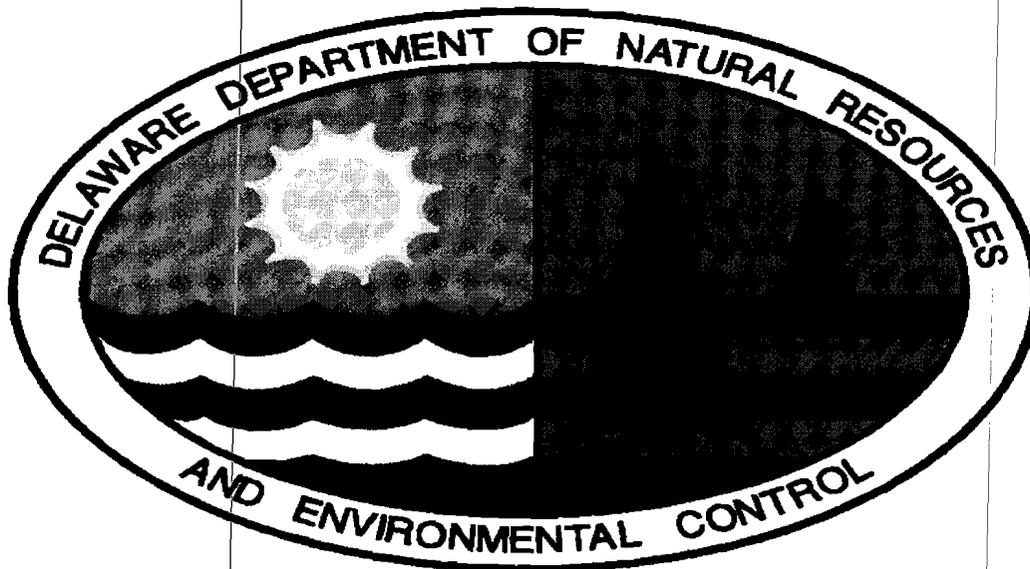


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**WILMINGTON COAL GAS - SOUTH SECTION
PROPOSED PLAN OF REMEDIAL ACTION**



September 1996

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

1

TABLE OF CONTENTS

I. INTRODUCTION	1
II. SITE DESCRIPTION AND HISTORY	1
III. PREVIOUS INVESTIGATIONS	2
IV. REMEDIAL GOALS	2
V. PROPOSED REMEDY	3
VI. CONFIRMATORY SAMPLING.....	4
VII. RECOMMENDATIONS	4
VIII. PUBLIC PARTICIPATION	4

FIGURES

- FIGURE 1. - GENERAL SITE LOCATION MAP
- FIGURE 2. - SPECIFIC SITE LOCATION MAP

I. INTRODUCTION

This Proposed Plan of Remedial Action ("Proposed Plan") is issued under the authority of the State of Delaware's Hazardous Substance Cleanup Act, 7 Del. C. Chapter 91 ("HSCA"). The purpose of the Proposed Plan is to present to the public the Department of Natural Resources and Environmental Control's (DNREC's) proposed technical approach to reduce the risks posed by the Wilmington Coal Gas Site - South Section (South Section) to public health, welfare and the environment.

In February 1996, Delmarva Power & Light (DP&L) reached an agreement with the DNREC wherein DP&L agreed to perform a Focused Feasibility Study (FFS) under the State of Delaware's Hazardous Substance Cleanup Act (HSCA) and restrict its use of the site through a deed restriction at the South Section in Wilmington, Delaware. The FFS was completed in September 1996. The FFS selected a combination of air sparging, soil vapor extraction and bio-remediation to achieve the remedial action objectives (RAO). The deed restriction is an integral part of the remedy and will remain in force at the site.

The DNREC has determined that the remedial alternative selected in the FFS has the potential to meet the RAO spelled out in the FFS. In addition, the DNREC has determined that a deed restriction, which restricts the use of the site to general commercial or industrial uses and requires proper and appropriate health and safety measures be taken while conducting intrusive work, be proposed and placed upon the deed of the property by DP&L. The DNREC has determined that these two measures are protective of human health, welfare and the environment.

II. SITE DESCRIPTION AND HISTORY

The South Section is a parcel of land of approximately 9.7 acres located at the intersection of Beech and Madison Streets in Wilmington, Delaware. The South Section is an approximate one-half portion of the larger, former Wilmington Coal Gas facility. The Wilmington Coal Gas - North Section is a parcel of approximately 8.3 acres and is the subject of a separate investigation by the DNREC. A general site location map is provided as Figure 1. This Proposed Plan is for an approximate one acre portion of the South Section situated in the southwest corner of the site. A specific site location map is provided as Figure 2. The South Section is located partially within the City of Wilmington and partially within New Castle County. The City of Wilmington's portion is zoned manufacturing/commercial waterfront district and the New Castle County's portion is zoned industrial.

The site is bordered to the north by Beech Street and other property owned by DP&L, to the east by Madison Street, to the south by the Wilmington Blue Rock's stadium and to the west by New Road, an elevated portion of Interstate 95, Conrail railroad tracks and Amtrak railroad tracks.

Historical information reveals that a manufactured gas plant (MGP) operated on both the North and South Sections. The MGP was originally constructed in 1889 and operated until 1961. Much of the MGP's physical features and edifices were located on the North Section. However,

the coal gas holder, which was dismantled in the 1970's, sat upon a circular concrete foundation that still exists today on the South Section.

Currently, the South Section supports a substation, a storage building, a gas regulator and a peaking unit with fuel supply. Abandoned railroad tracks run on the site along the southern boundary and the rest of the site is open, flat ground. Portions of the site are separated by chain link fence and the entire site is enclosed in a chain link fence.

III. PREVIOUS INVESTIGATIONS

The site was the subject of a Facility Evaluation (FE) completed in April 1995. Incorporated within the FE was a separate investigation entitled "Free-Product Delineation Report". This report, through a series of intrusive soil borings, defined, more or less, the extent and breadth of coal tar-related compounds on the South Section. Investigation of the South Section was prompted by the Department's desire to investigate the North Section, Delmarva's desire to attain closure and economies of scale on both properties and a previous environmental assessment on the present Wilmington Blue Rocks Stadium property. As part of this environmental assessment for the stadium in September 1992, test pits were excavated along the common property line between the stadium property and the South Section. These test pits revealed an oily substance in free-phase. Based upon these findings, the Department required the work that was performed in the FE.

IV. REMEDIAL GOALS

In view of the amount of data collected in the FE and the fact that no other threat to public health, welfare or the environment exists on the South Section, the DNREC agreed to permit DP&L to proceed directly to the Feasibility Study stage.

As part of the FE a risk assessment was prepared. The risk assessment concluded that the only threat that exceeded the allowable threshold of 1×10^{-5} additional cancer risk was to a future indoor worker. To abate this threat, DP&L agreed to deed restrict the South Section. The deed restriction restricts the site to general commercial or industrial uses and requires proper and appropriate health and safety measures be taken while conducting intrusive work.

Soil cleanup levels for this site were imposed by the DNREC after the development of the FFS. The soil cleanup goals are expressed in Section 4.2 under the heading of RAO in the FFS dated July 24, 1996 and last revised September 4, 1996. The RAO or cleanup standard for the site is 1000 parts per million (ppm) residual Total Petroleum Hydrocarbon (TPH) concentration. If portions of the site does not achieve the 1000 ppm TPH standard after enhancement of the system's design and operation, a 2000 ppm residual TPH concentration may be considered for those portions of the site that do not respond as well to the remedy.

In developing RAO, the DNREC considered the chemical composition of the contamination, its mobility, its potential to affect human or environmental receptors, the existence of human and environmental exposure pathways and regulatory status of the contaminants of concern.

Several factors were considered in selecting the RAO for the site. First, the coal tar material is located at depths generally greater than six (6) feet. This fact precludes casual dermal contact by a worker or trespasser and eliminates the inhalation of dust particles pathway. Secondly, the contaminants that remain are, for the most part, insoluble. Thirdly, the coal tar material rests upon former marsh sediments, which serve as a barrier to significant downward migration. Lastly, the marsh sediments also serve as an aquitard to any significant ground water mixing between aquifers. There are no drinking water supply wells within a one mile radius of the site. The nearest well to the site is located approximately 1.4 miles to the south in the Potomac aquifer. There is no established hydraulic link between the site and the Potomac aquifer. The potential for this site to pose any threat to any drinking water supply is extremely low.

For the reasons stated above, the RAO were developed to remediate the condition of a non-aqueous phase liquid in the subsurface soils and ground water. Regulatory guidance was reviewed to evaluate all applicable requirements. Since the contaminants at the site can best be described as a mixture of heavy fraction petroleum hydrocarbons, the State of Delaware's Underground Storage Tank Act and the Regulations Governing Underground Storage Tank Systems (UST Regulations) were identified as applicable requirements. The Underground Storage Tank Technical Guidance Manual (USTTGM), which was developed under the UST Regulations, was specifically selected as an applicable requirement. The USTTGM classifies releases at sites based upon land use and proximity to exposure pathways. The South Section was determined to fall within Category C under the USTTGM based upon an industrial land use, distance to potable ground water wells and distance to the Christina River.

V. PROPOSED REMEDY

A previous environmental investigation indicated the presence of non-aqueous phase liquid at the site. A subsequent investigation, the FE dated April 1995, confirmed the existence of coal tar material and, more or less, defined its breadth and depth on the DP&L property. The FFS reviewed a limited number of remedial alternatives and selected a combination of technologies which DP&L believes will accomplish the RAO. Specifically, DP&L chose soil vapor extraction and air sparging to deliver oxygen within the zone of contamination. Soil vapor extraction will volatilize contaminants in the unsaturated zone. Whereas air sparging will inject air within the saturated zone and within the zone of contamination, thereby inducing some volatilization and providing oxygen. The oxygen will be utilized by microbes to begin the process of degrading the long chained hydrocarbons. This process is referred to as bio-remediation.

The DNREC concurs that the selected remedial technologies (air sparging, soil vapor extraction and bio-remediation) have the potential to meet the RAO in the time period specified as long as sufficient oxygen can be efficiently delivered and distributed in the subsurface soil within the

zone of contamination. Furthermore, both DP&L and the DNREC recognize that execution of the deed restriction will eliminate risks to human health exceeding the allowable threshold.

VI. CONFIRMATORY SAMPLING

After the Remedial Action is deemed complete by DP&L, the DNREC will require Delmarva to retrieve a set number of samples from the zone of coal tar contamination and have those samples analyzed for TPH by an approved laboratory. The number, location and statistical evaluation of the confirmatory samples will be represented in a plan prepared by DP&L and approved by the DNREC during the Remedial Design phase of the project.

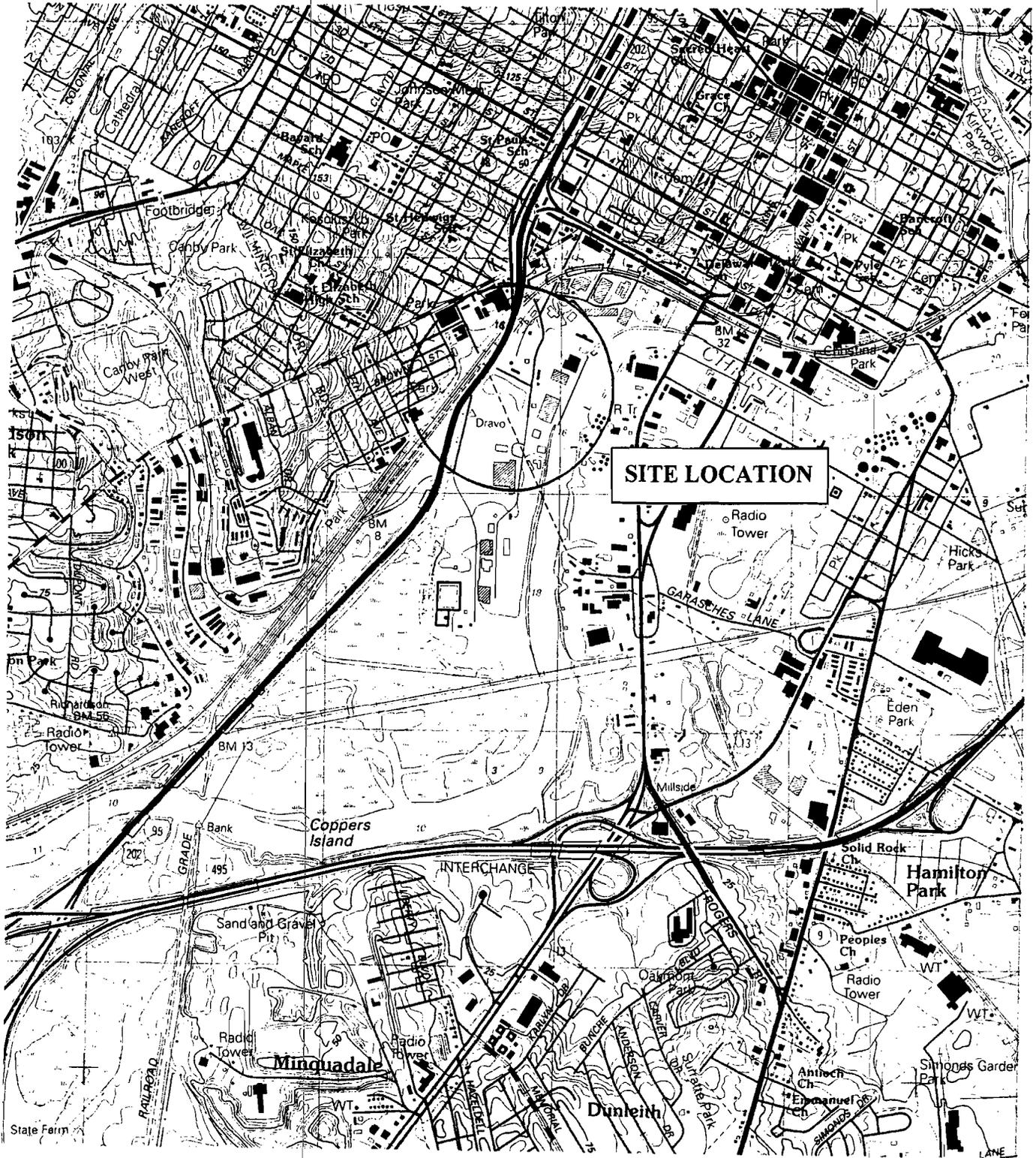
VII. RECOMMENDATIONS

Successful attainment of the RAO will eliminate the presence of a non-aqueous phase liquid in the subsurface soil at the South Section. Coal tar compounds presently at the South Section will be reduced in concentration and present less of an ongoing source to ground water and surface water contamination in the vicinity. DNREC recommends that DP&L be given the opportunity to pursue the chosen remedial alternative. The DNREC expects DP&L to modify and enhance the design of the remedy as necessary to achieve the RAO. If the selected remedy proves impracticable, then the DNREC will require DP&L to select another remedy. Lastly, the DNREC recommends that the deed restriction be executed.

VIII. PUBLIC PARTICIPATION

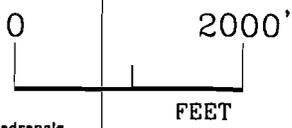
The DNREC invites public comments and questions on this Proposed Plan. All written comments should be directed to the following project manager: **Department of Natural Resources and Environmental Control, Division of Air and Waste Management Attn.: Mr. John Gysling, P.E., 715 Grantham Lane, New Castle, DE 19720.** Interested members of the public may contact the project manager at (302) 323-4540. The FFS for the Wilmington Coal Gas Site - South Section and other documentation supporting the issuance of this Proposed Plan are available for reviewing and copying at the address listed above between the hours of 8:00 A.M. and 4:30 P.M. The public comment period closes on October 21, 1996.

JG:dmg
JG96077
DE-114.II.B.8



SITE LOCATION

From: (1993) Wilmington South, DE-N4 Quadrangle
 7.5 Minute Series (Topographic)/Produced by U.S.G.S.



REVISION DATE:
 3/1/96
 DESIGNED BY:
 DRAFTED BY:
 AR
 CHECKED BY:
 JEM

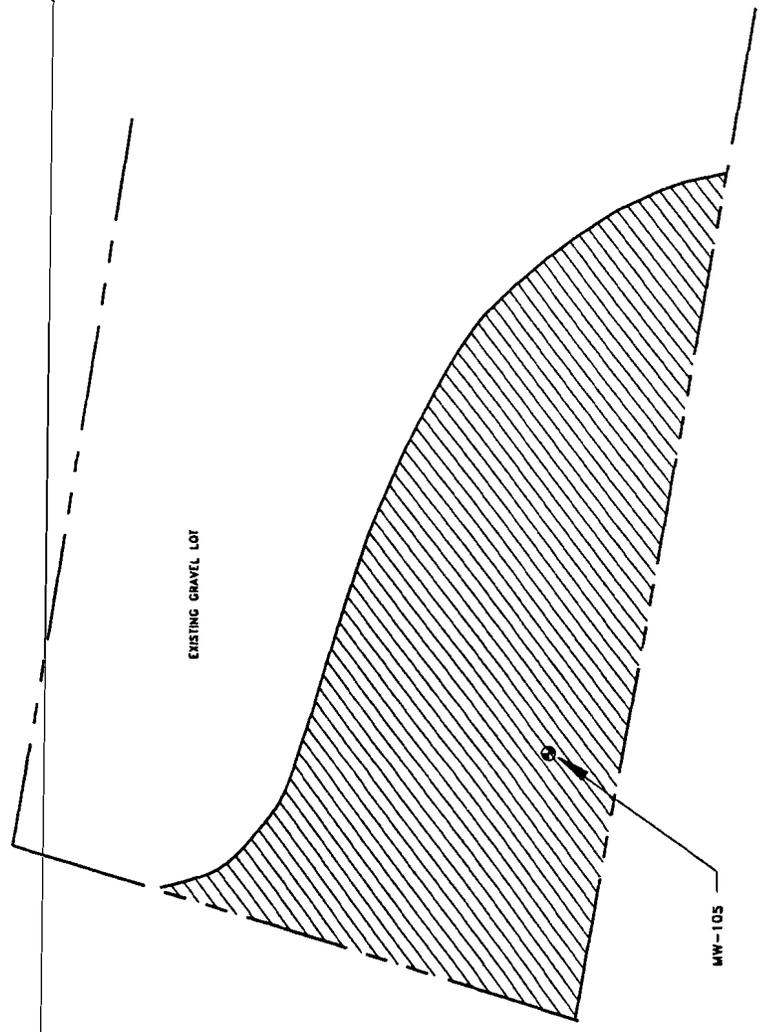
ENVIRONMENTAL ALLIANCE, INC
 1812 NEWPORT GAP PIKE
 WILMINGTON, DE 19808

FIGURE I-1
 SITE LOCATION MAP
 DELMARVA POWER & LIGHT
 BEECH AND MADISON STREETS
 WILMINGTON, DE

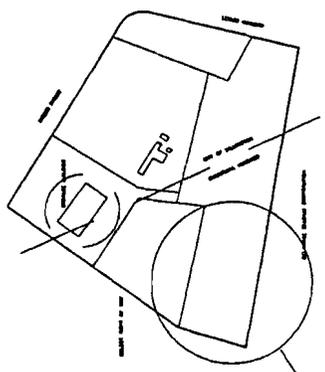
Figure 1

ALCANTARA/MSWP

WILMINGTON COAL GAS SITE SOUTHERN SECTION



KEY	
●	monitoring well
▨	extent of contamination
---	property boundary



ENVIRONMENTAL ALLIANCE, INC.
1812 NEWPORT-COPEL RICE
WILMINGTON, DE 19808

FIGURE 1-2
SITE BASE MAP
DELMARVA POWER & LIGHT
CORPORATION
WILMINGTON, DE

8/2/86
JF
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Approved By: Paul S. Miller, P.E.
06 1118

NOTE: EXTENT OF CONTAMINATION TAKEN FROM OHREC REPORT OF FINDINGS (1985)

Figure 2