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MCP INTERIM PHASE II REPORT AND CURRENT ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

VOLUME I OF IV

General Electric Company

Pittsfield, Massachusetts

October 1994

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

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GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

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SECTION 1 - INTRODUCTION

1.1 General

This report has been prepared on behalf of the General Electric Company (GE) by Blasland, Bouck & Lee, Inc. (BBL), to meet two sets of requirements applicable to the GE facility in Pittsfield, Massachusetts. First, the report constitutes an Interim Phase II - Comprehensive Site Assessment Report for the East Street Area 1 Site (ID No. 1-0145), as required by the Massachusetts Department of Environmental Protection (MDEP), pursuant to the Massachusetts Contingency Plan (MCP) and a Consent Order executed by GE and the MDEP in July 1990. Second, this report constitutes a Current Assessment Summary (CAS) report for the area designated as USEPA Area 3, pursuant to the requirements of a permit (the "Permit") issued to GE by the United States Environmental Protection Agency (USEPA) under the corrective-action provisions of the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA). The Permit was originally issued in February 1991 and was reissued, as modified, effective January 3, 1994.

The MDEP and the USEPA have also executed a Memorandum of Understanding (MOU) that provides for coordination between them in reviewing GE's submittals related to the Consent Order and Permit. Pursuant to the MOU, this document has been prepared to facilitate a coordinated joint agency review.

A previous version of this report was submitted to the MDEP and the USEPA in November 1991 (Geraghty & Miller, November 1991). However, at that time, the USEPA Permit was stayed pending resolution of an appeal of the Permit by GE and others. Following that appeal, USEPA modified certain portions of the Permit and issued final Permit modifications on December 1, 1993. The modified Permit became effective on January 3, 1994. This

document is being reissued to incorporate new information that has become available since November 1991.

As indicated above, this report is not only an MCP Interim Phase II Report, but also a CAS. Another document, which constitutes an MCP Supplemental Phase II Scope of Work (SOW) and a RCRA Facility Investigation (RFI) Proposal for this site, is being submitted concurrently with this document. In addition, a Preliminary Health and Environmental Assessment (HEA) Proposal for this site is also being submitted concurrently with this document.

1.2 Background Information

The East Street Area 1 Site has been designated as a "disposal site" by the MDEP under the MCP and is considered to be in Phase II of the MCP process. This site is coextensive with USEPA Area 3 under the Corrective Action Permit. (The East Street Area 1 Site used to be smaller than and located within USEPA Area 3, but has been expanded to be coextensive with USEPA Area 3 to facilitate inter-agency coordination.) Figure 1-1 shows the general location of the East Street Area 1/USEPA Area 3 Site, while Figure 1-2 shows a more detailed site plan. The site is bounded to the north by Tyler Street, to the east by New York Avenue, to the west by part of the GE facility (the USEPA Area 4 Site), and to the south by the Housatonic River. It is traversed by Merrill Road, East Street, and several sets of railroad tracks. Other streets located within the site are Newell Street, Lombard Street, Buckingham Street, Milan Street, and Fasce Street. The entire portion of the site north of Merrill Road, as well as a portion on the west side of the site between Merrill Road and East Street, consists of property owned by GE (see Figure 1-2). The remainder of the site is composed of a commercial and residential area known as the Lakewood area.

Numerous investigations have been conducted at or near the East Street Area 1/USEPA Area 3 Site. A summary of studies performed to date is presented in Table 1-1. A brief discussion of the history of the site is provided below.

GE has been the owner/operator of the overall manufacturing facility in Pittsfield since 1903, primarily as a manufacturer of electrical transformers and associated components. GE bought a significant portion of the current plant site from the Stanley Electric Company, the owner of the property from 1890 to 1903.

Prior to 1964, a portion of the facility formerly referred to as the Building 12F Tank Farm, which was located within East Street Area 1/USEPA Area 3, was used for the storage of mineral oil dielectric fluid used in GE's manufacturing processes. A total of 14 underground storage tanks (USTs), ranging in size from 20,000 gallons to 25,000 gallons, and one 100,000 gallon-capacity above-ground storage tank (AST), were located in this area. Although historic records are not complete, it is believed that these tanks were installed in 1918, 1925, and 1947. While these tanks were not used for the storage of fluids containing polychlorinated biphenyls (PCBs), some residual PCBs have been detected during previous sampling and analysis efforts. It is believed that the presence of PCBs in this area has resulted from limited interconnections between PCB and mineral oil distribution systems. Further, it is believed that releases from these tanks are the source of the oils floating on the water table within the East Street Area 1/USEPA Area 3 Site, as discussed further below.

In 1955, oil was detected in the basement of the Bellora property. This property is located on the northern edge of East Street, south of the Building 12F Tank Farm (Figure 1-2). In response to this discovery, GE performed a number of corrective measures in this area including oil recovery, groundwater

treatment, and numerous hydrogeologic investigations. These measures are described further in Section 4.

1.3 Format of Document

This document is divided into several sections. These sections include a detailed description of site location and history, a summary of previous investigations conducted at the site, the results of the MCP Phase II investigations to date, and characterization of the presence of PCBs and other hazardous constituents associated with the site.

Specifically, Section 1 presents pertinent background information. Section 2 describes the physical and environmental setting of the site, including site mapping, historic photographs, topography, surface drainage, vegetation, surface water, flooding potential, wetlands, critical wildlife habitats, geology, groundwater/hydrogeology, land use, climatology/meteorology, and utilities.

Section 3 provides an identification and characterization of potential sources of contamination at the site including a description of various Solid Waste Management Units (SWMUs) as identified in the Permit.

Sections 4 through 7 present and discuss the field investigations associated with the site, both prior to and as a part of the MCP activities. In particular, Section 4 discusses hydrogeologic investigation and characterization, Section 5 discusses miscellaneous soils and other investigations, Section 6 discusses air monitoring, and Section 7 presents a summary of short-term/interim measure activities.

Section 8 describes fate and transport characteristics associated with hazardous constituents detected at the site. Section 9 discusses potential migration pathways based on the information contained in the previous sections,

while Section 10 identifies remaining data needs. Finally, Section 11 presents conclusions and future activities.

In addition, Appendices A through M and the various tables and figures included herein provide supporting information referenced in this report.

SECTION 2 - PHYSICAL AND ENVIRONMENTAL SETTING

2.1 General

This section summarizes the current physical and environmental characteristics of the East Street Area 1/USEPA Area 3 Site located in Pittsfield, Massachusetts. Characteristics including site location, topography, surface drainage, vegetation, surface water, wetlands and critical habitats, geology, groundwater/hydrogeology, land use, climatology/meteorology, and utilities are described herein.

2.2 Geographic Location of Site

The general geographic location of the East Street Area 1/USEPA Area 3 Site is illustrated on Figure 1-1, and the boundaries of the site are shown on Figure 1-2.

The Universal Transverse Mercator (UTM) coordinates for the site are approximately 4,701,500m N, 645,750m E. The site is located at approximately 42° 27' 20" N latitude and 73° 13' 10" W longitude.

Several parcels are located within or border the East Street Area 1/USEPA Area 3 Site. Figure 2-1 illustrates the on-site and adjacent parcels and presents the corresponding City of Pittsfield Tax Assessors' property identification numbers. Table 2-1 lists the names and addresses of the owners of these parcels.

Institutions located within a 500-foot radius of the East Street Area 1/USEPA Area 3 Site appear to include portions of the Allendale School Yard and All Souls Church. The population residing within a one-half mile radius of the site boundary is estimated to be approximately 4,400 individuals. This number is based on a review of 1990 aerial photographs of the area that show

approximately 1,100 homes located within this radius. For purposes of estimating the population within one-half mile of the site, an average of four people are assumed to reside in each home.

2.3 Site Mapping and Photographs

2.3.1 Site Mapping

Figure 1-1 provides a general location plan of the East Street Area 1/USEPA Area 3 Site. This figure was prepared using United States Geological Survey (USGS) 7.5 x 15-minute quadrangle topographic mapping and includes topographic contours and elevations; streets, roads, highways and other manmade structures; and water features. Figure 1-2 provides a more detailed site plan, including topography and other physical site features such as roads, fencing, and structures. Site plans for portions north of East Street were obtained and prepared by GE, while those associated with the portions of the site south of East Street were photogrammetrically mapped based on April 1990 aerial photographs by Lockwood Mapping, Inc.

2.3.2 Site Photographs

Table 2-2 presents a summary of available aerial photographs that depict the East Street Area 1/USEPA Area 3 Site. Representative aerial photographs have been reproduced to illustrate the progression of change related to the site. These photographs are presented in Figures 2-2 through 2-4. They include photographs taken in 1942, 1969, and 1990, respectively.

2.4 Topography, Surface Drainage, and Vegetation

The topography of the East Street Area 1/USEPA Area 3 Site is characterized by relatively flat land, which slopes gently southward toward the

Housatonic River. Along the riverbank, which is vegetated, the topography drops off steeply. Topographic information is contained on Figures 1-1 and 1-2.

Surface drainage in GE-owned areas of the site occurs largely by means of a stormwater collection system, which is described in detail in a report entitled "Final Storm Water Management Plan. Facilities Description" (Blasland & Bouck, July 1990) and in figures included in Appendix A. The northwestern, GE-owned portion of the site, between Tyler Street and East Street, is served by a stormwater collection system that discharges to the Housatonic River through GE's 64X oil/water separator located within East Street Area 2/USEPA Area 4 and NPDES-permitted Outfall 006. Flows from the northeastern portion of the site, between Tyler Street and Merrill Road, discharge to the municipal storm sewer along New York Avenue via NPDES-permitted Outfall 007.

Surface water runoff in the remaining portions of the site generally flows toward the Housatonic River. A portion of this runoff is intercepted by various municipal storm sewer systems located along East and Fasce Streets and is conveyed to the Housatonic River. The municipal stormwater collected along Newell and Lombard Streets is conveyed to GE's 64X oil/water separator prior to discharge to the Housatonic River through NPDES-permitted Outfall 006.

Much of the East Street Area 1/USEPA Area 3 Site north of Merrill Road is covered by structures and asphalt-paved areas. Additional paved areas within the site include parking lots bordering East Street, public roads within and bordering the site (Merrill Road, New York Avenue, and Fasce, East, Lombard, Newell, and Tyler Streets), and driveways within the residential/commercial portion of the site. The southern portion of the site is primarily composed of grassy areas and lawns maintained by the individual property owners. A wooded area approximately 2 acres in size is also located south of East Street in the residential portion of the site along the embankment bordering the Housatonic

River. Figure 2-5 illustrates the approximate extent of the various surface cover limits associated with the site (excluding residential driveways).

A variety of deciduous trees and shrubbery is present throughout the site. Typical tree species include American Elm, Ashleaf Maple, Cottonwood, Red Osier Dogwood, and Trembling Aspen. Other woody and herbaceous vegetation may include grasses, Black Raspberry, Honeysuckle, Riverbank Grape, Wild Strawberry, Cypress Spurge, Dames Rocket, Rough Cinquefoil, Spotted Knapweed, and Yarrow.

2.5 Surface Water/Flooding Potential

There are no surface waters on the East Street Area 1/USEPA Area 3 Site. However, the site is bordered on the south by the Housatonic River, which is being addressed separately. The river is the subject of a separate MCP Interim Phase II Report/CAS (Blasland & Bouck, December 1991 and August 1992).

The flooding potential of the East Street Area 1/USEPA Area 3 Site has been documented in several technical reports and studies. Portions of the area south of East Street are located within the 100-year floodplain of the Housatonic River as determined by the Federal Emergency Management Agency's (FEMA's) National Flood Insurance Program (NFIP) (FEMA, January 1987). The 10-year floodplain has been estimated to exist in this area at an elevation of 981 feet above mean sea level. This estimation is a result of HEC-2 modeling conducted in 1991 as part of MCP Phase II activities associated with the Housatonic River. Figure 1-2 illustrates the approximate 10-year floodplain limit.

2.6 Wetlands and Critical Habitats

The Massachusetts Wetland Protection Act identifies specific resource areas as wetlands subject to protection. Resource area designations applicable to the

East Street Area 1/USEPA Area 3 Site include the 100-year floodplain of the Housatonic River and a 100-foot buffer zone from the river bank. The National Wetlands Inventory, performed by the U.S. Department of the Interior - Office of Biological Services, has not classified any portion of the site as wetlands (with exception of the adjacent Housatonic River, which is classed as riverine, lower perennial, open water).

As mentioned previously in Section 2.4, although a substantial portion of the East Street Area 1/USEPA Area 3 Site is covered by buildings and pavement, grassy areas exist at various locations of the site. However, these areas have not been designated as areas of critical environmental concern or protected areas, and there is no evidence that these areas constitute a critical habitat for any species.

2.7 Geology

Pittsfield is situated in the Housatonic River Basin between the Berkshire Hills to the east and the Taconic Range to the west. Bedrock in the Pittsfield area consists of an assemblage of north-south trending metamorphic units (mainly gneiss, schist, and marble), which has resulted from a series of Paleozoic mountain-building episodes that occurred between 520 to 480 million years ago. The bedrock is overlain by a series of unconsolidated materials formed by glacial scouring and deposition, as well as pre- and post-glacial fluvial modification of the landscape.

The main axis of the Housatonic River Valley is underlain by carbonate rock (marble, limestone, and dolomite) of the Ordovician-Cambrian Stockbridge Group. These rock types are less resistant and erode more easily than the gneiss and schist of the Berkshire Highlands.

The bedrock underlying the area is reported to be lower Ordovician age, tan-beige quartzose calcite and dolomite marble (USGS, 1983). Immediately west of the site the underlying bedrock is also reported as the Stockbridge Formation but the bedrock unit is described as Lower Cambrian age massive to finely laminated steel-grey calcitic dolomite marble containing a prominent zone of white quartz modules near the top (USGS, 1983).

The unconsolidated surficial geologic deposits within the basin (excluding swamps and alluvium) are of Pleistocene glacial origin (1.6 million to 10,000 years ago) and are classified as either stratified (glaciofluvial and glaciolacustrine) or nonstratified (till) deposits. Known thicknesses of stratified and till deposits have been documented at 240 feet and 90 feet, respectively (Norvitch et al., 1968). Till predominates in the upland areas, and stratified deposits occur primarily along the lower slopes. More recent alluvial and swamp deposits are found, mainly in the valley bottoms.

Aquifers and water bodies within the basin are recharged by precipitation (rainfall plus snowfall). The nearest mapped aquifers are within the Housatonic River Basin to the north and the Connecticut River Basin to the southeast, as indicated on the Pittsfield East Quadrangle. According to the Pittsfield Department of Public Utilities, the city obtains its industrial and municipal water supply from the following surface water bodies located several miles to the south and to the east: Sand Washington Reservoir, Cleveland Reservoir, Farnham Reservoir, New Sackett Reservoir, Lake Ashley, and the Lower Ashley Intake. In the past, Onota Lake (approximately 3 miles to the north) has been used as an emergency municipal and recreational water supply.

The stratified and nonstratified surficial deposits are not considered productive aquifers (Norvitch et al. 1968), and the carbonate bedrock will provide

sufficient water for domestic and industrial use only if a well is installed within a solution or fault zone.

A more detailed discussion of the geology associated with the East Street Area 1/USEPA Area 3 Site is presented in Section 4.1.1.

2.8 Groundwater/Hydrogeology

Groundwater is encountered at depths of approximately 2 to 15 feet below the ground surface at the East Street Area 1/USEPA Area 3 Site. General site groundwater flow is southerly, toward the Housatonic River. Site groundwater has been, and continues to be, characterized through the semi-annual monitoring program. Topics covered include delineation of oil plume boundaries, groundwater flow, and groundwater table elevations. The groundwater/ hydrogeology of the site is discussed further in Section 4.

2.9 Land Use

Land comprising the East Street Area 1/USEPA Area 3 Site is divided into two zones according to the Pittsfield zoning map. The portion of the site north of East Street is zoned as General Industry, and consists mainly of property owned by GE. Within this portion of the site, the area north of Merrill Road is part of the GE facility. Most of this area is surrounded by fencing with locked gates (see Figure 2-5), and access is restricted to GE personnel and contractors through active surveillance and security measures.

GE also owns much of the site located between Merrill Road and East Street. In this area, GE operates the Northside Recovery System near the intersection of East Street and Newell Street (see Figure 1-2). A number of commercial businesses are also located along East Street in this area, and

Conrail also maintains and uses a railroad track system which traverses this area along Merrill Road.

The portion of the site south of East Street (known as the Lakewood area) is zoned as General Business, and does contain some commercial business although the majority of the zone is used for residential purposes. In addition, GE operates the Southside Recovery System in this area (see Figure 1-2).

2.10 Climatological and Meteorological Information

The climate in the area of the site is characterized as humid, with a mean annual temperature of about 46°F based on data recorded at the nearby Pittsfield Municipal Airport. The mean summer temperature is 68°F, while the mean winter temperature is 28°F (Norvitch et al., 1968). Prevailing winds are from the west. This fact is supported by wind directional data collected during 1992 as part of a facility air monitoring program. These data, illustrated on Figure 2-6, were collected at a meteorological station on GE's East Street Area 2/USEPA Area 4 Site, which is located immediately to the west of the East Street Area 1/USEPA Area 3 Site.

The average precipitation varies from a low of 2.5 inches per month during the winter months, to a high of about 5 inches per month in the summer months. The Housatonic River Basin, which includes the site, receives an average of 46 inches of precipitation per year. Approximately 22 inches per year escape by evaporation and transpiration to the atmosphere, while the remaining 24 inches per year are lost as runoff or collected in reservoirs, lakes, and ponds (Norvitch et al., 1968)

2.11 Site Utilities

The East Street Area 1/USEPA Area 3 Site is traversed by a series of underground electronic, electrical, power, and water conduits that provide a variety of services throughout the area. Design drawings for these service lines have been obtained from GE, Berkshire Gas, and the City of Pittsfield Municipal Engineer and are presented in separate sections within Appendix B of this report.

In addition, various other above-ground utility services such as telephone and cable television are available for the residential/commercial areas of the site.

SECTION 3 - SOURCE IDENTIFICATION AND CHARACTERIZATION

3.1 General

The USEPA Corrective-Action Permit identifies 19 individual SWMUs within the East Street Area 1/USEPA Area 3 Site as potential sources of releases. They are: SWMU T-9 (Building 10 Sump Tank); SWMU T-26 (Building 14 Extension Drain Tank); SWMU T-61 (Building 12F Tank Farm Area), including SWMUs T-X through T-KK (USTs 12F-01 through 12F-14); SWMU T-W (Building 9G UST 9G-01); SWMU T-NN (Building 14 UST 14-03); and underground pipes and tunnels. [The Permit also lists SWMUs T-50, T-19, T-LL, and T-MM as being in USEPA Area 3, but they are in fact located in the East Street Area 2/USEPA Area 4 Site and were addressed in the Interim Phase II Report/CAS for that site (Blasland, Bouck & Lee, August 1994a).] The approximate locations of the SWMUs at this site are illustrated on Figure 3-1, and each is discussed below in Sections 3.2 through 3.7, respectively. The discussion of these SWMUs will also serve as the identification of sources and potential sources in this area, as required by the MCP for Phase II activities.

3.2 Building 10 Sump Tank (SWMU T-9)

The Building 10 Sump Tank (UST 10-01) was a 2,600-gallon, 7-foot diameter steel UST located east of Building 10, in the northeastern section of the site (Figure 3-1). It was installed in 1967 and served as an overflow collection tank for residual liquids from electrical apparatus testing activities performed in Building 10. There was one 6-inch opening and a single vent on top of the tank, and it had a veneer of soil above it.

The tank was leak-tested by ConTest of East Longmeadow, Massachusetts, on October 23, 1986. The test was performed at two liquid-elevation levels, and

both tests yielded results that exceeded the National Fire Protection Agency (NFPA) 329 Standard Leak Rate of 0.05 gallons per hour. GE immediately initiated system checks and repairs. A vent pipe to the floor drain pipe system was found to be loose and was repaired. The tank was then re-tested by ConTest on November 12, 1986. This test was also conducted at two liquid-elevation levels and yielded results within the compliance limits of NFPA 329 standards for a tight tank.

On September 1, 1987, the tank was leak-tested by Hunter Environmental Services, Inc. of Canton, Ohio. Test results indicated that the tank was again in compliance with NFPA 329 standards for a tight tank. In 1988, 1989, and 1990, Hunter retested the tank and found it to be within compliance limits for a tight tank each time. The leak-test results are presented in Appendix C. The tank was removed in June 1994. Refer to Section 5.3 for a discussion of data related to its removal.

3.3 Building 14 Extension Drain Tank (SWMU T-26)

This SWMU consists of a former 5,000-gallon fiberglass UST, referred to as the Building 14 Extension Drain Tank (UST 14-04), which was located south of Building 14E (Second Extension) and east of Building 14H, in the northern portion of the site (Figure 3-1). It was installed in 1973 and was used to store waste aqueous phosphate (phosphoric acid) and other residuals used for cleaning transformer radiators in Building 14H. This tank was taken out of service in 1984 and was removed in late 1989. Refer to Section 5.4 for more information related to the removal of this tank.

3.4 Building 12F Tank Farm Area (SWMU T-61)

The Building 12F Tank Farm Area, also known as the Building 12F Former Oil Storage Tanks, consisted of 14 USTs which include SWMUs T-X through T-KK (UTSs 12F-01 through 12F-14) and one AST located in the central-western section of the site (Figure 3-1). The USTs ranged in size from 20,000 to 25,000 gallons, and the AST had a capacity of 100,000 gallons. These tanks were used to store 10C mineral oil as part of GE's overall oil storage and distribution system prior to 1964. The oil, which was used to fill transformers manufactured in the Building 12 complex and bushings in Building 51, was transported via underground lines which ran west into the Building 12 complex and east to New York Avenue, north along the west side of New York Avenue to the Tyler Street Extension, and east along the south side of the Tyler Street Extension to Building 51 on Plastics Avenue.

Although historical records are incomplete, installation of the tanks is believed to have occurred during the early to mid-1900s (1918, 1925, and 1947). Use of the entire storage facility was discontinued in 1964. Formal records on the procedure used to decommission the facility have not been found.

While these tanks were not used for the storage of PCB-containing fluids, some residual PCBs have been detected during previous sampling and analysis efforts. It is believed that the presence of PCBs in this area has resulted from limited piping interconnections between PCB and mineral oil distribution systems. Further, it is believed that releases from these tanks are the source of floating oil on the groundwater which is discussed further in Section 4.

Based on verbal communications with an individual involved with the removal of these USTs, each was reportedly removed in 1964. An attempt was made in July 1993 to use Ground Penetrating Radar (GPR) to locate any USTs and related piping that may still be present at the Building 12F Tank Farm. The

GPR showed strong reflections indicative in size of underground piping located beneath the east entrance to Building 100. The GPR also showed weak reflections indicating the possible presence of three USTs located beneath a crowned, mulch-covered area that is bordered by asphalt curbing between Merrill Road and the east entrance to Building 100. In addition, the GPR showed weak reflections indicating the possible presence of two additional USTs located directly beneath Merrill Road adjacent to the east entrance to Building 100. No other GPR reflections that were indicative of any of the other Building 12F USTs were observed. An additional GPR investigation of the two USTs potentially located beneath Merrill Road was conducted during the week of August 30, 1993. This investigation observed no reflections characteristic of USTs. Further details regarding these GPR investigations are provided in Appendix D.

Based on the results of the GPR investigations and other pertinent information, GE believes that none of the former Building 12F USTs remains in the ground. The rationale for this conclusion is described below:

- Photographs taken when Building 12F was demolished indicate that the entire structure had been removed.
- The USTs were located 4 feet below grade based on site elevation plans. If these tanks were present, it would be expected that the GPR equipment would have indicated strong reflections (rather than only weak reflections).
- Railroad tracks were subsequently placed over the area where the July 1993 GPR survey indicated the potential presence of three USTs. These tracks were used for shipment of up to 945,000-pound loads of industrial transformers. Civil engineering principles would prohibit installation of such tracks over buried USTs.

In addition, on October 12, 1994 the City of Pittsfield installed a soil boring along Merrill Road directly over the area suspected of containing the three USTs noted to be potentially present during the July 1993 GPR survey. This boring was installed to a total depth of 24 feet below the ground surface as part of the relocation of Merrill Road. No USTs were encountered.

3.5 Building 9G Underground Storage Tank (SWMU T-W)

This SWMU consists of a 5,000-gallon steel UST (UST 9G-01) located in the area west of Building 9G and south of Building 9, in the central-northern section of the site (Figure 3-1). The tank was installed in 1948 and contained 10C mineral oil during its use. The duration of its use prior to closure is uncertain.

An inspection of the tank was performed in July 1989 by Blasland & Bouck. Site inspection notes indicate that in 1985 the tank was pumped of its contents. A small amount of residual product was found inside the tank and subsequently sampled by Blasland & Bouck and submitted for PCB analysis. PCBs were detected in the sample at a concentration of 100 ppm (a duplicate analysis indicated a concentration of 120 ppm). In February 1990, the tank was cleaned by J.H. Maxymillian, Inc. of Pittsfield, Massachusetts, and wipe samples were obtained by Blasland & Bouck from three locations inside the tank, one from each end wall and one from the bottom surface. These wipe samples yielded PCB concentrations of 6.1, 27, and 2.5 micrograms per 100 square centimeters, respectively. The analytical data are presented in Appendix E. The Pittsfield Fire Chief agreed to permit the closure of the tank in May 1990 by filling it in place with a concrete slurry. These activities were carried out during the same month.

3.6 Building 14 Underground Storage Tank (SWMU T-NN)

This SWMU consists of a 6,000-gallon UST (UST 14-03) located south of Building 14E (second Extension), in the northern section of the site (Figure 3-1). The tank was installed in 1963 and was formerly used to store Solvesso-100 [a solvent blend of alkylated benzene (greater than 96%) and saturated hydrocarbons (less than 4%)] until 1976, when the tank was taken out of service. This UST was found to be sand-filled during a pre-excavation inspection for the Altresco Steam Line strain-pole braces by Blasland & Bouck in August 1989. The date on which the tank was decommissioned is not known.

Two samples were obtained for PCB analysis from the vicinity of the tank during the August 1989 inspection by Blasland & Bouck. An aqueous sample was drawn from the water which had collected in the manway to the tank and a soil sample was taken from the fill material excavated from the manway. PCBs were detected in the aqueous sample at a concentration of 0.22 ppm and in the soil sample at a PCB concentration of 29 ppm. The analytical data are presented in Appendix F.

3.7 Underground Pipes and Tunnels

The East Street Area 1/USEPA Area 3 Site is traversed by a series of underground electronic, electrical, power, and water conduits that provide a variety of services throughout the area. Design drawings for these service lines have been obtained from GE, the Berkshire Gas Company, and the City of Pittsfield Municipal Engineer and are presented in Appendix B of this report.

GE facility property within the site is underlain by a network of pipelines and tunnels carrying steam, electricity, telephone service, security surveillance, potable water, storm water, and process wastewater.

The Building 12F Tank Farm area was serviced by a series of underground lines which are depicted in Appendix B. According to facility information, use of the storage facility was discontinued in 1964 in favor of a new, aboveground facility which was installed to the east of Building 29. In 1989, as part of the Altresco Steam Line distribution system, the former 12F facility distribution lines were reportedly drained at the low spot along Tyler Street midway between New York Avenue and the parking lot west of Building OP-2. The lines were disconnected and capped at New York Avenue. The lines were sampled when drained. Two 4-inch lines were drained of approximately 754 gallons of 10C oil containing 113 to 707 ppm PCBs. The lines were found to be located in the same trench beneath inactive individual hydrogen, oxygen, and nitrogen gas lines. An additional 1,315 gallons of oil were collected from the eastern terminal lines at Building 51. All of the recovered oil was disposed of at GE's Thermal Oxidizer located in the Building 60 complex, west of the site.

The Berkshire Gas Company provides natural gas service for the residential/commercial area in the southern portion of the site, and sewer and potable water service lines are maintained by the City of Pittsfield, Department of Public Utilities.

SECTION 4 - HYDROGEOLOGIC INVESTIGATIONS

4.1 General

This section provides a summary of the hydrogeologic investigations that have been performed to date at the East Street Area 1/USEPA Area 3 Site. Separate summaries have been prepared related to the oil plume, subsurface soils, and groundwater. These discussions have been further categorized into "Pre-MCP Investigations" (i.e., activities that were performed prior to the Consent Order executed by GE and the MDEP in July 1990), and "MCP Investigations" which were performed in accordance with the MDEP-approved "East Street Area 1 MCP Phase II Scope of Work" (Blasland & Bouck, August 1990a) or thereafter. Sections 4.1.1 and 4.1.2 present descriptions of geology and groundwater flow within the study area, and Sections 4.2 through 4.5 describe specific hydrogeologic investigation activities. Section 4.6 provides a summary of hydrogeologic activities. Figure 4-1 illustrates the sampling locations for the field investigations.

4.1.1. Geology

The geology in the East Street Area 1/USEPA Area 3 Site is comprised of both glacial and alluvial sediments overlying bedrock. Although none of the monitoring wells drilled in this area penetrated the bedrock, it was reported that dolomite bedrock was encountered at a depth of approximately 48 feet in the southeast corner of this area at well 61 (E&E, October 1982). The available boring logs for the monitoring wells are included in Appendix G and were utilized to prepare hydrogeologic cross-sections as shown on Figure 4-2. Figure 4-3 is a cross-section illustrating the geology along an east-west transect, while Figure 4-4 is an illustrative cross-section

feet above mean sea level for the years illustrated, descending in a generally southerly direction. (It is important to note that beginning in September 1988 the datum from which groundwater elevations were measured was shifted approximately 11 feet higher to correspond to mean sea level.) The configuration of the water table can be generally characterized as sloping from north to south, with a fairly steep gradient from the area of the former storage tanks sloping in a southerly direction toward East Street. Towards the western end of East Street, the gradient appears to shift somewhat to the southwest and continues to slope relatively steeply toward the Housatonic River. However, along the eastern half of this area, the gradient flattens out considerably in the area south of East Street, and appears to slope gradually toward the southeast, also toward the Housatonic River.

4.2 Oil Plume Investigations

The East Street Area 1/USEPA Area 3 Site from Merrill Road south has been the subject of a number of remedial investigations designed to characterize the occurrence of subsurface oil, and GE has taken a number of steps over the years to recover that oil. GE's oil recovery activities are described in Section 4.2.1 and GE's oil plume delineation activities are described in Section 4.2.2.

4.2.1. Oil Recovery Activities

In 1955, oil was detected in the basement of the Bellora property located on the northern edge of East Street, south of the Building 12F Tank Farm (Figure 1-2). In response to this discovery, GE installed a well point system on the northern portion of this property, and substantial amounts of oil were removed. Subsequently, GE installed an underground oil/water collection trench to replace the well point system. This trench was located

north of East Street and the Bellora property along the southern edge of the railroad siding. The trench intercepted the oil and groundwater and diverted it to a collection manhole adjacent to East Street where the oil fraction was drummed for disposal and the groundwater was discharged to the Newell Street storm drain.

In 1967, the collection trench was extended easterly from the Bellora property to the western edge of the Kelly-Dietrich property. In 1971, the Newell Street storm drain was diverted to GE's newly constructed Building 64X oil/water separator located approximately 1,000 feet to the southwest. In 1974, GE received its first National Pollution Discharge Elimination System (NPDES) Permit for the Pittsfield facility which included pollutant limitations for the water discharged from the Building 64X oil/water separator. Results of effluent monitoring performed persuant to the NPDES Permit were, and continue to be, reported to the MDEP and USEPA on a monthly basis.

In 1978, the Bellora property was purchased by GE. The structure on that property was demolished in June 1979. The Marchisio property, contiguous to the Bellora property on the western side, was also purchased by GE in October 1979 and the structure on it was subsequently demolished. A commercial building located at 1215 East Street was purchased in April 1980 and subsequently demolished. These properties are identified on Figure 4-11.

In 1979, GE discontinued use of the groundwater collection system and replaced the system with an upgraded oil recovery system, consisting of a french drain and caisson system. This system, referred to as the East Street Area 1 - Northside Recovery System, is located north of East Street just east of the Newell Street and East Street intersection (Figure 4-1).

The Northside Recovery System employs a 6.75-foot diameter perforated steel caisson with 22 6-inch diameter, approximately 80-foot long, perforated collection laterals (11 on the east side and 11 on the west side). The collection laterals were designed to collect and remove floating oil from the groundwater surface. The laterals start at a depth of approximately 7.5 feet below the land surface and extend to a maximum depth of 18.5 feet.

These laterals were installed to extend east and west along the length of the largest oil accumulation identified in the area and to have a vertical collection range necessary to intercept seasonal variations in the water table. A groundwater drawdown pump installed within the caisson is operated to induce a cone of depression in the localized water table, thereby producing a gradient needed to ensure effective oil recovery. The oil is skimmed from the groundwater by a hydrophobic/oleophilic membrane connected to a separate oil pump. The collected oil is stored in a 55-gallon drum located within the caisson. The oil is periodically removed and transported to GE's Thermal Oxidizer for destruction. The Northside Recovery System discharges the pumped groundwater to the 64G Groundwater Treatment Facility located approximately 750 feet to the west of the site in the East Street Area 2/USEPA Area 4 Site, where it is treated prior to being discharged.

The Southside Recovery System was installed in 1987 to supplement the Northside Recovery System in recovering the remaining scattered pockets of oil. The Southside Recovery System was installed on the south side of East Street, approximately 500 feet east of the intersection of Newell and East Streets (Figure 4-1). This system consists of a perforated precast concrete caisson, an oil skimming device, and a groundwater drawdown pump. It is operated in the same manner as the Northside

System. The collected oil is skimmed from the groundwater within the caisson and pumped into a 55-gallon drum located inside the caisson. This oil is then periodically removed and transported to GE's Thermal Oxidizer for destruction. The groundwater discharged from this system is also pumped to and treated at the 64G Groundwater Treatment Facility located in East Street Area 2/USEPA Area 4.

The operation of these two systems is being continued as part of Short-Term/Interim Measure activities associated with the site as described in Section 7.

4.2.2 Oil Plume Delineation Activities

In 1979 and 1980, a total of 141 monitoring wells were installed in and adjacent to the East Street Area 1/USEPA Area 3 Site to obtain water-level data and provide an indication of the potential presence of oil floating on the water table within the site. Figure 4-1 shows the monitoring well locations, while Table 4-1 presents available well construction details.

Soil samples were collected at each well location for visual characterization. A hollow stem auger rig was used to drill each well such that the well screen bridged the water table. Well boring depths ranged from 8 to 48 feet below the ground surface. Soil samples were collected from each well boring at 5-foot depth intervals with either a split-spoon sampler advanced through the auger or from auger cuttings (Geraghty & Miller, August 1981). The available soil boring logs are presented in Appendix G.

The wells were constructed of polyvinyl chloride (PVC) casing and preslotted (0.020 - inch slot) screen. The screens were installed to bridge the water table, allowing for the monitoring of the water table through seasonal fluctuations. Following the installation of the well screen and an

appropriate length of PVC riser pipe, the augers were withdrawn from the borehole allowing the native materials to collapse around the well screen. The remainder of the borehole annulus was backfilled with drill cuttings.

The progression of the monitoring well installation program is described below:

- The first phase of the monitoring well installation program involved the drilling and installation of 13 monitoring wells during August and September 1979. These monitoring wells, which were all located on GE property, delineated the general configuration of the water table. This information allowed for the estimation of the probable direction of oil migration.
- Wells 14 through 52 were installed by October 15, 1979 and detected oil under East Street in a plume extending from the intersection of East and Newell Streets to the east (Geraghty & Miller, 1979).
- Wells 53 through 60 were installed in East Street in an attempt to determine the eastern extent of the plume. Wells 61 through 68 were installed to determine if oil was present near Fasce Street. When oil was not found at these locations, wells 69, 70, and 71 were installed on Buckingham and Milan Streets. These wells indicated that oil was not located in the interior of the Lakewood area. Wells 72 through 76 were installed in the sidewalk south of East Street to determine if the more permeable utility trenches under East Street were retarding the southerly movement of the plume.

- In response to GE's offer that any Lakewood resident could request that a monitoring well be installed on their property, wells 77 through 100 were installed in December 1979.
- Wells 101 through 107, 108A, and 109A were also installed in December 1979 near the Northside Recovery System to replace wells that were destroyed during the construction of that recovery system.
- In early 1980, wells 108 through 117 were installed on the property at 1260 East Street in response to oil being observed in a basement sump. Wells 118 through 124, and 127 through 132 were installed in the Kelly-Dietrich parking lot and warehouse to the north of this property.
- Wells 125, 126, 133, 134, 135, and 138 were installed in the early 1980s at the request of the Department of Environmental Quality Engineering (now MDEP) to facilitate the collection of oil and groundwater samples at these locations. Wells 137 and 139 were installed at the request of Lakewood residents while wells 140 and 141 were installed to assist in monitoring the Northside Recovery System. These wells were also installed in the early 1980s.

Following the completion of each well, a clear bailer was used to determine if separate phase oil was present on the water table surface. The wells in which oil was identified were then periodically monitored during the well installation program to monitor any changes in the thickness of the oil present and to remove any significant accumulations encountered. A summary of the quantities of oil removed from the monitoring wells during

this period and oil thickness data obtained from these wells is presented in Appendix I.

Between 1981 and 1983, groundwater level and oil thickness data were collected on a quarterly basis from various wells. In May 1983, a semi-annual monitoring program was initiated to continue monitoring the water table, oil thickness, and lateral extent and migration of oil accumulation. This program has continued to the present, and the results are included in semi-annual monitoring reports submitted to the MDEP and the USEPA. A summary of the oil thickness data collected during the semi-annual monitoring program is included in Appendix I.

In addition to the extensive oil occurrence database generated as a result of the quarterly and semi-annual monitoring activities, a total of 11 samples of oil were collected in late 1979 and early 1980 (E&E, October 1982). These samples were collected from six monitoring wells (wells 48, 51, 52, 53, 55, and 56) and one residential basement sump located at 1260 East Street and analyzed for PCBs. The results of these analyses, summarized in Table 4-2, show oil PCB concentrations ranging from 4 to 274 ppm.

The historical migration of the oil plume can be observed through time from oil thickness contour maps. Oil thickness maps for October 1983, October 1989, and April 1994 are provided as Figures 4-8, 4-9, and 4-10, respectively.

In October 1983 the main portion of the oil plume appeared to extend over an approximate 3-acre area between the Northside and Southside Recovery Systems. Another smaller oil pocket was noted to be present approximately 200 feet east of the Southside Recovery System (see Figure 4-8).

By October 1989, the oil plume had been reduced to five small pockets of oil (see Figure 4-9). This was primarily a result of the effective operation of the two oil recovery systems. In April 1994, the extent of oil present at the site is shown to be limited to four small pockets of oil (see Figure 4-10).

4.3 Basement and Garden Sampling

4.3.1 Sampling of Basement Floors, Walls, and Sumps

Following the reported presence of oil in the basement sump at 1260 East Street in early 1980, GE collected two samples of the basement soil and a sample of oil and water from the sump. PCBs were detected in the soil samples at concentrations of 44 and 73 ppm, while PCB concentrations of 274 ppm and 0.826 ppm were detected in the oil and water samples, respectively. Following the receipt of the analytical results, GE expanded the scope of the basement sampling program between February and April 1980 to properties where oil could have migrated, as well as any Lakewood homeowners who wished to be included in the program.

Between February and April 1980, a total of 67 samples were collected from a total of 45 residences along East Street, Fasce Street, Newell Street, Lombard Street, Buckingham Street, and Milan Street. Fifty-four of the samples consisted of sump sediment or basement floor soil. The remaining samples were taken by scraping basement walls or by collecting material deposited around subsurface utility connections such as water or sewer lines. All samples were analyzed for PCBs. The results of the analyses are summarized in Table 4-3. The locations of the properties sampled and their addresses are shown on Figure 4-11. PCB results of the 67 samples ranged in concentration from non-detect to 152 ppm. A total of 61

samples (91 percent) exhibited a PCB concentration of 6 ppm or less, and 48 samples (72 percent) had a PCB concentration below detection. PCB concentrations of the remaining six samples were 7.6, 7.9, 8.4, 37, 40, and 152 ppm. The three basements that exhibited PCB concentrations of greater than 10 ppm were subject to additional sampling activities.

At 1250 East Street, the initial sump sediment sample collected on February 29, 1980 had a PCB concentration of 152 ppm. A second sump sediment sample was collected on March 25, 1980 which had a PCB concentration of 5.5 ppm (Table 4-3).

Two samples were collected from the basement at 34 Fasce Street on February 29, 1980. PCB results of these samples were 40 and 0.2 ppm (Table 4-3). On April 16, 1980, following a cleaning of the area, a total of four samples were collected from the sump area. Three of these samples had PCB concentrations of non-detect while the fourth had a concentration of 1.6 ppm (Table 4-3). Because the oil delineation program, described in Section 4.2.2 did not indicate the presence of oil in the area, and because of the distance between this property and the area of the oil plume, no additional sampling activities were conducted at this property.

Two samples were collected at 14/16 Lombard Street on March 14, 1980. Results for a sample collected from a basement wall crack had a PCB concentration of non-detect, while the results of a sample of grease on the concrete basement floor had a concentration of 37 ppm. As described by an individual involved in the sampling at this property, the presence of grease on the basement floor did not appear to be related to the oil plume present in parts of the site. Two samples, which were subsequently collected in late March and April 1980 of the soil beneath the concrete basement floor, both exhibited non-dectable PCB concentrations,

thus demonstrating that the grease did not enter the basement from beneath the floor. As a further measure, a steel trap door that covered this area was attached to the basement floor and locked. Periodic observations indicated that the grease did not reappear in this area.

In addition to the basement samples, liquid samples were drawn from five basement sumps and subsequently analyzed for PCBs by Stewart Laboratories of Knoxville, Tennessee (Stewart Labs). The collection of water and free-phase oil samples was attempted. The sump at 1260 East Street was the only one that showed evidence of a discrete oil layer, and separate water and free-phase oil samples were collected. As previously discussed, the PCB analytical results were 0.826 ppm for the water phase and 274 ppm for the oil phase. All other sump water samples yielded PCB concentrations of 0.0007 ppm or less (Table 4-4).

In addition to properties described in Section 4.2.1, the properties located at 1250/1252 East Street, 1254/1256 East Street, and 1260 East Street were purchased by GE in the early 1980s. These structures were demolished and an above-grade commercial facility (property at 1260 East Street) was constructed on these properties.

As discussed above, several properties where oil was detected were purchased by GE and the structures were removed. At two other properties (14/16 Lombard Street and 34 Fasce Street), additional samples were analyzed following cleaning activities. PCB concentrations detected in the remaining basements ranged from non-detect to 8.4 ppm (in a sump drain). It should be noted that many of these samples were taken from areas of the basement where access is limited and contact would be infrequent (e.g., holes and sumps).

4.3.2 Garden Sampling

In March 1980, canned and frozen vegetables from gardens at 15 and 23 Fasce Street were sampled and analyzed for PCBs (Figure 4-11). The analyses were performed by Stewart Labs, and the results are presented in Table 4-5. Only one of the 12 samples had a PCB concentration above the associated method detection limit; that sample showed a concentration of 0.01 ppm.

In May 1980, soil samples were collected from 13 garden plots associated with the site (many of which were located in the area of the oil plume). These samples were analyzed by Stewart Labs for PCBs. The results of these analyses, summarized in Table 4-6, show PCB concentrations ranging from non-detect to 1.0 ppm.

4.4 Subsurface Soil Investigations

4.4.1 Pre-MCP Subsurface Soil Investigations

As mentioned in Section 4.2.1, over 140 monitoring wells were installed in East Street Area 1/USEPA Area 3 in 1979 and 1980 (see Figure 4-1). Soil samples were collected from each of these wells at 5-foot depth intervals and examined in the field to determine soil stratigraphy. The soil samples were also carefully examined for the presence of oil (i.e., staining, odor, texture, and color).

A total of 13 soil samples, collected from nine soil borings, showed evidence of oil presence and were submitted for PCB analysis. The results of these analyses, summarized in Table 4-7 and on Figure 4-12, indicated that 11 of these 13 soil samples contained PCBs at concentrations ranging from below detection to 5.3 ppm. The two remaining samples contained PCBs at 13 and 25 ppm.

In July 1989, soil sampling and analysis were performed in East Street Area 1/USEPA Area 3 related to the installation of an above-ground steam line connecting the Altresco Cogeneration facility located approximately 1,200 feet to the east of the site (within the Hill 78 Area/USEPA Area 2) and Buildings 100 and 14. South and east of Building 9B, the steam line is supported by strain poles. The foundation for each strain pole (spaced at approximately 50-foot intervals along the pipeline) involved the excavation of soil to a depth of approximately 10 feet below the ground surface. At each location prior to excavation, Geraghty & Miller performed soil sampling in order to characterize the soil and identify appropriate soil disposition alternatives upon excavation. As part of these activities, 149 samples were collected from various depths at 52 locations and analyzed for PCBs. The locations of these samples and associated analytical data are presented on Figure 4-13 and in Table 4-8. PCBs were detected at concentrations of up to 14,000 ppm; although, three-quarters of the sample results were below 10 ppm. Each of these samples were also screened in the field for volatile organic compounds (VOCs) using a photoionization detector (PID). Based on PID readings, 15 of the 149 samples were also submitted for priority pollutant VOC analysis. The results of these analyses are summarized in Table 4-9, and indicated the presence of six VOCs at concentrations between non-detect and 20,000 ppm. The majority of the samples exhibited either non-detectable or low concentrations of VOCs.

In March 1990 three additional monitoring wells were installed in East Street Area 1/USEPA Area 3 near the east ends of Buildings 100 and 14E as shown on Figure 4-1. These wells were installed as part of a series of wells designed to collect groundwater quality data near Building 14 prior to GE's leasing of the associated building space to another manufacturing

company. These wells, designated D1, E1, and F1, were installed at depths of 13 feet, 20 feet, and 19 feet below the ground surface, respectively. Soil samples were collected continuously at each location at 2-foot depth intervals for characterizing related geology and soil quality. All samples were screened in the field for VOCs using a PID, and soil samples from various depth intervals were submitted for PCB analysis. PID readings of these samples ranged from 0 to 2 PID units. Associated PCB data are summarized in Table 4-10 and on Figure 4-12 and range from less than 1 to 30 ppm, with only two out of 13 samples exhibiting concentrations greater than 2 ppm. Soil boring logs and well construction details are included in Appendix G.

In addition to the pre-MCP soil data described above, various additional soil data are available as part of numerous miscellaneous soils investigations conducted throughout the site. Summary discussions regarding these data are presented in Section 5.

4.4.2 MCP Subsurface Soil Investigations

In accordance with the East Street Area 1 MCP Phase II SOW, four shallow to intermediate depth groundwater monitoring wells (ES1-1 through ES1-4) were installed north of Merrill Road by Geraghty & Miller during the period of January 22 through 29, 1991 (see Figure 4-1). Two of the wells (ES1-1 and ES1-4) were constructed with their screens bridging the water table to detect the possible presence of free-floating oil and to determine the quality of shallow groundwater entering the area south of Merrill Road from the GE facility. Wells ES1-2 and ES1-3 were constructed with their screens fully submerged below the water table to provide upgradient dissolved-constituent data. Proposed well ES1-5, which was specified in the East Street Area 1 MCP Phase II SOW, was deleted from the field

investigation with MDEP approval. Pursuant to the Remainder of GE Facility MCP Phase I SOW (Blasland & Bouck, August 1990b), a fifth monitoring well (well RF-13) was installed on May 30, 1991, southeast of Building 10 near the intersection of Merrill Road and New York Avenue (see Figure 4-1). A summary of well construction details is provided in Table 4-1.

Continuous split-spoon soil samples were collected at 2-foot intervals from four of the five newly-installed wells and described for moisture content, sediment texture, and structure. All samples were collected and analyzed in accordance with the MDEP-approved Sampling and Analysis Plan (SAP) (Blasland & Bouck, September 1990). Soil samples were not collected from boring ES1-4. Well ES1-4 was installed adjacent to and as a replacement for well 10, which had been destroyed. Soil borings for wells ES1-1, ES1-4, and RF-13 were advanced to a depth of approximately 10 feet below the water table, while the soil borings for wells ES1-2 and ES1-3 were advanced to a depth of approximately 15 feet below the water table.

Each soil sample was screened in the field for VOCs using a PID and submitted to IT Analytical Services (ITAS) of Knoxville, Tennessee, for PCB analysis. These data are presented in Table 4-11 and on Figure 4-12.

Only one non-zero PID reading was measured in the MCP soil samples. This occurred for the 4- to 6-foot depth sample for boring ES1-1. This sample was then submitted to CompuChem Laboratories (CCL) of Research Triangle Park, North Carolina for analysis of the VOCs and semivolatile organic constituents (SVOCs) listed in Appendix IX of 40 CFR Part 264. The results of this analysis, summarized in Table 4-12, shows the presence of several polynuclear aromatic hydrocarbons (PAHs) at various

concentrations. Associated analytical data sheets are included in Appendix J.

In addition, the 14- to 16-foot depth sample from boring RF-13 was submitted to CCL for analysis of the constituents listed in Appendix IX of 40 CRF Part 264 plus benzidine, 2-chloroethyl vinyl ether, and 1,2-diphenylhydrazine (Appendix IX+3). The results of this analysis are also summarized in Table 4-12, and associated analytical data sheets are included in Appendix J.

4.5 Groundwater Investigations

4.5.1 Pre-MCP Groundwater Investigations

As discussed previously in Section 4.2.2, an extensive network of groundwater monitoring wells has been installed at the East Street Area 1/USEPA Area 3 Site for the primary purposes of monitoring the direction of groundwater flow and fluctuation of the associated water table as well as the presence, extent, and potential migration of floating oils.

In addition to the extensive water-level and oil thickness database previously discussed, a limited pre-MCP analytical database is available for site groundwater as described below.

On various dates during the well installation program in 1979 and 1980, GE collected a total of 44 groundwater samples from 22 monitoring wells that were subsequently analyzed for PCBs. In addition, the MDEP collected 31 split samples for independent PCB analyses. The analytical results of these groundwater samples are summarized in Table 4-13. PCBs were only detected in 14 of the 75 samples analyzed. The concentrations of PCBs reported for these samples ranged from 0.00003 to 0.743 ppm. However, given the extremely low solubility of PCBs in water, the relatively

high concentrations reported for several of the samples may reflect traces of PCB-bearing oil in the samples analyzed as opposed to actual concentrations of PCBs dissolved in the groundwater. The methods used to collect, contain, and ship these samples, which involved placing both the water and any floating oil encountered into a single bottle for transport to the laboratory, may also make the results of these analyses of limited value.

Between February 1988 and April 1990, groundwater samples were collected on nine occasions from the Southside Recovery System. These samples were either collected directly from the discharge of a submersible pump set approximately 10 feet below the surface of the water table, or by lowering a bailer into the groundwater. On six of these occasions (2/8/88, 7/12/88, 7/20/88, 7/27/88, 8/11/88, and 9/25/89), the samples were analyzed for PCBs only. On two occasions (8/2/88 and 4/18/90), samples were analyzed for miscellaneous water quality parameters such as total suspended solids (TSS), biochemical oxygen demand (BOD), chemical oxygen demand (COD), and oil and grease. The results of these analyses, which are summarized in Table 4-14, showed PCB levels of less than 0.001 ppm. On one additional occasion (4/26/90), a sample was analyzed for PCBs, cyanide, and priority pollutant VOCs, SVOCs, and metals. The analysis of this sample showed the presence of PCBs at 0.071 ppm, bis(2-ethylhexyl)phthalate at 1.2 ppm, barium at 0.110 ppm, and cadmium at 0.009 ppm. Since PCB concentrations detected for the previous samples collected at this location were all shown to be less than 0.001 ppm, the detection of 0.071 ppm of PCBs on April 26, 1990 was unexpected and was believed to be attributable to the sampling methodology. This sample was the only sample collected by lowering a bailer into the caisson; all of the

other samples were collected from the pump discharge. It is possible that lowering the bailer into the caisson could have caused it to contact and be affected by an oil sheen present on the surface of the groundwater within the caisson. This could explain the anomalously high PCB concentration.

On May 6, 1988, the groundwater discharge from the Northside Recovery System was indirectly sampled and analyzed. This effort involved the collection of water samples from two manholes associated with the storm sewer to which this system discharges. These two water samples were submitted for the analysis of priority pollutants. The results of these analyses showed no detectable constituents except for trace concentrations of trans-1,2-dichloroethene (0.012 ppm), 1,4-dichlorobenzene (0.010 ppm), and N-nitrosodiphenylamine (0.014 ppm) in one sample.

On March 22, 1990, groundwater samples were collected from wells E1 and F1, located along the east end of Building 14E. (An attempt was also made at that time to collect a groundwater sample from well D1, located along the east end of Building 100, but groundwater in that well did not recover quickly enough to provide sufficient water for sampling.) These samples were analyzed by ITAS for cyanide, phenols, and priority pollutant VOCs, SVOCs, metals, and pesticides/PCBs. As shown on Figure 4-14, both wells exhibited low concentrations of copper (0.02 ppm in both wells), zinc (0.046 ppm in well E-1 and 0.083 ppm in well F-1), and total phenol (0.03 ppm in both wells). Silver was also detected in well F-1 at 0.01 ppm. No other constituents were detected above quantitation limits. However, toluene was detected in well E-1 at an estimated concentration below the quantitation limit of 0.001 ppm. Also, chloroform and N-nitrosodiphenylamine were detected in well F-1 at estimated concentrations

(below quantitation limits) of 0.002 and 0.006 ppm, respectively. These data suggest that plant operations in this area have not impacted associated groundwater quality.

4.5.2 MCP Groundwater Investigation

Between January and June 1991, Geraghty & Miller conducted a field investigation that included the collection of additional soil and groundwater quality data to further define the nature and extent of subsurface impacts at the East Street Area 1/USEPA Area 3 Site. A summary of the well installation, groundwater sampling and analysis, groundwater quality, and slug testing results are described in Sections 4.5.2.1 through 4.5.2.4, respectively.

4.5.2.1 Monitoring Well Installation

As described in Section 4.4.2, four shallow to intermediate depth groundwater monitoring wells (ES1-1 through ES1-4) were installed at the site during the period of January 22 through 29, 1991. Well RF-13 was installed on May 30, 1991 in accordance with the MCP Phase I Remainder of GE Facility SOW.

The monitoring wells were constructed with 4-inch diameter Schedule 40 PVC casing and 0.010-inch slotted PVC screen. A well-sorted sand pack was placed in the annular space to 2 feet above the top of the screen. A 2-foot thick pelleted bentonite seal was placed above the sand pack, and the remaining annular space was grouted to the land surface with a cement/bentonite mix. A locking curb box was installed at grade to complete each well.

Under the direction of Geraghty & Miller, each well was thoroughly developed to ensure a good hydraulic connection between the screen zone and the surrounding formation. Clean Berkshires, Inc.

performed the development using an air-lift pump until the well yielded visibly sediment-free water. The development water was drummed and transported to Building 12, pending laboratory analytical results from the groundwater samples.

The measuring-point elevations of wells ES1-1 through ES1-4 were determined to the nearest hundredth of a foot, in relation to mean sea level, by a licensed land surveyor. (Well RF-13 was not surveyed.) Well elevation data are presented along with the well construction summary in Table 4-1.

4.5.2.2 Groundwater Sampling and Analysis

In accordance with the East Street Area 1 Phase II SOW, groundwater samples were collected from wells ES1-1 through ES1-4 and from the Northside and Southside Recovery Caissons. The samples were collected between February 12 and February 20, 1991. Well RF-13 was sampled on December 4, 1991 in accordance with the Remainder of GE Facility Phase I SOW. All samples were analyzed in accordance with the SAP.

Depth-to-water and total well depth measurements were taken upon opening the wells. After calculating the casing volume of each well, approximately three to five well volumes were purged prior to sampling. The groundwater samples collected from wells ES1-3 and RF-13 were analyzed by CCL for all Appendix IX+3 constituents, while groundwater samples from all other well locations, including the Northside and Southside Recovery Caissons, were analyzed for Appendix IX+3 constituents excluding pesticides and herbicides, with MDEP approval. Field measurements of specific conductivity, pH, and temperature were also recorded as each well was sampled.

4.5.2.3 Groundwater Quality

The analytical results of the groundwater sampling are presented in Table 4-15 and on Figure 4-14, and associated analytical data sheets are included in Appendix J. These data indicate that shallow groundwater quality within the site appears not to have been impacted by the presence of the floating oil accumulation along East Street. In particular, the samples collected from the Northside and Southside Recovery Systems, which provide a worst-case scenario since the water within the caissons has been in direct contact with the floating oil, show very little impact to shallow groundwater quality. As presented in Table 4-15, toluene was detected at 0.009 ppm in the Northside Recovery System and 1,4-dichlorobenzene was detected at 0.012 ppm in the Southside Recovery System. Wells ES1-2 and ES1-3, constructed with their screens fully submerged below the water table, also show very minor impacts on groundwater quality. Cyanide was detected at 0.0103 ppm in well ES1-2, Aroclor 1254 was detected at 0.00076 ppm in well ES1-3, and Aroclor 1260 was detected at 0.0013 ppm in the field duplicate from well ES1-3. The sample from well ES1-4 showed 0.006 ppm chlorobenzene, 0.087 ppm 1,3-dichlorobenzene, 0.017 ppm 1,4-dichlorobenzene, and 0.045 ppm 1,2,4-trichlorobenzene. The sample from well RF-13 showed the presence of 1,2-dichloroethene (total) at 0.13 ppm and trichloroethene at 0.14 ppm. In addition, several other inorganic constituents were detected in each well (see Table 4-15).

4.5.2.4 Slug Testing of Selected Wells

The East Street Area 1 Phase II SOW specified slug testing of two existing monitoring wells (wells 37 and 103) to determine the

hydraulic conductivity of the overburden system. However, well 37 is located in a moderately high-use roadway (Newell Street) and is not readily accessible for the performance of slug tests. Accordingly, well 37 was not slug tested and four additional wells (wells E1, F1, 6, and 79) located along a line extending north to south from the GE facility toward the Housatonic River were slug tested following MDEP approval of this modification to the SOW (Hanson 1991).

As a result, slug tests were performed on five wells within the site (see Figure 4-1 for well locations) to establish the hydraulic conductivity of the formation material between the potential source area(s) and the Housatonic River.

Each slug test was performed utilizing a solid slug. Prior to placing the slug into the well, a pressure transducer, connected to a data logger, was placed in the well. A 5-foot long by 1.5-inch diameter solid slug was then placed in the well. After the water level in the well had returned to its original (static) level, the slug was rapidly removed from the well and the resulting change in water levels recorded with the data logger.

AQTESOLV software was utilized to calculate the hydraulic conductivities using the Bouwer and Rice Method (1976). The graphical results of this analysis are presented in Appendix K. Hydraulic conductivities [centimeters per second (cm/sec)] calculated from each slug test are as follows:

Well ID.	Hydraulic Conductivity (cm/sec)
E1	6.06×10^{-7}
F1	5.89×10^{-7}
6	1.75×10^{-5}
103	9.81×10^{-6}
79	1.07×10^{-3}

The hydraulic conductivity data indicate an increase in permeability of four orders of magnitude from wells E1 and F1 to well 79. This increase probably reflects the transition from less permeable floodplain deposits near the potential source area(s) to more permeable former riverbed channel deposits adjacent to the Housatonic River.

4.6 Site-Wide Hydrogeologic Characterization

Subsurface Lithology

The subsurface soil sampling conducted during the installation of monitoring wells has revealed the site to be underlain by an assemblage of silty, fine to medium sand, with lesser amounts of clay and gravel. At depths between 10 and 30 feet below the ground surface, these deposits grade to a dense silt unit. Deeper borings performed at and adjacent to the GE facility have revealed the presence of a very dense, tight, olive-green to brown till unit below the silt and above the bedrock surface, with the bedrock occurring at an estimated average depth of approximately 50 feet below the ground surface.

Water Table Fluctuations

Water table elevations in East Street Area 1/USEPA Area 3 have been measured since 1979. Water levels were measured on a quarterly basis between 1979 and 1983 and semi-annually since 1983. Throughout this timeframe,

groundwater flow in the area has generally been to the south and southwest, toward the Housatonic River. The groundwater gradient can be characterized as sloping steeply from the facility toward East Street, then flattening out as it approaches the Housatonic River. Using an average gradient of 0.04 based on the April 1994 water-level data, the average of the hydraulic conductivity values presented in Section 4.5.2.4, and an assumed porosity value of 20 percent, the estimated groundwater flow rate through the site would be approximately 4.23 x 10^{-5} cm/sec.

Recharge to the groundwater flow system in East Street Area 1/USEPA Area 3 occurs primarily through precipitation and discharge is primarily to the Housatonic River. Artificial discharge of groundwater is produced through the operation of the Northside and Southside Recovery Systems along East Street; these systems induce a continuous depression in the water-table surface as part of active oil recovery.

Oil Plume Migration Assessment

As indicated in Section 4.2.2, the historical migration of the oil plume in East Street Area 1/USEPA Area 3 has been monitored as part of the quarterly and semi-annual monitoring programs since 1981. Oil plume thickness maps were generated as a result of each monitoring event. Figures 4-8, 4-9, and 4-10 illustrate oil thickness data for monitoring performed in October 1983, October 1989, and April 1994, respectively. These maps illustrate the relative decrease in the size of the oil plume in this area over time. This decrease in size of the oil plume is primarily attributed to the operations of the Northside and Southside Recovery Systems. As shown in Figure 4-10, the present extent of the oil plume is limited to four small pockets of oil. The recovery of this remaining oil will continue as part of short-term/interim measure activities, as described in Section 7.

Groundwater Quality

Despite the fact that groundwater in the area associated with historical oil presence has been in long-term contact with the floating oil in this area, the associated groundwater quality does not appear to have been significantly affected. This is evidenced by both the pre-MCP and MCP groundwater analytical data. Figure 4-14 illustrates a summary of the more recent groundwater quality data collected at the site.

Subsurface Soil

The subsurface soils of the site have also been sampled and analyzed as part of numerous investigations as described in Section 4.4. Figures 4-12 and 4-13 provide an illustrative summary of PCB concentrations detected in subsurface soils, which show these concentrations to range from below detection to 14,000 ppm, although three-quarters were below 10 ppm. Several other non-PCB hazardous constituents have also been detected in subsurface soils (see Tables 4-9 and 4-12).

Summary

The data presented in this section satisfy many of the requirements for the assessment of site hydrogeologic conditions pursuant to Phase II of the MCP. In addition, the existing information presented herein fulfills many of the same requirements under the Corrective-Action Permit. However, several data needs have been identified based on the comparison of existing site information with the remaining MCP Phase II requirements and the RFI requirements of the USEPA Permit. These data needs are outlined and discussed in Section 10.

SECTION 5 - MISCELLANEOUS SOILS AND OTHER INVESTIGATIONS

5.1 General

In accordance with agreements between GE and the MDEP, certain excavation activities at the GE facility, whether they are associated with construction, demolition, landscaping, or other miscellaneous site work, are to be accompanied by a sampling and analysis program to assess the potential presence of chemical constituents in the excavated soils and thus to assist in determining the appropriate disposition of the materials. This section summarizes the sampling and analysis activities that have been performed in connection with such excavations, as well as various other miscellaneous sampling and analysis activities, at the East Street Area 1/USEPA Area 3 Site. Figure 5-1 shows the approximate locations of the various areas subject to such miscellaneous investigations. This section provides a brief summary of these investigations and the analytical results. Further details regarding these investigations are included in Appendix L. Available boring logs are included in Appendix G.

5.2 Excavation Near Building 9B

On March 6, 1991, five samples were collected from the area surrounding the excavation pit immediately west of Building 9B which was created as part of the repair of a steamline (Location A on Figure 5-1). The samples consisted of two discrete soil grab samples collected at a depth of 0 to 2 feet, two discrete concrete core samples collected at a depth of 0 to 4 inches, and one discrete asphalt grab sample collected at a depth of 0 to 3 inches.

All five samples were analyzed for PCBs by OBG Laboratories, Inc. of Syracuse, New York (OBG Labs) and were found to be non-detect. Based on

the results from PID measurements, VOC analysis was conducted on the two soil samples, and no detectable levels were reported. Refer to Appendix L, Section 1 for the sampling location maps and analytical data.

5.3 Excavations Near Building 10

Sampling and analysis activities have been conducted on four separate occasions in the area surrounding Building 10. Each of the investigations (March 1991, May 1991, August 1991, and June 1994) are summarized below. Sampling location maps, analytical data, and any additional information concerning the four investigations are included in Appendix L, Section 2.

A total of nine samples were collected on the north side of Building 10 on March 22, 1991 as part of excavations related to the repair of a steamline (Location B on Figure 5-1). They consisted of three discrete grab samples of soil collected from a depth of 0 to 2 feet below surface soils, three discrete concrete core samples at a depth of 0 to 6 inches, two discrete asphalt grab samples at a depth of 0 to 2 inches, and one discrete wood (railroad tie) core sample at a depth of 0 to 1 inch. All nine samples were analyzed for PCBs by OBG Labs. The discrete wood core sample was the only sample that exhibited a measurable PCB concentration (6.9 ppm).

On May 10, 1991, five discrete grab samples were collected along the northwest side of Building 10 as part of excavations related to the repair of a steamline (Location C on Figure 5-1). These samples included three soil samples (0 to 2 feet), one asphalt sample (0 to 2 inches), and one concrete sample (0 to 5 inches). These samples were analyzed for PCBs by OBG Labs, and only one of the soil samples exhibited a measurable PCB concentration (2.9 ppm). PID readings of these samples were all less than 10 PID units; therefore, no further VOC analyses were conducted.

On August 20, 1991, a total of 12 discrete soil grab samples were collected from two soil piles located on a pad located on the southwest side of Building 10 (Location D on Figure 5-1). From the first soil pile (approximately three cubic yards), six samples were collected (two each at depths of 0 to 15, 15 to 30, and 30 to 42 inches). One sample from each depth was analyzed for PCBs, and one sample from each depth was analyzed for Total Petroleum Hydrocarbons (TPHs). From the second soil pile (approximately eight cubic yards), six samples were collected (two each at depths of 0 to 16, 16 to 32, and 32 to 48 inches). As with the previous six samples, one sample from each depth was analyzed for PCBs while the other sample from that depth was analyzed for TPHs. All 12 samples were submitted to OBG Labs for PCB analysis. From the first soil pile, PCBs were detected at all three depths (1.5, 1.5, and 1.7 ppm, respectively), and TPH concentrations were non-detect. From the second soil pile, PCBs were again detected at all three depths (2.6, 1.9 and 8.0 ppm, respectively), and TPH concentrations of the 16- to 32-inch and 22- to 48-inch depths were found to be 300 and 210 ppm, respectively. PID readings of all samples were less than 10 PID units; therefore, no further VOC analyses were conducted.

Between June 5 and June 17, 1992, a total of five discrete water grab samples were collected from UST 10-01 located outside of Building 10 (Location E on Figure 5-1). Two of these samples were analyzed for PCBs, while the remaining three samples were analyzed for oil and grease. PCB concentrations of these samples were found to be 1.7 and 2.1 ppm, while oil and grease concentrations ranged from 2.8 to 2,240 ppm.

Between June 6 and June 9, 1994, one soil composite sample and 15 discrete soil grab samples were collected from the east side of Building 10 (Location E on Figure 5-1) as part of the removal of UST 10-01. The composite

sample was collected at a depth of 0 to 3 feet and analyzed by OBG Labs, using the Toxicity Characteristic Leaching Procedure (TCLP), for the metals subject to that procedure under 40 CFR 261.24 (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). The results of these analyses showed no detectable levels of these metals. The 15 grab samples were collected at various depths from 0 to 3 feet and analyzed by OBG Labs for PCBs and TPHs. Measurable levels of PCBs and TPHs were detected in all 15 samples. PCB concentrations ranged from 250 to 1,050 ppm, with an average of 458 ppm. TPH concentrations ranged from 61 to 360 ppm, with an average of 205 ppm. PID readings of these samples were all less than 10 PID units; therefore, no further VOC analyses were conducted.

The contents of UST 10-01 were also sampled and analyzed in June 1994 following its removal. Specifically seven discrete grab samples were collected from seven separate drums containing an oil/water mixture recovered from UST 10-01 during its removal. Four of these samples contained significant amounts of oil. In these instances, only the oil fraction was subject to analysis for PCBs. The remaining three samples contained only water, which was analyzed for PCBs. The oil samples exhibited PCB concentrations ranging from less than 2 to 5.1 ppm, while the water samples exhibited PCB concentrations ranging from less than 0.005 ppm to 0.301 ppm.

5.4 Excavations Within/Near Building 14

Sampling and analysis activities have been conducted on five separate occasions in and around Building 14. Each of the investigations (April 1988, August 1989, November 1989, February 1990, and March 1990) is summarized below. Sampling location maps, analytical data, and any additional information concerning the five investigations are included in Appendix L Section 3.

On April 7, 1988, 10 samples were collected from the first floor of Building 14 (Location F on Figure 5-1). Nine composite concrete samples (four at a depth of 3 inches, four at a depth of 5 inches, and one at a depth of 7 inches) and one composite soil sample (at a depth of 0 to 6 inches) were collected from an excavation pile located within Building 14. All 10 samples were analyzed by OBG Labs for PCBs and were found to be non-detect.

In August 1989, removal activities were initiated for the Building 14 Extension Drain Tank (UST 14-04) (Location G on Figure 5-1) with the collection of an aqueous sample from within the tank. The sample, described as wash water, was analyzed for PCBs by OBG Labs, and a concentration of 0.042 ppm was reported. Prior to the start of excavation activities, the concrete slab flush with the ground surface and located above the UST was sampled and analyzed for PCBs. Concrete samples from seven locations were obtained in October 1989 and composited into one sample. OBG Labs analyzed the sample and reported that PCBs were not detected at a laboratory detection limit of 5 ppm.

Tank removal activities involved the excavation of the concrete slab and subsurface soils, followed by the removal of the UST. Resulting from these actions was an excavation pit where the tank was formerly located, and several piles of excavated soils. Sampling and analysis activities were then directed toward the excavation pit and soil piles.

In November 1989, soil sampling and analysis was performed for excavated materials in three components. First, three soil samples were collected from the bottom of the excavation pit and composited into one sample for analysis. Results for PCBs (<5 ppm), phosphate (1,100 ppm), and pH (9.0) were obtained from OBG Labs. Second, as soils were excavated, they were segregated into separate stockpiles based on visual observations; those soils suspected to contain PCBs or other hazardous materials (due to observed soil staining) were

placed in a separate area away from the other excavated soils. The soil pile containing "stained" soils was sampled at one representative location. Results for PCBs (<5 ppm), phosphate (1,800 ppm), and pH (7.2) were obtained from OBG Labs. Third, eight locations from three soil piles in which no visual evidence of "staining" was observed were sampled. The eight samples were composited into a single sample and submitted to OBG Labs for analyses. Results for PCBs (<5 ppm), phosphate (670 ppm), and pH (9.9) were reported.

Additional soil sampling was performed in February 1990 for those soil stockpiles where elevated PID readings were reported. Three locations (two from the non-stained soil pile and one from the stained soil pile) were sampled and submitted to OBG Labs for VOC analysis. Results indicated that all constituents, with the exception of acetone were not detected. Acetone (detected at concentration between 0.018 and 0.026 ppm) was also detected in the laboratory blank sample at 0.010 ppm. Therefore, the detection of low concentrations of acetone in the soil samples was attributed to laboratory methods.

On March 8 and March 27, 1990, 24 discrete concrete core samples were collected at a depth of 0 to 7 inches from within and around the Building 14 complex. Of the 24 samples, four were collected from within the East Street Area 1/USEPA Area 3 Site. These four samples are located south of Building 14 (Location H on Figure 5-1). The samples were analyzed by OBG Labs for PCBs and a measurable PCB concentration was detected in only one of the four samples (730 ppm in sample F1).

5.5 Excavations Near Building 100

Sampling and analysis activities have been conducted two times in and around Building 100. Both investigations (August 1987 and June 1988) are summarized below. Sampling location maps, analytical data, and any additional

information concerning these investigations are included in Appendix L, Section 4.

On August 12 and 13, 1987, Geraghty & Miller conducted a soil boring program adjacent to the east end of Building 100 (Location I on Figure 5-1). Twelve split-spoon soil samples were collected at various depths from 0 to 6.5 feet (see Appendix L, Section 4 for relevant information). The samples were analyzed by IT Analytical Services, Inc. for PCBs. Two samples exhibited PCB concentrations of 90 and 120 ppm (Boring 100-5 at 1.5 to 2 feet and Boring 100-8 at 2 to 4 feet, respectively). All other samples exhibited PCB levels less than 20 ppm. PID readings of the samples were all less than 10 PID units; therefore, no further VOC analyses were conducted.

On June 29, 1988, Blasland & Bouck collected 12 discrete wood core samples (at a depth of 6 inches) from railroad ties located east of Building 100 (Location J on Figure 5-1). The samples were analyzed for PCBs by OBG Labs, and PCB concentrations for all of the samples were non-detect. On July 5, 1988, at the same location, 12 wipe samples were taken from the railroad track rails. These samples were also analyzed for PCBs by OBG Labs, and only one of these samples exhibited a detectable PCB concentration (1.1 ug/100 cm^2).

5.6 Storm Sewer Sediment Sampling

From August 4 to August 8, 1989, 11 discrete sediment grab samples were collected from various storm sewers throughout the GE facility. Five of these sample locations, were within the East Street Area 1/USEPA Area 3 Site (Locations K on Figure 5-1). (Refer to Appendix L, Section 5 for maps as well as analytical results.) These samples were submitted to OBG Labs for PCB analysis, and PCB concentrations were detected in four of these five samples at 5.6, 8.4, 12, and 1,000 ppm.

5.7 Southside Recovery System Excavations

On April 20, 21, 23, and May 5, 1992, 15 samples were collected from soil, gravel, and concrete materials that were excavated from the Southside Recovery System (Location L on Figure 5-1) in anticipation of a planned pipeline installation. The excavated materials were staged in two piles east of Building 68, located within the East Street Area 2/USEPA Area 4 Site, and sampled at that location.

The 15 samples consisted of two discrete gravel grab samples, four discrete concrete core samples, one soil composite sample, and eight discrete soil grab samples. PID readings of the two gravel samples, both collected at a depth of 0 to 2 feet, were less than 10 PID units; therefore, further analyses were not conducted for these samples. The four concrete samples, each collected at a depth of 0 to 4 inches, were analyzed by OBG Labs for PCBs, and no detectable concentrations were reported. The soil composite sample, collected at a depth of 0 to 3 feet, was analyzed for TCLP metals by Alpha Analytical Laboratories. No TCLP metals were detected, and the sample did not show characteristics of toxicity. The remaining eight soil samples were taken at various depths from 1 to 3 feet and were analyzed by OBG Labs for PCBs. PCB concentrations were detected in three of these samples at 0.8, 1.2, and 1.4 ppm. PID readings for four of the eight samples were less than 10 PID units; therefore, no further analyses of these samples were conducted. PID readings for the remaining four samples, however, ranged from 10 to 61 PID units; therefore, these samples were analyzed for VOCs and SVOCs. VOC analyses detected acetone in three samples at 0.073, 0.082, and 0.12 ppm; ethylbenzene in one sample at 0.036 ppm; and xylene in two samples at 0.2 and 0.6 ppm. SVOC analyses detected various PAHs in all four samples. Concentrations ranged from 0.48 ppm for indeno(1,2,3-cd)pyrene in one sample (estimated value below

quantitation limit) to 90 ppm phenanthrene in another sample. Refer to Appendix L, Section 6 for sample location maps and analytical results.

On August 31, 1992, four additional soil composite samples were collected, each at a depth of 0 to 12 inches, from two additional soil piles located east of Building 68. Once again, the soil piles consisted of staged materials excavated from the Southside Recovery System area (Location M on Figure 5-1). Two samples were taken from each of the two soil piles and analyzed by OBG Labs for TPHs. Measurable TPH concentrations were detected in three of the four samples at 4,500, 15,000, and 23,000 ppm. Refer to Appendix L, Section 6 for sample location maps and analytical data.

5.8 Sweeper Soils

On several occasions, sand from GE "sweepers" were sampled and analyzed for PCBs and, on occasion, TCLP metals. The sand was swept up by GE on its property and placed into piles after having been used by GE during the winter to sand roads at the facility. In each case, the PCB analyses were performed by OBG Labs, while TCLP analyses were performed by Alpha Analytical Laboratories. These activities are summarized below, and the corresponding map and analytical results are provided in Appendix L, Section 7.

- Building 10, June 20, 1990 - Two discrete soil grab samples were collected at depths of 0 to 2 feet from two sweeper piles located west of Building 10 (Location N on Figure 5-1). A PCB concentration was detected in the sample taken from one pile (a 12 cubic yard soil pile) at 6.2 ppm, while no PCBs were detected in the other pile (a 10 cubic yard soil pile).
- Buildings 9 and 10, October 14, 1991 - Four discrete soil grab samples were collected from a sweeper pile located south of Building

9 and northwest of Building 10 (Location O on Figure 5-1). PCB concentrations were detected at 2.5, 2.1, and 2.0 ppm from samples taken at depths of 0 to 4 inches, 0 to 8 inches, and 0 to 12 inches, respectively. The fourth sample, taken at a depth of 0 to 12 inches, was tested for TCLP metals. Barium (0.26 ppm) and silver (0.01 ppm) were detected, but the sample results did not show characteristics of toxicity under 40 CFR 261.24.

- Building 10, October 14, 1991 - Six discrete soil grab samples were collected from a sweeper soil pile located west of Building 10 (Location P on Figure 5-1). Five of the samples, which were collected at various depths between 0 to 3 feet, were analyzed for PCBs. Three of these samples exhibited measurable PCB concentrations of 1.8, 2.3, and 3.2 ppm. The sixth sample, taken at a depth of 0 to 3 feet, was analyzed for TCLP metals. Arsenic (0.005 ppm), barium (0.17 ppm), and silver (0.01 ppm) were detected, but the sample results did not show characteristics of toxicity under 40 CFR 261.24.
- Building 10, June 15, 1992 - Three discrete sand grab samples were collected from a 5-cubic yard sweeper pile located west of Building 10 (Location Q on Figure 5-1). PCB concentrations were detected at 3.3, 1.2, and 2.4 ppm, in samples taken at depths of 0 to 1 foot, 1 to 2 feet, and 2 to 3 feet, respectively.
- Building 10, June 14, 1994 - Seven composite sand samples were collected at depths of 0 to 1 foot and 0 to 3 feet from approximately 10 sweeper piles located west of Building 10 (Location R on Figure 5-1). The piles consisted of approximately 41 cubic yards of sand. PCB concentrations were detected in all three of the 1- foot samples

at 2.0, 3.9, and 12 ppm, and in three of the four 3-foot samples at 1.0, 2.1, and 3.5 ppm.

SECTION 6 - AIR MONITORING AND ASSESSMENT

6.1 General

Air quality within the East Street Area 1/USEPA Area 3 Site was monitored on one occasion prior to MCP Phase II activities. The USEPA conducted this monitoring in an attempt to measure indoor air concentrations of PCBs in select commercial and residential basements. The results of this monitoring are summarized below in Section 6.2.

As part of the more recent MCP investigations associated with the GE facility, GE conducted a year-long facility air monitoring program to assess ambient outdoor airborne PCB concentrations within or in the vicinity of the GE facility. These activities are discussed in Section 6.3.

6.2 Pre-MCP Indoor Air Monitoring

The USEPA Region 1 Air Monitoring Group conducted indoor air monitoring in East Street Area 1/USEPA Area 3 on July 7, 1981. That monitoring was designed to measure air PCB concentrations in select commercial and residential basements at the site. Sampling was conducted at the following locations (see Figure 4-11 for address locations):

- 14/16 Lombard Street;
- 34 Fasce Street;
- Kelley - Dietrich Warehouse (East Street); and
- 53 Parkside Avenue (not illustrated -- located off-site, south of the Housatonic River).

One sample was collected from each of the properties, each consisting of a total sample volume of 1 cubic meter, collected from the average breathing elevation at an approximate flow rate of 3.8 liters per minute. Each sample was

analyzed for PCBs and chlordane (an insecticide being used by the residents). The following concentrations were reported by the USEPA in an undated report:

Sample location	Concentrations in micrograms per cubic meter (ug/m^3)	
	PCBs	Chlordane
14/16 Lombard Street	0.120	0.03
34 Fasce Street	0.150	1.20
Kelly-Dietrich	Not detectable	Not detectable
53 Parkside Avenue	Not detectable	22.0

Separate testing was conducted by the USEPA in homes in North Carolina to determine background concentrations of PCBs. PCB background levels were found to range from 0.05 ug/m^3 to 0.6 ug/m^3, with an average of 0.2 ug/m^3 (USEPA, undated).

Based on these results, the USEPA concluded that the levels of PCBs found in the basements at the East Street Area 1/USEPA Area 3 Site did not exceed normal background (USEPA, undated). A copy of the USEPA's report is provided in Appendix M.

6.3 MCP Ambient Air Monitoring and Assessment

From August 1991 through August 1992, GE conducted a facility air monitoring program to quantify levels of PCBs in the ambient air at and near its Pittsfield facility. This activity was performed in accordance with the "Facility Air Monitoring MCP Scope of Work" (Blasland & Bouck, August 1990c). In addition to the collection of meteorological information, air samplers were placed at certain locations based on an initial siting study. While this program did not include a sampling station directly within the East Street Area 1/USEPA Area 3 Site (due to the lack of an identified surface PCB "source" area compared to

adjacent areas), two co-located air monitoring stations were located at Building 64Y located adjacent to the southwest boundary of the site within East Street Area 2/USEPA Area 4. Another air monitoring station was located on Hill 78 to the northeast of the site.

The year-long program was performed by Zorex Environmental Engineers (Zorex), of Pittsfield, Massachusetts, and involved the collection of air samples every 12 days with analysis for PCBs. The results of this program were submitted to the MDEP and the USEPA on a quarterly basis and were presented in a final report submitted in November 1992 (Zorex, November 1992). Those results are summarized in Table 2 of that report, which has been reproduced as Table 6-1 of this report. As shown in Table 6-1, ambient air PCB concentrations during the year-long study averaged 0.0011 ug/m^3 at the Building 64Y monitoring station and 0.0007 ug/m^3 at the Hill 78 location.

At this time, no additional air monitoring activities are anticipated for the East Street Area 1/USEPA Area 3 Site.

SECTION 7 - DESCRIPTION OF SHORT-TERM/INTERIM MEASURE ACTIVITIES

7.1 General

As previously described, GE has been active in recovery and containment of the subsurface oil plume found at the East Street Area 1/USEPA Area 3 Site. These on-going activities have been performed to date under MDEP review and approval as STMs under the MCP. Now that the Corrective-Action Permit has become effective, these activities will be conducted as an STM/Interim Measure under the review and approval of the MDEP and the USEPA. To this end, an Interim Measure Proposal entitled "Oil Recovery Programs in East Street Areas 1 and 2" (Blasland, Bouck & Lee, February 1994) was developed and submitted to the USEPA, with a copy to the MDEP. Section 7.2 describes the STM activities that have taken place at the East Street Area 1/USEPA Area 3 Site to date and Section 7.3 summarizes GE's plan for future STM activities under the MCP and as an Interim Measure under the Permit. [Although the recently revised MCP now refers to STMs as Immediate Response Actions (IRAs), this report continues to refer to GE's oil recovery activities as STMs for convenience, since they began as STMs. In the present context, the term STM should be deemed equivalent to an IRA under the revised MCP.]

7.2 Review of Prior STM Activities

7.2.1 Northside Oil Recovery System

In August 1990, GE provided a proposal to the MDEP for the implementation of an STM for the Northside Oil Recovery System. That proposal included a description of the site background, current status of the system, and justification for the performance of the following measures:

- Continued operation of the recovery caisson, including groundwater drawdown pumping and oil recovery; and
- Supplementing the "active" oil recovery program with a "passive" oil recovery program. Passive oil recovery would involve the periodic monitoring of select wells where oil accumulations have been noted in the past. If oil accumulations were detected, oil removal (by either localized oil skimming within the well or manual bailing) would be performed.

Specific details regarding the proposal were included in a document entitled "Proposal for Short Term Measures at East Street Areas 1 and 2" (GE, August 1990). This document was submitted to the MDEP on August 31, 1990, with a copy to the USEPA.

Subsequent to the submittal of the above-referenced proposal, the MDEP and GE entered into a dialogue regarding the contents and scope of the proposal. As a result of this dialogue, the following specific requirements regarding the STMs to be performed by GE were identified:

- Active groundwater/oil recovery from the Northside System would continue.
- Existing monitoring wells 103, 105, 106, 107, 108A, 109a, 119, 140, and 141 (nine total - see Figure 4-1 for locations) would be monitored on a weekly basis. If an oil thickness of 0.1 feet of oil or greater was detected, passive oil recovery, consisting of manual bailing, would be initiated. Recovered oil would be properly containerized and transported to GE's Thermal Oxidizer for destruction.
- GE would provide the MDEP with monthly status reports to include the amount of groundwater and oil pumped from the

recovery system and the volume of oil recovered by passive means.

The passive oil recovery activities continued, as described above, with some minor modifications, until December 1992 when GE prepared an evaluation of oil recovery efficiency for the site. In a letter to the MDEP dated December 22, 1992, GE proposed to eliminate passive oil recovery from wells in the area of the Northside System because these wells are within the zone of influence (i.e, cone of depression caused by groundwater pumping) of the Northside System, and any oil present in the wells and surrounding area would move toward the Northside Caisson where it could be collected and removed. A copy of that letter was also sent to the USEPA.

The MDEP approved the proposed program in a letter dated April 20, 1993, and the passive oil recovery program was discontinued. Active pumping of the Northside Recovery System continues with limited down-time, as evidenced by the monthly status reports.

7.2.2 Southside Oil Recovery System

As part of the "Proposal for Short Term Measures at East Street Areas 1 and 2" (GE, August 1990), several measures were proposed by GE for the Southside Oil Recovery System. Operation of the existing recovery caisson had been essentially discontinued in 1990 due to several mechanical difficulties with the system and concern by the City of Pittsfield regarding the discharge of recovered groundwater to the city's sewer system. As part of the STM plan, GE proposed the performance of weekly monitoring well inspections, with oil removal (via passive means) as necessary.

Subsequent dialogue between the MDEP and GE resulted in the following specific requirements regarding the Southside Oil Recovery System:

- GE would pursue active groundwater/oil recovery from the Southside Caisson.
- Existing monitoring wells 25, 72, 74, 75, 76, 127 and the caisson itself (seven locations total - see Figure 4-1) would be monitored on a weekly basis. If an oil thickness of 0.1 feet or greater was detected, then passive oil recovery via manual bailing would be initiated. Recovered oil would be containerized and transported to GE's Thermal Oxidizer for destruction.
- GE would provide the MDEP with monthly status reports to include the volume of oil and groundwater pumped from the recovery system and the volume of oil recovered by passive means.

With respect to the re-initiation of active recovery from within the Southside System, GE evaluated possible discharge options and concluded that groundwater could be pumped from the Southside System to a manhole in the Northside System. From there it would go to the 64G Groundwater Treatment Facility, which was being constructed in the East Street Area 2/USEPA Area 4 Site, where the water would be treated prior to being discharged. Pipeline construction and installation activities were completed by May 1, 1992. Active recovery was initiated on July 31, 1992 and the recovery system has operated with limited down-time since that time, as evidenced by the monthly status reports.

The passive oil recovery activities continued as described above, with some minor modifications, until December 1992 when GE prepared an evaluation of oil recovery efficiency for the site. In a letter dated December 22, 1992 to the MDEP, GE proposed to modify the passive oil recovery program for the wells in the area of the Southside System. The

MDEP conditionally approved the proposed oil recovery program modifications in a letter dated April 20, 1993. The resulting modifications were as follows:

- Wells that did not contain oil would no longer be monitored.
- Well 76, which is adjacent to and directly upgradient from the Southside Caisson, would no longer be manually bailed; oil would be collected instead at the Southside Caisson.
- Wells 48 and 72 would be monitored on a monthly basis and any accumulated oil would be removed.

Since April 1993, monthly monitoring and oil removal has occurred at well 72. Because well 48 is actually located within a busy roadway, it was agreed that a specially designed bailer would be installed in this well to collect oil as it accumulates. This bailer was installed and monthly oil removal began in October 1993.

7.3 Current and Planned Oil Recovery Measures

GE's plans for continued efforts to address oil recovery at the East Street Area 1/USEPA Area 3 Site are described in an Interim Measure Proposal submitted to the USEPA (Blasland, Bouck & Lee, February 1994) and involve the following elements:

- Continue active groundwater/oil recovery from the Northside and Southside Recovery Caissons;
- Continue monitoring and passive oil recovery (if sufficient oil is present) on a monthly basis at monitoring wells 48 and 72;
- Provide the MDEP and the USEPA with monthly status reports to include the volume of groundwater and oil recovered via the active oil

recovery systems and the volume of oil recovered by passive means; and

- Continue the semi-annual oil and groundwater monitoring program in all other respects to verify the effectiveness of the current recovery systems.

The Interim Measure Proposal was approved by the USEPA in July 1994. Any modification to the ongoing activities described above will be made with the approval of the MDEP and USEPA.

SECTION 8 - FATE AND TRANSPORT CHARACTERISTICS

8.1 General

Various chemical constituents have been detected in the soil and groundwater at the East Street Area 1/USEPA Area 3 Site. The information presented in this section provides a general characterization of the environmental fate and transport properties associated with the constituents observed in these media. This section discusses only those compounds found at levels above the quantitation limit or CLP-required detection limit. Information concerning the detected concentrations and areas of distribution for compounds observed are presented in Sections 4 through 7. The fate and transport characteristics discussed in this section are intended to be general in nature for the various constituent groups and are not site-specific. Therefore, this section of the report is not intended to identify those processes actually occurring at the East Street Area 1/USEPA Area 3 Site, but only to provide information on potential fate and transport mechanisms.

8.2 Characterization of Detected Hazardous Materials

Due to the number of constituents detected, and the fact that many of these chemicals share common characteristics, discussions of compound-specific environmental fate and transport properties address representative groups of chemicals. These groups of chemicals and the constituents within each group exhibit specific properties that determine their potential behavior in the environment.

VOCs detected at the East Street Area 1/USEPA Area 3 Site include aromatics and halogenated hydrocarbons. SVOCs detected include polychlorinated benzenes and PAHs, as well as one amine and one phthalate

ester. PCBs were also detected at the site, as were certain metals. These chemicals are discussed in the following sections. Table 8-1 presents the water solubility, log octanol/water partitioning coefficient (log K_{ow}), vapor pressure, and Henry's Law Constant for the organic compounds detected at the East Street Area 1/USEPA Area 3 Site. These properties provide considerable insight into the fate and transport of a compound in the environment. Depending on their vapor pressure, highly water-soluble chemicals are less likely to volatilize and are generally more likely to biodegrade (Howard, 1989). Water solubility can affect adsorption and desorption on soils. Compounds that are more soluble are more likely to desorb from soils. Water solubility can also affect possible transformation by hydrolysis, photolysis, oxidation, and reduction (Verchueren, 1983). The log octanol/water partition coefficient correlates well with a compound's tendency to bioconcentrate and adsorb to soil (Howard, 1989). Generally, the higher the compound's log octanol/water partitioning coefficient, the higher the compound's affinity for adsorption, and the lower its mobility in groundwater. Henry's Law Constant provides an indication of the tendency of a compound to volatilize, and thus provides a means for ranking the relative volatilities of chemicals from water (Verchueren, 1983). Henry's Law Constants can be obtained directly from literature or can be calculated by dividing a compound's vapor pressure by its water solubility. The Henry's Law Constant can be used to calculate the rate of evaporation from water. The information presented in Table 8-1 will be referenced, as appropriate, during the discussion of the various groups of compounds detected.

8.2.1 Volatiles

VOCs detected at the site include aromatics and halogenated hydrocarbons. As indicated in Table 8-1, the water solubilities and vapor

pressures of these compounds range from moderate to high and their log K_{ow} values are relatively low.

8.2.1.1 Aromatics

Aromatic compounds detected at the site include ethylbenzene and toluene. In the upper soil, the competing processes of volatilization to the atmosphere and downward migration with infiltrating precipitation (both of which would be limited by the presence of pavement) are the dominant fate processes. Generally, aromatics are mobile (as liquid or gas) in soil (ATSDR, 1989a; 1989b; 1990; Swann et al., 1983). However, upward migration from subsurface soils in the soil-gas phase and subsequent volatilization to the atmosphere will be substantially limited by partitioning of the gas phase into the soil water, adsorption (to a small extent), biodegradation, and the general heterogeneous nature of soils (USEPA, 1989).

In deeper soil, the most likely transport mechanism is dissolution into soil water and downward migration through the soil. Competing processes of biodegradation and limited adsorption to soil organic matter may decrease the quantities of the chemicals released to groundwater. Aromatics are generally capable of biodegrading under both aerobic and anaerobic conditions. Ethylbenzene, however, has been found to be resistant to biodegradation under anaerobic conditions (Howard, 1989). Soil adsorption is expected to be moderate for ethylbenzene and low for toluene (Howard, 1989; 1990).

8.2.1.2 Halogenated Compounds

Halogenated VOCs detected at the East Street Area 1/USEPA Area 3 Site include chlorobenzene, 1,2-dichloroethene, methylene chloride, tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene. These

halogenated VOCs are characterized by their volatility and relatively high water solubility. In the surficial soil, volatilization into the atmosphere may occur. Due to their high solubility in water, these compounds may leach downward through the soil column with percolating soil water. Biodegradation of the halogenated VOCs under aerobic conditions is generally regarded as being very slow to nonexistent. Biotransformation of halogenated organic compounds via reductive dehalogenation has been demonstrated under anaerobic conditions (Wilson et al., 1986). Slow biodegradation may occur under anaerobic conditions where acclimated microorganisms exist (Howard, 1990).

8.2.2 Semivolatiles

Semivolatiles detected include polychlorinated benzenes PAHs, an amine and a phthalate ester.

8.2.2.1 Polychlorinated Benzenes

The polychlorinated benzenes detected include 1,2,4-trichlorobenzene and 1,3- and 1,4-dichlorobenzene.

Polychlorinated benzenes exhibit moderate volatility. If present in surface soils, volatilization into the atmosphere is expected to occur. Adsorption to soil particles and residence within the soil matrix is also a dominant fate of polychlorinated benzenes. The potential for dissolution of these compounds into soil water and possible transport to underlying soils or groundwater may occur under certain circumstances (CHEMFATE, 1989). In sandy or mineral soils with low organic content, polychlorinated benzenes are more likely to leach through the soil, whereas in organic soils mobility should be greatly reduced. Biodegradation in soil and water is generally expected to be

quite slow, but loss via this route may be significant in situations where acclimation of the microbial population has taken place (HSDB, 1990).

8.2.2.2 PAHs

Various PAHs were detected at low levels in the East Street Area 1/USEPA Area 3 Site. PAHs are semivolatile compounds that have low water solubilities (Table 8-1). PAHs have a strong tendency to adsorb to soil particles and organic matter. The PAHs with higher molecular weights tend to be less water soluble and have a higher affinity for adsorption to soil. Within the soil environment, biodegradation of PAHs is also related to molecular weight. PAHs with lower molecular weights tend to undergo microbial degradation more rapidly than the PAHs with higher molecular weights. The lower molecular weight PAHs may also be subject to volatilization, but to a much lesser extent than VOCs.

8.2.2.3 Amines

N-nitrosodiphenylamine is the only constituent of the amine class of constituents detected at the site. N-nitrosodiphenylamine is fairly soluble and mobile in groundwater; however, it has a tendency to adsorb to soil organic matter and thus is relatively immobile in soil. Loss of N-nitrosodiphenylamine occurs primarily through biodegradation (ATSDR, 1993).

8.2.2.4 Phthalate Esters

Bis(2-ethylhexyl)phthalate in the only phthalate ester detected at the site. This constituent has relatively low solubility and volatility, and exhibits limited movement in soil. It has a strong tendency to adsorb to organic matter in soils. This limits its mobility in

groundwater. Biodegradation screening studies indicate that bis(2-ethylhexyl)phthalate has the potential to rapidly degrade under aerobic conditions (Howard, 1989).

8.2.3 PCBs

PCBs have been detected at varying concentrations at the East Street Area 1/USEPA Area 3 Site. The fate and transport of PCBs in the environment are greatly influenced by their low water solubility and high affinity for soil organic matter. This generally limits aqueous-phase concentrations to low ppb levels unless significant amounts of solvents, oils, or colloids are present (Baker et al., 1986; Dragun, 1989). In general, the adsorption of PCBs to soils and sediments increases with increasing soil organic content, decreasing soil particle size, and increasing congener chlorination (Lyman et al., 1982; Pignatello, 1989). PCBs could potentially volatilize from soil, but strong adsorption to soils tends to limit the extent of volatilization (ATSDR, 1993).

PCBs are fairly persistent in the environment, and degradation via chemical oxidation and hydrolysis in soil or aquatic systems is generally insignificant. PCBs may, however, be subject to loss via photolysis, biotransformation, and biodegradation (ATSDR, 1993). Experimental evidence indicates that PCBs are susceptible to biodegradation under both aerobic and anaerobic conditions. In general, the degradability of PCB congeners under aerobic conditions increases as the degree of chlorination decreases. Variations in this trend exist and are attributed to preferential degradation determined by chlorine substitution patterns (ATSDR, 1993).

Laboratory research has shown that the lesser-chlorinated PCB congeners are subject to aerobic biodegradation by microorganisms indigenous to soils. Aerobic biodegradation results in a complete

breakdown of the PCBs, causing a net decrease in total molar PCB concentration. Various breakdown products have been identified, and include chlorinated catechol, chlorobenzoic acid, and carbon dioxide (Bedard et al., 1987; Hankin and Sawhney, 1984; Fries and Morrow, 1984).

As with aerobic biodegradation, preferential degradation of meta- and para-substituted congeners has been observed under anaerobic conditions, although biotransformation is apparently also related to the chlorination pattern of the congeners (Rhee et al., June 1993, April 1993; Quensen et al., 1988). Laboratory research has shown that PCBs undergo reductive dechlorination under anaerobic conditions by indigenous microorganisms; however, the extent and rate of dechlorination varies among congeners and soil collection locales (Rhee et al., June 1993, April 1993; Nies and Vogel, 1990). Study results indicate that the more highly-chlorinated PCBs are transformed to less-chlorinated congeners by anaerobes (Quensen et al., 1988; Quensen et al., 1990) and that the lower-chlorinated PCBs may be further degraded to carbon dioxide, water, and chloride by aerobes (Chen et al., 1988).

8.2.4 Metals

Numerous naturally-occurring metals were also detected at the site. Metals are cycled within the environment, forming various species with different physical and chemical properties. Metal species may be transformed from one inorganic or organometallic species to another, but the inorganic element itself does not degrade.

Certain inorganic species are highly water soluble, while others are extremely insoluble. The movement of a particular metal into and within groundwater is determined by the amount and form of the metal, the groundwater's chemical and physical properties, and the composition of the

soil or waste solution with which the metal is associated (USEPA, 1988). The soil properties affecting metal retention/release and transport include bulk density, surface area, particle-size distribution, pH, redox conditions, ion exchange capacity, amount of organic matter, type and amount of metal oxides, and type and amount of clay minerals (USEPA, 1988). Adsorption to soil organic matter, at levels commonly found in soils, is one of the primary immobilizing processes for metals (USEPA, 1988). The form in which an inorganic element exists is highly dependent upon the chemical characteristics of the site such as pH, oxygen level, and ionic characteristics.

SECTION 9 - POTENTIAL MIGRATION PATHWAYS AND EXPOSURE POTENTIAL INFORMATION

9.1 General

This section discusses potential migration pathways associated with the chemical constituents observed in soil, groundwater, and oils at the East Street Area 1/USEPA Area 3 Site. In addition, information is presented on the potential for exposure of human and environmental receptors to hazardous constituents at the site.

9.2 Potential Migration Pathways

This section focuses on the principal groups of chemicals found at the site above the detection/quantitation limit. To determine the potential migration pathways for these chemicals, this section takes into account the physical characteristics and environmental setting of the site (presented in Section 2), the results of current and past investigations (presented in Sections 4 through 7), and the fate and transport characteristics of the chemicals observed (presented in Section 8).

For a human or environmental receptor to be exposed to a given chemical, a transport pathway by which the chemical migrates from its source to a point of potential exposure must exist. A migration pathway includes the following three components: 1) a source of a chemical; 2) potential mechanisms of release from the source; and 3) a transport medium by which the chemical may potentially travel from the source to a potential receptor. Identification of potential migration pathways allows for an overall understanding of exposure potential and serves to direct the scope of subsequent exposure evaluations.

Prior sections of this report have described the investigative activities that have been performed to characterize the presence, quantity, and concentration of constituents at the East Street Area 1/USEPA Area 3 Site. The fate and transport characteristics of the constituents detected have been discussed in Section 8 of this report. Using this information and certain site characteristics, the potential migration pathways addressed in the following subsections are:

- Volatilization, dust migration, and surface runoff from surface soil;
- Volatilization from basement soils and/or surfaces to basement air;
- Leaching or direct releases from subsurface soil/fill to groundwater;
- Subsurface transport via remaining oil on the groundwater; and
- Subsurface transport via groundwater flow.

These potential migration pathways are discussed in the following subsections.

9.2.1. Migration from Surficial Soil

Surficial soil could provide a source of chemicals to the atmosphere via volatilization or dust migration and to surface water via surface runoff. The presence of buildings, extensive pavement, and vegetation at this site limits the extent to which dusting and volatilization would occur. The potential for surface water runoff to mobilize constituents in surficial soil is also limited by pavement, vegetation, and other cover, and would be expected to be less of a concern as distance from the river increases.

If soil were disturbed during excavation activities, the potential for transport via volatilization, dusting, or surface runoff would be greater. However, excavation activities are of limited frequency and duration and are unlikely to contribute significantly to the migration of chemical compounds within or from the site. In addition, GE's excavation protocols address releases of dusts from on-site excavations. These protocols define

appropriate measures to mitigate potential chemical migration associated with on-site excavations.

To evaluate the potential for release of PCBs to the ambient air, air monitoring activities have been conducted. As shown in Section 6, the results of the PCB air monitoring indicate relatively low-level concentrations of PCBs in the ambient air adjacent to the site in East Street Area 2/USEPA Area 4.

9.2.2 Migration from Basement Soils and/or Other Surfaces to Basement Air

PCBs were detected in soil/surface samples collected from certain residential basements in February and April 1980. Although there is a potential for PCBs to volatilize from these soils/surfaces to basement air, this migration pathway is not considered significant based on available information. Specifically, in July 1981, USEPA sampled ambient air in the basements of certain residential and commercial buildings at the site. Results of this investigation showed PCB concentrations ranging from non-detect to 0.15 ug/m^3. USEPA compared these observed levels to PCB concentrations detected during testing of indoor air in homes with no sources of PCBs (i.e., background samples). It was USEPA's conclusion that the PCB concentrations observed in samples of basement air from homes located in the residential area of the site are not significantly greater than the background samples (Appendix M). In addition, GE purchased and demolished several of the residences and commerial buildings where elevated PCB concentrations were observed in basement soils during the 1980 soil sampling and analysis effort.

9.2.3 Migration from Subsurface Soil

Subsurface soils that have been affected by hazardous constituents provide a potential source of migration through direct contact with or leaching into groundwater, or possible through volatilization to the air. Of particular concern are the soils through which the oil plume has traveled. Both prior to and as part of MCP Phase II activities, monitoring wells have been completed in the area of the oil plume to describe the subsurface material and determine the extent of oil in the area. Potential migration pathways associated with the soil are influenced by the: 1) type and concentration of the observed constituents; 2) vertical distribution of constituents; and 3) activities in the area.

Chemicals observed in the soil may potentially act as sources of constituents to the groundwater due to direct contact or due to leaching by infiltrating precipitation. The potential for contact of subsurface soil with infiltrating precipitation is limited in certain areas by physical characteristics of the area. For example, some areas at the site are covered by concrete or asphalt surfaces or buildings that prevent infiltration and subsequent leaching from material in the unsaturated zone. Other portions are covered by vegetation, which limits infiltration but does not prevent it to the extent concrete or asphalt does.

Groundwater is in direct contact with constituents in the soil in some, but not many, locations. Dissolution of the more water-soluble chemicals from the soil matrix to groundwater will occur at these locations, but the extent to which this occurs will depend on the characteristics of the chemical in question and the amount of time the soils and groundwater are in contact.

Many of the chemicals observed, particularly PCBs and many PAHs, tend to adsorb strongly to the organic portion of soils and exhibit low water solubility. Typically, low aqueous-phase concentrations of these compounds would be expected unless significant amounts of solvents, colloids, or oils are present in the area. Therefore, the oil present in the subsurface soil could increase the potential for migration of compounds that are typically less mobile.

Under current conditions at the site, volatilization of chemicals from subsurface soils is not considered a migration pathway. This is due to the fact that the chemicals are typically present at depths which would limit diffusion to the atmosphere. Moreover, much of the site is paved and volatilization of chemicals from such areas would only be considered significant under conditions which would expose underlying soils to the atmosphere, e.g., during excavation. During such excavation activities, dust migration would also be a potential transport route for chemicals in subsurface soils. However, the extent to which migration would occur via these pathways is limited by the fact that excavation activities would only occur on an infrequent basis and for only a short duration. In areas owned or controlled by GE, migration via dust would be further limited by following the facility-wide excavation protocols. In addition, PCBs adsorbed to soils would not be expected to volatilize to a significant extent. Hence, volatilization and dust migration from subsurface soils are not expected to be substantial migration pathways.

9.2.4 Migration via the Remaining Oil Pockets

Constituents present in the remaining oil pockets on the groundwater at the site may act as sources of constituents to the groundwater due to the oil being in direct contact with the groundwater. The transfer of

constituents from the oil to the groundwater would be expected to be greater for the more water-soluble compounds (i.e., VOCs and low-molecular-weight PAHs). Thus, the most likely route for subsurface migration for PCBs and other chemicals with low water solubility is via the oil rather than in a dissolved phase in groundwater. The opposite would likely be true for more water-soluble compounds such as ethylbenzene and chlorinated benzenes. However, as explained in Sections 4.2.2 and 4.6, only four small pockets of oil remain at the site; therefore, migration of constituents via this pathway would be limited.

9.2.5 Migration via Groundwater

Movement of groundwater beneath this area is primarily in a southerly direction toward the Housatonic River. Although transport of constituents from groundwater to surface water is considered a potential migration pathway, the available sampling and analysis data from the river indicate that this migration does not result in significant impacts to the surface water or sediments of the river. Refer to Section 4.4 of the MCP Interim Phase II Report/CAS for Housatonic River (Blasland & Bouck, December 1991) and Section 2 of its Addendum (Blasland & Bouck August 1992).

9.3 Potential for Human Exposure

The potential for human exposure to hazardous constituents at the East Street Area 1/USEPA Area 3 Site is discussed in Section 2.3 of the Preliminary HEA Proposal which is being submitted concurrently with this report. As shown there, potential human receptors who could be exposed to affected media at or from the site include GE workers and contract employees, residents living south of East Street, employees of commercial businesses along East Street, utility and

road maintenance workers, and pedestrians or trespassers passing through unrestricted areas at the site.

9.4 Potential Impacts to Environmental Receptors

The portions of the East Street Area 1/USEPA Area 3 Site that could be of any value to wildlife are the vegetated portions of the riverbank and the small unpaved, wooded, and/or shrub-filled areas that exist at various locations throughout the site (see Figure 2-5). The rest of the site is either paved or covered by buildings. Although individual small mammals, song birds, amphibians, and/or reptiles may be present in these areas, the area is too small to support a community of wildlife, as discussed in Section 2.4 of the Preliminary HEA Proposal. As a result, an ecological risk assessment will not be conducted for this site. The HEA for the Housatonic River (Area 6) will evaluate, on an overall basis, potential risks to environmental receptors, not only in the river itself but also in riverbank and floodplain areas adjacent to the river. This overall evaluation should be sufficient to address potential environmental exposures (if any) in the riverbank and wooded area at the East Street Area 1/USEPA Area 3 Site.

SECTION 10 - REMAINING DATA NEEDS

10.1 General

Results from the prior site investigations summarized in Sections 4 through 6 of this document have satisfied many of the requirements for an MCP Phase II - Comprehensive Site Assessment. In addition, the existing information documented herein fulfills many of the requirements for an RFI for USEPA Area 3 pursuant to the Corrective-Action Permit.

Several data needs have been identified based on comparison of existing site information with the remaining MCP Phase II requirements and the RFI requirements of the USEPA Permit. These data needs are discussed in the following sections. These data needs will be addressed through activities described in the separately bound MCP Supplemental Phase II SOW/RFI Proposal for the East Street Area 1/USEPA Area 3 Site (Supplemental Phase II SOW/RFI Proposal) being submitted concurrently with this document.

10.2 Investigation of the Subsurface Soil

A number of soil samples have been collected in the East Street Area 1/USEPA Area 3 Site as part of various investigative activities. These results have been useful in determining the presence of hazardous constituents (particularly PCBs) at portions of the site. However, the Permit requires soil sampling at or near certain SWMUs at the site to assess potential releases from those SWMUs. Specifically, the Permit requires soil sampling at or near the Building 10 Sump Tank (SWMU T-9) and the Building 12F Former Oil Storage Tanks (SWMU T-61). Proposals for soil sampling near (downgradient of) these SWMUs are included in the Supplemental Phase II SOW/RFI Proposal.

In addition, there are other areas at the site, notably at certain locations in the northern portion of the site, where the existing data are not sufficient to

characterize the subsurface soils. Additional soil sampling is needed in such areas, as provided in the Supplemental Phase II SOW/RFI Proposal.

Further, the soils adjacent to East Street need to be characterized in order to provide information for a road or utility maintenance scenario in the risk assessment/HEA. Toward this end, a proposal for installation and sampling of two deep, and two shallow soil borings along East Street is included in the Supplemental Phase II SOW/RFI Proposal.

Finally, described in Section 4, PCBs were detected in boring RF-13 at 200 ppm in soils at 0 to 2 feet below the ground surface. Due to this finding, further assessment of the soils in this unpaved area is needed. To address this data need, a proposal for additional soil sampling in this area, including one soil boring, is included in the Supplemental Phase II SOW/RFI Proposal.

10.3 Investigation of Surface Soils

As discussed above, due to the detection of PCBs in boring RF-13 at 200 ppm in a sample collected from the top two feet of soil, additional assessment of the soils in this area is needed. This assessment should include surficial soil sampling. Hence, in addition to the soil boring mentioned above, a proposal for the collection and analysis of surface soil from this area is included in the Supplemental Phase II SOW/RFI Proposal.

In addition, further assessment of the presence of hazardous constituents in surficial soils in various grass-covered areas of the site is needed, particularly for the risk assessment/HEA. A proposal to address this data need is also included in the Supplemental Phase II SOW/RFI Proposal.

10.4 Hydrogeologic Data Needs

10.4.1 Groundwater Quality Monitoring

As shown in Section 4, the groundwater data for the East Street Area 1/USEPA Area 3 Site indicate that, in general, there has been no significant migration of hazardous constituents from the site soils or remaining oil pockets into the groundwater. To verify this condition and to provide further information on groundwater quality, it would be appropriate to conduct additional groundwater monitoring at select monitoring wells on an area-wide basis. Such additional monitoring should be sufficient to ensure that, together with existing groundwater quality data, there is adequate area-wide groundwater information to account for releases from each SWMU subject to groundwater monitoring, to evaluate potential migration of hazardous constituents toward site boundaries, and to allow, to the extent feasible, the identification of likely sources of hazardous constituents (if any) found in groundwater. In addition, further groundwater monitoring would be appropriate to attempt to collect site-specific data on background groundwater quality. A proposal for additional groundwater monitoring to meet these objectives is included in the Supplemental Phase II SOW/RFI Proposal.

10.4.2 Characterization of LNAPL

To date, only limited data are available on the chemical nature of the floating oil at the site. As such, sampling and analysis of this light non-aqueous phase liquid (LNAPL) is appropriate, primarily for risk assessment purposes. A proposal to address this data need is included in the Supplemental Phase II SOW/RFI Proposal.

10.4.3 Additional Information on Groundwater Elevations and Flow Patterns

As discussed in Section 4, an extensive data base regarding groundwater potentiometric elevations at the site has been generated as a result of monitoring events performed since 1979. However, a current groundwater flow map representative of the entire East Street Area 1/USEPA Area 3 Site should be developed and a current site-wide groundwater flow rate should be calculated. Seasonal variations in groundwater elevation and flow patterns should also be addressed. Proposals to address these data needs are included in the Supplemental Phase II SOW/RFI Proposal.

10.5 Preferential Pathway Analysis

Based on existing information, some underground pipes and tunnels within East Street Area 1/USEPA Area 3 may have functioned as preferential pathways for the migration of hazardous constituents in the past. Various remedial activities have been conducted to address this migration. Additional evaluation is needed to determine if any other underground pipes and/or tunnels associated with the East Street Area 1/USEPA Area 3 Site are acting as preferential pathways for the transport of hazardous constituents. A proposal for such an evaluation is included in the Supplemental Phase II SOW/RFI Proposal.

10.6 Estimation of Volumes

Under the MCP and the Corrective-Action Permit, it will be necessary, upon completion of data-gathering efforts, to estimate the volumes of materials affected by hazardous constituents at the site. A proposal for these activities is included in the Supplemental Phase II SOW/RFI Proposal.

10.7 Risk Assessment

Under the MCP and the Corrective-Action Permit, it will also be necessary, upon completion of data-gathering efforts, to evaluate the potential risks to human health and the environment associated with constituents present at this site, given the current and reasonably foreseeable uses of the site and the surrounding areas. A more detailed overview concerning this evaluation is provided in the separately bound Preliminary HEA Proposal, submitted concurrently with this document.

SECTION 11 - CONCLUSIONS AND FUTURE ACTIVITIES

11.1 Conclusions

A number of conclusions have been developed, based on the information and data presented in Sections 4 through 9. These conclusions are summarized below:

- The former oil plume has been the focus of extensive investigative and remedial activities for many years. The extent of oil at the site has been delineated through a semi-annual monitoring program for over 10 years. During this time, the areal extent of the oil has significantly decreased, primarily through the oil recovery efforts at the Northside and Southside Recovery Systems. Semi-annual monitoring performed in April 1994 indicates that the former plume now consists of several small pockets of oil located predominantly near East Street. Recovery efforts at the East Street Area 1/USEPA Area 3 Site are ongoing as part of a short-term/interim measure.
- Subsurface soil investigations to date have indicated several localized areas, predominantly within the fenced, access-restricted GE facility, of elevated concentrations of PCBs (up to 14,000 ppm) and select VOCs, although a number of areas have very low concentrations of these constituents. Subsurface soil data collected outside the facility has exhibited substantially lower PCB concentrations (generally less than 5 ppm with several exceptions up to 200 ppm). Additional investigative activities are described in the SOW/RFI Proposal to determine the extent of such constituents.
- Groundwater data collected at the site to date have indicated a limited impact from the oil pockets or prior activities at the GE facility. A

number of samples, including samples from the Northside and Southside Recovery System have been collected and analyzed for Appendix IX+3 constituents (or other VOC scans) and have found a limited number of constituents at low concentrations. Additional groundwater sampling is described in the SOW/RFI Proposal as part of the area-wide groundwater monitoring program.

- Samples collected from basement floors, walls, and sumps at 46 residences in the Lakewood area indicated that PCBs were present at a limited number of properties. Following the purchase and demolition of certain properties and the re-sampling of others, the highest remaining basement PCB result was 8.4 ppm (in a sump drain). It should be noted that many of these samples were taken from areas of the basements where access is limited and contact would be infrequent (e.g., holes, sumps).
- Air monitoring performed by USEPA Region 1 in residential and commercial basements at the site indicated the presence of PCBs at two properties (along with chlordane, an insecticide). However, USEPA concluded that there was no indication that PCB concentrations detected in the basements at the site were above normal background levels.
- Surficial soils collected to date in the residential area include 13 samples collected from gardens, predominantly in the vicinity of the oil plume. The highest detected PCB concentration was 1.0 ppm, thus indicating a very limited impact to these soils. Additional surficial soil samples will be collected from certain grass-covered areas of the site for use in the HEA, as described in the SOW/RFI Proposal.

11.2 Future Activities

Section 10 of this document has identified several data gaps concerning the presence and extent of hazardous materials at the East Street Area 1/USEPA Area 3 Site. The separately-bound MCP Supplemental Phase II SOW/RFI Proposal for this site describes the field activities intended to fill those data needs. Following the MDEP's review and approval of this Interim Phase II Report/CAS and the Supplemental Phase II SOW/RFI Proposal, the activities described in the latter document will be performed. After the performance of these activities, all data will be completed, presented, and interpreted in a MCP Supplemental Phase II/RFI Report, which will be submitted for MDEP/USEPA review and approval. At the same time, a Risk Assessment Scope of Work/Supplemental HEA Proposal (which will be more detailed than the Preliminary HEA Proposal being submitted concurrently with this document) will be submitted for MDEP/USEPA review and approval. After performance of the risk assessment activities, the MCP Final Phase II Report (including the risk assessment) and the HEA Report will be submitted, together with a Media Protection Standards Proposal for this site.

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Tables

TABLE 1-1

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF EAST STREET AREA 1/USEPA AREA 3 STUDIES: JANUARY 1980 - AUGUST 1994

Author	Title/Investigation	Date of Report
Geraghty & Miller, Inc.	Hydrogeologic Analysis of Insulating Oil Leakage in the Vicinity of East Street	January 4, 1980
Geraghty & Miller, Inc.	Letter Report: Work Completed by Geraghty & Miller, Inc. in Area 1 since January 1980	February 17,1981
Ecology & Environment	Preliminary Assessment of Subsurface Contamination: Lakewood Area of Pittsfield, Massachusetts - Volume II: Data Supplement	May 7, 1981
Environmental Protection Agency, Region 1 Air Monitoring Group	Results of Residential Air Monitoring for PCBs in Pittsfield, Massachusetts, EPA Region 1 (performed July 1981)	undated, but approx. 1981.
Geraghty & Miller, Inc.	90-Day Status Report for East Street Areas 1 and 2	August 1981
Geraghty & Miller, Inc.	Quarterly Monitoring Reports, East Street Area 1	1980 to 1982
Ecology and Environment	Preliminary Assessment of Subsurface Contamination: Lakewood Area of Pittsfield, Massachusetts - Volume I: Final Technical Report	October 1982
Geraghty & Miller, Inc.	Semi-Annual Monitoring Reports, Occurrence of Oil in East Street Area 1	1983 to December 1988, and May 1990 to December 1993
Geraghty & Miller, Inc.	Letter Report: Conceptual Design for an Area 1 Supplemental Oil Recovery System (Southside)	March 27, 1984
Arthur D. Little, Inc.	Evaluation of Remedial Action Effectiveness and Potential Exposure Pathways, Lakewood Area, Pittsfield, Massachusetts	April 16, 1984
Geraghty & Miller, Inc.	Letter Report: Response to Arthur D. Little, Inc.'s Report "Evaluation of Remedial Action Effectiveness and Potential Exposure Pathways, Lakewood Area, Pittsfield, Massachusetts, dated April 16, 1984"	September 25, 1984
Blasland & Bouck Engs.	Ground-water Recovery System, East Street - Area 1	May 1986
Geraghty & Miller, Inc.	Geologic Logs for the East Street Area 1 Project Site	November 1987
Groundwater Technology	East Street Area 1 Monitoring Report, Spring 1989	June 1989

TABLE 1-1 (CONT'D)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF EAST STREET AREA 1/USEPA AREA 3 STUDIES: JANUARY 1980 - AUGUST 1994

Author	Title/Investigation	Date of Report
Groundwater Technology	East Street Area 1 Monitoring Report, Fall 1989	December 1989
Geraghty & Miller, Inc.	Results of the Well Installation and Water Sampling Program in the Vicinity of Building 100, GE Company, Pittsfield, Massachusetts	May 1990
Geraghty & Miller, Inc.	Letter Report: Oil Recovery Data, Monitoring Well MW-48, Area 1	June 11, 1990
General Electric Co.	Proposal for Short Term Measures at East Street Areas 1 and 2	August 1990
Geraghty & Miller, Inc.	Interim Phase II - comprehensive Site Assessment/Current Assessment Summary Report for East Street Area 1/USEPA Area 3, Pittsfield, Massachusetts	November 1991
Blasland, Bouck & Lee, Inc.	Interim Measure Proposals for Oil Recovery Programs in East Street Areas 1 and 2	February 1994
Blasland, Bouck & Lee, Inc.	Occurrence of Oil at East Street Area 1/USEPA Area 3 - Spring 1994	August 1994

TABLE 2-1

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF ON-SITE AND ADJACENT PROPERTY OWNERS

Parcel Identification	Owner/Address
J10-5-1	Deno Renieri 368 Newell Street Pittsfield, MA 01201
J10-5-2	Yolanda Donati Hickey 8 Lomard Street Pittsfield, MA 01201
J10-5-3	Romolo G. Magi 16 Lombard Street Pittsfield, MA 01201
J10-5-4	Doris M. Cabral 30 Lombard Street Pittsfield, MA 01201
J10-5-5	Joan T. Tognini 34 Lombard Street Pittsfield, MA 01201
J10-5-6	Thomas H. Harrington, Jr. 43 Lombard Street Pittsfield, MA 01201
J10-6-1	Mario Capitanio 9 Lombard Street Pittsfield, MA 01201
J10-6-2	Mario Capitanio 9 Lombard Street Pittsfield, MA 01201
J10-6-3	Mario Capitanio 9 Lombard Street Pittsfield, MA 01201
J10-6-4	Normal Hurley 15 Lombard Street Pittsfield, MA 01201
J10-6-5	Connie A. Brodeur 7 Milan Street Pittsfield, MA 01201
J10-6-6	Eric P. Schanz 13 Milan Street Pittsfield, MA 01201
J10-6-7	Ernest F. Fortini 16 Milan Street Pittsfield, MA 01201
J10-6-8	Teresa C. Dalone 13 Norwich Drive Dalton, MA 01226

Parcel Identification	Owner/Address
J10-6-9	Erminio G. Ferrarin 21 Lombard Street Pittsfield, MA 01201
J10-6-10	Jennie J. Spasyk 1238 East Street Pittsfield, MA 01201
J10-6-11	Lawrence I. Menin 4 Buckinham Street Pittsfield, MA 01201
J10-6-12	Peter A. Spina 15 Delafield Drive Lenox, MA 01240
J10-6-13	Peter A. Spina 15 Delafield Drive Lenox, MA 01240
J10-6-14	Peter A. Spina 15 Delafield Drive Lenox, MA 01240
J10-6-15	John Marchisio 1274 East Street Pittsfield, MA 01201
J10-6-16	Peter A. Spina 15 Delafield Drive Lenox, MA 01240
J10-6-17	Thomas E. Ellis 1264 East Street Pittsfield, MA 01201
J10-6-18	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J10-6-19	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J10-6-20	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J10-6-21	Edward J. Ladouceur, Jr. 1097 West Street Pittsfield, MA 01201
J10-6-22	Catherine V. Meandro 1230 East Street Pittsfield, MA 01201

(See Notes on Page 4)

TABLE 2-1
(Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 2/USEPA AREA 3

SUMMARY OF ON-SITE AND ADJACENT PROPERTY OWNERS

Parcel Identification	Owner/Address
J10-6-23	Norma Ranotto 1228 East Street Pittsfield, MA 01201
J10-6-24	Robert J. Marley 1224 East Street Pittsfield, MA 01201
J10-6-25	Robert J. Marley 1224 East Street Pittsfield, MA 01201
J10-6-26	Robert J. Marley 1224 East Street Pittsfield, MA 01201
J10-6-27	Robert J. Marley 1224 East Street Pittsfield, MA 01201
J10-6-28	Tosca Patti 21 Milan Street Pittsfield, MA 01201
J10-6-29	Remo Delgallo 145 Holmes Road Pittsfield, MA 01201
J10-6-30	Mario Capitanio 9 Lombard Street Pittsfield, MA 01201
J10-6-31	Peter A. Spina 15 Delafield Drive Lenox, MA 01240
J10-6-117	John F. Hiser 61 Riverview Drive Dalton, MA 01226
J10-7-1	Brian R. Walter 48 Lombard Street Pittsfield, MA 01201
J10-7-2	Peter A. Spina 15 Delafield Drive Lenox, MA 01240
J10-8-1	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201

Parcel Identification	Owner/Address
J10-8-3	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J10-8-4	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J10-8-5	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J10-8-6	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J10-9-1	Penn Central Company Penn Central RR Right of Way Pittsfield, MA 01201
J10-9-2	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J11-7-1	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J11-8-1	Peter E. Keller 94 Benedict Road Pittsfield, MA 01201
J11-8-2	Charlotte M. Kelly 1201 Tyler Street Pittsfield, MA 01201
J11-8-3	Ellen J. Wood 74 New Hampshire Avenue Pittsfield, MA 01201
J11-9-1	Raymond A. Levante 77 New Hampshire Avenue Pittsfield, MA 01201
J11-9-2	Elvira Maselli 1229 Tyler Street Pittsfield, MA 01201
J11-9-3	Thomas R. Barber 74 Rhode Island Avenue Pittsfield, MA 01201

(See Notes on Page 4)

TABLE 2-1
(Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 2/USEPA AREA 3

SUMMARY OF ON-SITE AND ADJACENT PROPERTY OWNERS

Parcel Identification	Owner/Address
J10-8-2	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
J11-10-1	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201
K10-14-1	HMG-Fieber Realty Trust 1277 East Street Pittsfield, MA 01201
K10-14-2	S&A Realty, Inc. 1311 East Street Pittsfield, MA 01201
K10-14-3	O'Connell Oil Associates, Inc. 1315 East Street Pittsfield, MA 01201
K10-15-1	Joseph T. Carr 23 Fasce Place Pittsfield, MA 01201
K10-15-2	Melena M. Zavattero 15 Fasce Place Pittsfield, MA 01201
K10-15-3	Rudolph & Mabel Mazelli 11 Fasce Place Pittsfield, MA 01201
K10-15-4	Katherin M. Depietro 232 High Street Dalton, MA 01226
K10-15-5	Tulio Marzotto 1 Facse Place Pittsfield, MA 01201
K10-15-6	Bernard J. Potts 204 Pittsfield Road Lenox, MA 01240
K10-15-7	Bernard J. Potts 204 Pittsfield Road Lenox, MA 01240

Parcel Identification	Owner/Address
J11-9-23	Raymond A. Levante 77 New Hampshire Avenue Pittsfield, MA 01201
K10-17-1	Peter A. Spina 15 Delafield Drive Lenox, MA 01240
K10-17-2	John D. Sondrini 34 Fasce Place Pittsfield, MA 01201
K10-17-3	Russell A. Davis 24 Fasce Place Pittsfield, MA 01201
K10-17-4	Thomas E. Maston 1294 East Street Pittsfield, MA 01201
K10-17-5	Levern J. Taylor 1300 East Street Pittsfield, MA 01201
K10-17-6	Thomas E. Maston 1294 East Street Pittsfield, MA 01201
K10-17-7	Caroline Quirico 1282 East Street Pittsfield, MA 01201
K10-17-8	Caroline Quirico 1282 East Street Pittsfield, MA 01201
K10-17-9	Francis J. Quirico 1282 East Street Pittsfield, MA 01201
K11-1-15	Penn Central Company Penn Central RR Right of Way Pittsfield, MA 01201
K11-7-2	General Electric Company 100 Woodlawn Avenue Pittsfield, MA 01201

(See Notes on Page 4)

TABLE 2-1
(Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 2/USEPA AREA 3

SUMMARY OF ON-SITE AND ADJACENT PROPERTY OWNERS

Notes:

1. Parcel ownership information was obtained from the City of Pittsfield Tax Assessors' office and is current through July 19, 1994.
2. Refer to Figure 2-1 for illustration of parcel locations.

TABLE 2-2

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF HISTORICAL AERIAL PHOTOGRAPHS ILLUSTRATING
EAST STREET AREA 1/USEPA AREA 3: 1942-1994

Date	Photographer	Approx.Scale of Photos	Coverage of Photos
July 13, 1942	Nat. Arch.	1:16,300	Full coverage of Site.
November 24, 1956	Col-East	1:19,200	Small, southwest portion of Site.
October 3, 1957	Col-East	1:25,000	Full coverage of Site.
July 3, 1960	Col-East	1:2,400	Southern portions of Site, south of Merrill Road.
April 14, 1969	Col-East	1:4,800	Full coverage of Site.
July 1, 1974	Col-East	!:2,400	Southern portion of Site, south of Merrill Road.
March 21, 1979	Col-East	1:6,000	Full coverage of Site.
November 3, 1981	Col-East	1:2,400	Full coverage of Site except for small strip along northern boundary.
April 13, 1983	Quinn	1:12,000	Full coverage of Site.
November 1, 1987	Col-East	1:19,200	Full coverage of Site.
April 23, 1990	Lockwood	1:6,000	Full coverage of Site.
August 8, 1990	Col-East	1:6,000	Full coverage of Site.

Abbreviations:

Nat. Arch. - USGS National Archives, Washington, D.C.
Col-East - Col-East, Inc., North Adams, Massachusetts
Quinn - Quinn Associates, Inc., Horsham, Pennsylvania
Lockwood - Lockwoood Mapping, Inc., Rochester, New York

TABLE 4-1

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

WELL CONSTRUCTION DATA

Well Number	Elevation of Measuring Point (feet above mean sea level)	Bottom of Well (feet below land surface)	Length of Screen (feet)	Depth to Top of Screen (feet below land surface)	Elevation of the Top of the Screen (feet above mean sea level)
Pre-MCP Monitoring Wells					
1	998.5	24	15	9	989.5
2	991.0	24	15	9	982.0
3*	1004.1	14	10	4	1000.1
4*	1002.0	14	10	4	998.0
5	996.1	24	15	9	987.0
6	1003.90	13.5	10	3.5	1000.4
7*	1003.5	13	10	3	1000.5
8	1004.70	11	10	1	1003.7
9	1024.50	24	15	9	1015.5
10*	1025.39	24	20	4	1021.4
11	1023.00	25	20	5	1018.0
12*	989.5	--	--	--	--
13*	989.7	--	--	--	--
14*	1004.3	23	20	3	1001.3
15*	1002.3	23	20	3	999.3
16*	1001.3	23	20	3	998.3
17*	1001.7	23	20	3	998.7
18*	992.2	23	20	3	989.2
19*	1003.6	23	20	3	1000.6
20*	1003.9	23	20	3	1000.9
21*	1003.2	17	15	2	1001.2
22*	1002.7	17.5	15	2.5	1000.2
23*	1003.1	17	15	2	1001.1
24*	1001.4	17	15	2	999 4
25	1000.70	17	15	2	998.7
26*	1004.2	17	15	2	1002.2
27*	998.8	17	15	2	996.8

(See Notes on Page 6)

TABLE 4-1 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

WELL CONSTRUCTION DATA

Well Number	Elevation of Measuring Point (feet above mean sea level)	Bottom of Well (feet below land surface)	Length of Screen (feet)	Depth to Top of Screen (feet below land surface)	Elevation of the Top of the Screen (feet above mean sea level)
28*	998.7	17	15	2	996.7
29*	999.8	17	15	2	997.8
30	998.90	15.5	15	0.5	998.4
31	988.70	22	20	2	996.7
32	999.30	23	20	3	996.3
33	999.50	23	20	3	996.5
34	999.90	23	20	3	996.9
35	1000.15	23	20	3	997.2
36	988.10	23	20	3	985.1
37	988.10	23	20	3	985.1
38	988.7	25	20	5	983.7
39	988.8	25	20	5	983.8
40	989.8	30	25	5	984.8
41	987.1	25	20	5	982.1
42	988.6	30	25	5	983.6
43	989.2	35	30	5	984.2
44	988.7	20	15	5	983.7
45	1000.10	22	20	2	998.1
46	999.80	22	20	2	997.8
47	999.70	22	20	2	997.7
48	999.30	22	20	2	997.3
49	999.90	22	20	2	997.9
50	999.9	22	20	2	997.9
51	999.5	22	20	2	997.5
52	999.30	22	20	2	997.3
53	998.60	22	20	2	996.6
54	998.1	23	30	3	995.1

(See Notes on Page 6)

TABLE 4-1 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

WELL CONSTRUCTION DATA

Well Number	Elevation of Measuring Point (feet above mean sea level)	Bottom of Well (feet below land surface)	Length of Screen (feet)	Depth to Top of Screen (feet below land surface)	Elevation of the Top of the Screen (feet above mean sea level)
55*	997.7	22	20	2	995.7
56	997.60	23	20	3	994.6
57	998.40	23	20	3	995.4
58	998.9	23	20	3	995.9
59	998.35	22	20	2	996.3
60*	998.40	23	20	3	995.4
61	986.4	48	40	8	978.4
62	989.07	22	20	2	987.1
63	991.19	23	20	3	988.2
64	993.27	23	20	3	990.3
65	995.57	23	20	3	992.6
66	987.55	23	20	3	984.6
67	990.26	23	20	3	987.3
68	992.01	20	15	5	987.0
69*	992.04	23	18	5	987.0
70	990.53	23	20	3	987.5
71	988.67	23	20	3	985.67
72	1000.62	23	20	3	997.6
73	999.77	23	20	3	996.8
74	999.39	23	20	3	996.4
75	1000.65	23	20	3	997.7
76	1000.45	23	20	3	997.5
77	990.26	31.5	25	6.5	983.8
78	997.61	22	20	2	995.6
79	992.24	30	28	2	990.2
80	989.98	31.5	25	6.5	983.5
81	993.87	11	10	1	992.9

(See Notes on Page 6)

TABLE 4-1 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

WELL CONSTRUCTION DATA

Well Number	Elevation of Measuring Point (feet above mean sea level)	Bottom of Well (feet below land surface)	Length of Screen (feet)	Depth to Top of Screen (feet below land surface)	Elevation of the Top of the Screen (feet above mean sea level)
82	987.53	35	32	3	984.5
83	987.78	21	17	4	983.8
84	986.61	26	23	3	983.6
85	986.40	30	25	5	981.4
86	990.86	30	25	5	985.9
87	989.47	30	25	5	984.5
88	989.46	31	25	6	983.5
89	993.89	11	10	1	992.9
90	987.65	15	13	2	985.7
91*	991.12	16	13	3	988.1
92	985.60	21	18	3	982.6
93*	993.43	20	18	2	991.4
94	996.75	20	18	2	994.8
95	989.17	20	18	2	987.2
96	988.53	15	13	2	986.53
97	1000.43	15	15	0	1000.4
98	990.76	16	15	1	989.8
99	983.58	15	13	2	981.6
100	1001.28	15	13	2	999.3
101	1003.17	17	15	2	1001.2
102	1003.51	17	15	2	1001.5
103	1002.52	17	15	2	1000.5
104*	1000.13	23	20	3	997.1
105	1002.85	17	15	2	1000.9
106	1004.06	23	20	3	1000.1
107	1003.86	17	15	2	1001.9
108	1001.02	18	15	3	998.0

(See Notes on Page 6)

TABLE 4-1 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

WELL CONSTRUCTION DATA

Well Number	Elevation of Measuring Point (feet above mean sea level)	Bottom of Well (feet below land surface)	Length of Screen (feet)	Depth to Top of Screen (feet below land surface)	Elevation of the Top of the Screen (feet above mean sea level)
108A	1007.79	20	15	5	1002.8
109	1000.46	18	15	3	997.5
109A	1005.43	20	15	5	1000.5
110	1000.70	14	10	4	996.7
111	1000.72	18	15	3	996.7
112	1000.02	18	15	3	997.0
113	1000.33	18	15	3	997.3
114	1000.32	20	18	2	998.3
115*	991.84	21	18	3	988.8
116*	991.70	21	18	3	988.7
117*	993.51	20	18	2	991.51
118	1001.50	10	8	2	999.5
119	1001.53	10	8	2	999.5
120	1001.30	15	13	2	999.3
121	1000.80	10	8	2	998.8
122*	1000.80	10	8	2	998.8
123*	1001.31	10	8	2	999.3
124*	1000.83	10	8	2	998.8
125	994.52	10	8	2	992.5
126	998.34	15	13	2	996.3
127	1001.13	13	10	3	998.1
128	1001.41	15	14	1	1000.4
129*	1001.31	13	10	3	998.3
130	1001.31	8	5	3	998.3
131	1001.18	8	5	3	998.3
132	1001.94	8	5	3	998.9
133*	994.63	15	13	2	992.6

(See Notes on Page 6)

TABLE 4-1 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

WELL CONSTRUCTION DATA

Well Number	Elevation of Measuring Point (feet above mean sea level)	Bottom of Well (feet below land surface)	Length of Screen (feet)	Depth to Top of Screen (feet below land surface)	Elevation of the Top of the Screen (feet above mean sea level)
134	990.53	15	13	2	988.5
135*	991.35	15	13	2	989.4
136	990.51	8	5	3	987.5
137	986.65	15	13	2	984.7
138	988.18	20	5	15	973.18
139	987.13	15	10	5	982.13
140	1000.30	17	15	2	998.3
141	1000.16	17	15	2	998.2
MCP Monitoring Wells					
ES1-1	1017.09	24	15	9.2	1008.09
ES1-2	1019.97	30	10	19.9	999.97
ES1-3	1023.09	25	10	14.8	1008.09
ES1-4	1022.09	25	20	5	1017.07
RF-13	--	20	15	--	--

NOTES:

1. Measuring point elevations were developed by Geraghty & Miller, Inc., as part of the quarterly and semi-annual monitoring programs. All elevations have been corrected to be consistent with the current datum used since April 1988. The current datum is 11.3 feet higher than the datum used prior to April 1988.
2. Top-of-screen elevations are based on assumption that all wells have been completed flush with the ground surface and that the associated measuring point elevations are consistent with ground surface elevations.
3. Dash (--) signifies that information is not available.
4. * - well has been destroyed.

TABLE 4-2

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP OIL PCB ANALYSES
(Results are reported in parts per million, ppm)

Sample Location	Sample Date	Sample Number	PCB Concentration			
			Aroclors 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Well #48	10/12/79	63	--	--	--	49
Well #48	10/18/79	67	--	--	--	33
Well #48	2/13/80	--	<1	<3	46	46
Well #48	3/4/80	SL 54	ND	ND	146	146
Well #48	4/80	SL 171	ND	ND	122	122
Well #51	10/18/79	65	--	--	--	14
Well #52	10/18/79	69	--	--	--	7
Well #53	10/18/79	68	--	--	--	4
Well #55	10/28/79	70	--	--	--	9
Well #56	10/18/79	66	--	--	--	8
Sump @ former 1260 East Street*	1/10/80	SL 2	<10	94	180	274

Note:

1. Analyses performed during February, March, and April 1980 were conducted by Stewart Laboratories, Inc. All other analyses were conducted by GE.
2. ND = Compound was analyzed for, but not detected.
3. Dash (--) signifies that information is not available.
4. The "less than" (<) symbol before a number indicates that the value reported is the limit of resolution for quantification. The laboratory detected the compound in the sample, but was unable to quantify it below the value indicated.
5. * Indicates that the property was subsequently purchased by GE and the structure on it demolished.

TABLE 4-3

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP SOIL/SEDIMENT PCB DATA RELATED TO
RESIDENTIAL BASEMENT SAMPLING
(Results are reported in dry weight parts per million, ppm)

Sample Location	Location Description	Sample Date	Sample Number	PCB Concentration			
				Aroclors 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
East Street							
1224	floor	03/13/80	SL-80	ND	ND	ND	ND
1228	water inlet	03/13/80	SL086	ND	ND	ND	ND
1232	basement floor hole	03/13/80	SL-82	ND	ND	2.4	2.4
1234	sump	03/14/80	SL-108	ND	ND	3.2	3.2
1236	sump	03/14/80	SL-110	ND	ND	1.0	1.0
1238	wood block from sump	03/13/80	SL-103	ND	NO DATA REPORTED		
1246	basement NW scraping	02/29/80	SL-34	ND	ND	2.5	2.5
1246	basement NE sump	02/29/80	SL-35	ND	ND	ND	ND
1250*	sump sediment	02/29/80	SL-36	ND	136	16	152
1250*	sump sediment	03/25/80	SL-127	ND	5.5	ND	5.5
1254*	sediment NW sump	03/24/80	SL-125	ND	ND	ND	ND
1254*	sediments W sump	03/24/80	SL-126	ND	ND	ND	ND
1260*	basement floor	01/10/80	SL-1	<2	<193	44	44
1260*	basement floor	01/10/80	SL-3	<1	<102	73	73
1264	basement sump	03/1380	SL-84	ND	2.1	1.7	3.8
1274	service entrance	03/14/80	SL-115	ND	ND	ND	ND
1282	sump south	03/13/80	SL-83	ND	ND	ND	ND
1294	--	03/13/80	SL-96	ND	ND	ND	ND
1296	--	03/13/80	SL-85	ND	ND	ND	ND
1300	hole in floor	03/14/80	SL-104	ND	ND	ND	ND
1306-8	--	03/13/80	SL-81	ND	ND	ND	ND
1374	basement floor	03/14/80	SL-114	ND	ND	ND	ND

(See Notes on Page 4)

TABLE 4-3 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP SOIL/SEDIMENT PCB DATA RELATED TO
RESIDENTIAL BASEMENT SAMPLING
(Results are reported in dry weight parts per million, ppm)

Sample Location	Location Description	Sample Date	Sample Number	PCB Concentration			
				Aroclors 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Lombard Street							
8	--	03/14/80	SL-111	ND	ND	ND	ND
9	corner basement	03/13/80	SL-100	ND	ND	ND	ND
14-16	wall crack	03/14/80	SL-107	ND	ND	ND	ND
14-16	grease from floor surface	03/14/80	SL-122	<1	37	<4	37
16	soil under concrete floor	04/80	SL-160	ND	ND	ND	ND
16	soil under concrete floor	03/28/80	SL-137	ND	ND	ND	ND
15-17	sump pump	03/13/80	SL-97	ND	ND	ND	ND
19	cold cellar floor	03/13/80	SL-98	ND	ND	ND	ND
21	hole basement floor	02/29/80	SL-33	ND	ND	ND	ND
28	floor hole-soil	03/25/80	SL-136	ND	1.0	1.4	2.4
30	floor-soil	03/25/80	SL-135	ND	ND	ND	ND
42	street wall	03/14/80	SL-105	ND	6.4	1.2	7.6
48	basement NW left	02/29/80	SL-37	ND	0.4	0.2	0.6
48	basement NE right	02/29/80	SL-38	ND	1.1	0.5	1.6
48	NW corner	04/80	SL-162	ND	ND	ND	ND
48	NE corner	04/80	SL-163	ND	ND	ND	ND
Fasce Street							
3	Water Inlet	03/13/80	SL-92	ND	ND	ND	ND
5-7	Water Inlet	03/14/80	SL-93	ND	ND	ND	ND
15	Sump Drain	03/13/80	SL-95	ND	4.4	4.0	8.4
15	Sump (Empty Pipe)	--	SL-165	ND	ND	ND	ND
21	Cellar Sump	04/17/80	SL-138	ND	ND	ND	ND

(See Notes on Page 4)

TABLE 4-3 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP SOIL/SEDIMENT PCB DATA RELATED TO
RESIDENTIAL BASEMENT SAMPLING
(Results are reported in dry weight parts per million, ppm)

Sample Location	Location Description	Sample Date	Sample Number	PCB Concentration			
				Aroclors 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Fasce Street (Cont'd)							
21	Cellar Sump	04/17/80	SL-139	ND	ND	ND	ND
21	Cellar Sump	04/17/80	SL-140	ND	ND	ND	ND
23	Cold Cellar Floor	02/29/80	SL-28	ND	ND	ND	ND
23	Cellar Gas Inlet	02/29/80	SL-40	ND	4.2	3.7	7.9
23	Sewer Sump Area	04/17/80	SL-141	ND	ND	ND	ND
24	Sump	03/13/80	SL-94	ND	2.8	0.9	3.7
34	Basement NE	02/29/80	SL-29	ND	0.2	ND	0.2
34	Basement SE	02/29/80	SL-30	ND	36	4	40
34	Cellar Sump Area	04/16/80	SL-142	ND	ND	ND	ND
34	Cellar Sump Area	04/16/80	SL-143	ND	ND	ND	ND
34	Cellar Sump Area	04/16/80	SL-144	ND	ND	ND	ND
34	Cellar Sump Area	04/16/80	SL-146	ND	ND	1.6	1.6
Newell Street							
368	Wall Scraping	02/29/80	SL-39	ND	ND	ND	ND
382	Sewer Entrance	03/14/80	SL-109	ND	ND	ND	ND
386	SW Corner	03/13/80	SL-89	ND	ND	ND	ND
388	Dirt Floor	03/13/80	SL-88	ND	ND	ND	ND
390	Basement Floor Hole	03/13/80	SL-91	ND	ND	0.6	0.6
390	Center	04/80	SL-158	ND	ND	ND	ND
390	East	04/80	SL-159	ND	ND	ND	ND
402	Water Inlet	03/13/80	SL-90	ND	ND	ND	ND

(See Notes on Page 4)

TABLE 4-3 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP SOIL/SEDIMENT PCB DATA RELATED TO RESIDENTIAL BASEMENT SAMPLING
(Results are reported in dry weight parts per million, ppm)

Sample Location	Location Description	Sample Date	Sample Number	PCB Concentration			
				Aroclors 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Buckingham Street							
4	sediment phase-sump	02/29/80	SL-31	ND	ND	ND	ND
4	sediment phase-duplicate	02/29/80	SL-32	ND	ND	ND	ND
Milan Street							
7-9	water inlet	03/13/80	SL-102	ND	ND	ND	ND
16-18	drain trench	03/13/80	SL-101	ND	ND	ND	ND
18	right	04/80	SL-164	ND	ND	ND	ND
21	hole-basement floor	02/29/80	SL-33	ND	ND	ND	ND

Notes:

1. Analyses were performed by Stewart Laboratories, Inc.
2. ND = Compound was analyzed for, but not detected.
3. The "less than" (<) symbol before a number indicates that the value reported is the limit of resolution for quantification. The laboratory detected the compound in the sample, but was unable to quantify it below the value indicated.
4. * = Indicates properties which were subsequently purchased and demolished by GE.

TABLE 4-4

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP OIL/WATER PCB DATA RELATED TO RESIDENTIAL BASEMENT SUMPS
(Results are reported in parts per million, ppm)

Sample Location	Sample Phase	Sample Date	Sample Number	PCB Concentration			
				Aroclors 1242 and/ or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Sump at 1260 East St.	oil	01/10/80	SL-2	<10	94	180	274
	water	01/10/80	SL-2	<0.008	0.121	0.705	0.826
Sump at 1254-1256 East St.	oil	NO DISCRETE LAYER REPORTED					
	water	02/20/80	SL-26	<0.0001	<0.0001	<0.0001	<0.0001
Sump at 1254 East St.	oil	NO DISCRETE LAYER REPORTED					
	water	03/24/80	SL-123	ND	ND	ND	ND
Sump at 1254 East St.	oil	NO DISCRETE LAYER REPORTED					
	water	03/24/80	SL-124	ND	ND	ND	ND
Sump at 1250 East St.	oil	NO DISCRETE LAYER REPORTED					
	water	02/29/80	SL-41	ND	ND	ND	ND
Sump at 1250 East St.	oil	NO DISCRETE LAYER REPORTED					
	water	03/25/80	SL-128	ND	0.0007	ND	0.0007
Sump at 4 Buckingham	oil	NO DISCRETE LAYER REPORTED					
	water	02/29/80	SL-31	ND	ND	ND	ND
Sump at 4 Buckingham	oil	NO DISCRETE LAYER REPORTED					
	water	02/29/80	SL-32	ND	0.0007	ND	0.0007

Notes:
1. Analyses were performed by Stewart Laboratories, Inc.
2. ND = compound was analyzed for, but not detected.
3. The "less than" (<) symbol before a number indicates that the value reported is the limit of resolution for quantification. The laboratory detected the compound in the sample, but was unable to quantify it below the value indicated.

TABLE 4-5

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP VEGETABLE PCB DATA
(Results are reported in parts per million, ppm)

Sample Location	Sample Description	Sample Date	Sample Number	PCB Concentration			
				Aroclors 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
15 Fasce Street	tomatoes-canned	03/14/80	SL-116	ND	ND	ND	ND
	yellow beans-canned	03/14/80	SL-117	ND	ND	ND	ND
	cauliflower-frozen	03/14/80	SL-118	ND	ND	ND	ND
	green beans-frozen	03/14/80	SL-119	ND	ND	ND	ND
	brown speckled beans-dried	03/14/80	SL-120	ND	ND	ND	ND
	white beans-dried	03/14/80	SL-121	ND	ND	ND	ND
23 Fasce Street	carrots-canned	03/29/80	SL-42	ND	ND	ND	ND
	green & yellow beans	03/29/80	SL-43	ND	ND	ND	ND
	tomatoes-canned	03/29/80	SL-44	ND	ND	ND	ND
	spinach-frozen	03/29/80	SL-45	ND	0.01	ND	0.01
	carrots-frozen	03/29/80	SL-46	ND	ND	ND	ND
	zucchini-frozen	03/29/80	SL-47	ND	ND	ND	ND

Notes:

1. Analyses was performed by Stewart Laboratories, Inc.
2. ND = compound was analyzed for, but not detected.

TABLE 4-6

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP GARDEN SOIL PCB DATA
(Results are reported in parts per million, ppm)

Sample Location	Sample Date	Sample Number	PCB Concentration			
			Aroclors 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
1228 East St.	05/19/80	SL-204	ND	ND	0.2	0.2
1234 East St.	05/19/80	SL-208	ND	0.2	0.2	0.4
1236-38 East St.	05/19/80	SL-203	ND	0.2	0.3	0.5
1264 East St.	05/19/80	SL-206	ND	ND	0.4	0.4
1264 East St.	05/19/80	SL-212	ND	ND	0.4	0.4
1282 East St.	05/19/80	SL-210	ND	0.2	0.3	0.5
1282 East St.	05/19/80	SL-211	ND	0.4	0.4	0.8
1300 East st.	05/19/80	SL-209	ND	0.1	ND	0.1
11 Fasce Place	05/19/80	SL-215	ND	0.2	0.5	0.7
23 Fasce Place	05/19/80	SL-214	ND	ND	ND	ND
402-04 Newell St.	05/19/80	SL-216	ND	0.5	0.5	1.0
402 Newell St.	05/19/80	SL-228	ND	ND	ND	ND
19 Lombard St.	05/19/80	SL-205	ND	0.4	0.4	0.8
21 Lombard St.	05/19/80	SL-213	ND	ND	0.1	0.1
4 Buckingham St.	05/19/80	SL-207	ND	ND	0.1	0.1
21 Milan St.	05/80	SL-229	ND	ND	ND	ND
21 Milan St.	05/80	SL-230	ND	ND	ND	ND

Notes:

1. Analyses were performed by Stewart Laboratories, Inc.
2. ND = Compound was analyzed for, but not detected.

TABLE 4-7

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP MONITORING WELL SOIL PCB DATA
(Results are reported in dry weight parts per million, ppm)

Sample Location	Depth (Feet)	Sample Date	Sample Number	PCB Concentration			
				Aroclor 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Well #6	--	3/4/80	SL-49	ND	ND	13	13
Well #46	--	3/4/80	SL-55	ND	ND	5.3	5.3
Well #48	--	3/4/80	SL-54	ND	ND	25	25
Well #74	--	3/4/80	SL-51	ND	ND	ND	ND
Well #94	--	3/4/80	SL-53	ND	ND	0.1	0.1
Well #100	--	3/4/80	SL-52	ND	ND	0.4	0.4
Well #127	10	--	SL-62	ND	ND	1.5	1.5
Well #129	10	--	SL-63	ND	ND	1.8	1.8
Well #130	2-2.5	3/3/80	SL-56	ND	ND	1.3	1.3
Well #130	4-5	3/3/80	SL-57	ND	ND	ND	ND
Well #130	6-7	3/3/80	SL-59	ND	ND	2.6	2.6
Well #130	8-9	3/3/80	SK-60	ND	ND	3.1	3.1
Well #130	9-10	3/3/80	SL-61	ND	ND	0.1	0.1

Notes:

1. Analyses were performed by Stewart Laboratories, Inc.
2. ND = Compound was analyzed for, but not detected.
3. Dash (--) signifies that information is not available.

TABLE 4-8

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP SOIL PCB DATA RELATED
TO ALTRESCO STEAMLINE SUPPORT EXCAVATIONS
(Results are reported in dry weight parts per million, ppm)

Sample ID.	Sample Depth (ft)	PCB Conc.
PS-W-43	0-4	3.3
PS-W-44	0-4	11
PS-W-45A	0-2	10
PS-W-45B	2-6	87
PS-W-45C	6-10	8.5
PS-W-46A	0-2	100
PS-W-46B	2-6	4.4
PS-W-46C	6-10	7.5
PS-W-47A	0-2	79
PS-W-47B*	2-6	7,100
PS-W-47C	6-10	14,000
PS-W-49A	0-2	1.8
PS-W-49B	2-6	49
PS-W-49C	6-10	27
PS-W-51A	0-2	0.5
PS-W-51B	2-6	3.6
PS-W-51C	6-10	0.63
PS-W-52A*	0-2	47
PS-W-52B*	2-6	14
PS-W-52C*	6-10	4.3
PS-W-52D*	10-14	5.0
PS-W-53A	0-2	8.5
PS-W-53B*	2-6	5,500
PS-W-53C	6-10	800
PS-W-54A	0-2	5.3
PS-W-54B	2-6	700
PS-W-54C*	6-10	53
PS-W-55A	0-2	14
PS-W-55B*	2-6	1,000
PS-W-55C	6-10	4.6
PS-W-56A	0-2	1.2
PS-W-56B	2-6	5.8

Sample ID.	Sample Depth (ft)	PCB Conc.
PS-W-56C*	6-10	4.6
PS-W-57A	0-2	40
PS-W-57B	2-6	0.86
PS-W-57C	6-10	0.09
PS-W-58A	0-2	1.4
PS-W-58B	2-6	0.14
PS-W-58C	6-10	1.2
PS-W-59A	0-2	7.8
PS-W-59B	2-6	0.2
PS-W-59C	6-10	0.6
PS-W-60A	0-2	ND
PS-W-60B	2-6	0.13
PS-W-60C	6-10	0.09
PS-W-60D	10-14	0.09
PS-W-61A	0-2	ND
PS-W-61B	2-6	ND
PS-W-61-C	6-10	ND
PS-W-62A	0-2	0.34
PS-W-62B	2-6	ND
PS-W-62C	6-10	0.26
PS-W-63A	0-2	ND
PS-W-63B	2-6	0.15
PS-W-63C	6-10	0.09
PS-W-64A	0-2	ND
PS-W-64B	2-6	0.09
PS-W-64C	6-10	ND
PS-W-66A	0-4	ND
PS-W-66B	4-8	ND
PS-W-66C	8-12	ND
PS-W-68A	0-4	ND
PS-W-68B	4-8	ND
PS-W-68C	8-12	ND

Sample ID.	Sample Depth (ft)	PCB Conc.
PS-W-70A	0-2	ND
PS-W-70B	2-6	ND
PS-W-70C	6-10	ND
PS-W-71A	0-2	ND
PS-W-71B	2-6	0.05
PS-W-71C	6-10	ND
PS-W-72A	0-2	0.44
PS-W-72B	2-6	0.12
PS-W-72C	6-10	ND
PS-W-73A	0-2	ND
PS-W-73B	2-6	0.27
PS-W-73C	6-10	0.05
PS-W-74A	0-2	ND
PS-W-74B	2-6	ND
PS-W-74C	6-10	ND
PS-W-74D	10-14	ND
PS-W-75A	0-2	ND
PS-W-75B	2-6	0.42
PS-W-75C	6-10	ND
PS-W-76A	0-2	ND
PS-W-76B	2-6	ND
PS-W-76C	6-10	ND
PS-W-77A	0-2	ND
PS-W-77B	2-6	ND
PS-W-77C	6-10	ND
PS-W-78A	0-2	0.57
PS-W-78B	2-6	0.13
PS-W-78C	6-10	0.16
PS-W-79B	4-6	0.22
PS-W-79C	6-10	4.6
PS-W-80B	2-6	0.24
PS-W-80C	6-10	0.79

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(See Notes on Page 2)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP SOIL PCB DATA RELATED
TO ALTRESCO STEAMLINE SUPPORT EXCAVATIONS
(Results are reported in parts per million, ppm)

Sample ID.	Sample Depth (ft)	PCB Conc.
PS-W-81A	0-2	7.0
PS-W-81B	2-8	0.89
PS-W-81C	8-10	ND
PS-W-82A	2-4	1.7
PS-W-82B	4-8	0.68
PS-W-82C	8-10	ND
PS-W-83B	2-6	0.60
PS-W-83C	6-10	ND
PS-W-84B	2-6	0.18
PS-W-84C	6-10	ND
PS-W-85B*	2-6	0.78
PS-W-85C	6-10	0.14
PS-W-86B	2-6	2.1
PS-W-86C	6-10	ND
PS-W-87B	2-6	0.52
PS-W-87C	6-10	ND
PS-W-88B	2-6	0.52
PS-W-88C	6-9	1.6

Sample ID.	Sample Depth (ft)	PCB Conc.
PS-W-89A	0-2	30
PS-W-89B	2-6	4.2
PS-W-89C	6-10	1.0
PS-W-90A	0-2	1,400
PS-W-90B	2-6	36
PS-W-90C	6-10	68
PS-W-90D	10-14	68
PS-W-91A	0-2	57
PS-W-91B	2-6	6.7
PS-W-91C	6-10	1.2
PS-W-92A	0-2	4.5
PS-W-92B	2-6	0.58
PS-W-92C	6-10	0.24
PS-W-93A	0-2	14
PS-W-93B	2-6	1.4
PS-W-93C	6-10	4.3
PS-W-94A	0-2	160
PS-W-94B*	2-6	1.7

Sample ID.	Sample Depth (ft)	PCB Conc.
PS-W-94C	6-10	1.8
PS-W-95A	0-2	1500
PS-W-95B	2-6	200
PS-W-95C*	6-10	32
PS-W-96A	0-2	540
PS-W-96B*	2-6	36
PS-W-96C	6-10	110
PS-W-97A	0-2	160
PS-W-97B*	2-6	0.54
PS-W-97C	6-10	1.5
PS-W-98A*	0-2	8.6
PS-W-98B	2-6	0.11
PS-W-98C	6-10	0.21
PS-W-98D	10-14	0.06
PS-W-100A	0-2	6.9
PS-W-100B	2-6	2.2
PS-W-100C	6-10	3.3

Notes:

1. Samples were collected by Geraghty & Miller, Inc., in July and August 1989.
2. ND = Compound was analyzed for, but not detected.

TABLE 4-9

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP SOIL VOC DATA RELATED TO
ALTRESCO STEAMLINE SUPPORT EXCAVATIONS
(Results are reported in dry weight parts per million, ppm)

Sample ID	Ethyl-Benzene	Methylene Chloride	Tetrachloro-ethene	Toluene	1,1,1-Tri-chloroethane	Trichloro-ethene
PS-W-47B	ND	12	8,100	41	7	50
PS-W-52A	ND	12	5	6	ND	14
PS-W-52B	ND	8	7	5	ND	28
PS-W-52C	ND	11	6	<5	ND	14
PS-W-52D	ND	10	12	<5	ND	16
PS-W-53B	ND	35	2,000	31	24J	4,900
PS-W-54C	ND	8	11,000	15	97	4,100
PS-W-55B	ND	ND	20,000	ND	1,100	8,000
PS-W-56C	ND	250J	1,400	ND	ND	1,700
PS-W-85B	ND	<5	ND	ND	ND	ND
PS-W-94B	ND	340	ND	ND	ND	ND
PS-W-95C	ND	25	ND	ND	ND	ND
PS-W-96B	ND	9	ND	ND	ND	ND
PS-W-97B	3J	7	ND	2J	ND	ND
PS-W-98A	34	4J	ND	ND	ND	ND

Notes:
1. Samples were collected by Geraghty & Miller, Inc., during July and August 1989.
2. Only constituents detected in at least one sample are shown.
3. ND = Compound was analyzed for, but not detected.
4. The "less than" (<) symbol before a number indicates that the value reported is the limit of resolution for quantification. The laboratory detected the compound in the sample, but was unable to quantify it below the value indicated.
5. J - Indicates an estimated value less than CLP-required quantitation limit.

TABLE 4-10

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP SOIL PCB DATA FOR
MONITORING WELLS D1, E1, AND F1
(Results are reported in dry weight parts per million, ppm)

Well ID.	Sample Depth (feet)	Total PCB Concentration
D1	0 - 2	30
	4 - 8	22
	8 -13	<1
E1	0 - 4	1.6
	4-8	1.6
	8-12	<1
	12-16	<1
	16-20	<1
F1	0-4	1.2
	4-8	<1
	8-12	<1
	12-15	<1
	15-19	<1

Notes:
1. Samples were collected under the direction of Geraghty & Miller, Inc., and analyzed for PCBs by O'Brien & Gere Laboratories, Inc., during March 2-14, 1990.
2. The "less than" (<) symbol before a number indicates that the value reported is the limit of resolution for quantification. The laboratory detected the compound in the sample, but was unable to quantify it below the value indicated.

TABLE 4-11

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF MCP SOIL BORING PCB DATA
(Results are reported in dry weight parts per million, ppm)

Location ID.	Sample Depth (feet)	PCB Concentration			
		Aroclors 1016, 1232,1242 and/or 1248	Aroclor 1254	Aroclor 1260	Total PCBs
ES1-1	0 - 2	ND	ND	ND	ND
	2 - 4	ND	ND	ND	ND
	4 - 6	ND	ND	ND	ND
	6 - 8	ND	ND	ND	ND
	8 - 10	ND	ND	ND	ND
	10 - 12	ND	ND	ND	ND
	12 - 14	ND	ND	ND	ND
	14 - 16	ND	ND	ND	ND
	16 - 18	ND	ND	ND	ND
	18 - 20	ND	ND	ND	ND
	20 - 22	ND	ND	ND	ND
	22 - 24	ND	ND	0.17	0.17
ES1-2	0 - 2	ND	ND	2.9	2.9
	2 - 4	ND	ND	8.5	8.5
	4 - 6	ND	1.0	0.86	1.9
	6 - 8	ND	0.41	0.85	1.3
	8 - 10	ND	0.68	ND	0.68
	10 - 12	ND	ND	ND	ND
	12 - 14	ND	ND	1.6	1.6
	14 - 16	ND	4.8	ND	4.8
	16 - 18	ND	ND	ND	ND
	18 - 20	ND	ND	ND	ND
	20 - 22	ND	ND	ND	ND
	22 - 24	ND	0.11	ND	0.11
	24 - 26	ND	ND	0.31	0.31

(See notes on page 2)

TABLE 4-11 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF MCP SOIL BORING PCB DATA
(Results are reported in dry weight parts per million, ppm)

Location ID.	Sample Depth (feet)	PCB Concentration			
		Aroclors 1016, 1232,1242 and/or 1248	Aroclor 1254	Aroclor 1260	Total PCBs
ES1-3	0 - 2	ND	0.22	0.19	0.41
	2 - 4	0.17	1.9	1.3	3.4
	4 - 6	0.48	3.6	0.95	5.0
	6 - 8	15.0	65.0	ND	80.0
	8 - 10	0.19	1.2	0.85	2.2
	10 - 12	ND	ND	ND	ND
	12 - 14	ND	ND	ND	ND
	14 - 16	0.08	0.48	ND	0.56
	16 - 18	ND	ND	1.7	1.7
	18 - 20	0.31	1.4	0.74	2.4
	18 - 20 Dup.	ND	0.17	ND	0.17
	20 - 22	ND	ND	ND	ND
	22 - 24	ND	ND	0.11	0.11
RF-13	0 - 2	ND	110.0	94.0	200.0
	2 - 4	ND	22.0	57.0	79.0
	4 - 6	ND	2.8	30.0	33.0
	6 - 8	ND	0.10	0.34	0.44
	8 - 10	ND	ND	3.0	3.0
	10 - 12	ND	ND	ND	ND
	12 - 14	ND	2.2	14.0	16.0
	14 - 16	ND (ND)	ND (0.10)	ND (ND)	ND (0.10)
	16 - 18	ND	ND	ND	ND
	18 - 20	ND	0.08	ND	0.08

Notes:
1. Samples were collected by Geraghty & Miller, Inc., during January and May 1991.
2. Samples were analyzed by IT Analytical Services, unless otherwise indicated.
3. Total PCB concentrations are presented as reported by the laboratory.
4. Data presented in parentheses were reported by CompuChem Laboratories.
5. Dup. = Duplicate Sample.
6. ND = Compound was analyzed for, but not detected.

TABLE 4-12

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF MCP SOIL APPENDIX IX+3 DATA
(Results are reported in parts per million, ppm)

Boring ID:	ES1-1	RF-13
Sample Depth (ft):	4 - 6	14 - 16
VOLATILE ORGANIC COMPOUNDS		
Acetone	0.014B	0.017B
Methylene Chloride	0.058B	0.045B
Chloroform	0.002J	ND
1,1,2-Trichloro-1,2,2-trifluoromethane	0.001J	ND
SEMIVOLATILE ORGANIC COMPOUNDS		
Acenaphthene	0.67	ND
Dibenzofuran	0.56	ND
Fluorene	0.92	ND
Phenanthrene	3.1	ND
Anthracene	0.85	ND
Naphthalene	0.22J	ND
2-Methylnaphtalene	0.19J	ND
1-Methylnaphtalene	0.22J	ND
Acenaphthylene	0.13J	ND
Fluoranthene	2.3	ND
Pyrene	1.4	ND
Benzo(a)anthracene	0.79	ND
Chrysene	0.74	ND
Bis(2-Ethylhexyl)phthalate	0.38J	0.15BJ
Benzo(b)fluoranthene	0.92	ND
Benzo(a)pyrene	0.54	ND
Indeno(1,2,3-cd)pyrene	0.32J	ND
Dibenz(a,h)anthracene	0.1J	ND
Benzo(g,h,i)perylene	0.33J	ND
POLYCHLORINATED BIPHENYLS (PCBS)		
Aroclor 1254	NA	0.10

(See Notes on Page 2)

TABLE 4-12 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF MCP SOIL APPENDIX IX+3 DATA
(Results are reported in parts per million, ppm)

Boring ID:	ES1-1	RF-13
Sample Depth (ft):	4 - 6	14 - 16
INORGANICS		
Aluminum	NA	5,300
Arsenic	NA	3.8
Barium	NA	18.3J*
Calcium	NA	33,100
Chromium	NA	5.9
Cobalt	NA	6.8
Copper	NA	13.7
Iron	NA	13,900
Lead	NA	7.3
Magnesium	NA	16,500
Manganese	NA	397
Nickel	NA	11.8
Potassium	NA	352J*
Sodium	NA	146J*
Vanadium	NA	5.6J*
Zinc	NA	35.5

NOTES:

1. Samples were collected by Geraghty & Miller, Inc., during January and May 1991.
2. Analyses were conducted by CompuChem Laboratories.
3. Sample RF-13 was analyzed for all Appendix IX+3 constituents, while sample ES1-1 was only analyzed for Appendix IX+3 volatiles and semivolatiles.
4. Only constituents detected in at least one sample are shown.
5. ND = Compound was analyzed for, but not detected.
6. NA = Not analyzed.
7. B = Analyte was also detected in associated method blank.
8. J = Indicates an estimated value less than the CLP-required quantitation limit.
9. J* = Indicates an estimated value between the CLP required detection limit and the instrument detection limit.

TABLE 4-13

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP GROUNDWATER PCB DATA
(Results are reported in parts per million, ppm)

Sample Location	Sample Date	Laboratory	Sample Number	PCB Concentration			
				Aroclor 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Well #6	2/13/80	Stewart	--	<0.0005	<0.007	0.081	0.081
Well #6	3/4/80	Stewart	SL-49	ND	ND	0.012	0.012
Well #6	3/4/80	LES	--	--	--	--	<0.010
Well #6	4/25/80	Stewart	SL-172	ND	ND	ND	ND
Well #6	4/25/80	LES	--	--	--	--	ND
Well #29	2/13/80	Stewart	--	<0.0005	<0.004	0.026	0.026
Well #29	4/25/80	Stewart	SL-168	ND	0.0003	0.0011	0.0014
Well #29	4/25/80	LES	--	--	--	--	ND
Well #46	2/13/80	Stewart	--	<0.0005	<0.010	0.082	0.082
Well #46	3/4/80	Stewart	SL-55	ND	ND	0.0013	0.0013
Well #46	3/4/80	LES	--	--	--	--	<0.010
Well #46	4/25/80	Stewart	SL-169	ND	ND	0.0016	0.0016
Well #46	4/25/80	LES	--	--	--	--	ND
Well #48	2/13/80	Stewart	--	<0.014	<0.084	0.743	0.743
Well #48	3/4/80	Stewart	SL-54	ND	ND	0.0016	0.0016
Well #48	4/25/80	Stewart	SL-171	ND	ND	0.171	0.171
Well #63	2/13/80	Stewart	--	<0.0001	<0.0001	0.0003	0.0003
Well #63	3/4/80	Stewart	SL-48	ND	ND	ND	ND
Well #63	3/4/80	LES	--	--	--	--	<0.010
Well #69	12/19/79	Stewart	--	<0.000003	<0.00003	<0.00003	<0.00006
Well #69	12/19/79	LES	--	--	--	--	ND
Well #69	4/18/80	Stewart	SL-175	ND	ND	ND	ND
Well #69	4/18/80	LES	--	--	--	--	<10
Well #74	2/13/80	Stewart	--	<0.0001	<0.0001	0.0006	0.0006
Well #74	3/4/80	Stewart	SL-51	ND	ND	ND	ND
Well #74	3/4/80	LES	--	--	--	--	ND
Well #74	4/25/80	Stewart	SL-170	ND	ND	ND	ND
Well #74	4/25/80	LES	--	--	--	--	<0.010
Well #77	12/19/79	Stewart	--	<0.000003	0.00003	<0.00003	0.00003
Well #77	12/19/79	LES	--	--	--	--	ND

(See Notes on Page 3)

TABLE 4-13 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP GROUNDWATER PCB DATA
(Results are reported in parts per million, ppm)

Sample Location	Sample Date	Laboratory	Sample Number	PCB Concentration			
				Aroclor 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Well #77	4/18/80	LES	--	--	--	--	<0.010
Well #79	12/19/79	LES	--	--	--	--	ND
Well #80	12/19/79	Stewart	--	<0.000003	<0.00003	<0.00003	<0.00006
Well #80	12/19/79	LES	--	--	--	--	ND
Well #91	12/19/79	Stewart	--	<0.000003	<0.00003	<0.00003	<0.00006
Well #91	12/19/79	LES	--	--	--	--	ND
Well #91	4/18/80	Stewart	SL-177	ND	ND	ND	ND
Well #91	4/18/80	LES	--	--	--	--	>0.010
Well #94	2/13/80	Stewart	--	<0.0001	<0.00001	<0.00001	<0.00001
Well #94	3/4/80	Stewart	SL-53	ND	ND	ND	ND
Well #94	3/4/80	LES	--	--	--	--	<0.010
Well #94	4/25/80	Stewart	SL-167	ND	ND	ND	ND
Well #94	4/25/80	LES	--	--	--	--	ND
Well #100	12/28/79	Stewart	SL-4	<0.010	<0.040	0.1	0.1
Well #100	2/13/80	Stewart	--	<0.00003	<0.002	0.015	0.015
Well #100	3/4/80	Stewart	SL-52	ND	ND	ND	ND
Well #100	3/4/80	LES	--	--	--	--	--
Well #100	4/18/80	Stewart	SL-181	ND	ND	0.010	0.010
Well #100	4/18/80	LES	--	--	--	--	<0.010
Well #115	3/26/80	Stewart	SL-133	ND	ND	ND	ND
Well #115	3/26/80	LES	--	--	--	--	ND
Well #115	4/18/80	Stewart	SL-183	ND	ND	ND	ND
Well #115	4/18/80	LES	--	--	--	--	<0.010
Well #116	3/26/80	Stewart	SL-129	ND	ND	ND	ND
Well #116	3/26/80	LES	--	--	--	--	ND
Well #117	3/26/80	Stewart	SL-130	ND	ND	ND	ND
Well #117	3/26/80	LES	--	--	--	--	ND
Well #117	4/18/80	Stewart	SL-173	ND	ND	ND	ND
Well #125	3/26/80	Stewart	SL-166	ND	ND	ND	ND
Well #125	3/26/80	LES	--	--	--	--	<0.010

(See Notes on Page 3)

TABLE 4-13 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF PRE-MCP GROUNDWATER PCB DATA
(Results are reported in parts per million, ppm)

Sample Location	Sample Date	Laboratory	Sample Number	PCB Concentration			
				Aroclor 1242 and/or 1016	Aroclor 1254	Aroclor 1260	Total PCBs
Well #133	3/26/80	Stewart	SL-134	ND	ND	ND	ND
Well #133	3/26/80	LES	--	--	--	--	ND
Well #134	3/26/80	Stewart	SL-131	ND	ND	ND	ND
Well #134	3/26/80	LES	--	--	--	--	<0.010
Well #134	4/18/80	Stewart	--	ND	ND	ND	ND
Well #134	4/18/80	LES	--	--	--	--	ND
Well #135	3/26/80	Stewart	SL-132	ND	ND	ND	ND
Well #135	3/26/80	LES	--	--	--	--	<0.010
Well #135	4/18/80	Stewart	SL-174	ND	ND	ND	ND
Well #135	4/18/80	LES	--	--	--	--	ND
Well #137	4/18/80	Stewart	SL-182	ND	ND	ND	ND
Well #137	4/18/80	LES	--	--	--	--	ND
Well #139	4/18/80	Stewart	SL-180	ND	N/A	0.0009	0.0009
Well #139	4/18/80	LES	--	--	--	--	ND

Notes:

1. GE employed Stewart Laboratories, Inc., to perform the above analyses. The MDEP had its samples prepared at the Lawrence Experiment Station and analyzed by the Division of Marine Fisheries Laboratory.
2. Dash (--) signifies that no data are available.
3. The 'less than' (<) symbol before a number indicates that the value reported is the limit of resolution for quantification. The laboratory detected the compound in the sample, but was unable to quantify it below the value indicated.
4. All LES analyses for PCBs have a limit of resolution of 0.010 ppm and a limit of detection of 0.0010 ppm. LES reported only total PCBs.
5. Most Stewart Laboratory analyses for PCBs have a limit of resolution as indicated and a limit of detection of 0.0001 ppm.
6. ND = Compound was analyzed for, but not detected.
7. N/A = Quantification impossible due to interference.

TABLE 4-14

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT ASSESSMENT
SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF SOUTHSIDE RECOVERY SYSTEM DISCHARGE SAMPLING
(Results are reported in parts per million, ppm)

Sample Date	Filtered Sample?	PCBs	TSS	Oil and Grease	COD	BOD
2/8/88	No Yes	<0.001 <0.001	NA NA	NA NA	NA NA	NA NA
7/12/88	No	<0.001	NA	NA	NA	NA
7/20/88	No	<0.001	NA	NA	NA	NA
7/27/88	Yes	<0.001	NA	NA	NA	NA
8/2/88	Unknown	NA	17.5	NA	81	11.6
8/11/88	No	<0.001	NA	NA	NA	NA
9/25/89	No	0.0008	NA	NA	NA	NA
4/18/90	No	<0.0005	34.6	10	63	2.5
	Yes (10 micron)	<0.0005	25.1	5.9	61	<0.5
	Yes (100 micron)	<0.0005	34.2	7.2	75	6.7

Notes:

1. All samples collected from discharge of drawdown pump located approximately 10 feet below the water-table surface.
2. All samples analyzed by GE Laboratory.
3. The "less than" (<) symbol before a number indicates that the value reported is the limit of resolution for quantification. The laboratory detected the compound in the sample, but was unable to quantify it below the value indicated.
4. TSS = Total Suspended Solids.
5. COD = Chemical Oxygen Demand.
6. BOD = Biological Oxygen Demand.
7. NA = Not Analyzed.

TABLE 4-15

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF MCP GROUNDWATER APPENDIX IX+3 DATA
(Results are reported in parts per million, ppm)

Well ID:	ES1-1	ES1-2	ES1-3	ES1-3 Dup.	ES1-4	Northside Recovery Caisson	Southside Recovery Caisson	RF-13
Sample Collection Date:	2/13/91	2/13/91	2/12/91	2/12/91	2/12/91	2/20/91	2/20/91	12/4/91
VOLATILE ORGANIC COMPOUNDS								
Methylene Chloride	ND	0.004BJ	ND	0.001BJ	ND	0.007BJ	ND	ND
Chlorobenzene	ND	ND	ND	ND	0.006	ND	0.002J	0.002J
Benzene	ND	ND	ND	ND	ND	ND	0.001J	ND
Toluene	ND	ND	ND	ND	ND	0.009	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	0.003J
1,2-Dichloroethene (Total)	ND	ND	ND	ND	ND	ND	ND	0.13
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	0.14
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	0.004J
SEMIVOLATILE ORGANIC COMPOUNDS								
1,3-Dichlorobenzene	ND	ND	ND	ND	0.087	ND ND	0.002J 0.002J	ND 0.001J
1,4-Dichlorobenzene	ND	ND	ND	ND	0.016	0.008J 0.005J	0.012 0.012	0.002J 0.002J
1,2-Dichlorobenzene	ND	ND	ND	ND	0.002J	ND ND	ND ND	ND ND

(See Notes on Page 4)

TABLE 4-15 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF MCP GROUNDWATER APPENDIX IX+3 DATA
(Results are reported in parts per million, ppm)

Well ID:	ES1-1	ES1-2	ES1-3	ES1-3 Dup.	ES1-4	Northside Recovery Caisson	Southside Recovery Caisson	RF-13
Sample Collection Date:	2/13/91	2/13/91	2/12/91	2/12/91	2/12/91	2/20/91	2/20/91	12/4/91
SEMIVOLATILE ORGANIC COMPOUNDS (Cont'd)								
Benzoic Acid	ND	ND	ND	ND	ND	ND ND	0.005J 0.001J	ND ND
2,4-Dichlorophenol	ND	ND	ND	ND	0.004J	ND ND	ND ND	ND ND
1,2,4-Trichlorobenzene	ND	ND	0.002J	0.002J	0.045	ND ND	ND ND	0.002J 0.002J
Naphthalene	ND	ND	ND	ND	ND	0.11J 0.009J	ND ND	ND ND
2,4,5-Trichlorophenol	ND	ND	ND	ND	0.001J	ND ND	ND ND	ND ND
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND ND	0.001JX ND	ND ND
Diphenylamine	ND	ND	ND	ND	ND	ND ND	0.001JX ND	ND ND
Di-n-butylphthalate	ND	ND	0.002J	ND	ND	ND ND	ND ND	ND ND
Bis(2-ethylhexyl)phthalate	0.006J	ND	0.001J	0.002J	0.001J	ND 0.009BJ	0.003J 0.004BJ	0.014B ND

(See Notes on Page 4)

TABLE 4-15 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF MCP GROUNDWATER APPENDIX IX+3 DATA
(Results are reported in parts per million, ppm)

Well ID:	ES1-1	ES1-2	ES1-3	ES1-3 Dup.	ES1-4	Northside Recovery Caisson	Southside Recovery Caisson	RF-13
Sample Collection Date:	2/13/91	2/13/91	2/12/91	2/12/91	2/12/91	2/20/91	2/20/91	12/4/91
ORGANOCHLORINE PESTICIDES/PCBS								
Aroclor 1254	ND	ND	0.00076	ND	ND	ND	ND	ND
Aroclor 1260	ND	ND	ND	0.0013	ND	ND	ND	ND
INORGANICS								
Aluminum	ND	ND	ND	ND	ND	0.25	0.40	0.0992J*
Barium	ND	ND	ND	ND	ND	ND	ND	0.153J*
Calcium	37	55	82	84	44	100	53	246
Cobalt	ND	ND	ND	ND	ND	ND	ND	0.0052J*
Copper	ND	ND	ND	ND	ND	ND	ND	0.0063J*
Iron	ND	0.14	ND	ND	0.16	19	6.4	0.0352J*
Lead	0.0051	0.0081	0.0098	0.0077	ND	ND	0.0068	0.0027J*
Magnesium	16	16	41	41	18	25	9.1	53.4
Manganese	0.089	0.077	0.083	0.091	0.096	1.9	0.87	3.55
Potassium	ND	ND	5.4	5.3	ND	ND	8.1	6.5
Sodium	83	130	100	100	320	100	260	290
Zinc	ND	0.057	0.029	0.14	ND	0.16	0.055	0.0261

(See Notes on Page 4)

TABLE 4-15 (Cont'd)

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT
ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF MCP GROUNDWATER APPENDIX IX+3 DATA
(Results are reported in parts per million, ppm)

Well ID:	ES1-1	ES1-2	ES1-3	ES1-3 Dup.	ES1-4	Northside Recovery Caisson	Southside Recovery Caisson	RF-13
Sample Collection Date:	2/13/91	2/13/91	2/12/91	2/12/91	2/12/91	2/20/91	2/20/91	12/4/91
INORGANICS (Cont'd)								
Cyanide	ND	0.0103	ND	NA	ND	ND	ND	ND

Notes:

1. Samples were collected by Geraghty & Miller, Inc., and analyzed by CompuChem Laboratories.
2. Samples RF-13 and ES1-3 were analyzed for all Appendix IX+3 constituents; sample ES1-3 Dup. was analyzed for all Appendix IX+3 constituents excluding herbicides; samples ES1-1, ES1-2, ES1-4, and those from the Northside and Southside Recovery Caissons were analyzed for all Appendix IX+3 constituents excluding pesticides and herbicides; samples for the Northside and Southside Recovery Caissons as well as RF-13 were reanalyzed for SVOCs -- the results for both sets of analysis are presented.
3. Only constituents detected in one or more well(s) are included in this table.
4. ND = Compound was analyzed for, but not detected.
5. NA = Compound was not analyzed.
6. J = Indicates an estimated value less than the CLP-required quantitation limit.
7. B = Analyte was also found in the associated method blank.
8. J* = Indicates an estimated value between the CLP-required detection limit and the instrument detection limit.

TABLE 7-1

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CURRENT ASSESSMENT SUMMARY
FOR EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF AMBIENT AIR PCB CONCENTRATIONS
(Results are Presented in Micrograms Per Cubic Meter (ug/m^3)

Monitor Identification: / Location Description:	002 NWL	003 LYM	004 H78	005 OP3	006 BCC	007 64Y	001[1] 64YC	008 32S
Mean Concentration[2]	0.0062	0.0013	0.0007	<0.0005	<0.0005	0.0011	0.0011	0.0050[3]
Mean Spring[2]	0.0097	0.0016	0.0008[4]	0.0006	<0.0005	0.0012	0.0009	(-)
Mean Summer[2,4]	0.0117	0.0029	0.0011	0.0010	<0.0005	0.0022	0.0020	(-)
Mean Fall[2]	0.0028	0.0006	<0.0005	<0.0005	<0.0005	0.0006	0.0007	(-)
Mean Winter[2]	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	(-)
Max. 24 Hour Concentration	0.030	0.0059	0.0035	0.0019	0.0015	0.0037	0.0041	0.0071
Date of Occurrence	06/15/92	08/02/92	06/05/92	07/19/92	08/14/92	07/21/92	08/02/92	08/02/92
Min. 24 Hour Concentration[5]	ND[6]	ND	ND	ND	ND	ND	ND	0.0035
Date of Occurrence	(-)[7]	(-)	(-)	(-)	(-)	(-)	(-)	07/09/92
Total # of Valid Samples	30	30	30	31	31	29	29	6
% Below the Detection Limit	26.7	46.7	76.7	74.2	83.9	37.9	37.9	0

Notes:
1. Co-located with Monitor 007.
2. Averages are calculated using one-half the detection limit for non-detect events.
3. Based on six sampling events between June 15, 1992 and August 14, 1992.
4. Observations from summer 1991 and 1992 were combined to produce summer averages.
5. Sampling Stations 001 through 007 had several observations of non-detect.
6. ND - Below the detection limit of 0.0005 ug/m^3.
7. (-) = Indicates that a non-detect was recorded on several occasions.

Location Key:

NWL = Newell Street Oxbow Area 1 Site
LYM = Lyman Street Parking Lot/USEPA Area 5B Site
H78 = Hill 78 Area/USEPA Area 2 Site
OP3 = Bldg. OP-3 located in Unkamet Brook Area/USEPA Area 1
BCC = Berkshire Community College
64Y = Bldg. 64Y in East Street Area 2/USEPA Area 4 Site
32S = Bldg. 32S in East Street Area 2/USEPA Area 4 Site

Reference:
Information was reproduced from Zorex, November 1992 - Table 2.

TABLE 9-1

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP PHASE II REPORT AND CURRENT ASSESSMENT
SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

PHYSICAL AND CHEMICAL PROPERTIES OF SELECT CONSTITUENTS

Chemical	Water Solubility (mg/L)	Log Kow	Vapor Pressure (mm Hg)	Henry's Law Constant (atm-m^3/mole)
VOLATILE ORGANIC COMPOUNDS				
Aromatics				
Ethylbenzene	161	3.15	9.53	8.44E-3
Toluene	534.8	2.73	28.4	5.94E-3
Halogenated Compounds				
Chlorobenzene	471.7	2.84	11.9	3.45E-3
1,2-Dichloroethene (cis-)	3,500	1.86	215	3.37E-3
1,2-Dichloroethene (trans-)	6,260	2.09	336	6.72E-3
Methylene Chloride	13,000	1.25	434.9	2.63E-3
Tetrachloroethene	150	3.4	18.5	1.80E-2
1,1,1-Trichloroethene	1,495	2.49	123.7	8.0E-3
Trichloroethene	1,100	2.42	69	1.03E-3
SEMIVOLATILE ORGANIC COMPOUNDS				
Polychlorinated Benzenes				
1,3-Dichlorobenzene	111 (20°C)	3.60	2.3	1.8E-3
1,4-Dichlorobenzene	87	3.52	1.76	1.5E-3
1,2,4-Trichlorobenzene	48.8 (20°C)	4.02	0.29	1.42E-3
PAHs				
Acenaphthene	3.88	3.92	0.004-0.03	1.55E-4
Anthracene	0.03-0.075	4.45	2.67E-6	6.5E-5
Benzo(a)anthracene	0.009	5.66	3.08E-8	9.75E-7
Benzo(b)fluoranthene	0.0015	6.12	5.0E-7	1.11E-4
Benzo(a)pyrene	0.007-0.004	5.97	5.5E-9	1.82E-6
Chrysene	0.002	5.66	3.08E-8	9.46E-5
Dibenzofuran	4.8	4.12	2.6E-3	1.2E-4
Fluoranthene	0.26	4.95	1.0E-8	1.26E-8
Fluorene	1.98	4.18	7.0E-4 - 8.0E-3	8.39E-5
Phenanthrene	1.00	4.46	2.0E-4	3.95E-5
Pyrene	1.4E-7	4.88	2.5E-6	1.1E-5
Amines				
N-Nitrosodiphenylamine	40	2.57-3.13	0.1	6.6E-4
Phthalate Esters				
Bis(2-ethylhexyl)phthalate	0.3	5.1	6.5E-6	1.1E-5
PCBs				
Aroclor 1016	0.42	5.6	4E-4	2.9E-4
Aroclor 1232	Unknown	5.1	4.06E-3	Unknown

(See Notes on Page 2)

TABLE 9-1

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP PHASE II REPORT AND
CURRENT ASSESSMENT SUMMARY FOR EAST STREET AREA 1/USEPA AREA 3

PHYSICAL AND CHEMICAL PROPERTIES OF SELECT CONSTITUENTS
(cont'd)

Chemical	Water Solubility (mg/L)	Log Kow	Vapor Pressure (mm Hg)	Henry's Law Constant ($atm\text{-}m^3/mole$)
PCBs (Cont'd)				
Aroclor 1242	0.24	5.6	4.06E-4	5.2E-4
Aroclor 1248	0.054	6.2	4.94E-4	2.8E-3
Aroclor 1254	0.012	6.5	7.71E-5	2.0E-3
Aroclor 1260	0.0027	6.8	4.05E-5	4.6E-3

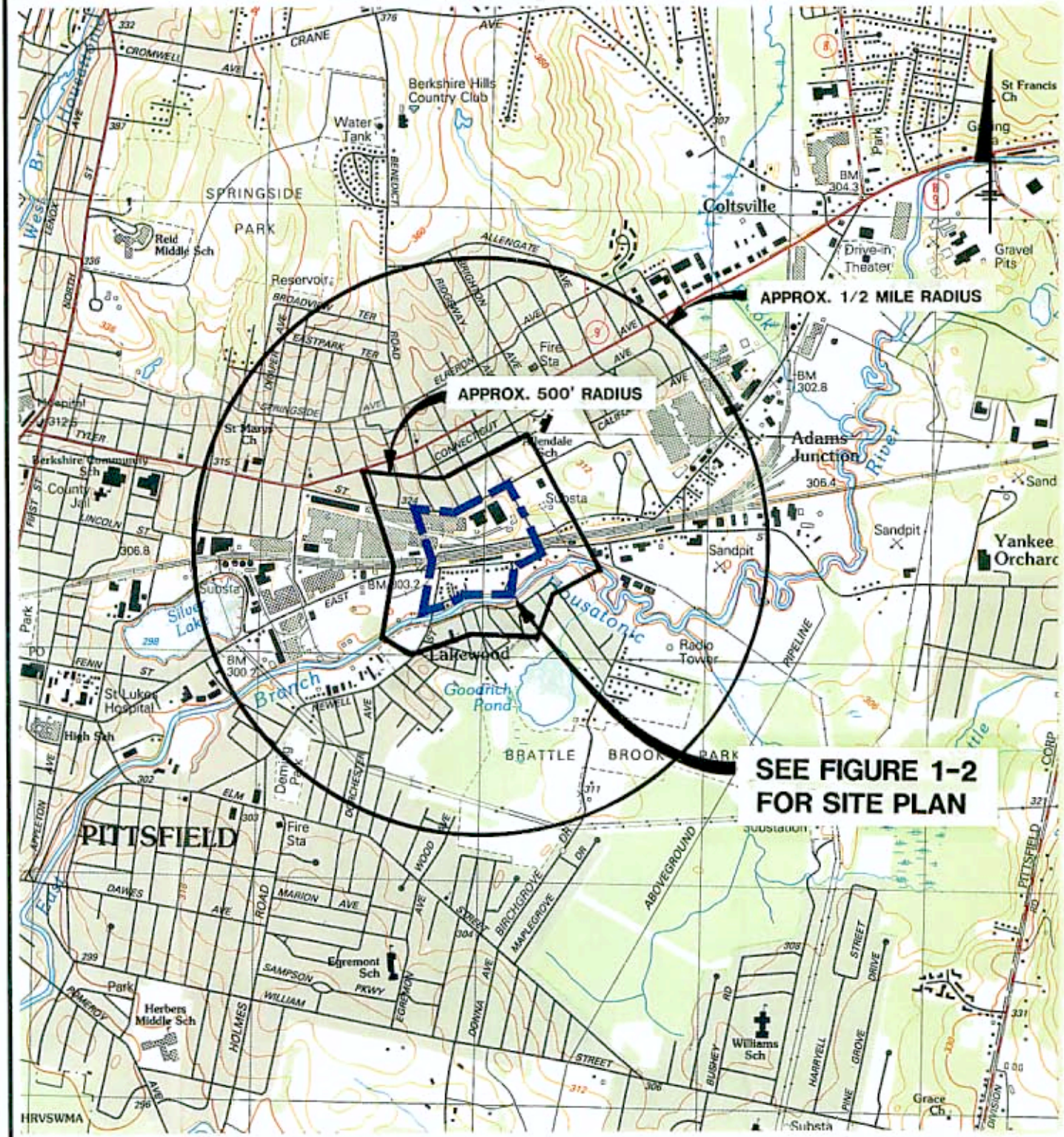
Notes:

1. Summary includes all organic compounds detected in soils, oil, or groundwater above the quantitation limit.
2. Value was measured at 25°C unless noted.
3. * = Indicates an estimated value.

References:

Howard, 1989, 1990, 1991
ASTDR for the chemical
CHEMFATE, 1989
Verchuren, 1982
Hansch and Leo, 1985
Mackay and Shui, 1981
Hartley and Kidd, 1983
USEPA, 1980

Figures

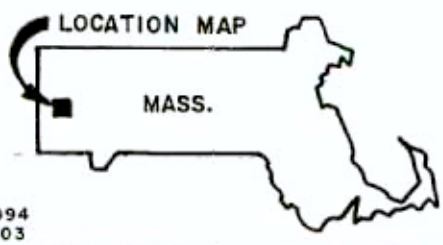


REFERENCE: PITTSFIELD EAST, MASS. QUAD. USGS 1988

2000' 0 2000'

APPROX. SCALE: 1" = 2000'

LOCATION MAP



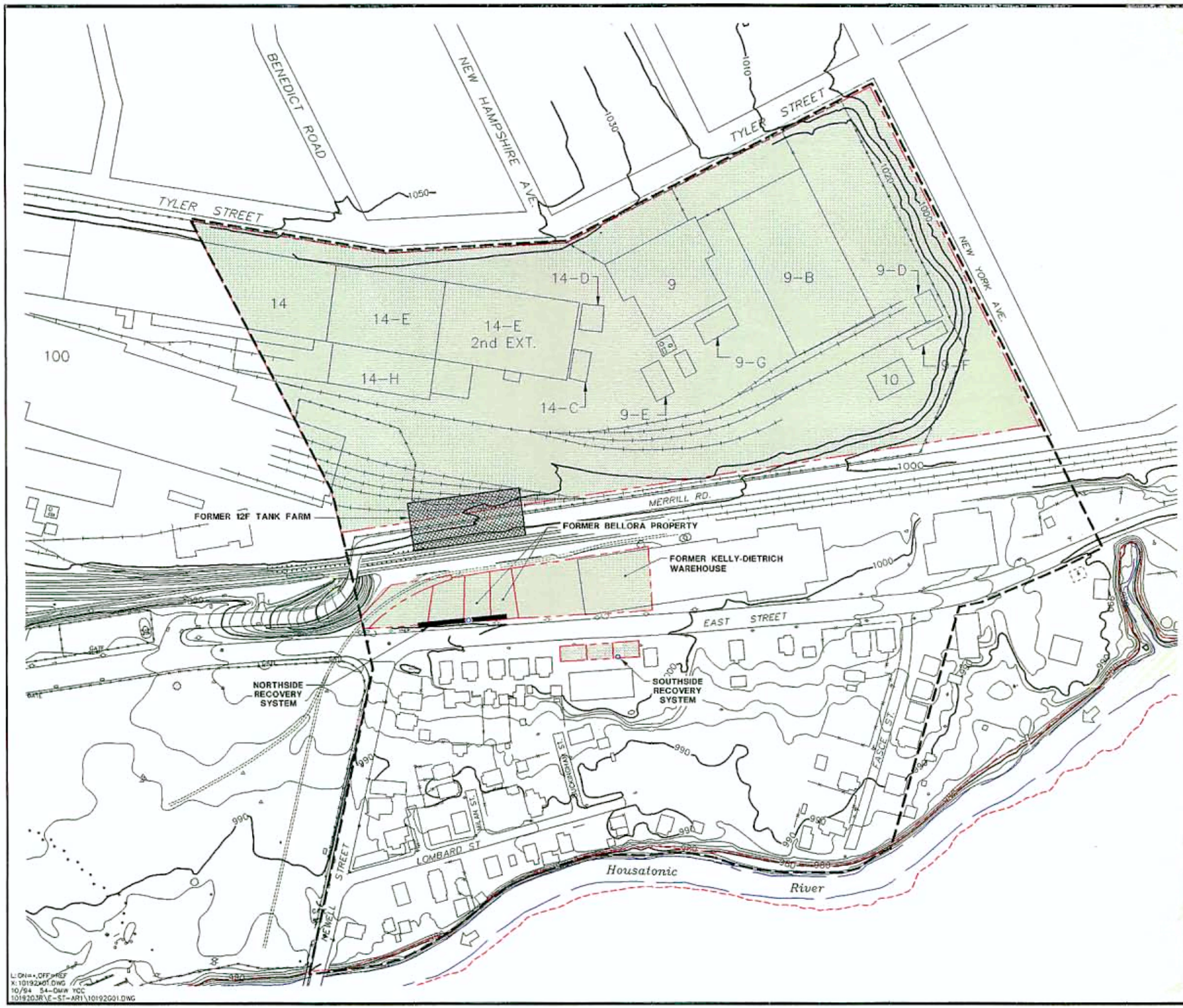
JULY, 1994
101.92.03

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

GENERAL ELECTRIC COMPANY • PITTSFIELD, MASSACHUSETTS
MCP INTERIM PHASE II REPORT
AND CURRENT ASSESSMENT SUMMARY FOR
EAST STREET AREA 1 / USEPA AREA 3

LOCATION PLAN

FIGURE
1-1



LEGEND:

- SITE BOUNDARY
- 1000 ELEVATION CONTOUR
- FENCE LINE
- 10-YEAR FLOODPLAIN
- APPROXIMATE PARCEL BOUNDARY FOR GE PROPERTIES
- SITE PROPERTY CURRENTLY OWNED BY GENERAL ELECTRIC CO.
- OIL RECOVERY CAISSON

0' 200' 400'

APPROXIMATE SCALE: 1" = 200'

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN. ALSO, TOPOGRAPHIC INFORMATION IS NOT AVAILABLE FOR ENTIRE SITE.
3. SITE BOUNDARY IS APPROXIMATE.
4. THE LIMIT OF FLOODPLAIN REPRESENTS THE APPROXIMATE 10-YEAR FLOODPLAIN. DELINEATION OF 10-YEAR FLOODPLAIN IS BASED ON HEC-2 HYDRAULIC MODELING PERFORMED BY BLASLAND AND BOUCK ENGINEERS, P.C. (1991) AND AVAILABLE TOPOGRAPHIC MAPPING.

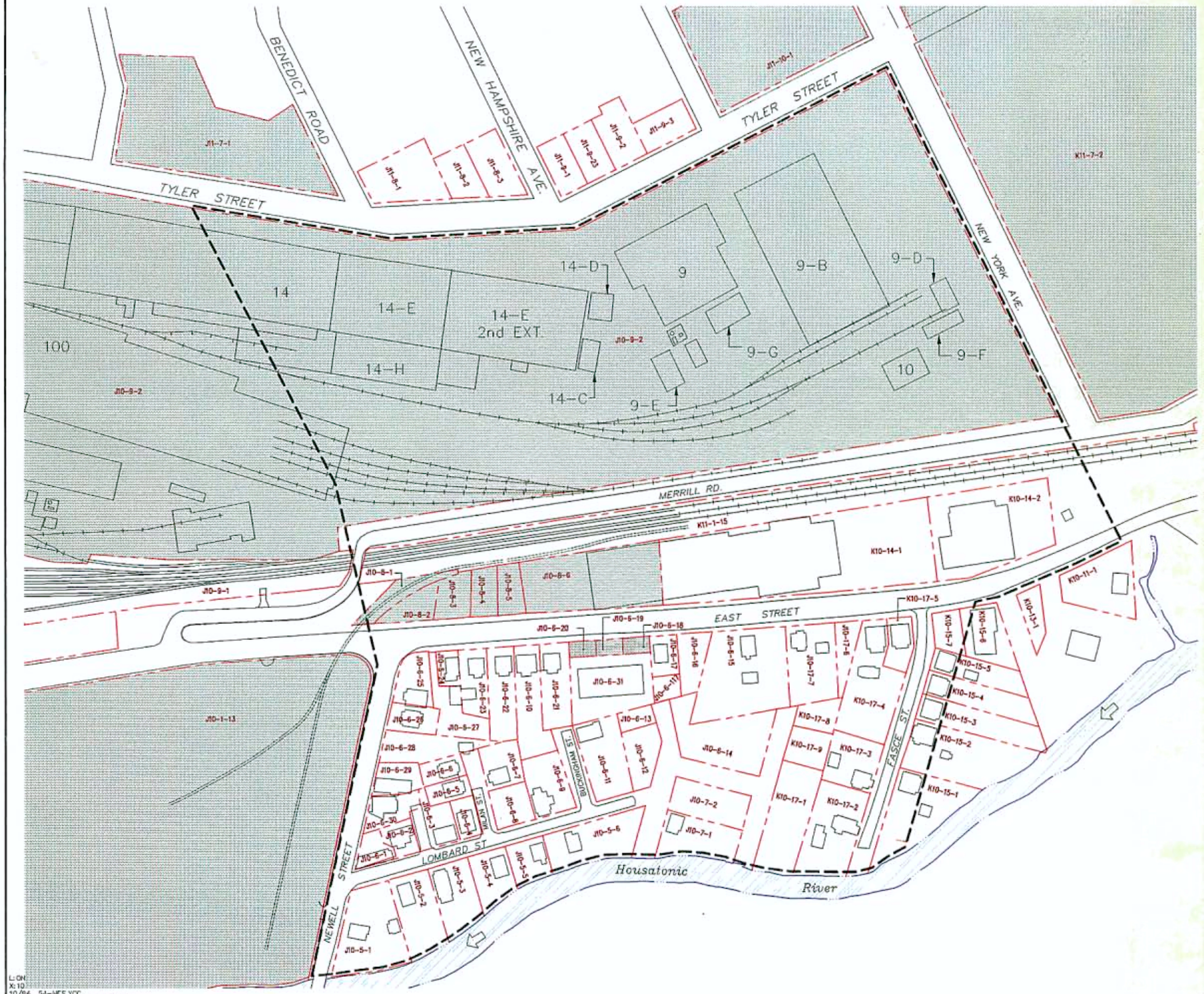
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

SITE PLAN

FIGURE **1-2**

L:\ON=*;OFF=REF
X:\1019\2\01.DWG
10/94 54-DMW YCC
1019203R\E-ST-AR1\10192G01.DWG



LEGEND:

- SITE BOUNDARY
- APPROXIMATE PARCEL BOUNDARY
- J11-7-1 TAX ASSESSORS' PARCEL IDENTIFICATION NUMBER
- PROPERTY CURRENTLY OWNED BY GENERAL ELECTRIC CO.

0' 200' 400'

APPROXIMATE SCALE: 1" = 200'

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. PARCEL BOUNDARY INFORMATION OBTAINED FROM CITY OF PITTSFIELD TAX ASSESORS' OFFICE AND IS CURRENT THROUGH DECEMBER 31, 1991.

BLASLAND, BOUCK & LEE, INC.
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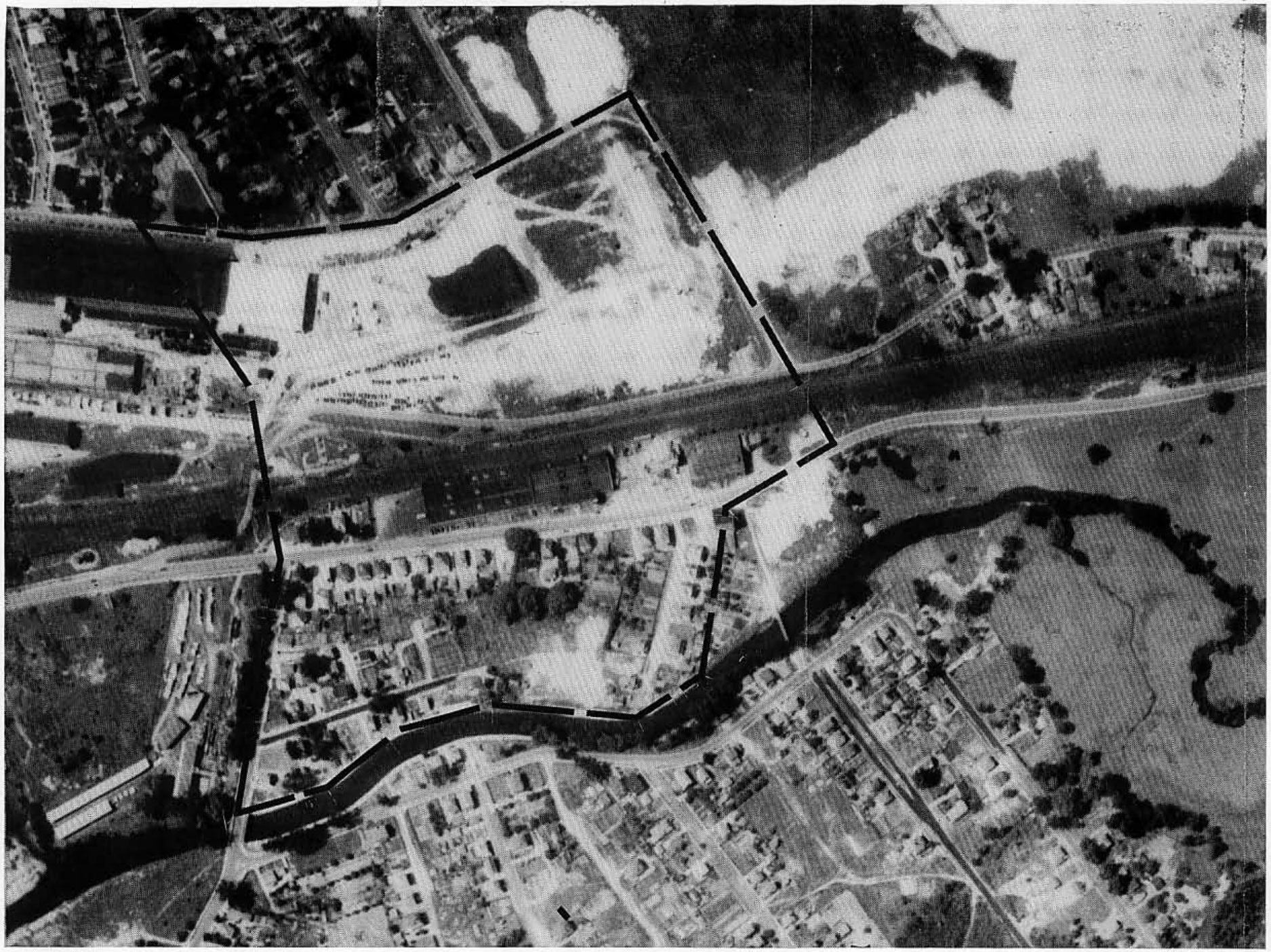
GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF ADJACENT PROPERTY OWNERS

FIGURE 2-1

L: ON
X: 10
10/94 54-MES,YCC
10192G3R\E--ST--AR1\10192G02.DWG



LEGEND

APPROXIMATE SITE BOUNDARY

260' 0 260'

APPROX. SCALE: 1" = 260'

NOTE: AERIAL PHOTOGRAPH WAS TAKEN ON JULY 13, 1942

AUG. 1994 JVM
101.92.03

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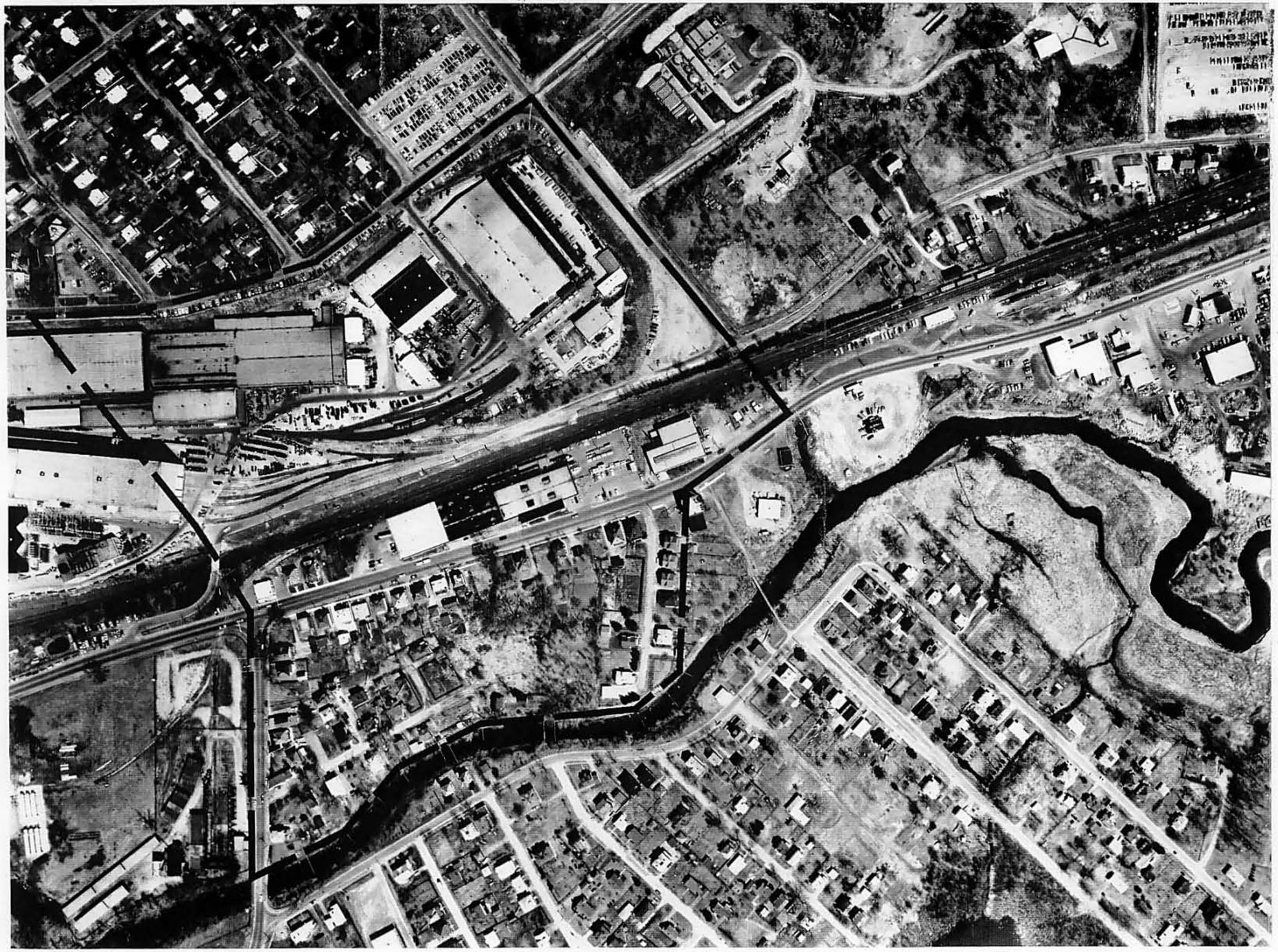
MCP INTERIM PHASE II REPORT / CAS FOR EAST STREET AREA 1 / USEPA AREA 3

1942 AERIAL PHOTOGRAPH

FIGURE 2-2



LEGEND

APPROXIMATE SITE BOUNDARY

260' 0 260'

APPROX. SCALE: 1" = 260'

NOTE: AERIAL PHOTOGRAPH WAS TAKEN ON APRIL 14, 1969

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MCP INTERIM PHASE II REPORT / CAS FOR EAST STREET AREA 1/USEPA AREA 3

1969 AERIAL PHOTOGRAPH

FIGURE 2-3

LEGEND

APPROXIMATE SITE BOUNDARY

260' 0 260'

APPROX. SCALE: 1" = 260'

NOTE: AERIAL PHOTOGRAPH WAS TAKEN ON APRIL 23, 1990

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101.92.03

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MCP INTERIM PHASE II REPORT / CAS FOR EAST STREET AREA 1/ USEPA AREA 3

1990 AERIAL PHOTOGRAPH

FIGURE 2-4

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. EXTENT OF VARIOUS SURFACE COVER LIMITS ARE APPROXIMATE
5. ONLY FENCING RELATED TO GE OWNED PROPERTY IS SHOWN.
6. NOT ALL PAVEMENT LIMITS ARE SHOWN SOUTH OF EAST STREET.

L: ON=*;OFF=REF,LTP210,LTP220,SYM900
X:\1019\2\D1.DWG
10/94 54-D\W YCC
1019203R\E-ST-AR1\1019207.DWG

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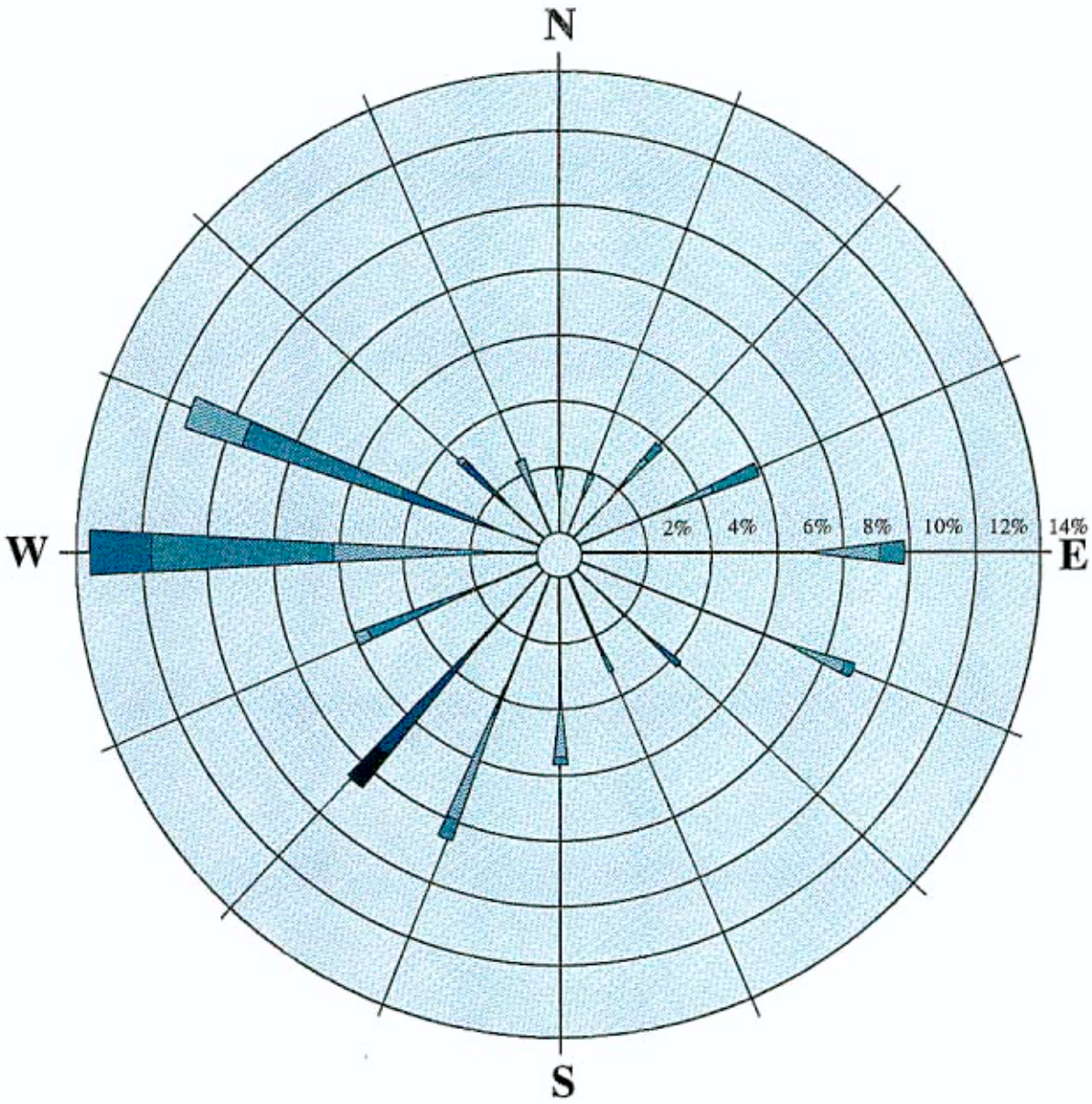
GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

SURFACE COVER MAP

FIGURE
2-5



WIND SPEED (KNOTS)

NOTES:

1. INFORMATION WAS COLLECTED BY ZOREX ENVIRONMENTAL ENGINEERS, INC., DURING JANUARY 1 THROUGH DECEMBER 31, 1992 FROM A METEOROLOGICAL STATION LOCATED IN EAST STREET AREA 2/USEPA AREA 4.
2. FREQUENCIES INDICATE DIRECTION FROM WHICH THE WIND IS BLOWING.
3. CALM WINDS 2.94%.

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

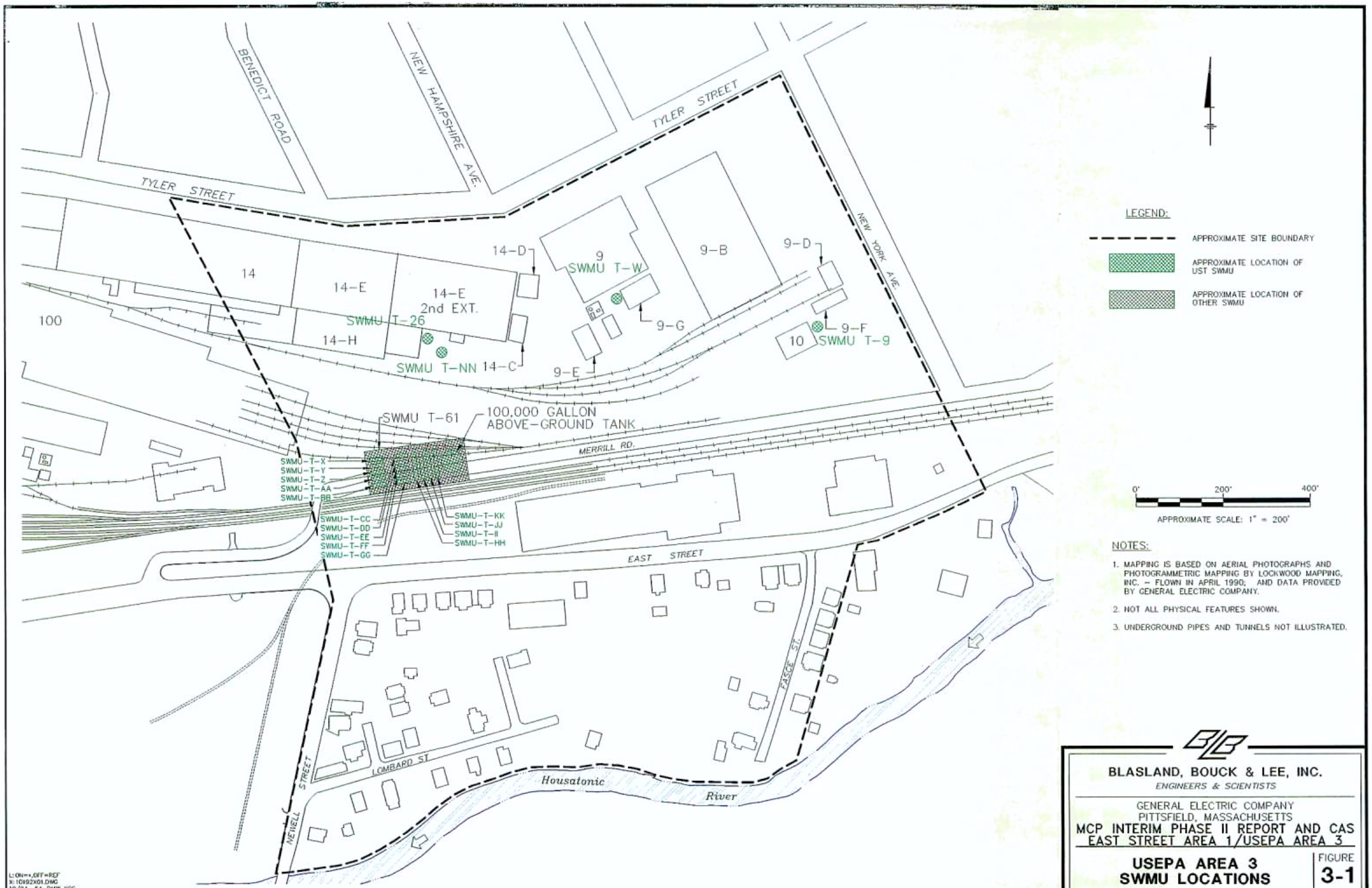
GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT/CAS FOR EAST STREET AREA 1/USEPA AREA 3

1992 WIND ROSE

FIGURE 2-6

7/94 54-DJH
10192032/10192G01.CDR



NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. UNDERGROUND PIPES AND TUNNELS NOT ILLUSTRATED.

L:ON=*,OFF=REF
X:\1019203\X01.DWG
10/94 54-DMW YCC
1019203R\E-ST-AR1\10192G03.DWG

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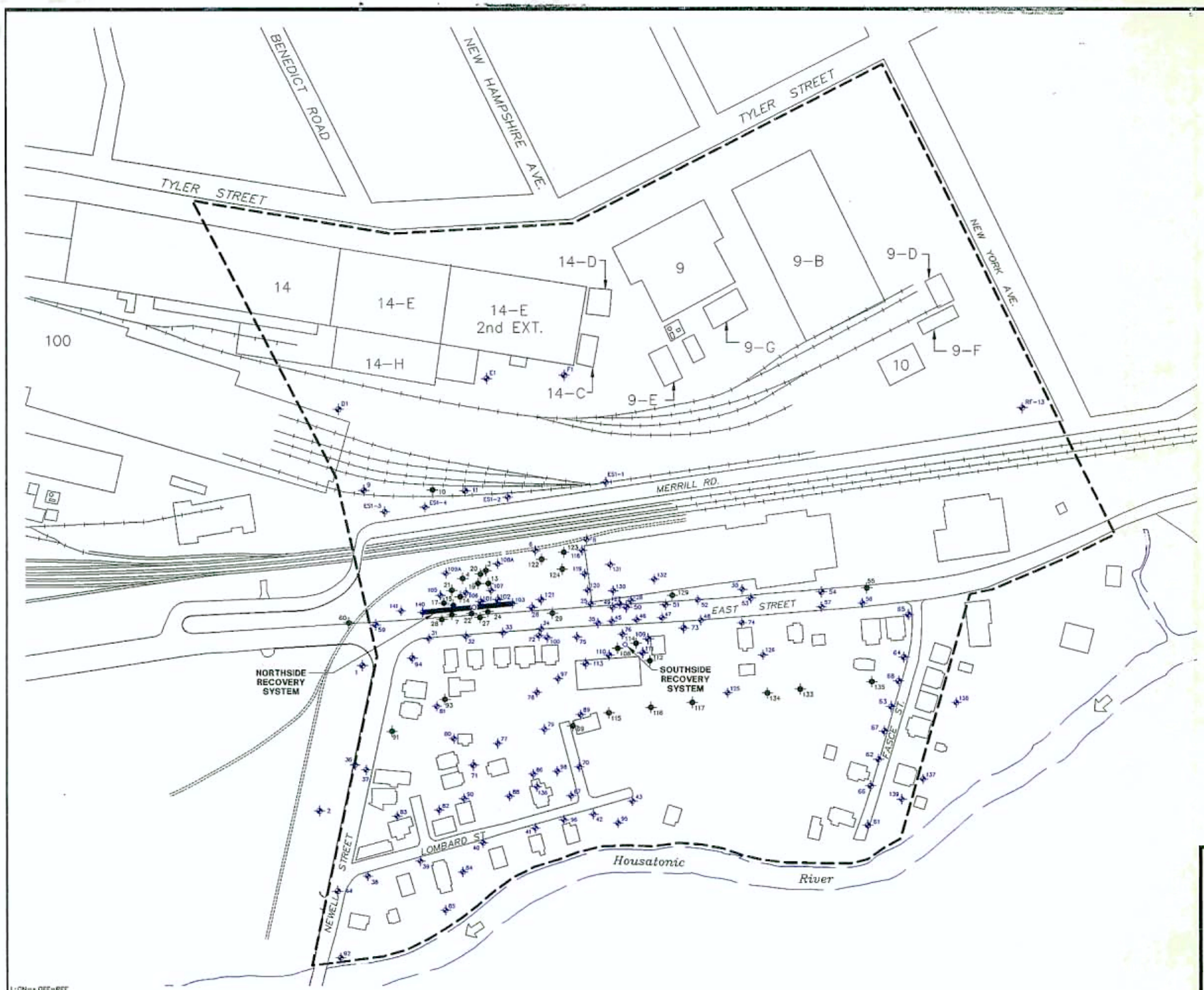
GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

USEPA AREA 3
SWMU LOCATIONS

FIGURE
3-1



LEGEND:

- APPROXIMATE SITE BOUNDARY
- MONITORING WELL
- OIL RECOVERY CAISSON
- ABANDONED MONITORING WELL

0' 200' 400'

APPROXIMATE SCALE: 1" = 200'

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. ALL BORING/WELL LOCATIONS ARE APPROXIMATE.

L:ON=*,OFF=REF
X:\10192X01.DWG
10/94 54-NES, YCC
10192003R\E-ST-AR1\10192006.DWG

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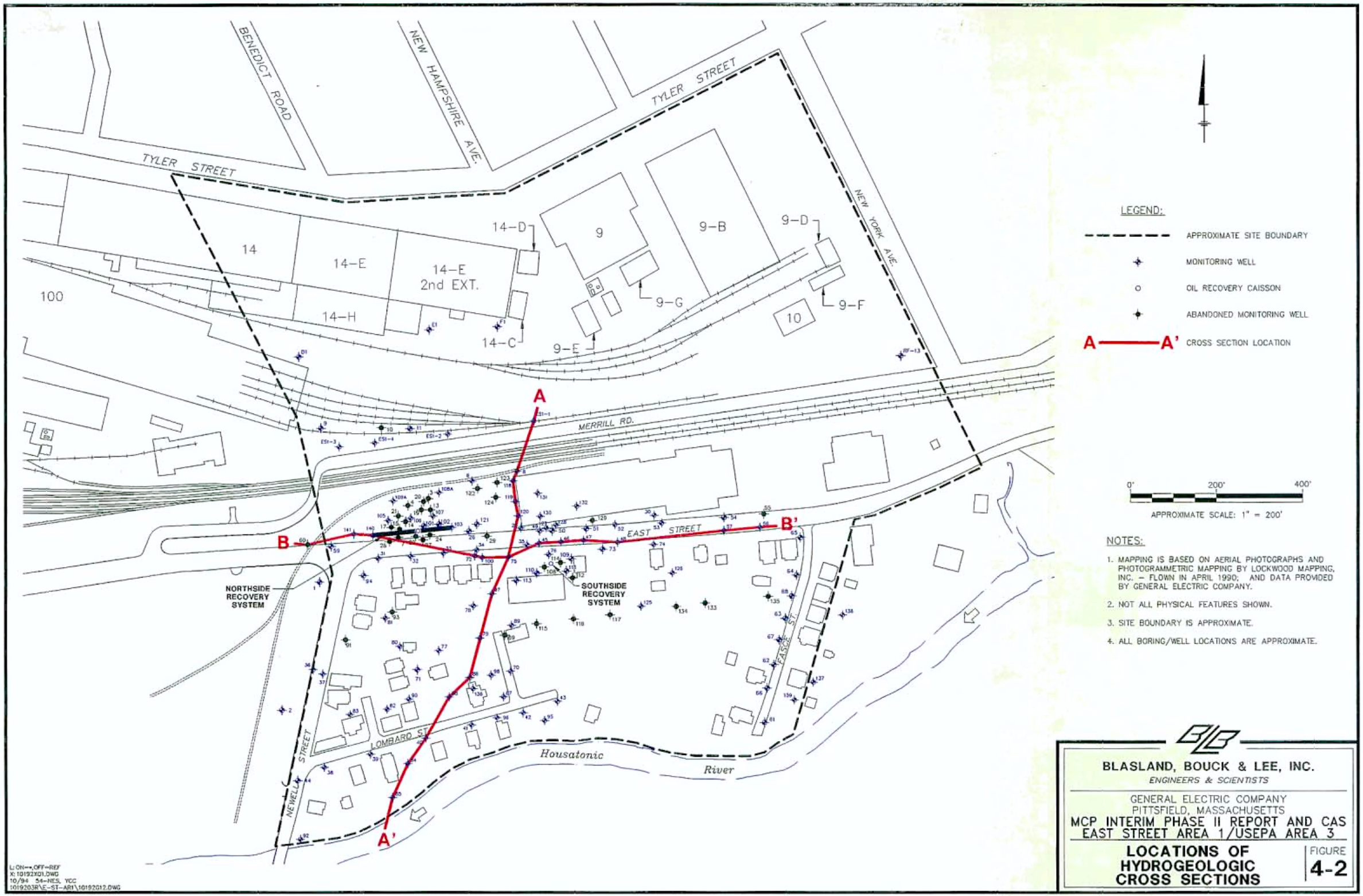
PITTSFIELD, MASSACHUSETTS
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

SOIL BORING AND MONITORING WELL LOCATION MAP

FIGURE **4-1**



NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. ALL BORING/WELL LOCATIONS ARE APPROXIMATE.

L: ON=*,OFF=REF
X: 10192X01.DWG
10/94 54-NES, YCC
1019203R\E-ST-AR1\10192G12.DWG

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MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

LOCATIONS OF HYDROGEOLOGIC CROSS SECTIONS

FIGURE **4-2**

NORTH

A

SOUTH

A'

ELEVATION IN FEET

1020
1010
1000
990
980
970
960
950

ES1-1
8
118
119
120
75
97
79
86
88
84
85

GEOLOGIC CROSS SECTION B-B'

HOUSATONIC RIVER

LEGEND

75 — WELL NUMBER

MONITORING WELL

CORRECTED WATER TABLE (APRIL 1994)

APPROXIMATE SCREENED INTERVAL

BOTTOM OF BORING

FILL

SILT

SAND

SAND & SILT

SAND, SILT & GRAVEL

TILL

NOTES:

1. LOCATION OF CROSS SECTION ILLUSTRATED ON FIGURE 4-2.
2. LITHOLOGIC DESCRIPTIONS BASED ON GERAGHTY & MILLER, INC. SUBSURFACE LOGS.
3. GROUND SURFACE ELEVATIONS ARE APPROXIMATE.

0 100' 200'

APPROXIMATE HORIZONTAL SCALE 1" = 100'

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EAST STREET AREA 1/USEPA AREA 3

GEOLOGIC CROSS SECTION A-A'

FIGURE **4-3**

9/13/94 SA-DMW
1019302R\E-ST-AR1\10192CSA.DWG

WEST

B

EAST

B'

GEOLOGIC CROSS SECTION A-A'

ELEVATION IN FEET

1020
1010
1000
990
980
970
960

60 140 72 75 45 46 48 57 56

LEGEND

75 — WELL NUMBER

MONITORING WELL

CORRECTED WATER TABLE (APRIL 1994)

APPROXIMATE SCREENED INTERVAL

BOTTOM OF BORING

FILL

SILT

SAND

SAND & SILT

SAND, SILT & GRAVEL

NOTES:

1. LOCATION OF CROSS SECTION ILLUSTRATED ON FIGURE 4-2.
2. LITHOLOGIC DESCRIPTIONS BASED ON GERAGHTY & MILLER, INC. SUBSURFACE LOGS.
3. GROUND SURFACE ELEVATIONS ARE APPROXIMATE.

0 100' 200'

APPROXIMATE HORIZONTAL SCALE 1" = 100'

8/18/94 SA-DMW
1019302R\E-ST-AR1\1019CSB.DWG

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EAST STREET AREA 1/USEPA AREA 3

GEOLOGIC CROSS SECTION B-B"

FIGURE **4-4**

MERRILL RD.

EAST STREET

LOMBARD ST.

NEWELL STREET

FASCE ST.

Housatonic River

NORTHSIDE RECOVERY SYSTEM

984'

982'

980'

978'

976'

974'

972'

970'

968'

LEGEND:

- MONITORING WELL INCLUDED IN THE OCTOBER 1983 MONITORING EVENT
- OTHER EXISTING MONITORING WELL
- ABANDONED MONITORING WELL
- OIL RECOVERY CAISSON
- 980' — GROUNDWATER ELEVATION CONTOUR (10 FT INTERVAL)
- 982' — GROUNDWATER ELEVATION CONTOUR (2 FT INTERVAL)
- GROUNDWATER FLOW DIRECTION

0' 120' 240'

APPROXIMATE SCALE: 1" = 120"

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. — FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. WELL LOCATIONS ARE APPROXIMATE.
4. BASE MAP REFLECTS SITE CONDITIONS AS OF APRIL 1990.

X:\10192\X01.DWG, 10192X03.DWG
8/94 54-DMW NES YCC
10192\03R/E-ST-AR1/10192G08.DWG

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MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

GROUNDWATER ELEVATION CONTOUR MAP OCTOBER 1983

FIGURE **4-5**

MERRILL RD.

EAST STREET

LOMBARD ST.

NEWELL STREET

FASCE ST.

Housatonic River

NORTHSIDE RECOVERY SYSTEM

SOUTHSIDE RECOVERY SYSTEM

1008'
1006'
1004'
1002'
1000'
998'
996'
994'
992'
990'
988'
986'
984'
982'
980'
978'

LEGEND:

- MONITORING WELL INCLUDED IN THE OCTOBER 1989 MONITORING EVENT
- OTHER EXISTING MONITORING WELL
- ABANDONED MONITORING WELL
- OIL RECOVERY CAISSON
- 980' GROUNDWATER ELEVATION CONTOUR (10 FT INTERVAL),
- 982' GROUNDWATER ELEVATION CONTOUR (2 FT INTERVAL),
- GROUNDWATER FLOW DIRECTION

0' 120' 240'

APPROXIMATE SCALE: 1" = 120"

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. - FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. WELL LOCATIONS ARE APPROXIMATE.
4. BASE MAP REFLECTS SITE CONDITIONS AS OF APRIL 1990.

X:\10192\X01.DWG, 10192X04.DWG
9/94 S4-DWW
1019203R/E-ST-AR1/10192G09.DWG

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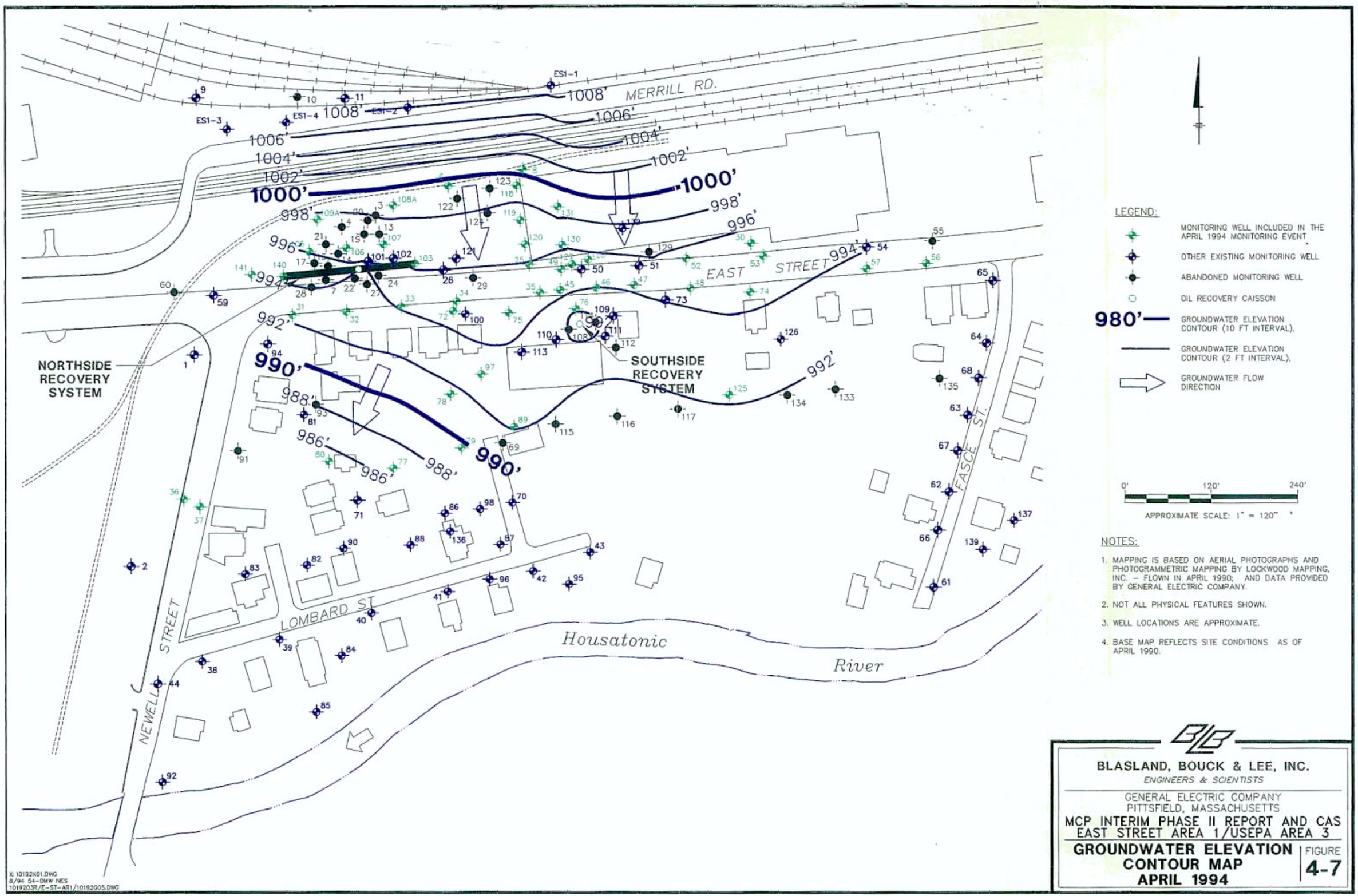
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

GROUNDWATER ELEVATION CONTOUR MAP OCTOBER 1989

FIGURE **4-6**



NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. WELL LOCATIONS ARE APPROXIMATE.
4. BASE MAP REFLECTS SITE CONDITIONS AS OF APRIL 1990.

X: 10192X01.DWG
8/94 SA-DMW NES
1019203R/E-ST-AR1/10192G05.DWG

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MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

GROUNDWATER ELEVATION CONTOUR MAP APRIL 1994

FIGURE **4-7**

LEGEND:

- MONITORING WELL INCLUDED IN THE OCTOBER 1983 MONITORING EVENT
- OTHER EXISTING MONITORING WELL
- ABANDONED MONITORING WELL
- OIL RECOVERY CAISSON
- <0.01' OIL THICKNESS
- 0.01'–0.8' OIL THICKNESS
- >0.8' OIL THICKNESS

0' 120' 240'

APPROXIMATE SCALE: 1" = 120"

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. WELL LOCATIONS ARE APPROXIMATE.
4. BASE MAP REFLECTS SITE CONDITIONS AS OF APRIL 1990.
5. PLUME LIMITS DELINEATION BASED ON INFORMATION PRESENTED BY GERAGHTY & MILLER, JANUARY 1984.

X:\10192\D01.DWG, 10192X03.DWG
9/94 S4-NES.DWG
10192\3R/E-ST-AR1/10192G10.DWG

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GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

OIL PLUME MAP
OCTOBER 1983

FIGURE
4-8

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. — FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. WELL LOCATIONS ARE APPROXIMATE.
4. BASE MAP REFLECTS SITE CONDITIONS AS OF APRIL 1990.
5. PLUME LIMITS DELINEATION BASED ON INFORMATION PRESENTED BY GROUNDWATER TECHNOLOGY, INC., DECEMBER, 1989.

X:\10192\D01.DWG, 10192X04.DWG
9/94 54-NES.DWG
10192\SW\E-ST-AR1\10192G11.DWG

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MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

OIL PLUME MAP
OCTOBER 1989

FIGURE
4-9

FORMER 12F TANK FARM

MERRILL RD.

EAST STREET

LOMBARD ST.

NEWELL STREET

FASCE ST.

Housatonic River

NORTHSIDE RECOVERY SYSTEM

SOUTHSIDE RECOVERY SYSTEM

LEGEND:

- MONITORING WELL INCLUDED IN THE APRIL 1994 MONITORING EVENT
- OTHER EXISTING MONITORING WELL
- ABANDONED MONITORING WELL
- OIL RECOVERY CAISSON
- 0.01 – 0.8' OIL THICKNESS
- > 0.8' OIL THICKNESS

0' 120' 240'

APPROXIMATE SCALE: 1" = 120'

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. WELL LOCATIONS ARE APPROXIMATE.
4. BASE MAP REFLECTS SITE CONDITIONS AS OF APRIL 1990.
5. APPARENT OIL THICKNESS CONTOURS BASED ON LOG-LINEAR INTERPRETATION OF DATA (ND IS ASSUMED TO BE 0.000001 FT).

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MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

OIL PLUME MAP
APRIL 1994

FIGURE
4-10

X:\1019ZX01.DWG
9/94 54-NES DMW
1019203R\E-ST-AR1\1019ZG04.DWG

MERRILL RD.

EAST STREET

FORMER BERKSHIRE AUTO PARTS

FORMER BELLORA PROPERTY

FORMER MARCHISIO PROPERTY

FORMER KELLY-DIETRICH WAREHOUSE

1215 1217 1229 1231

1224 1226 1228 1230 1232 1238 1244 1246 1250 1252 1254 1256 1260 1264

1274 1282 1294 1296 1300 1302

402 404 398 234 1236

NEWELL STREET

BUCKINGHAM ST.

MILAN ST.

FASCE ST.

LOMBARD ST

13 15 21 4 16 18 7 390 386 388 382 (?) 9 378 19 15 17 21 42 34 28 30 14 16 8 368 368 1/2

1 3 5 7 9 11 15 24 21 23 34 48

Housatonic River

LEGEND:

APPROXIMATE LOCATION & SIZE OF BUILDING PURCHASED AND DEMOLISHED BY GE PRIOR TO OR DURING 1980

APPROXIMATE LOCATION & SIZE OF BUILDING PURCHASED AND DEMOLISHED BY GE AFTER 1980

0' 120' 240'

APPROXIMATE SCALE: 1" = 120'

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. PRIOR BUILDING STRUCTURES WERE LOCATED USING AERIAL PHOTOGRAPHS DATED JULY 3, 1960.
4. 1306-08 EAST STREET NOT ILLUSTRATED.

X:\10192\02.DWG
10/12/94 SA-YCC AK
1019203R\E-ST-AR1\10192D01.DWG

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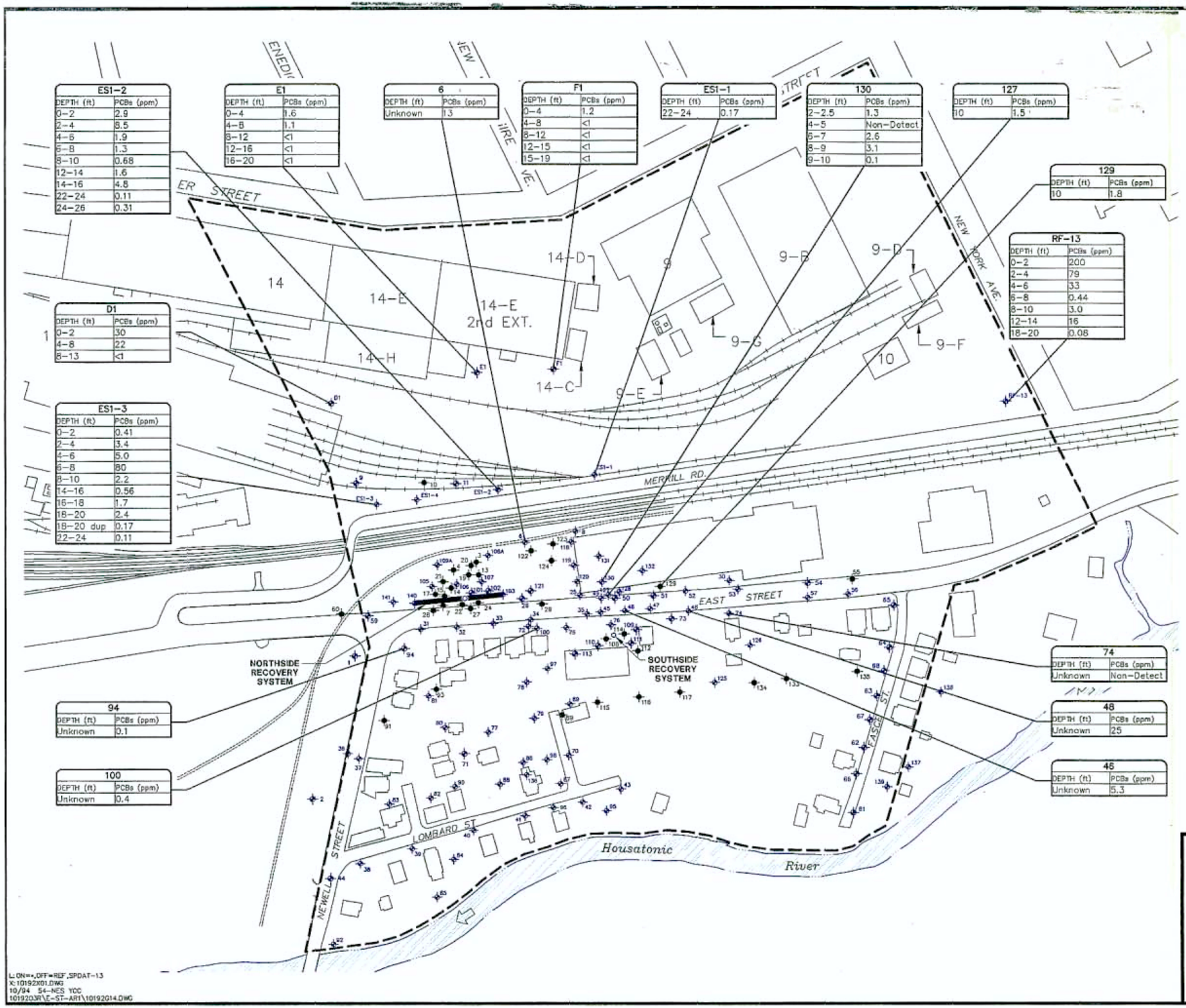
PITTSFIELD, MASSACHUSETTS
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

ADDRESS LOCATION MAP FOR 1980 BASEMENT & GARDEN SAMPLING

FIGURE **4-11**



NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. ALL BORING/WELL LOCATIONS ARE APPROXIMATE.
5. BOTH PRE-MCP AND MCP PCB DATA ARE SUMMARIZED. DATA ARE PRESENTED IN DRY WEIGHT PARTS PER MILLION (PPM).
6. REFER TO FIGURE 4-13 FOR ADDITIONAL SOIL PCB DATA.
7. THE "LESS THAN" (<) SYMBOL BEFORE A NUMBER INDICATES THAT THE VALUE REPORTED IS THE LIMIT OF RESOLUTION FOR QUANTIFICATION. THE LABORATORY DETECTED THE COMPOUND IN THE SAMPLE, BUT WAS UNABLE TO QUANTIFY IT BELOW THE VALUE INDICATED.
8. ND = COMPOUND WAS ANALYZED, BUT NOT DETECTED.

L:ON=*,OFF=REF,SPDAT=13
X:10192X01.DWG
10/94 S4-NCS YCC
10192G3R\E-ST-AR1\10192G14.DWG

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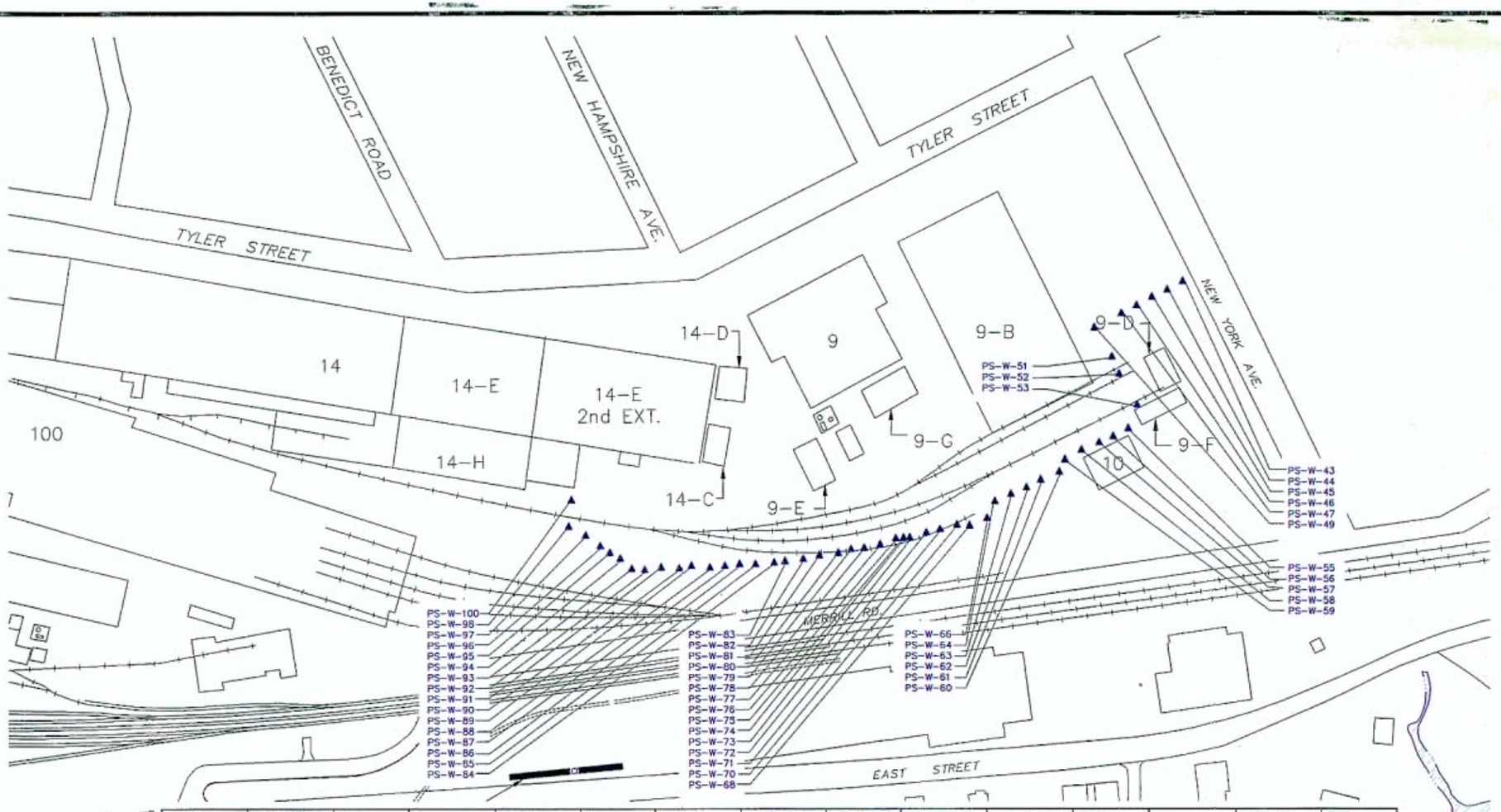
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

MONITORING WELL & SOIL BORING PCB DATA

FIGURE **4-12**



LEGEND:

▲ SOIL BORING

0' 200' 400'

APPROXIMATE SCALE: 1" = 200'

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. ALL BORING LOCATIONS ARE APPROXIMATE.
5. DATA ARE PRESENTED IN DRY WEIGHT PARTS PER MILLION (PPM).
6. ND = COMPOUND WAS ANALYZED, BUT NOT DETECTED.
7. LOCATION PS-W-54 NOT ILLUSTRATED.

Sample ID	Sample Depth (ft)	PCBs (ppm)
PS-W-43	0-4	3.3
PS-W-44	0-4	11
PS-W-45	0-2	10
	2-6	87
	6-10	8.5
PS-W-46	0-2	100
	2-6	4.4
	6-10	7.5
PS-W-47	0-2	79
	2-6	7,100
	6-10	14,000
PS-W-49	0-2	1.8
	2-6	49
	6-10	27
PS-W-51	0-2	0.5
	2-6	3.6
	6-10	0.63
PS-W-52	0-2	47
	2-6	14
	6-10	4.3
	10-14	5.0
PS-W-53	0-2	8.5
	2-6	5,500
	6-10	800
PS-W-54	0-2	5.3
	2-6	700
	6-10	53
PS-W-55	0-2	14
	2-6	1,000
	6-10	4.6

Sample ID	Sample Depth (ft)	PCBs (ppm)
PS-W-56	0-2	1.2
	2-6	5.8
	6-10	4.6
PS-W-57	0-2	40
	2-6	0.86
	6-10	0.09
PS-W-58	0-2	1.4
	2-6	0.14
	6-10	1.2
PS-W-59	0-2	7.8
	2-6	0.2
	6-10	0.6
PS-W-60	0-2	ND
	2-6	0.13
	6-10	0.09
	10-14	0.09
PS-W-61	0-2	ND
	4-6	ND
	6-10	ND
PS-W-62	0-2	0.34
	2-6	ND
	6-10	0.26
PS-W-63	0-2	ND
	2-6	0.15
	6-10	0.09
PS-W-64	0-2	ND
	2-6	0.09
	6-10	ND

Sample ID	Sample Depth (ft)	PCBs (ppm)
PS-W-66	0-4	ND
	4-8	ND
	8-12	ND
PS-W-68	0-4	ND
	4-8	ND
	8-12	ND
PS-W-70	0-2	ND
	2-6	ND
	6-10	ND
PS-W-71	0-2	ND
	2-6	0.05
	6-10	ND
PS-W-72	0-2	0.44
	2-6	0.12
	6-10	ND
PS-W-73	0-2	ND
	2-6	0.27
	6-10	0.05
PS-W-74	0-2	ND
	2-6	ND
	6-10	ND
	10-14	ND
PS-W-75	0-2	ND
	2-6	0.42
	6-10	ND
PS-W-76	0-2	ND
	2-6	ND
	6-10	ND

Sample ID	Sample Depth (ft)	PCBs (ppm)
PS-W-77	0-2	ND
	2-6	ND
	6-10	ND
PS-W-78	0-2	0.57
	2-6	0.13
	6-10	0.16
PS-W-79	4-6	0.22
	6-10	4.6
PS-W-80	2-6	0.24
	6-10	0.79
PS-W-81	0-2	7.0
	2-8	0.89
	8-10	ND
PS-W-82	2-4	1.7
	4-8	0.68
	8-10	ND
PS-W-83	2-6	0.60
	6-10	ND
PS-W-84	2-6	0.18
	6-10	ND
PS-W-85	2-6	0.78
	6-10	0.14
PS-W-86	2-6	2.1
	6-10	ND
PS-W-87	2-6	0.52
	6-10	ND
PS-W-88	2-6	0.52
	6-9	1.6
PS-W-89	0-2	30
	2-6	4.2
	6-10	1.0

Sample ID	Sample Depth (ft)	PCBs (ppm)
PS-W-90	0-2	1,400
	2-6	36
	6-10	68
	10-14	68
PS-W-91	0-2	57
	2-6	6.7
	6-10	1.2
PS-W-92	0-2	4.5
	2-6	0.58
	6-10	0.24
PS-W-93	0-2	14
	2-6	1.4
	6-10	4.3
PS-W-94	0-2	160
	2-6	1.7
	6-10	1.8
PS-W-95	0-2	1,500
	2-6	200
	6-10	32
PS-W-96	0-2	540
	2-6	36
	6-10	110
PS-W-97	0-2	160
	2-6	0.54
	6-10	1.5
PS-W-98	0-2	8.6
	2-6	0.11
	6-10	0.21
	10-14	0.06
PS-W-100	0-2	6.9
	2-6	2.2
	6-10	3.3

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

ALTRESCO STEAMLINE SOIL BORING LOCATIONS AND PCB DATA

FIGURE **4-13**

L:ON=*;OFF=REF
X:10192X01.DWG
10/94 54-NES YCC
1019203R\E-ST-AR1\10192015.DWG

ES1-2	
ANALYTE	CONC.(ppm)
Cyanide	0.0103
Calcium	55
Iron	0.14
Lead	0.0081
Magnesium	16
Manganese	0.077
Sodium	130
Zinc	0.057

E-1	
ANALYTE	CONC.(ppm)
Copper	0.02
Zinc	0.046
Phenols	0.03

F-1	
ANALYTE	CONC.(ppm)
Copper	0.02
Silver	0.010
Zinc	0.083
Phenols	0.03

ES1-1	
ANALYTE	CONC.(ppm)
Calcium	37
Lead	0.0051
Magnesium	16
Manganese	0.089
Sodium	83

RF-13	
ANALYTE	CONC.(ppm)
1,2-dichloroethene	0.13
Trichloroethene	0.14
Calcium	246
Magnesium	53.4
Manganese	3.55
Potassium	6.5
Sodium	290
Zinc	0.0261

ES1-4	
ANALYTE	CONC.(ppm)
Chlorobenzene	0.006
1,3-dichlorobenzene	0.087
1,4-dichlorobenzene	0.016
1,2,4-trichlarobenze	0.045
Calcium	44
Iron	0.16
Magnesium	18
Manganese	0.096
Sodium	320

ES1-3	
ANALYTE	CONC.(ppm)
Aroclar 1254	0.00076
Calcium	82
Lead	0.0098
Magnesium	41
Manganese	0.083
Potassium	5.4
Sodium	100
Zinc	0.029

ES1-3 DUP	
ANALYTE	CONC.(ppm)
Aroclor 1260	0.0013
Calcium	84
Lead	0.0077
Magnesium	41
Manganese	0.091
Potassium	5.3
Sodium	100
Zinc	0.14

NORTHSIDE CAISSON	
ANALYTE	CONC.(ppm)
Toluene	0.009
Aluminum	0.25
Calcium	100
Iron	19
Magnesium	25
Manganese	1.9
Sodium	100
Zinc	0.16

SOUTHSIDE CAISSON	
ANALYTE	CONC.(ppm)
1,4-dichlorobenzene	0.012
Aluminum	0.40
Calcium	53
Iron	6.4
Lead	0.0068
Magnesium	9.1
Manganese	0.87
Potassium	8.1
Sodium	260
Zinc	0.055

TYLER STREET
ENEDIC'
AVE.
STREET
NEW YORK AVE.
14
14-D
14-E
14-E 2nd EXT.
14-H
14-C
9
9-B
9-D
9-G
9-E
9-F
10
MERRILL RD.
EAST STREET
FASCE ST.
LOMBARD ST.
NEWELL STREET
NORTHSIDE RECOVERY SYSTEM
SOUTHSIDE RECOVERY SYSTEM
Housatonic River

LEGEND:

- APPROXIMATE SITE BOUNDARY
- MONITORING WELL MOINTORED AS PART OF MCP PHASE II ACTIVITIES
- OIL RECOVERY CASSION MONITORED AS PART OF MCP PHASE II ACTIVITIES
- OTHER EXISTING MONITORING WELLS
- ABANDONED MONITORING WELL

0' 200' 400'

APPROXIMATE SCALE: 1" = 200'

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. ALL BORING/WELL LOCATIONS ARE APPROXIMATE.
5. DATA SUMMARY INCLUDES MCP APPENDIX IX+3 DATA, AS WELL AS PRIORITY POLLUTANT DATA COLLECTED IN MARCH 1990.
6. ONLY CONSTITUENTS DETECTED ABOVE ASSOCIATED QUANTITATION LIMITS ARE SUMMARIZED. ESTIMATED VALUES AND BLANK CONTAMINANTS ARE NOT SUMMARIZED.
7. ALL DATA ILLUSTRATED FROM MCP INVESTIGATION EXCEPT FOR RESULTS FROM WELLS E-1 AND F-1, WHICH ARE PRE-MCP DATA. FOR OTHER PRE-MCP DATA, SEE TABLES 4-13 AND 4-14.

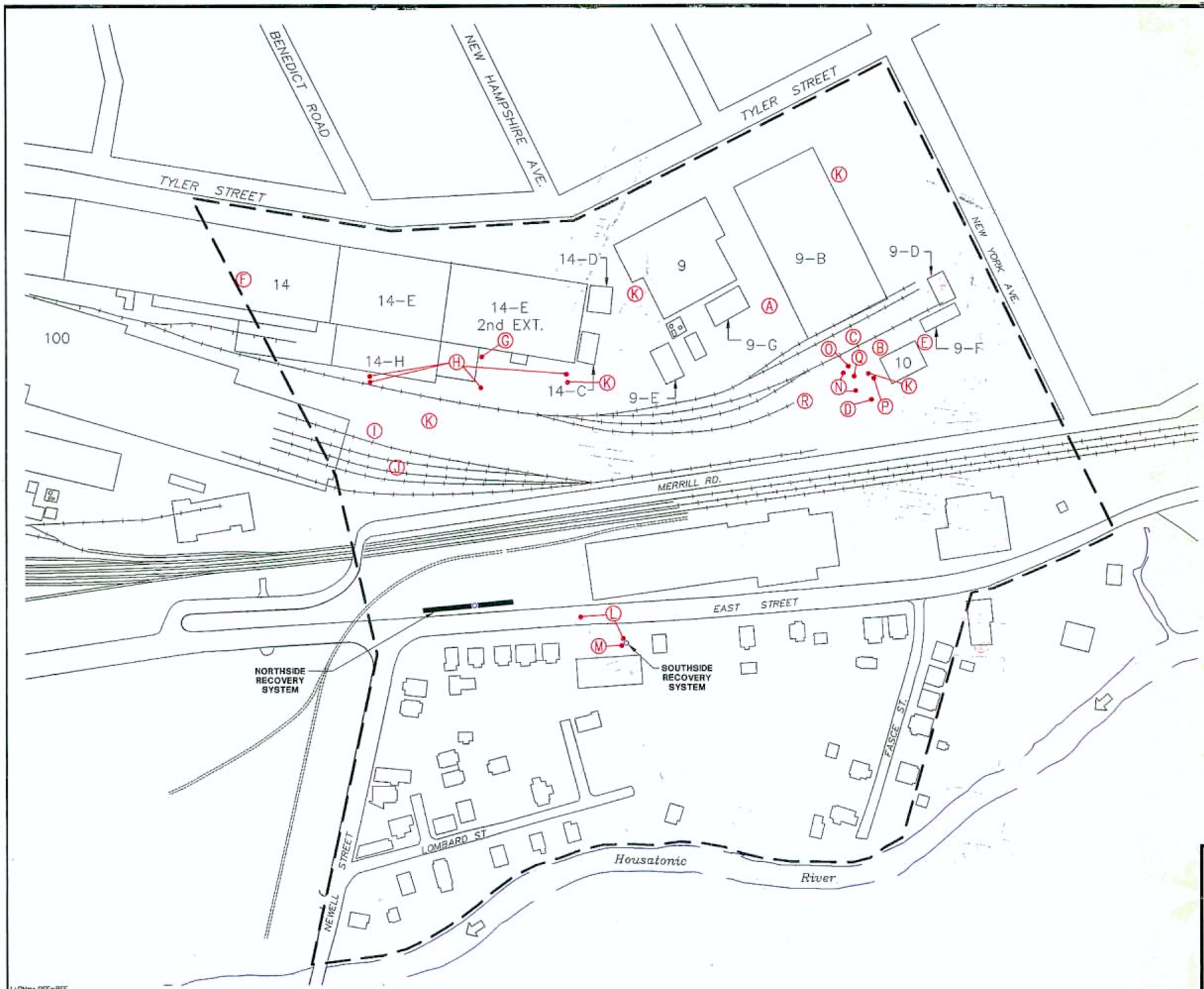
L: ON=*,OFF=REF,SPDAT-11
X: 10192X01.DWG
10/94 54-NES YCC
10192G3R\E-ST-AR1\10192G20.DWG

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
MCP INTERIM PHASE II REPORT AND CAS
EAST STREET AREA 1/USEPA AREA 3

SUMMARY OF SELECT GROUNDWATER DATA

FIGURE 4-14



LEGEND:

APPROXIMATE SITE BOUNDARY

SAMPLING LOCATIONS:

- (A) BUILDING 9B STEAMLINE REPAIR SAMPLING
- (B) BUILDING 10 STEAMLINE REPAIR SAMPLING
- (C) BUILDING 10 STEAMLINE REPAIR EXTENSION SAMPLING
- (D) BUILDING 10 (OUTSIDE) PAD SOIL SAMPLING
- (E) UST 10-01 SAMPLING PROGRAM
- (F) BUILDING 14-1 FLOOR SAMPLING
- (G) UST 14-04 SAMPLING PROGRAM
- (H) BUILDING 14 RAILROAD TRACK CONCRETE SAMPLING
- (I) BUILDING 100 SOIL BORING PROGRAM
- (J) BUILDING 100 YARD SAMPLING (RAILROAD TIES AND RAILS)
- (K) STORM SEWER SEDIMENT SAMPLING
- (L) SOUTHSIDE RECOVERY SYSTEM EXCAVATION SAMPLING
- (M) SOUTHSIDE RECOVERY SYSTEM EXCAVATION SAMPLING
- (N) BUILDING 10 SWEEPER SOIL SAMPLING (6/20/90)
- (O) BUILDING 9 & 10 SWEEPER SOIL SAMPLING
- (P) BUILDING 10 SWEEPER SOIL SAMPLING (10/14/91)
- (Q) BUILDING 10 SWEEPER SOIL SAMPLING (6/15/92)
- (R) BUILDING 10 SWEEPER SOIL SAMPLING (6/14/94)

0' 200' 400'

APPROXIMATE SCALE: 1" = 200'

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; AND DATA PROVIDED BY GENERAL ELECTRIC COMPANY.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. ALL SAMPLING LOCATIONS ARE APPROXIMATE.

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EAST STREET AREA 1/USEPA AREA 3

LOCATIONS OF MISCELLANEOUS INVESTIGATIONS

FIGURE **5-1**

L:ON=*,OFF=REF
X:10192X01.DWG
10/94 54-YCC NES
1019203R\E-ST-AR1\10192G13.DWG