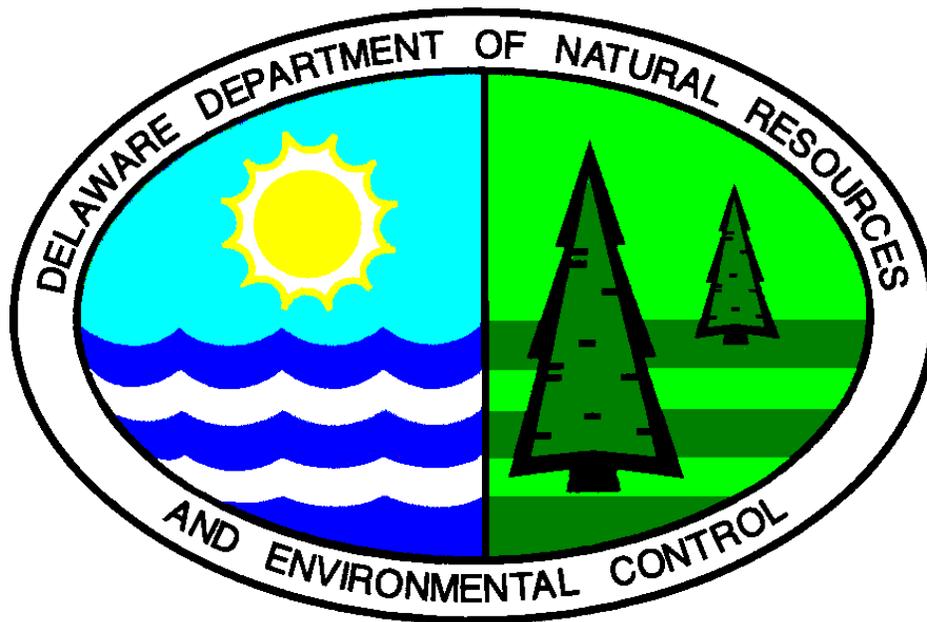


FINAL PLAN OF REMEDIAL ACTION

Former DP&L Elsmere Substation Site
DE 1186



December 2001

Delaware Department of Natural Resources and Environmental Control
Division of Air and Waste Management
Site Investigation & Restoration Branch
391 Lukens Drive
New Castle, Delaware 19720

TABLE OF CONTENTS

| | | |
|------------|--|----------|
| 1.0 | INTRODUCTION | 1 |
| 2.0 | SITE DESCRIPTION AND HISTORY | 1 |
| 2.1 | SITE SETTING | 1 |
| 2.2 | SITE HISTORY | 2 |
| 2.3 | PREVIOUS INVESTIGATION | 2 |
| 2.4 | SITE INVESTIGATION RESULTS | 3 |
| 3.0 | SITE RISK EVALUATION | 4 |
| 4.0 | REMEDIAL ACTION OBJECTIVES | 5 |
| 5.0 | FINAL PLAN OF REMEDIAL ACTION | 5 |
| 6.0 | PUBLIC PARTICIPATION | 6 |
| 6.1. | PUBLIC MEETINGS..... | 6 |
| 6.2 | PUBLIC COMMENTS AND RESPONSES | 7 |
| 7.0 | DECLARATION | 9 |

LIST OF FIGURES

| | |
|------------------------------------|----|
| FIGURE 1: SITE LOCATION MAP | 10 |
| FIGURE 2: SAMPLE LOCATION MAP..... | 11 |

ATTACHMENTS

| | |
|---------------|---|
| ATTACHEMENT A | Response Letter From Delmarva Power & Light Company |
| ATTACHEMENT B | Preliminary Cost Estimated of Remedial Alternatives |

1.0 INTRODUCTION

The Former DP&L Elsmere Substation Site (“herein known as the “Site”) is located at the intersection of Baltimore and Northern Avenues in Elsmere, Delaware (Figure 1). The property is currently owned by Marty Mellinger. In order to determine the potential for environmental liability a past owner of the property, Delmarva Power & Light Company (“DP &L”), agreed to investigate the potential risks posed to the public health, welfare and the environment under the provisions of the Delaware Hazardous Substance Cleanup Act 7 Del. C. Chapter 91 (“HSCA”). DP & L contracted WIK Associates, Inc. (“WIK”) to perform a Remedial Investigation (“RI”) of the Site with the oversight of the Department of Natural Resources and Environmental Control, Site Investigation and Restoration Branch (“DNREC-SIRB”).

The purpose of the RI was to: 1) understand the nature and extent of any soil and/or groundwater contamination at 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 HSCA and the Regulations Governing Hazardous Substance Cleanup (“Regulations”). It presents DNREC-SIRB’s remedial alternative based on an assessment of the potential health and environmental risks posed by the Site.

DNREC-SIRB issued a public notice of the Proposed Plan, and provided the public with an opportunity to comment on the Proposed Plan in accordance with Section 12 of the Regulations. At the conclusion of the public comment period, DNREC-SIRB reviewed and considered all of the comments received and is now issuing this Final Plan. The Final Plan designates the selected remedy for the Site. All previous 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 for the Site.

Section 2.0 presents a summary of the site description, site history and investigation results of the Site. Section 3.0 presents site risk evaluation. Section 4.0 presents a discussion of the remedial 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

2.1 Site Setting

The Site is located at the southeastern corner of the intersection of Baltimore Avenue and Northern Avenue, in Elsmere, Delaware. The Site is bounded generally by Baltimore Avenue to the north, Northern Avenue right-of-way to the west, Route 100 to the east, and the Fairground Park and the CSX Transportation property to the south. The 1.017-acre Site is open land with a small shed near the center of the property. The Site is fenced on all sides with one gate for access. The ground surface consists of gravel cover and an open grass-covered area. The Site topography is relatively flat with a low-lying wetland area to the south, where it borders with the wooded

wetland area of Fairground Park and the CSX railroad tracks. The site is zoned commercial, but is located in a residential area.

2.2 Site History

The property was originally owned by Mary Sission, who sold the property to Baltimore & Philadelphia Railroad on June 9, 1916. DP & L acquired the Site on November 9, 1948, and began using it as an electrical substation until the mid-1990's. Historical information on the Site indicated the presence of eleven concrete structures that supported five transformers, three capacitors, and three oil circuit breakers during the operation of the substation. All polychlorinated biphenyl ("PCB") containing equipment was either removed or retrofitted to non-PCB status by 1986. DP&L removed all substation equipment by 1994.

A Phase II Environmental Site Assessment was performed in August 1994. Based on the analytical findings, DP&L removed and disposed of 1.2 cubic yards of PCB-contaminated soil in October 1994. The current owner, Marty Mellinger, purchased the Site on June 23, 1999. Since then, it has been used for equipment and roll-off storage.

2.3 Previous Investigation

On September 19-20, 1994, DP&L hired Tetra Tech, Inc. ("Tetra Tech") to perform a Phase II Environmental Site Assessment. Soil samples were collected and analyzed for PCBs and Total Petroleum Hydrocarbons ("TPH"). A PCB remedial action level of 10 parts per million ("ppm"), the EPA Region III standard at that time, and a TPH action level of 1,000 ppm were implemented during the investigation. A sample from one area contained over 10 ppm of PCBs; therefore, 1.2 cubic yards of contaminated soil were removed from this area and shipped off-site. Samples from two areas, which contained TPH at concentrations of 130 and 190 ppm, were below the action level of 1,000 ppm. Wipe samples of concrete pads were analyzed for PCBs, but none were detected.

In 1999, residents in the area of the Site expressed concern to the Town of Elsmere about the operations of the current owner, Marty's Contracting, and raised the possibility of potential contamination at the Site. The Town requested assistance from DNREC-SIRB regarding the alleged environmental contamination at the Site. DNREC-SIRB requested that, as a past owner, DP&L enter a VCP Agreement to further investigate the Site. DP&L agreed to conduct the required investigations.

DP&L's consultant, WIK, submitted a work plan for the RI, which was reviewed and approved by DNREC-SIRB. The RI sampling was performed in September 2000 by WIK. Surface and subsurface soil and groundwater samples were collected and analyzed for volatile and semi-volatile organic compounds, PCBs/pesticides, metals and cyanide. A wetland survey was also performed. The RI Report detailing the findings of the investigation was submitted to DNREC-SIRB.

Due to the potential presence of contamination at the Site, DNREC-SIRB required Marty Mellinger to cease land-disturbing activities at the Site, and to maintain the perimeter fence. In addition, the contents of several roll-offs on the property were inspected. The roll-offs, which were stored temporarily at the Site, contained at times construction and demolition debris, but no

municipal waste and were empty during other occasions. Asphalt and stone were found on the ground surface, but not buried. A slag pile was also present at the Site. This type of slag is used in variety of construction settings. DNREC-SIRB collected samples from the slag pile and it did not identify any hazardous substances.

DNREC-SIRB collected a composite soil sample from the intersection of the Site driveway and Baltimore Avenue to evaluate whether contaminated soil is conveyed off-site to the residential area due to the movement of trucks in and out of the property. Another composite surface soil sample was collected from locations off-site along Baltimore and Northern Avenue to obtain a preliminary estimate of the background metal concentrations in the surface soil in the area of the Site.

2.4 Site Investigation Results

The primary media of concern for the Site is surface soil. On the main portion of the Site, arsenic is the contaminant of potential concern. Arsenic concentrations in the surface soil ranged from 2.9 to 17.5 milligrams per kilogram (“mg/kg”). PCBs (Aroclor 1254) were detected in only one sample at a concentration of 0.7 mg/kg. The concentration is below DNREC-SIRB’s Uniform-Risk Based Standard (“URS”) for restricted use (3.0 mg/kg), but above the unrestricted use standard (0.3 mg/kg). Lead concentrations in the surface soil ranged from 7.7 to 41.1 mg/kg on the main portion of the Site, and are well below the URS for unrestricted use (400 mg/kg).

Surface soil in the low-lying southern portion of the Site contained elevated concentrations of organic materials and showed wetland characteristics. Surface soil at one location in this area showed the presence of lead at a concentration of 2,240 mg/kg, which is above DNREC-SIRB’s URS for restricted use (1,000 mg/kg). Arsenic and antimony at concentrations of 33.7 and 92.6 mg/kg, respectively, were also detected at this location. DP&L has proposed to remove soil from this area. In the remaining low-lying area, arsenic concentrations ranged from 13.5 to 30.7 mg/kg, with lead concentrations ranging from 287 to 387 mg/kg. No volatile organic compounds (“VOCs”), semivolatile organic compounds (“SVOCs”), pesticides, or cyanide were detected above DNREC-SIRB’s restricted or unrestricted use standards.

In subsurface soil (i.e., soil 2 feet below ground surface), contaminants above DNREC-SIRB’s restricted use standard were not detected. Arsenic was detected at concentrations of 1.6 to 3.2 mg/kg.

In groundwater, the only compounds that exceeded DNREC-SIRB’s standards were iron and manganese. Benzene, at a concentration of 2.1 ug/L, was detected in groundwater but the concentration is below DNREC-SIRB’s URS standard of 5 ug/L. DNREC-SIRB’s standard for iron and manganese are based on aesthetic (taste and odor) properties, not health risks. Additionally, groundwater is not currently being used at the Site or in the general area.

DNREC-SIRB collected a composite soil sample from locations along Baltimore and Northern Avenues in the vicinity of the Site to obtain a preliminary estimate of the background metal concentrations in the surface soil in the area of the Site. Arsenic at 9.2 mg/kg and lead at 112 mg/kg were detected. Other metals detected at low concentrations were nickel, copper, zinc, iron and barium.

DNREC-SIRB collected a composite soil sample from the intersection of the Site driveway and Baltimore Avenue. The soil sample was collected to evaluate whether contaminated soil was being conveyed off-site due to the truck traffic going in and out of the property. The sample contained arsenic at a concentration of 12.9 mg/kg, and lead at a concentration of 40.5 mg/kg

A wetland survey found evidence of wetland conditions on the southwestern portion of the Site, and the adjacent wooded area to the south. Wetland conditions were not observed in the main portion of the Site and adjacent properties to the east or west of the Site. Evidence of waste dumping from unknown sources was observed in the wooded wetland area outside the Site, and on the adjacent property to the west. The largest component of surface water runoff from the Site drains toward the low-lying southwest side of the Site, and from there, to the wooded wetland area south/southwest of the Site. This area also receives storm water runoff from up-gradient residential and commercial properties and from the railroad property. DNREC-SIRB will perform an additional investigation in the wooded wetland area outside the Site in the near future to evaluate contamination in that area. This work will be done as a separate site under an agreement with the Town of Elsmere, the owner of the wooded area.

3.0 SITE RISK EVALUATION

The risk posed by the site was evaluated by considering the Contaminants of Potential Concern (“COPCs”) at the Site and the potential impact to human health and the environment. The primary media of concern is surface soil. The COPCs for the Site are arsenic and lead in surface soil; and lead, arsenic and antimony in the low-lying southern wetland portion of the Site. PCBs were not included as a COPC because PCBs were detected in only one sample and risk calculations indicated a cancer risk well below $1.0E-05$ for both restricted and unrestricted use of the Site. Risk calculations indicate a total cancer risk of $5.26E-06$ and a Hazard Index (“HI”) of 0.09 for non-carcinogenic compounds for the restricted commercial use of the Site. For unrestricted use of the Site, the cancer risk calculated is $4.71E-05$ and the non-cancerous risk is a HI of 2.44.

The cleanup standard under HSCA is $1.0 E-05$ for cancer risk and HI of 1.0 for non-cancer risk. The risk posed by exposure to the soil on Site is below the cleanup standard assuming that the Site is used for commercial purposes. The Site is currently zoned commercial, but it is located near residential housing. Since contaminated soil from the Site is being “tracked” off-site into the residential neighborhood by vehicle traffic at the site, DNREC-SIRB has determined that the cleanup standard should be based on an unrestricted land-use assumption to prevent conveying of the contaminated soil to the residential neighborhood.

This risk calculation did not include lead. DNREC-SIRB’s restricted use URS for lead is 1,000 ppm and 400 ppm for unrestricted use. At one location, lead concentration exceeded 1,000 ppm. If the soil were excavated as proposed for this location, the maximum lead concentration left at the Site would be 387 ppm, which is below the unrestricted use of 400 ppm.

Subsurface soil (greater than 2 feet below surface) contamination was not detected above DNREC-SIRB’s restricted use URS standard. In groundwater, the only compounds that exceeded DNREC-SIRB’s URS standard were iron and manganese. However, DNREC-SIRB’s URS standard for these compounds are based on aesthetic qualities (taste and odor), and not

health. Moreover, groundwater is not currently being used at the Site or in the general area. The residents of the Town of Elsmere are served by public water (Artesian Water Company).

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. Objectives should consider current and potential land use, resource use, proximity of human populations, use of surrounding properties, and the level of contamination of surrounding properties. Qualitative objectives describe, in general terms, the ultimate result of remedial action. Quantitative objectives define specific levels of remedial action necessary to achieve protection of public health, welfare, and the environment.

The following objectives have been established by DNREC-SIRB for the Site.

Qualitative Remedial Objectives:

- ?? To restore the Site for commercial use as is consistent with its zoning and the surrounding residential land uses;
- ?? Prevent conveyance of surface soil to the adjacent residential area;
- ?? Prevent exposure to groundwater;
- ?? Prevent impact of the Site on the adjacent wetlands areas.

Quantitative Remedial Objectives:

Based on the above qualitative Remedial Action Objectives, the following quantitative remedial action objectives were developed:

- ?? Prevent human contact with contaminant concentrations that exceed 1.0E-05 cumulative cancer risk and a hazard index of 1.0 for non-carcinogenic compounds.
- ?? Prevent use of groundwater from the Site.
- ?? Prevent erosion of contaminated soil from the Site to the adjacent wetland areas.

5.0 FINAL PLAN OF REMEDIAL ACTION

Based on DNREC-SIRB's evaluation of the Site information, and the above remedial action objectives, the recommended remedial action for the Site will include the following:

1. Installation of a cap on the portion of the Site that will be used for any Site operations to prevent "tracking" or conveyance of surface soil to the adjacent residential area. A Site Plan submitted by the current owner, Marty Mellinger, on 11/15/01, ("Site Plan") consisting of an asphalt cover on the operation yard and a building, along with the maintenance of a vegetative cover on the rest of the area, would fulfill the remedial objective of preventing the transport of contaminated soil offsite during future use of the property. Site operations will not take place on any uncapped area. The Site Plan shall comply with all applicable and relevant rules and regulations including that of the DNREC and the Town of Elsmere before it can be implemented. Any modifications of the Site Plan that may be required by the Town of Elsmere, and which also meet the remedial objective of capping the Site and preventing offsite transport of surface soil, will

also be permitted under this Final Plan with DNREC-SIRB's prior written approval. Additional construction activities may be allowed on the Site, but only with the prior written approval of DNREC-SIRB.

2. The area of elevated lead, arsenic and antimony concentrations in the low-lying southern wetland portion of the property will be excavated as proposed by DP&L. The Work Plan for this proposal must have the prior written approval of DNREC-SIRB.
3. The remedial design will incorporate engineering controls to prevent potential impacts of Site soils due to storm water runoff and migration of contaminants to the wetland areas adjacent to the Site.
4. A vegetative cover shall be maintained on the low-lying wetland portion of the Site to prevent erosion of soil off-site erosion of soil.
5. The existing perimeter fence and gate at the Site will be maintained until DNREC-SIRB gives written approval for it to be removed.
6. Inspections shall be made on a quarterly basis to ensure that the cap, the vegetative cover and any other controls are meeting the objective of preventing contaminated soil from being "tracked" or conveyed off-site.
7. A deed restriction will be placed on the Site restricting it to commercial land use prohibiting groundwater use without DNREC-SIRB's approval, prohibiting any digging, drilling, excavating, grading, construction earth moving, or any other land disturbing activities on the property without the prior written approval of DNREC-SIRB.
8. A groundwater management zone ("GMZ") will be established which will restrict groundwater withdrawals at this Site. The GMZ will be administered via a memorandum of understanding between DNREC's Division of Air and Waste Management and Division of Water Resources.

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 Friday, August 24, 2001, and was extended until September 26, 2001.

6.1 Public Meetings

A public meeting was held at the Elsmere Town Hall on September 12, 2001 at 7:30 p.m. to present the Proposed Plan for Remedial Action for the site. Representatives from DNREC-SIRB, the Town of Elsmere, the consultant for DP&L and several residents of Elsmere were present at the meeting. Several concerns and comments regarding the current and future use of the property were voiced. DNREC-SIRB indicated that they would look into the matter and would schedule a meeting with the Town and the current owner of the property. The meeting was scheduled on

Friday, September 21, 2001. The public comment period began on August 24, 2001, and was extended until September 26, 2001, at the request by the Town of Elsmere.

The meeting among representatives from DNREC-SIRB, the Town of Elsmere and the current property owner was held at the Elsmere Town Hall on September 21, 2001. The purpose of the meeting was to discuss the present and future activities at the site by the current owner and the regulatory requirements by different branches of DNREC and the Town of Elsmere. The Town indicated that they may have more stringent requirements than those proposed in DNREC-SIRB's Proposed Plan for Remedial Action for the site.

6.2 Public Comments and Responses

Comments from the Town of Elsmere: A comment letter from the Town of Elsmere dated 9/24/01 was received on 10/15/01. A representative from the Town of Elsmere called on September 26 and informed DNREC-SIRB that the Town was having some internal problems and that the letter would be late. DNREC-SIRB determined that acceptance of the remedial plan by the Town and its citizens was important to the success of the remedy and accepted the comment letter. The comments summarized from the letter along with DNREC's responses are as follows:

?? The Town or Elsmere representative mentioned that the site was zoned commercial in 1948 and suggested that if zoning were determined today the site would be zoned residential to fit the surrounding residential neighborhood. The Town representative then suggested that the site should be restored to a condition using the residential use standard instead of the less stringent commercial use standard.

The risk calculations performed during the remedial investigation indicated that the site met the commercial use standard provided a limited amount of contaminated soil from a low lying wetland area was removed. DNREC-SIRB considered the presence of the surrounding residential neighborhood and determined that the site required a remedy because soil leaving the Site did not meet the unrestricted cleanup standard. DNREC-SIRB also collected surface soil from the surrounding residential area to determine background concentration of metals. Arsenic concentrations in the background surface soil exceeded the unrestricted use standard.

?? After listing the remedy proposed by DNREC-SIRB for the site, the Town suggested that the only true way to eliminate the current and future potential danger to the residents of this area is to order a complete removal and replacement of the existing soil from the site. The Town also suggested that that the total removal of all contaminated soil cannot cost much more than the cost of implementing the Proposed Plan.

The Proposed Plan was developed with the understanding that capping and hot spot excavation are applicable remedies for surface soil contamination, and determined that this measure will be protective of public health and environment. As suggested by the Town, the removal of contaminated soil and replacement with clean soil will also protect human health and environment. However, HSCA requires that a cost comparison between remedial alternatives be evaluated. DNREC-SIRB requested DP&L to perform a focused feasibility study to compare the cost-effectiveness of remedies. DP&L responded by suggesting that such study is unwarranted

because the substantial cost to remove all contaminated soil from the site is disproportionate to the incremental protection it would achieve and is not technically justifiable or practicable (Attachment A). DP&L maintained that the remedial measures proposed should provide adequate protection.

DNREC-SIRB performed a preliminary cost comparison between the proposed remedy and the excavation of contaminated soil as proposed by the Town. The cost for soil excavation is several times more than the capping alternative presented in the proposed remedy (Attachment B).

?? The Town of Elsmere asked whether the town code was taken into consideration during the development of the Proposed Plan, because the Code may not allow maximum coverage of the land.

A copy of the Proposed Plan was faxed to the Town's representative but no comments were received before it was published. The current owner, Marty Mellinger, submitted a site plan to DNREC-SIRB on 11/15/01, which includes construction of an asphalt cap on the operation yard and a building. According to Mr. Mellinger, the plan was prepared in accordance with the Town's code and submitted for the Town's review. According to the plan, the building and the asphalt capped operation yard will cover about 56% of the property.

Comments from Residents of Elsmere: Several verbal comments were made during the public meeting on 9/12/01. Most of these comments are included in the letter by the Town of Elsmere.

?? One resident claimed that he witnessed the current site owner bringing in "waste, which could be hazardous." He also claimed that the owner moved dirt around the property and inquired about what limits could be placed upon the current site owner.

Similar complaints were voiced earlier and a site inspection by DNREC-Solid and Hazardous Waste Management Branch and DNREC-SIRB did not find any evidence of hazardous waste being brought to the Site. Also, the Final Plan of Remedial Action will put several restrictions on the use of the site.

?? Residents expressed concern that the site owner was bringing dirt out on to the street. They asked whether a prohibition on dust generation activities could be placed. They complained that DNREC's Enforcement Section did not respond to their complaints and questioned why the remedy was not in place yet.

DNREC-SIRB has approved an interim measure proposed by the current owner to install a construction entrance to the site, which is intended to prevent "tracking" of soil to the streets. DNREC-SIRB, on 12/4/01, sent a letter reminding the current owner that activities should be limited to areas where stone cover was placed, and take all necessary measures to prevent soil from being "tracked" or conveyed offsite as an interim measure. The remedy selected in the Final Plan will prevent soil migration and stop dust generation. DNREC-SIRB followed up with DNREC's Enforcement Branch and they indicated that they have responded to repeated complaints but were not able to substantiate the basis of the complaint. With regards to the amount of time it has taken to issue this Final Plan, DNREC-SIRB has followed its administrative process and has continued to work with DP & L, the Town of Elsmere and the Residents in reaching this final remedy decision

7.0 DECLARATION

This Final Plan of Remedial Action for the Former DP & L Elsmere Substation Site is protective of human health, welfare and the environment and is consistent with the requirements of the Delaware Hazardous Substance Cleanup Act (“HSCA”).

John Blevins, Director
Division of Air and Waste Management

Date

QS/rm
QS01031.doc
DE 1186 II B9

Figure 1: Site Location Map

Figure 2: Sample Location Map