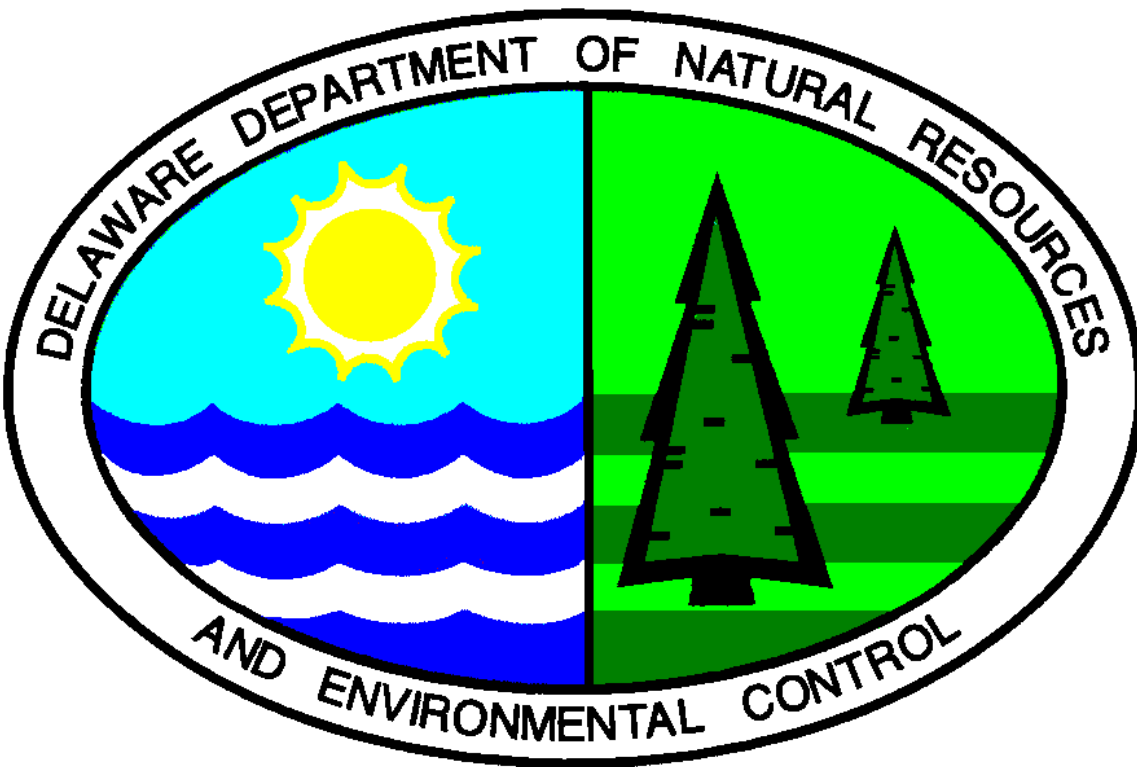


FINAL PLAN OF REMEDIAL ACTION

**Proposed New Castle
County Courthouse Site
Wilmington, Delaware**

DE1094



June 1999

**Department of Natural Resources and Environmental Control
Division of Air and Waste Management
Site Investigation and Restoration Branch**

Table of Contents

I.	INTRODUCTION	1
II.	ORGANIZATION AND CONTENTS OF THE FINAL PLAN	1
III.	SITE DESCRIPTION.....	1
IV.	SITE HISTORY	2
V.	REMEDIAL INVESTIGATION PROCEDURES	3
VI.	REMEDIAL INVESTIGATION RESULTS	3
	A. GENERAL INFORMATION.....	3
	B. MAGNETIC SURVEY.....	3
	C. GROUNDWATER.....	4
	D. SUMMARY.....	4
VII.	INTERIM ACTION	4
VIII.	FACILITY REMEDIAL ACTION OBJECTIVES	4
IX.	RISK EVALUATION SUMMARY	4
X.	FINAL REMEDIAL ACTION PLAN	5
XI.	DECLARATION	5

List of Figures

FIGURE 1 - SITE LOCATION	6
--------------------------------	---

I. Introduction

The Delaware Department of Natural Resources and Environmental Control, Site Investigation and Restoration Branch (“DNREC-SIRB”) performed a Remedial Investigation and Feasibility Study (“RI/FS”) of the Proposed New Castle County Courthouse Site (“Site”) under the Delaware Hazardous Substance Cleanup Act (“HSCA”) 7 Del. C. Chapter 91. Based on the comprehensive environmental investigations performed for the Site and the interim action taken at the Site, DNREC-SIRB concluded that the Site, in its present condition, presents an unacceptable risk to public health, welfare or the environment.

II. Organization and Contents of the Final Plan

DNREC-SIRB issues this Final Plan under the provisions of HSCA and the Regulations Governing Hazardous Substance Cleanup, (“Regulations”). The Final Plan presents DNREC-SIRB’s assessment of the health and environmental risks posed by the Site and plans for limited further action.

In accordance with the Regulations, DNREC-SIRB provided notice to the public and an opportunity for the public to comment on the proposed plan in accordance with Section 12 of the Regulations. At the comment period’s conclusion, June 25, 1999, DNREC-SIRB reviewed and considered all of the comments received to the Proposed Plan. DNREC-SIRB did not receive any substantive comments to the Proposed Plan. Therefore, DNREC-SIRB issues this Final Plan of Remedial Action. The Final Plan of Remedial Action designates the selected remedy for the Site. The Proposed Plan, the comments received from the public, DNREC-SIRB’s response to those comments, and the Final Plan of Remedial Action constitute the remedial decision record.

The Final Plan contains a description of the following Site information:

- A summary of the procedures, analytical results, and conclusions of the RI/FS.
- A discussion of objectives,
- A summary of the risk assessment results, and
- A plan for the Site’s future.

III. Site Description

The Site is bordered by King, Fourth, and Walnut Streets in Wilmington, New Castle County, Delaware, see Figure 1. The Site consists of approximately 5.4 acres and contains a bituminous concrete covered parking lot and two small toll collection buildings.

The Site is bounded to the north by Wilmington College Customs House and the Customs House’s parking and a ten story Alico Building, to the east by Walnut Street, to the south by Fourth Street and to the west by King Street.

The Site is characterized by rolling hills and is underlain by the Wilmington Complex (a meta-igneous and meta-sedimentary crystalline “bedrock”) which is overlain by approximately 20 to 50 feet of sandy silt to silty clay material. Fracture orientation and frequency control groundwater flow in this area. Well yields are generally low, with the average residential well yielding about

one gallon per minute. Groundwater is also present in the overlying silty clay material (regolith). However, since the Site is located in the City of Wilmington, public water and sewer serves both the surrounding buildings and the Site.

Site surface elevations range from approximately 64 feet above mean sea level (MSL) at the north side of the Site to approximately 34 feet MSL at the intersection of Fourth and Walnut Streets. Surface drainage from the Site flows to the south into the City of Wilmington combined sewage and stormwater collection system.

Soil Survey for New Castle County, Delaware describes the on-site soils as Made Land, which typically describe land that has been filled with soil materials, debris, or both. In addition, Made Land has been so altered or disturbed by urban works and structures that soil classification is not feasible.

There are no mapped wetland areas present on the Site. There are no wetland plants or hydrology present on the Site.

There are no underground storage tanks present on the Site.

IV. Site History

The Site contains a bituminous concrete parking area and was used as a parking lot business operated by the City of Wilmington Parking Authority. Two payment booths are present, one at the King Street exit and one at the Walnut Street exit. Other than the two booths, there are no other buildings on the property.

Historically, Fifth Street, Sixth Street and French Street traversed the Site prior to its conversion to a parking lot sometime in the 1960's. The Site is the combination of four and a half city blocks, which includes three tax parcels: Parcel E (4.4 acres), Parcel F (0.69 acres), and Parcel B-2 (0.31 acres).

The Site was developed prior to the 1884 with commercial shops, small industrial facilities, a school, a fire station, stables, residences, and churches. The Site continued to be developed through 1901 and 1927 and 1951. The development that accrued at the Site during the first half of the twentieth century included: furniture shops, automobile repair and garages, carriage factories and shops, machine shop, clothing factories, a monument/marble works, food processing facilities (bakery and a macaroni company), and a gasoline filling station. During the 1960's the buildings existing on the Site were demolished and the Site became a parking lot.

A leaking underground storage tank was addressed at the location of the 4th and King Street parking lot during 1996. The City of Wilmington, Wilmington Parking Authority authorized a consultant to remove and properly dispose of the tank (a 550-gallon heating oil tank) and its impacted soils. This tank was discovered during property improvements conducted by the Wilmington Parking Authority. The remediation involved the removal and proper disposal of the tank and approximately 18-tons of petroleum impacted soil under the oversight of the Department of Natural Resources and Environmental Control, Division of Air and Waste Management Underground Storage Tank Branch (DNREC-UST). DNREC-UST issued a "no further action" letter dated January 30, 1997, for this area.

V. Remedial Investigation Procedures

DNREC-SIRB conducted an extensive review of past investigations prepared for the Site. After review of the work conducted, DNREC-SIRB worked with Duffield Associates, Inc. (Duffield) the consultant for the State of Delaware, Department of Administrative Services, Division of Facilities Management to develop a Work Plan to address the following:

- Determine the presence or absence of contaminants in the underlying fill and if present, determine the contaminant fate and transport, and
- Determine the presence or absence of a source in the underlying soils and if present to remove the source.

The Work Plan called for Duffield to perform the following tasks:

- Re-sample and analyze the Site soils and building structure;
- Develop a profile of the volume of material impacted;
- A risk assessment, if necessary, both human health and/or ecological and
- A FS, if the Site poses unacceptable risk to human health and the environment to correct these risks.

VI. Remedial Investigation Results

The following is a brief summary of the results of the investigations for the Site.

A. General Information

All surrounding buildings and structures are currently connected to public water and waste water systems.

The Site soils exhibited concentrations of organics, polyaromatic hydrocarbons (“PAHs”) and metals at levels higher than the DNREC-SIRB Remediation Standards for Unrestricted Use (residential). The majority of the concentrations were within the Restricted Use range with the one exception of one location on the Site which exceeded the Standard for benzo(a)pyrene and lead.

Demolition debris, fill materials, and building foundations were observed in the fill below the parking surface. Other metallic objects included hardware on windows and doors, pipes, nails, utility lines, electrical conduit, and barbed wire. Other observed deposits included: ash and slag fill material.

In the vicinity of the historic gasoline stations and automobile operations, fill soils indicated the presence of organic compounds. The presence of organic compounds on the ground water table was not observed.

B. Magnetic Survey

An underground storage tank (UST) was encountered during the investigation for the Site. In addition, two abandoned cars, and some apparent former sign posts and or vents were detected.

C. Groundwater

The groundwater table is approximately 17 feet to 25 feet below top of ground and bedrock was encountered at approximately 41 to 75 feet below top of ground.

D. Summary

The results of the study indicated that the Site contains elevated soil concentrations in the fill material above the Unrestricted Use Remediation Standards for lead, PAHs, organics and metals. There is buried construction and demolition debris within the fill for the Site and there is a buried underground storage tank located near the Walnut Street entrance to the Site.

VII. Interim Action

The agreement with State of Delaware, Department of Administrative Services, Division of Facilities Management provided that if during the course of investigation means became apparent to reduce the contamination or prevent its spread, appropriate action would be taken immediately. Therefore the following remedial interim actions have occurred:

- **Lead and PAHs**: The Lead and PAHs containing fill materials were removed and disposed of properly as per the regulations.
- **Underground Storage Tank**: The underground storage tank was removed and disposed of properly as per State Law 7 Del. C. Chapter 74, Delaware Underground Storage Tank Act.

VIII. Facility Remedial Action Objectives

The Regulations provide that DNREC-SIRB sets objectives for land use, resource use, and cleanup levels that are protective of human health and the environment. The following objectives are determined to be appropriate for the Site:

- Prevent residential exposure to impacted media, and
- Continue the use of public water and sewer for all purposes to the surrounding community,

These objectives are consistent with the value of the Site as part the surrounding land use, New Castle County zoning policies, state regulations governing water supply, and worker health and safety.

IX. Risk Evaluation Summary

Duffield performed a health risk assessment to evaluate the possible effects on human health from the use of the Site consistent with the objectives discussed above.

The Risk Evaluation (“RE”) evaluated whether there was a possible health risk and/or environmental impacts from the release of hazardous substances from the Site. Given that nearly all the residents in the immediate area are connected to municipal water supply and the interim action removed all soil, wood, building debris and dust contamination, the only remaining pathway is exposure to the remaining fill on the Site containing organics and metals. Therefore, DNREC-SIRB proposed that remaining fill be excavated and disposed of off-site properly.

X. Final Remedial Action Plan

Based on the results of the RI/FS and the Interim Action at the Site, DNREC-SIRB concludes that the risks at the Site are acceptable with a restricted groundwater access and off site removal of the remaining restricted use fill material. Therefore, DNREC-SIRB will:

- Restrict drinking water access and create a groundwater management zone for the Site.
- Excavate and remove off-site and dispose of properly the remaining contaminated fill located on the Site.

XI. Declaration

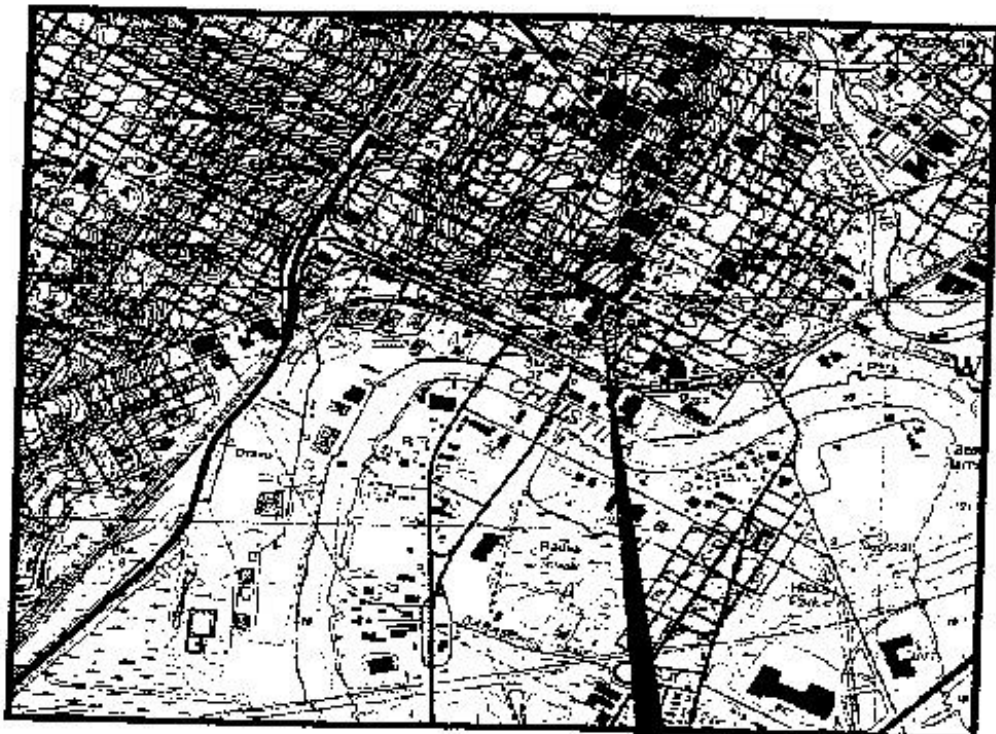
This Final Plan of Remedial Action for Proposed New Castle County Courthouse Site is protective of human health, welfare, and the environment and is consistent with the requirements of the Delaware Hazardous Substance Cleanup Act.

Major William W. Hill, Acting Director
Division of Air and Waste Management

Date

JFBS/rm/JFB99045.DOC
DE1146 II B9

Figure 1 - Site Location



PROJECT SITE LOCATION

NOTE:

THIS LOCATION SKETCH IS ADAPTED FROM THE U.S.G.S. TOPOGRAPHIC MAP, 7.5 MINUTE SERIES, FOR WILMINGTON SOUTH, DEL.-N.J. (1993).

LOCATION SKETCH
NEW CASTLE COUNTY
COURTHOUSE
 CITY OF WILMINGTON
 NEW CASTLE COUNTY - DELAWARE

DUFFIELD ASSOCIATES

DUFFIELD ASSOCIATES, INC.
 CONSULTANTS IN THE GEOSCIENCES
 5400 LORRYSTONE ROAD
 WILMINGTON, DELAWARE 19808-1202
 TEL (302)833-6804 FAX (302)833-0485
 E-MAIL: DUFFIELD@DUFFWNET.COM

Drawn: DSH	Chk'd: W.A.J.	Date: 16 NOVEMBER 1998
Scale: 1" = 2000'		W.O.: 3947.EB
Drawing No: A-3047EB-1		FIGURE 1

JFBS/jfbs/JFB99041.DOC
 DE1146 II B8