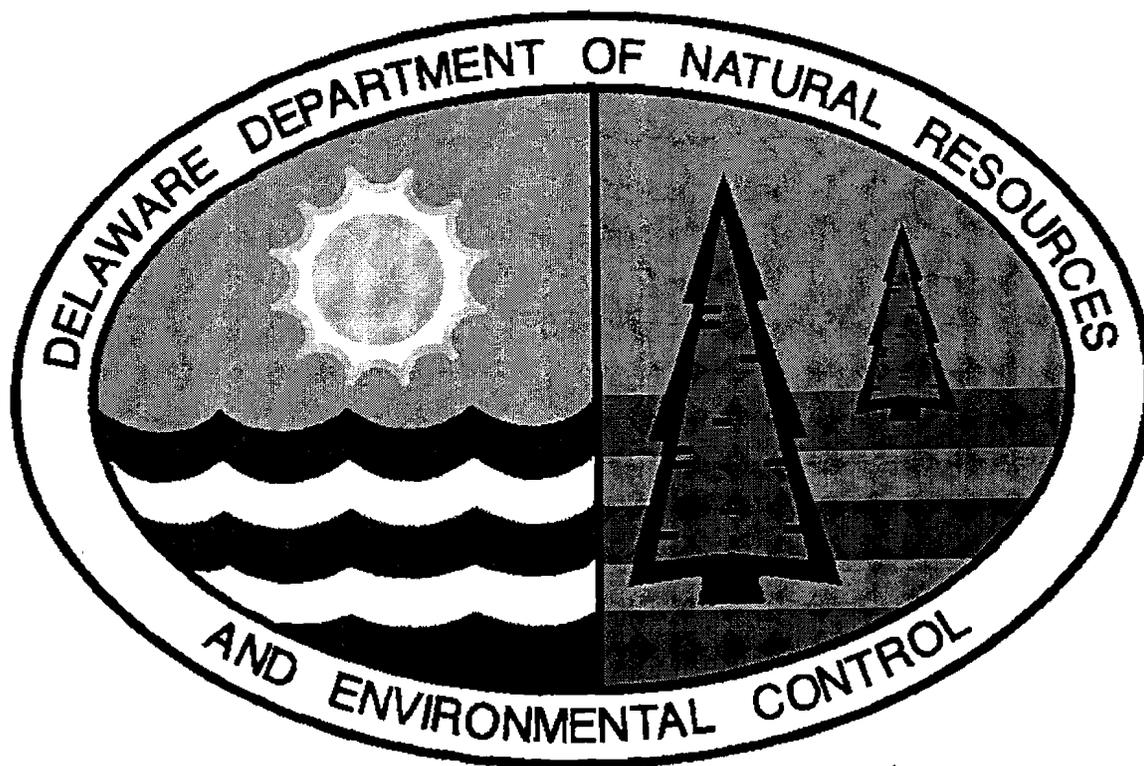


# PROPOSED PLAN OF REMEDIAL ACTION

**Five Points Fire Company  
209 South Maryland Avenue  
Wilmington, Delaware**

DE-1168



October 2001

**Department of Natural Resources and Environmental Control  
Division of Air and Waste Management  
Site Investigation and Restoration Branch  
391 Lukens Drive  
New Castle, DE 19720 - 3774**

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## I. INTRODUCTION

The Five Points Fire Company Site ("Site") is located at 209 South Maryland Avenue between Summit Avenue and Reamer Avenue outside of the city limits of Wilmington, New Castle County, Delaware (Figure 1).

During geotechnical testing for construction of an addition to the firehouse, Duffield Associates, Inc. ("DAI"), consultant for the fire company, discovered historical fill soil and debris below the existing structure and parking lot. In addition to being unsuitable for the support of building foundations, analysis of soil samples indicated the presence of hazardous substances, including arsenic, beryllium, vanadium and benzo(a)pyrene above the Department of Natural Resources and Environmental Control, Site Investigation and Restoration Branch's ("DNREC-SIRB's") Uniform Risk-Based Standards ("URS").

In order to dispose of the soils appropriately, and in accordance with applicable laws and regulations, the Five Points Fire Company (the "FPFC" or "Owner"), entered into the DNREC-SIRB's Voluntary Cleanup Program ("VCP") under the provisions of the Delaware Hazardous Substance Cleanup Act ("HSCA"), 7 Del. C. Chapter 91. Through a VCP Agreement, the Owner agreed to conduct an Interim Action ("IA") to dispose of the soil and debris in order to eliminate the risks posed to the public health, welfare and the environment. The Owner contracted DAI to perform an IA of the portion of the Site involved in the construction project.

Following the IA, DNREC-SIRB contracted Tetra Tech, Inc. ("Tt") to conduct a Facility Evaluation ("FE") at the Site. The purpose of the FE was to: 1) understand the nature and extent of any soil contamination on the remainder of the Site, 2) evaluate risks to public health, welfare and the environment associated with any identified contamination, and 3) perform, if necessary, a Feasibility Study that would identify and recommend a Remedial Action, if required by DNREC-SIRB.

This document is DNREC-SIRB's Proposed Plan of Remedial Action ("Proposed Plan") for the Site. It is based on the results of the previous investigations performed at the Site. This Proposed Plan is issued under the provisions of the HSCA and the Delaware Regulations Governing Hazardous Substance Cleanup ("Regulations"). It presents the Department's assessment of the potential health and environmental risk posed by the Site.

As described in Section 12 of the Regulations, DNREC-SIRB will provide notice to the public and an opportunity for the public to comment on the Proposed Plan. At the comment period's conclusion, DNREC-SIRB will review and consider all of the comments received, and will issue a Final Plan of Remedial Action ("Final Plan"). The Final Plan shall designate the selected remedy, if required, for the Site. All prior investigations of the Site, the Proposed Plan, the comments received from the public, DNREC-SIRB's responses to those comments, and the Final Plan will constitute the Remedial Decision Record.

Section II presents a summary of the site description, site history and previous investigations of the Site. Section III provides a description of the remedial investigation results. Section IV presents a discussion of the remedial objectives. Section V presents the Proposed Plan of Remedial Action. Section VI discusses public participation requirements.

## II. SITE DESCRIPTION AND HISTORY

The Site is located at 209 South Maryland Avenue between Summit Avenue and Reamer Avenue outside of the city limits of Wilmington, New Castle County, Delaware (Figure 1). The Site consists of approximately 1.3 acres and consists of four tax parcels, numbers 07-043.10-102, 07-043.10-103, 07-043.10-104 and 07-043.10.106. The Site has a two-story firehouse and public assembly area and a smaller garage structure. The remaining property on the Site is paved.

The Site previously contained an automobile dealership, including gasoline pumps, and a dry cleaner. The Site has been operated as a fire company since approximately 1955. The Site is bounded to the north by residential properties and a small commercial store complex, to the east by Maryland Avenue, and to the south and west by residential properties. The Site is currently owned by the Five Points Fire Company and is expected to remain under the same land use.

### *Site and Project History*

Historically the Site was used as an automotive dealership and a dry cleaner prior to its purchase by the FPFC. The FPFC purchased the four parcels at different times beginning in 1955.

DAI conducted a limited environmental soil evaluation at the Site in the fall of 1999 to assess the extent and character of apparent petroleum containing soils and historical fill material observed during an earlier geotechnical evaluation. Soil samples collected during the soil evaluation contained concentrations of benzo(a)pyrene (a polynuclear aromatic hydrocarbon ("PAH")), and arsenic, beryllium and vanadium above the DNREC-SIRB URS value for unrestricted use. As a result of the soil evaluation, FPFC entered into the VCP and agreed to conduct an Interim Action in order to appropriately dispose of the soils deemed unsuitable for the support of building foundations and containing concentrations of contaminants in excess of URS values in accordance with applicable laws and regulations.

During the IA, approximately 265 tons of historical fill soils were removed and disposed of at Clean Earth of New Castle, Inc. ("Clean Earth"). An Underground Storage Tank ("UST") was encountered during sidewalk repair following the IA. The UST was removed and excavated soils were transported to Clean Earth for treatment. Post-excavation sampling and analysis indicated concentrations of benzo(a)pyrene, benzo(b)fluoranthene and beryllium which exceeded the URS value for unrestricted use in at least one sample, but less than the respective URS values for restricted use. Arsenic was detected in all samples at concentrations greater than the URS for restricted use, but within the natural background levels normally found in Delaware. Vanadium did not exceed the unrestricted URS level in any sample. Diesel range organics were detected in two samples at a concentrations greater than the restricted use URS level, which warranted further investigation.

Following the IA, an FE was conducted at the Site to evaluate the remainder of the property. Eight direct-push borings were placed at representative locations around the property and a total of fifteen soil samples were collected and screened by the DNREC-SIRB chemist for general characterization including volatile organic compounds ("VOC's"), carcinogenic PAHs, pesticides, polychlorinated biphenyls ("PCBs") and metals. Four soils samples were selected for laboratory analysis based on the screening results.

### **III. INVESTIGATION RESULTS**

DNREC-SIRB conducted a review of past investigations prepared for the Site. After review of the work conducted, DNREC-SIRB worked with Tt, DNREC-SIRB's remedial contractor, to develop a FE Work Plan to address the following:

- Determine the presence or absence of contaminants at the surface and subsurface soils, and if present, determine if the contaminants pose any unacceptable risks to human health or the environment.

The FE Work Plan called for Tt to perform the following tasks:

- Sample and analyze the surface and subsurface soil at the Site;
- Conduct a deed search and gather relevant background information;
- Prepare a pathway analysis for pathways of concern.

DNREC-SIRB considers the data and information generated in the FE, and the previous investigations of the Site to meet the criteria of a Remedial Investigation ("RI") for this Site. The following is a brief summary of the results of the investigations for the Site:

#### **A. General Information**

The Site is currently occupied by a fire company and completely covered by two-story structure and asphalt parking lot. All surrounding buildings and structures are currently connected to public water and sewer systems.

#### **B. Site Soils**

The soils at the Site are mapped primarily as made land or urban land, indicating areas that have been filled with soil material, miscellaneous fill or both. Direct-push soil sampling indicated that the underlying soils ranged from silty clay to silt with a trace of clay. Depth of fill materials at the Site ranged from 3 feet to 8 feet in depth with the average depth approximately 4.5 feet. The deepest area of fill was located in an area where a UST was reportedly removed in the 1970's and backfilled. Fill materials consisted of miscellaneous fill, stone, clay, silty sand and some ash.

Eight direct-push soil borings were placed at representative locations around the property, and a total of fifteen soil samples were collected and screened by the DNREC-SIRB chemist for general characterization including VOCs, carcinogenic PAHs, pesticides, PCBs and metals. Four soils samples were selected for laboratory analysis based on the screening results.

Field analytical screening results indicated several metals exceeded the non-critical water resource area unrestricted use URS value, including arsenic, barium, iron, manganese, mercury and vanadium. Arsenic was the only metal to exceed the restricted use URS value based on field analytical screening. No VOCs, semivolatile organic compounds (SVOCs) pesticides, PCBs or petroleum were detected by field screening.

Laboratory analysis detected tetrachloroethene and 1,1,2,2-tetrachloroethane in separate samples at concentrations below the unrestricted and restricted URS values. Phenanthrene, pyrene and butylbenzylphthalate were all detected in one sample at concentrations below the unrestricted and restricted URS values. Aroclor-1248 (a PCB) was detected in two samples, one exceeding the URS value for unrestricted uses, but below the restricted use URS value, and the other below both the restricted and unrestricted use URS values. For metals analysis, only arsenic was detected at a concentration greater than the URS value for restricted use, but within the natural background levels normally found in Delaware.

### **C. Groundwater**

No groundwater samples were collected during the FE. Groundwater was not encountered in any of the test pits or auger borings during the IA, or in direct-push soil borings conducted during the FE. The area is served by a public water supply system. There are no known users of local groundwater or water supply wells near the Site.

### **D. Summary**

The results of the investigations indicated that the Site contains elevated concentrations of arsenic and Aroclor-1248 in at least one soil sample, which exceeded the DNREC URS value for unrestricted use. Several samples contained arsenic at a concentration greater than the URS value for restricted use, but within the range of concentrations that would be expected for natural background in Delaware.

No groundwater samples were collected during the FE. Groundwater was not encountered in any of the test pits or auger borings during the IA, or in direct-push borings conducted during the FE, therefore, no groundwater samples were collected. The existing pavement cap will prevent water from infiltrating through the soils beneath the Site. The area is served by a public water supply system. There are no known users of local groundwater or water supply wells near the Site and groundwater is not considered a pathway of concern for this Site.

The Site is completely covered by a two-story building and asphalt parking lot and there is no current soil exposure pathway.

## **IV. REMEDIAL ACTION OBJECTIVES**

According to Section 8.4 (1) of the Regulations, site-specific Remedial Action Objectives must be established for all plans of Remedial Action. The Regulations provide that DNREC-SIRB set objectives for land use, resource use, and cleanup levels that are protective of human health and the environment.

Qualitative objectives describe, in general terms, what the ultimate result of the remedial action, if necessary, should be. The following qualitative objectives are determined to be appropriate for the Site:

- Prevent residential and future worker exposure to impacted soil.

These objectives are consistent with the current use of the Site as non-residential use in an urban setting, and worker health and safety.

Quantitative objectives define specific levels of remedial action to achieve protection of human health and the environment. Based on the qualitative objectives, the quantitative objectives will be to ensure that future Site users such as Site workers, construction workers, visitors, and trespassers do not come in contact with soils that contain elevated levels of metals and PCBs above the established URS values.

## **V. PROPOSED PLAN OF REMEDIAL ACTION**

As stated in Section III of this Proposed Plan, the soils at the Site contain elevated levels of some PCBs and metals. The Site is currently developed as a fire department building and is expected to remain under the same land use. The Proposed Plan for the Five Points Fire Company Site calls for maintenance of a containment system (building and parking lot) and institutional controls, consisting of the following:

- Placement of a deed restriction on the Site limiting the property to non-residential uses and prohibiting excavation, construction, grading, drilling, digging or other earth disturbance activities on the Site without prior approval of DNREC-SIRB. Operations and maintenance will consist of maintaining the pavement cap in good condition.

## **VI. PUBLIC PARTICIPATION**

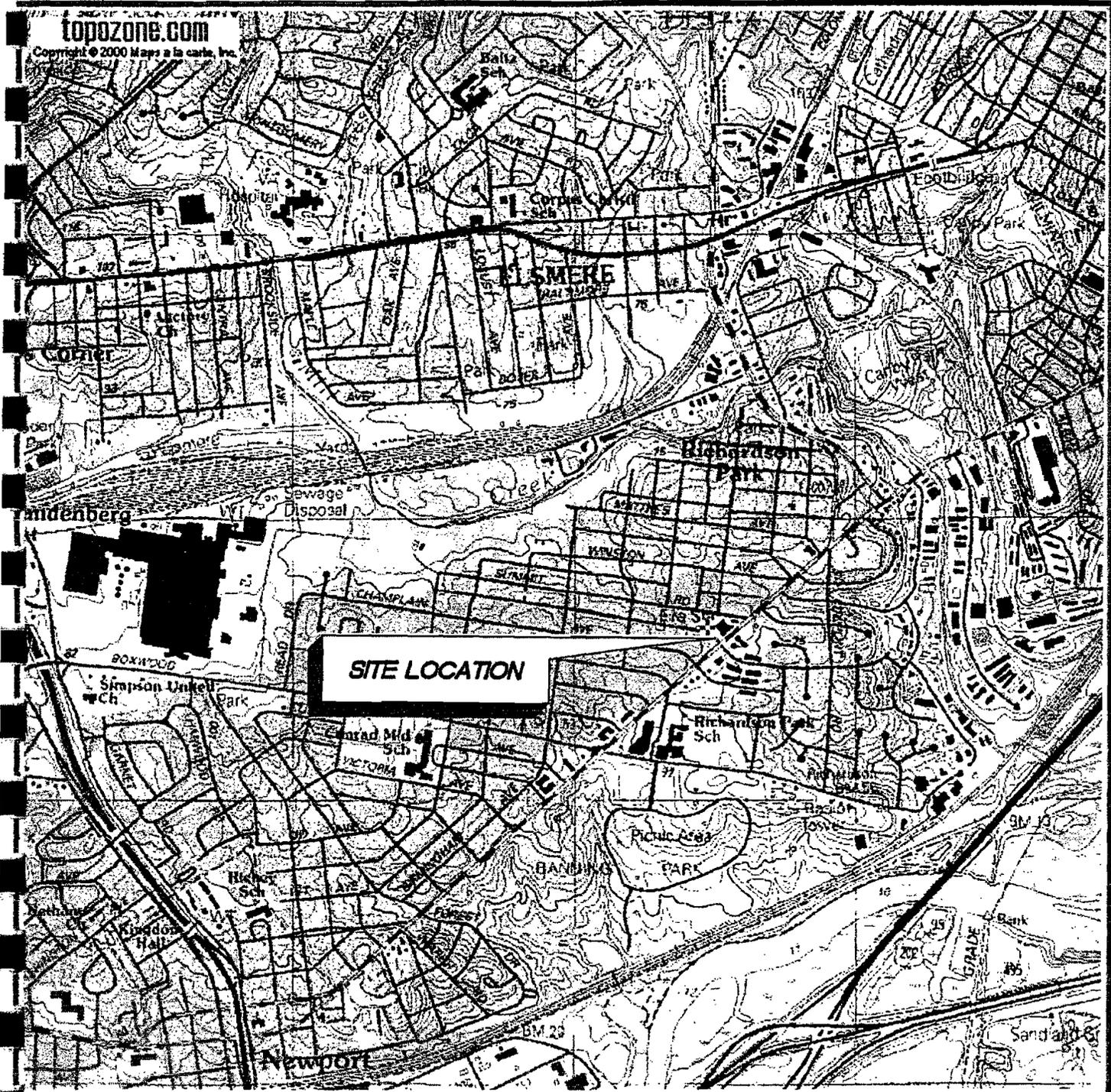
The Department actively solicits public comments or suggestions on the Proposed Plan and welcomes opportunities to answer questions. Please direct written comments to:

DNREC  
Site Investigation and Restoration Branch  
391 Lukens Drive  
New Castle, Delaware 19720-2774  
Attn: Larry Jones

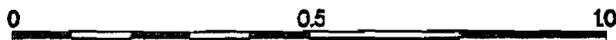
The public comment period for this Proposed Plan begins on November 1, 2001, and ends at the close of business (4:30 p.m.) November 21, 2001. If so requested, a public hearing will be held on the Proposed Plan. The meeting time and place will be announced if said hearing is requested.

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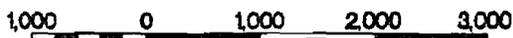
**Figure 1: Site Location Map**



SCALE 1:25,000



APPROX. SCALE IN MILES



APPROX. SCALE IN FEET

SOURCE: USGS - WILMINGTON SOUTH, DE QUADRANGLE, 2000 (Maps a la carte, Inc.)

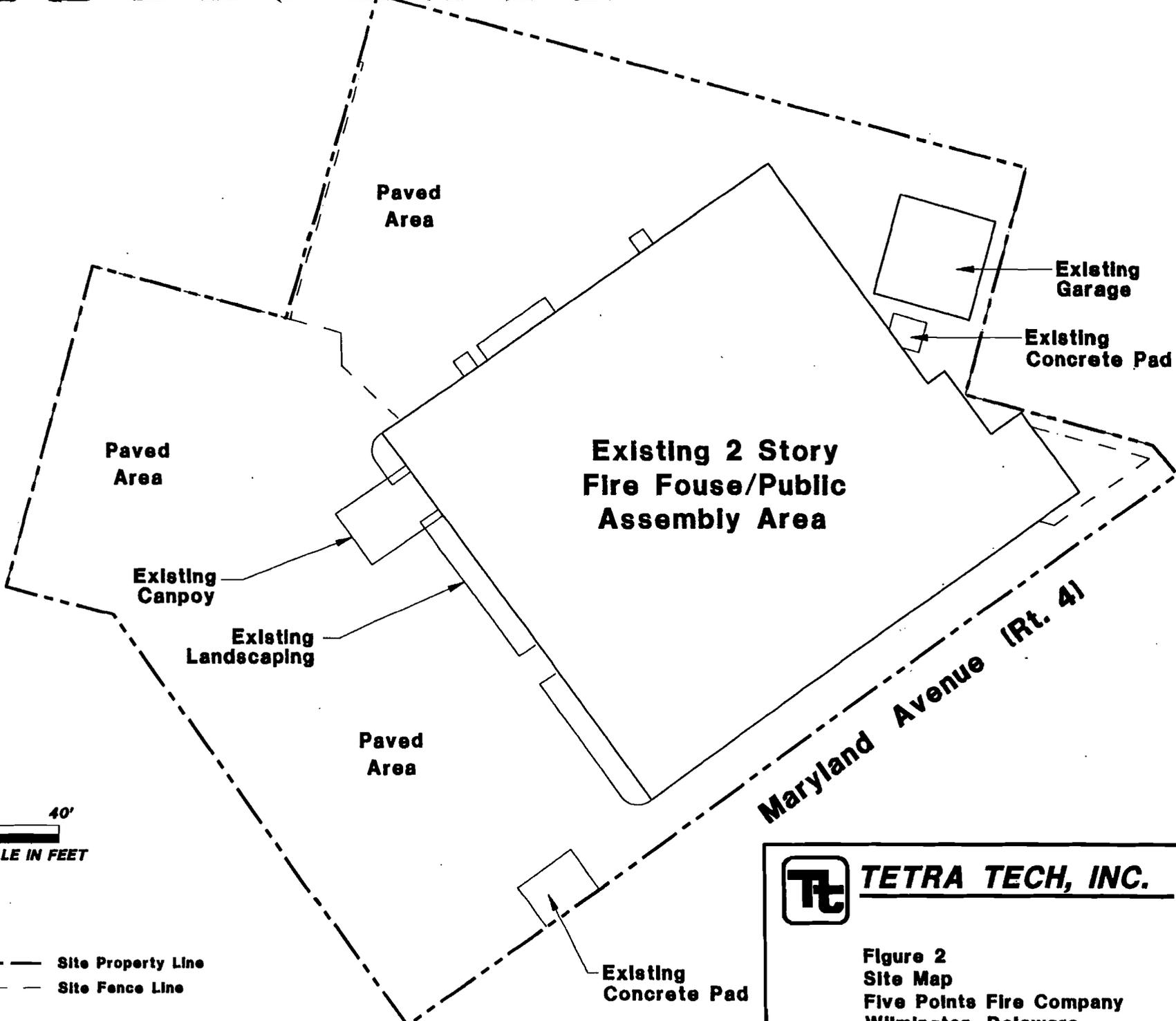
environmental figures.dwg



**TETRA TECH, INC.**

Figure 1  
 Site Location Map  
 Five Points Fire Company  
 Maryland Avenue (Rt. 4)  
 Wilmington, Delaware

## Figure 2: Site Map



0' 40'  
APPROX. SCALE IN FEET

**LEGEND:**

- Site Property Line
- - - - - Site Fence Line



**TETRA TECH, INC.**

Figure 2  
Site Map  
Five Points Fire Company  
Wilmington, Delaware