

STATE OF DELAWARE

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL- SITE INVESTIGATION AND RESTORATION BRANCH

FINAL PLAN OF REMEDIAL ACTION



**2621 Philadelphia Pike
Claymont, Delaware**

DNREC Project No. DE-1296

This final plan of remedial action (final plan) presents the Department of Natural Resources and Environmental Control's (DNREC's) preferred cleanup alternative for 2621 Philadelphia Pike (site) in Claymont, DE. For site-related reports and more information, please see the public participation section of this document.

The purpose of the final plan is to provide specific information about the soil and groundwater contamination and the cleanup alternatives, if necessary, that DNREC has considered. As described in Section 12 of the Delaware Regulations Governing Hazardous Substance Cleanup (Regulations), DNREC provided notice to the public and an opportunity for the public to comment on the proposed plan of remedial action (proposed plan). During the comment period of May 26, 2004 through June 14, 2004, DNREC did not receive any comments on the proposed plan; therefore, the proposed plan has been adopted as the final plan. The final plan designates the selected remedy of the site.

The final plan summarizes the April 4, 2002 Phase II Environmental Site Assessment, DNREC's Underground Storage Tank Branch investigations and the April 1, 2004 Facility Evaluation (FE)/Remedial Investigation (RI) report and the administrative record file upon which this final plan is based. Copies of these documents can be obtained or viewed at locations listed at the end of this document.

INTRODUCTION

The site is located at 2621 Philadelphia Pike in Claymont, Delaware (Figure 1). On September 9, 2003, Mid-Atlantic Resources, Inc. (Mid-Atlantic) entered into the Delaware Department of Natural Resources and Environmental Control, Site Investigation and Restoration Branch's (DNREC-SIRB's) Voluntary Cleanup Program (VCP). Mid-Atlantic desires a Certificate of Completion of Remedy (COCR) prior to the sale of the property.

The site includes a vacant former Brosius-Eliason Lumber Home Center warehouse/retail building located on 2.9-acre site (Tax Parcel #06-096.00-004). The L-shaped building occupies the center of the site. Paved parking lots are located to the east and west of the building (Figure 2). Small grass-covered areas are located along the western property boundary and narrow grass or leaf-covered strips, along the street right-of-ways and southern wall of the building. The area north of the building is enclosed by a fence.

The site is located at the intersection of Harvey Road and Philadelphia Pike. The site is bordered on the north and west by residences, to the east by Harvey Road and further east by the Town and County Shopping Center, and to the southeast and south by Philadelphia Pike and two shopping plazas.

SITE DESCRIPTION AND HISTORY

The site was originally developed between 1936 and the early 1940s. In 1955, the site was occupied by the 7-Up Bottling Company as a bottling plant. The 7-Up Bottling Company closed in 1980. In 1984, the site was leased to Brosius-Eliason Company, which operated a retail lumber store and home center until 2000. The site has been unoccupied since 2000. A 3,000-gallon gasoline underground storage tank (UST) was removed from the site in 1994. Although a release was observed during the time of the UST removal, based on soil sample analytical results, DNREC's Tank Management Branch (TMB) issued a No Further Action letter on February 24, 1995. No other USTs are present at the site.

As part of a proposed property transfer and redevelopment, a Phase II Environmental Site Assessment (Phase II) was conducted in February 2002. During the Phase II, 13 soil borings (one of which was converted to a temporary monitoring well) and four permanent groundwater monitoring wells were installed. Soil from the soil borings and groundwater were analyzed for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). Analytical results from the Phase II indicated the presence of tetrachloroethene (PCE) in groundwater (2.3 micrograms per liter, $\mu\text{g/L}$), which is below the Delaware Uniform-Risk Based (URS) Standard of 5 $\mu\text{g/L}$. Benzene, ethylbenzene and naphthalene were detected in groundwater above DNREC's URS levels.

As part of the FE/RI work plan, the vapor intrusion to indoor air pathway from groundwater was evaluated using the EPA Guidance document entitled, "November 29, 2002, Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils" (guidance). The intent of conducting the vapor intrusion pathway evaluation was to determine whether or not the vapor intrusion exposure pathway was complete and, if so, whether it posed an unacceptable risk to human health.

After applying the screening process as described in EPA's guidance document, the results indicated that the groundwater contaminants of concern would not impact indoor air sufficiently to present an unacceptable risk to indoor air to human health.

INVESTIGATION RESULTS

Soil

A FE/RI was conducted at the site on February 5, 2004. In order to conduct a statistically valid risk assessment of the site soils, ten surface soil samples were collected (Figure 2). The samples were screened by DNREC's laboratory. The screening detected low levels of polynuclear aromatic hydrocarbons (PAHs), which are SVOC base/neutral compounds, and metals. Based on the screening results, one sample was analyzed for VOCs, SVOCs base/neutral compounds, Target Analyte List (TAL) metals, and PCBs, and two additional samples were analyzed for SVOCs base/neutrals only.

No VOCs or PCBs were reported over the unrestricted URS values in any of the soil samples. Benzo (a) pyrene was reported in all three soil samples (HA-2, HA-8, and HA-9) at concentrations ranging from 150 micrograms per kilogram ($\mu\text{g}/\text{kg}$) for HA-2 to 240 $\mu\text{g}/\text{kg}$ for HA-8. All the concentrations were over the unrestricted URS value of 90 $\mu\text{g}/\text{kg}$. Arsenic was reported at 5.45 mg/kg, which is over the URS unrestricted value of 4 mg/kg, but below the DNREC established background concentration of 11 mg/kg. Since arsenic was below the background level, arsenic was not considered a contaminant of concern (COC).

The COC in soil at the site was benzo (a) pyrene. This compound exceeded the URS values for unrestricted use. The maximum concentrations of the 13 SVOCs detected in the soil samples including benzo (a) pyrene were entered into the DNREC risk calculator spreadsheet. The cumulative risk for these compounds including benzo (a) pyrene was less than 1×10^{-5} cancer risk level for unrestrictive use (Attachment A).

Groundwater

DNREC reviewed the groundwater chromatographs from the Phase II and concluded that for the RI, the groundwater samples did not have to be analyzed for SVOCs, metals, pesticides or PCBs. The groundwater samples were analyzed for VOCs by EPA Method 8260. The four groundwater wells were re-sampled as part of the FE/RI conducted in 2004. No VOCs were reported over the respective URS values. Based on these results, there are no remaining groundwater COCs at the site.

REMEDIAL ACTION OBJECTIVES

The following qualitative objectives have been determined to be appropriate for the site:

- ☒ Prevent exposure to impacted media;
- ☒ Minimize potential exposure to site contaminants of concern for construction workers at the site; and
- ☒ Prevent environmental impacts to onsite indoor commercial workers.

These objectives are consistent with the current and proposed future use of the site as a commercial/industrial property in an urban setting, City of Claymont zoning policies, state regulations governing water supply and worker health and safety.

Based on the qualitative objectives, the quantitative objective is:

1. Prevent human exposure to impacted soil and groundwater that would result in a carcinogenic risk exceeding 1×10^{-5} or a non-carcinogenic risk exceeding a hazard index (HI) of 1.0.

FINAL PLAN OF REMEDIAL ACTION

Based on DNREC's evaluation of the site information, which includes current and past environmental investigations, historical information and the above remedial action objective, the recommended action for the site is No Further Action as benzo (a) pyrene in soils is the only COC and the carcinogenic risk of this COC is less than 1×10^{-5} and the non-carcinogenic risk does not exceed a HI of 1.0, assuming unrestricted land use.

PUBLIC PARTICIPATION

The Department actively solicited written public comments and suggestions on the proposed plan of remedial action. The comment period began on May 26, 2004 and ended on June 14, 2004. No comments were received. If you have any questions or concerns regarding the 2621 Philadelphia Pike site, or if you would like to view reports or other information regarding the site, please contact the project manager, Rick Galloway, at 391 Lukens Drive, New Castle, Delaware 19720, or at 302.395.2600.

DECLARATION

The final plan of remedial action for the 2621 Philadelphia Pike 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

Date of Review

RMG/dp
RMG04020.doc
DE 1296 II B9

FIGURES

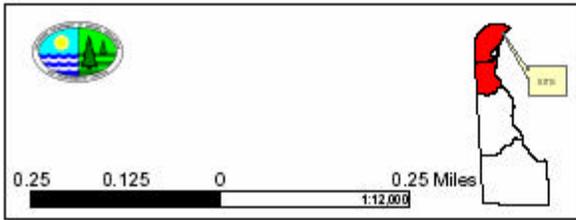
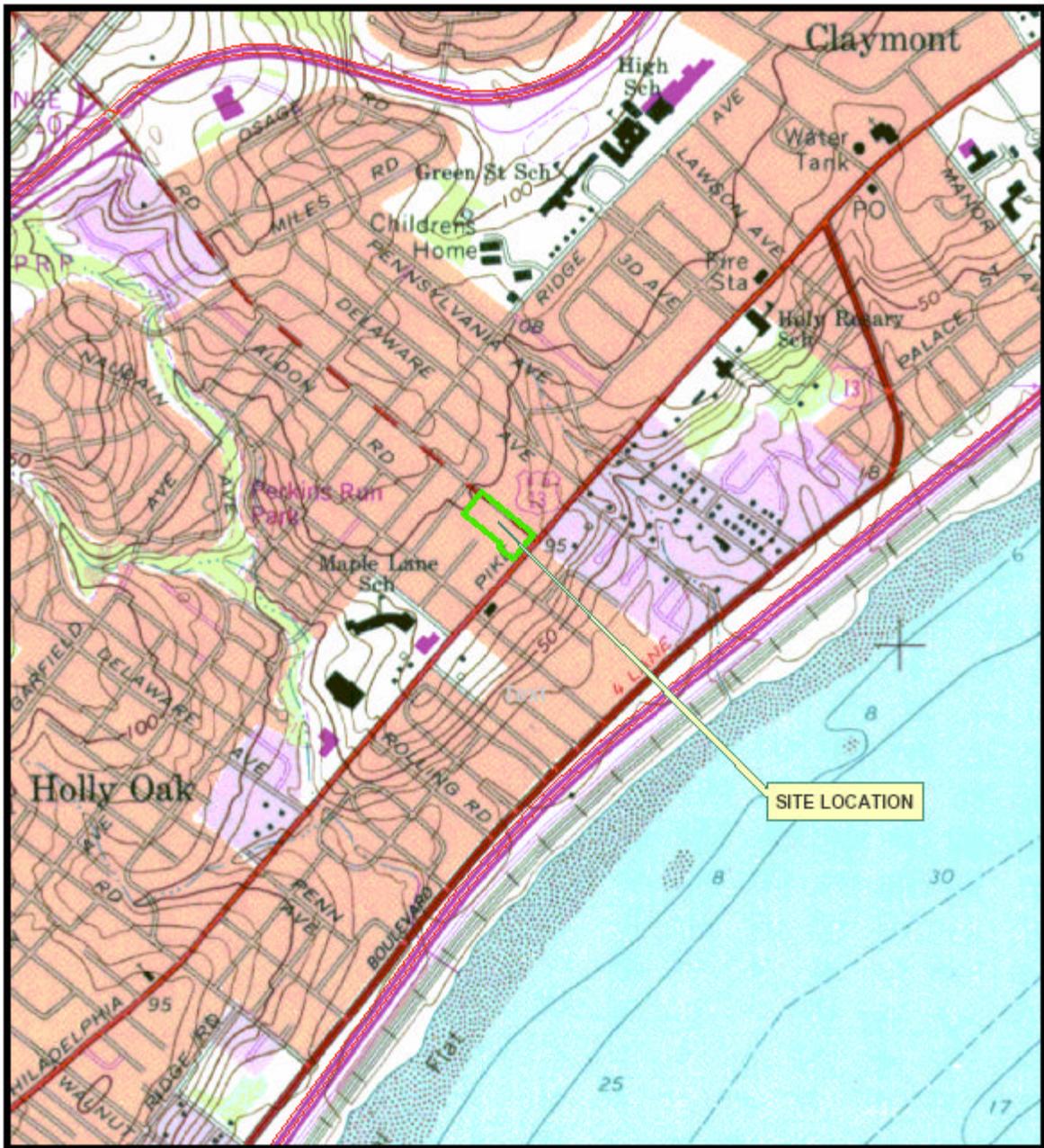


FIGURE 1
2621 PHILADELPHIA PIKE

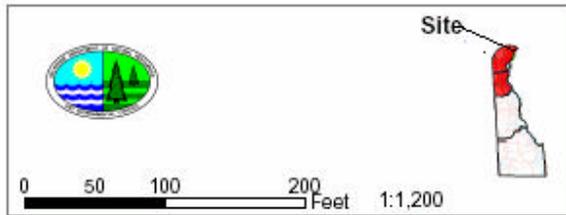
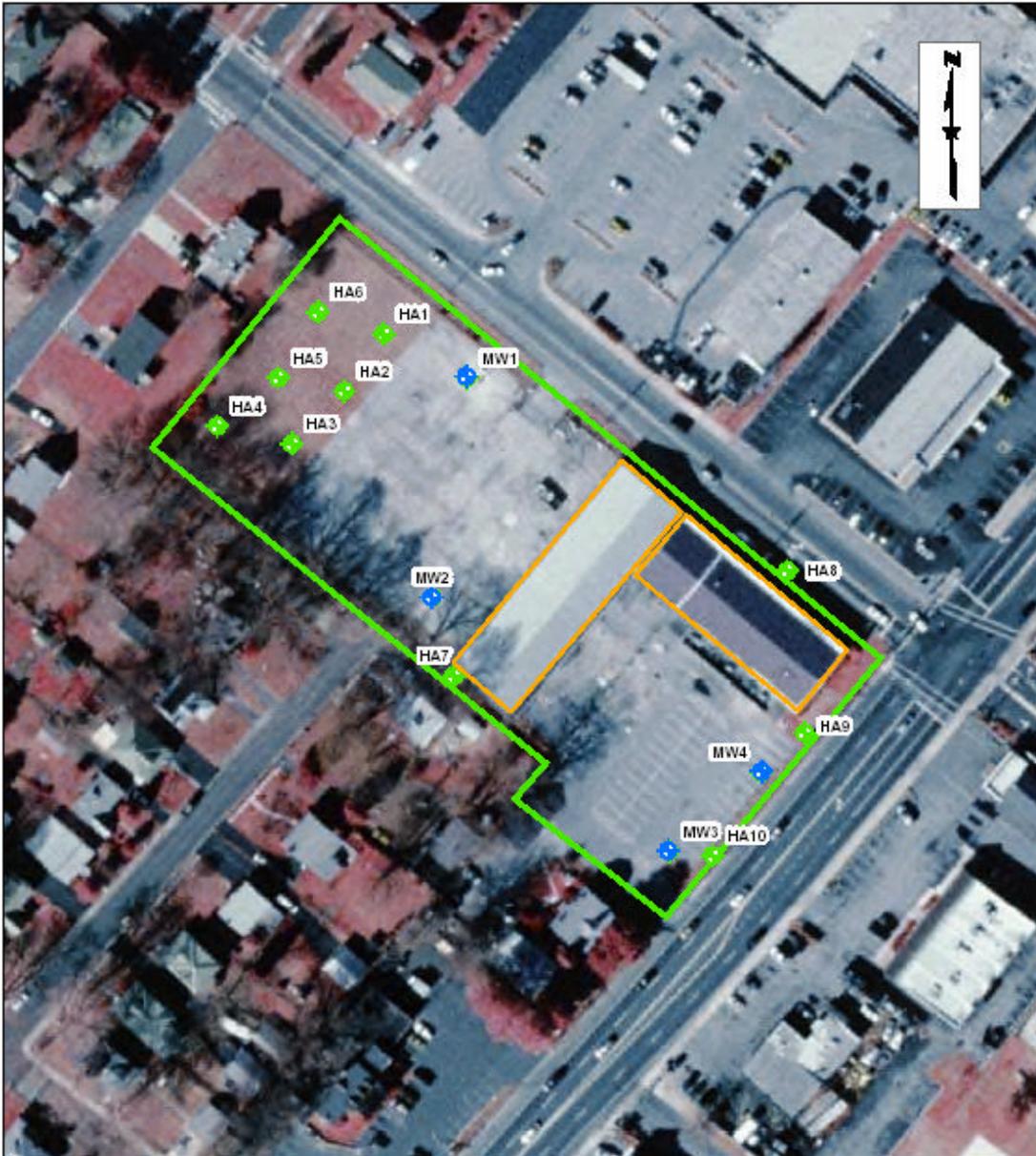


FIGURE 2
SAMPLE LOCATION MAP
2621 PHILADELPHIA PIKE

ATTACHMENT A

TABLE 7-1A
 RISK CALCULATION SUMMARY, PAIS IN SOIL, HA-2
 2621 PHILADELPIA PIKE
 CLAYMONT, DELAWARE

| Command Buttons | | DNREC SITE-SPECIFIC STANDARD CALCULATOR FOR MULTIPLE ANALYTES May, 1999 Version | | | Calculated Cancer Risk | | | Calculated Noncancer Risk | | | |
|--|--|--|---------------------------------|---|---|------------------------------------|---|---|---------------------------------------|--|--|
| Click to learn about this application Click here to calculate risk Click on this to filter results Click to remove results filter | | Site Concentrations Table | | | Totals By Category | | | Totals By Category | | | |
| Contaminant Name | | CAS Number | Ground Water Concentration ug/L | Soil Concentration (Restricted Use) mg/kg | Soil Concentration (Unrestricted Use) mg/kg | Ground Water Ingestion Cancer Risk | Soil-Related Cancer Risk (Restricted Use) | Soil-Related Cancer Risk (Unrestricted Use) | Ground Water Ingestion Noncancer Risk | Soil-Related Noncancer Risk (Restricted Use) | Soil-Related Noncancer Risk (Unrestricted Use) |
| POLYNUCLEAR AROMATIC HYDROCARBONS | | | | | | | | | | | |
| ACENAPHTHENE | | 43129 | | | 0.061 | | | | | | 0.00 |
| PYRENE | | 129600 | | | 0.430 | | | 4.91E-06 | | | |
| BENZ[A]ANTHRACENE | | 56553 | | | 0.073 | | | 8.34E-08 | | | |
| BENZO[A]PYRENE | | 50328 | | | 0.150 | | | 1.71E-06 | | | |
| BENZO[B]FLUORANTHENE | | 209802 | | | 0.190 | | | 2.17E-07 | | | |
| BENZO[K]FLUORANTHENE | | 207809 | | | 0.064 | | | 7.31E-09 | | | |
| CHRYSENE | | 218019 | | | 0.100 | | | 1.14E-09 | | | |
| FLUORANTHENE | | 206440 | | | 0.210 | | | | | | 0.00 |
| INDENO[1,2,3-c,d]PYRENE | | 193393 | | | 0.070 | | | 8.57E-08 | | | |

TABLE 7-1B
 RISK CALCULATION SUMMARY, PAHS IN SOIL, HA-8
 2621 PHILADELPHIA PIKE
 CLAYMONT, DELAWARE

| Command Buttons | | DNREC SITE-SPECIFIC STANDARD CALCULATOR FOR MULTIPLE ANALYTES May, 1999 Version | | | | Calculated Cancer Risk | | | Calculated Noncancer Risk | | |
|--|--------|--|-----------------------------------|---|---|------------------------------------|---|---|---------------------------------------|--|--|
| Click to learn about this application Click here to calculate risk Click on this to filter results Click to remove results filter | | Site Concentrations Table | | | | Totals By Category | | | Totals By Category | | |
| Contaminant Name | | CAS Number | Ground Water Concentration (ug/L) | Soil Concentration (Restricted Use) (mg/kg) | Soil Concentration (Unrestricted Use) (mg/kg) | Ground Water Ingestion Cancer Risk | Soil-Related Cancer Risk (Restricted Use) | Soil-Related Cancer Risk (Unrestricted Use) | Ground Water Ingestion Noncancer Risk | Soil-Related Noncancer Risk (Restricted Use) | Soil-Related Noncancer Risk (Unrestricted Use) |
| POLYNUCLEAR AROMATIC HYDROCARBONS | | | | | | | | | | | |
| ANTHRACENE | 120127 | | | 0.048 | | | | 5.49E-07 | | | |
| PYRENE | 129000 | | | 0.430 | | | | 4.91E-06 | | | |
| BENZ[<i>a</i>]ANTHRACENE | 56553 | | | 0.230 | | | | 2.63E-07 | | | |
| BENZO[<i>a</i>]PYRENE | 50334 | | | 0.240 | | | | 2.74E-06 | | | |
| BENZO[<i>b</i>]FLUORANTHENE | 209902 | | | 0.310 | | | | 3.54E-07 | | | |
| BENZO[<i>k</i>]FLUORANTHENE | 207689 | | | 0.130 | | | | 1.49E-08 | | | |
| CHRYSENE | 218019 | | | 0.290 | | | | 3.20E-09 | | | |
| DIBENZ[<i>a,h</i>]ANTHRACENE | 53703 | | | 0.051 | | | | 5.83E-07 | | | |
| FLUORANTHENE | 206440 | | | 0.410 | | | | | | | 0.00 |
| INDENO[1,2,3- <i>c</i>]DIPYRENE | 193395 | | | 0.160 | | | | 1.83E-07 | | | |

TABLE 7-1C
 RISK CALCULATION SUMMARY, PAHS IN SOIL, HA-9
 2621 PHILADELPHIA PIKE
 CLAYMONT, DELAWARE

| Command Buttons | | DNREC SITE-SPECIFIC STANDARD CALCULATOR FOR MULTIPLE ANALYTES May, 1999 Version | | | Calculated Cancer Risk | | | Calculated Noncancer Risk | | | | | | |
|--|------------|--|---|---|------------------------------------|---|---|---------------------------------------|--|--|------|------|--|------|
| Click to learn about this application Click here to calculate risk Click on this to filter results Click to remove results filter | | Site Concentrations Table | | | Totals By Category | | | Totals By Category | | | | | | |
| 0.00E+00 | | | | | 0.00E+00 | | | 6.85E-06 | | | 0.00 | | | 0.00 |
| 0.00E+00 | | | 0.00E+00 | | | 3.54E-06 | | | 0.00 | | | 0.00 | | |
| 0.00E+00 | | | 0.00E+00 | | | 3.54E-06 | | | 0.00 | | | 0.00 | | |
| Contaminant Name | CAS Number | Ground Water Concentration (ug/L) | Soil Concentration (Restricted Use) (mg/kg) | Soil Concentration (Unrestricted Use) (mg/kg) | Ground Water Ingestion Cancer Risk | Soil Related Cancer Risk (Restricted Use) | Soil Related Cancer Risk (Unrestricted Use) | Ground Water Ingestion Noncancer Risk | Soil Related Noncancer Risk (Restricted Use) | Soil Related Noncancer Risk (Unrestricted Use) | | | | |
| POLYNUCLEAR AROMATIC HYDROCARBONS | | | | | | | | | | | | | | |
| PPYRENE | 129000 | | | 0.316 | | | 3.54E-06 | | | | | | | |
| BENZ[A]ANTHRACENE | 56553 | | | 0.173 | | | 1.94E-07 | | | | | | | |
| BENZO[A]PYRENE | 50328 | | | 0.190 | | | 2.17E-06 | | | | | | | |
| BENZOF[FLUORANTHENE | 20992 | | | 0.260 | | | 2.97E-07 | | | | | | | |
| BENZOF[K]FLUORANTHENE | 20789 | | | 0.092 | | | 1.05E-08 | | | | | | | |
| CHRYSENE | 218019 | | | 0.230 | | | 2.63E-09 | | | | | | | |
| DIBENZO[A,H]ANTHRACENE | 53703 | | | 0.043 | | | 4.91E-07 | | | | | | | |
| FLUORANTHENE | 206440 | | | 0.290 | | | | | | 0.00 | | | | |
| INDENO[1,2,3-C,D]PYRENE | 193395 | | | 0.120 | | | 1.37E-07 | | | | | | | |