Six borings, designated RI-1 through RI-6, were installed as part of the CRC area soils investigation. The borings were subsequently converted into monitoring wells upon completion. Borings RI-1 through RI-5 are located within the building and boring RI-6 is located outside of the building. Specifically, boring RI-1 is located immediately south of, and upgradient from the CRC area; borings RI-2 and RI-3 are located east and west, respectively, adjacent to the CRC area; borings RI-4 and RI-5 are located within the CRC area; and boring RI-6 is located immediately north of, and downgradient from the CRC area. A summary of soil quality analyses is presented in Table 4-2.

Volatile organic concentrations of trichloroethene and tetrachloroethene were detected in soil samples collected from boring RI-1 at 5.98 and 28.3 ppb, respectively, from 0 to 2 feet below grade.

In soil samples collected from borings RI-2 and RI-3, minor concentrations of tetrachloroethene were detected ranging from 7.64 to 55.0 ppb to a depth of 16 feet below grade. Trichloroethene was also detected at a concentration of 25.0 ppb in RI-2 from soil samples collected 0 to 2 feet below grade. Methylene chloride was detected in RI-3 at a maximum concentration of 10.7 ppb from 8 to 10 feet below grade. Mineral spirits were not detected in borings RI-1, RI-2, and RI-3. Soil samples collected from borings RI-4 and RI-5 contained volatile organic concentrations of methylene chloride ranging from 6.32 to 276,000 ppb, trichloroethene ranging from 9.14 to 156,000 ppb, and tetrachloroethene ranging from 6.95 to 8,950,000 ppb. Additionally, 1,1,1-trichloroethane was detected in boring RI-5 at a concentration of 1,520,000 ppb in the soil sample collected from 0 to 2 feet below grade. Maximum concentrations of volatile contaminants were detected in soil samples collected from 0 to 2-foot intervals for borings RI-4 and RI-5, and were greater in concentration for samples collected from RI-5. Methylene chloride was detected within the laboratory blank and may be considered an analytical anomaly. Mineral spirits were detected at concentrations ranging from 509 to 71,700,000 ppb within soil samples collected from boring RI-5 to a maximum depth of 16 feet below grade.

Volatile organics consisting of methylene chloride, 1,1-dichloroethene, 1,1-dichloroethane, 1,2-dichloroethene (cis+trans), 1,1,1-trichloroethane, trichloroethene, and tetrachloroethene were detected at maximum concentrations of 21.8, 12.3, 44.2, 17.3, 187, 552, and 1020 ppb, respectively, for soil samples collected from 12 to 14 feet below grade within boring RI-6. Mineral spirits were not detected from soil samples collected from RI-6.

One boring, designated RIB-1, was drilled within the former paint spray booths within the building. Maximum volatile organic concentrations of methylene chloride and trichloroethene were detected at 24.6 and 7.18 ppb, respectively, within the soil samples collected to a depth of 10 feet below grade. Lead was also detected at a concentration of 9.68 ppm in the soil sample collected from a 14- to 16-foot depth interval. Mineral spirits were not detected in any soil sample collected from boring RIB-1.

One boring, designated RIB-2, was drilled outside the building and is located northeast from the former solvent storage room. No volatile organic constituents or mineral spirits were detected in the soil samples collected. Lead concentrations ranging from 7.68 to 4,520 ppm were detected in the soil samples collected, with the concentrations decreasing at depth.

A total of six borings were drilled in the area of the former USTs and the LNAPL contaminant plume. Three borings, designated RIB-3, RIB-4, and RIB-6, were drilled adjacent to the former UST field and within the NAPL plume. Three borings, designated RI-8, RI-9, and RI-10, were completed as monitoring wells. Borings RI-8 and RI-9 are located east and west, respectively, of the former USTs and outside of the LNAPL plume.

Boring RI-10 is located northwest of, and immediately downgradient from the former UST field and within the LNAPL plume. Within soil samples collected in the saturated zone from the four borings (RIB-3, RIB-4, RIB-6, and RI-10) located within the LNAPL plume, volatile organic constituents of methylene chloride ranging from 8.5 to 179,000 ppb; 1,1,1-trichloroethane ranging from 5.06 to 919,000 ppb; trichloroethene ranging from 247 to 110,000 ppb; and tetrachloroethene ranging from 38.8 to 9,590,000 ppb, were found to be common in all borings. Additionally, 1,2-dichloroethene (cis+trans) was detected in soil samples collected from borings RIB-3, RIB-4, and RI-10, and xylenes were detected in soils from borings RIB-4 and RI-10. Minor concentrations of vinyl chloride, chloroethane, 1,1-dichlorethane, 1,2-dichloroethane, toluene, and ethyl benzene were detected in soil samples collected from boring RIB-4. Mineral spirits were detected at concentrations ranging from 3,400 to 11,000,000 ppb in all four borings.

Soil samples collected from borings RI-8 and RI-9, located away from the LNAPL plume, contained no detectable concentrations of volatile organic compounds or mineral spirits.

One additional on-site boring was advanced as part of the Phase 2 off-site program. This boring was converted into a monitoring well, designated RI-11, and is located immediately east of boring RI-8. RI-11 also contained no detectable concentrations of volatile organic compounds or mineral spirits in soil samples collected.

4.2.2 Off-Site Soils

As part of the off-site soils RI data acquisition portion of the RI, a soil-gas survey was conducted at property north of Bradley Hill Road and along the railroad tracks immediately west of the site. The off-site soil-gas survey was conducted on June 3 and 4, and July 8, 1991 by Target Environmental Services, Inc. of Columbia, Maryland. Analysis of the samples by GC/FID for petroleum hydrocarbons, and GC/ECD for chlorinated hydrocarbons, indicated that low levels of weathered petroleum hydrocarbons and tetrachloroethene were detected adjacent to Bradley Hill Road. Very low levels of tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene were detected in the northern portion of the survey area. The off-site soil-gas survey report conducted by Target Environmental Services is provided in Appendix C.

A total of 16 borings, designated MW-OS-1R, MW-OS-2R, MW-OS-3, and MW-OS-4R through MW-OS-16R, were drilled to the north of Bradley Hill Road as part of the off-site RI activities (Figure 2-3). Minor concentrations of volatile organic chlorinated solvents were detected in soil samples collected from off-site borings MW-OS-2R, located along Bradley Hill Road and immediately northwest of the on-site NAPL contaminant plume, MW-OS-6R and MW-OS-9R. Methylene chloride was detected in borings MW-OS-6R and MW-OS-9R at concentrations ranging from 5.53 to 12.4 ppb. Additional volatile organic constituents consisting of cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene were detected at maximum concentrations of 10.7, 6.66, and 28.3 ppb, respectively, in soil samples collected from MW-OS-2R. With the exception of the borings noted above, soil contamination was not detected off-site.

4.3 GROUNDWATER

4.3.1 On-site Groundwater

A total of 11 groundwater monitoring wells were installed by WCC as part of the on-site RI. Previous on-site groundwater investigations (Recra Research, 1980 and 1984; Dames and Moore, 1985; WCC, 1986) involved the installation of 17 groundwater monitoring wells (Figure 2-3). The groundwater quality data evaluated for purposes of the on-site RI incorporates all groundwater monitoring wells included in the quarterly sampling program. A summary of groundwater quality data is presented as Table 4-3.

Overburden groundwater monitoring wells installed by WCC as part of the on-site groundwater RI are designated RI-1, RI-5, RI-6, and RI-9. Previously installed overburden monitoring wells are designated W-1 through W-5, U-6, W-7, W-8, PW-2, and MW-10 through MW-17.

Monitoring well U-6 was utilized for background overburden groundwater quality data. Low concentrations of chlorinated volatile organic solvents, including trichloroethene, tetrachloroethene, and chloroform, have been detected in previous sampling events. It is WCC's professional opinion that these detections are representative of background environmental conditions and not representative of impacts from site activities.

Overburden groundwater monitoring wells W-1, W-2, W-4, W-7, PW-2, MW-10 through MW-13, MW-15, and MW-16 are located within the area of elevated levels of volatile organic contamination associated with the former USTs. Volatile organic concentrations of 1,2-dichloroethene (cis+trans) and tetrachloroethene ranging from 2,900 to 327,000 ppb have consistently been detected in the groundwater samples collected from these wells. Concentrations generally ranging from 130 to 53,000 ppb of 1,1,1-trichloroethane and trichloroethene have also been consistently detected in the sampled groundwater. Additional volatile organic contaminants historically detected within the groundwater samples from the aforementioned wells are 1,1-dichloroethane and 1,1-dichloroethene at concentrations generally ranging from 66 to 5,400 ppb. Although levels of total volatile organic concentrations within the wells have varied slightly in previous sampling events conducted, specific volatile organic constituent concentrations have remained relatively consistent. Minor concentrations of methylene chloride, toluene, vinyl chloride, and lead have been detected intermittently in monitoring wells W-1 through W-4, U-6, W-7, W-8, MW-10, MW-13, MW-16, MW-17, PW-2, and RI-5. Non-aqueous phase liquid has previously been observed in monitoring wells MW-10, MW-12, and MW-13.

A total of 11 shallow bedrock groundwater monitoring wells exist on-site at the facility (Figure 2-3). Six of the shallow bedrock monitoring wells were installed during previous investigations and are designated U-6D, W-7D, W-9D, OW-1, OW-2, and PW-1. Five shallow bedrock monitoring wells, designated RI-2 through RI-4, RI-7, and RI-8, were installed by WCC as part of the on-site groundwater RI. Monitoring well U-6D was utilized for background water quality data purposes. Low concentrations of chlorinated volatile organic solvents have been detected in this well during previous sampling events. It is WCC's professional opinion that these detectable concentrations represent background environmental conditions, and are not related to activities at the Xerox site.

Shallow bedrock groundwater monitoring wells W-7D, W-9D, OW-2, and PW-1 are located within the area of elevated levels of contamination by volatile organic compounds, associated with the former UST locations. Concentrations of 1,2-dichloroethene (cis+Trans) from 88 to 15,000 ppb have commonly been detected in all of the wells. Concentrations of tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene ranging from 29 to 6,400 ppb have also consistently been detected in groundwater samples collected from these wells. Additionally, concentrations of 1,1-dichloroethane and 1,1-dichloroethene have historically been detected at concentrations generally ranging from 5 to 387 ppb at this location. Since 1991, concentrations of 1,2-dichloroethene (cis+Trans) have steadily increased in groundwater samples collected from monitoring wells W-7D and OW-2. In sampling events conducted in December 1990 and February 1991, low concentrations of Bromoform and Dibromochloromethane were detected in groundwater samples from well W-7D, and 1,1,2-trichloroethane was detected in well OW-2, respectively.

Shallow bedrock groundwater monitoring wells associated with the former CRC and paint spray booth areas are RI-2, RI-3, RI-4, and RI-7. Wells RI-2 and RI-3 are located immediately east and west, respectively, of the former CRC area and within the building. Well RI-4 is located within the former CRC area, and well RI-7 is located outside the building and northwest of the former CRC area. Tetrachloroethene was the only volatile organic contaminant detected in groundwater samples collected from the four wells. Volatile organic concentrations generally ranging from 2 to 6,600 ppb of tetrachloroethene, 1,1,1-trichloroethane, trichloroethene, 1,1,-dichloroethane, and 1,2-dichloroethene (cis+Trans) have consistently been detected in groundwater samples from wells RI-2 and RI-4, and intermittently been detected at concentrations of 1 to 13 ppb within well RI-3. 1,1-dichloroethane and 1,2-dichloroethene (cis+Trans) have not been detected in well RI-7. The highest total concentrations of volatile organic compounds have been historically found in well RI-4.

One deep bedrock groundwater monitoring well designated RI-10 was installed on-site by WCC as part of the on-site groundwater RI. Tetrachloroethene was the only volatile organic contaminant which has been detected in all sampling events since the installation of this well. Its concentration has not exceeded 25 ppb. Additional volatile organic contaminants which have been detected intermittently in groundwater samples collected from RI-10 are 1,1,1-trichloroethane, chloroform, and 1,2-dichloroethene (cis+Trans). Concentrations of these parameters have not exceeded 5 ppb.

As of November 1991, lead has been detected above 15 ppb in groundwater samples collected from on-site shallow bedrock wells U-6D, W-7D, W-9D, OW-1, OW-2, and RI-7.

4.3.2 Off-site Groundwater

A total of 13 overburden groundwater monitoring wells were installed by WCC as part of the off-site groundwater RI. The wells, designated MW-OS-1 through MW-OS-7, MW-OS-9 through MW-OS-12, MW-OS-14, and MW-OS-15 are located to the north of Bradley Hill Road and to the west of the railroad tracks, which are immediately adjacent to the site to the west (Figure 2-3).

Volatile organic compounds tetrachloroethene, trichloroethene, 1,1,1-trichloroethane, and 1,2-dichloroethene (cis+Trans) have been detected at concentrations ranging from 470 to 5,880 ppb in groundwater samples collected from well MW-OS-2, which is located northwest of, and downgradient from the area of impacted groundwater in the vicinity of the contaminant source area. Additionally, these volatile organic constituents have been detected at concentrations from 1 to 760 ppb within off-site overburden monitoring wells MW-OS-3, MW-OS-5 through MW-OS-7, MW-OS-9, MW-OS-11, and MW-OS-15. Volatile organic concentrations of 1,1-dichloroethane and 1,1-dichloroethene have been intermittently detected at concentrations generally ranging from 2 to 98 ppb in groundwater samples from wells MW-OS-2, MW-OS-3, MW-OS-5, and MW-OS-6. Volatile organic compounds were not detected in wells MW-OS-1 or MW-OS-10 located along the railroad tracks. Lead has been detected at concentrations above 15 ppb within groundwater samples from off-site overburden wells MW-OS-1, MW-OS-2, MW-OS-5 through MW-OS-7, MW-OS-10, and MW-OS-11.

As part of the off-site groundwater RI, 15 shallow bedrock groundwater monitoring wells were installed by WCC (Figure 2-5). The wells are designated MW-OS-1R, MW-OS-2R, and MW-OS-4R through MW-OS-16R. Concentrations of volatile organic compounds ranging from 37 to 1,220 ppb, which include detections of tetrachloroethene, trichloroethene, 1,1,1-trichloroethane, and 1,2-dichloroethene (cis+Trans), have consistently been encountered in groundwater samples collected from monitoring wells MW-OS-2R, MW-OS-5R through MW-OS-7R, and MW-OS-11R. These volatile organic constituents have also been intermittently detected at concentrations generally from 1 to 26 ppb in monitoring wells MW-OS-1R, MW-OS-8R, MW-OS-12R, and MW-OS-15R. Additional volatile organics consisting of 1,1-dichloroethene and 1,1-dichloroethane have been detected at concentrations ranging from 3 to 139 ppb in groundwater samples from wells MW-OS-2R, MW-OS-6R, and MW-OS-11R, and from 1 to 12 ppb in wells MW-OS-5R and MW-OS-7R. Within off-site monitoring wells MW-OS-1R, MW-OS-4R, MW-OS-9R, MW-OS-10R, and MW-OS-16R, the aforementioned volatile constituents have been detected, however, not individually above 10 ppb, and not totaling more than 15 ppb. Low levels of chloroform have also been intermittently detected in wells MW-OS-8R, MW-OS-9R, MW-OS-13R, MW-OS-15R, and MW-OS-16R.

Lead has only been detected above 15 ppb in groundwater samples from off-site shallow bedrock well MW-OS-12R.

The deep bedrock groundwater monitoring wells designated MW-OS-5D, MW-OS-7D, and MW-OS-11D were installed by WCC as part of the off-site groundwater RI. The completion interval on these wells has been designed to investigate groundwater quality in the flow zone below the shallow bedrock interval and to investigate hydraulic relationships between the upper flow regime and deeper groundwater flow zones.

Volatile organic compounds, at concentrations ranging from 25 to 185 ppb of tetrachloroethene, 1,2-dichloroethene (cis+Trans), 1,1,1-trichloroethane, and trichloroethene, have been detected in groundwater samples collected from wells MW-OS-5D and MW-OS-11D, with highest concentrations found in MW-OS-11D. Additional volatile organic contaminants of 1,1-dichloroethene and 1,1-dichloroethane ranging from 2 to 19 ppb have been detected in both wells. Tetrachloroethene was the only volatile organic found in well MW-OS-7D and did not exceed 10 ppb. Lead was not detected in any of the groundwater samples collected from the off-site deep bedrock monitoring wells.

4.3.3 Overall Groundwater Conditions

Overburden Groundwater: The most prolific volatile organic contaminants detected in both the on-site and off-site overburden groundwater monitoring wells are: 1,2-dichloroethene (cis+Trans), tetrachloroethene, trichloroethene, and 1,1,1-trichloroethane. Although on-site overburden monitoring wells typically contain higher concentrations of 1,2-dichloroethene than tetrachloroethene, off-site wells typically contain higher concentrations of tetrachloroethene than 1,2-dichloroethene. These two volatile constituents are also commonly detected together within the off-site wells; however, they may or may not occur together within the on-site overburden monitoring wells. Volatile organic concentrations of trichloroethene and 1,1,1-trichloroethane are similar in off-site overburden wells in which they are detected. Additional volatile organic contaminants commonly detected together in the on- and off-site overburden wells are 1,1-dichloroethene and 1,1-dichloroethane. When only one of these constituents is detected, it is typically 1,1-dichloroethene. Volatile organic constituents detected in the off-site overburden groundwater monitoring wells are commonly a factor of 10 times less than their on-site counterparts. The volatile organic contaminant plume trends north-northwesterly, with the highest off-site volatile organic concentrations found in wells MW-OS-2, MW-OS-3, and MW-OS-5.

Shallow Bedrock Groundwater: The most prolific volatile organic contaminants detected in both the on- and off-site shallow bedrock groundwater monitoring wells listed in decreasing order of occurrence and magnitude of concentration are: tetrachloroethene, trichloroethene, 1,1,1-trichloroethane, and 1,1-dichloroethene (cis+Trans). Volatile organic concentrations of trichloroethene and 1,1,1-trichloroethane are similar in off-site shallow bedrock wells in which they are detected. Additional volatile organic contaminants intermittently detected in the on- and off-site shallow bedrock wells are 1,1-dichloroethene and 1,1-dichloroethane. When only one of these constituents is detected, it is typically 1,1-dichloroethene. Volatile organic constituents detected in the off-site shallow bedrock groundwater monitoring wells are commonly a factor of 10 times less than their on-site counterparts. The volatile organic contaminant plume generally trends in a northward direction, with the highest off-site total volatile organic concentrations found in wells MW-OS-5R, MW-OS-6R, and MW-OS-11R. However, the number of volatile constituents is highest in well MW-OS-2R.

Lead concentrations found in the shallow bedrock wells are higher than concentrations detected in the overburden wells.

Deep Bedrock Groundwater: Of the three off-site and one on-site deep bedrock groundwater monitoring wells, off-site wells MW-OS-5D and MW-OS-11D contain the most commonly detected volatile organic contaminants of tetrachloroethene, trichloroethene, 1,1,1-trichloroethane, 1,2-dichloroethene (cis+Trans), 1,1-dichloroethene, and 1,1-dichloroethane. The highest concentrations were found in groundwater samples collected from off-site deep bedrock well MW-OS-11D. Tetrachoroethene was the only contaminant detected in the four wells. The volatile organic contaminant plume appears concentrated highest off-site, generally trending in a north-northeasterly direction.

Lead was not detected in any of the deep bedrock groundwater monitoring wells.

4.3.4 Surface Water and Sediments

The results of surface water analysis showed the presence of five volatile organic compounds (VOCs) in water samples from six downgradient sampling stations (Figure 2-7). The concentrations of the VOCs were generally low at all stations, and their distribution showed a trend of declining concentrations with distance downgradient from the site. The detected VOCs were: 1,1-dichloroethane, 1,2-dichloroethene (cis+Trans), tetrachlorothene, 1,1,1-trichloroethane, and trichloroethene. No mineral spirits were detected at any stations. The concentrations of total VOCs measured nearest the site in the pond and the outlet ranged from about 50 to 100 ppb, while levels at locations further downstream ranged from about 2 to 30 ppb. The upstream background sampling location (Station 9) showed no detectable VOCs or mineral spirits.

Station 8, located only slightly downgradient from the site and at the western perimeter of any potential downgradient contaminant transport, had no detectable levels of VOCs or mineral spirits.

Sediment samples were collected at the same stations utilized for surface water collections. The results of the sediment sample analysis revealed the presence of the same five VOCs as detected in the surface water samples. In addition to these VOCs, methylene chloride was also detected. Mineral spirits were not detected in any sediment samples. The concentrations of VOCs in the sediment samples were generally low, with no contaminant level greater than 50 ppb. Total VOCs among all downgradient stations ranged from a low of 9.78 ppb to a maximum of 88.13 ppb. No detectable VOCs were identified in the sediment sample from the upstream background station.

4.3.5 Air

The air quality concentrations for each of the analytes tested are presented in Table 4-4 along with the New York State 1991 proposed annual and short-term (1 hour) guideline concentrations (AGC/SGC). The air quality concentrations were well below the SGCs for each analyte at all locations. The air quality concentrations were well below the AGCs for the majority of analytes, with the exception of benzene and trichloroethene. The AGC for benzene was exceeded at all of the monitoring stations, but the AGC for trichloroethene was exceeded at only one of the monitoring stations. The AGCs are annual guidance levels and are extremely low for benzene and trichloroethene. The measured concentrations for all of the analytes tested are less than 1 ppb, which falls in the range of background levels found in most ambient environments. It should be noted that emissions from on-site vehicles likely contributed to some of the compounds detected during the monitoring program.

5.0 CONTAMINANT FATE AND TRANSPORT

5.1 POTENTIAL ROUTES OF MIGRATION

Contaminants introduced into the subsurface soils at the Blauvelt Facility have migrated through various media to areas on-site which are outside of the source areas (locations of former tanks or site operations). In addition, contaminants have migrated through similar media to off-site locations. All of these media have been investigated during the on- and off-site RI. The extent of contamination and potential to impact human health and/or the environment have been adequately assessed in these media during the RI.

The primary media for contaminant migration at the site is groundwater flow in the shallow weathered and fractured bedrock, and the overburden. The lateral extent of migration in these flow zones is shown on Figures 3-3 and 3-4. The extent of contamination in the deeper bedrock, as shown on Figure 3-5, is less extensive than in the other flow zones.

In addition to the groundwater, contaminants are migrating from the site in the north south trending stream which is adjacent to the site and runs through the industrial park to the north of Bradley Hill Road. Contaminants are migrating within this stream both dissolved in the surface water and adsorbed onto sediment particles.

The Remedial Investigation also examined the migration of contaminants from the site in the air. Contaminants are entering the atmosphere at low rates, with resulting low concentrations, from subsurface volatilization of the contaminants from soil particles and from the groundwater surface.

Contaminants are also entering the atmosphere at low concentrations, associated with the on-going remedial activities at the site, including the existing air stripper and 2-PHASE extraction system discharge. It is likely that the volume of contaminants entering the atmosphere will increase during the course of remedial activities when additional water and soil vapor is removed from the subsurface and treated. Atmospheric discharges will be within currently established SPDES limits.

5.2 CONTAMINANT PERSISTENCE

The contaminants of concern at the site are chlorinated volatile organic solvents and mineral spirits. Generally, the persistence of contaminants in the environment is controlled by a number of factors, including:

- Volatilization
- Adsorption
- Degradation
- Dispersion/dilution
- Biodegradation

In turn, these factors are partially controlled by factors unique to the geologic environment including:

- Porosity of subsurface materials
- Permeability of subsurface materials
- Water content/degree of saturation
- Fractional/Total Organic Carbon content of unconsolidated soils

During site operations the solvent blends used by Xerox contained mineral spirits to reduce volatilization and loss during the spray cleaning process. In the subsurface, the mineral spirits are continuing to reduce the volatilization of the solvents adsorbed onto soil particles and dissolved in the groundwater.

The effects of degradation and biodegradation are observable in the analytical results for groundwater samples collected from the monitoring wells installed on- and off-site. The presence of typical daughter products such as dichlorethane/dichloroethene and vinyl chloride has been observed in many of the samples collected. The long-term effect of biodegradation will be to reduce the concentrations of mineral spirits in the subsurface materials which will facilitate volatilization of the chlorinated solvents. There will be biodegradation of the chlorinated solvents to some degree. The biodegradation and volatilization of chlorinated solvents will be accelerated through the interim remedial program and ultimate long-term remediation system (2-PHASE) at the site.

5.3 CONTAMINANT MIGRATION

The migration pathways described in Section 5.1 of this report, migration via groundwater flow, is the most significant. Testing at the site indicated that migration in the atmosphere is negligible due to the extremely low rates of volatilization into the atmosphere from the subsurface materials in the spill area. Contaminants have entered the stream to the west and north of the site through infiltration of contaminated groundwater. This infiltration is limited to the areas in close proximity to the site, as further downstream the stream becomes a losing stream, with exfiltration probably responsible for controlling the migration of contaminated groundwater to the west. Once the groundwater levels are drawn down through accelerated pumping during full site remediation, it is likely that infiltration into the surface water system will end, eliminating surface water as a migration pathway.

The plume of contaminated groundwater is currently migrating to the north-northwest as shown on Figures 3-3, 3-4, and 3-5. The extent of contamination has been adequately defined by the network of monitoring wells which have been installed in the off-site areas (Bradley Industrial Park, Oratamin Swim Club, and General Bearing properties). Migration of contaminated groundwater generally follows groundwater flow patterns interpreted from water levels measured in off-site monitoring wells, except as subsequently described. Based upon a review of the data obtained during the course of the off-site RI, it is our professional opinion that the migration of contamination has been limited by exfiltration of water from the stream causing a partial hydraulic barrier which limits contaminant migration to the west in the Bradley Industrial Park. For this reason, the mapping of the extent of groundwater contamination requiring remediation closely approximates the location of the stream.

Concentrations of volatile organic solvents near the drinking water criteria have been detected in monitoring wells MW-OS-15R and MW-OS-16R. The concentrations are low enough that these wells can adequately define the extent of contamination in these directions. The fringe of the contamination will continue to migrate to the north in absence of an off-site recovery well system with sufficient radius of influence. It is likely that the fringe of the contaminant plume requiring remediation (groundwater with levels exceeding drinking water quality) will be slower that groundwater flow due to dilution, degradation, dispersion and adsorption.

Contaminant transport modelling has not been conducted at this site, as there is an extensive monitoring well network which adequately defines the extent of contamination requiring remediation. Modelling could be conducted to assess the ultimate fate of contaminants in the groundwater if no active remediation were to occur. This modelling has not been conducted, as Xerox intends to implement off-site remediation programs to contain and recover the plume of contaminated groundwater. A Feasibility Study has been conducted to evaluate remedial alternatives, and a preferred alternative has been recommended for implementation in the off-site areas.

6.0
BASELINE RISK ASSESSMENT

A human health assessment was conducted during the Feasibility Study for the site. The objective of the assessment was to ascertain whether unacceptable health risks are posed to humans by the current site conditions. The assessment examines potential health impacts that could be incurred by humans currently in or near the site as a result of exposure to site-related chemicals under current and plausible future site use. The human health assessment follows guidance developed by the USEPA for performing baseline risk assessment under the Superfund program. The results of the assessment are summarized below and are presented in Appendix I.

6.1 HUMAN HEALTH EVALUATION

The available chemical data for groundwater, surface water, soils, and sediments were examined for applicability in the risk assessment and selection of chemicals of concern. Validation of the data was not within WCC's scope of work, so all data were assumed to be adequate for use in a human health assessment.

6.1.1 Exposure Assessment

Four groups of receptors were examined for potential exposure: on-site workers, off-site workers, off-site residents, and trespassers. An exposure pathway generally consists of four elements: (1) a source and mechanism of release, (2) a retention or transport medium or media, (3) a point of potential human contact with the contaminated medium (exposure point), and (4) an exposure route. If one of these elements is missing, the potential exposure pathway is incomplete and human exposure to the chemical cannot or does not occur. Of these receptor groups, only trespassers contacting stream water and sediments were identified as having complete exposure pathways.

6.1.2 Toxicity Assessment

In general, two broad types of potential human toxicity are considered in the assessment: carcinogenicity and systemic toxicity (toxicity other than carcinogenicity, such as organ damage or impairment of physiological functions). Chemicals which can elicit a carcinogenic response are referred to as carcinogens; chemicals exerting systemic toxicity are often referred to as non-carcinogens, although a chemical can exhibit both carcinogenic and non-carcinogenic effects. Summaries of the potential toxicity of the chemicals of concern are not included in the assessment.

6.1.3 Risk Characterization

Potential exposure of adult and youth trespassers to chemicals contained in surface water and sediments of the small stream which crosses the site property was assessed for reasonable maximum exposures (RME) and more typical exposures. The resultant upper bound cancer risk estimates were all at or below the acceptable risk range identified by the USEPA of 1×10^{-4} to 1×10^{-6}. The resultant non-carcinogenic Hazard Indices were all below the comparison threshold value of 1.0. This suggests that unacceptable health risks are not posed by exposure to chemicals at the site.

6.2 ENVIRONMENTAL EVALUATION

Two documented spills of solvents from former USTs at the site resulted in the introduction of organic contaminants into the subsurface. In addition, an area inside the building where spraying operations took place is also associated with the release of solvents. Contamination has impacted soils and groundwater at the site, and stream surface water and sediment chemical data has confirmed the presence of contaminants in the stream channel.

Exposure to subsurface soils would not occur under normal conditions to the potential receptor groups considered, so all exposure pathways were identified as incomplete. Several contaminants detected in groundwater on and downgradient of the site exceeded the allowable Maximum Contaminant Levels (MCLs) as defined by the Safe Drinking Water Act. As such if this water were to be regularly consumed, it is likely that adverse health effects would be incurred. Currently, the groundwater within the vicinity of the site is not used as a public drinking water source.

In general, organisms recovered from the small stream flowing through the study area reflect the natural physicochemical features of the habitat. Many of the forms found were typical of moderately well aerated, flowing water with an abundant food supply. Some subtle differences were observed among the faunal assemblages likely reflect other natural features such as sediment type or surface water chemistry.

7.0
SUMMARY AND CONCLUSIONS

7.1 SUMMARY

This section of the RI report summarizes the results of the investigation with respect to the nature and extent, and significance of environmental impacts at and in the vicinity of the Xerox site from previous releases of chlorinated solvents.

7.1.1 Nature and Extent of Contamination

The soil and groundwater at the site have been impacted by the historical release of chlorinated solvents from the former underground storage tanks on the property leased by Xerox Corporation. The environmental impacts of these releases have been extensively investigated through the various prior programs conducted by Xerox Corporation, and the on- and off-site remedial investigation summarized herein.

The contamination of the environmental media at and in the vicinity of the Xerox site has resulted from overflow from underground storage tanks in the northern portion of the Xerox facility which occurred overnight and operations within the facility building (CRC). In the tank area, it has been reported that the chlorinated solvents/mineral spirits blend flowed overland to a low area on the Xerox facility and seeped into the ground. Leakage occurred in the building which was probably related to the solvent collection and transfer system.

In summary, soil contamination above the groundwater table has occurred through the infiltration and migration of solvents through the unsaturated zone to the groundwater. Solvents entered the groundwater in these areas and have migrated with the groundwater in response to hydraulic gradients and chemical concentration profiles (dispersion from areas of high concentration to low concentration). Impacts to the surface water system have occurred due to the localized discharge of contaminated groundwater to the surface water system.

The extent of contamination in these affected media have been well characterized by the remedial investigation conducted by WCC for Xerox Corporation. Significant soil contamination is limited to the areas where solvents migrated/infiltrated through the soil. These areas pertain to the vicinity of the former underground storage tanks, and the former CRC area within the building. Insignificant levels of soil contamination exists within the capillary fringe of the groundwater and within soils which may be occasionally saturated during periods of high groundwater levels. Significant levels of soil contamination are therefore limited to the Xerox facility.

The nature and extent of groundwater contamination has been evaluated through the installation of wells within the overburden, shallow bedrock, and deep bedrock flow zones. The interpreted plumes of groundwater contamination for the most recent sampling event are shown on Figures 5-1, 5-2 and 5-3. The plumes have been characterized on the basis of evaluation of groundwater flow (which is predominantly to the north/northwest), the presence of boundary wells which contain low to non-detectable levels of site contaminants, and our understanding of the aquifer permeabilities, groundwater gradients and contaminant characteristics.

The horizontal extent of contamination appears to have been adequately defined in all of the flow zones. The migration of impacted groundwater appears to have been partially controlled by exfiltration from the north-south trending stream which runs adjacent to the Xerox facility and through Bradley Corporate Park. The exfiltration has limited the migration of contaminants to the west. This limitation may be the result of the creation of a very localized mound in the vicinity of the stream, and dilution of groundwater containing volatile organic solvents to the lower levels detected in monitoring well located to the west of the stream.

The vertical extent of contamination has not been fully defined during the remedial investigation. The horizontal extent of contamination has been characterized by the currently installed deep bedrock monitoring wells. However, the depth to which groundwater within the bedrock has been impacted, has not been fully defined. The currently installed deep bedrock wells in the central portion of the plume contain volatile organic solvents in the low hundreds of parts per billion range. It is likely that the contamination at this depth has resulted from some localized downward hydraulic gradients and chemical dispersion from the contaminated groundwater in the shallow bedrock.

7.1.2 Fate and Transport

It is anticipated that the volatile organic contaminants would continue to migrate with the groundwater flow system if no action were taken. With continued migration, the plume of contamination would likely widen from its current narrow, well defined extent which is locally controlled by the topography and the surface water system. The concentrations would decrease as dispersion and dilution effects continue. In addition, concentrations of site-related contaminants would decrease as biodegradation and adsorption of contaminants onto organic matter within the aquifer units continued.

The currently operating recovery wells on the northern boundary of the Xerox facility will continue to isolate the contaminant source (area of elevated levels of groundwater contamination and LNAPL on the Xerox facility) from the off-site groundwater flow system. Therefore, with the operation of the existing recovery wells only, the concentrations of contaminants migrating off site would gradually diminish with continued dilution, dispersion, and degradation.

7.1.3 Risk Assessment

The Feasibility Study (FS) which has been prepared for this site includes a detailed Risk Assessment. Therefore, the reader of this report is hereby referenced to the FS for the details of the Risk Assessment conducted for this site. In summary, the Risk Assessment concluded that the site presents a low to negligible risk to human health or the environment due to the absence of potential receptors. There are no groundwater users within or in the vicinity of the contaminant plume. The benthic community in the surface water system does not appear to be affected by the low levels of contaminants in the surface water and stream sediment. There is a negligible risk to direct contact to trespassers due to the fact that the significant concentrations of the contaminants are in the subsurface soils. Finally, there are no significant habitat areas within the area where surface waters contain low levels of contaminants from the site.

7.2 CONCLUSIONS

As previously stated, the remedial investigation conducted on behalf of the Xerox Corporation was a thorough investigation of the subsurface conditions at and in the vicinity of the site. Through the detailed multi-media approach, all of the media which may have been impacted by the releases at the site have been assessed, and the migration of contaminants from the site has been defined.

Although the migration of contaminants at the site has been really extensive, the off-site environmental quality has not been substantially degraded. There are extensive areas off-site which will require remediation as discussed in the FS due to levels of contaminants exceeding drinking water quality standards.

The on-site soil and groundwater on the facility has been impacted to a more significant extent as evidenced by the elevated concentrations of contaminants in the soil groundwater (which is contained on-site by the existing groundwater recovery well system) and the presence of LNAPL. Xerox has been conducting interim remedial activities on-site since 1989 to recover and treat groundwater which contains elevated concentrations of volatile organic compounds and/or LNAPL.

7.2.1 Data Limitations and Recommendations for Future Work

The evaluations made within this report were based on an investigation program approved by the NYSDEC and implemented by Xerox Corporation. There may be field conditions which were not identified based upon the locations of wells and/or samples or omissions from the approved scope of work.

Additional investigations will need to be conducted to identify the vertical extent of contamination prior to the formalization of designs for deep bedrock recovery wells.

7.2.2 Recommended Remedial Action Objectives

The recommended remedial action alternatives are presented in a detailed evaluation within the FS. As these two documents have been prepared concurrently, and are available concurrently, the reader is directed to the FS for a detailed discussion of the recommended remedial action objectives.

Tables

TABLE 2-1

SUMMARY OF WELL CONSTRUCTION DETAILS
XEROX CORPORATION
BLAUVELT, NEW YORK

Well No.	Date Instld.	Survey Coordinates North	Survey Coordinates East	Total Depth of Boring (ft)*	Screened Interval (ft)*	Zone Monitored	Casing Material	Casing Diameter (in.)	Ground Elevation (ft, msl)	Top of Protective Casing Elevation (ft, msl)	Top of Bedrock Elevation (ft, msl)*
W-1	9/80	NDA	NDA	20	6.4-16.4	Overburden	Galvanized	2	109.62	113.60	91.62
W-2	9/80	NDA	NDA	18	4-14	Overburden	Galvanized	2	104.82	106.80	88.32
W-3	9/80	NDA	NDA	24	8.5-18.5	Overburden	Galvanized	2	109.39	111.98	88.79
W-4	9/80	NDA	NDA	22	4.5-14.5	Overburden	Galvanized	2	109.92	111.81	87.92
W-5	9/80	NDA	NDA	31	5-15	Overburden	Galvanized	2	113.10	115.15	
U-6	8/84	NDA	NDA	10.5	4.5-9.5	Overburden	Galvanized	2	115.88	119.04	
W-7	8/84	NDA	NDA	17.5	3.5-13.5	Overburden	Galvanized	2	107.52	110.99	91.72
W-8	8/84	NDA	NDA	15	4.5-14.5	Overburden	Galvanized	2	108.03	111.66	84.43
U-6D	8/84	NDA	NDA	27.5	19-23	Bedrock	Galvanized	2	115.48	118.43	101.48
W-7D	8/84	NDA	NDA	29.5	23-28	Bedrock	Galvanized	2	107.32	111.14	89.32
W-9D	8/84	NDA	NDA	27	19-24	Bedrock	Galvanized	2	105.62	108.80	90.62
OW-1	8/85	NDA	NDA	34	22-33	Bedrock	Galvanized/ stainless	2	110.24	113.27	95.24
OW-2	7/85	NDA	NDA	30	19-30	Bedrock	Galvanized/ stainless	2	107.16	110.98	92.19
PW-1	7/85	NDA	NDA	31	19.5-30.5	Bedrock	Galvanized/ stainless	4	107.80	110.87	89.30
PW-2	8/85	NDA	NDA	18.4	11.1-16.7	Overburden	Galvanized/ stainless	4	107.62	110.90	-
RW-1	9/86	NDA	NDA	32	5-25	OB/SRB	Stainless	4	106.54	109.36	91.54
RW-2	9/86	NDA	NDA	36	9.5-29.5	OB/SRB	Stainless	4	105.89	107.94	86.39
RW-3	9/86	NDA	NDA	34	9-29	OB/SRB	Stainless	4	105.54	107.86	87.54
RW-4	10/86	NDA	NDA	33.5	7-27	OB/SRB	Stainless	4	102.84	105.34	90.34

Well No.	Date Instld.	Survey Coordinates North	Survey Coordinates East	Total Depth of Boring (ft)*	Screened Interval (ft)*	Zone Monitored	Casing Material	Casing Diameter (in.)	Ground Elevation (ft, msl)	Top of Protective Casing Elevation (ft, msl)	Top of Bedrock Elevation (ft, msl)*
RW-5	10/86	NDA	NDA	33	7-27	OB/SRB	Stainless	4	104.56	106.95	90.56
RW-6	10/86	NDA	NDA	33	6.5-26.5	OB/SRB	Stainless	4	106.43	108.81	89.93
RW-7	10/86	NDA	NDA	34.5	8-28	OB/SRB	Stainless	4	106.81	109.40	88.81
RW-8	10/86	NDA	NDA	34	8-28	OB/SRB	Stainless	4	107.80	110.15	89.80
RW-9	10/86	NDA	NDA	35	9-29	OB/SRB	Stainless	4	108.01	110.30	89.01
RW-10	9/86	NDA	NDA	38	12-32	OB/SRB	Stainless	4	108.64	110.08	86.64
MW-10	11/86	7,130.43	48,578.34	15	3.5-13.5	Overburden	Stainless	2	106.87	108.86	91.87
MW-11	11/86	7,064.24	48,666.24	14	4-14	Overburden	Stainless	2	107.99	109.50	93.99
MW-12	11/86	NDA	NDA	18	3.5-13.5	Overburden	Stainless	2	108.69	111.72	90.69
MW-13	11/86	NDA	NDA	16	4-14	Overburden	Stainless	2	111.58	114.28	95.58
MW-14	12/86	NDA	NDA	21.5	2.25-12.25	Overburden	Stainless	2			
MW-15	12/86	NDA	NDA	14	2.8-12.8	Overburden	Stainless	2			
MW-16	12/86	6,989.69	48,651.28	23.5	7-17	Overburden	Stainless	2	112.32	113.93	88.82
MW-17	12/86	NDA	NDA	22	10-20	Overburden	Stainless	2			
RI-1	10/90	6,787.18	48,827.12	25	11-21	Overburden	Stainless	2	119.08	118.74	
RI-2	10/90	6,874.12	48,838.98	44	33.5-43.5	Bedrock	Stainless	2	119.08	118.59	88.58
RI-3	10/90	6,812.71	48,698.38	38	27-37	Bedrock	Stainless	2	119.01	118.57	95.01
RI-4	10/90	6,862.95	48,777.64	45.5	33.5-43.5	Bedrock	Stainless	2	119.06	118.84	89.56
RI-5/ VES-1	10/90	6,841.02	48,796.94	26	5.5-25.5	Overburden	Stainless	2	119.02	118.83	92.02
RI-6	10/90	6,893.09	48,742.02	25	14-24	Overburden	Stainless	2	114.46	114.21	90.46
RI-7	10/90	6,902.48	48,745.26	40.8	28-38	Bedrock	Stainless	2	114.38	114.18	90.38
RI-8	10/90	7,123.93	48,782.44	38.4	27-37	Bedrock	Stainless	2	110.00	111.74	85.70
RI-9	10/90	6,949.45	48,570.70	24	13.6-23.6	Overburden	Stainless	2	111.29	111.14	87.29
RI-10	10/90	7,135.48	48,578.34	57.4	OH	Bedrock	Stainless	6	106.83	109.38	90.83
RI-11	6/92	7,120.9	48,900.0	55	44-54	Bedrock	Stainless	2	119.49	121.56	78.49
MW-OS-1	9/91	7,061.24	48,238.89	18	7-17	Overburden	Stainless	2	105.18	107.12	--

Well No.	Date Instld.	Survey Coordinates North	Survey Coordinates East	Total Depth of Boring (ft)*	Screened Interval (ft)*	Zone Monitored	Casing Material	Casing Diameter (in.)	Ground Elevation (ft, msl)	Top of Protective Casing Elevation (ft, msl)	Top of Bedrock Elevation (ft, msl)*
MW-OS-1R	9/91	7,051.33	48,242.19	51	40-50	Bedrock	Stainless	2	105.17	107.10	68.28
MW-OS-2	10/91	7,238.93	48,457.01	20	9-19	Overburden	Stainless	2	103.09	105.86	--
MW-OS-2R	10/91	7,248.55	48,448.94	45	34-44	Bedrock	Stainless	2	102.14	104.69	71.54
MW-OS-3	9/91	7,209.58	48,660.75	20	9-19	Overburden	Stainless	2	107.66	106.91	--
MW-OS-4	9/91	7,247.11	48,789.88	18	7-17	Overburden	Stainless	2	111.33	113.48	--
MW-OS-4R	9/91	7,239.39	48,792.75	49.5	38.5-48.5	Bedrock	Stainless	2	111.05	113.05	75.55
MW-OS-5	9/91	7,369.44	48,466.58	17	6-16	Overburden	Stainless	2	98.38	100.51	--
MW-OS-5R	9/91	7,364.76	48,543.02	42	31-41	Bedrock	Stainless	2	98.05	100.31	70.05
MW-OS-5D	9/91	7,391.46	48,467.09	71.6	OH	Bedrock	Stainless	6	98.29	100.86	70.29
MW-OS-6	9/91	7,504.42	48,525.62	22	6-21	Overburden	Stainless	2	96.33	98.75	--
MW-OS-6R	9/91	7,506.92	48,525.62	42	31-41	Bedrock	Stainless	2	96.06	98.39	68.06
MW-OS-7	10/91	7,519.59	48,269.61	19	8-18	Overburden	Stainless	2	91.61	93.72	--
MW-OS-7R	10/91	7,529.04	48,271.33	35	24-34	Bedrock	Stainless	2	90.41	93.00	70.41
MW-OS-7D	10/91	7,523.05	48,263.43	66	OH	Bedrock	Stainless	6	90.95	93.49	68.95
MW-OS-8R	9/91	7,413.85	48,713.05	39	28-38	Bedrock	Stainless	2	106.60	108.90	81.70
MW-OS-9	10/91	7,810.93	48,288.34	20	9-19	Overburden	Stainless	2	81.47	83.43	--
MW-OS-9R	9/91	7,807.08	48,291.82	43	32-42	Bedrock	Stainless	2	81.41	83.52	52.71
MW-OS-10	9/91	6,876.19	48,399.14	20	9-19	Overburden	Stainless	2	111.11	112.95	--
MW-OS-10R	9/91	6,876.82	48,405.32	37	26-36	Bedrock	Stainless	2	111.17	113.44	88.17
MW-OS-11	10/91	7,773.37	48,613.25	28	17-27	Overburden	Stainless	2	103.05	104.73	--

Well No.	Date Instld.	Survey Coordinates North	East	Total Depth of Boring (ft)*	Screened Interval (ft)*	Zone Monitored	Casing Material	Casing Diameter (in.)	Ground Elevation (ft, msl)	Top of Protective Casing Elevation (ft, msl)	Top of Bedrock Elevation (ft, msl)*
MW-OS-11R	9/91	7,776.98	48,616.10	44.5	33-43	Bedrock	Stainless	2	103.24	105.37	72.74
MW-OS-11D	5/92	7,772.5	48,620.5	74	OH	Bedrock	Stainless	6	103.63	105.63	74.13
MW-OS-12	10/91	8,085.93	48,404.54	19.5	7.5-17.5	Overburden	Stainless	2	83.88	86.38	--
MW-OS-12R	10/91	8,083.62	48,406.32	34	23-33	Bedrock	Stainless	2	83.96	86.62	63.96
MW-OS-13R	6/92	7,396.0	48,909.8	59	44-54	Bedrock	Stainless	2	120.59	120.25	80.09
MW-OS-14	5/92	7,870.4	48,795.9	31.5	20-30	Overburden	Stainless	2	113.08	115.28	
MW-OS-14R	5/92	7,873.4	48,799.3	55.6	44.5-54.5	Bedrock	Stainless	2	113.02	114.92	72.52
MW-OS-15	5/92	8,394.7	48,147.1	27	16-26	Overburden	Stainless	2	84.58	86.86	
MW-OS-15R	5/92	8,391.1	48,148.0	50	39-49	Bedrock	Stainless	2	84.47	86.19	48.47
MW-OS-16R	5/92	7,986.9	47,705.2	37	26.5-36.5	Bedrock	Stainless	2	83.40	85.38	62.90

*Below ground surface
OB = Overburden
SBR = Shallow bedrock
OH = Open hole
NDA = No data available

<u>Note</u>: Wells MW-10, MW-11, MW-16 resurveyed 12/2/91. 12/2/91 date used in above table.

TABLE 3-1

SUMMARY OF SLUG TEST RESULTS

Xerox Blauvelt
Offsite Slug Test Analysis Summary
Transmissivity & Permeability

OVERBURDEN WELLS

		Values calculated using Method of Cooper, Bredehoeft & Papadopolous		Values calculated using Method of Bouwer & Rice using the Diameter of the Drilled Hole		Values calculated using Method of Bouwer & Rice using the Diameter of the Casing and Screen		LOG Averages		
Well	Test Type	Transmissivity (ft^2/min)	Permeability (ft/min)	Transmissivity (ft^2/min)	Permeability (ft/min)	Transmissivity (ft^2/min)	Permeability (ft/min)	Transmissivity (ft^2/min)	Permeability (ft/min)	Permeability (cm/min)
MW-OS-10	FALLING	1.19e-002	1.09e-003	5.32e-002	4.84e-003	8.26e-002	7.51e-003	3.74e-002	3.40e-003	1.04e-001
MW-OS-10	RISING	3.07e-002	2.79e-003	5.17e-002	4.70e-003	8.03e-002	7.30e-003	5.03e-002	4.57e-003	1.40e-001
MW-OS-11	RISING	1.10e-001	1.22e-002	3.08e-001	3.43e-002	7.00e-002	7.78e-003	1.33e-001	1.48e-002	4.53e-001
MW-OS-11	RISING	3.91e-002	4.34e-003	2.82e-001	3.13e-002	6.41e-002	7.12e-003	8.91e-002	9.89e-003	3.02e-001
MW-OS-12	RISING	9.58e-004	9.12e-005	9.78e-002	9.31e-003	1.60e-001	1.52e-002	2.47e-002	2.35e-003	7.17e-002
MW-OS-14	RISING	3.94e-001	5.26e-002	3.45e-001	4.60e-002	8.09e-002	1.08e-002	2.22e-001	2.97e-002	9.07e-001
MW-OS-15	RISING	0.00e+000	0.00e+000	4.70e-001	4.70e-002	1.05e-001	1.05e-002	3.67e-001	7.90e-002	7.71e-001
MW-OS-2	FALLING	0.00e+000	0.00e+000	2.40e-001	2.83e-002	5.45e-002	6.41e-003	2.36e-001	5.66e-002	5.52e-001
MW-OS-2	RISING	9.73e-002	1.15e-002	3.37e-001	3.96e-002	7.73e-002	9.09e-003	1.36e-001	1.60e-002	4.91e-001
MW-OS-3	FALLING	0.00e+000	0.00e+000	9.94e-002	7.36e-003	1.52e-001	1.13e-002	2.47e-001	4.37e-002	4.25e-001
MW-OS-3	RISING	2.02e-001	1.50e-002	6.63e-002	4.91e-003	1.01e-001	7.51e-003	1.11e-001	8.20e-003	2.51e-001
MW-OS-4	RISING	6.36e-002	7.95e-003	2.78e-001	3.47e-002	6.46e-002	8.08e-003	1.05e-001	1.31e-002	4.00e-001
MW-OS-5	RISING	4.69e-002	4.94e-003	3.37e-001	3.55e-002	7.60e-002	8.00e-003	1.06e-001	1.12e-002	3.42e-001
MW-OS-6	RISING	2.28e-001	1.57e-002	8.41e-002	5.80e-003	1.28e-001	8.83e-003	1.35e-001	9.30e-003	2.85e-001
MW-OS-7	RISING	0.00e+000	0.00e+000	3.48e-001	4.35e-002	8.07e-002	1.01e-002	3.04e-001	7.60e-002	7.43e-001
MW-OS-9	FALLING	1.40e-001	7.79e-003	1.25e-007	6.94e-009	1.88e-007	1.04e-008	1.49e-005	8.25e-007	2.53e-005
MW-OS-9	RISING	7.40e-002	4.11e-003	1.09e-001	6.04e-003	1.63e-001	9.08e-003	1.10e-001	6.09e-003	1.86e-001
	LOG Average	1.13e-001	1.82e-002	7.50e-002	7.04e-003	4.21e-002	3.95e-003			

TABLE 3-1 (Continued)

Xerox Blauvelt
Offsite Slug Test Analysis Summary
Transmissivity & Permeability

DEEP ROCK WELLS

Well	Test Type	Values calculated using Method of Cooper, Bredehoeft & Papadopolous: Transmissivity (ft^2/min)	Values calculated using Method of Cooper, Bredehoeft & Papadopolous: Permeability (ft/min)	Values calculated using Method of Bouwer & Rice using the Diameter of the Drilled Hole: Transmissivity (ft^2/min)	Values calculated using Method of Bouwer & Rice using the Diameter of the Drilled Hole: Permeability (ft/min)	Values calculated using Method of Bouwer & Rice using the Diameter of the Casing and Screen: Transmissivity (ft^2/min)	Values calculated using Method of Bouwer & Rice using the Diameter of the Casing and Screen: Permeability (ft/min)	LOG Averages: Transmissivity (ft^2/min)	LOG Averages: Permeability (ft/min)	LOG Averages: Permeability (cm/min)
MW-OS-11D	FALLING	9.56e-003	9.56e-004	1.64e-001	1.64e-002	1.64e-001	1.64e-002	6.36e-002	6.36e-003	1.94e-001
MW-OS-11D	RISING	5.36e-003	5.36e-004	1.49e-001	1.49e-002	1.49e-001	1.49e-002	4.92e-002	4.92e-003	1.50e-001
MW-OS-5D	FALLING	9.00e-003	9.00e-004	2.86e-001	2.86e-002	2.86e-001	2.86e-002	9.03e-002	9.03e-003	2.76e-001
MW-OS-5D	RISING	5.36e-003	5.36e-004	1.73e-001	1.73e-002	1.73e-001	1.73e-002	5.44e-002	5.44e-003	1.66e-001
MW-OS-7D	FALLING	4.11e-002	4.11e-003	1.58e-001	1.58e-002	1.58e-001	1.58e-002	1.01e-001	1.01e-002	3.08e-001
MW-OS-7D	RISING	2.61e-002	2.61e-003	1.56e-001	1.56e-002	1.56e-001	1.56e-002	8.59e-002	8.59e-003	2.63e-001
	LOG Average	1.18e-002	1.18e-003	1.76e-001	1.76e-002	1.76e-001	1.76e-002			

TABLE 3-1 (Continued)

Xerox Blauvelt
Offsite Slug Test Analysis Summary
Transmissivity & Permeability

ROCK WELLS

Well	Test Type	Values calculated using Method of Cooper, Bredehoeft & Papadopolous		Values calculated using Method of Bouwer & Rice using the Diameter of the Drilled Hole		Values calculated using Method of Bouwer & Rice using the Diameter of the Casing and Screen		LOG Averages		
		Transmissivity (ft^2/min)	Permeability (ft/min)	Transmissivity (ft^2/min)	Permeability (ft/min)	Transmissivity (ft^2/min)	Permeability (ft/min)	Transmissivity (ft^2/min)	Permeability (ft/min)	Permeability (cm/min)
MW-OS-10R	FALLING	2.69e-003	2.69e-004	1.18e-001	1.18e-002	1.44e-001	1.44e-002	3.58e-002	3.58e-003	1.09e-001
MW-OS-11R	FALLING	1.45e-001	1.45e-002	7.05e-002	7.05e-003	8.65e-002	8.65e-003	9.59e-002	9.59e-003	2.93e-001
MW-OS-11R	RISING	1.58e-001	1.58e-002	5.54e-002	5.54e-003	6.79e-002	6.79e-003	8.41e-002	8.41e-003	2.57e-001
MW-OS-12R	FALLING	7.34e-003	7.34e-004	4.43e-001	4.43e-002	2.45e-001	2.45e-002	9.27e-002	9.27e-003	2.84e-001
MW-OS-12R	RISING	0.00e+000	0.00e+000	1.41e-001	1.41e-002	7.85e-002	7.85e-003	2.23e-001	4.80e-002	4.68e-001
MW-OS-13R	FALLING	1.16e-002	1.16e-003	3.32e-002	3.32e-003	4.04e-002	4.04e-003	2.50e-002	2.50e-003	7.62e-002
MW-OS-13R	RISING	8.05e-003	8.05e-004	3.95e-002	3.95e-003	4.81e-002	4.81e-003	2.48e-002	2.48e-003	7.61e-002
MW-OS-15R	FALLING	8.11e-002	8.11e-003	2.69e-002	2.69e-003	3.28e-002	3.28e-003	4.15e-002	4.15e-003	1.27e-001
MW-OS-15R	RISING	3.36e-002	3.36e-003	4.56e-002	4.56e-003	5.55e-002	5.55e-003	4.40e-002	4.40e-003	1.34e-001
MW-OS-16R	FALLING	8.55e-003	8.55e-004	5.21e-002	5.21e-003	6.37e-002	6.37e-003	3.05e-002	3.05e-003	9.33e-002
MW-OS-16R	RISING	4.12e-003	4.12e-004	4.87e-002	4.87e-003	5.94e-002	5.94e-003	2.28e-002	2.28e-003	6.98e-002
MW-OS-1R	FALLING	8.11e-002	8.11e-003	8.16e-001	8.16e-002	9.94e-001	9.94e-002	4.04e-001	4.04e-002	1.23e+000
MW-OS-1R	RISING	1.13e-001	1.13e-002	7.71e-001	7.71e-002	9.40e-001	9.40e-002	4.35e-001	4.35e-002	1.33e+000
MW-OS-2R	FALLING	7.57e-003	7.57e-004	4.45e-001	4.45e-002	5.42e-001	5.42e-002	1.22e-001	1.22e-002	3.74e-001
MW-OS-2R	RISING	5.94e-003	5.94e-004	4.40e-001	4.40e-002	5.36e-001	5.36e-002	1.12e-001	1.12e-002	3.42e-001
MW-OS-4R	FALLING	9.44e-002	9.44e-003	5.87e-002	5.87e-003	7.13e-002	7.13e-003	7.34e-002	7.34e-003	2.24e-001
MW-OS-4R	RISING	1.54e-001	1.54e-002	4.91e-002	4.91e-003	5.96e-002	5.96e-003	7.66e-002	7.66e-003	2.35e-001
MW-OS-5R	FALLING	1.35e-002	1.35e-003	4.91e-002	4.91e-003	5.98e-002	5.98e-003	3.41e-002	3.41e-003	1.04e-001
MW-OS-5R	RISING	2.26e-002	2.26e-003	9.16e-002	9.16e-003	1.12e-001	1.12e-002	6.15e-002	6.15e-003	1.88e-001
MW-OS-6R	FALLING	1.81e-003	1.81e-004	4.71e-002	4.71e-003	5.74e-002	5.74e-003	1.70e-002	1.70e-003	5.19e-002
MW-OS-6R	RISING	1.51e-003	1.51e-004	4.83e-002	4.83e-003	5.89e-002	5.89e-003	1.63e-002	1.63e-003	4.97e-002
MW-OS-7R	FALLING	0.00e+000	0.00e+000	2.93e-002	2.93e-003	3.59e-002	3.59e-003	1.02e-001	2.19e-002	2.14e-001
MW-OS-7R	RISING	1.36e-001	1.36e-002	5.22e-002	5.22e-003	6.40e-002	6.40e-003	7.69e-002	7.69e-003	2.35e-001
MW-OS-9R	RISING	1.12e-002	1.12e-003	1.43e-001	1.43e-002	7.88e-002	7.88e-003	5.02e-002	5.02e-003	1.53e-001
	LOG Average	2.74e-002	3.31e-003	9.06e-002	9.06e-003	1.00e-001	1.00e-002			

TABLE 4-1

INLAND CHEMICAL SOLVENT BLENDS USED AT XEROX BLAUVELT AND SUMMARY OF DETECTED COMPOUNDS

Trade Name	Major Components	Approximate Concentration (%)
Solvent Blends		
AP-66	1,1,1-Trichloroethane	58
	Aliphatic Hydrocarbons	29
	Tetrachloroethene	7
	Trichloroethene	6
AP-67	Aliphatic Hydrocarbons	50
	1,1,1-Trichloroethane	20
	Trichloroethene	15
	Tetrachloroethene	10
	Methylene Chloride	5
AP-71	Aliphatic Hydrocarbons	65
	Tetrachloroethene	25
	Trichloroethane	5
	Methylene Chloride	5
AP-72	Aliphatic Hydrocarbons	60
	Tetrachloroethene	5
	Trichloroethene	5
	1,1,1-Trichloroethane	5
	Methylene Chloride	12.5
	n-Heptane	12.5
Detected Compounds		
Aliphatics	Mineral Spirits	
	n-Heptane	
	n-Octane	
	n-Nonane	
	n-Decane	

TABLE 4-1 (Continued)

Trade Name	Major Components	Approximate Concentration (%)
Detected Compounds (Continued)		
Volatile Organics	Vinyl Chloride	
	Methylene Chloride	
	1,1-Dichloroethene	
	1,1-Dichloroethane	
	1,2-Dichloroethene	
	Chloroform	
	1,2-Dichloroethane	
	1,1,1-Trichloroethane	
	Trichloroethene	
	Tetrachloroethene	
	Benzene	
	Toluene	
	Ethylbenzene	
	Chlorobenzene	
	1,4-Dichlorobenzene	
	1,3-Dichlorobenzene	
	Xylenes	
Inorganics	Lead*	

*Potential concern due to activities associated with Paint Booths

TABLE 4-2

SUMMARY OF ON-SITE SOIL QUALITY
XEROX CORPORATION
BLAUVELT, NEW YORK

	RI-1		RI-2			RI-3				Detection Limit
	S-1	S-6	S-1	S-8	S-14	S-1	S-5	S-7	S-10	
Date Collected:	10/4/91	10/4/91	10/6/90	10/7/90	10/7/90	10/10/90	10/15/90	10/15/90	10/15/90	
Date Analyzed:	10/6/90	10/6/90	10/10/90	10/10/91	10/10/91	10/17/90	10/25/90	10/18/90	10/18/90	
Sampled Interval (ft):	0-2	10-12	0-2	14-16	26-28	0-2	8-10	12-14	18-20	
PARAMETER										
Methylene Chloride	ND	ND	ND	ND	ND	7.20[(1)]	10.7	ND	ND	5
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethene (cis+Trans)	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Trichloroethene	5.98	ND	25.0	ND	ND	ND	ND	ND	ND	5
Tetrachloroethene	28.3	ND	55.5	7.64	ND	ND	15.0	ND	ND	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Total Xylenes (o,m,p)	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Total Volatiles (ug/kg)	34.28	ND	80.5	7.64	ND	7.20	25.7	ND	ND	
Mineral Spirits (ug/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	500
Lead (ug/g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	

[(1)]Analyte found in lab or method blank

TABLE 4-2 (Continued)

SUMMARY OF ON-SITE SOIL QUALITY
XEROX CORPORATION
BLAUVELT, NEW YORK

	RI-8		RI-9		RI-10		RI-11		Detection Limit
	S-5	S-6	S-1	S-5	S-5[(a)]	S-6	S-8	S-14	
Date Collected:	10/08/90	10/08/90	10/15/90	10/15/90	10/17/90	10/17/90	5/29/92	5/29/92	
Date Analyzed:	10/10/90	10/10/90	10/18/90	10/18/90	10/25/90	10/25/90	6/3/92	6/4/92	
Sampled Interval (ft):	8-10	10-12	1 - 3	9 - 11	8-10	10-12	14-16	24-28	
PARAMETER									
Methylene Chloride	ND	ND	ND	ND	17,700	8.50	ND	ND	5
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	10
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	10
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethene (cis+Trans)	ND	ND	ND	ND	ND	812	ND	ND	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	200	ND	ND	5
Trichloroethene	ND	ND	ND	ND	25,000	247	ND	ND	5
Tetrachloroethene	ND	ND	ND	ND	1,150,000	1,100	ND	ND	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	10
Total Xylenes (o,m,p)	ND	ND	ND	ND	91,800	ND	ND	ND	10
Total Volatiles (ug/kg)	ND	ND	ND	ND	1,284,500	2367.5	ND	ND	
Mineral Spirits (ug/kg)	ND	ND	ND	ND	11,000,000	3400	NA	NA	
Lead (ug/g)	NA	NA	NA	NA	NA	NA	NA	NA	

[(a)]Sample RI-10/S-5 dilution factor 1:2500

TOC (%) 4.5

TABLE 4-2 (Continued)

SUMMARY OF ON-SITE SOIL QUALITY
XEROX CORPORATION
BLAUVELT, NEW YORK

	RI-4			RI-5/VES-1			RI-6		RI-7		Detection Limit
	S-1[2]	S-10	S-14	S-1[3]	S-8	S-13	S-6	S-7			
Date Collected:	10/17/90	10/18/90	10/18/90	10/21/90	10/21/90	10/21/90	10/2/90	10/2/90			
Date Analyzed:	10/26/90	10/26/90	10/26/90	10/27/90	10/27/90	10/27/90	10/6/90	10/6/90			
Sampled Interval (ft):	0-2	18-20	26-28	0-2	14-16	24-26	10.5-12.5	12.5-14.5			
PARAMETER											
Methylene Chloride	2610[1]	17.3	7.19	276,000[1]	5.72[1]	6.32[1]	21.3[1]	19.8[1]	NA	NA	5
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	10
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	10
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	9.23	44.2	NA	NA	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	12.3	NA	NA	5
1,2-Dichloroethene (cis+Trans)	ND	ND	ND	ND	ND	ND	7.56	17.3	NA	NA	5
1,1,1-Trichloroethane	ND	ND	ND	1,520,000	ND	ND	86.0	187	NA	NA	5
Trichloroethene	3570	9.14	ND	156,000	ND	ND	144	552	NA	NA	5
Tetrachloroethene	114,000	19.0	ND	8,950,000	9.54	6.95	226	1020	NA	NA	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	10
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	10
Total Xylenes (o,m,p)	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	10
Total Volatiles (ug/kg)	120,180	45.44	7.19	10,902,000	15.26	13.27	494.09	1852.6	NA	NA	
Mineral Spirits (ug/kg)	1,490,000	ND	ND	71,700,000	509	ND	ND	ND	NA	NA	500
Lead (ug/g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

[1]Analyte found in lab or method blank
[2]Sample RI-4/S-1 dilution factor 1:250
[3]Sample RI-5/VES-1/S-1 dilution factor 1:25,000

TABLE 4-2 (Continued)

SUMMARY OF ON-SITE SOIL QUALITY
XEROX CORPORATION
BLAUVELT, NEW YORK

	RIB-1			RIB-2			RIB-3				Detection Limit
	S-1	S-5	S-8	S-1	S-8	S-17	S-2[5]	S-3[6]	S-4[7]	S-5[8]	
Date Collected:	10/2/90	10/2/90	10/3/90	10/6/90	10/6/90	10/6/90	10/22/90	10/22/90	10/22/90	10/22/90	
Date Analyzed:	10/5/90	10/5/90	10/6/90	10/9/90	10/10/90	10/10/90	10/27/90	10/26/90	10/26/90	10/27/90	
Sampled Interval (ft):	0-2	8-10	14-16	1-3	15-17	33-35	2-4	4-6	6-8	8-10	
PARAMETER											
Methylene Chloride	24.6[1]	21.9[1]	ND	ND	ND	ND	9090[1]	1360[1]	20,500[1]	179,000[1]	5
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethene (cis+Trans)	ND	ND	ND	ND	ND	ND	ND	1300	19,200	ND	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	16,600	ND	57,300	919,000	5
Trichloroethene	ND	7.18	ND	ND	ND	ND	40,900	3340	110,000	ND	5
Tetrachloroethene	ND	ND	ND	ND	ND	ND	570,000	38,200	976,000	9,590,000	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Total Xylenes (o,m,p)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Total Volatiles (ug/kg)	24.6	29.08	ND	ND	ND	ND	636,590	44,200	1,183,000	10,688,000	
Mineral Spirits (ug/kg)	ND	ND	ND	ND	ND	ND	733,000	515,000	4,460,000	6,810,000	500
Lead (ug/g)	ND	ND	9.68	4520	17.1	7.68	NA	NA	NA	NA	5

[1] Analyte found in lab or method blank
[5] Sample RIB-3/S-2 dilution factor 1:1250
[6] Sample RIB-3/S-3 dilution factor 1:125
[7] Sample RIB-3/S-4 dilution factor 1:2500
[8] Sample RIB-3/S-5 dilution factor 1:25000

TABLE 4-2 (Continued)

SUMMARY OF ON-SITE SOIL QUALITY
XEROX CORPORATION
BLAUVELT, NEW YORK

	RIB-4		RIB-5		RIB-6				Detection Limit
	S-3[9]	S-4			S-4[10]	S-5[11]	S-6[12]	S-7[13]	
Date Collected:	10/22/90	10/22/90			10/22/90	10/22/90	10/22/90	10/22/90	
Date Analyzed:	10/27/90	10/26/90			10/26/90	10/27/90	10/29/90	10/27/90	
Sampled Interval (ft):	4-6	6-8			6-8	8-10	10-12	12-14	
PARAMETER									
Methylene Chloride	339[1]	22.3[1]	NA	NA	17,700	599	385	43,900	5
Vinyl Chloride	ND	515	NA	NA	ND	ND	ND	ND	10
Chloroethane	ND	271	NA	NA	ND	ND	ND	ND	10
1,1-Dichloroethane	ND	269	NA	NA	ND	ND	ND	ND	5
1,2-Dichloroethane	ND	16.2	NA	NA	ND	ND	ND	ND	5
1,1-Dichloroethene	ND	ND	NA	NA	ND	ND	ND	ND	5
1,2-Dichloroethene (cis+Trans)	ND	846	NA	NA	ND	ND	ND	ND	5
1,1,1-Trichloroethane	837	5.06	NA	NA	56,200	1,170	558	153,000	5
Trichloroethene	580	ND	NA	NA	47,100	716	597	75,900	5
Tetrachloroethene	3,390	38.8	NA	NA	814,000	48,600	2700	1,600,000	5
Toluene	ND	104	NA	NA	ND	ND	ND	ND	10
Ethylbenzene	ND	28.4	NA	NA	ND	ND	ND	ND	10
Total Xylenes (o,m,p)	ND	256	NA	NA	ND	ND	ND	ND	10
Total Volatiles (ug/kg)	5146	2371.76	NA	NA	935,000	51,085	4240	1,872,800	
Mineral Spirits (ug/kg)	54,300	13,300	NA	NA	4,670,000	ND	26,000	5,210,000	500
Lead (ug/g)	NA	NA	NA	NA	NA	NA	NA	NA	

[9]Sample RIB-4/S-3 dilution factor 1:50
[10]Sample RIB-6/S-4 dilution factor 1:2500
[11]Sample RIB-6/S-5 dilution factor 1:100
[12]Sample RIB-6/S-6 dilution factor 1:25
[13]Sample RIB-6/S-7 dilution factor 1:5000

TABLE 4-2 (Continued)

SUMMARY OF OFF-SITE SOIL QUALITY
XEROX CORPORATION
BLAUVELT, NEW YORK

	MW-OS-1R		MW-OS-2R		MW-OS-3		MW-OS-4R		MW-OS-5R		Detection Limit
	S-1	S-16	S-6	S-11	S-2	S-7	S-5	S-13	S-4	S-7	
Date Collected:	9/26/91	9/27/91	10/03/91	10/03/91	9/25/91	9/26/91	9/23/91	9/23/91	9/16/91	9/16/91	
Date Analyzed:	10/2/91	10/2/91	10/09/91	10/09/91	10/1/91	10/1/91	9/30/91	9/30/91	9/19/91	9/19/91	
Sampled Interval (ft):	0-2	30-32	10-12	20-22	2-4	12-14	8-10	24-26	6-8	12-14	
PARAMETER											
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethene (cis+Trans)	ND	ND	cis 10.7	cis 7.89	ND	ND	ND	ND	ND	ND	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Trichloroethene	ND	ND	5.3	6.66	ND	ND	ND	ND	ND	ND	5
Tetrachloroethene	ND	ND	28.3	15.8	ND	ND	ND	ND	ND	ND	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Total Xylenes (o,m,p)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Total Volatiles (ug/kg)	ND	ND	44.3	30.35	ND	ND	ND	ND	ND	ND	
Mineral Spirits (ug/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	500
Lead (ug/g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

TOC (%) <0.5 8.04 <0.5

OS 2 7.88 [illegible]

TABLE 4-2 (Continued)

SUMMARY OF OFF-SITE SOIL QUALITY
XEROX CORPORATION
BLAUVELT, NEW YORK

	MW-OS-6R		MW-OS-7R		MW-OS-8R		MW-OS-9R		MW-OS-10R		Detection Limit
	S-4	S-12	S-5	S-9	S-8	S-11	S-6	S-15	S-5	S-11	
Date Collected:	9/04/91	9/04/91	10/07/91	10/07/91	9/10/91	9/10/91	9/13/91	9/13/91	9/24/91	9/25/91	
Date Analyzed:	9/10/91	9/10/91	10/11/91	10/11/91	9/13/91	9/13/91	9/19/91	9/19/91	10/2/91	10/2/91	
Sampled Interval (ft):	6-8	22-24	8-10	16-18	14-16	20-22	10-12	28-30	8-10	20-22	
PARAMETER											
Methylene Chloride	12.4	8.32	ND	ND	ND	ND	6.65	5.53	ND	ND	5
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethene (cis+Trans)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Total Xylenes (o,m,p)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Total Volatiles (ug/kg)	12.4	8.32	ND	ND	ND	ND	6.65	5.53	ND	ND	
Mineral Spirits (ug/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	500
Lead (ug/g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

TABLE 4-2 (Continued)

SUMMARY OF OFF-SITE SOIL QUALITY
XEROX CORPORATION
BLAUVELT, NEW YORK

	MW-OS-11R		MW-OS-12R		MW-OS-13R		MW-OS-14R		MW-OS-15R*		Detection Limit	Detection Limit*
	S-11	S-14	S-3	S-8	S-10	S-17	S-12	S-16	S-7	S-9		
Date Collected:	9/10/91	9/10/91	10/08/91	10/08/91	6/3/92	6/3/92	5/26/92	5/26/92	5/5/92	5/5/92		
Date Analyzed:	9/13/91	9/13/91	10/11/91	10/11/91	6/12/92	6/12/92	6/2/92	6/2/92	5/12/92	5/13/92		
Sampled Interval (ft):	20-22	26-28	4-6	14-16	18-20	32-34	22-24	30-32	12-14	16-18		
PARAMETER												
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	10
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	10
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5
1,2-Dichloroethene (cis+Trans)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	10
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	10
Total Xylenes (o,m,p)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	10
Total Volatiles (ug/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Mineral Spirits (ug/kg)	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	500	
Lead (ug/g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

*Detection Limit only for MW-OS-15R

TABLE 4-2 (Continued)

SUMMARY OF OFF-SITE SOIL QUALITY
XEROX CORPORATION
BLAUVELT, NEW YORK

	MW-OS-16R		Detection Limit
	S-3	S-9	
Date Collected:	5/13/92	5/13/92	
Date Analyzed:	5/21/92	5/21/92	
Sampled Interval (ft):	4-6	16-18	
PARAMETER			
Methylene Chloride	ND	ND	5
Vinyl Chloride	ND	ND	5
Chloroethane	ND	ND	5
1,1-Dichloroethane	ND	ND	5
1,2-Dichloroethane	ND	ND	5
1,1-Dichloroethene	ND	ND	5
1,2-Dichloroethene (cis+Trans)	ND	ND	5
1,1,1-Trichloroethane	ND	ND	5
Trichloroethene	ND	ND	5
Tetrachloroethene	ND	ND	5
Toluene	ND	ND	5
Ethylbenzene	ND	ND	5
Total Xylenes (o,m,p)	ND	ND	5
Total Volatiles (ug/kg)	ND	ND	
Mineral Spirits (ug/kg)	NA	NA	
Lead (ug/g)	NA	NA	

TABLE 4-3

SUMMARY OF ON-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
XEROX, BLAUVELT, NEW YORK
DECEMBER 1990

	Well Designation										
PARAMETER	W-1 (1)	W-2 (2)	W-3	W-4 (2)	W-5	U-6	W-7 (3)	W-8	PW-2 (4)	MW-10 (3)	MW-11 (3)
Methylene Chloride	6690	ND	ND	280	ND	ND	ND	ND	1530	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	3.62	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1,390	ND	ND	ND	ND	ND	ND	ND	546	ND	ND
1,1-Dichloroethane	2,950	295	ND	280	ND	ND	638	2.85	539	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	133,000	11,600	ND	19,100	ND	ND	8,010	50.3	21,400	20,800	10,400
Chloroform	ND	ND	ND	ND	ND	1.11	ND	2.35	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloro-ethane	41,800	3,410	ND	5,100	ND	ND	6,250	7.14	14,500	6,560	11,600
1,1,2-Trichloro-ethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloro-ethene	1,840	5,650	1.31	5,500	1.07	8.43	9,400	33.7	6,150	4,420	10,400

TABLE 4-3 (Continued)

ON-SITE OVERBURDEN, DECEMBER 1990

PARAMETER	W-1[(1)]	W-2[(2)]	W-3	W-4[(2)]	W-5	U-6	W-7[(3)]	W-8	PW-2[(4)]	MW-10[(3)]	MW-11[(3)]
Tetrachloroethene	8,500	24,100	3.51	19,100	4.3	1.03	44,300	41.7	17,100	49,400	47,200
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	196,170	45,055	4.82	49,360	5.37	10.57	68,598	141.66	61,675	81,180	79,600
Lead (ppm)	0.0168	0.0138	ND	ND	ND	0.0088	ND	0.0136	0.0050	ND	0.0343
Mineral Spirits	2,170	161	ND	472	ND	ND	5,340	ND	368	50,600	88,700

ND = None Detected
(1)Sample dilution factor 1:1000
(2)Sample dilution factor 1:200
(3)Sample dilution factor 1:500
(4)Sample dilution factor 1:250

TABLE 4-3 (Continued)

ON-SITE OVERBURDEN, DECEMBER 1990

	Well Designation									
PARAMETER	MW-12*(5)	MW-13**(6)	MW-14	MW-15(7)	MW-16(5)	MW-17(8)	RI-1	RI-5(9)	RI-6	RI-9
Methylene Chloride	ND	ND	ND	ND	790	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	122	1,520	583	ND	ND	ND	4.32
1,1-Dichloroethane	ND	5,400	ND	133	648	624	ND	105	ND	3.24
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	24,600	311,000	9.15	12,700	32,300	7,840	ND	ND	ND	12.2
Chloroform	ND	33,300	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	6,360	ND	ND	1,800	41,700	23,200	2.55	406	3.00	6.32
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	4,950	27,500	5.12	3,950	22,300	20,300	1.34	907	2.10	27.3
Tetrachloroethene	54,700	48,900	14.1	23,200	28,400	24,100	3.70	1,360	5.16	38.0
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	90,610	426,100	28.37	41,905	127,658	76,647	7.59	2,778	10.26	91.38
Lead (ppm)	ND	0.0105	ND	ND	ND	0.0108	ND	0.0059	ND	ND
Mineral Spirits	24,800	18,600	ND	ND	1,140	3,340	ND	220	ND	ND

ND = None Detected
*NAPL 0.09-foot thickness
**NAPL 0.22-foot thickness

(5) Sample dilution factor 1:500
(6) Sample dilution factor 1:2000
(7) Sample dilution factor 1:100
(8) Sample dilution factor 1:250
(9) Sample dilution factor 1:20

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
DECEMBER 1990

Well Designation

PARAMETER	U-6D	W-7D[1]	W-9D[2]	OW-1[3]	OW-2[4]	PW-1[4]	RI-2	RI-3	RI-4[3]	RI-7	RI-8[1]
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	2.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	23.4	198	22.6	7.93	21.5	3.54	ND	ND	ND	7.06
1,1-Dichloroethane	ND	15.3	387	36.3	15.5	11.2	7.98	1.47	24.5	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	135	3,940	1,020	158	280	4.15	ND	11.4	ND	21.8
Chloroform	2.38	7.81	ND	ND	ND	16.5	ND	1.93	ND	ND	ND
Bromoform	ND	14.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	39.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	214	1,850	470	74.0	185	17.9	5.96	179	2.09	129
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	324	1,120	156	44.9	173	6.63	2.62	338	ND	145
Tetrachloroethene	3.93	555	2,120	310	84.7	276	14.4	12.9	658	7.27	264
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	8.79	1328.51	9,615	2,014.9	385.03	963.2	54.6	24.88	1,210.9	9.36	566.86
Lead (ppm)	0.0278	0.0159	0.0431	0.199	0.129	0.0096	ND	ND	ND	ND	ND
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1)Sample dilution factor 1:5
(2)Sample dilution factor 1:50
(3)Sample dilution factor 1:10
(4)Sample dilution factor 1:2

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
DECEMBER 1990

	Well Designation
PARAMETER	RI-10
Methylene Chloride	ND
Vinyl Chloride	ND
Chloroethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,2-Dichloroethene (cis+trans)	ND
Chloroform	2.84
Bromoform	ND
Dibromochloromethane	ND
Bromodichloromethane	ND
1,1,1-Trichloroethane	1.50
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Tetrachloroethene	20.00
Toluene	ND
Total Volatiles (ppb)	24.34
Lead (ppm)	ND
Mineral Spirits	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
FEBRUARY 1991

	Well Designation										
PARAMETER	W-1(1)	W-2(2)	W-3	W-4(2)	W-5	U-6	W-7(1)	W-8	PW-2(2)	MW-10*(3)	MW-11(3)
Methylene Chloride	ND	ND	ND	ND	ND	ND	1,560	ND	ND	601	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1,600	652	1.24	ND	ND	ND	ND	ND	536	ND	ND
1,1-Dichloroethane	2,310	464	1.10	202	ND	ND	ND	ND	520	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	127,000	25,300	8.98	23,000	ND	ND	16,500	2.75	18,300	29,800	17,100
Chloroform	ND	ND	ND	ND	ND	1.56	ND	1.95	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloro-ethane	39,100	13,700	6.66	6,060	ND	ND	6,250	1.88	13,300	9,520	18,700
1,1,2-Trichloro-ethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloro-ethene	1,700	10,500	12.4	7,070	ND	13.8	14,500	3.83	4,800	5,160	16,500
Tetrachloro-ethene	5,760	30,500	14.1	17,700	1.91	1.49	49,600	7.08	10,900	52,500	57,300

TABLE 4-3 (Continued)

ON-SITE OVERBURDEN, FEBRUARY 1991

PARAMETER	W-1(1)	W-2(2)	W-3	W-4(2)	W-5	U-6	W-7(1)	W-8	PW-2(2)	MW-10*(3)	MW-11(3)
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	177,470	81,116	44.48	54,032	1.91	16.85	88,410	17.49	48,356	97,581	109,600
Lead (ppm)	0.0485	0.0451	0.221	0.0109	0.0177	0.0285	ND	0.0170	0.0236	ND	0.0076
Mineral Spirits	3,100	641	ND	689	ND	ND	4,780	ND	399	6,390	17,300

ND = None Detected
*NAPL 0.01-foot thickness
(1)Sample dilution factor 1:1000
(2)Sample dilution factor 1:200
(3)Sample dilution factor 1:500

TABLE 4-3 (Continued)

ON-SITE OVERBURDEN, FEBRUARY 1991

	Well Designation									
PARAMETER	MW-12[4]	MW-13[5]	MW-14	MW-15[6]	MW-16[7]	MW-17[8]	RI-1	RI-5[9]	RI-6	RI-9
Methylene Chloride	ND	2,580	ND	ND	464	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	987	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	177	1,980	660	ND	80.0	ND	9.97
1,1-Dichloroethane	ND	4,350	ND	ND	542	570	ND	175	ND	7.84
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	37,700	327,000	ND	10,100	43,600	21,900	ND	171	ND	19.6
Chloroform	ND	ND	ND	ND	ND	ND	1.64	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5,600	40,900	ND	2,950	52,000	21,800	1.88	1,730	3.73	18.0
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5,860	13,100	ND	3,290	34,800	17,600	2.35	3,160	ND	65.6
Tetrachloroethene	33,800	41,300	2.99	17,700	37,500	18,100	13.5	3,930	1.62	76.0
Toluene	ND	ND	ND	ND	821	ND	ND	ND	ND	ND
Total Volatiles (ppb)	82,960	429,230	2.99	34,157	172,694	80,630	19.37	9,246.0	5.35	197.01
Lead (ppm)	ND	0.0137	0.0321	0.0469	0.0065	0.0104	0.0267	0.321	0.0181	ND
Mineral Spirits	11,400	31,200	ND	ND	1,170	1,800	ND	ND	ND	ND

ND = None Detected
(4)Sample dilution factor 1:500
(5)Sample dilution factor 1:2500
(6)Sample dilution factor 1:100
(7)Sample dilution factor 1:400
(8)Sample dilution factor 1:200
(9)Sample dilution factor 1:25

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
FEBRUARY 1991

Well Designation

PARAMETER	U-6D	W-7D(1)	W-9D(2)	OW-1(3)	OW-2(1)	PW-1(4)	RI-2	RI-3	RI-4(5)	RI-7	RI-8(4)
Methylene Chloride	ND	ND	ND	ND	20.4	5.0	ND	2.22	27.5	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	23.9	248	239	45.2	23.5	3.41	ND	ND	ND	6.06
1,1-Dichloroethane	ND	9.3	259	576	15.6	6.75	7.26	ND	14.8	ND	3.56
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	88.2	4,470	15,800	553	117	4.56	ND	ND	ND	18.1
Chloroform	1.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	182	2,580	5,880	359	116	15.6	2.90	194	2.98	82.5
1,1,2-Trichloroethane	ND	ND	ND	ND	30.4	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	286	1,290	668	319	163	8.82	ND	417	ND	112
Tetrachloroethene	2.89	359	2,020	1,440	562	194	20.3	9.25	844	6.17	206
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	4.78	948.4	10,867	24,594	1904.6	625.25	59.95	14.37	1,497.3	9.15	428.22
Lead (ppm)	0.0218	0.0262	0.0878	0.193	0.167	ND	ND	ND	ND	ND	0.0146
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1)Sample dilution factor 1:5
(2)Sample dilution factor 1:50
(3)Sample dilution factor 1:100
(4)Sample dilution factor 1:2
(5)Sample dilution factor 1:10

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TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
FEBRUARY 1991

	Well Designation
PARAMETER	RI-10
Methylene Chloride	ND
Vinyl Chloride	ND
Chloroethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,2-Dichloroethene (cis+trans)	ND
Chloroform	ND
Bromoform	ND
Dibromochloromethane	ND
Bromodichloromethane	ND
1,1,1-Trichloroethane	1.15
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Tetrachloroethene	15.1
Toluene	ND
Total Volatiles (ppb)	16.25
Lead (ppm)	ND
Mineral Spirits	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
MAY 1991

	Well Designation										
PARAMETER	W-1(1)	W-2(2)	W-3	W-4(2)	W-5	U-6	W-7(2)	W-8	PW-2(2)	MW-10(3)	MW-11(3)
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	643	ND	ND	ND	ND	ND	ND	661	ND	ND
1,1-Dichloroethane	2,900	537	ND	ND	1.29	ND	702	ND	656	530	ND
1,2-Dichloroethane	4,380	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	157,000	28,800	ND	19,000	ND	ND	17,200	ND	29,500	29,400	23,300
Chloroform	ND	ND	ND	ND	ND	ND	ND	24.8	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	7.12	ND	ND	ND
1,1,1-Trichloro-ethane	43,700	16,900	ND	5,970	ND	ND	3,330	ND	17,900	8,920	20,600
1,1,2-Trichloro-ethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloro-ethene	2,490	11,900	ND	6,860	ND	ND	8,890	1.24	5,220	3,340	9,290
Tetrachloro-ethene	10,500	40,700	1.73	26,200	2.50	1.51	36,600	5.56	13,300	43,900	48,300

TABLE 4-3 (Continued)
ON-SITE OVERBURDEN, MAY 1991

PARAMETER	W-1(1)	W-2(2)	W-3	W-4(2)	W-5	U-6	W-7(2)	W-8	PW-2(2)	MW-10(3)	MW-11(3)
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	220,970	99,480	1.73	58,030	3.79	1.51	66,722	38.72	67,237	86,090	101,490
Lead (ppm)	0.0155	0.0267	0.121	ND	0.0161	0.0355	0.0061	0.0075	0.0254	ND	0.0099
Mineral Spirits	2,750	590	ND	410	ND	ND	1,790	ND	130	2,940	6,090

ND = None Detected
(1)Sample dilution factor 1:1000
(2)Sample dilution factor 1:200
(3)Sample dilution factor 1:500

TABLE 4-3 (Continued)
ON-SITE OVERBURDEN, MAY 1991

Well Designation

PARAMETER	MW-12(4)	MW-13(5)	MW-14*	MW-15(6)	MW-16(4)	MW-17(7)	RI-1	RI-5(8)	RI-6	RI-9
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	25.3	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	984	791	ND	41.3	ND	2.46
1,1-Dichloroethane	ND	4,700	ND	127	723	613	1.52	86.8	ND	2.53
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	65,100	265,000	ND	7,450	29,200	5,730	ND	86.1	ND	2.57
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	6,410	27,200	ND	2,350	37,100	18,700	8.77	1,090	5.10	9.84
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1,910	ND	1.18	2,670	23,800	18,700	3.82	1,860	ND	25.6
Tetrachloroethene	28,600	5,390	4.69	17,600	43,500	22,400	24.5	2,980	1.65	46.4
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	102,020	302,290	5.87	30,197	135,307	66,934	38.61	6,169.5	6.75	89.40
Lead (ppm)	0.0340	0.0211	0.0064	0.0088	0.0130	ND	0.0159	0.0159	0.0072	0.0057
Mineral Spirits	6,730	14,600	ND	ND	834	2,810	ND	ND	ND	ND

ND = None Detected
*Sample Collected 6/27/91
(4)Sample dilution factor 1:500
(5)Sample dilution factor 1:2500
(6)Sample dilution factor 1:100
(7)Sample dilution factor 1:200
(8)Sample dilution factor 1:25

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
MAY 1991

Well Designation

PARAMETER	U-6D	W-7D[1]	W-9D[2]	OW-1[3]	OW-2[1]	PW-1	RI-2	RI-3	RI-4[4]	RI-7	RI-8[5]
Methylene Chloride	ND	ND	ND	266	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	403	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	23.6	125	365	35.2	19.1	1.11	ND	ND	ND	5.95
1,1-Dichloroethane	ND	12.1	374	1,930	19.1	5.31	5.01	ND	37.7	ND	6.15
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	105	2,190	43,000	821	191	3.06	ND	19.6	ND	40.5
Chloroform	1.41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	213	256	4,340	440	119	9.48	3.54	437	2.61	124
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	323	579	451	222	132	5.13	ND	997	ND	140
Tetrachloroethene	3.54	518	878	2,040	372	219	14.0	7.90	2,590	10.8	328
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	4.95	1,194.7	4,402	52,795	1909.3	685.41	37.79	11.44	4,081.3	13.41	644.60
Lead (ppm)	0.0355	0.0190	0.137	0.161	0.0096	0.0067	ND	ND	ND	ND	0.0199
Mineral Spirits	ND	ND	ND	158	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1) Sample dilution factor 1:5
(2) Sample dilution factor 1:20
(3) Sample dilution factor 1:200
(4) Sample dilution factor 1:10
(5) Sample dilution factor 1:2

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
MAY 1991

PARAMETER	Well Designation RI-10
Methylene Chloride	ND
Vinyl Chloride	ND
Chloroethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,2-Dichloroethene (cis+trans)	ND
Chloroform	ND
Bromoform	ND
Dibromochloromethane	ND
Bromodichloromethane	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Tetrachloroethene	13.9
Toluene	ND
Total Volatiles (ppb)	13.9
Lead (ppm)	ND
Mineral Spirits	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
SEPTEMBER 1991

	Well Designation										
PARAMETER	W-1(1)	W-2(2)	W-3	W-4(2)	W-5	U-6	W-7(3)	W-8	PW-2(2)	MW-10(1)	MW-11(2)
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	914	ND	ND	ND	ND	ND	ND	ND	577	ND	ND
1,1-Dichloroethane	922	300	ND	ND	ND	ND	ND	1.51	542	ND	219
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	44,400	11,200	ND	14,500	ND	ND	4,050	3.21	24,300	13,300	10,500
Chloroform	ND	ND	ND	ND	ND	ND	ND	1.66	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloro-ethane	22,600	4,420	ND	2,170	1.47	ND	1,510	ND	14,800	2,600	8,820
1,1,2-Trichloro-ethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloro-ethene	4,680	5,260	ND	1,200	1.28	8.51	2,490	5.04	4,640	2,860	6,780
Tetrachloro-ethene	13,600	23,400	1.44	10,100	5.23	1.89	18,400	5.56	14,300	25,700	20,900

TABLE 4-3 (Continued)

ON-SITE OVERBURDEN, SEPTEMBER 1991

PARAMETER	W-1(1)	W-2(2)	W-3	W-4(2)	W-5	U-6	W-7(3)	W-8	PW-2(2)	MW-10(1)	MW-11(2)
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	87,116	44,580	1.44	27,970	7.98	10.40	26,450	16.98	59,159	44,460	47,219
Lead (ppm)	0.0315	0.0443	0.0165	ND	0.0050	0.0259	ND	ND	0.014	ND	0.0103
Mineral Spirits	1,240	ND	ND	553	ND	ND	299	ND	ND	959	7,050

ND = None Detected
(1)Sample dilution factor 1:250
(2)Sample dilution factor 1:200
(3)Sample dilution factor 1:100

TABLE 4-3 (Continued)
ON-SITE OVERBURDEN, SEPTEMBER 1991

PARAMETER	Well Designation									
	MW-12[4]	MW-13[5]	MW-14	MW-15[6]	MW-16[7]	MW-17[4]	RI-1	RI-5[8]	RI-6	RI-9
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	384	ND	ND	105	1,600	480	ND	ND	ND	ND
1,1-Dichloroethane	385	1,550	ND	125	611	457	ND	52.0	ND	1.68
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	27,300	101,000	ND	8,370	29,900	18,200	ND	ND	ND	4.55
Chloroform	ND	ND	ND	ND	ND	ND	1.22	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	13,700	1,600	ND	2,990	41,700	26,200	2.13	606	2.00	2.68
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	4,740	3,980	1.23	3,060	22,500	21,200	1.25	1,380	ND	8.68
Tetrachloroethene	34,100	13,600	4.29	15,200	27,900	41,200	8.21	1,580	6.23	16.1
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	80,609	121,730	5.52	29,850	124,211	107,737	12.81	3,618.0	8.23	33.69
Lead (ppm)	ND	ND	0.0062	ND	0.0193	ND	0.0324	0.0088	0.0064	ND
Mineral Spirits	835	6,440	ND	ND	1,190	38,900	ND	ND	ND	ND

ND = None Detected
(4)Sample dilution factor 1:200
(5)Sample dilution factor 1:1000
(6)Sample dilution factor 1:100
(7)Sample dilution factor 1:500
(8)Sample dilution factor 1:20

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
SEPTEMBER 1991

Well Designation

PARAMETER	U-6D	W-7D(1)	W-9D(2)	OW-1(3)	OW-2(3)	PW-1(3)	RI-2	RI-3	RI-4(2)	RI-7	RI-8(3)
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	66.0	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	24.2	228	7.78	19.1	15.2	27.1	ND	ND	ND	4.54
1,1-Dichloroethane	ND	23.7	125	27.3	34.4	7.34	53.2	ND	34.4	ND	3.88
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	594	4,360	183	253	220	41.6	ND	ND	ND	43.1
Chloroform	3.47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	436	3,040	19.4	29.1	153	98.4	2.71	310	ND	77.0
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	203	1,450	204	162	119	54.5	ND	752	ND	125
Tetrachloroethene	2.94	334	3,070	70.9	273	188	81.4	7.26	2,030	3.63	265
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	6.41	1,614.9	12,339.0	512.38	770.6	702.54	356.2	9.97	3,126.4	3.63	518.52

TABLE 4-3 (Continued)
ON-SITE SHALLOW BEDROCK, SEPTEMBER 1991

PARAMETER	U-6D	W-7D(1)	W-9D(2)	OW-1(3)	OW-2(3)	PW-1(3)	RI-2	RI-3	RI-4(2)	RI-7	RI-8(3)
Lead (ppm)	0.139	0.0233	0.0127	0.178	0.178	0.0116	0.0061	ND	ND	0.0053	ND
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1)Sample dilution factor 1:5
(2)Sample dilution factor 1:20
(3)Sample dilution factor 1:2

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
SEPTEMBER 1991

PARAMETER	Well Designation RI-10
Methylene Chloride	ND
Vinyl Chloride	ND
Chloroethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,2-Dichloroethene (cis+trans)	ND
Chloroform	ND
Bromoform	ND
Dibromochloromethane	ND
Bromodichloromethane	ND
1,1,1-Trichloroethane	1.25
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Tetrachloroethene	13.1
Toluene	ND
Total Volatiles (ppb)	14.35
Lead (ppm)	ND
Mineral Spirits	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
NOVEMBER 1991

	Well Designation										
PARAMETER	W-1 (1)	W-2 (2)	W-3	W-4 (2)	W-5	U-6	W-7 (1)	W-8	PW-2 (3)	MW-10 (4)	MW-11 (3)
Methylene Chloride	ND	ND	ND	279	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	918	232	ND	ND	ND	ND	ND	ND	557	ND	237
1,1-Dichloroethane	967	240	ND	136	ND	ND	604	ND	543	ND	370
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	43,600	13,600	2.43	9,430	ND	ND	21,800	2.51	21,300	31,000	33,500
Chloroform	ND	ND	ND	ND	ND	1.57	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloro-ethane	21,900	4,990	ND	916	1.23	ND	3,930	ND	13,900	6,150	10,200
1,1,2-Trichloro-ethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloro-ethene	5,010	6,090	8.66	528	1.33	8.73	4,520	11.0	4,120	4,040	1,400
Tetrachloro-ethene	12,300	25,200	12.5	3,600	5.20	ND	25,400	2.20	16,300	39,800	15,500

TABLE 4-3 (Continued)
ON-SITE OVERBURDEN, NOVEMBER 1991

PARAMETER	W-1(1)	W-2(2)	W-3	W-4(2)	W-5	U-6	W-7(1)	W-8	PW-2(3)	MW-10(4)	MW-11(3)
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	84,695	50,352	23.59	14,889	7.76	10.3	56,254	15.71	56,720	80,990	61,207
Lead (ppm)	0.017	0.0097	0.0394	ND	0.0155	ND	ND	ND	0.0221	ND	0.0105
Mineral Spirits	944	132	ND	390	ND	ND	1,580	ND	ND	6,650	8,430

ND = None Detected
(1)Sample dilution factor 1:250
(2)Sample dilution factor 1:100
(3)Sample dilution factor 1:200
(4)Sample dilution factor 1:500

TABLE 4-3 (Continued)
ON-SITE OVERBURDEN, NOVEMBER 1991

	Well Designation									
PARAMETER	MW-12(5)	MW-13	MW-14	MW-15(6)	MW-16(5)	MW-17(7)	RI-1	RI-5(8)	RI-6	RI-9
Methylene Chloride	ND	NS	ND	ND	ND	ND	ND	ND	3.53	ND
Vinyl Chloride	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	681	NS	ND	111	1,590	ND	ND	ND	ND	1.90
1,1-Dichloroethane	611	NS	ND	104	619	ND	ND	31.9	ND	3.16
1,2-Dichloroethane	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	47,200	NS	ND	7,960	31,900	29,200	ND	42.6	ND	9.72
Chloroform	ND	NS	ND	ND	ND	ND	1.21	39.7	ND	ND
Bromoform	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	22,900	NS	ND	2,990	33,300	49,600	2.31	278	1.71	2.87
1,1,2-Trichloroethane	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	7,550	NS	1.22	2,890	16,200	39,100	2.05	778	1.88	16.8
Tetrachloroethene	37,300	NS	5.59	15,700	26,600	72,400	10.9	1,200	10.6	35.3
Toluene	ND	NS	ND	ND	ND	NO	ND	ND	ND	ND
Total Volatiles (ppb)	116,242	NS	6.81	29,755	110,209	190,300	16.47	2,370.2	17.72	69.75
Lead (ppm)	ND	NS	ND	0.0154	0.0188	0.010	0.0267	0.0219	ND	ND
Mineral Spirits	3,540	NS	ND	ND	939	27,300	ND	ND	ND	ND

ND = None Detected
NS = Not Sampled
(5)Sample dilution factor 1:250
(6)Sample dilution factor 1:50
(7)Sample dilution factor 1:1000
(8)Sample dilution factor 1:10

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
NOVEMBER 1991

Well Designation

PARAMETER	U-6D	W-7D(1)	W-9D(2)	OW-1	OW-2(3)	PW-1	RI-2	RI-3	RI-4(4)	RI-7	RI-8(5)
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	46.5	68.6	4.89	14.8	18.1	ND	ND	ND	ND	9.52
1,1-Dichloroethane	ND	35.0	324	16.1	25.0	11.3	ND	ND	54.9	ND	8.05
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	1,330	1,910	92.6	469	280	ND	ND	26.5	ND	88.9
Chloroform	6.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	871	231	1.65	216	174	1.70	1.95	527	ND	143
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	266	441	150	138	103	ND	ND	1,250	1.41	196
Tetrachloroethene	2.78	413	728	36.8	321	145	11.4	7.35	2,890	ND	406
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	9.00	2,961.5	3,702.6	302.04	1,183.8	731.4	13.10	9.30	4748.4	1.41	851.47

TABLE 4-3 (Continued)
ON-SITE SHALLOW BEDROCK, NOVEMBER 1991

PARAMETER	U-6D	W-7D(1)	W-9D(2)	OW-1	OW-2(3)	PW-1	RI-2	RI-3	RI-4(4)	RI-7	RI-8(5)
Lead (ppm)	0.0529	0.0217	0.216	0.143	0.167	0.0118	0.0066	ND	0.0053	ND	ND
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1)Sample dilution factor 1:5
(2)Sample dilution factor 1:10
(3)Sample dilution factor 1:5
(4)Sample dilution factor 1:20
(5)Sample dilution factor 1:2

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
NOVEMBER 1991

	Well Designation
PARAMETER	RI-10
Methylene Chloride	ND
Vinyl Chloride	ND
Chloroethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,2-Dichloroethene (cis+trans)	ND
Chloroform	ND
Bromoform	ND
Dibromochloromethane	ND
Bromodichloromethane	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Tetrachloroethene	7.41
Toluene	ND
Total Volatiles (ppb)	7.41
Lead (ppm)	ND
Mineral Spirits	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
XEROX, BLAUVELT, NEW YORK
JANUARY 1992

Well Designation

PARAMETER	W-1[1]	W-2[2]	W-3	W-4[2]	W-5	U-6	W-7[3]	W-8	PW-2[4]	MW-10*[1]	MW-11[2]
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	960	650	ND	ND	ND	ND	ND	ND	750	ND	310
1,1-Dichloroethane	750	680	ND	140	ND	ND	110	ND	490	420	320
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	39,000	40,000	ND	21,000	ND	ND	8,100	49	27,000	30,000	26,000
Chloroform	ND	ND	ND	ND	ND	2.8	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	15,000	16,000	ND	3,100	ND	ND	860	1.5	15,000	9,000	15,000
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	4,900	15,000	2.8	2,900	ND	6.2	290	9.2	5,100	3,500	5,500
Tetrachloroethene	13,000	51,000	4.5	11,000	1.9	1.9	7,500	26	19,000	43,000	24,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	73,610	123,300	7.3	38,140	1.9	10.9	16,860	85.7	67,340	85,920	71,240
Lead (ppm)	0.0145	0.0087	0.0351	ND	ND	ND	ND	ND	0.0111	0.0094	ND
Mineral Spirits	1,100	360	ND	350	ND	ND	470	ND	ND	25,000	1,300

ND = None Detected
*NAPL 0.44-foot thickness
(1)Sample dilution factor 1:250
(2)Sample dilution factor 1:200
(3)Sample dilution factor 1:50
(4)Sample dilution factor 1:100

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TABLE 4-3 (Continued)
ON-SITE OVERBURDEN, JANUARY 1992

Well Designation

PARAMETER	MW-12	MW-13(5)	MW-14	MW-15(6)	MW-16(7)	MW-17(8)	RI-1	RI-5(9)	RI-6	RI-9
Methylene Chloride	NS	ND	ND	ND	ND	2,500	2.0	ND	ND	ND
Vinyl Chloride	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	NS	ND	ND	75	2,000	780	ND	3.9	ND	1.9
1,1-Dichloroethane	NS	5,100	ND	ND	580	990	ND	7.8	ND	2.6
1,2-Dichloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	NS	24,000	ND	6,800	42,000	68,000	ND	3.1	ND	12
Chloroform	NS	ND	ND	ND	ND	ND	1.2	ND	ND	ND
Bromoform	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	NS	53,000	ND	1,900	35,000	57,000	3.1	130	3.1	6.6
1,1,2-Trichloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	NS	7,400	ND	1,700	20,000	39,000	2.1	270	ND	18
Tetrachloroethene	NS	21,000	3.1	10,000	29,000	49,000	7.9	280	2.8	38
Toluene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	NS	326,500	3.1	20,475	128,580	217,270	16.3	694.8	5.9	79.1
Lead (ppm)	NS	0.041	0.0051	0.0102	0.0125	ND	ND	ND	ND	ND
Mineral Spirits	NS	51,000	ND	ND	790	220,000	ND	ND	ND	ND

ND = None Detected
NS = Not Sampled
(5) Sample dilution factor 1:2000
(6) Sample dilution factor 1:50
(7) Sample dilution factor 1:250
(8) Sample dilution factor 1:500
(9) Sample dilution factor 1:2

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
JANUARY 1992

	Well Designation										
PARAMETER	U-6D	W-7D(1)	W-9D(2)	OW-1	OW-2(1)	PW-1(3)	RI-2	RI-3	RI-4(3)	RI-7	RI-8(4)
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	27	ND	ND
Vinyl Chloride	ND	ND	ND.	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	85	290	3.4	79	140	1.6	ND	ND	ND	11
1,1-Dichloroethane	ND	47	290	6.5	32	70	7.0	ND	63	ND	6.9
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	2,500	6,000	130	2,100	4,200	4.2	ND	25	ND	86
Chloroform	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	1,500	2,500	50	1,300	2,400	12	2.7	580	ND	110
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	380	1,800	66	350	700	15	ND	1,400	ND	150
Tetrachloroethene	2.2	520	5100	44	500	1,500	29	7.4	4,400	1.1	270
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	6.8	5,032	15,980	299.9	4,361	9,010	68.8	10.1	6,495	1.1	633.9
Lead (ppm)	0.119	0.0336	0.0404	0.152	0.112	ND	ND	ND	ND	ND	ND
Mineral Spirits	ND	ND	ND	170	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1) Sample dilution factor 1:10 (3) Sample dilution factor 1:20
(2) Sample dilution factor 1:25 (4) Sample dilution factor 1:2

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
JANUARY 1992

PARAMETER	Well Designation RI-10
Methylene Chloride	ND
Vinyl Chloride	ND
Chloroethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,2-Dichloroethene (cis+trans)	2.1
Chloroform	ND
Bromoform	ND
Dibromochloromethane	ND
Bromodichloromethane	ND
1,1,1-Trichloroethane	4.5
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Tetrachloroethene	25
Toluene	ND
Total Volatiles (ppb)	31.6
Lead (ppm)	ND
Mineral Spirits	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
APRIL 1992

	Well Designation										
PARAMETER	W-1(1)	W-2(2)	W-3	W-4(3)	W-5	U-6	W-7(2)	W-8	PW-2(3)	MW-10(1)	MW-11(2)
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1,500	97	ND	ND	ND	ND	ND	ND	730	350	ND
1,1-Dichloroethane	1,700	130	ND	210	ND	ND	ND	ND	540	400	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	91,000	13,000	ND	30,000	ND	ND	29,000	24	26,000	36,000	8,000
Chloroform	ND	ND	ND	ND	ND	2.6	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	34,000	2,300	ND	6,100	ND	ND	1,000	ND	17,000	13,000	1,000
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	8,200	4,200	4.7	7,600	ND	5.4	570	6.0	5,400	3,700	740
Tetrachloroethene	22,000	16,000	6.8	25,000	4.8	1.4	6,000	27	19,000	41,000	12,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	158,400	35,727	11.5	68,910	4.8	9.4	36,570	57.0	68,670	94,450	21,740
Lead (ppm)	0.0214	0.0176	0.0958	0.0214	ND	0.0216	ND	ND	0.0108	ND	ND
Mineral Spirits	1,600	ND	ND	430	ND	ND	1,000	ND	ND	ND	2,300

ND = None Detected
(1)Sample dilution factor 1:250
(2)Sample dilution factor 1:50
(3)Sample dilution factor 1:100

TABLE 4-3 (Continued)
ON-SITE OVERBURDEN, APRIL 1992

	Well Designation									
PARAMETER	MW-12	MW-13(4)	MW-14	MW-15(5)	MW-16(1)	MW-17(6)	RI-1	RI-5(7)	RI-6	RI-9
Methylene Chloride	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	NS	ND	ND	ND	480	780	ND	17	ND	ND
1,1-Dichloroethane	NS	2,200	ND	ND	600	920	ND	28	ND	ND
1,2-Dichloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	NS	130,000	ND	2,900	53,000	54,000	ND	12	ND	7.9
Chloroform	NS	ND	ND	ND	ND	ND	1.2	ND	ND	ND
Bromoform	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	NS	14,000	ND	130	19,000	45,000	1.9	530	3.7	2.4
1,1,2-Trichloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	NS	ND	ND	310	14,000	29,000	1.8	1,000	ND	15
Tetrachloroethene	NS	8,300	1.5	4,800	26,000	33,000	6.3	1,100	1.8	33
Toluene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	NS	154,500	1.5	8,140	113,080	162,700	11.2	2,687	5.5	58.3
Lead (ppm)	NS	ND	ND	0.0070	ND	0.0106	0.0093	ND	ND	ND
Mineral Spirits	NS	18,000	ND	ND	ND	5,600	ND	ND	ND	ND

ND = None Detected
NS = Not Sampled
(4) Sample dilution factor 1:1000
(5) Sample dilution factor 1:25
(6) Sample dilution factor 1:500
(7) Sample dilution factor 1:5

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
APRIL 1992

	Well Designation										
PARAMETER	U-6D	W-7D[1]	W-9D[2]	OW-1	OW-2[3]	PW-1[1]	RI-2	RI-3	RI-4[3]	RI-7	RI-8
Methylene Chloride	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	23	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	310	190	5.6	230	240	4.2	ND	ND	ND	8.6
1,1-Dichloroethane	ND	200	340	4.4	100	140	15	ND	29	ND	4.3
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	15,000	5,200	260	8,100	12,000	14	8.0	13	ND	62
Chloroform	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	6,400	1,800	130	3,900	5,400	23	5.5	280	ND	91
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	760	1,100	28	570	690	29	1.4	670	ND	130
Tetrachloroethene	4.9	1,500	2,300	45	1,300	1,800	39	12	1,600	2.3	210
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	7.5	24,170	10,930	473.0	14,234	20,270	124.2	26.9	2,592	2.3	505.9
Lead (ppm)	0.284	0.0148	0.0469	0.0722	0.0922	0.0050	ND	ND	ND	0.0199	ND
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1) Sample dilution factor 1:20
(2) Sample dilution factor 1:25
(3) Sample dilution factor 1:10

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
APRIL 1992

	Well Designation
PARAMETER	RI-10
Methylene Chloride	ND
Vinyl Chloride	ND
Chloroethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,2-Dichloroethene (cis+trans)	ND
Chloroform	ND
Bromoform	ND
Dibromochloromethane	ND
Bromodichloromethane	ND
1,1,1-Trichloroethane	1.7
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Tetrachloroethene	17
Toluene	ND
Total Volatiles (ppb)	18.7
Lead (ppm)	ND
Mineral Spirits	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
JULY 1992

Well Designation

PARAMETER	W-1 (1)	W-2 (2)	W-3	W-4 (3)	W-5	U-6	W-7 (4)	W-8	PW-2 (2)	MW-10* (2)	MW-11 (1)
Methylene Chloride	560	ND	ND	ND	ND	ND	ND	ND	ND	230	1000
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	900	ND	ND	ND	ND	ND	ND	ND	290	220	ND
1,1-Dichloroethane	2000	360	ND	110	ND	ND	ND	ND	440	290	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	150,000	24,000	ND	20,000	ND	ND	54,000	3.9	24,000	60,000	71,000
Chloroform	ND	ND	ND	ND	ND	1.9	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	33,000	6,600	ND	2000	ND	ND	1200	ND	11,000	9,700	8,300
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	3100	8400	ND	1900	ND	3.8	480	4.8	4200	4100	1800
Tetrachloroethene	17,000	35,000	ND	12,000	2.8	1.8	4200	14	16,000	51,000	17,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	206,560	74,360	ND	36,010	2.8	7.5	59,880	22.7	55,930	125,540	99,100
Lead (ppm)	0.0180	ND	0.0604	ND	ND	0.0200	ND	ND	0.0117	ND	ND
Mineral Spirits	3900	230	ND	250	ND	ND	1500	ND	100	1100	6200

ND = None Detected

TABLE 4-3 (Continued)

ON-SITE OVERBURDEN
JULY 1992

Well Designation

PARAMETER	MW-12** (1)	MW-13** (5)	MW-14	MW-15 (6)	MW-16 (1)	MW-17* (1)	RI-1	RI-5 (6)	RI-6	RI-9
Methylene Chloride	ND	ND	ND	ND	810	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	980	ND	ND	74	ND	ND
1,1-Dichloroethane	ND	4100	ND	66	780	710	ND	170	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	100,000	270,000	ND	12,000	66,000	60,000	2.9	570	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	9500	17,000	ND	1900	36,000	42,000	11	3500	1.5	1.2
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1800	ND	ND	2200	20,000	36,000	12	9500	ND	6.3
Tetrachloroethene	13,000	3300	3.4	15,000	46,000	80,000	41	13,000	3.1	22
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	124,300	294,400	3.4	31,166	170,570	218,710	66.9	26,814	4.6	29.5
Lead (ppm)	ND	ND	ND	ND	ND	0.0059	0.0068	ND	ND	ND
Mineral Spirits	6,300	48,000	ND	ND	300	13,000	ND	ND	ND	ND

ND = None Detected
*NAPL = 0.07 foot thickness
**NAPL = 0.01 foot thickness
(1)Sample dilution factor 1:500
(2)Sample dilution factor 1:200
(3)Sample dilution factor 1:100
(4)Sample dilution factor 1:250
(5)Sample dilution factor 1:2000
(6)Sample dilution factor 1:50

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
JULY 1992

Well Designation

PARAMETER	U-6D	W-7D (1)	W-9D (2)	OW-1 (3)	OW-2 (3)	PW-1 (4)	RI-2	RI-3	RI-4 (2)	RI-7	RI-8 (5)	RI-11
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	100	56	23	21	25	1.8	ND	ND	ND	3.7	ND
1,1-Dichloroethane	ND	190	340	150	ND	20	8.8	ND	44	ND	2.9	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis + trans)	ND	14,000	3200	2600	1500	1300	6.4	ND	ND	ND	45	ND
Chloroform	3.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.0
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	4100	170	61	99	480	13	2.5	670	ND	69	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	820	950	440	220	230	23	1.3	2600	ND	150	ND
Tetrachloroethene	ND	1900	1200	310	430	410	38	13	6600	ND	350	4.0
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	3.9	21,110	5916	3584	2270	2465	91	16.8	9914	ND	620.6	7.0
Lead (ppm)	0.392	0.0431	0.106	0.0755	0.197	ND	ND	ND	ND	ND	ND	0.0018
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

(1)Sample dilution factor 1:100 ND = None Detected
(2)Sample dilution factor 1:25
(3)Sample dilution factor 1:10
(4)Sample dilution factor 1:5
(5)Sample dilution factor 1:2

TABLE 4-3 (Continued)

SUMMARY OF ON-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
JULY 1992

Well Designation

PARAMETER	RI-10
Methylene Chloride	ND
Vinyl Chloride	ND
Chloroethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,2-Dichloroethene (cis+trans)	ND
Chloroform	ND
Bromoform	ND
Dibromochloroethane	ND
Bromodichloromethane	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Tetrachloroethene	22
Toluene	ND
Total Volatiles (ppb)	22
Lead (ppm)	ND
Mineral Spirits	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF GROUNDWATER QUALITY IN OFF-SITE OVERBURDEN MONITORING WELLS XEROX, BLAUVELT, NEW YORK DECEMBER 1991

Well Designation

PARAMETER	MW-OS -1	MW-OS -2(3)	MW-OS -3	MW-OS -4	MW-OS -5	MW-OS -6(1)	MW-OS -7	MW-OS -9	MW-OS -10	MW-OS -11	MW-OS -12
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	90.8	3.84	ND	6.14	13.3	2.01	ND	ND	6.19	1.24
1,1-Dichloroethane	ND	56.6	3.20	ND	4.06	7.94	ND	ND	ND	3.27	ND
1,2-Dichloroethene (cis+trans)	ND	2,730	27.5	ND	44.2	149	45.2	11.0	ND	42.3	10.8
Chloroform	3.08	ND	ND	5.50	ND	ND	ND	2.93	ND	ND	ND
1,1,1-Trichloroethane	ND	708	43.5	ND	52.8	119	17.9	5.22	ND	51.2	8.01
Trichloroethene	ND	1,040	68.9	ND	86.5	181	22.9	7.87	ND	81.1	12.9
Tetrachloroethene	ND	4,240	123	1.25	147	318	61.5	22.1	2.19	12.9	22.1
Total Volatiles (ppb)	3.08	8,865.4	269.94	6.75	340.70	788.24	149.51	49.12	2.19	313.06	55.05
Lead (ppm)	ND	0.0256	ND	0.0079	0.0456	ND	0.0949	ND	ND	ND	ND
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1) Dilution factor for volatile fraction = 1:2
(2) Dilution factor for volatile fraction = 1:5
(3) Dilution factor for volatile fraction = 1:20

TABLE 4-3 (Continued)

SUMMARY OF GROUNDWATER QUALITY IN OFF-SITE SHALLOW BEDROCK MONITORING WELLS XEROX, BLAUVELT, NEW YORK DECEMBER 1991

Well Designation

PARAMETER	MW-OS -1R	MW-OS -2R	MW-OS -4R	MW-OS -5R	MW-OS -6R(2)	MW-OS -7R	MW-OS -8R	MW-OS -9R	MW-OS -10R	MW-OS -11R(1)	MW-OS -12R
Methylene Chloride	ND	ND	ND	ND	10.2	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	8.43	ND	6.49	63.5	6.06	ND	ND	ND	23.7	ND
1,1-Dichloroethane	ND	4.70	ND	4.26	21.0	3.44	ND	ND	ND	8.42	ND
1,2-Dichloroethene (cis+trans)	ND	78.6	ND	51.5	290	116	1.70	ND	11.4	119	2.80
Chloroform	ND	ND	ND	ND	ND	ND	12.4	20.1	ND	ND	5.38
1,1,1-Trichloroethane	1.3	69.9	1.17	67.1	262	43.5	5.05	ND	ND	134	1.66
Trichloroethene	ND	114	ND	98.7	434	60.4	10.2	ND	ND	201	7.85
Tetrachloroethene	10.9	198	11.8	158	639	165	11.2	1.04	2.03	324	14.3
Total Volatiles (ppb)	12.20	473.63	12.97	386.05	1719.7	394.40	40.55	21.14	13.43	810.12	31.99
Lead (ppm)	ND	0.0158	0.0348	0.0153	ND	0.0332	0.0320	ND	ND	ND	ND
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1)Dilution factor for volatile fraction = 1:2
(2)Dilution factor for volatile fraction = 1:5
(3)Dilution factor for volatile fraction = 1:20

TABLE 4-3 (Continued)

SUMMARY OF GROUNDWATER QUALITY IN OFF-SITE DEEP BEDROCK MONITORING WELLS XEROX, BLAUVELT, NEW YORK DECEMBER 1991

	Well Designation	
PARAMETER	MW-OS-5D	MW-OS-7D
Methylene Chloride	ND	ND
Vinyl Chloride	ND	ND
1,1-Dichloroethene	4.99	ND
1,1-Dichloroethane	ND	ND
1,2-Dichloroethene (cis+trans)	25.9	ND
Chloroform	20.2	ND
Bromodichloromethane	1.53	ND
1,1,1-Trichloroethane	19.5	ND
Trichloroethene	31.3	ND
Tetrachloroethene	42.0	9.16
Total Volatiles (ppb)	145.42	9.16
Lead (ppm)	ND	ND
Mineral Spirits	ND	ND

ND = None Detected

TABLE 4-3 (Continued)
SUMMARY OF OFF-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
XEROX, BLAUVELT, NEW YORK
JANUARY 1992

	Well Designation										
PARAMETER	MW-OS -1	MW-OS -2 (1)	MW-OS -3	MW-OS -4	MW-OS -5	MW-OS -6	MW-OS -7	MW-OS -9	MW-OS -10	MW-OS -11	MW-OS -12
Methylene Chloride	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	NS	98.4	11.0	ND	10.4	7.56	2.68	1.03	ND	4.90	ND
1,1-Dichloroethane	NS	ND	3.98	ND	4.10	3.93	ND	ND	ND	2.24	ND
1,2-Dichloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	NS	3,380	55.5	ND	61.6	113	52.5	21.6	ND	28.0	3.09
Chloroform	NS	ND	ND	8.00	ND	ND	ND	ND	ND	ND	ND
Bromoform	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	NS	790	90.8	ND	77.8	73.9	19.2	7.61	ND	32.2	2.40
1,1,2-Trichloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	NS	1,500	170	ND	132	133	30.2	12.5	ND	50.4	5.23
Tetrachloroethene	NS	5,880	299	1.53	240	213	77.7	32.2	ND	63.1	9.17
Toluene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	NS	11,648.4	630.28	9.53	525.9	544.39	182.28	74.94	ND	180.84	19.89
Lead (ppm)	NS	0.152	0.0089	ND	0.0364	0.0151	0.0176	ND	0.0407	0.0056	0.0067
Mineral Spirits	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
NS = Not Sampled
(1) Sample dilution factor 1:50

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
JANUARY 1992

	Well Designation										
PARAMETER	MW-OS -1R	MW-OS -2R	MW-OS -4R	MW-OS -5R(1)	MW-OS -6R(1)	MW-OS -7R	MW-OS -8R	MW-OS -9R	MW-OS -10R	MW-OS -11R(2)	MW-OS -12R
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	11.2	ND	7.92	58.6	6.24	ND	ND	ND	139	ND
1,1-Dichloroethane	ND	3.25	ND	4.89	8.08	2.61	ND	ND	ND	23.4	1.93
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	70.6	ND	55.9	198	113	1.92	ND	4.70	547	3.05
Chloroform	ND	ND	ND	ND	ND	ND	2.37	9.11	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	1.55	71.9	ND	66.2	168	39.2	5.79	ND	ND	560	1.40
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	129	ND	109	323	60.3	12.0	ND	ND	912	6.69
Tetrachloroethene	9.31	241	6.06	199	444	175	16.3	ND	4.80	1,220	9.68
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 4-3 (Continued)
OFF-SITE SHALLOW BEDROCK, JANUARY 1992

PARAMETER	MW-OS -1R	MW-OS -2R	MW-OS -4R	MW-OS -5R(1)	MW-OS -6R(1)	MW-OS -7R	MW-OS -8R	MW-OS -9R	MW-OS -10R	MW-OS -11R(2)	MW-OS -12R
Total Volatiles (ppb)	10.86	526.95	6.06	442.91	1,199.68	396.35	38.38	9.11	9.50	3,401.4	22.75
Lead (ppm)	ND	ND	0.0072	0.0079	ND	ND	ND	ND	0.0095	ND	0.0067
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1)Sample dilution factor 1:2
(2)Sample dilution factor 1:5

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
JANUARY 1992

PARAMETER	Well Designation MW-OS-5D	MW-OS-7D
Methylene Chloride	ND	ND
Vinyl Chloride	ND	ND
Chloroethane	ND	ND
1,1-Dichloroethene	7.20	ND
1,1-Dichloroethane	2.07	ND
1,2-Dichloroethane	ND	ND
1,2-Dichloroethene (cis+trans)	40.3	ND
Chloroform	6.58	ND
Bromoform	ND	ND
Dibromochloromethane	ND	ND
Bromodichloromethane	ND	ND
1,1,1-Trichloroethane	26.3	ND
1,1,2-Trichloroethane	ND	ND
Trichloroethene	44.7	ND
Tetrachloroethene	60.9	7.89
Toluene	ND	ND
Total Volatiles (ppb)	188.05	7.89
Lead (ppm)	ND	ND
Mineral Spirits	ND	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
APRIL 1992

	Well Designation										
PARAMETER	MW-OS -1	MW-OS -2(1)	MW-OS -3(2)	MW-OS -4	MW-OS -5(3)	MW-OS -6	MW-OS -7	MW-OS -9	MW-OS -10	MW-OS -11	MW-OS -12
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	72	9.3	ND	19	2.3	1.4	ND	ND	2.6	1.2
1,1-Dichloroethane	ND	33	5.6	ND	13	ND	ND	ND	ND	ND	2.3
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	2,400	51	ND	760	31	44	8.2	ND	21	9.7
Chloroform	ND	ND	ND	3.3	ND	ND	ND	1.3	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	640	88	ND	330	28	15	3.1	ND	26	8.6
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	1,200	140	ND	210	48	19	4.2	ND	43	16
Tetrachloroethene	ND	4,000	220	ND	570	81	52	12	ND	56	22
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	ND	8,345	513.9	3.3	1,902	190.3	131.4	28.8	ND	148.6	59.8
Lead (ppm)	0.0238	0.0376	ND	0.0106	0.0101	0.0097	0.0058	ND	0.0134	0.0214	ND
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1)Sample dilution factor 1:20
(2)Sample dilution factor 1:2
(3)Sample dilution factor 1:5

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
APRIL 1992

	Well Designation										
PARAMETER	MW-OS -1R	MW-OS -2R(1)	MW-OS -4R	MW-OS -5R	MW-OS -6R(1)	MW-OS -7R	MW-OS -8R	MW-OS -9R	MW-OS -10R	MW-OS -11R(1)	MW-OS -12R
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	9.8	ND	12	35	5.1	ND	ND	ND	45	ND
1,1-Dichloroethane	ND	6.7	ND	4.8	8.8	3.0	ND	ND	ND	7.3	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	410	ND	130	220	130	1.5	ND	ND	150	3.3
Chloroform	ND	ND	ND	ND	ND	ND	1.2	4.3	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloro-methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	150	ND	120	140	43	4.3	ND	ND	170	2.4
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	100	ND	150	240	51	8.4	ND	ND	270	8.2
Tetrachloroethene	4.5	300	5.4	250	290	140	13	1.1	2.8	300	10
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 4-3 (Continued)
OFF-SITE SHALLOW BEDROCK, APRIL 1992

PARAMETER	MW-OS -1R	MW-OS -2R[1]	MW-OS -4R	MW-OS -5R	MW-OS -6R[1]	MW-OS -7R	MW-OS -8R	MW-OS -9R	MW-OS -10R	MW-OS -11R[1]	MW-OS -12R
Total Volatiles (ppb)	4.5	976.5	5.4	666.8	933.8	372.1	28.4	5.4	2.8	942.3	23.9
Lead (ppm)	ND	ND	ND	ND	ND	ND	ND	ND	0.0093	ND	0.0406
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
(1)Sample dilution factor 1:2

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
APRIL 1992

PARAMETER	Well Designation MW-OS-5D	MW-OS-7D
Methylene Chloride	ND	ND
Vinyl Chloride	ND	ND
Chloroethane	ND	ND
1,1-Dichloroethene	5.2	ND
1,1-Dichloroethane	2.2	ND
1,2-Dichloroethane	ND	ND
1,2-Dichloroethene (cis+trans)	42	ND
Chloroform	ND	ND
Bromoform	ND	ND
Dibromochloroethane	ND	ND
Bromodichloromethane	ND	ND
1,1,1-Trichloroethane	25	ND
1,1,2-Trichloroethane	ND	ND
Trichloroethene	40	ND
Tetrachloroethene	58	6.1
Toluene	ND	ND
Total Volatiles (ppb)	172.4	6.1
Lead (ppm)	ND	ND
Mineral Spirits	ND	ND

ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
INTERIM WELL SAMPLING
JUNE 2, 1992

	Well Designation
PARAMETER	MW-OS-15
Methylene Chloride	ND
Vinyl Chloride	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
1,2-Dichloroethene (cis+trans)	1.1
Chloroform	2.4
1,1,1-Trichloroethane	ND
Trichloroethene	4.2
Tetrachloroethene	5.0
Total Volatiles (ppb)	12.7
Lead (ppm)	0.0706
Mineral Spirits	NS

ND = None Detected
NS = Not Sampled

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
INTERIM WELL SAMPLING
JUNE 2, 1992

PARAMETER	Well Designation MW-OS-15R	MW-OS-16R
Methylene Chloride	ND	ND
Vinyl Chloride	ND	ND
1,1-Dichloroethene	ND	ND
1,1-Dichloroethane	ND	ND
1,2-Dichloroethene (cis+trans)	2.7	ND
Chloroform	4.9	3.8
1,1,1-Trichloroethane	3.2	1.6
Trichloroethene	6.9	1.6
Tetrachloroethene	11	ND
Total Volatiles (ppb)	28.7	7.0
Lead (ppm)	0.0069	ND
Mineral Spirits	NS	NS

ND = None Detected
NS = Not Sampled

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
JULY 1992

Well Designation

PARAMETER	MW-OS -1*	MW-OS -2[1]	MW-OS -3[2]	MW-OS -4	MW-OS -5[3]	MW-OS -6	MW-OS -7	MW-OS -9	MW-OS -10	MW-OS -11	MW-OS -12
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	5.0	ND	17	5.0	2.4	ND	ND	2.2	1.3
1,1-Dichloroethane	ND	ND	2.8	ND	9.7	2.7	1.2	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	1800	23	ND	420	68	71	24	ND	21	11
Chloroform	ND	ND	4.8	5.1	ND	ND	ND	7.1	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	470	53	ND	260	52	22	9.5	ND	24	9.7
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	1000	94	ND	220	89	29	12	ND	37	17
Tetrachloroethene	ND	3100	190	ND	500	150	87	38	ND	62	26
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	ND	6370	372.6	5.1	1426.7	366.7	212.6	90.6	ND	146.2	65
Lead (ppm)	ND	0.0673	ND	0.0073	0.0103	ND	ND	ND	0.0222	ND	ND
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*Well Dry
ND = None Detected
[1]Sample dilution factor 1:20
[2]Sample dilution factor 1:2
[3]Sample dilution factor 1:5

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
OVERBURDEN MONITORING WELLS
JULY 1992

	Well Designation	
PARAMETER	**MW-OS-14**	**MW-OS-15**
Methylene Chloride	ND	ND
Vinyl Chloride	ND	ND
1,1-Dichloroethene	ND	ND
1,1-Dichloroethane	ND	ND
1,2-Dichloroethene (cis+trans)	ND	ND
Chloroform	4.0	6.0
1,1,1-Trichloroethane	ND	2.0
Trichloroethene	ND	7.0
Tetrachloroethene	ND	7.0
Total Volatiles (ppb)	4.0	22.0
Lead (ppm)	0.0202	0.0136
Mineral Spirits	NA	NA

NA = Not Analyzed
ND = None Detected

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
JULY 1992

Well Designation

PARAMETER	MW-OS -1R	MW-OS -2R[1]	MW-OS -4R	MW-OS -5R	MW-OS -6R[1]	MW-OS -7R	MW-OS -8R	MW-OS -9R	MW-OS -10R	MW-OS -11R[1]	MW-OS -12R
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	10	ND	9.7	50	4.0	ND	ND	ND	40	ND
1,1-Dichloroethane	ND	4.1	ND	3.9	7.1	1.7	ND	ND	ND	7.5	1.0
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (cis+trans)	ND	270	ND	250	400	110	2.0	5.9	ND	160	4.1
Chloroform	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	110	ND	130	260	37	6.4	ND	ND	180	3.6
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	100	ND	110	370	41	11	1.4	ND	240	9.2
Tetrachloroethene	4.0	280	9.4	270	610	110	26	5.2	3.3	310	14
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatiles (ppb)	4.0	774.1	9.4	773.6	1697.1	303.7	46.6	12.5	3.3	937.5	31.9
Lead (ppm)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mineral Spirits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = None Detected
[1]Sample dilution factor 1:2

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
SHALLOW BEDROCK MONITORING WELLS
JULY 1992

	Well Designation			
PARAMETER	MW-OS-13R	MW-OS-14R*	MW-OS-15R	MW-OS-16R
Methylene Chloride	ND	NS	ND	ND
Vinyl Chloride	ND	NS	ND	ND
1,1-Dichloroethene	ND	NS	ND	ND
1,1-Dichloroethane	ND	NS	ND	ND
1,2-Dichloroethene (cis+trans)	ND	NS	3.0	ND
Chloroform	3.3	NS	5.0	7.0
1,1,1-Trichloroethane	ND	NS	2.0	ND
Trichloroethene	ND	NS	6.0	ND
Tetrachloroethene	3.7	NS	5.0	ND
Total Volatiles (ppb)	7.0	NS	21.0	7.0
Lead (ppm)	0.0101	NS	0.0032	0.0028
Mineral Spirits	ND	NS	ND	NA

*Well Dry
ND = None Detected
NS = Not Sampled

TABLE 4-3 (Continued)

SUMMARY OF OFF-SITE GROUNDWATER QUALITY
DEEP BEDROCK MONITORING WELLS
JULY 1992

	Well Designation		
PARAMETER	MW-OS-5D	MW-OS-7D	MW-OS-11D
Methylene Chloride	ND	ND	ND
Vinyl Chloride	ND	ND	ND
Chloroethane	ND	ND	ND
1,1-Dichloroethene	14	ND	19
1,1-Dichloroethane	3.0	ND	2.9
1,2-Dichloroethane	ND	ND	ND
1,2-Dichloroethene (cis+trans)	185	ND	110
Chloroform	ND	ND	ND
Bromoform	ND	ND	ND
Dibromochloroethane	ND	ND	ND
Bromodichloromethane	ND	ND	ND
1,1,1-Trichloroethane	90	ND	79
1,1,2-Trichloroethane	ND	ND	ND
Trichloroethene	76	ND	100
Tetrachloroethene	160	8.1	170
Toluene	ND	ND	ND
Total Volatiles (ppb)	528	8.1	480.9
Lead (ppm)	ND	ND	ND
Mineral Spirits	ND	ND	ND

ND = None Detected

TABLE 4-4

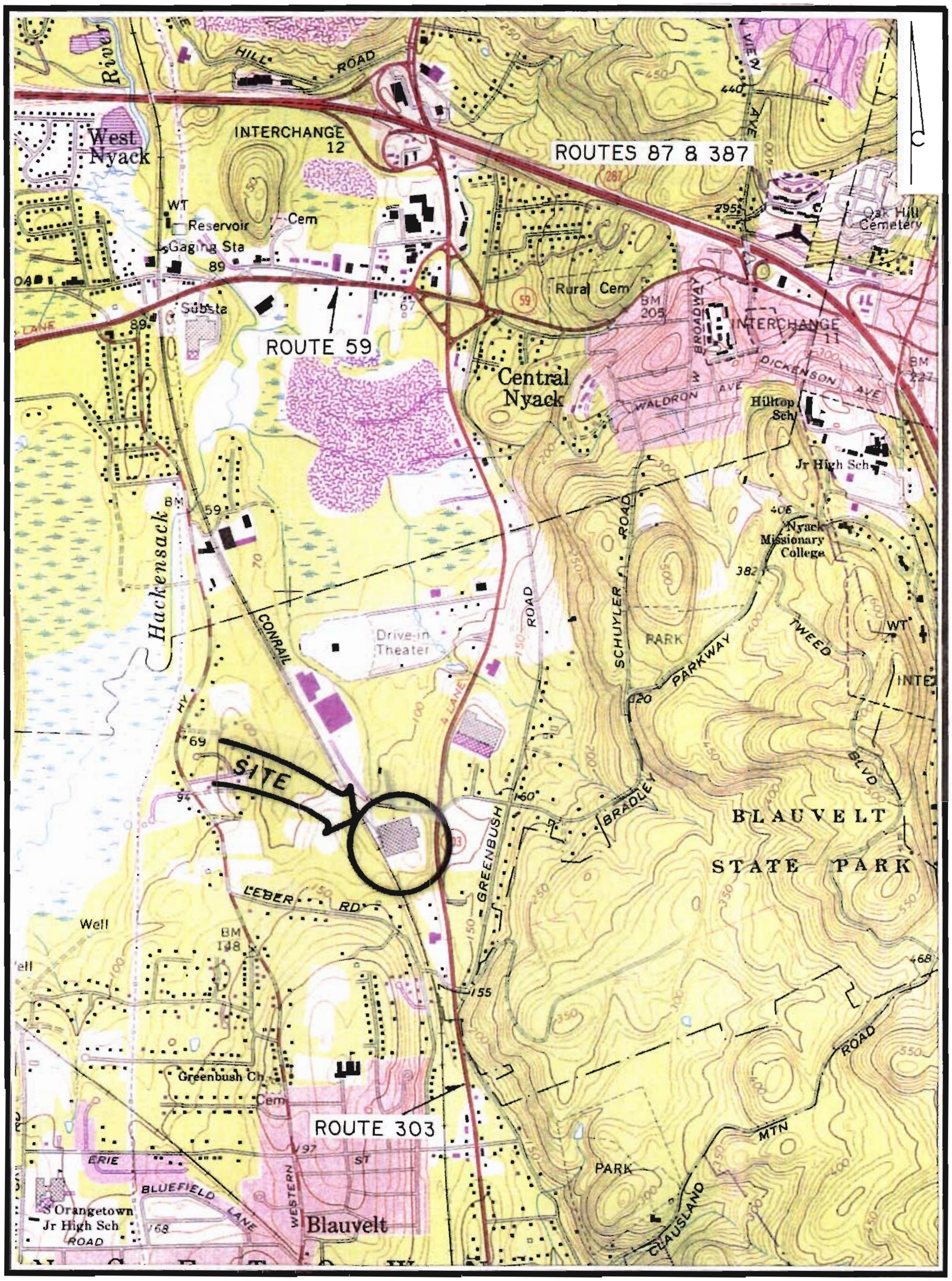
SUMMARY OF AMBIENT AIR CONCENTRATIONS (ug/m^3)
COLLECTED IN MAY 1992 AND COMPARISON WITH
NEW YORK STATE 1991 DRAFT AIR GUIDANCE CONCENTRATIONS
XEROX BLAUVELT SITE

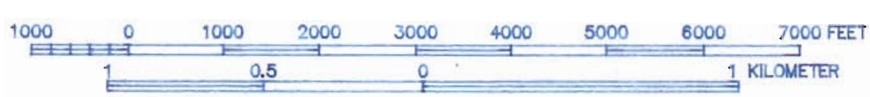
Chemical	Site 1 (Downwind Monitor)	Site 2 (Adjacent to MW-13)	Site 2-C (Co-Located Monitor)	Site 3 (Adjacent to PW-2)	Site 4 (Upwind Monitor)	SGC (2) (ug/m^3)	AGC (3) (ug/m^3)
1,1-Dichloroethene	ND	ND	ND	ND	ND	2,000	0.02
1,1-Dichloroethane	ND	ND	ND	ND	ND	190,000	500
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	360
Ethylbenzene	0.36	0.34	0.28	0.22	0.21	100,000	1,000
Benzene	0.95	0.89	0.58	0.74	0.43	30	0.12
Methylene Chloride	6.64	0.71	0.15	0.16	0.26	41,000	27
1,1,1-Trichloroethane	1.28	1.7	1.19	1.45	0.9	450,000	1,000
Tetrachloroethane (1)	0.29	0.69	0.48	0.98	0.24	81,000	1.2
Toluene	1.81	1.84	1.37	1.09	1.04	89,000	2,000
Trichloroethene	6.79	0.43	ND	0.24	ND	33,000	0.45
m,p-Xylenes	0.48	0.82	0.5	0.22	0.47	100,000	300
o-Xylene	0.17	0.34	0.18	ND	0.17	100,000	700

Notes:

(1) Revised AGC based on conversations with NYSDEC. All other SGC and AGC values are from 1991 draft Air Guide 1 document.
(2) SGC - Short-Term (1 hour) Guideline Concentration
(3) AGC - Annual Guideline Concentration
NA = Not available
ND = Not detected (detection limit unknown)

Figures





REGIONAL LOCATION PLAN

FIGURE 1-1

SITE MAP
XEROX CORPORATION
BLAUVELT, NEW YORK

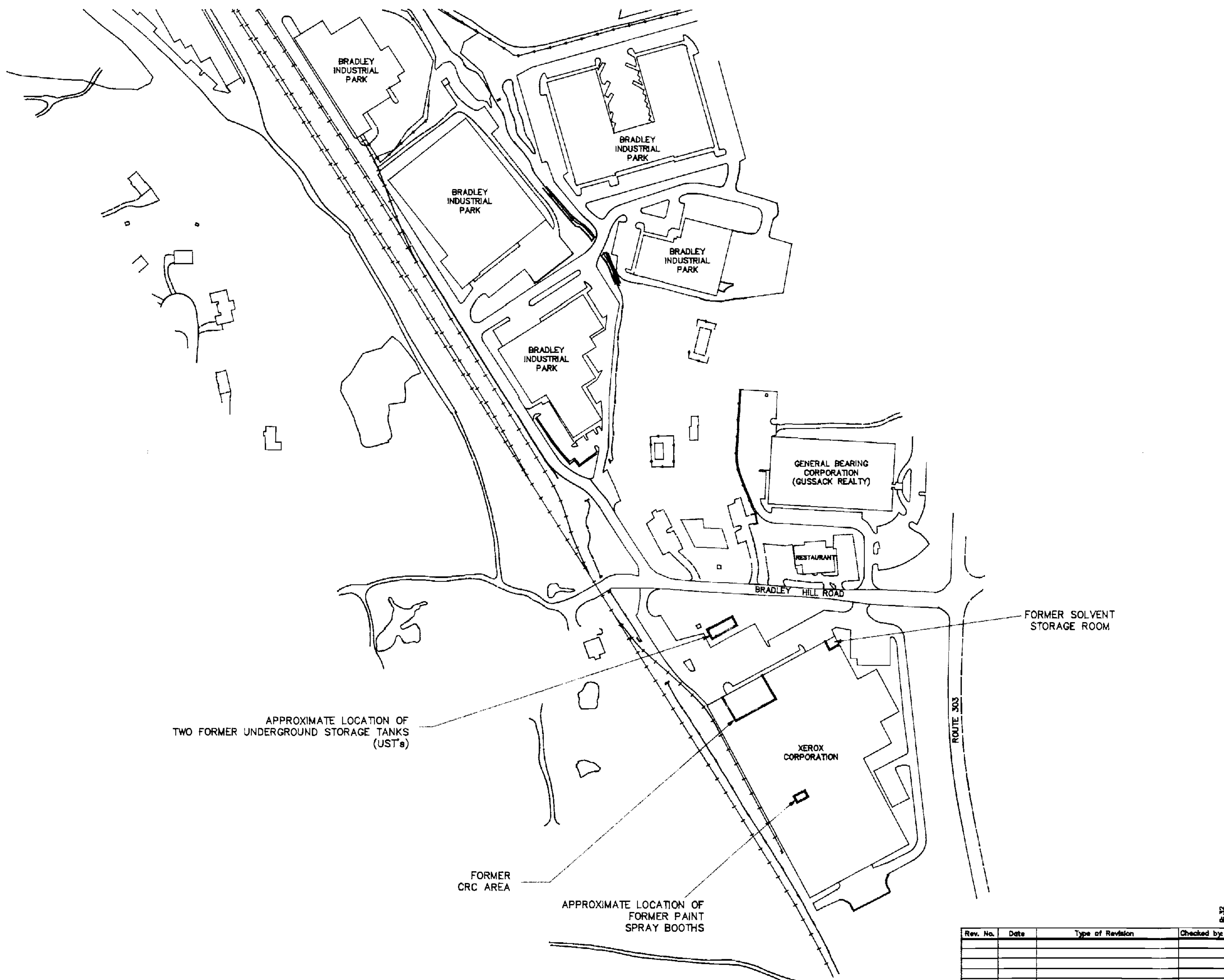
Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 89C2828 | Drawing No. 21932080 | Date: 09/28/1992
Drawn by: DEG | Checked by:
Scale: 0 — 300 Feet

FIGURE 1-2

Rev. No.	Date	Type of Revision	Checked by:

15:31



FORMER OPERATIONAL AREAS
XEROX CORPORATION
BLAUVELT, NEW YORK

Rev. No.	Date	Type of Revision	Checked by:

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 89C2828	Drawing No. 21932090	Date: 10/15/92
Drawn by: DEG	Checked by:	
Scale: 0 — 300 Feet		FIGURE 1-3

Rev. No.	Date	Type of Revision	Checked by:

14:40

SITE TOPOGRAPHIC MAP
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 92C2193	Drawing No. 21932100	Date: 09/29/1992
Drawn by: DEG	Checked by:	FIGURE 2–1
Scale: 0 — 300 Feet		

Rev. No.	Date	Type of Revision	Checked by:

16:58

SOIL BORING LOCATION PLAN
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 92C2193	Drawing No. 21932110	Date: 08/28/1992
Drawn by: DEG	Checked by:	FIGURE 2-2
Scale: 0 — 300 Feet		

Rev. No.	Date	Type of Revision	Checked by:

MONITORING WELL LOCATION PLAN
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 92C2193	Drawing No. 21932120	Date: 09/29/1992
Drawn by: DEG	Checked by:	FIGURE 2--3
Scale: 0 — 300 Feet		

OVERBURDEN WELL LOCATION PLAN
XEROX CORPORATION
BLAUVELT, NEW YORK

Rev. No.	Date	Type of Revision	Checked by:

Woodward-Clyde Consultants
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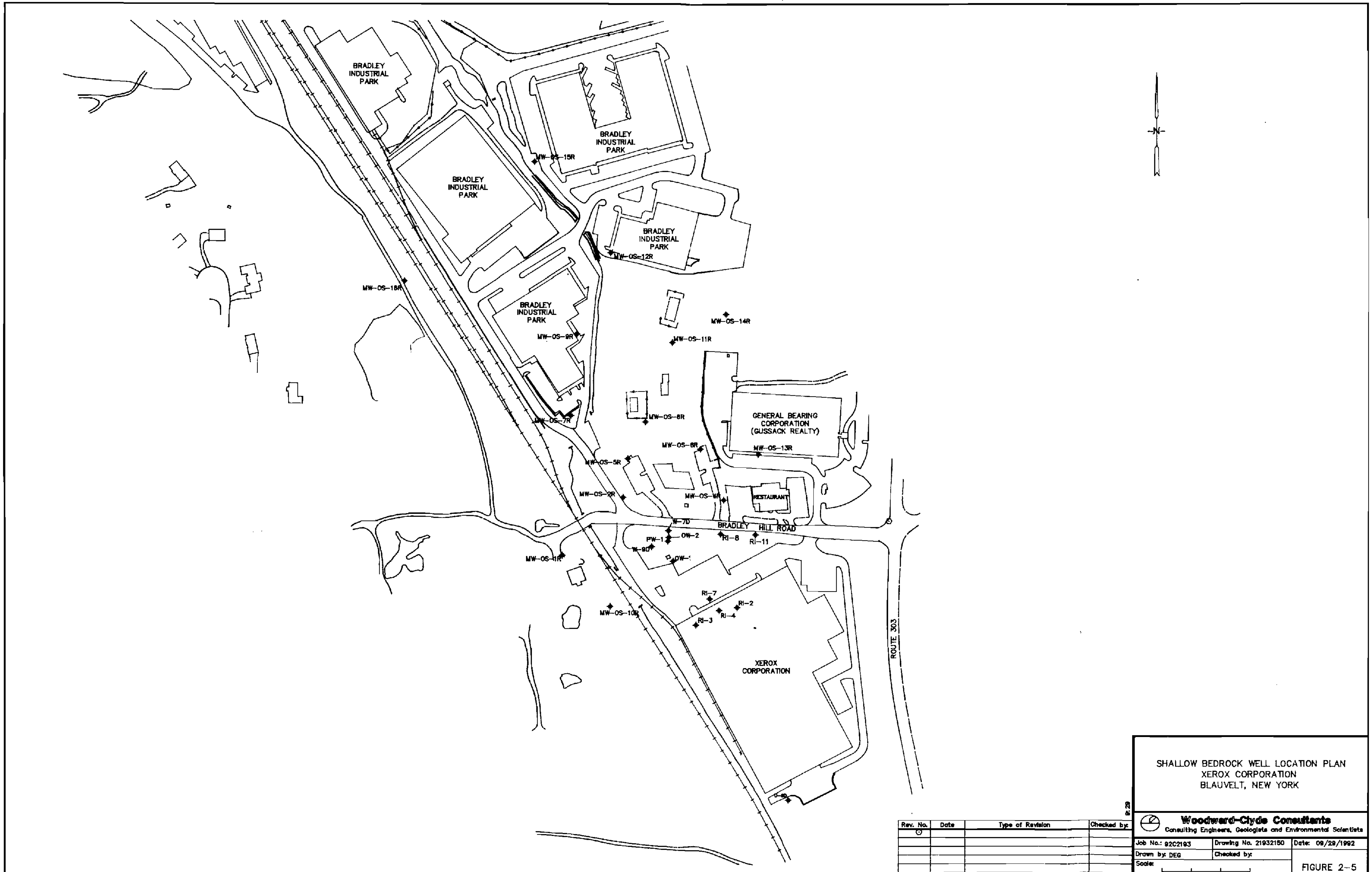
Job No.: 92C2193	Drawing No. 21932140	Date: 09/29/1992
Drawn by: DEG	Checked by:	FIGURE 2-4
Scale: 0 — 300 Feet		



Rev. No.	Date	Type of Revision	Checked by:
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SHALLOW BEDROCK WELL LOCATION PLAN
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 92C2193	Drawing No. 21932150	Date: 09/29/1992
Drawn by: DEG	Checked by:	
Scale: 0 — 300 Feet		FIGURE 2-5

Rev. No.	Date	Type of Revision	Checked by:

DEEP BEDROCK WELL LOCATION PLAN
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
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Job No.: 92C2193	Drawing No. 21932180	Date: 09/29/1992
Drawn by: DEG	Checked by:	FIGURE 2-6
Scale: 0 — 300 Feet		

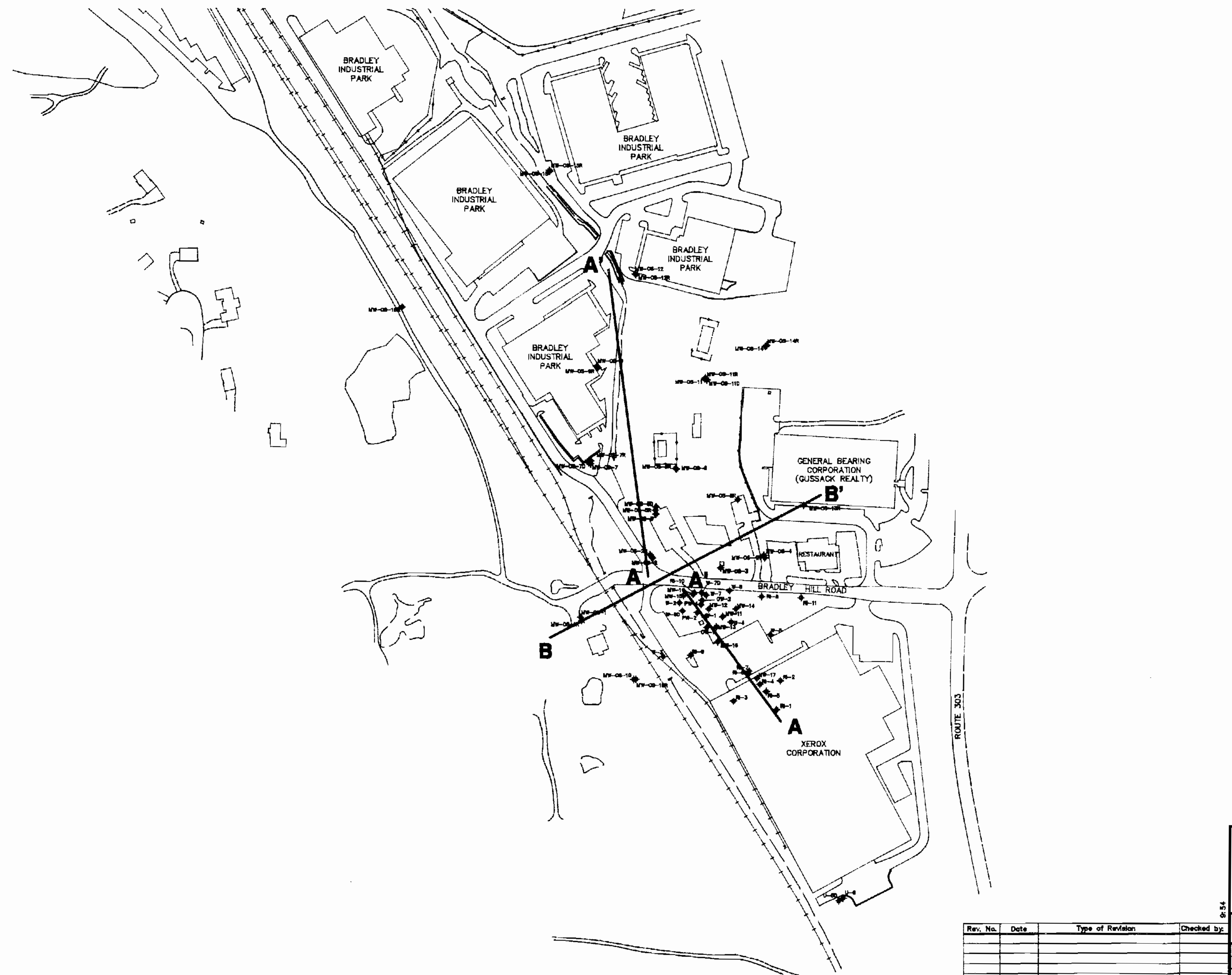
SURFACE WATER & SEDIMENT
SAMPLING LOCATION
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Rev. No.	Date	Type of Revision	Checked by:

Job No.: 92C2193	Drawing No. 21832130	Date: 10/15/92
Drawn by: DEG	Checked by:	
Scale: 0 — 300 Feet		FIGURE 2-7

10.61

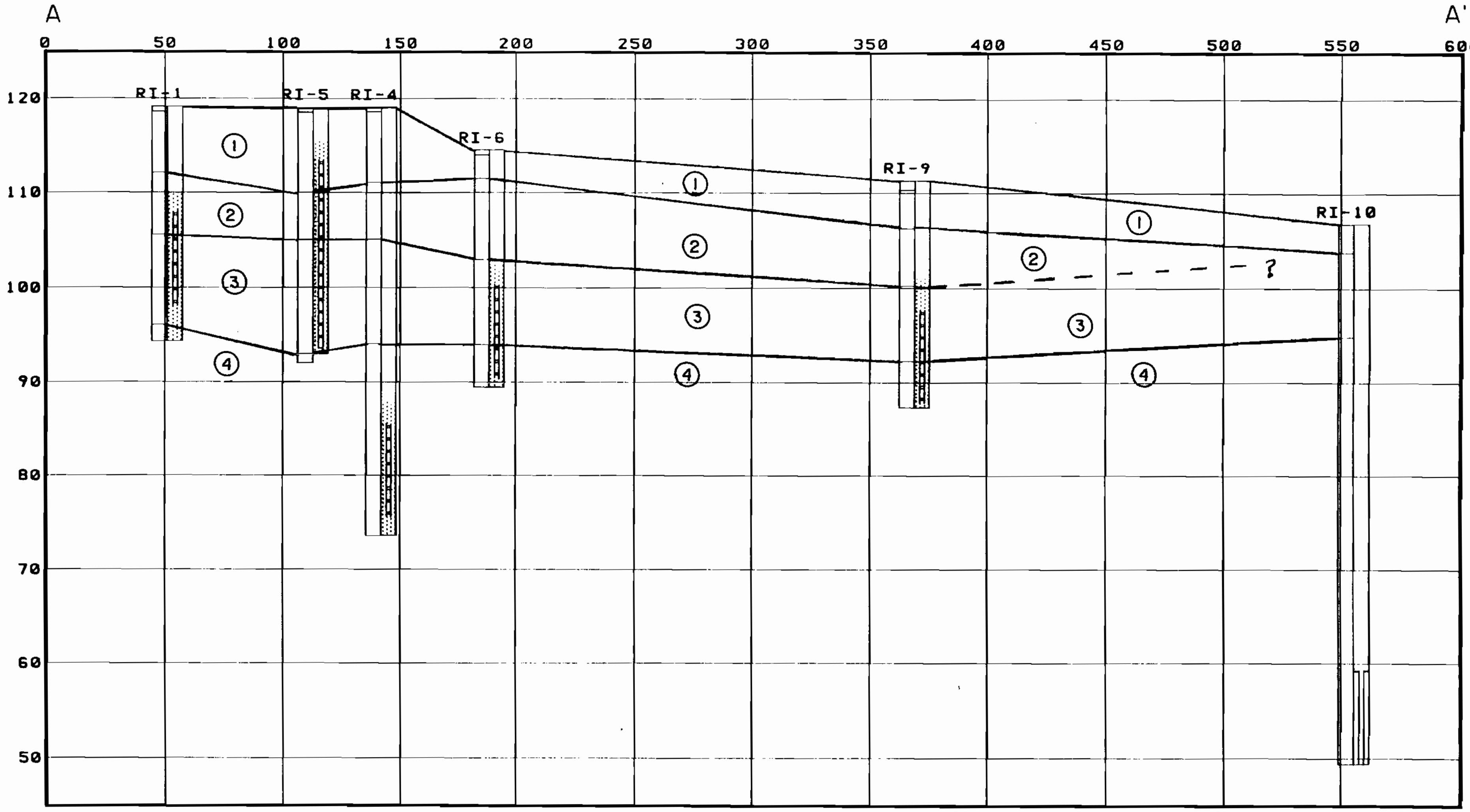


STRATIGRAPHIC TRAVERSE LOCATION MAP
XEROX CORPORATION
BLAUVELT, NEW YORK

Rev. No.	Date	Type of Revision	Checked by:

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 92C2193	Drawing No. 21932170	Date: 09/29/1992
Drawn by: DEG	Checked by:	FIGURE 3-1
Scale: 0 — 300 Feet		



Boring	North	East	Elev.	Depth
RI-1	6787.2	48827.1	119.1	24.8
RI-10	7135.5	48582.4	106.8	57.4
RI-4	6863.0	48777.6	119.1	45.5
RI-5	6841.0	48796.9	119.0	27.0
RI-6	6893.1	48742.0	114.5	25.0
RI-9	6949.5	48570.7	111.3	24.0

Key:

(1) FILL = Silty SAND with gravel

(2) GLACIAL OUTWASH = Interbedded silty SAND and gravel

(3) GLACIAL TILL = Sandy SILTY CLAY/ CLAYEY SILT with gravel

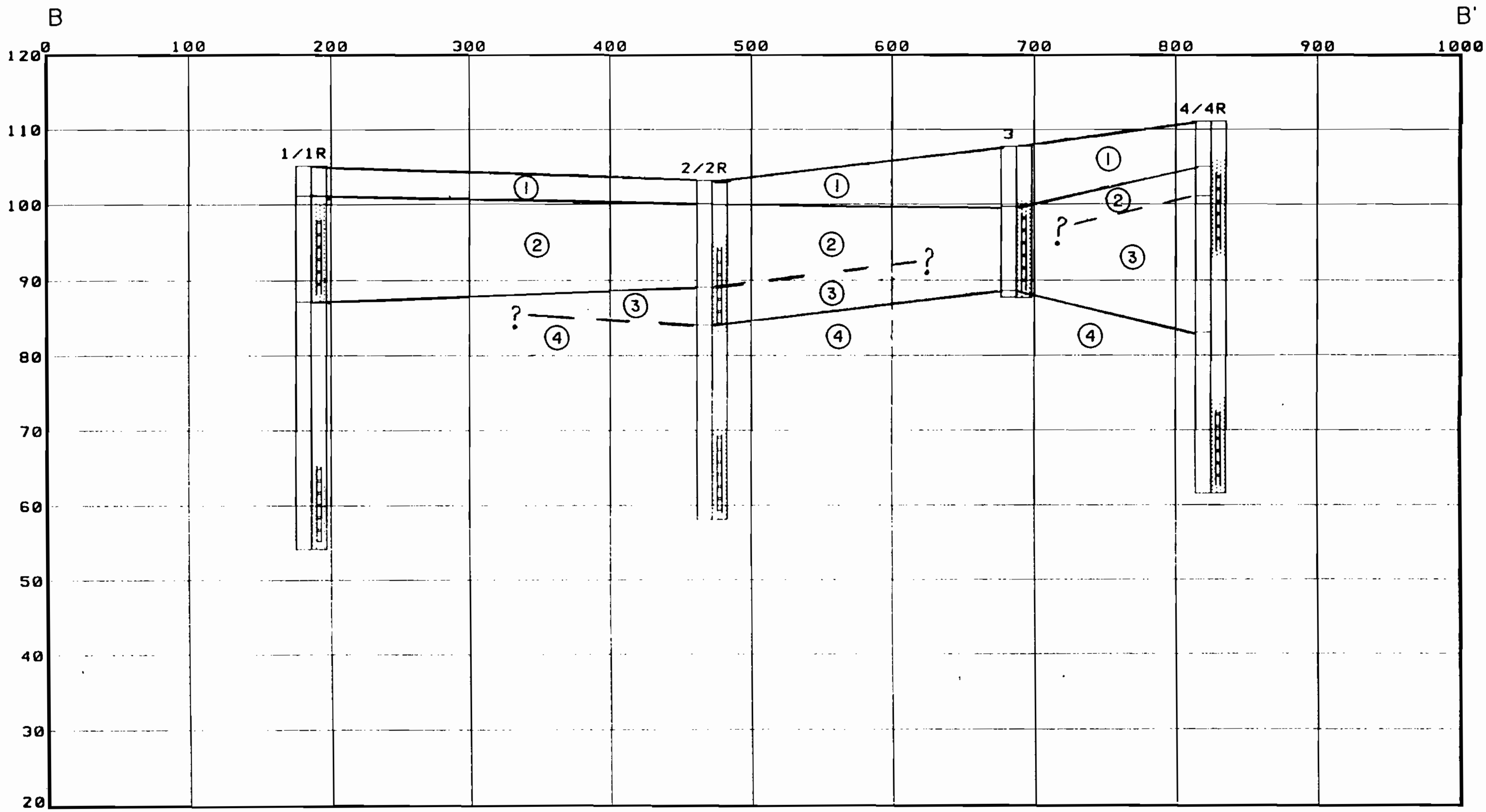
(4) BEDROCK = Sandstone/Shale (Triassic Brunswick Formation)

SUBSURFACE CROSS SECTION A-A' (ONSITE)

Xerox Blauvelt, NY

Blauvelt, New York

PROJECT #	DATE	
89C2827	AUG 92	FIGURE 3-2.1



Boring	North	East	Elev.	Depth
1/1R	7051.3	48242.2	105.2	51.0
2/2R	7248.6	48448.9	103.1	45.0
3	7209.6	48660.8	107.7	20.9
4/4R	7247.1	48792.8	111.1	49.5

Key:

(1) FILL = Silty SAND with gravel

(2) GLACIAL OUTWASH = Interbedded silty SAND and gravel

(3) GLACIAL TILL = Sandy SILTY CLAY/ CLAYEY SILT with gravel

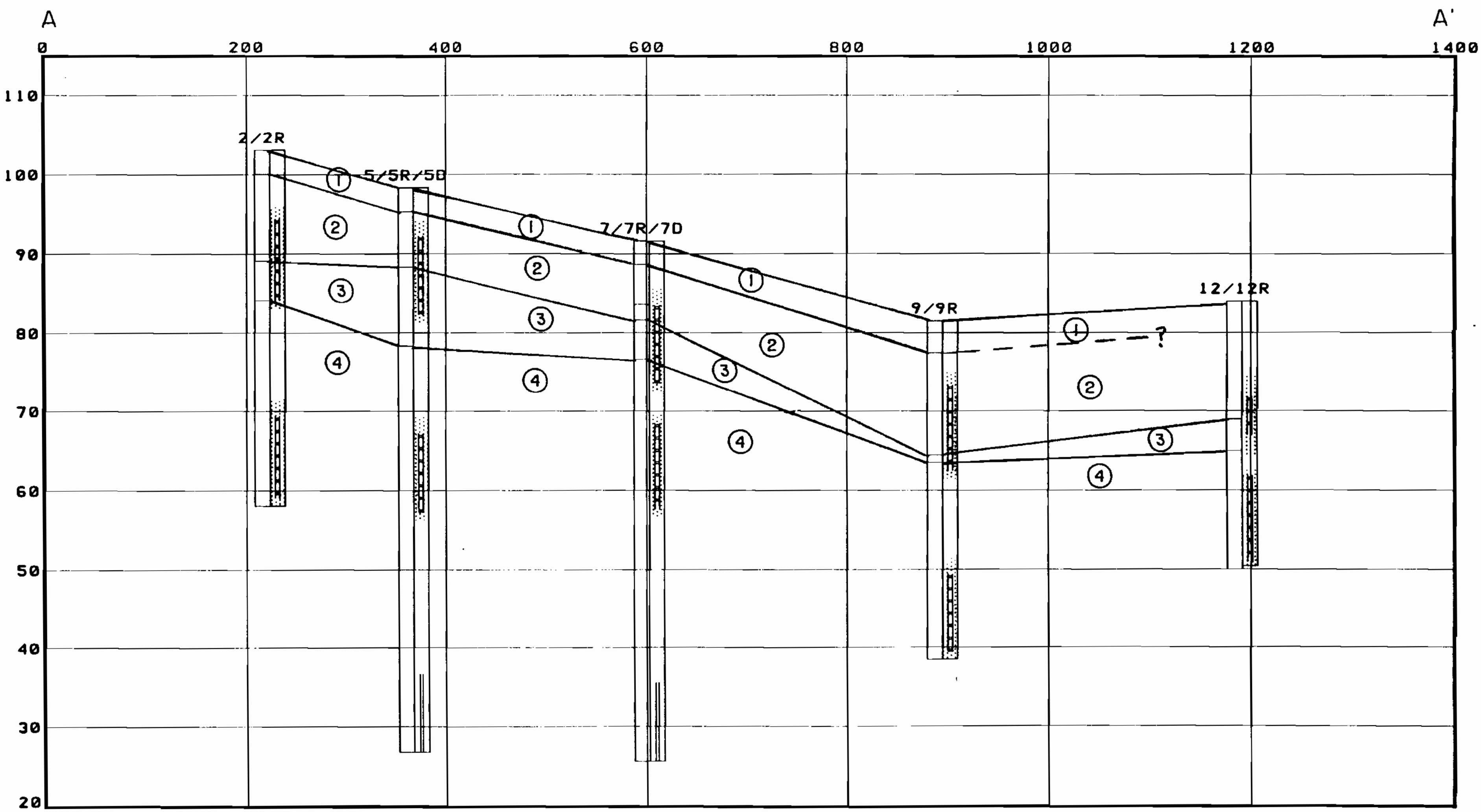
(4) BEDROCK = Sandstone/Shale (Triassic Brunswick Formation)

SUBSURFACE CROSS SECTION B-B' (Offsite)

Xerox, Blauvelt NY

Remedial Investigation

PROJECT #	DATE	
89C2828	SEP 92	FIGURE 3-2.2



Boring	North	East	Elev.	Depth
12/12R	8083.6	48406.3	84.0	34.0
2/2R	7248.6	48448.9	103.1	45.0
5/5R/5D	7391.5	48467.1	98.3	71.5
7/7R/7D	7519.6	48269.6	91.6	66.0
9/9R	7810.9	48288.3	81.5	43.0

Key:

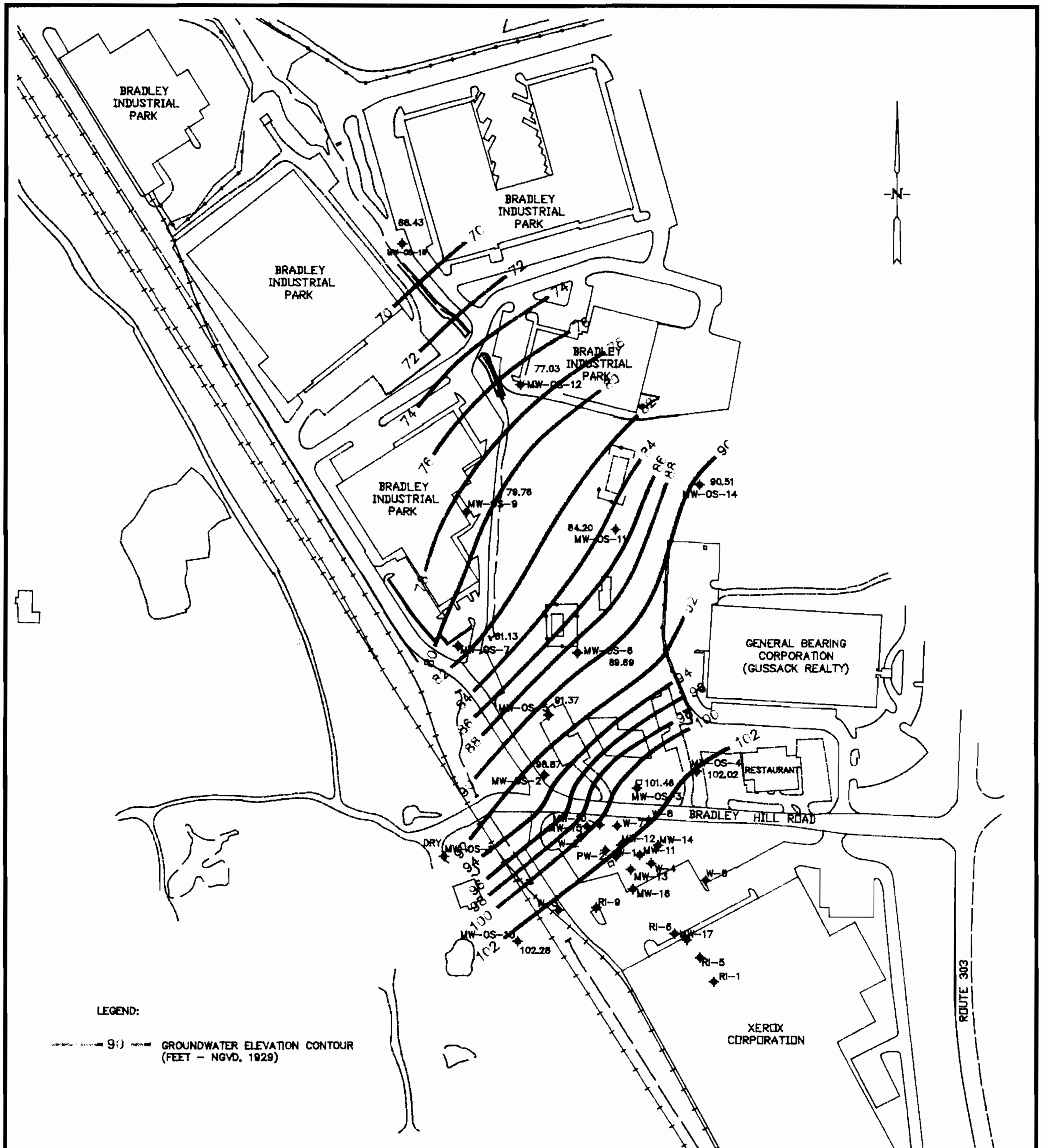
(1) FILL = Silty SAND with gravel

(2) GLACIAL OUTWASH = Interbedded silty SAND and gravel

(3) GLACIAL TILL = Sandy SILTY CLAY/ CLAYEY SILT with gravel

(4) BEDROCK = Sandstone/Shale (Triassic Brunswick Formation)

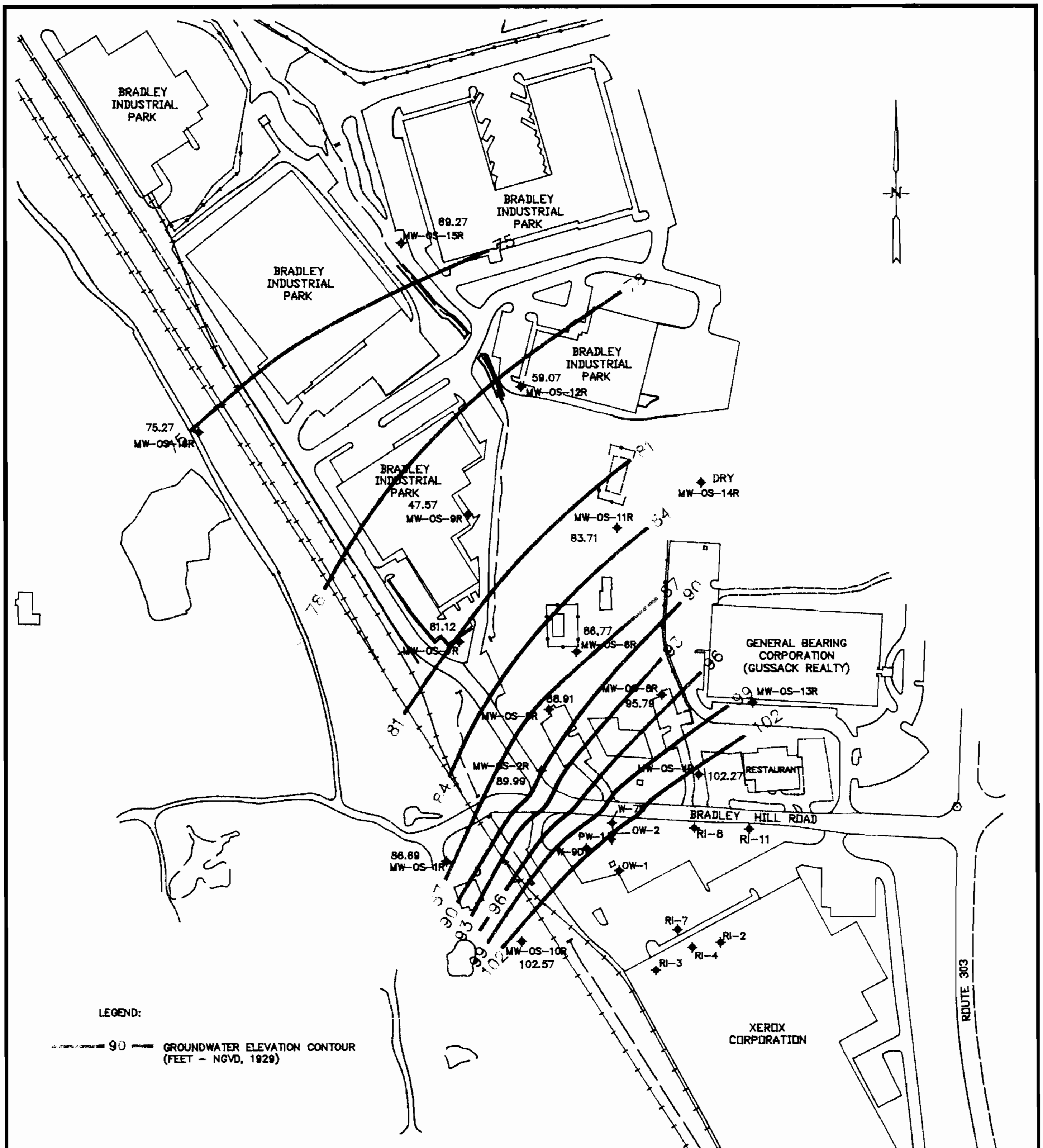
SUBSURFACE CROSS SECTION A-A' (OFFSITE)		
Xerox, Blauvelt NY Blauvelt, New York		
PROJECT # 89C2828	DATE AUG 92	FIGURE 3-2.3



OVERBURDEN GROUNDWATER ELEVATIONS
3rd QUARTER (JULY) 1992
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

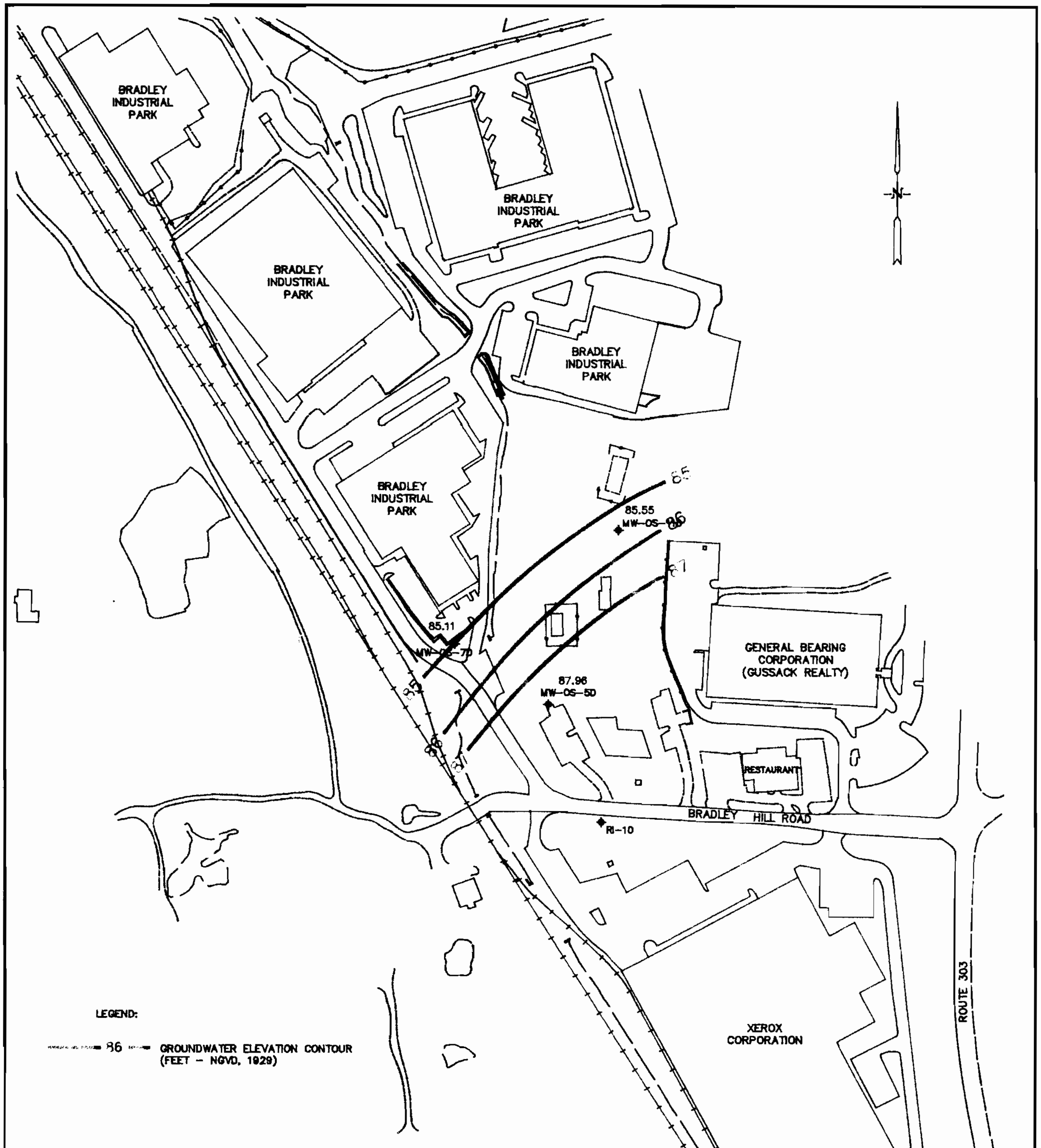
Job No.: 92C2193	Drawing No. 21930370	Date: 09/29/1992
Drawn by: DEG	Checked by:	FIGURE 3-3
Scale: 0 — 300 Feet		



SHALLOW BEDROCK GROUNDWATER ELEVATIONS
3rd QUARTER (JULY) 1992
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

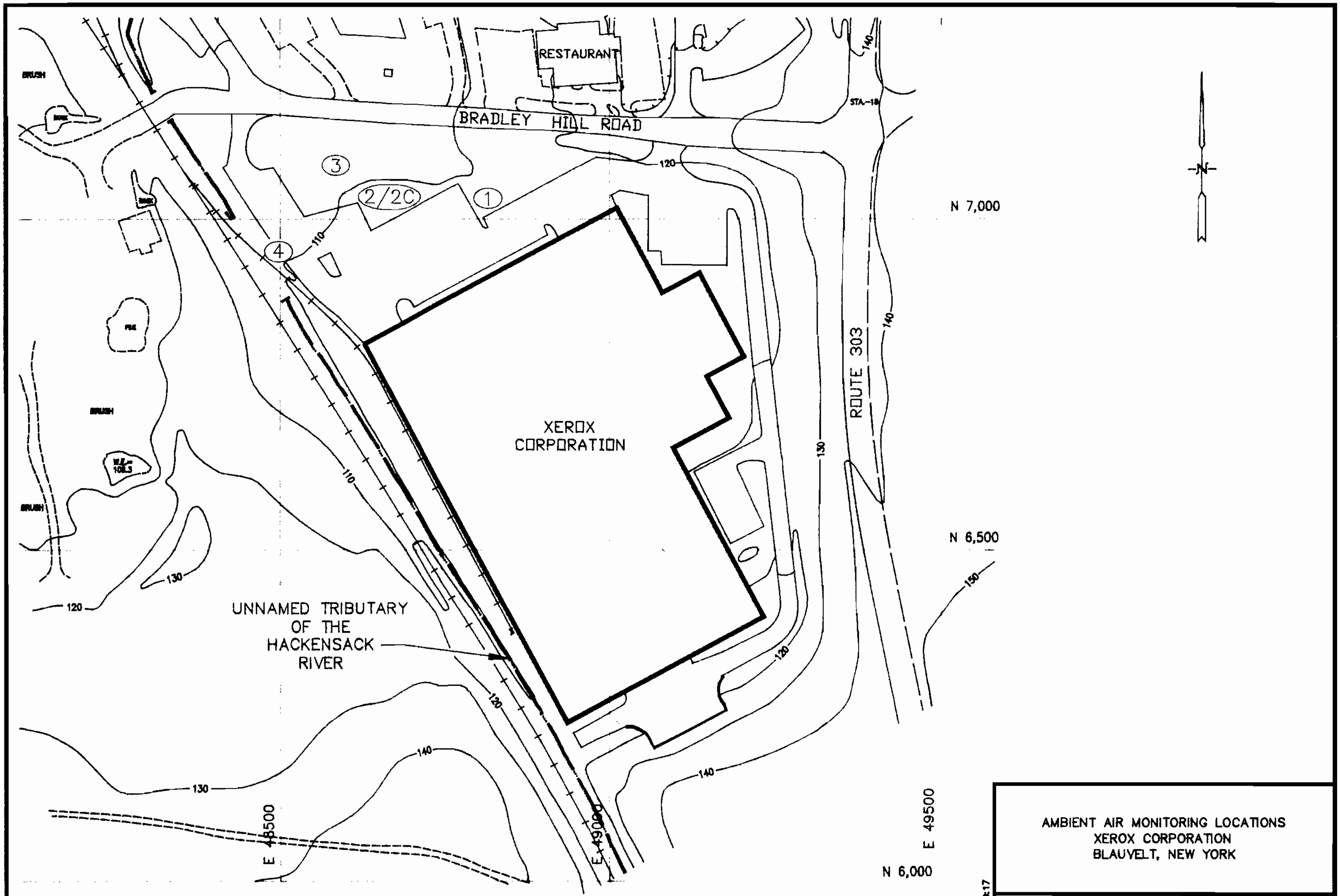
Job No.: 92C2193	Drawing No. 21930380	Date: 09/29/1992
Drawn by: DEG	Checked by:	FIGURE 3-4
Scale: 0 — 300 Feet		



DEEP BEDROCK GROUNDWATER ELEVATIONS
3rd QUARTER (JULY) 1992
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 92C2193	Drawing No. 21930390	Date: 09/29/1992
Drawn by: DEG	Checked by:	FIGURE 3-5
Scale: 0 — 300 Feet		

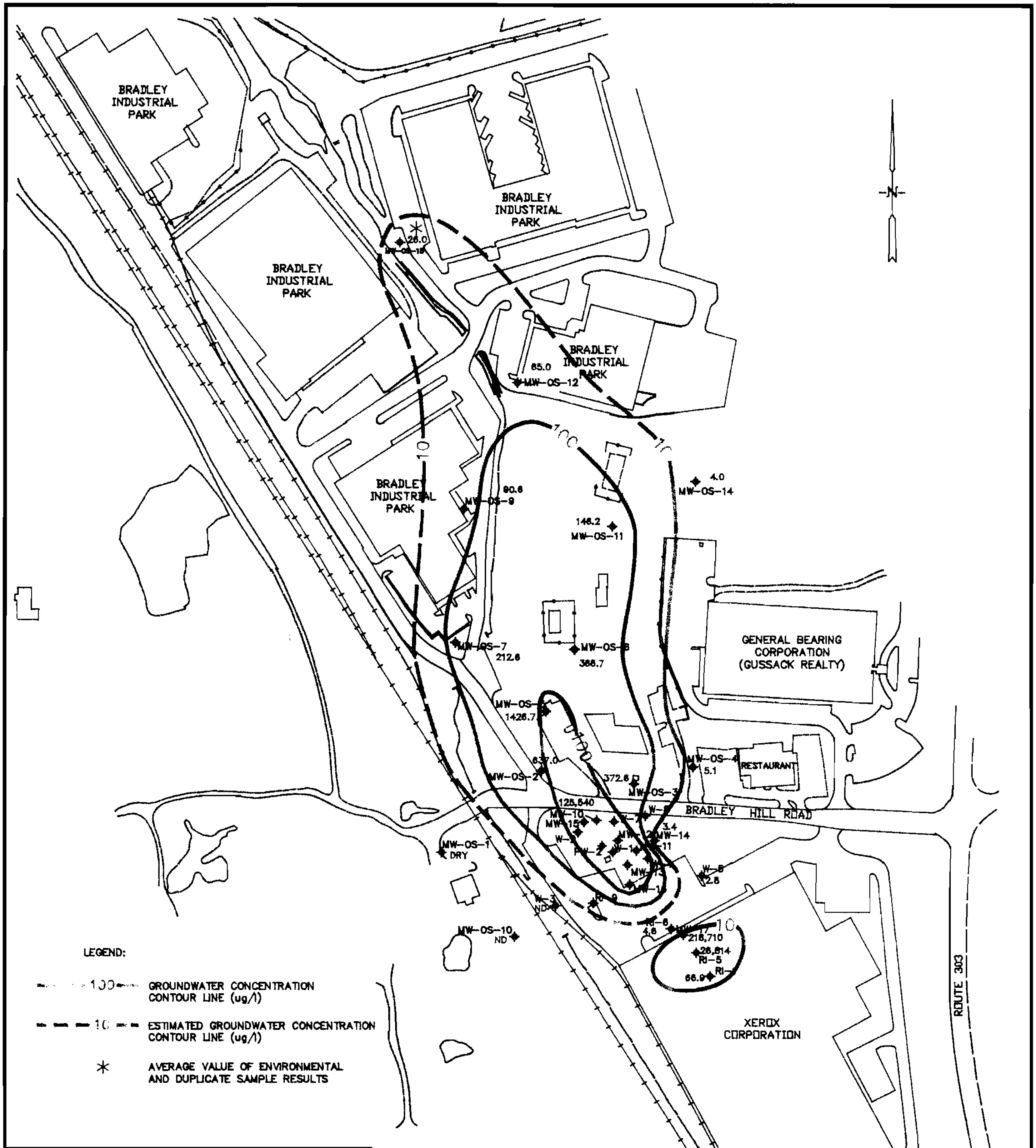


AMBIENT AIR MONITORING LOCATIONS
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Rev. No.	Date	Type of Revision	Checked by:

Job No.: 92C2193	Drawing No. 21930270	Date: 10/15/92
Drawn by: DEG	Checked by: DMH	FIGURE 4-1
Scale: 0 — 200 FT.		



OVERBURDEN CONCENTRATIONS
TOTAL VOLATILE ORGANICS
3rd QUARTER (JULY) 1992
XEROX CORPORATION
BLAUVELT, NEW YORK

Woodward-Clyde Consultants
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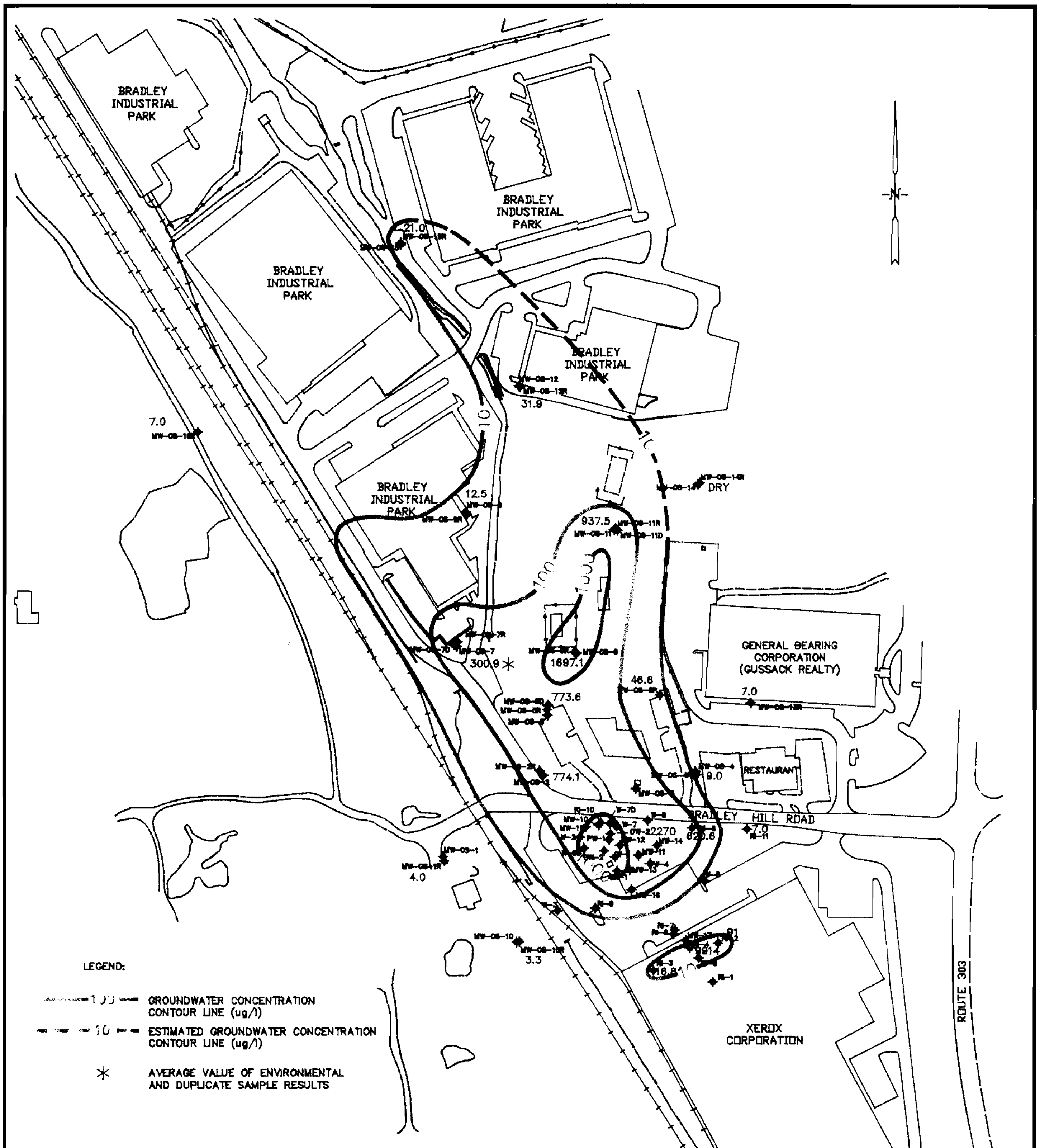
Job No.: 92C2193	Drawing No. 21930360	Date: 10/14/92
Drawn by: DEG	Checked by:	
Scale: 0 — 300 Feet		FIGURE 5-1



SHALLOW BEDROCK CONCENTRATIONS
TOTAL VOLATILE ORGANICS
3rd QUARTER (JULY) 1992
XEROX CORPORATION
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Woodward-Clyde Consultants
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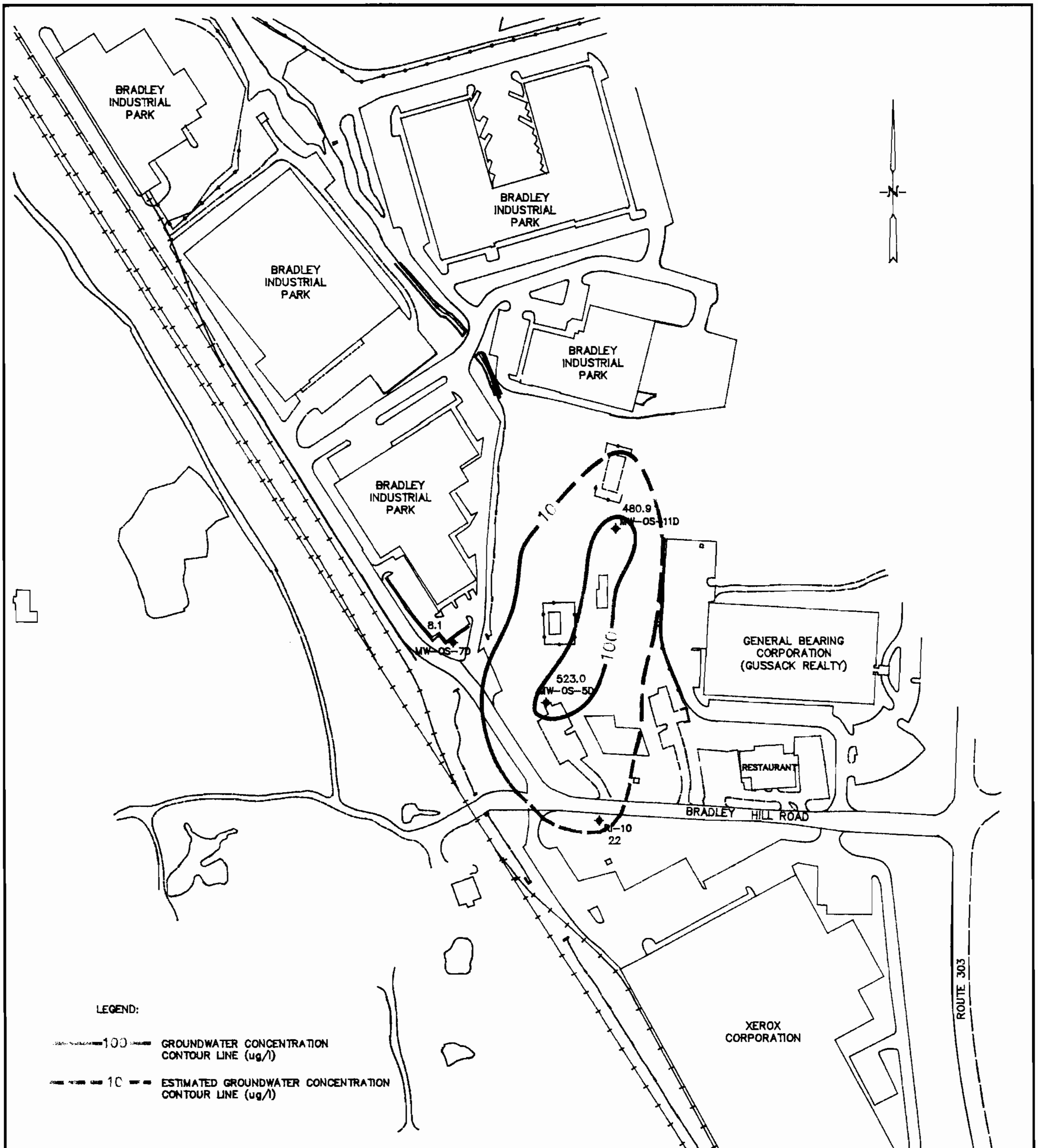
Job No.: 92C2193	Drawing No. 21930410	Date: 10/14/92
Drawn by: DEG	Checked by:	FIGURE 5-2
Scale: 0 — 300 Feet		



DEEP BEDROCK CONCENTRATIONS
TOTAL VOLATILE ORGANICS
3rd QUARTER (JULY) 1992
XEROX CORPORATION
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Job No.: 92C2193	Drawing No. 21930400	Date: 10/14/1992
Drawn by: DEG	Checked by:	FIGURE 5-3
Scale: 0 — 300 Feet		