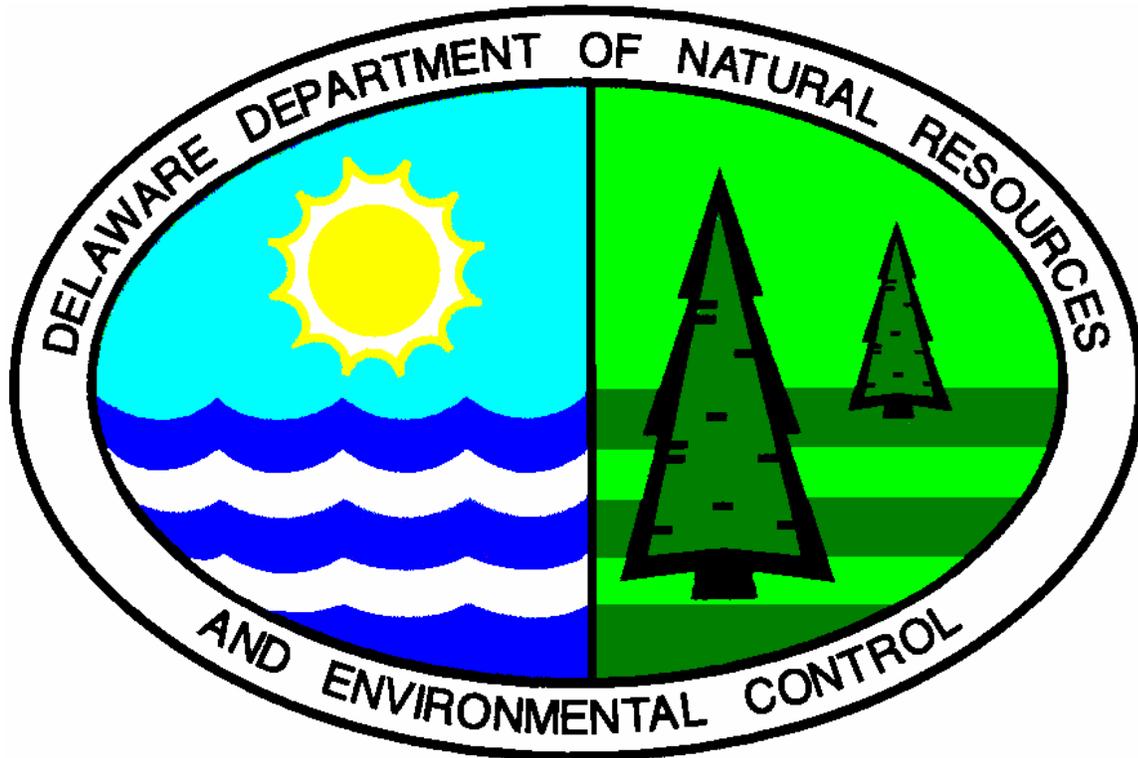


FINAL PLAN OF REMEDIAL ACTION

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

DE-1168



March 2002

**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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1.0 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. (Tetra Tech) 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 (FS) that would identify and recommend a Remedial Action, if required by DNREC-SIRB.

This document is DNREC-SIRB's Final Plan of Remedial Action (Final Plan) for the Site. It is based on the results of the previous investigations performed at the Site. This Final 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.

In November 2001, DNREC-SIRB issued the Proposed Plan of Remedial Action (Proposed Plan) for the Site based on the previous investigations. As described in Section 12 of the Regulations, DNREC-SIRB provided notice to the public and an opportunity for the public to comment on the Proposed Plan. At the comment period's conclusion, DNREC-SIRB reviewed and considered all of the comments received, and then issued this Final Plan. The Final Plan designates the selected remedy for the Site. The Proposed Plan, the previous investigations of the Site, the comments received from the public, DNREC-SIRB's responses to those comments, and the Final Plan will constitute the Remedial Decision Record for the Site.

Section 2.0 presents a summary of the Site description, history and previous investigations of the Site. Section 3.0 provides a description of the remedial investigation results. Section 4.0 presents a discussion of the Remedial Action Objectives. Section 5.0 presents the Final Plan of Remedial Action. Section 6.0 discusses public participation requirements and Section 7.0 presents the Director's Declaration.

2.0 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, New Castle County tax parcel 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, public assembly area and a smaller garage structure. The remaining portions of the property are paved.

The Site was previously operated as an automobile dealership, including gasoline pumps, and as a dry cleaner. The Site has been used 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 for the foreseeable future.

2.1 SITE AND PROJECT HISTORY

Historically, the Site was used as an automotive dealership and a dry cleaning operation 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 (i.e., residential 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 soil 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 abandoned 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 (i.e., commercial or industrial use). Arsenic was detected in all samples at concentrations greater than the URS for restricted use, but within the natural background levels (typically less than 11 mg/kg) normally found in Delaware. Vanadium did not exceed the unrestricted URS level in any sample. Diesel range organics (DRO) were detected in two samples at a concentration greater than the restricted use URS level, which warranted further investigation.

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

3.0 INVESTIGATION RESULTS

DNREC-SIRB conducted a review of past investigations prepared for the Site. After review of the work conducted, DNREC-SIRB worked with Tetra Tech, 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 Tetra Tech 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 potential pathways of concern.

DNREC-SIRB considers the data and information generated in the FE, and from 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:

3.1 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.

3.2 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 results 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 1970s 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 Site, 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 compounds 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 found in Delaware.

3.3 *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, and groundwater is not considered a pathway of concern for this 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.

3.4 *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 present.

4.0 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 for restricted use.

5.0 FINAL PLAN OF REMEDIAL ACTION

Based upon the information and results of the investigations performed at the Five Points Fire Company Site, DNREC-SIRB has determined that the preferred remedy conveyed in the Proposed Plan should be adopted as the Final Plan, and shall be implemented. The Final 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.

6.0 PUBLIC PARTICIPATION

The Department actively solicited public comments or suggestions on the Proposed Plan and welcomed opportunities to answer questions. The public comment period for the Proposed Plan began on Thursday November 1, 2001, and concluded at the close of business (4:30 p.m.) Wednesday November 21, 2001. No written comments or requests for public hearing were received by DNREC-SIRB.

7.0 DECLARATION

This Final Plan of Remedial Action for the Five Points Fire Company Site is protective of human health, welfare and the environment and is consistent with the requirements of the Delaware Hazardous Substance Cleanup Act.

John Blevins
Director, Division of Air and Waste Management

Date

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Figure 1: Site Location Map

Figure 2: Site Map

