Volume 1

ENGINEER'S AND OWNER'S CERTIFICATION OF CLOSURE FOR WASTE MANAGEMENT UNITS AT PHILADELPHIA COKE COMPANY

Prepared for:

Philadelphia Coke Company
Philadelphia, Pennsylvania

Woodward-Clyde

Prepared by:

Woodward-Clyde Consultants
Plymouth Meeting, Pennsylvania

December 1992

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1.1 SCOPE AND OBJECTIVES

This Engineer's and Owner's Certification of Closure document has been prepared for the solid waste management units (SWMUs) and hazardous waste management units (HWMUs) at the former Philadelphia Coke Company (Philadelphia Coke) plant in accordance with the requirements of the Pennsylvania Department of Environmental Resources' (PADER) hazardous waste management regulations; specifically, Title 25, Sections 265.115 and 265.117 requirements pertaining to certification of closure and postclosure care and use of property are addressed. It is the intent of this closure certification to demonstrate that the SWMUs and HWMUs have been closed in accordance with the PADER-approved Closure Plan.

Representatives of Philadelphia Coke, several consultants, and numerous contracting firms have been involved with the removal and subsequent disposal of the various solid and hazardous wastes identified in the PADER-approved Closure Plan. Cleanup and closure activities proceeded in stages to various degrees of completion before Woodward-Clyde Consultants (WCC) was engaged by Philadelphia Coke in February 1985.

Closure activities were initiated by Philadelphia Coke at about the same time the plant closed permanently in May 1982. Although WCC was not involved in the closure activities between the time of plant closing and February 1985, WCC did review available records and documents, and conduct a general facility inspection in connection with its investigatory and closure activities.

1.2 BACKGROUND

Philadelphia Coke operated a gas manufacturing and coke production facility from January 1929 until its permanent closing in May 1982. Initially, the plant was built to provide manufactured gas to the City of Philadelphia for illumination and heating.

Later, as market conditions changed, production of metallurgical coke was emphasized. The former plant site is located on approximately 63 acres of industrial zoned land in the Bridesburg section of the City of Philadelphia, Pennsylvania (Figure 1).

1.2.1 Process Description

Philadelphia Coke used bituminous coal with some anthracite as raw materials. The coal was carbonized in Koppers-Becker slot-type by-product ovens.

The principal source of waste materials from the coking operation was the coal gas cleaning and cooling system. Figure 2 depicts a generalized process diagram for the gas cleaning and cooling operations that were used at the Philadelphia Coke plant.

During the coal carbonization process and subsequent coal gas cleaning and cooling operations, some heavy hydrocarbons were produced which combined with fine coal or coke solids in the gas stream. This mixture of heavy hydrocarbons (i.e., coal tar) and fine solids settled in the tar decanters which functioned as tar/water separators. Periodically the settled mixture, referred to as decanter tank tar sludge, was purged from the decanters and removed for disposal. The decanter tank tar sludge is similar chemically to coal tar and contains a variety of compounds, including polycyclic aromatic hydrocarbons (PAHs).

1.2.2 Regulatory Considerations

Under the USEPA Resource Conservation and Recovery Act (RCRA) program, Philadelphia Coke filed a Part A Application for interim status as a generator and as a treatment, storage, or disposal facility. This application (Appendix A-1) indicated decanter tank tar sludge from coking operations (USEPA Waste No. K087) as the only hazardous waste from specific sources and was submitted to the USEPA on August 18, 1980. In a letter dated July 24, 1981 (Appendix A-2), the USEPA indicated that Philadelphia Coke complied with the RCRA interim status requirements and was assigned EPA I.D. No. PAD000427906 to handle K087 and D003 listed hazardous wastes. The K087 waste designation referred to the decanter

tank tar sludge from coking operations, while the D003 referred to the spent iron oxide from the oxide boxes.

Representatives of the PADER inspected the closed Philadelphia Coke plant on June 4, 1982 and requested that Philadelphia Coke prepare a closure plan for the hazardous waste management facilities at the plant. This closure plan, dated June 1983, was submitted to the PADER on June 23, 1983 (Appendix A-3). The PADER conditionally approved the closure plan by letter dated December 13, 1983 (Appendix A-4). The following two conditions were imposed upon the closure plan approval:

- Groundwater monitoring wells were to be installed and monitored
- Only coke breeze and PADER Class I demolition debris could be disposed on site

1.2.3 Groundwater

Between December 1983 and the spring of 1985, a groundwater sampling and analysis plan was developed in order to comply with the first PADER closure condition. Documents pertaining to this groundwater sampling and monitoring plan are presented in Appendixes A-5 through A-8.

Four monitoring wells (W-1 through W-4) were installed in accordance with the plan on March 25 and 26, 1985. The groundwater monitoring plan was officially approved by the PADER in a letter dated September 12, 1985 (Appendix A-8). Subsequently, two additional monitoring wells (W-5 and W-6) were installed on October 23, 1986. These six monitoring wells, as shown on Plate 1, comprise the RCRA groundwater monitoring network at the Philadelphia Coke plant site.

The groundwater evaluation program at Philadelphia Coke was further modified by WCC's letter dated August 27, 1986 (Appendix A-9) to incorporate knowledge gained during the hydrogeologic evaluation program. This addendum to the groundwater sampling and analysis plan suggested indicator parameters for the background well (W-4), refinement of groundwater flow condition evaluations, and

aquifer testing. Results of these modifications to the program and of the entire hydrogeologic assessment were presented in WCC's report dated January 29, 1986 (Appendix A-10). This report concluded the following:

- Well W-1 monitors groundwater downgradient from the former tar plains area and exhibits no contamination associated with the former coal gas or tar processing operations.

- Well W-2 is monitoring groundwater in the vicinity of the former tar decanters which has been impacted by these facilities.

- Well W-2 exhibits the highest levels of groundwater contamination in the shallow groundwater zone, and the nature of the contaminants represent components related to the processing of coal gas and/or coal tar.

- Well W-3 exhibits essentially no contamination associated with the former coal gas or tar processing operations.

- Well W-4 is monitoring groundwater that represents background conditions in a location regionally upgradient of the former plant processing areas.

Groundwater monitoring during closure activities is discussed in Section 1.2.4 and a further discussion of the results of monitoring groundwater from Wells W-1 through W-6 is presented in Section 3.0 of this document.

1.2.4 Soil

In a letter dated March 14, 1985 (Appendix A-6), the PADER requested that a soil sampling program be developed to evaluate whether satisfactory closure of the former decanter lagoons had been achieved. Subsequent discussions between Philadelphia Coke and the PADER pertaining to the extent and scope of soil sampling resulted in a program which was submitted to the PADER on April 15, 1986 (Appendix A-11). The PADER reviewed the proposed soil evaluation program and responded with comments in a letter dated June 12, 1986 (Appendix A-12).

In response to the PADER's comments, WCC prepared a revised soil sampling program on behalf of Philadelphia Coke which was submitted on August 27, 1986 (Appendix A-13). The PADER approved this work plan in a letter dated September 18, 1986 (Appendix A-14).

The PADER-approved soil boring program was conducted on October 15, 16, and 17, 1986. As a result of observations made during this soil boring investigation program, the PADER issued a letter dated October 31, 1986 (Appendix A-15) which requested submission of information pertaining to location of the WMUs and how much contaminated soil and waste would be removed from the site.

Correspondence pertaining to the PADER review of the January 29, 1987 Hydrogeologic and Soils Investigation Report (Appendix A-10) is summarized in Appendixes A-16, A-17, and A-18. Items of significant importance resulting from this correspondence include:

- Additional soil investigations were to be conducted in the vicinity of the former tar decanter lagoons.

- The USEPA EP Toxicity Test for Inorganics would be used to evaluate the soils during final closure.

In a letter dated July 1, 1987 (Appendix A-19), the PADER reiterated the agency's belief that the closure of the Philadelphia Coke site should be in accordance with the approved closure plan (Appendix A-3). The approved closure plan called for landfill disposal of all appropriately contaminated materials and soils.

In response to this request, Philadelphia Coke indicated in a letter dated July 22, 1987 (Appendix A-20) that the current federal regulatory arena favored the use of technologies which ultimately destroy or detoxify wastes rather than simply transferring them to another disposal area. Philadelphia Coke advanced options such as bioremediation or other technologies to destroy, detoxify, or reduce the concentration of the contaminants of concern.

A meeting between representatives of Philadelphia Coke, the PADER, and WCC was held on December 21, 1987 to discuss the anticipated closure approaches. One of the main purposes for the meeting was to discuss cleanup levels of the PAHs, as summarized in WCC's letter dated January 28, 1988 (Appendix A-21).

In response to the PADER's request to develop volume estimates of contaminated soil that must be handled at closure, Philadelphia Coke conducted an exploratory soil boring program in December 1987. This program, as summarized in a report prepared by WCC dated February 15, 1988 (Appendix A-22), involved advancing 67 soil borings on a square grid pattern on 50-foot centers over the former main processing area at the Philadelphia Coke plant site. This soil boring effort characterized the extent of soil contamination and enabled estimates to be made of soil quantities for off-site disposal and possible on-site treatment.

In February 1988, a detailed work plan for a field pilot land treatment testing program at the Philadelphia Coke site was developed and submitted to the PADER for review. A copy of this work plan, which was subsequently revised in July 1988, is included as Appendix A-23. The PADER reviewed the initial work plan and summarized its comments in a letter dated March 28, 1988 (Appendix A-24), and requested additional information pertinent to the processes and chemicals used when the Philadelphia Coke plant was operating. The PADER requested this information in order to evaluate cleanup levels. The requested information was provided to the PADER on behalf of Philadelphia Coke at a meeting on April 6, 1988, as indicated in WCC's letter dated April 6, 1988 (see Appendix A-25).

By late 1987 and early 1988, it became apparent that the quantity of soils potentially requiring cleanup was larger than that identified in the June 1983 PADER-approved closure plan. This indication resulted from knowledge gained during the soil boring programs and other site investigations described previously. Accordingly, Philadelphia Coke attempted to establish a reasonable and appropriate cleanup level for the contaminants of concern at the site (i.e., the polycyclic aromatic hydrocarbons -- PAHs). In a letter from WCC to the PADER dated January 28, 1988 (Appendix A-21), a request was made on behalf of Philadelphia Coke to establish some mutually acceptable cleanup levels.

The PADER conditionally approved the February 1988 bioremediation pilot study work plan in a letter dated April 21, 1988 (Appendix A-26). In this letter the PADER indicated that total PAH compounds could not be used for soil cleanup characterization and that cleanup levels would be set for specific compounds. No specific criteria for these compounds, however, were proposed by the PADER.

During the spring of 1988, it became apparent to Philadelphia Coke that to comply with the approved closure plan, it would be necessary to effect the closure activities that would generate soils requiring landfilling before the August 1988 federally-mandated land disposal ban on K087 materials. Consequently, it was imperative that cleanup criteria be established for the closure activities so that work could proceed.

Based upon available literature pertaining to USEPA decisions on criteria at similarly contaminated sites (Appendix A-21), cleanup criteria were proposed in a letter prepared by WCC on behalf of Philadelphia Coke, dated May 20, 1988, as presented in Appendix A-27.

The criteria proposed by Philadelphia Coke to define clean closure of the WMUs at the site (for both in-place soils and those that would be backfilled in selected areas following the bioremediation process) were as follows:

- The sum of the concentration of those PAH compounds identified by the USEPA as either suspected animal carcinogens or compounds having some suspected carcinogenic potency (i.e. the CPAHs) would be limited to 50 ppm in the soil.

- No individual compound of the six CPAHs, so identified by the USEPA, would exceed a concentration of 15 ppm.

Because no written response was received from the PADER pertaining to this request, and because Philadelphia Coke was obligated to proceed with the RCRA closure before the effect of the national land disposal ban took effect in August 1988, the closure activities proceeded in accordance with the verbal authorization obtained from the PADER on June 3, 1988 (Appendix A-28). The USEPA subsequently

postponed the effective date of the land disposal ban until August 1990, but not until August 1988, after much of the K087 materials had already been removed and disposed.

Closure activities were initiated on July 12, 1988 and were essentially completed on December 30, 1988. During this time period, PADER representatives visited the site on at least three occasions to review the cleanup effort. Numerous telephone conversations were conducted between WCC and PADER representatives to apprise the Department of the cleanup progress. PADER representatives inspected the site on January 18, 1989 and requested that two of the groundwater monitoring wells (W-2 and W-4) be returned to proper operation. This request is contained in a letter dated February 6, 1989 (Appendix A-29).

Philadelphia Coke responded to the PADER's request via letter dated February 22, 1989 (Appendix A-30) and indicated that the wells would be placed back in operation. On March 8, 1989, Wells W-2 and W-4 were replaced with Wells W-2R and W-4R in accordance with the PADER request.

In February 1989, Philadelphia Coke requested authorization from the PADER to complete backfilling operations in certain areas excavated in connection with the 1988 closure work. This request letter appears as Appendix A-31. The PADER authorized backfilling of these areas in a letter dated June 20, 1989 (Appendix A-32).

Groundwater samples were collected from these two newly replaced wells, along with the other four RCRA site wells, in accordance with the normal second quarter sampling on April 18, 1989. First quarter 1989 groundwater samples were collected from the six wells (W-1 through W-6) on January 18, 1989. It should be emphasized that normal quarterly groundwater sampling and reporting were suspended (with the concurrence of the PADER) for the third and fourth quarters of 1988 due to the ongoing remedial activities at the site.

1.2.5 Initial Closure Certification Submission

Certification of closure documents and a site restoration work plan were presented to the PADER on September 26, 1989 (Appendix A-34 and A-35). These submissions prompted two general responses from the PADER as follows:

- Closure Certification: WCC was advised verbally by the PADER that the Department would not review the September 26, 1989 Closure Certification documents until the coal tar-contaminated soils (see Section 1.3) were either treated to a level acceptable to the Department and replaced on the site or removed to an authorized offsite disposal facility. The Closure Certification documents were subsequently returned to WCC.

- Site Restoration: In order to cost-effectively manage the coal tar-contaminated soils (not K087-type materials), Philadelphia Coke evaluated numerous options for reclaiming/recycling/disposing of these materials over the period of time beginning with the land treatment pilot tests in August 1988 and culminating with offsite disposal as a non-hazardous residual waste stream at the G.R.O.W.S. Landfill (operated by Waste Management, Inc. in Bucks County, Pennsylvania) in 1992. Treatment/disposal options evaluated by Philadelphia Coke during this time period included:

  - Processing using a proprietary coal-cleaning process
  - Incorporating soils into a soil-cement layer under a partial site cap
  - Processing through various thermal treatment systems
  - Utilizing as a feedstock for sewer brick manufacture
  - Processing using a landfarming bioremediation technique
  - Using for daily cover at local landfills
  - Disposing as non-hazardous waste in local landfills
  - Using as feedstock for fluidized-bed boilers in the region

Correspondence documenting many of these efforts is presented in Appendices A-36 through A-47.

As approved per Appendices A-44 through A-47, a total of approximately 29,400 tons of the coal tar-contaminated soils (consisting of three non-hazardous waste streams: Coke Breeze, Paving Material, and Coal Tar-Contaminated Soil) were removed from the site and disposed as residual waste at the G.R.O.W.S. landfill facility between February 19 and July 24, 1992.

1.3 CLOSURE CRITERIA

The June 1983 PADER-approved Closure Plan indicates that the cleanup criteria would involve visual observation of the materials encountered during the closure activities and visual classification of these materials for subsequent disposal. For instance, closure of the tar plains area under Section 3.3.4 of the June 1983 Closure Plan dictates that Philadelphia Coke "Excavate all visible tar and contaminated soil. The tar has a black sheen and tacky consistency." Confirmatory analytical effort proposed in the original approved closure plan was limited to analysis of soil samples from the tar plains area for phenol and naphthalene. It is important to note that the cleanup criteria proposed in the June 1983 Closure Plan have been achieved. These criteria have also been expanded and refined by Philadelphia Coke to further document the achievement of a clean closure of the identified HWMUs.

Decanter tank tar sludge (USEPA Waste No. K087) appears physically as an easily recognizable black, fibrous, gritty, and odorous mass. The sludge contains not only coal tar, but also coal and coke fines that are removed from the coal gas during the gas cleaning and cooling process, and subsequent tar cleaning processes. This waste was originally listed as hazardous by the USEPA because of its phenol and naphthalene contents. Based upon results of previous WCC site investigations and the 1988 closure activities, all known deposits of this waste material have been removed and disposed off-site.

As opposed to K087 wastes, coal tar appears as a black, viscous semi-solid that ranges in consistency from a thick molasses-like liquid to a hard, almost brittle pitch. Because the coal tar behaves both physically and chemically like asphalt (i.e. petroleum tar), some of the tar was used historically as a binder for aggregate to pave on-site roadways. Coal tar is no longer used primarily for this purpose because

it is too valuable and is used as feedstock for the chemical industry and in various consumer products such as driveway sealers, roofing products, and in some pharmaceutical applications.

In addition to its use as paving binder, coal tar was introduced to the site environment through various leaks and spills that were inevitable (but not commonplace) during the plant's 53 years of operation. Consequently, CPAHs associated with this coal tar (not decanter tank tar sludge No. K087) are present in the site soils that have been in contact with the coal tar. These are the soils that constituted the approximately 29,400 tons of material removed for disposal at the G.R.O.W.S. facility (see Section 1.2.5).

In order to establish reasonable and quantifiable cleanup levels for the specific contaminants of concern (i.e. the CPAHs), the criteria set forth in WCC's May 20, 1988 letter to the PADER (Appendix A-27) were established based upon other regulatory decisions pertaining to these contaminants at the time. The proposed cleanup criterion of 50 ppm of total CPAHs is more conservative than Superfund Records of Decision (RODs) issued by the USEPA at the time for sites with similar contaminants. Appendix A-33 presents two RODs, one allowing a maximum total of 100 ppm of CPAHs to remain in residential area soils, and the other proposing a maximum total of 700 ppm CPAHs in soils at a commercial site. In light of these ROD decisions, the proposed 50 ppm total CPAH cleanup criterion for the Philadelphia Coke site, while never officially approved by the PADER even though Philadelphia Coke requested such approval, represents a reasonable and conservative cleanup criterion for the RCRA HWMUs at this site.

Soil samples were collected from areas in or around most of the former HWMUs during the 1988 closure activities and analyzed for the following parameters:

- EP toxic inorganics
- RCRA reactivity (cyanide and sulfide)

- USEPA Priority Pollutant scan for the base/neutral extractable pollutants using EPA Method 625 by GC/MS in order to measure total and individual CPAH concentrations

- USEPA Priority Pollutant scan for the acid extractable pollutants using EPA Method 625 by GC/MS in order to evaluate samples for phenol concentration

These criteria, which are more conservative than those set forth in the June 1983 Closure Plan and their appropriate regulatory thresholds are summarized in Table 1.

As set forth in the June 1983 closure plan, visual cleanup criteria were to be applied to certain wastes in particular HWMUs. For instance, it was only necessary to perform a visual inspection to establish the fact that the former tar storage tanks were removed and the concrete pads on which they were mounted were clean. During the 1988 closure work, visual criteria were also used to segregate the various waste materials encountered for subsequent disposal. Thus, soils that contained visibly observable decanter tank tar sludge were segregated and staged for subsequent landfill disposal. During the excavation and cleanup process, visual segregation of materials was aided by extensive use of on-site fluorometric techniques developed by WCC and described in the soil investigation report of Appendix A-22.

The on-site fluorometric analyses were instrumental in guiding the excavation process providing quick-turnaround (24 hours or less), semi-quantitative analysis of soil samples collected from the HWMU excavations. Thus, visual observation of the easily recognizable K087 material constituted the primary cleanup criterion. Fluorometric analysis served as a semi-quantitative, rapid-turnaround analytical technique as backup to the visual observations. Confirmatory samples of soil were collected from the excavations and analyzed as described above. Further discussion of the soil sampling procedures and results is presented in Section 2.2 (Achievement of Closure Criteria).

2.1 WASTE MANAGEMENT UNITS

Closure of the areas where both solid and hazardous wastes were reportedly stored, as identified in the PADER-approved Closure Plan, are addressed in this section. These include:

- Tar Storage Tanks
- Waste Liquor Pit
- Trash Pile
- Tar Plains
- Clean Oxide
- Wood Trays
- Tar Decanters
- Iron Oxide Boxes and Pile
- Process Piping Throughout the Site

With the exception of the Process Piping, the location of these areas, referred to as waste management units (WMUs), is depicted on Figure 3. Some of these WMUs were used to store nonhazardous solid waste and are designated as solid waste management units (SWMUs). These include:

- Trash Pile
- Clean Oxide
- Wood Trays
- Process Piping Throughout the Site

The remaining areas are designated as HWMUs for purposes of this closure certification document. The basis for this classification is Table 3 of the June 1983 Closure Plan (Appendix A-3), which associates the following areas to possible K087 wastes:

- Tar Storage Tanks
- Waste Liquor Pit
- Tar Plains
- Tar Decanters

The Iron Oxide Boxes and Pile were also designated as a HWMU for the purposes of this closure certification document. Reasons for this classification include:

- The USEPA authorized Philadelphia Coke to handle D003 wastes (a solid waste that exhibits the characteristic of reactivity but is not a listed hazardous waste), as indicated in Appendix A-2.

- Documents pertaining to disposal of the spent iron oxide (Appendix B-1) in 1981 indicate the material was handled and disposed as hazardous waste.

- Documents pertaining to disposal of the spent iron oxide - decanter tar mixture in 1982 (Appendix B-2) indicate the material was handled and disposed as hazardous waste.

This section of the closure certification document addresses closure of each of the above SWMUs and HWMUs during some or all of the following time periods:

- Time Period No. 1 - From acknowledgement by the USEPA in July 1981 that Philadelphia Coke complied with RCRA Interim Status requirements until submittal of the closure plan on June 23, 1983

- Time Period No. 2 - From submittal of the closure plan on June 23, 1983 until WCC was engaged on the project on February 26, 1985

- Time Period No. 3 - Post-WCC involvement from February 26, 1985 through closure certification of the waste management units as addressed in this document.

As stated previously in Section 1.1, the scope of WCC's closure certification for work done at the site during Periods No. 1 and 2 above is, for some SWMUs and HWMUs, based upon a review of available information and WCC's inspection of the facility in connection with its investigatory and closure activities. Discussion of closure activities performed for each WMU by Philadelphia Coke is presented in the following sections. Documents pertaining to the pre-WCC involvement closure activities are presented in sections of Appendix B, and are referred to for each WMU in Sections 2.3 through 2.11.

Philadelphia Coke contracted with Associated Chemical and Environmental Services (ACES) of Valley Forge, Pennsylvania in 1988 to complete closure of the HWMUs identified in the closure plan. ACES, under the direction of WCC (who served as Philadelphia Coke's agent) removed waste materials during the third and fourth quarters of 1988. Most of these waste materials were transported by various hauling subcontractors (to ACES) under appropriate manifests to several authorized treatment/disposal facilities. A summary of contractors, subcontractors, facilities, waste types, and quantities removed during Time Period No. 3 is presented in Table 2. Documents pertaining to the 1988 closure activities are presented in sections of Appendix C, and are referred to for each WMU in Sections 2.3 through 2.11.

During closure activities in 1988, the following materials were removed from the site and treated/disposed at various authorized off-site facilities:

- Decanter tank tar sludge (K087) and soil visually contaminated with this sludge - 9,370 tons

- Water contaminated as a result of excavation activities around the various RCRA HWMUs - 439,800 gallons

- Drums and other containers of various waste materials - 12 drums

- Fuel oil from unknown source floating on water in excavations - 250 gallons

- Rubble consisting of railroad ties and other wooden timbers - 65 cubic yards

- Scrap metal - approximately 60 tons

The K087 waste material was removed from the following HWMUs:

- Waste Liquor Pit
- Tar Plains
- Tar Decanters
- Iron Oxide Boxes and Pile

As the K087 waste material was removed from those HWMUs where it was found, it was placed into a common pile from which it was loaded out for transportation and disposal at the Envirosafe Services of Ohio, Inc. (ESOI) chemical waste landfill in Oregon, Ohio. All K087 material transported and disposed at the ESOI facility was manifested using PADER uniform hazardous waste manifest forms. A summary of each K087 solid waste load and its pertinent manifest information is presented in Appendix C-1. Copies of the manifests appear in Appendix C-2.

During the excavation of certain HWMUs, contaminated shallow groundwater was encountered that was transported off-site for treatment at the E. I. du Pont de Nemours and Company, Inc. Chambers Works facility in Deepwater, New Jersey. The water was transported under New Jersey uniform hazardous waste manifests in appropriate tank trucks by Continental Vanguard, Inc. under subcontract to ACES. Appendix C-3 presents a summary of the water shipments, and copies of the manifests are included in Appendix C-4.

Other materials removed from the site during the 1988 closure activities (see Table 2) included 12 drums of various non-K087 wastes removed prior to start-up of the 1988 closure work, approximately 250 gallons of fuel oil from an unknown source encountered during excavation, wooden railroad ties, and scrap metal. Documents pertaining to handling and disposition of these other materials are presented in Appendixes C-5 and C-6. Only the drummed materials and the fuel oil were handled and disposed as potentially hazardous materials, even though tests showed they were

not hazardous (see Appendixes C-5 and C-6). The railroad ties were removed for off-site landfill disposal and the scrap metal was salvaged. Removal of the coal tar-contaminated soils (not K087 materials) was completed in 1992, as discussed in Section 1.2.5.

2.2 ACHIEVEMENT OF CLOSURE CRITERIA

This section documents the achievement of the closure criteria set forth in Section 1.3 for the HWMUs. Chemical analyses of soil samples collected from the areas in or around the HWMUs were used to confirm that clean closure had been achieved.

In order to manage collection and analysis of appropriate samples from such widely dispersed (and in the case of the Tar Plains, poorly defined) HWMUs, a site grid system was established. This 50- by 50-foot grid, as depicted on Figure 4, is an expanded version of that developed during the soil contamination assessment work described in Appendix A-22. The grid was expanded to the extent shown on Figure 4 to cover all former SWMUs and HWMUs, except the Tar Storage Tanks (the foundations of which are readily apparent at the site) and the Process Piping, which had been removed prior to WCC involvement.

Excavation and other closure activities, including soil sampling, were keyed to the grid for locational reference on the site. At the completion of closure excavation for the HWMUs, soil samples were collected using procedures described in Appendix D-1. The soil samples were collected from the completed excavations and composited to represent selected areas prior to analysis by Lancaster Laboratories of Lancaster, Pennsylvania for analysis. Chain-of-custody forms for these samples appear in Appendix D-2. Laboratory analytical data sheets are presented in Appendix D-3.

Figure 5 depicts the areas represented by various composite soil samples. Figures 6 and 7 show typical cross-sectional views of the excavation depicted on Figure 5.

A total of 16 composite soil samples, one from each area shown on Figure 5, were analyzed, and the results are summarized in Table 3. These data indicate that the

cleanup criterion of 50 ppm of the CPAHs has been achieved in Areas 1 through 15. Sample Area 16 exceed the 50 ppm CPAH criterion. The source of the CPAHs in Area 16, however, is believed to be the former coal tar-derived macadam paving that covered all of Area 16 and not decanter tank tar sludge (K087) waste, because no K087 material was observed in this area.

Additional soil was removed from a portion of Area 14 and the area resampled in October 1990. This supplemental work was described in a June 9, 1992 letter to the PADER (Appendix A-48). Soil analysis data from the October 1990 resampling of Area 14 are included in Table 3 to demonstrate that the cleanup criterion of 50 ppm of the CPAHs has been achieved.

Analytical data in Table 3 also indicate that the remaining soils in all 16 areas are nonhazardous based upon USEPA criteria for the EP Toxic Inorganics (TCLP Inorganics for the October 1990 resampling of Area 14). Similarly, the analyses indicate that the samples are nonreactive, as defined by RCRA requirements. In addition, no USEPA priority pollutant acid extractable compounds were measured above detectable levels in sample Areas 1 through 13, and in Area 16. In Area 14, the acid extractables analysis from the October 1990 resampling indicated 0.73 ppm phenol, which is believed attributable to the former coal tar-derived paving. Similarly, the Area 15 samples reportedly contained 2.2 ppm phenol, which is less than the criterion of 15 ppm from Table 1.

Based upon these soil sample analysis results and visual observations of K087 material removed during the closure excavation operations, clean closure of the following HWMUs has been achieved as a result of the closure activities:

- Waste Liquor Pit
- Tar Plains
- Tar Decanters
- Iron Oxide Boxes and Pile

The following sections describe specific closure procedures for the SWMUs and HWMUs. Based upon WCC's review of available information and inspection of the

facility during its investigatory and closure activities, closure of the other SWMUs and HWMUs has been completed in accordance with the closure plan.

2.3 TAR STORAGE TANKS

2.3.1 Closure Procedure

Two above-ground steel tanks were used to store product coal tar from the coal gas cleaning operations. The two tanks were located as shown on Figure 3 and reportedly had capacities of 1 million gallons and 500 thousand gallons. As reported in the June 1983 Closure Plan, these tanks contained approximately 650 cubic yards of coal tar and/or decanter tank tar sludge.

In July 1983, Philadelphia Coke contracted with Kipin Industries, Inc., of Coraopolis, Pennsylvania, to excavate, classify, and dispose of various waste materials identified in the closure plan. Various documents pertaining to waste removal and disposal services provided to Philadelphia Coke by Kipin Industries, Inc. are provided in Appendix B-3.

Based upon the available information, the coal tar and decanter tank tar sludge remaining in the Tar Storage Tanks was removed and blended with coke breeze from around the site, and this mixture subsequently was sold as fuel to various area industries. Based upon available records, a total of 3,755 tons of this coal tar/decanter tank tar sludge/coke breeze fuel mix was processed from various WMUs (including the Tar Storage Tanks) and subsequently removed from the site.

Following removal of the tar from the tanks, the steel portion of the tanks were dismantled and the steel reclaimed for scrap. The concrete foundations of these tanks remain on site and have been cleaned to a visually clean condition.

2.3.2 Closure Certification

Because all closure work associated with the Tar Storage Tanks was completed prior to WCC's involvement, WCC's certification is necessarily based upon a review of

available information and inspection of the facility during its investigatory and closure activities. Closure of this HWMU has been completed in accordance with the PADER-approved Closure Plan.

2.4 WASTE LIQUOR PIT

2.4.1 Closure Procedure

The Waste Liquor Pit consists of a two-chamber, solid concrete pit, with overall dimensions of approximately 25 feet wide by 25 feet long by approximately 10 feet deep. At least 8 feet of the waste liquor pit depth was below grade. The location of the Waste Liquor Pit is depicted on Figure 3.

Cleaning of the Waste Liquor Pit is referenced in documents contained in Appendix B-3 relating to services provided to Philadelphia Coke by Kipin Industries, Inc. It is unclear, however, based upon available information, when or if the Waste Liquor Pit was cleaned out under the services of Kipin Industries, Inc.

Given this uncertainty, the pit was investigated and cleaned out during the 1988 closure activities. Material removed from the Waste Liquor Pit consisted of odorous fill and rubble that was comingled with materials from other HWMUs for disposal at the ESOI chemical waste landfill in Oregon, Ohio. Fill and rubble materials removed from the Waste Liquor Pit were not segregated for separate disposal because the material appeared similar in appearance and odor (with the exception of some bricks) to the decanter tank tar sludge authorized for disposal at ESOI as K087 Hazardous Waste.

The interior concrete walls and concrete floor of the two-chamber Waste Liquor Pit were scraped as clean as practicable using a steel plate that was temporarily welded to a backhoe bucket. This machine-scraping method was used to remove much of the thin layer of heavy pitch on the inner concrete surfaces of the Waste Liquor Pit. The concrete floor and walls of the Waste Liquor Pit were left intact. The pit was then backfilled with concrete rubble generated from the demolition of the former tar decanter concrete foundations and pilings. Some of this concrete from the former

tar decanter foundations also had a thin coating of tar pitch on its outer surface. Placement of this concrete with the thin tar pitch coating into the Waste Liquor Pit was approved by PADER representatives in a telephone conversation on November 4, 1988.

Clean fill that was being imported onto the site as part of general site filling operations was used to backfill the remainder of the Waste Liquor Pit. The backfilling operation was completed in November 1988 in order not to leave a dangerous, open, vertical-walled excavation on-site.

2.4.2 Closure Certification

All K087 waste material has been removed from the Waste Liquor Pit. Any CPAH compounds that may remain within the Waste Liquor Pit would be associated with the coal tar pitch that coated the pit inner walls or the thin coal tar pitch layer on some of the concrete rubble from the former Tar Decanter pilings that was backfilled into the pit with the approval of the PADER. Closure of this HWMU has been completed in accordance with the PADER-approved Closure Plan. Engineer's and Owner's Certification of Closure forms appear in Appendix E-2.

2.5 TRASH PILE

2.5.1 Closure Procedure

A Trash Pile that reportedly contained approximately 2,000 cubic yards of tar waste, coal fines, wood, rubble, steel, and other debris was located within the Tar Plains area of the site, as depicted on Figure 3. The Trash Pile was reportedly several feet high and spread over about a 50- by 250-foot area.

Based on available records, the Trash Pile was removed prior to WCC's involvement during the July and August 1983 time-frame. Reportedly, the Trash Pile was segregated into three classes of materials: (1) those suitable for on-site disposal (such as concrete, brick, stone, pipe, and wood; (2) those materials such as cans,

hoses, and other rubbish requiring off-site disposal at a municipal landfill; and (3) those materials requiring off-site disposal at a secure landfill.

Information appearing in Appendix B-3 pertaining to services of Kipin Industries, Inc. indicate that 1500 tons of rubble and debris from the Trash Pile were disposed on-site. The exact location for on-site disposal of the material segregated from the Trash Pile is unknown. Records also show that an estimated 550 tons of material from the Trash Pile were disposed at the Boyertown Sanitary Disposal Company Landfill in Gilbertsville, Pennsylvania. The Trash Pile no longer exists on-site.

2.5.2 Closure Certification

Because all closure work associated with the Trash Pile was completed prior to WCC's involvement, WCC's certification is necessarily based upon a review of available information and inspection of the facility during its investigatory and closure activities. Closure of this SWMU has been completed in accordance with the PADER-approved Closure Plan. The Engineer's and Owner's Certification of Closure forms appear in Appendix E-3.

2.6 TAR PLAINS

2.6.1 Closure Procedure

The Tar Plains consisted of an area approximately 150 by 450 feet in the southwest corner of the site (Figure 3) that was used as a waste disposal area during plant operations. Reportedly, numerous wastes, including coke breeze, tar from spills or leaks, some decanter tank tar sludge, and miscellaneous rubble and solid wastes were deposited on the soil surface in the area designated as the Tar Plains.

Based on available records (Appendix B-3), material from the Tar Plains was removed in July 1983 by Kipin Industries, Inc. These materials were reportedly screened and then disposed in one of the following manners:

- On site

- Local municipal landfill
- Secure landfill

Information provided in Appendix B-3 indicates that 240 tons of material from the Tar Plains were disposed on site along with materials from the Trash Pile and Clean Oxide. As mentioned previously in Section 2.5.1, the exact location of the on-site disposal is unknown.

Also, according to the records of Appendix B-3, 472 tons of material from the Tar Plains were disposed at the Boyertown Sanitary Disposal Company Landfill in Gilbertsville, Pennsylvania. This material was apparently comingled with solid wastes from the Trash Pile and disposed at the Boyertown Landfill facility.

Records presented in Appendix B-3 indicate that between 1,723 and 1,888 tons of material from the Tar Plains were disposed at the Kelly Run Landfill operated by Kelly Run Sanitation, Inc. in Elizabeth, Pennsylvania. These records indicate that this disposal at the Kelly Run Landfill took place in mid to late 1983.

Because the Tar Plains was identified as a WMU associated with K087 materials in the closure plan, the Tar Plains were investigated during the 1983 closure activities. Materials removed from the Tar Plains during Time Period No. 3 include:

- Approximately 2006 tons of non-hazardous coke breeze and coal fines that were removed from the site for disposal at the G.R.O.W.S. Landfill in 1992 (see Section 1.2.5 and Appendix A-46)

- K087 waste materials and soil visually contaminated with K087 materials which were removed to the ESOI Chemical Waste Landfill in Ohio in 1988

- Soils slightly contaminated with coal tar-related compounds (i.e. TPAHs and CPAHs) which were subsequently removed from the site for disposal at the G.R.O.W.S. Landfill in 1992 (see Section 1.2.5 and Appendixes A-45 and A-47)

During the 1988 closure activities, six backhoe test pits were excavated throughout the Tar Plains in order to assess subsurface conditions during the 1988 closure activities. These backhoe test pits were excavated to a depth of approximately 6 to 8 feet beneath the finish grade established following the closure excavation. Visual observation of these test pits revealed no further indication of any K087 materials remaining in the Tar Plains.

Confirmatory soil samples were collected from the Tar Plains as described in Section 2.2. Analytical results for the composite sample collected from the Tar Plains are presented in Table 3 (for Area VII). These data show that the cleanup criterion have been achieved for the Tar Plains. It is important to note that, based upon the extent of excavation indicated on Figure 5 for the Tar Plains, a considerably larger area was cleaned and sampled during the 1988 closure work than what had been reported in the June 1983 Closure Plan (Figure 3).

Following receipt of the acceptable confirmatory analytical results for the Tar Plains presented in Table 3, existing soil and rubble fill that had been imported onto the Philadelphia Coke Site as part of the general filling operations was used to backfill portions of the former Tar Plains.

2.6.2 Closure Certification

As indicated in the previous section, some work associated with the Tar Plains was completed prior to WCC's involvement. Accordingly, WCC's certification for this prior work is necessarily based upon a review of available information and inspection of the facility during its investigatory and closure activities. Based upon this investigation and the work completed during the 1988 closure activities, closure of the Tar Plains has been completed in accordance with the PADER-approved Closure Plan. The Engineer's and Owner's Certification of Closure forms appear in Appendix E-4.

2.7 CLEAN OXIDE

2.7.1 Closure Procedure

In accordance with the criteria presented in Section 2.1 (Waste Management Units), the Clean Oxide Area has been designated as a solid waste management unit (SWMU). The approved Closure Plan called for disposal of the Clean Oxide on site. Based upon available information presented in Appendix B-3, approximately 2,200 tons of Clean Oxide were disposed on site under the services of Kipin Industries, Inc. It is unclear, however, based upon the available information exactly where the Clean Oxide was disposed on the Philadelphia Coke Plant site. This material, however, was not encountered during excavations associated with the 1988 closure activities.

2.7.2 Closure Certification

Because all closure work associated with the Clean Oxide was completed prior to WCC's involvement, WCC's certification is necessarily based upon a review of available information and inspection of the facility during its investigatory and closure activities. Closure of this SWMU has been completed in accordance with the PADER-approved Closure Plan. The Engineer's and Owner's Certification of Closure forms appear in Appendix E-5.

2.8 WOOD TRAYS

2.8.1 Closure Procedures

Approximately 300 cubic yards of Wood Trays were reportedly processed by Kipin Industries under contract to Philadelphia Coke by grinding the trays and processing the ground wood into solid fuel, as indicated in Appendix B-3. This work was done prior to WCC involvement in 1983. Reportedly, the ground wood from the Wood Trays was mixed with coal, coke breeze, and tar materials from the Tar Storage Tanks and Waste Liquor Pit, and blended for fuel, which was subsequently sold to off-site consumers. No records, other than those presented in Appendix B-3, were available documenting the quantity or disposition of the Wood Trays.

2.8.2 Closure Certification

Because all closure work associated with the Wood Trays was completed prior to WCC's involvement, WCC's certification is necessarily based upon a review of available information and inspection of the facility during its investigatory and closure activities. Closure of this SWMU has been completed in accordance with the PADER-approved Closure Plan. The Engineer's and Owner's Certification of Closure forms appear in Appendix E-6.

2.9 TAR DECANTERS

2.9.1 Closure Procedures

Closure of the Tar Decanters was accomplished during two time periods as follows:

- Initial closure activities conducted for Philadelphia Coke by Clean Venture, Inc. from September through December 1982

- Follow-up closure activities conducted by ACES in 1988

Based upon available information presented in Appendix B-2, a total of 4,481 tons of waste materials consisting of a mixture of tar decanter sludge and spent iron oxide was transported as hazardous waste to the Solley Road Landfill operated by Browning-Ferris Industries in Glen Burnie, Maryland. Appendix Table B-2 summarizes the manifests and shipment dates for this material. Copies of letters in Appendix B-2 indicate that both the PADER and the USEPA were apprised of the closure work in progress during the 1982 activities.

As a result of the 1982 closure work, much of the decanter tank tar sludge (K087) waste material was removed from the decanters and the adjacent decanter sludge lagoon (Figure 3). These areas were reportedly backfilled and considered closed, based on the June 1983 Closure Plan.

Soil contamination investigation work performed by WCC in December 1987 (Appendix A-22) revealed additional areas of apparent K087 materials in the vicinity of the former tar decanters. Accordingly, the 1988 closure excavation work proceeded around the former tar decanter foundation and ultimately removed not only the soil around the foundation as depicted on Figure 6, but also the concrete decanter foundation itself. Excavation around the tar decanter foundation revealed the presence of small pockets of decanter tank tar sludge (K087) identified by visual observation. These K087 waste materials were excavated and removed from the site for disposal at the ESOI chemical waste landfill in Oregon, Ohio as described in Section 2.1 (Waste Management Units).

During the excavation process around the former decanter tank foundations, coal tar and/or decanter tank tar sludge was observed beneath the concrete foundation of the former tar decanter tanks. Because there was no acceptable safe way to remove this material from beneath the pile-supported concrete foundation, the foundation and supporting piles were demolished and removed. Clean concrete from the former decanter tank foundation was backfilled on-site in previously excavated areas. As mentioned in Section 2.4.1 (Closure Procedure) for the Waste Liquor Pit, some of the pilings and portions of the concrete structure of the former tar decanter foundation were coated with a thin layer of coal tar pitch. As approved by telephone with the PADER, these pieces of concrete with the thin layer of coal tar pitch were backfilled into the Waste Liquor Pit.

As reported previously for the Tar Plains Area (see Section 2.6.1), soil slightly contaminated with coal tar-related components (i.e., the TPAHs and/or CPAHs) were removed from the excavation areas around the former Tar Decanter Tanks and stockpiled on-site. These stockpiled soils were subsequently removed for disposal as non-hazardous residual waste at the G.R.O.W.S. Landfill facility (see Section 1.2.5 and Appendixes A-45 and A-47).

Segregation of the soils destined for stockpiling, and the K087 materials for off-site chemical waste landfill disposal, was made based upon a visual observation of the physical appearance of the soil. As stated in Section 1.3, the decanter tank tar sludge appears physically as an easily recognizable black, fibrous, gritty, and odorous mass.

During the closure excavation process around the former decanter tank foundation, a significant quantity of clean soil was unavoidably mixed with the decanter tank tar sludge as a result of the heavy machinery excavation process. In order to be conservative, however, if there was any question as to whether the soil contained decanter tank tar sludge, it was directed to the pile for disposal at the ESOI landfill facility. This cleanup criteria is in accordance with that suggested in the PADER-approved June 1983 Closure Plan. As summarized in Section 2.2, soil samples were collected at the completion of the closure excavation activities in Areas I through VI and XVI, as depicted on Figure 5. These areas were selected for association with the former tar decanters only because of their proximity to the former decanters and because of the excavation sequencing during the 1988 closure work. Figure 6 depicts the cross-sectional extent of excavation in the former Tar Decanter area.

The area surrounding the former Tar Decanters has been backfilled with clean fill imported onto the Philadelphia Coke site as part of the general site filling operations. This backfilling operation was authorized by the PADER (Appendix A-32).

2.9.2 Closure Certification

The 1982 work performed for Philadelphia Coke by Clean Venture, Inc. was completed before WCC's involvement. Accordingly, WCC's certification for this prior work is necessarily based upon a review of available information and inspection of the facility during its investigatory and closure activities. Based upon this investigation and the work completed during the 1988 closure activities, closure of the Tar Decanters has been completed in accordance with the PADER-approved 1983 Closure Plan. Engineer's and Owner's Certification of Closure forms for the Tar Decanters are presented in Appendix E-7.

2.10 IRON OXIDE BOXES AND PILE

2.10.1 Closure Procedures

The Iron Oxide Boxes consisted of two rectangular above-ground steel containers erected on concrete foundations that were located as shown on Figure 3. These multi-chamber boxes contained a mixture of iron oxide and wood chips through which the coal gas was passed as part of the gas cleaning operation.

Based upon information presented in Appendix B-2, the spent iron oxide was removed from the Iron Oxide Boxes as part of site closure work performed by Clean Venture, Inc. in late 1982. Based upon this information, Clean Venture, under contract to Philadelphia Coke, removed the spent iron oxide from the Iron Oxide Boxes and mixed it with decanter tar, and this mixture was subsequently disposed at the BFI Solley Road Landfill in Glen Burnie, Maryland. The above-grade portion of the Iron Oxide Boxes were then demolished and salvaged.

Soil investigation work performed by WCC in December 1987 (Appendix A-22) revealed additional areas of apparent K087 waste materials in the vicinity of the Iron Oxide Box foundations and former Iron Oxide Pile, the locations of which are shown on Figure 3. Accordingly, the 1988 closure excavation work included removal of this K087 waste material. Excavation around the former oxide box foundations revealed small pockets of decanter tank tar sludge (K087) based upon visual observation. These K087 waste materials were excavated and removed from the site for disposal at the ESOI chemical waste landfill in Oregon, Ohio, as described in Section 2.1 (Waste Management Units).

Soil slightly contaminated with coal tar-related components (i.e., the TPAHs and/or CPAHs) were removed from the excavation areas around the former Iron Oxide Box foundations and Iron Oxide Pile, and stockpiled on-site. These stockpiled soils were subsequently removed for disposal as non-hazardous residual waste at the G.R.O.W.S. Landfill facility (see Section 1.2.5 and Appendixes A-45 and A-47).

Visual observation of the soils was used as the primary criteria for separating those soils destined for stockpiling and the K087 materials for off-site chemical waste landfill disposal as set forth in the June 1983 PADER-approved Closure Plan. Figure 7 depicts the cross-sectional extent of excavation in the area of the former Iron Oxide Boxes and Pile.

As summarized in Section 2.2, soil samples were collected at the completion of the closure excavation in Areas IX through XIII and XV on Figure 5. These areas were selected for association with the former Iron Oxide Boxes and Pile only because of their proximity to the former Iron Oxide Box and Pile, and because of the excavation sequencing performed during the 1988 closure work. It should be emphasized that considerably more materials have been removed for proper disposal as a result of the 1988 closure work than were envisioned in the PADER-approved June 1983 Closure Plan.

The area surrounding the former Iron Oxide Boxes and Pile has been backfilled with clean fill imported onto the Philadelphia Coke site as part of the ongoing general site filling operations, as approved by the PADER.

2.10.2 Closure Certification

The 1982 work performed for Philadelphia Coke by Clean Venture, Inc. was completed before WCC's involvement. Accordingly, WCC's certification for this work is necessarily based upon a review of available information and inspection of the facility during its investigatory and closure activities. Based upon this information and the work completed during the 1988 closure activities, closure of the Iron Oxide Boxes and Pile has been completed in accordance with the PADER-approved Closure Plan. Engineer's and Owner's Certification of Closure forms for the Iron Oxide Boxes and Pile are presented in Appendix E-8.

2.11 PROCESS PIPING THROUGHOUT THE SITE

2.11.1 Closure Procedures

Based upon information presented in the June 1983 Closure Plan, asbestos insulation was used on Process Piping Throughout the Site. The quantity of this asbestos insulation was reported as 100 to 150 cubic yards in the June 1983 Closure Plan. Based upon available information contained in Appendix B-4, a total of 466 bags of waste insulation asbestos totaling approximately 30 cubic yards was disposed at the Kinsley Landfill in Deptford, New Jersey on December 9, 1982. No other documentation pertaining to disposal of the waste asbestos was available.

2.11.2 Closure Certification

Because all work associated with the Process Piping Throughout the Site was completed prior to WCC's involvement, WCC's certification is necessarily based upon a review of available information and inspection of the facility during its investigatory and closure activities. Closure of this SWMU has been completed in accordance with the PADER-approved Closure Plan. The Engineer's and Owner's Certification of Closure forms appear in Appendix E-9.

3.0
GROUNDWATER

This section of the Closure Certification presents a summary of analytical results from the groundwater monitoring program at Philadelphia Coke since April 1985. Table 4 summarizes groundwater monitoring data for Well W-1, which is located in the southern corner of the site adjacent to and downgradient of the former Tar Plains, as shown on Plate 1. Well MW-1 was replaced by MW-1R on April 5, 1991, as the outer casing of MW-1 was apparently damaged during backfilling operations at the site. This was coordinated with the PADER, as indicated in Appendix A-49.

The data in Table 4 indicate that Well W-1 exhibits no contamination associated with the former coal gas or tar processing operations. This indicates that there is no uncontrolled migration from the site near Well W-1 of contaminants associated with the former coal gas or tar processing operations. A complete data set of all analyses, including laboratory QA/QC sample analyses, are presented in Appendix F for monitoring Wells W-1 through W-6.

Tables 5 and 5A summarize groundwater monitoring data for Wells W-2 and W-2R (which replaced Well W-2 as of April 18, 1989). During the 1988 closure work, Well W-2 was necessarily removed as part of the excavation process in the area of the former Tar Decanters. This removal was coordinated with the PADER. The data presented in Tables 5 and 5A indicate that both W-2 and W-2R appear to be impacted by contaminants associated with the former coal gas and/or tar processing operations. Accordingly, it is Philadelphia Coke Company's intent to continue a groundwater monitoring program for a time period mutually acceptable to both Philadelphia Coke and the PADER.

Groundwater monitoring data for Well W-3 are summarized in Table 6. As shown on Plate 1, Well W-3 is located downgradient to the east of the former coal gas and tar processing operation area. The data of Table 6 indicate that monitoring Well W-3 exhibits no contamination associated with the former coal gas or tar processing

operations. This indicates that there is no uncontrolled migration from the site near Well W-3 of former coal gas or tar processing operations.

Tables 7 and 7A summarize groundwater monitoring data for Well W-4, which is located upgradient of the former plant processing area near the northwest corner of the site. As described previously for Well W-2, monitoring Well W-4 was replaced in April 1989 as requested by the PADER (Appendix A-29). It should be noted that the 20 parts per billion (ppb) total base/neutral extractables reported in Table 7A for Well W-4R is for bis(2-ethylhexyl)phthalate, a compound not associated with the former plant processing areas.

A data summary for Well W-5, which was installed in October 1986, is presented in Table 8. Well W-5, as shown on Plate 1, is located upgradient topographically of the former plant processing area, but is showing low levels (ranging from 11 to 300 ppb) of contaminants potentially related to former plant operations. As presented in Appendix A-17, this condition may be caused by influences on groundwater flow caused by the Upper Delaware Collector Sewer which passes through the site between Wells MW-4 and MW-5. Potential contaminant migration in this area is controlled by this sewer, which appears to act as a "sink" for groundwater in the saturated fill zone and, as such, would convey the intercepted groundwater to the Philadelphia Northeast Sewage Treatment Plant where it would be treated.

Groundwater monitoring data for Well W-6, also installed in October 1986, are presented in Table 9. The data in Table 9 indicate low levels (total of approximately 0.1 mg/l) of contaminants potentially related to the former processing areas.

4.0
CONCLUSIONS

As described in the foregoing sections, the five HWMUs and four SWMUs described in the PADER-approved Closure Plan for the Philadelphia Coke Company facility have been closed in accordance with that plan. Low levels (i.e. less than a total of 1 ppm) of contaminants potentially related to the former plant operations are present in groundwater from three of the six monitoring wells. There is, however, no indication that these contaminants are migrating from the site in an uncontrolled manner.

TABLE 1

SUMMARY OF SOIL CLEANUP CRITERIA
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Parameter	Criterion
Total CPAH; Sum of:	50 ppm total or 15 ppm individual compound
Benzo (a) anthracene	
Chrysene	
Benzo (a) pyrene	
Benzo (b) fluoranthene	
Dibenzo (a,h) anthracene	
Indeno (1, 2, 3-cd) pyrene	
Phenol	15 ppm
EP Toxic - Inorganics (in leachate)	
Arsenic	5.0 mg/l
Barium	100 mg/l
Cadmium	1.0 mg/l
Chromium	5.0 mg/l
Lead	5.0 mg/l
Mercury	0.2 mg/l
Selenium	1.0 mg/l
Silver	5.0 mg/l
RCRA Reactivity	
Cyanide	250 ppm
Sulfide	500 ppm

/PC

TABLE 2

SUMMARY OF MATERIALS REMOVED FROM THE SITE
DURING 1988 CLOSURE ACTIVITIES

Waste Material	Quantity (Units)	TSD (USEPA ID No.)	Contractor/Subcontractor
1. Decanter Tank Tar Sludge (K087)/soil visually contaminated with K087	9,370 (tons)	ESOI (OHDO45243706)	ACES/Continental Vanguard John Pfrommer Dart Trucking
2. Contaminated Water from excavations	439,800 (gal)	DuPont Chambers Works (NJD002385730)	ACES/Continental Vanguard
3. Drums and other containers	12 (drums)	Delaware Container Co. (PAD064375470)	Delaware Container Co., Inc.
4. Fuel oil	250 (gallons)	Delaware Container Co. (PAD064375470)	Delaware Container Co., Inc.
5. Rubble/RR Ties	65 (c.y.)	--	ACES/Quick-Way, Inc.
6. Scrap Metal	60 (tons - Est.)	--	Robert Hawthorne, Inc.

TABLE 3: CONFIRMATORY SOIL SAMPLE ANALYSES
SAMPLE AREA (FIGURE 5)

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XIVR	XV	XVI
SAMPLE DEPTH FROM ORIGINAL GRADE (ft)	8-17	16-16	14	8-12	13	12-14	2-6	2-3	2-3	2-3	6	11	8	1-5	1-5	6	4
BASE NEUTRAL EXTRACTABLES																	
Acenaphthene	1.27	ND	ND	ND	0.5	ND	ND	ND	ND	ND	ND	0.97	0.73	ND	1.09	ND	0.37
Acenaphthylene	ND	ND	ND	ND	0.47	ND	0.57	ND	ND	ND	ND	ND	ND	1.47	<0.47	0.53	1.33
Anthracene	0.7	ND	ND	ND	1.5	ND	1.6	ND	ND	ND	ND	0.73	0.5	3.33	1.01	0.8	7
*Benzo (a) anthracene	1.03	ND	0.6	0.6	2.23	0.47	3.07	4.3	ND	0.83	ND	1.73	1	17.3	0.7	2.97	17.7
*Benzo (a) pyrene	0.9	ND	0.53	0.47	1.73	0.57	2.4	ND	ND	0.7	ND	1.27	0.63	12	0.62	2.67	11
*Benzo (b) fluoranthene	1.23	ND	0.77	0.63	2.73	0.77	4	6	ND	1.4	ND	2	1.03	24.3	0.83	6	22
Benzo (g,h,i) perylene	0.57	ND	ND	ND	1.07	ND	1.83	ND	ND	0.43	ND	0.7	0.4	12	<0.47	1.9	8.7
Benzo (k) fluoranthene	***	ND	***	***	***	***	***	***	ND	***	ND	***	***	***	<0.47	***	***
*Chrysene	1.37	ND	1.13	0.73	2.2	0.8	4	5.7	ND	1.43	ND	2.6	1.3	26.3	0.86	3.07	25.7
*Dibenzo (a,h) anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.8	<0.47	0.63	2.13
Fluoranthene	1.53	ND	0.97	0.83	10	0.47	7.67	8	ND	1.27	2.17	2.23	2.83	25	1.51	3.83	31.7
Fluorene	1	ND	ND	ND	2.57	ND	1.13	ND	ND	ND	ND	0.67	0.87	1.4	0.9	0.53	2.43
*Indeno (1,2,3-c,d) pyrene	0.47	ND	ND	ND	0.97	ND	1.77	ND	ND	0.43	ND	0.57	0.37	9.7	<0.47	2.07	7
Naphthalene	1.53	ND	0.5	ND	ND	ND	1.5	26.7	ND	0.47	10.7	1.93	2	6	4.79	3.37	3.67
Phenanthrene	2.67	ND	0.53	0.77	11.7	0.77	8.67	8	ND	0.83	3	2.53	1.7	10.7	1.64	2.87	23
Pyrene	2.33	ND	1.13	1.33	4	1.17	8.67	7.7	ND	2.17	2.17	2.8	1.9	22	1.75	4.23	24.7
TOTAL TPAHs	16.6	0	6.16	5.36	41.7	5.02	42.98	66.4	0	10.16	18	20.63	16.26	174.3	16.69	36.27	188.4
TOTAL CPAHs	5	0	3.03	2.43	8.9	2.61	15.24	16	0	4.89	0	8.07	4.33	92.4	3	17.41	86.5
MOISTURE (% by weight)	32.1	40.5	32.6	36	25.8	31.1	31.4	12.4	7.2	13.4	24.8	30	17.1	13.8		13.4	12.7
EPTOX LEACHATE (mg/l)																	
Arsenic	ND	0.3	0.4	0.3	0.2	0.2	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND
Barium	0.007	ND	0.006	ND	ND	ND	ND	ND	ND	0.2	0.2	0.2	ND	ND	<2.0	ND	0.2
Cadmium	ND	ND	0.05	ND	ND	ND	0.008	ND	ND	ND	ND	ND	ND	0.012	<0.05	ND	0.009
Chromium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND
Lead	ND	ND	ND	ND	ND	ND	0.06	0.1	ND	ND	ND	ND	ND	ND	<0.5	ND	0.06
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.005	ND	ND
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.1	ND	ND
REACTIVITY	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
ACID EXTRACTABLES (mg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	0.73	2.23	ND

* = THESE COMPOUNDS ARE KNOWN ANIMAL CARCINOGENS; SOME ARE SUSPECTED OR SUGGESTED HUMAN CARCINOGENS

ND = CONCENTRATION IS BELOW THE DETECTION LIMIT FOR THIS COMPOUND

*** = THIS COMPOUND COULD NOT BE DISTINGUISHED FROM BENZO (B) FLUORANTHENE IN ANALYSIS; REPORTED VALUES ARE THE COMBINED CONCENTRATIONS

NO = CYANIDE AND SULFATE CONCENTRATIONS ARE BELOW THOSE WHICH ARE CONSIDERED REACTIVE

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-1

TABLE 4

PARAMETER	UNITS	4/10/85	6/26/85	10/15/85	1/23/86	4/24/86	7/29/86
TOTAL ACID EXTRACTABLES	ug/l	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	17	127.2	42.3	***	***	***
TOTAL VOLATILE ORGANICS	ug/l	***	1.5	9.2	7.7	4.4	***
pH	standard	6.67	6.4	6.45	6.71	6.9	6.55
SPECIFIC CONDUCTANCE	umhos/cm	32.5	4094	1620	1670	2020	2690
TOTAL ORGANIC CARBON	mg/l	8.7	5.97	6.92	2073	3.63	2.8
TOTAL ORGANIC HALOGENS	ug/l	215	19	ND	ND	93	7

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-1

TABLE 4

PARAMETER	10/10/86	1/8/87	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88
TOTAL ACID EXTRACTABLES	***	***	39	***	***		***
TOTAL BASE NEUTRAL EXTRACTABLES	***	***	***	***	***		***
TOTAL VOLATILE ORGANICS	***	***	35	4.7	***	***	
pH	6.28	6.22	5.69	5.14	5.24	5.55	
SPECIFIC CONDUCTANCE	2120	1440	ND	1650	2030	1240	
TOTAL ORGANIC CARBON	4.8	2.3	3.7	3	2.2	2.1	
TOTAL ORGANIC HALOGENS	18	46	ND	ND	ND	248	

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-1

TABLE 4

PARAMETER	5/19/88	1/18/89	4/18/89	8/1/89	10/30/89	1/11/90	4/5/90
TOTAL ACID EXTRACTABLES	***	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	***	***	10	***	12	***	***
TOTAL VOLATILE ORGANICS	***	***	***	***	***	***	13
pH	6.28	4.87	6.19	5.93	6.19	6.71	6.3
SPECIFIC CONDUCTANCE	1950	1970	1460	954	805	1010	1220
TOTAL ORGANIC CARBON	0.9	3.3	3.1	3.9	3.8	2.6	3.5
TOTAL ORGANIC HALOGENS	141	6	8	7	<5	9	8

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-1

TABLE 4

PARAMETER	7/10/90	10/11/90	1/8/91
TOTAL ACID EXTRACTABLES	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	18	60	32
TOTAL VOLATILE ORGANICS	***	***	***
pH	6.26	6.58	6.29
SPECIFIC CONDUCTANCE	1050	1130	6930
TOTAL ORGANIC CARBON	5.4	5.2	200
TOTAL ORGANIC HALOGENS	***	18	100

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-1R (REPLACING WELL W-1 AS OF 4-5-91)

TABLE 4A

PARAMETER	UNITS	5/2/91	7/18/91	10/25/91	1/16/92	4/16/92	8/13/92
TOTAL ACID EXTRACTABLES	ug/l	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	13	***	15	***	16	***
TOTAL VOLATILE ORGANICS	ug/l	***	***	***	***	***	***
pH	standard	6.87	6.98	6.98	6.54	6.55	6.81
SPECIFIC CONDUCTANCE	umhos/cm	12600	9790	6560	8430	8420	7890
TOTAL ORGANIC CARBON	mg/l	170	150	84	110	80	87
TOTAL ORGANIC HALOGENS	ug/l	160	100	80	80	60	240

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT

TABLE 4A

GROUNDWATER MONITORING DATABASE SUMMARY

MONITORING WELL W-1R (REPLACING WELL W-1 AS OF 4-5-91)

PARAMETER	11/5/92
TOTAL ACID EXTRACTABLES	***
TOTAL BASE NEUTRAL EXTRACTABLES	***
TOTAL VOLATILE ORGANICS	***
pH	6.95
SPECIFIC CONDUCTANCE	6990
TOTAL ORGANIC CARBON	73
TOTAL ORGANIC HALOGENS	57

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-2

TABLE 5

PARAMETER	UNITS	4/10/85	6/26/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
TOTAL ACID EXTRACTABLES	ug/l	30310	276	***	646	10.1	663	274	358
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	105	360.5	1448	635	349.6	237	1404	1143
TOTAL VOLATILE ORGANICS	ug/l	212.2	315.1	210	***	93.4	566.2	***	152.7
pH	standard	7.15	7.45	8.31	7.75	6.75	7.78	7.41	7.1
SPECIFIC CONDUCTANCE	umhos/cm	8010	9929	9750	7750	5650	10400	11100	6900
TOTAL ORGANIC CARBON	mg/l	5.6	7.67	4.5	194	109	254	371	82
TOTAL ORGANIC HALOGENS	ug/l	78	69	***	5180		14	99	33

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-2

TABLE 5

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	5/19/88
TOTAL ACID EXTRACTABLES	ug/l	39	66	33		***	28
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	340	160	63		201	102
TOTAL VOLATILE ORGANICS	ug/l	177.5	247.8	121	53		32
pH	standard	7.2	8.43	6.85	7.03		7.05
SPECIFIC CONDUCTANCE	umhos/cm	709	6810	7210	5640		4160
TOTAL ORGANIC CARBON	mg/l	110	116	102	62.5		8.47
TOTAL ORGANIC HALOGENS	ug/l	16	20	46	106		182

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-2R (REPLACING WELL W-2 AS OF 4-18-89)

TABLE 5A

PARAMETER	UNITS	4/18/89	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90
TOTAL ACID EXTRACTABLES	ug/l	100	148	270	210	91	47	174
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	470	117	181	236	157	182	43
TOTAL VOLATILE ORGANICS	ug/l	135	99	74	1278	109	68	72
pH	standard	8.05	10	9.91	9.91	9.34	9.76	8.95
SPECIFIC CONDUCTANCE	umhos/cm	3810	3330	3380	3360	3240	3230	3070
TOTAL ORGANIC CARBON	mg/l	110	120	120	100	68	52	52
TOTAL ORGANIC HALOGENS	ug/l	50	100	210	230	180	120	140

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT

TABLE 5A

GROUNDWATER MONITORING DATABASE SUMMARY

MONITORING WELL W-2R (REPLACING WELL W-2 AS OF 4-18-89)

PARAMETER	1/8/91	5/2/91	7/18/91	10/25/91	1/16/92	4/16/92	8/13/92	11/5/92
TOTAL ACID EXTRACTABLES	25	28	23	24	25	***	13	***
TOTAL BASE NEUTRAL EXTRACTABLES	169	179	146	141	257	290	137	100
TOTAL VOLATILE ORGANICS	105	79	83	89	90	110	110	***
pH	9.28	8.96	9.27	9.21	9.1	9.01	8.95	8.91
SPECIFIC CONDUCTANCE	3060	2850	2940	2870	2810	2550	2520	2610
TOTAL ORGANIC CARBON	39	34	37	44	42	35	35	40
TOTAL ORGANIC HALOGENS	70	10	70	70	61	80	60	56

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-3

TABLE 6

PARAMETER	UNITS	4/10/85	6/26/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
TOTAL ACID EXTRACTABLES	ug/l	***	***	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	12	***	***	***	***	***	***	***
TOTAL VOLATILE ORGANICS	ug/l	3.8	***	***	***	6.1	***	***	***
pH	standard	6.5	6.19	6.15	6.4	6.95	6.37	6.47	6.44
SPECIFIC CONDUCTANCE	umhos/cm	1070	1097	903	702	534	754	583	432
TOTAL ORGANIC CARBON	mg/l	6.7	5.51	3.1	1.39	1.75	1.6	2.5	2.6
TOTAL ORGANIC HALOGENS	ug/l	48	7	***	***	1040	***	13	10

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-3

TABLE 6

PARAMETER	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89	8/1/89
TOTAL ACID EXTRACTABLES	***	***	***		***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	***	***	***		***	***	***	***	***
TOTAL VOLATILE ORGANICS	34	***	***	***		***	***	***	***
pH	6.39	6.3	6.28	6.54		6.21	6.49	6.61	6.3
SPECIFIC CONDUCTANCE	353	328	242	303		273	310	3510	300
TOTAL ORGANIC CARBON	2.1	1.5	2.2	1.4		0.59	1.1	1.1	1.6
TOTAL ORGANIC HALOGENS	***	100	8	96		123	***	6	***

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-3

TABLE 6

PARAMETER	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	5/2/91	7/18/91	10/25/91
TOTAL ACID EXTRACTABLES	***	***	***	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	***	***	***	***	***	***	***	***	***
TOTAL VOLATILE ORGANICS	***	***	***	***	***	***	***	***	***
pH	6.21	6.34	6.47	6.21	6.38	6.28	6.24	6.7	6.2
SPECIFIC CONDUCTANCE	304	323	330	505	955	1060	1390	1320	1840
TOTAL ORGANIC CARBON	1.6	1.3	1.2	2.2	2	2.1	2.5	3.1	4.4
TOTAL ORGANIC HALOGENS	***	***	***	***	***	7	***	***	8

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-3

TABLE 6

PARAMETER	1/16/92	4/16/92	8/13/92	11/5/92
TOTAL ACID EXTRACTABLES	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	***	***	***	***
TOTAL VOLATILE ORGANICS	***	***	***	***
pH	6.36	6.5	6.43	6.67
SPECIFIC CONDUCTANCE	1750	1760	1680	1810
TOTAL ORGANIC CARBON	2.6	3.1	3.4	3.3
TOTAL ORGANIC HALOGENS	7	***	8	14

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-4

TABLE 7

PARAMETER	UNITS	4/10/85	6/26/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
TOTAL ACID EXTRACTABLES	ug/l	***	***	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	***	***	***	***	***	***	***	***
TOTAL VOLATILE ORGANICS	ug/l	3.4	***	***	***	***	***	***	***
pH	standard	6.99	6.57	5.89	6.5	6.34	6.49	6.67	6.25
SPECIFIC CONDUCTANCE	umhos/cm	461	1777	186	158		369	588	194
TOTAL ORGANIC CARBON	mg/l	130	3.16	2.78	2.55	***	6.3	15.7	2.5
TOTAL ORGANIC HALOGENS	ug/l	82	18	***	6		***	***	12

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT

TABLE 7

GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-4

PARAMETER	4/16/87	7/17/87	10/28/87	3/8/88	5/19/88	1/18/89
TOTAL ACID EXTRACTABLES	***	***	***	***		***
TOTAL BASE NEUTRAL EXTRACTABLES	***	***	***	17	***	***
TOTAL VOLATILE ORGANICS	32	***	***			***
pH	6.05	6.02	6.1	6.41	6.51	6.35
SPECIFIC CONDUCTANCE	182	148.5	382	216	187	240
TOTAL ORGANIC CARBON	1.6	2.25	4.3	4.09	0.58	2.9
TOTAL ORGANIC HALOGENS	***	30	***	120		***

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MINITORING WELL W-4R (REPLACING WELL W-4 AS OF 4-18-89)

TABLE 7A

PARAMETER	UNITS	4/18/89	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90
TOTAL ACID EXTRACTABLES	ug/l	***	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	20	***	***	***	***	***	***
TOTAL VOLATILE ORGANICS	ug/l	***	***	***	***	***	***	***
pH	standard	7.01	6.87	6.85	6.81	6.82	6.81	6.76
SPECIFIC CONDUCTANCE	umhos/cm	2440	1170	1520	2010	2250	2080	3180
TOTAL ORGANIC CARBON	mg/l	56	25	34	51	55	58	87
TOTAL ORGANIC HALOGENS	ug/l	13	8	9	9	11	8	13

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT

TABLE 7A

GROUNDWATER MONITORING DATABASE SUMMARY

MINITORING WELL W-4R (REPLACING WELL W-4 AS OF 4-18-89)

PARAMETER	1/8/91	5/2/91	7/18/91	10/25/91	1/16/92	4/16/92	8/13/92	11/5/92
TOTAL ACID EXTRACTABLES	***	***	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	***	***	***	***	12	***	***	11
TOTAL VOLATILE ORGANICS	***	***	***	***	***	***	***	***
pH	6.7	6.96	6.88	6.86	6.83	6.96	6.88	7.08
SPECIFIC CONDUCTANCE	3900	2510	2790	3160	4380	5540	5090	5000
TOTAL ORGANIC CARBON	110	70	77	90	130	160	130	140
TOTAL ORGANIC HALOGENS	20	10	7	10	12	18	20	31

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-5

TABLE 8

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89
TOTAL ACID EXTRACTABLES	ug/l	***	***	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	125	87	152	***	132	11	330	120
TOTAL VOLATILE ORGANICS	ug/l	***	171.9	106	75		37	245	73
pH	standard	6.79	6.67	6.23	6.67		6.5	6.44	6.71
SPECIFIC CONDUCTANCE	umhos/cm	325	346	314	281		312	310	3240
TOTAL ORGANIC CARBON	mg/l	6.8	10.1	7.7	9.1		1.03	6.4	4.8
TOTAL ORGANIC HALOGENS	ug/l	17	***	64	152		158	140	56

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN TH[redacted]ATEGORY WERE REPORTED AS LESS THAN METHOD DETE[redacted]ON LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-5

TABLE 8

PARAMETER	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91	5/2/91
TOTAL ACID EXTRACTABLES	***	***	***	***	***	***	***		***
TOTAL BASE NEUTRAL EXTRACTABLES	55	862	444	307	557	337	1580		10
TOTAL VOLATILE ORGANICS	48	32	197	163	31	75	171		5
pH	6.61	6.52	6.64	6.52	6.43	6.41	6.33		6.53
SPECIFIC CONDUCTANCE	418	306	343	286	454	328	293		253
TOTAL ORGANIC CARBON	7.3	72	8.6	5.4	10	4.2	11		3.6
TOTAL ORGANIC HALOGENS	36	22	150	130	27	21	53		48

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-5

TABLE 8

PARAMETER	7/18/91	10/25/91	1/16/92	4/16/92	8/13/92	11/5/92
TOTAL ACID EXTRACTABLES	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	535	787	477	65	351	421
TOTAL VOLATILE ORGANICS	88	35	9	8	23	65
pH	6.53	6.46	6.45	6.66	6.51	6.57
SPECIFIC CONDUCTANCE	292	368	380	330	533	472
TOTAL ORGANIC CARBON	4.5	6	3.1	4.7	5.6	7.4
TOTAL ORGANIC HALOGENS	52	32	7	19	17	60

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-6

TABLE 9

PARAMETER	UNITS	4/16/87	7/17/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89	8/1/89
TOTAL ACID EXTRACTABLES	ug/l	***	***		***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	ug/l	85	47		61	13	180	110	72
TOTAL VOLATILE ORGANICS	ug/l	24	1	3		***	***	***	***
pH	standard	7.4	7.4	7.4		7.15	7.46	7.39	7.2
SPECIFIC CONDUCTANCE	umhos/cm	846	1110	1010		1160	820	1100	1040
TOTAL ORGANIC CARBON	mg/l	5.9	15.2	13.9		4.27	6.2	7	9.9
TOTAL ORGANIC HALOGENS	ug/l	17	***	142		113	5	***	***

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-6

TABLE 9

PARAMETER	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	5/2/91	7/18/91	10/25/91
TOTAL ACID EXTRACTABLES	***	***	***	***	***	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	264	466	469	273	156	901	***	357	137
TOTAL VOLATILE ORGANICS	***	***	***	***	***	***	75	***	***
pH	920	7.48	7.24	7.12	7.43	6.97	6.95	7.18	7.08
SPECIFIC CONDUCTANCE	8.9	1180	1160	1270	1300	1030	839	868	1070
TOTAL ORGANIC CARBON	***	9.1	7	9.6	10	7.5	5.6	6.8	9.6
TOTAL ORGANIC HALOGENS		8	5	***	6	11	***	***	8

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

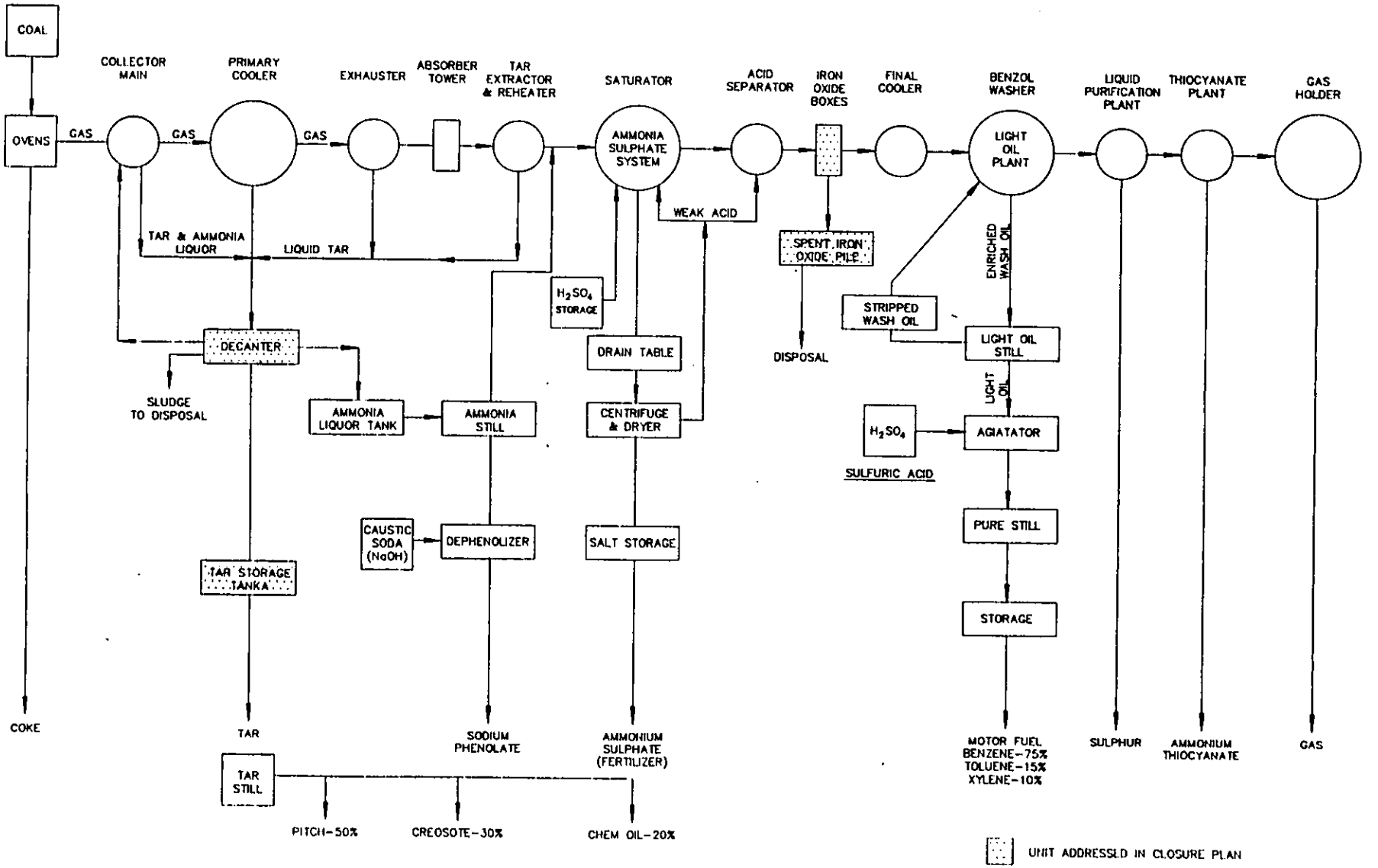
PHILADELPHIA COKE PLANT
GROUNDWATER MONITORING DATABASE SUMMARY
MONITORING WELL W-6

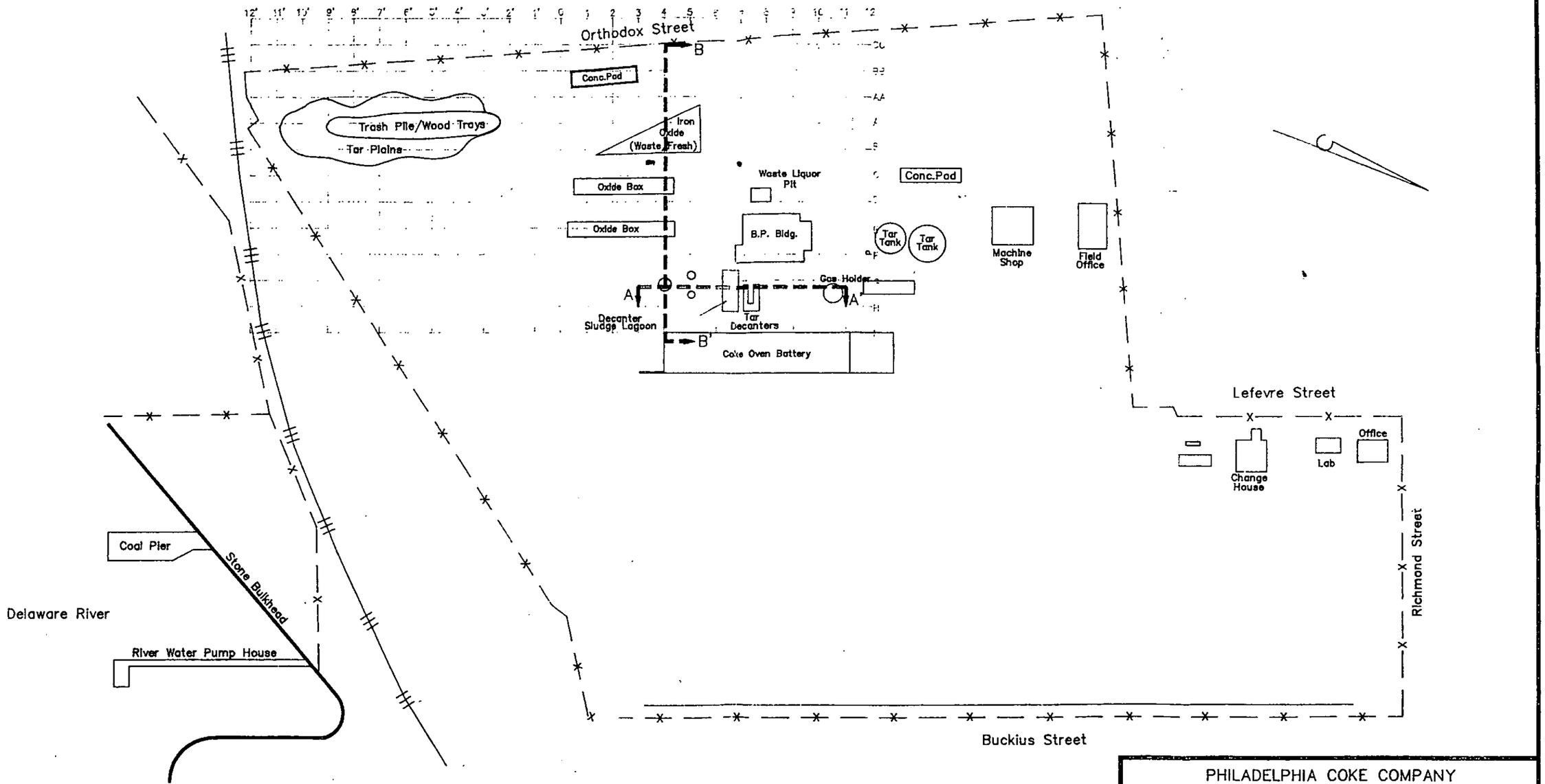
TABLE 9

PARAMETER	1/16/92	4/16/92	8/13/92	11/5/92
TOTAL ACID EXTRACTABLES	***	***	***	***
TOTAL BASE NEUTRAL EXTRACTABLES	204	316	161	188
TOTAL VOLATILE ORGANICS	***	***	***	***
pH	7.14	7.28	7.17	7.39
SPECIFIC CONDUCTANCE	1190	1320	1480	1340
TOTAL ORGANIC CARBON	8.6	11	15	14
TOTAL ORGANIC HALOGENS	***	14	11	16

*** = CONCENTRATIONS OF THE USEPA PRIORITY POLLUTANT COMPOUNDS IN THIS CATEGORY WERE REPORTED AS LESS THAN METHOD DETECTION LIMITS

FIGURE 2
GENERALIZED PROCESS FLOW DIAGRAM
PHILADELPHIA COKE COMPANY



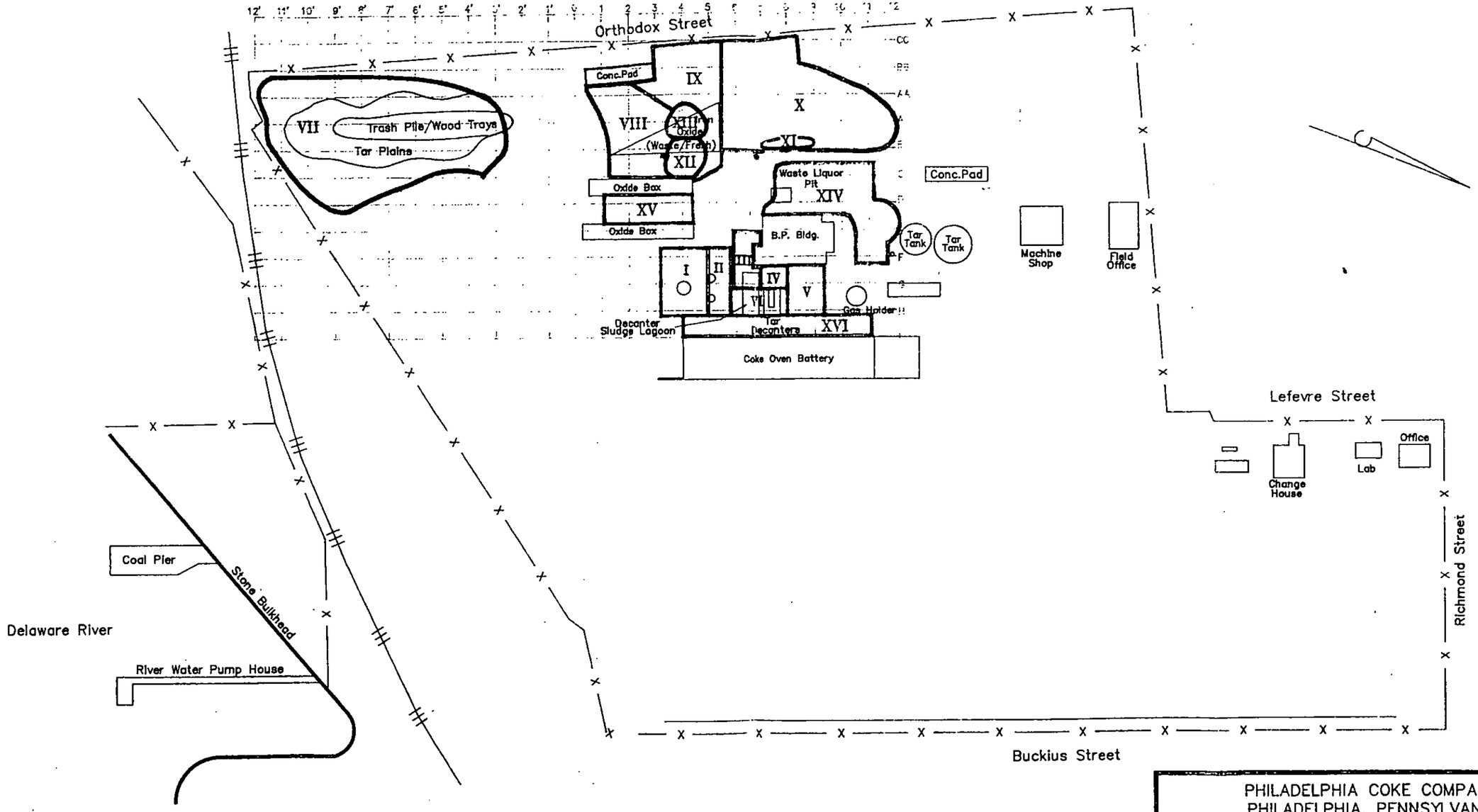


PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

REFERENCE GRID LOCATION PLAN

Job No.: 87C2839A6	Drawing No. 78390070	Date: 8/15/89
Checked by:	Rev. No.:	FIGURE 4
Scale: 0 200 FEET		



PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

CONFIRMATORY SOIL
SAMPLE AREAS

Job No.: 87C2839A6	Drawing No. 78390050	Date: 8/15/89
Checked by:	Rev. No.:	FIGURE 5
Scale: 0 — 200 FEET		

TABLE 2-2

SUMMARY OF SOIL SAMPLING PROGRAM
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Location	Approximate Depth (ft)	No. of Samples	Sampling Method
Decanter Tar Bottoms Area			
B-1	6, 10	2	HSA
B-2	6, 10	2	HSA
B-3	5, 7	2	HSA
B-4	10	1	—
B-5	8	1	HSA
B-6	8	1	HSA
B-7	6,8	2	HSA
Waste Liquor Pit			
B-8	10	1	HSA
Lime Pit			
B-9	4,8	2	HSA
Tar Plains			
TP1	0.5	1	Hand Tools
TP2	0.5	1	Hand Tools
TP3	0.5	1	Hand Tools
Background			
BG-1	0.5	1	Hand Tools

Note: HSA = Hollow Stem Auger

TABLE 2-3

LIST OF PARAMETERS ANALYZED
GROUNDWATER SAMPLING
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

ORGANIC COMPOUNDS

Volatile Organic Priority Pollutants
Base/Neutral Extractable Priority Pollutants
Acid-Extractable Priority Pollutants

PARAMETERS ESTABLISHING GROUNDWATER QUALITY

Chlorides	Phenols
Iron	Sodium
Manganese	Sulfates

PARAMETERS USED AS INDICATORS OF GROUNDWATER CONTAMINATION

pH
TOC (Total Organic Carbon)
Specific Conductance
TOX (Total Organic Halogen)

APPENDIX II PARAMETERS

Arsenic	Mercury	Endrin
Barium	Nitrate	Lindane
Chromium	Selenium	Methoxychlor
Fluoride	Silver	Toxaphane
Lead	Coliform Bacteria	2,4-D
2,4,5-TP		

ADDITIONAL INORGANIC PARAMETERS

Alkalinity	Total Dissolved Solids
Aluminum	BOD
Ammonia as N	COD
Cyanide	

Tables

TABLE 2-1

SUMMARY OF WELL CONSTRUCTION DATA
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Well Number	Completion Date	Total Depth (1) (ft)	Casing Material	Casing Diameter (in)	Type of Screen	Screened Interval (1) (ft)	Top of Casing Elevation (ft) (2)	Ground Elevation (ft) (2)	Coordinates (3)	
									North	East
W-1	March 25, 1985	14	PVC	4"	SCH 40 20 SLOT	3-13	10.94	8.7	8,499.01	9,559.42
W-2	March 26, 1985	14	PVC	4"	SCH 40 20 SLOT	3-13	15.31	13.4	9,242.25	9,932.47
W-3	March 26, 1985	14	PVC	4"	SCH 40 20 SLOT	2.5-12.5	14.46	11.5	8,832.18	10,256.92
W-4	March 25, 1985	16	PVC	4"	SCH 40 20 SLOT	4-14	15.17	13.2	9,978.68	9,713.30
W-5	October 23, 1986	16	PVC	2"	SCH 40 10 SLOT	4-14	14.76	12.80	9,886.25	9,729.98
W-6	October 23, 1986	14	PVC	2"	SCH 40 10 SLOT	4-14	14.50	12.90	9,669.25	9,914.97

(1) Screened intervals and depths are in feet below ground surface

(2) Elevations in feet Mean Sea Level (USGS Datum)

(3) Plant coordinate system

TABLE 5-1

GROUNDWATER QUALITY RESULTS
PRIORITY POLLUTANT ORGANICS DETECTED
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

VOLATILE ORGANICS

Benzene	1.3 - 490.0 ppb
Methylene Chloride	< 1.0 - 9.2 ppb
Toluene	< 0.2 - 81.0 ppb
Ethylbenzene	< 1.0 - 43.0 ppb

BASE/NEUTRAL EXTRACTABLES

Bis(2-chloroethyl)ether	15.0 - 33.0 ppb
Hexachloroethane*	0 - 83.0 ppb
Nitrobenzene*	0 - 90.0 ppb
Bis(2-chloroethoxy)methane*	0 - 15.0 ppb
Naphthalene	< 5.0 - 1180.0 ppb
Acenapthylene	< 7.0 - 56.0 ppb
2,6-Dinitrotoluene*	0 - 10.6 ppb
Acenapthene	8.0 - 84.0 ppb
Fluorene	< 5.0 - 120.0 ppb
Phenanthrene	< 5.0 - 347.0 ppb
Fluoranthene	< 5.0 - 191.0 ppb
Pyrene	< 5.0 - 126.0 ppb
Benzo(a)anthracene	< 10.0 - 25.0 ppb
Benzo(a)pyrene	< 25.0 - 96.0 ppb
Bis(2-ethylhexyl)phthalate	< 5.0 - 12.0 ppb

ACID EXTRACTABLES

Phenol	21.0 - 2710.0 ppb
2,4-Dimethylphenol	10.1 - 27600.0 ppb

*Compound was detected in only one sampling round.

TABLE 2-4

SINGLE-WELL PERMEABILITY TESTING
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA
OCTOBER 27, 1986

Well Number	Permeability (k) (cm/sec)	Aquifer Conditions
W-1	1.4×10^{-3}	unconfined
W-2	3.5×10^{-3}	unconfined
W-3	1.3×10^{-3}	unconfined
W-4	---	---
W-5	9.5×10^{-3}	unconfined
W-6	5.8×10^{-2}	unconfined

Note: Permeability for W-4 could not be determined due to an insufficient supply of water in the well.

TABLE 5-2

TOTAL VOLATILE ORGANIC CONCENTRATIONS (ppb)
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Well Number	4-10-85	6-26-85	10-15-85	1-23-86	4-24-86	7-29-86	10-10-86
W-1	ND	1.5	9.2*	7.7	4.4*	< 5.0	ND
W-2	212.2	315.1	210.0	ND	93.4	566.2	ND
W-3	3.8*	< 1.0	ND	ND	6.1*	< 5.0	ND
W-4	3.4*	< 1.0	ND	< 1.0	ND	< 5.0	ND

*Only volatile organic detected was Methylene Chloride, a potential laboratory contaminant.

ND - Not Detected

TABLE 5-3

TOTAL ACID EXTRACTABLE CONCENTRATIONS (ppb)
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Well Number	4-10-85	6-26-85	10-15-85	1-23-86	4-24-86	7-29-86	10-10-86
W-1	ND	ND	ND	ND	ND	ND	ND
W-2	30,310.0	276.0	ND	646.0	10.1	663.0	274.0
W-3	ND	ND	ND	ND	ND	ND	ND
W-4	ND	ND	ND	ND	ND	ND	ND

ND - Not Detected

TABLE 5-4

TOTAL BASE/NEUTRAL EXTRACTABLE CONCENTRATIONS (ppb)
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Well Number	4-10-85	6-26-85	10-15-85	1-23-86	4-24-86	7-29-86	10-10-86
W-1	< 10.0	127.2	42.3	5.0	ND	ND	ND
W-2	105.0	360.5	1448.0	635.0	349.6	237.0	1404.0
W-3	12.0*	ND	ND	< 5.0*	ND	ND	ND
W-4	8.5*	5.8*	< 5.0*	5.0*	ND	ND	ND

*Only Base/Neutral Extractable detected was bis(2-ethylhexyl)phthalate, a potenial well material contaminant

ND - Not Detected

TABLE 5-5

SOIL QUALITY RESULTS
PRIORITY POLLUTANT ORGANICS DETECTED
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Parameter	Units	B-1A	B-1B	B-2A	B-2B
Acid Extractables					
Phenol	ppb	1200	BDL	BDL	BDL
2,4-Dimethylphenol	ppb	220	BDL	270	BDL
Total Acids		1420	BDL	270	BDL
Base/Neutral Extractables					
Naphthalene	ppb	81,000	7,800	13,000	250
Acenaphthylene	ppb	17,000	1,900	2,000	BDL
Acenapthene	ppb	BDL	BDL	BDL	BDL
Fluorene	ppb	16,000	2,500	5,600	BDL
Phenanthrene	ppb	33,000	6,400	1,500	220
Anthracene	ppb	7,900	1,300	3,800	BDL
Fluoranthene	ppb	18,000	3,800	8,900	300
Pyrene	ppb	11,000	3,400	8,000	3
Benzo (A) Anathracene	ppb	6,500	1,800	3,700	2
Bis (2-Ethylhexyl) Phthalate	ppb	BDL	BDL	BDL	BDL
Chrysene	ppb	5,800	1,700	3,600	270
Benzo (B) Fluoranthene	ppb	6,500	930	4,800	420
Benzo (K) Fluoranthene	ppb	6,500	1,400	4,800	420
Benzo (A) Pyrene	ppb	3,300	880	2,400	260
Indeno (1,2,3-c,d) Pyrene	ppb	BDL	BDL	BDL	BDL
Dibenzo, (A,H) Anthracene	ppb	BDL	BDL	BDL	BDL
Benzo (G,H,I) Perylene	ppb	BDL	BDL	BDL	BDL
Total Base/Neutrals		212,500	33,810	62,100	2,680
Volatile Organics					
Methylene Chloride	ppb	BDL	BDL	18	BDL
Benzene	ppb	80	BDL	BDL	BDL
Toluene	ppb	50	BDL	BDL	BDL
Ethylbenzene	ppb	84	BDL	BDL	BDL
Total Volatiles		214	BDL	18	BDL

BDL - Below Detection Limit

TABLE 5-5

SOIL QUALITY RESULTS
PRIORITY POLLUTANT ORGANICS DETECTED
PHILADELPHIA, COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Parameter	Units	B-7A	B-7B	B-8A	B-9A	B-9B
Acid Extractables						
Phenol	ppb	1100	330	BDL	BDL	570
2,4-Dimethylphenol	ppb	320	BDL	BDL	BDL	BDL
Total Acids		1420	330	BDL	BDL	570
Base/Neutral Extractables						
Naphthalene	ppb	6,300	1,000	11,000	46,000	46,00
Acenaphthylene	ppb	BDL	BDL	780	4,800	26
Acenapthene	ppb	320	BDL	6,100	250	BDL
Fluorene	ppb	BDL	BDL	4,600	2,200	24
Phenanthrene	ppb	360	BDL	10,000	7,500	97
Anthracene	ppb	370	BDL	3,200	2,300	1,20
Fluoranthene	ppb	1,000	290	6,800	8,300	65
Pyrene	ppb	900	280	4,400	4,400	59
Benzo (A) Anathracene	ppb	1,000	BDL	2,200	3,700	36
Bis (2-Ethylhexyl) Phthalate	ppb	BDL	BDL	BDL	BDL	19
Chrysene	ppb	880	BDL	2,100	3,500	40
Benzo (B) Fluoranthene	ppb	1,700	230	2,100	6,400	0
Benzo (K) Fluoranthene	ppb	1,700	230	2,100	6,400	430
Benzo (A) Pyrene	ppb	980	BDL	1,300	3,500	290
Indeno (1,2,3-c,d)Pyrene	ppb	490	BDL	260	1,800	BDL
Dibenzo (A,H) Anthracene	ppb	BDL	BDL	BDL	190	BDL
Benzo (G,H,I) Perylene	ppb	530	BDL	250	1,700	BDL
Total Base/Neutrals		16,530	2,030	57,190	102,940	51,950
Volatile Organics						
Methylene Chloride	ppb	BDL	BDL	BDL	BDL	BDL
Benzene	ppb	9	15	BDL	BDL	10
Toluene	ppb	BDL	BDL	BDL	BDL	5
Ethylbenzene	ppb	BDL	BDL	BDL	BDL	BDL
Total Volatiles		9	15	BDL	BDL	15

BDL - Below Detection Limit

TABLE 5-5

SOIL QUALITY RESULTS
PRIORITY POLLUTANT ORGANICS
PHILADELPHIA, COKE COMP
PHILADELPHIA, PENNSYLVA

Parameter	Units	B-3A	B-3B
Acid Extractables			
Phenol	ppb	910	BDL
2,4-Dimethylphenol	ppb	180	BDL
Total Acids		1090	BDL
Base/Neutral Extractables			
Naphthalene	ppb	52,000	510
Acenaphthylene	ppb	13,000	BDL
Acenapthene	ppb	3,900	BDL
Fluorene	ppb	37,000	180
Phenanthrene	ppb	110,000	780
Anthracene	ppb	34,000	220
Fluoranthene	ppb	90,000	740
Pyrene	ppb	55,000	720
Benzo (A) Anathracene	ppb	36,000	400
Bis (2-Ethylhexyl) Phthalate	ppb	BDL	BDL
Chrysene	ppb	3,400	350
Benzo (B) Fluoranthene	ppb	44,000	380
Benzo (K) Fluoranthene	ppb	44,000	380
Benzo (A) Pyrene	ppb	24,000	220
Indeno (1,2,3-c,d) Pyrene	ppb	9,500	BDL
Dibenzo, (A,H) Anthracene	ppb	3,900	BDL
Benzo (G,H,I) Perylene	ppb	8,400	BDL
Total Base/Neutrals		568,100	4,880
Volatile Organics			
Methylene Chloride	ppb	11	BDL
Benzene	ppb	BDL	BDL
Toluene	ppb	BDL	BDL
Ethylbenzene	ppb	BDL	BDL
Total Volatiles		11	BDL

BDL - Below Detection Limit

TABLE 5-6

EPA DRINKING WATER STANDARDS
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Parameter	Interim Primary Standard (ppm)	Interim Secondary Standard (ppm)
Arsenic	0.050	
Barium	1	
Cadmium	0.01	
Chloride		250
Chromium	0.05	
Copper		1
Fluoride	1.4-2.4	
Iron		0.3
Lead	0.05	
Manganese		0.05
Mercury	0.002	
Nitrate (as Nitrogen)	10	
pH		6.5-8.5 units
Selenium	0.01	
Silver	0.05	
Sodium	no standard	
Sulfate		250
Total Cyanides	0.2	
Total Dissolved Solids		500
Zinc		5

Source: 40 CFR Part 143 and 265, Appendix III, 7/1/85 Edition.

TABLE 5-5

SOIL QUALITY RESULTS
PRIORITY POLLUTANT ORGANICS DETECTED
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Parameter	Units	Field Blank1	Field Blank	TP-1	TP-2	TP-3	BG
Acid Extractables							
Phenol	ppb	BDL	BDL	BDL	BDL	BDL	BDL
2,4-Dimethylphenol	ppb	BDL	BDL	BDL	BDL	BDL	BDL
Total Acids		BDL	BDL	BDL	BDL	BDL	BDL
Base/Neutral Extractables							
Naphthalene	ppb	BDL	18	220,000	310	540	BD
Acenaphthylene	ppb	BDL	BDL	6,500	BDL	220	BD
Acenapthene	ppb	BDL	BDL	BDL	BDL	BDL	BD
Fluorene	ppb	BDL	BDL	69,000	BDL	BDL	BD
Phenanthrene	ppb	BDL	11	230,000	590	1,000	1,3
Anthracene	ppb	BDL	BDL	53,000	200	480	3
Fluoranthene	ppb	BDL	5	130,000	310	1,900	1,4
Pyrene	ppb	BDL	BDL	140,000	360	2,200	1,6
Benzo (A) Anathracene	ppb	BDL	BDL	54,000	220	1,100	6
Bis (2-Ethylhexyl) Phthalate	ppb	10	8	BDL	BDL	BDL	BD
Chrysene	ppb	BDL	BDL	49,000	450	1,300	7
Benzo (B) Fluoranthene	ppb	BDL	BDL	70,000	780	1,900	1,0
Benzo (K) Fluoranthene	ppb	BDL	BDL	70,000	780	1,900	1,0
Benzo (A) Pyrene	ppb	BDL	BDL	40,000	450	960	5
Indeno (1,2,3-c,d) Pyrene	ppb	BDL	BDL	BDL	290	440	2
Dibenzo, (A,H) Anthracene	ppb	BDL	BDL	BDL	BDL	210	BD
Benzo (G,H,I) Perylene	ppb	BDL	BDL	BDL	310	460	2
Total Base/Neutrals		10	42	1,131,500	5,050	14,610	8,9
Volatile Organics							
Methylene Chloride	ppb	BDL	BDL	10	17	BDL	BDL
Benzene	ppb	BDL	BDL	BDL	BDL	6	BDL
Toluene	ppb	BDL	BDL	22	BDL	BDL	BDL
Ethylbenzene	ppb	13	BDL	BDL	BDL	BDL	BDL
Total Volatiles		13	BDL	32	17	6	BDL

BDL - Below Detection Limit

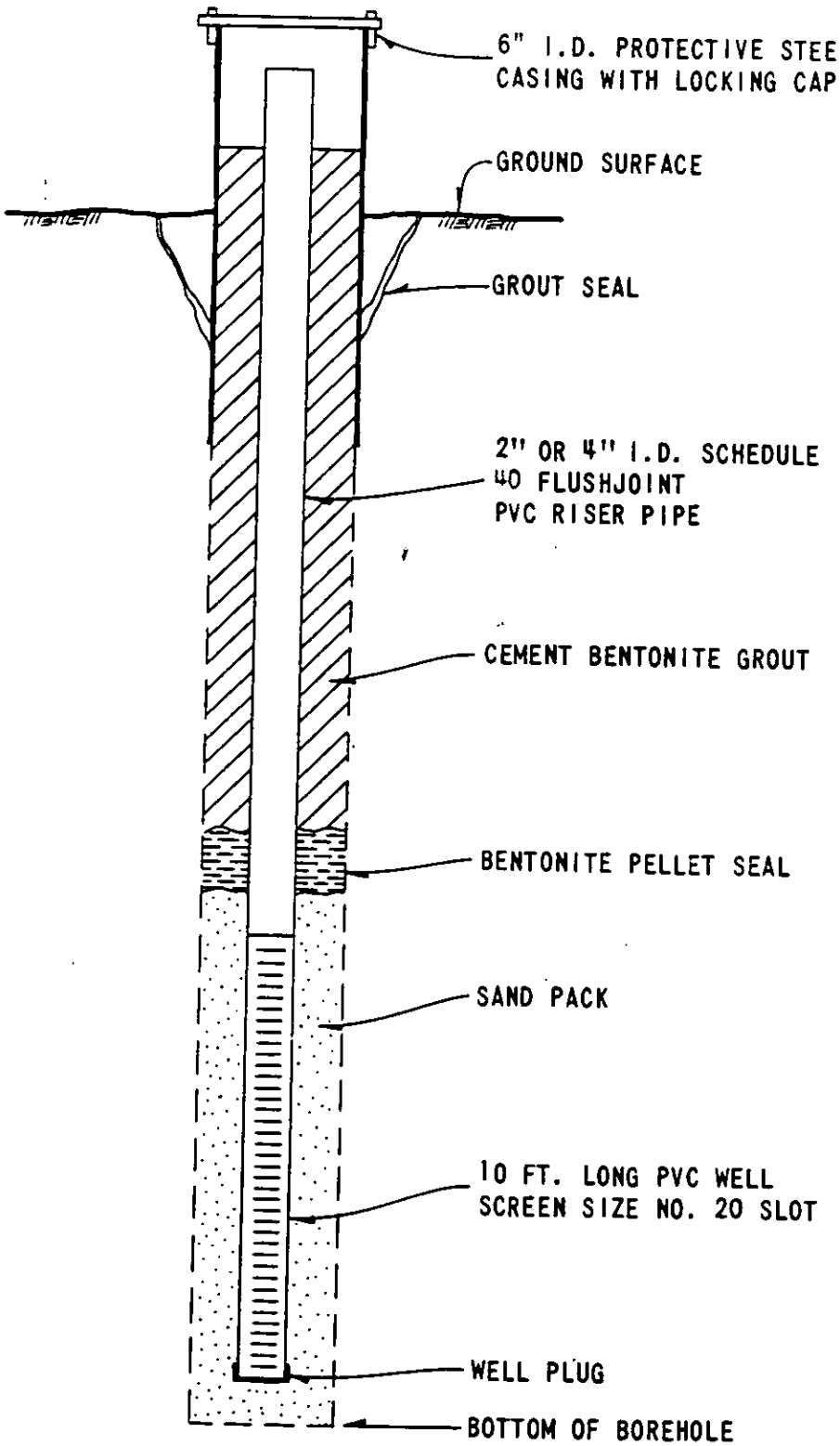
Figure

TABLE 5-7

PRIORITY POLLUTANT WATER QUALITY CRITERIA
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Parameter	Acceptable Concentration (ppb)	Guideline Basis
Acid Extractables		
Phenol	3500	Ambient Water Quality Criteria
2,4-Dimethylphenol	400	Organoleptic Ambient Water Criteria
Base/Neutral Extractables		
Naphthalene	No standard	
Acenapthylene	2.8×10^{-2}*	
Acenapthene	2.8×10^{-2}*	Ambient Water Quality Criteria
Fluorene	2.8×10^{-2}*	Ambient Water Quality Criteria
Phenanthrene	2.8×10^{-2}*	Ambient Water Quality Criteria
Benzo(a)pyrene	2.8×10^{-2}*	Ambient Water Quality Criteria
Benzo(a)anthracene	2.8×10^{-2}*	Ambient Water Quality Criteria
Pyrene	2.8×10^{-2}*	Ambient Water Quality Criteria
Fluoranthene	42	Ambient Water Quality Criteria
Bis (2-Chloroethyl)ether	0.3*	Ambient Water Quality Criteria
Hexachloroethane	19*	Ambient Water Quality Criteria
Nitrobenzene	19,800	Ambient Water Quality Criteria
2-6, Dinitrotoluene	No standard	
Bis (2-Chloroethoxy)methane	No standard	
Bis (2-Ethylhexyl)phthalate	4200	Suggested No Adverse Response Level
Volatile Organics		
Methylene Chloride	50*	Ambient Water Quality Criteria
Benzene	5	Maximum Contaminant Level
Toluene	2000	Recommended Maximum Contaminant Level
Ethylbenzene	680	Recommended Maximum Contaminant Level

* For an incremental increased lifetime cancer risk of 10^{-5}.



NOTE: SEE APPENDIX B FOR SPECIFIC WELL CONSTRUCTION DETAILS

TYPICAL MONITORING WELL CONSTRUCTION
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

FIGURE 2-2

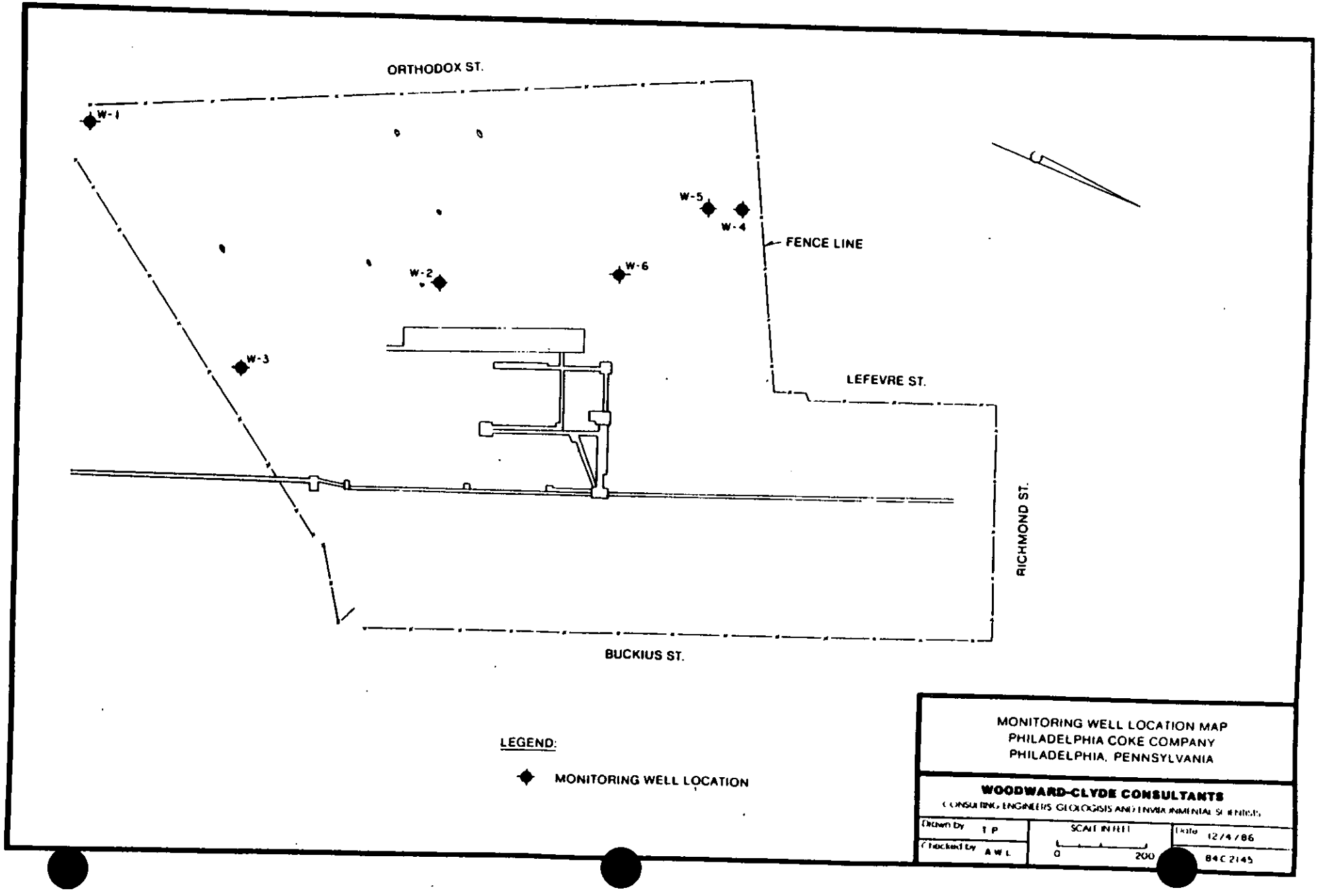

ORTHODOX ST.
W-1
W-5
W-4
FENCE LINE
W-2
W-6
W-3
LEFEVRE ST.
RICHMOND ST.
BUCKIUS ST.
LEGEND:
MONITORING WELL LOCATION
MONITORING WELL LOCATION MAP
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA
WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
Drawn By T P
Checked by A W L
SCALE IN FEET
0
200
Date 12/4/86
84C2145

FIGURE 1

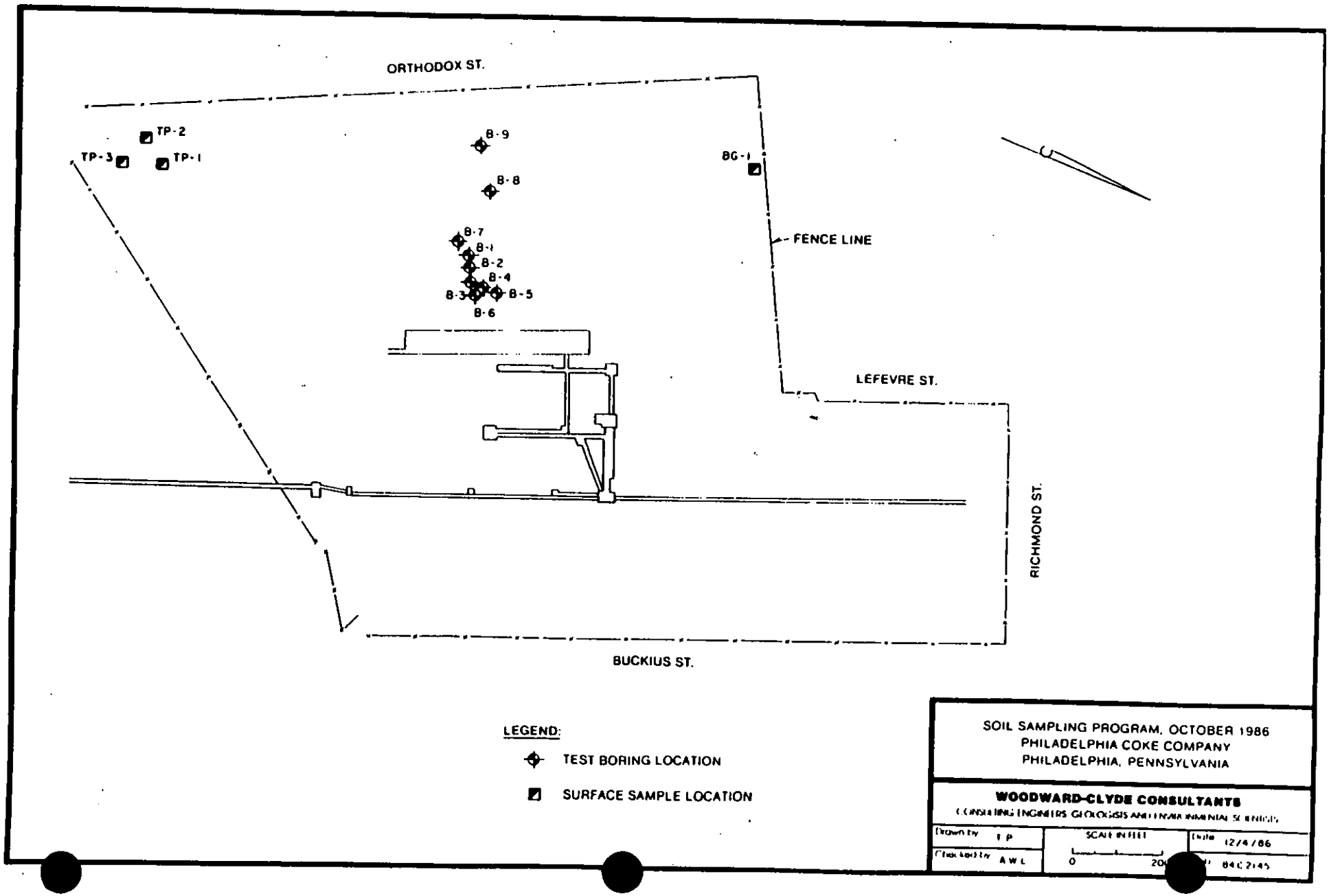
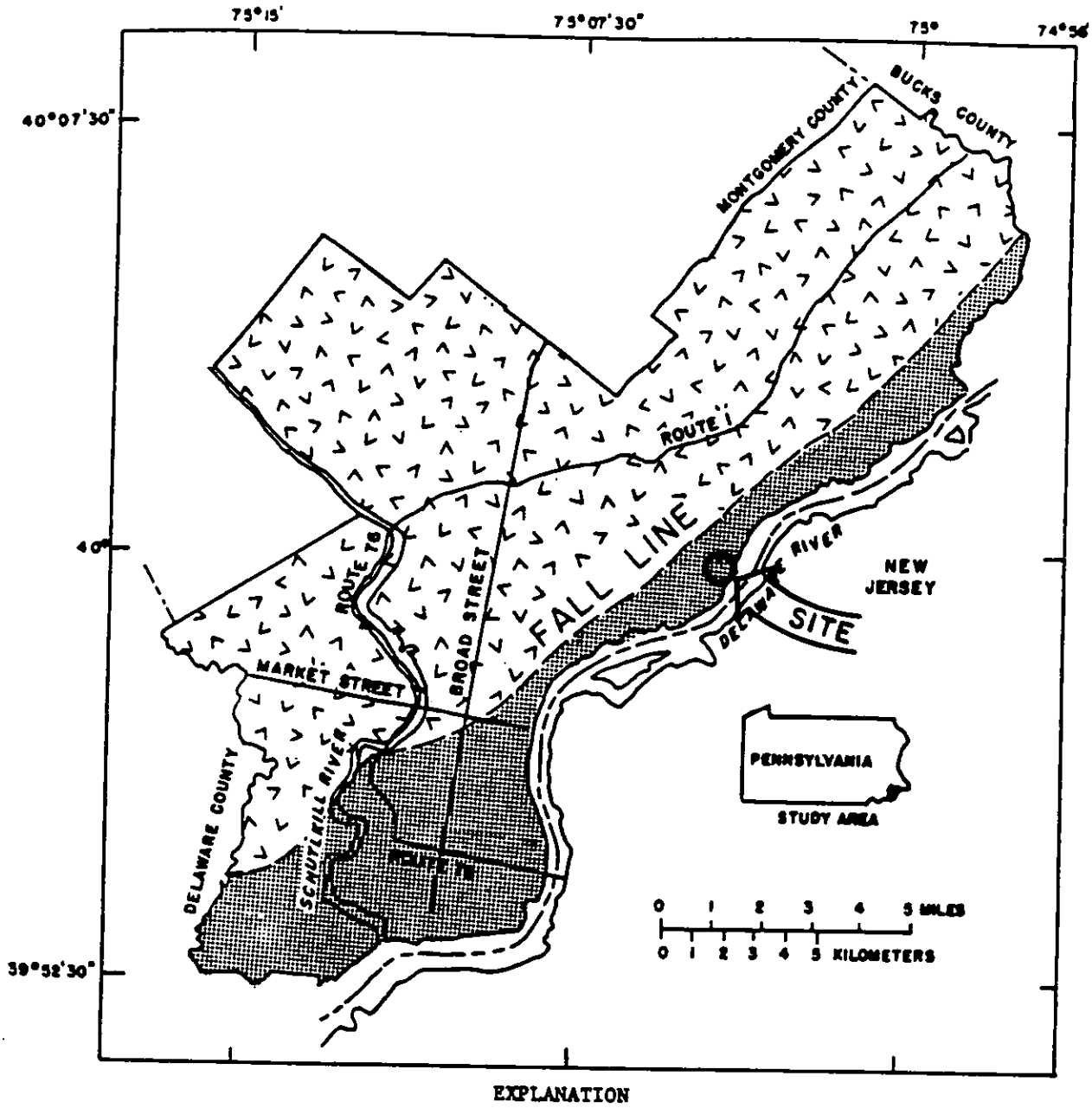

ORTHODOX ST.
TP-2
TP-3
TP-1
B-9
B-8
B-7
B-1
B-2
B-4
B-3
B-5
B-6
BG-1
FENCE LINE
LEFEVRE ST.
RICHMOND ST.
BUCKIUS ST.
LEGEND:
TEST BORING LOCATION
SURFACE SAMPLE LOCATION
SOIL SAMPLING PROGRAM, OCTOBER 1986
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA
WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
Drawn by T P
Checked by A W L
SCALE IN FEET
0
Date 12/4/86

FIGURE 1-1



EXPLANATION

PIEDMONT
Underlain by crystalline rocks, chiefly schist of the Wissahickon Formation, lesser amounts of quartzite of the Chickies Formation, and gneissose rocks of granitic to gabbroic composition

COASTAL PLAIN
Underlain by unconsolidated deposits of gravel, sand, silt, and clay. Includes Potomac-Raritan-Magothy aquifer system.

GENERALIZED GEOLOGY, PHILADELPHIA COUNTY
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

FIGURE 3-1

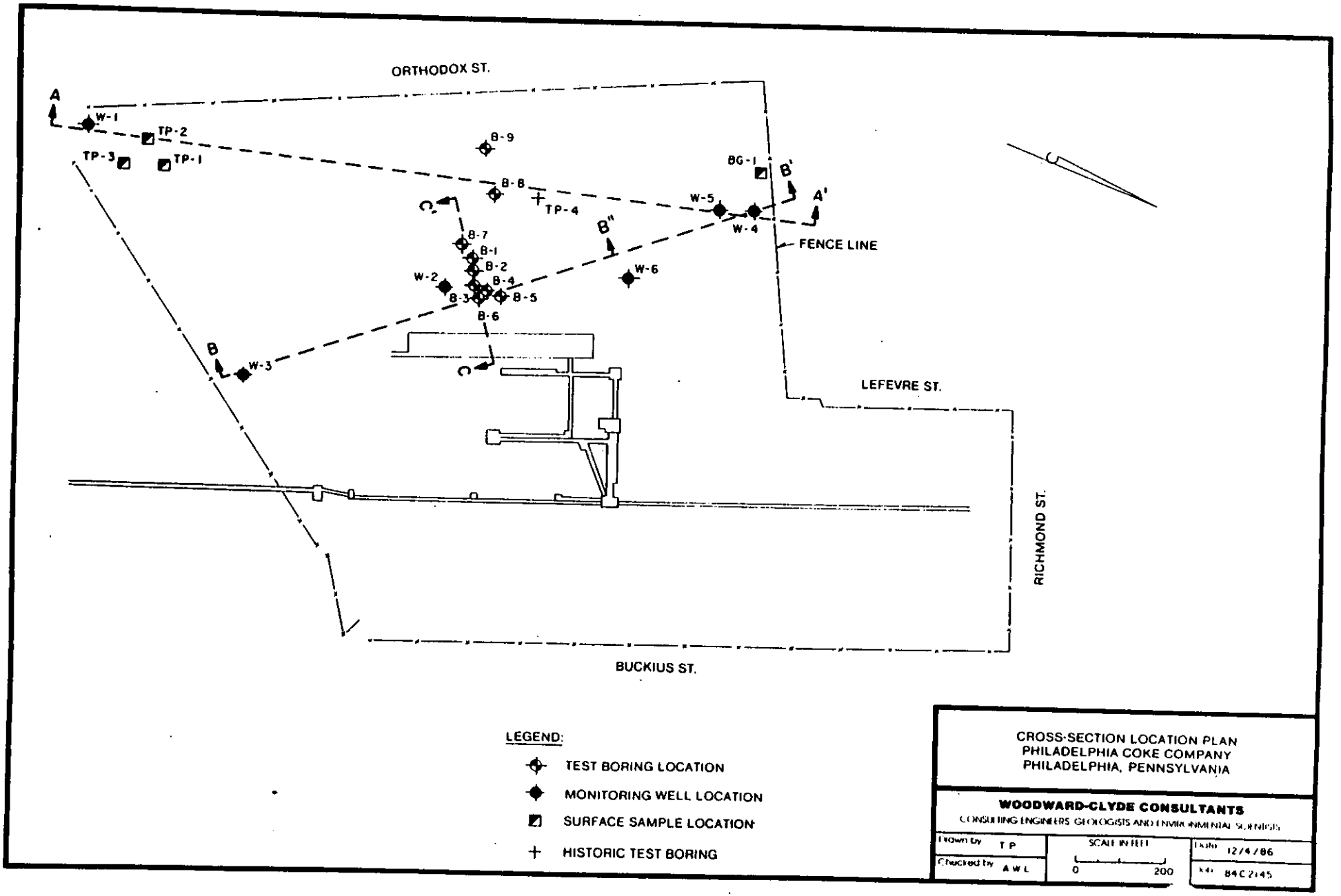
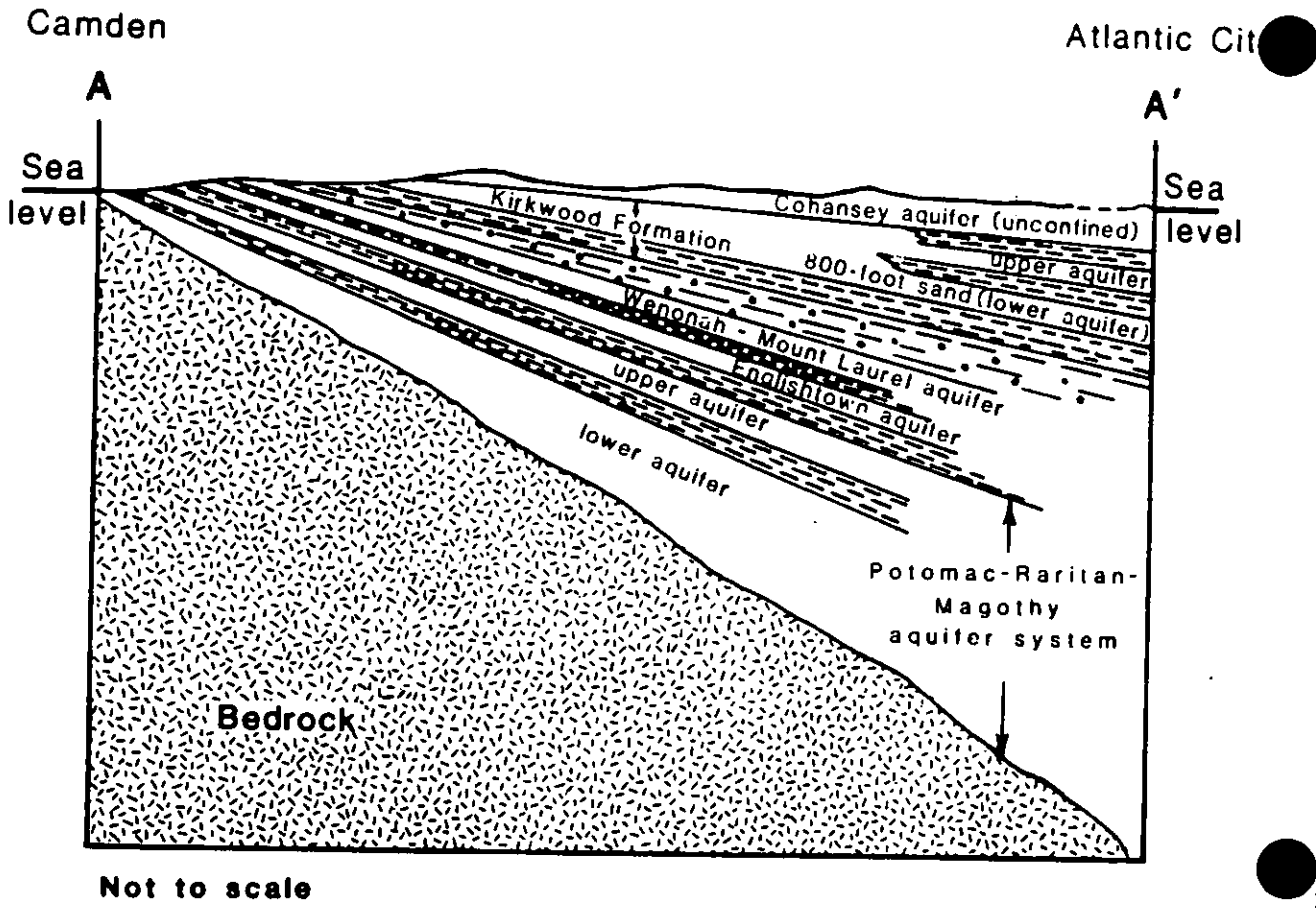
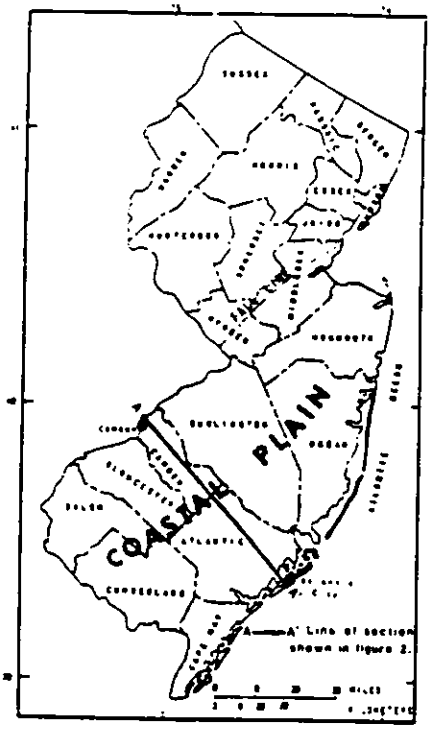

ORTHODOX ST.
A
W-1
TP-2
TP-3
TP-1
B-9
B-8
TP-4
BG-1
B'
A'
W-5
W-4
FENCE LINE
C
B-7
B-1
B-2
B-4
B-3
B-5
B-6
W-2
B"
W-6
B
W-3
C'
LEFEVRE ST.
RICHMOND ST.
BUCKIUS ST.
LEGEND:
TEST BORING LOCATION
MONITORING WELL LOCATION
SURFACE SAMPLE LOCATION
HISTORIC TEST BORING
CROSS-SECTION LOCATION PLAN
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA
WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
Drawn by T P
Checked by A W L
SCALE IN FEET
0
200
Date 12/4/86
Job 84C2145

FIGURE 1-1



Not to scale



EXPLANATION

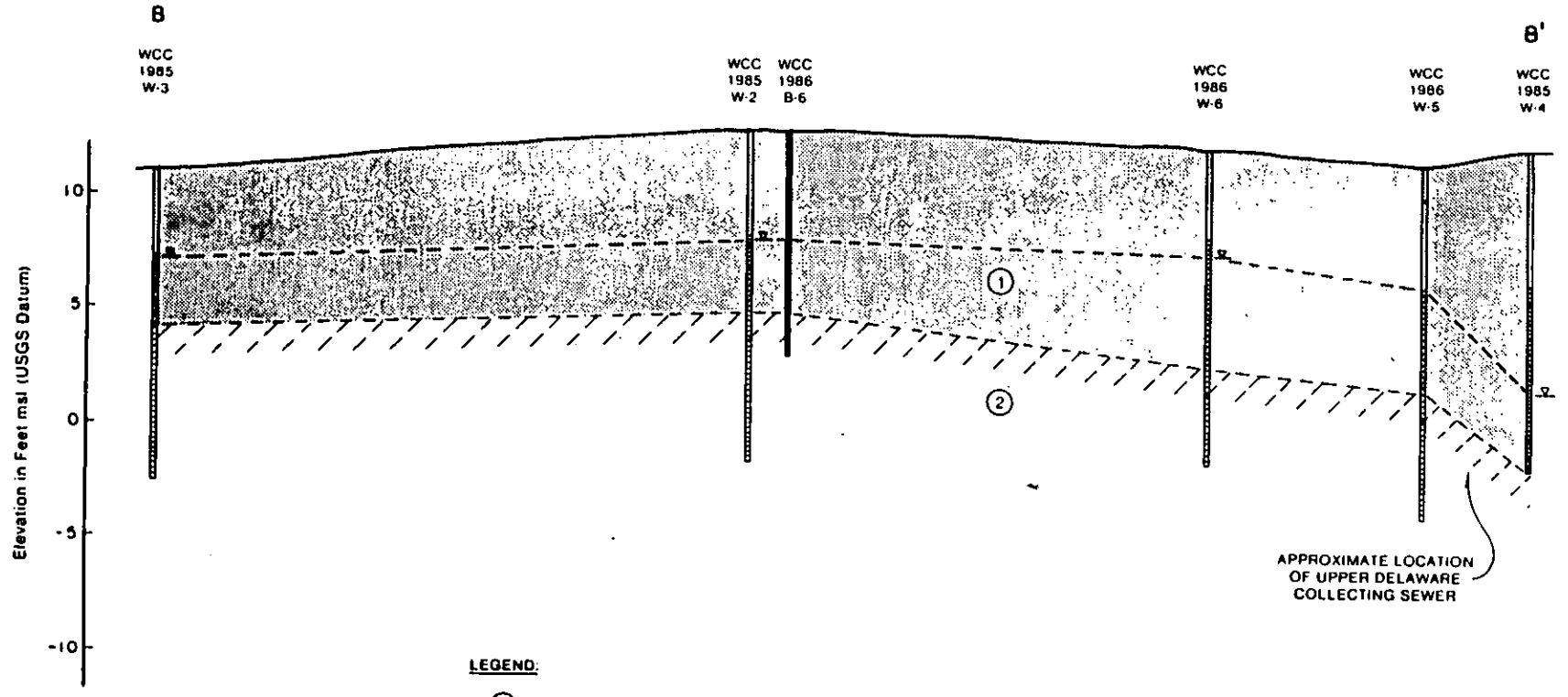
Composite confining layer and minor aquifer

Confining layer

(From U.S. Geological Survey Open File Report 82-4077, 1983)

GENERALIZED GEOLOGIC CROSS-SECTION
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

FIGURE 3-2



LEGEND:

1. OVERBURDEN AND FILL MATERIAL
2. GRAY TO GRAY-BROWN SILTY CLAY

GROUNDWATER LEVELS (OCTOBER 27, 1986)

TEST BORING

WELL SCREEN

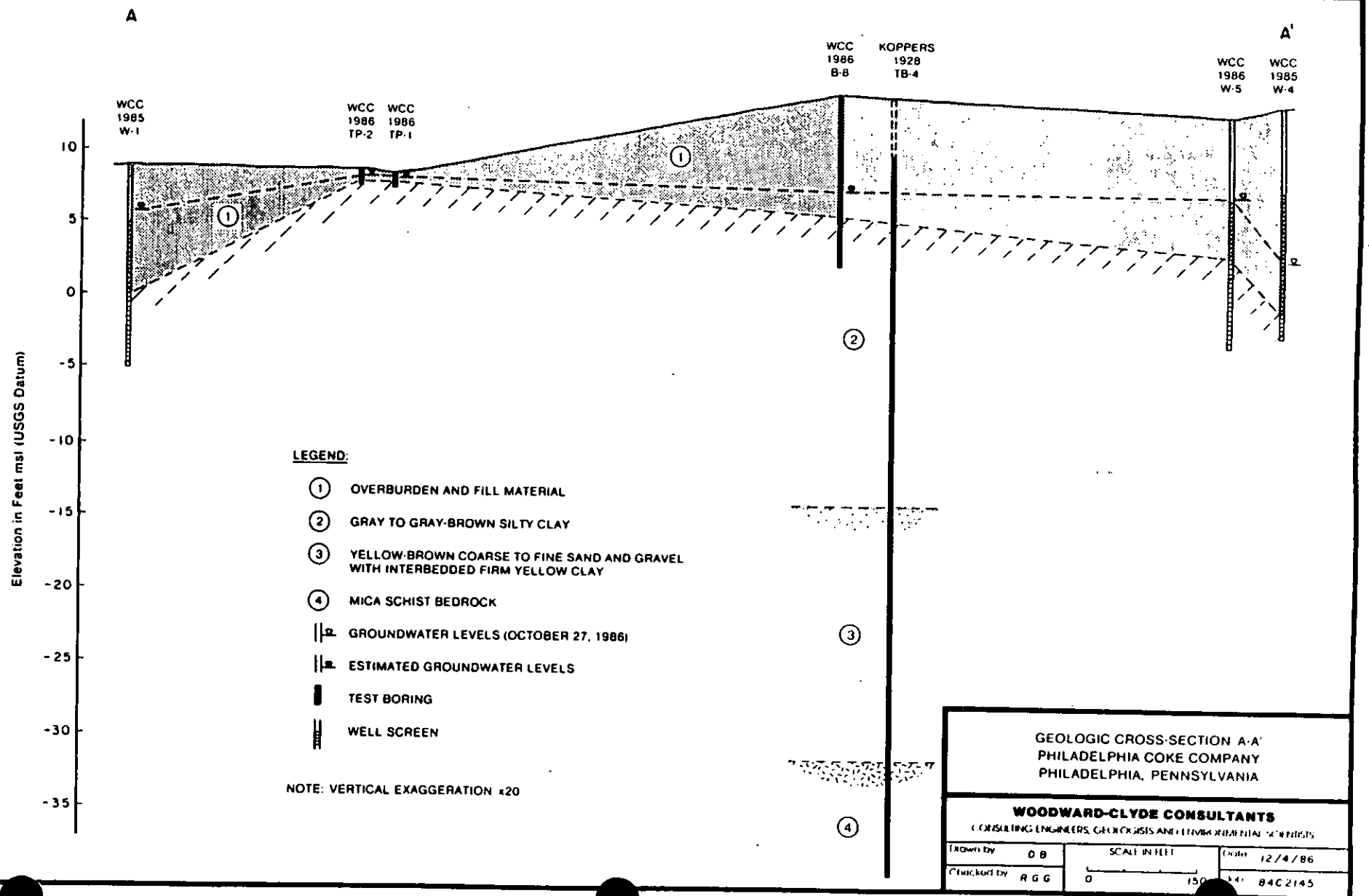
NOTE: VERTICAL EXAGGERATION x20

GEOLOGIC CROSS-SECTION B-B'
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

Drawn by D.B.	SCALE IN FEET	Date	12/4/86
Checked by R.G.G.	0 100	Job No.	84C2145

FIGURE 15

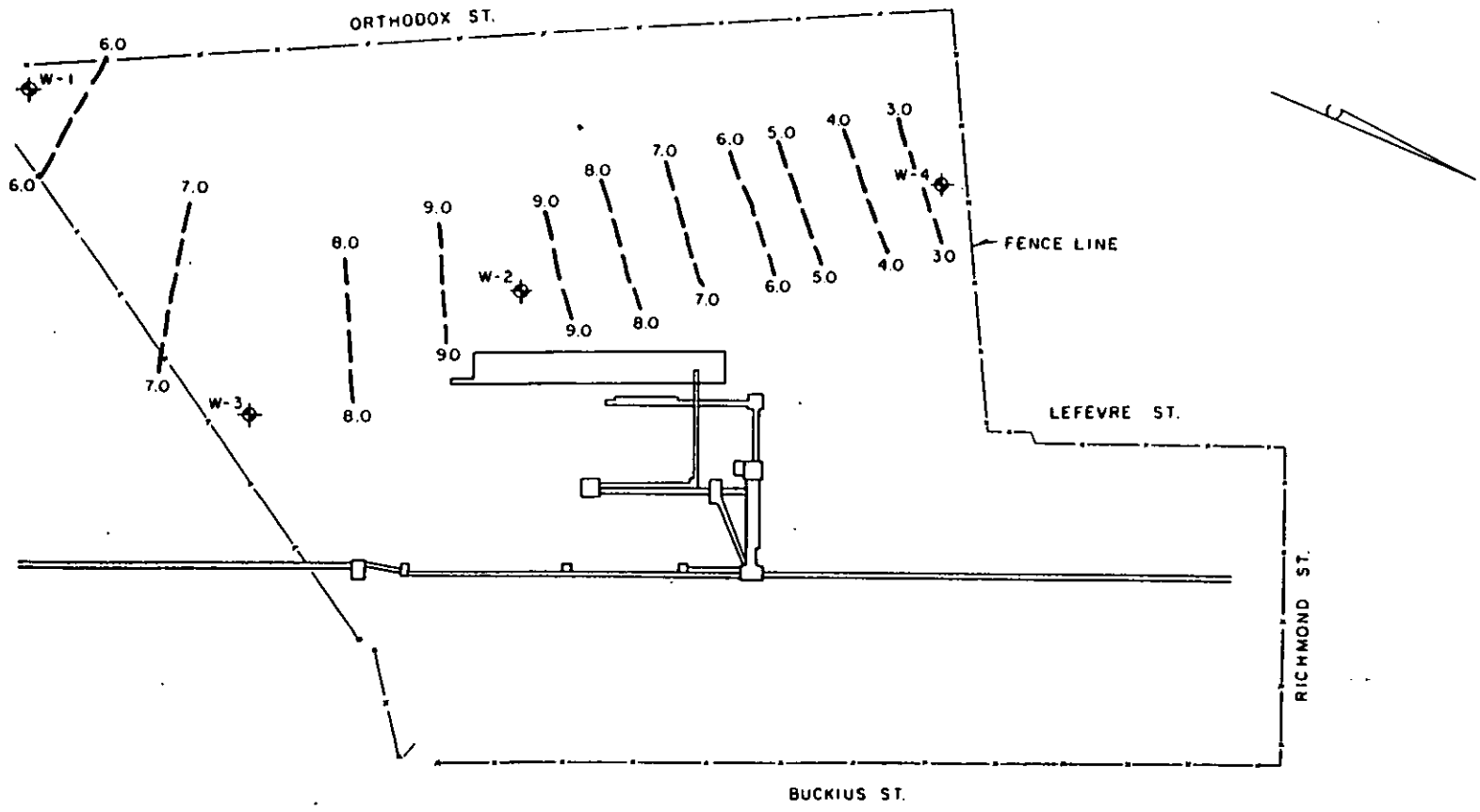


GEOLOGIC CROSS-SECTION A-A'
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

Drawn by	D B	SCALE IN FEET	Date 12/4/86
Checked by	R G G	0 150	84C2145

FIGURE 3-4



LEGEND:

MONITORING WELL

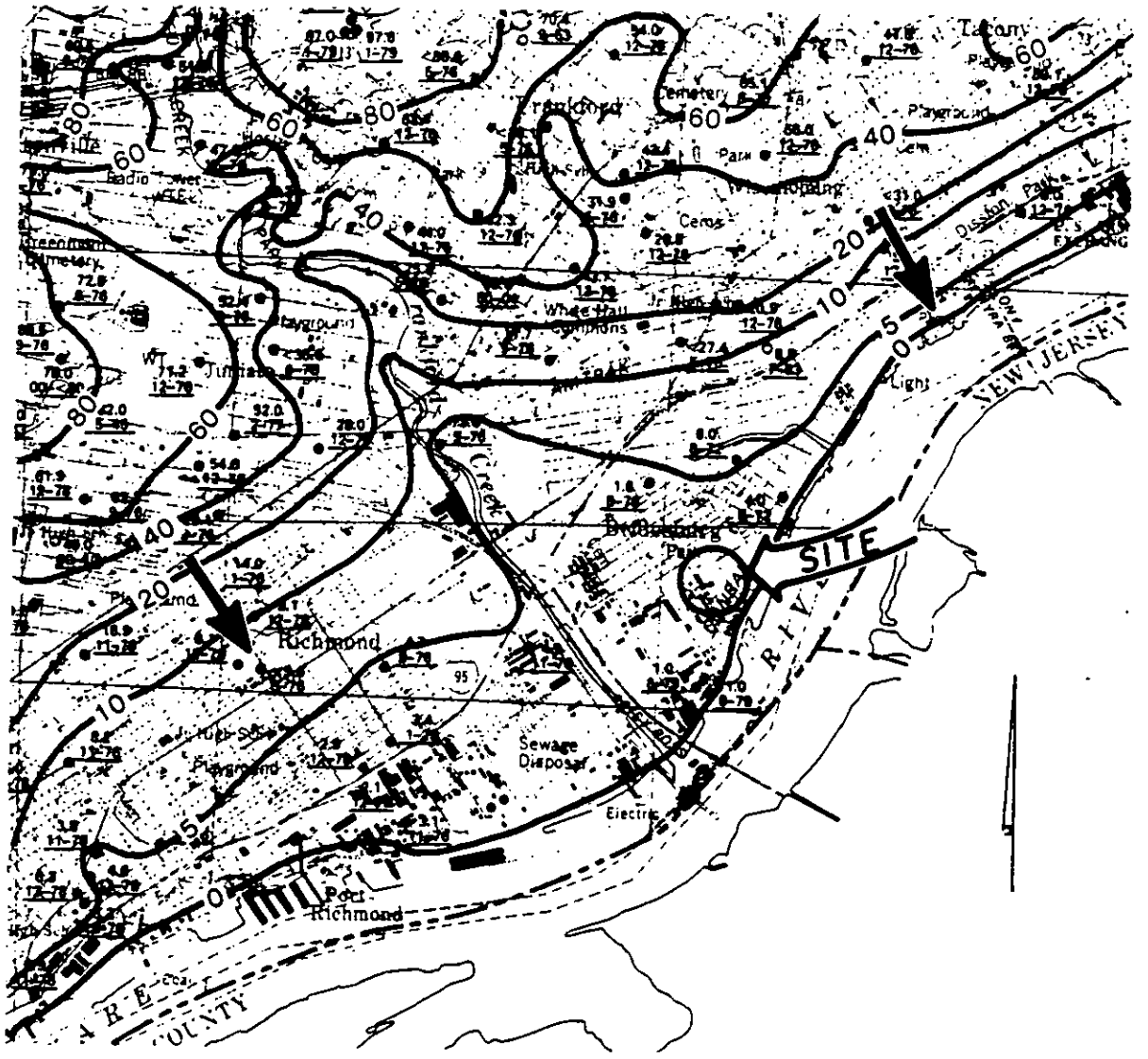
8.0 GROUNDWATER CONTOUR

GROUNDWATER ELEVATIONS, OCT. 10, 1986
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

Drawn By	T. P	SCALE IN FEET 0 200	Date 12-8-86
Checked	T.W.T.		Job No. 84C2145

FIGURE 4-2

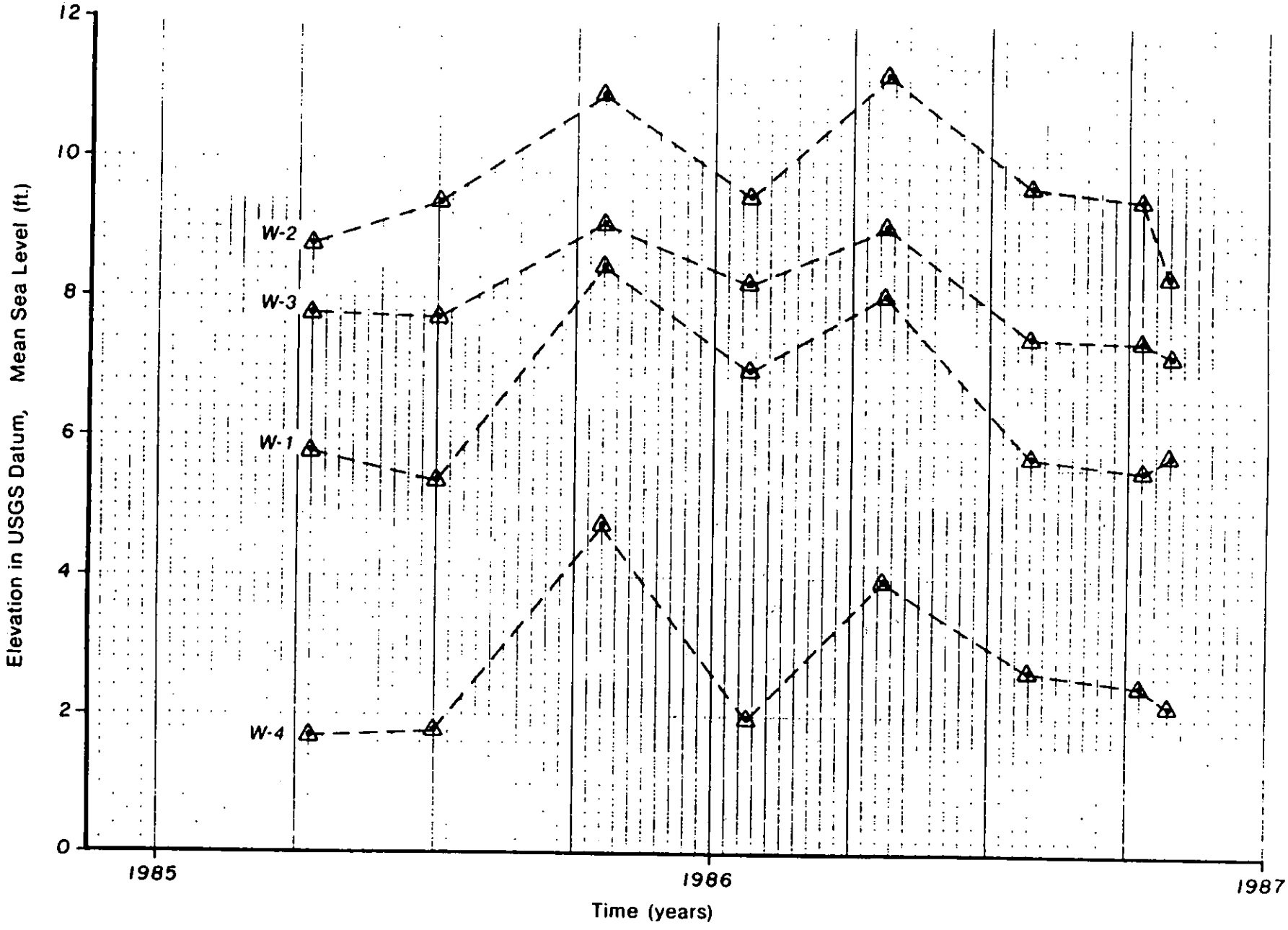


NOTE: GROUNDWATER ELEVATION CONTOURS ARE SHOWN AS U.S.G.S. DATUM ELEVATIONS.

FROM: PAVACHOK, G.N. AND WOOD, C.R., 1984 WATER TABLE MAP OF PHILADELPHIA, PENNSYLVANIA, 1976-1980.

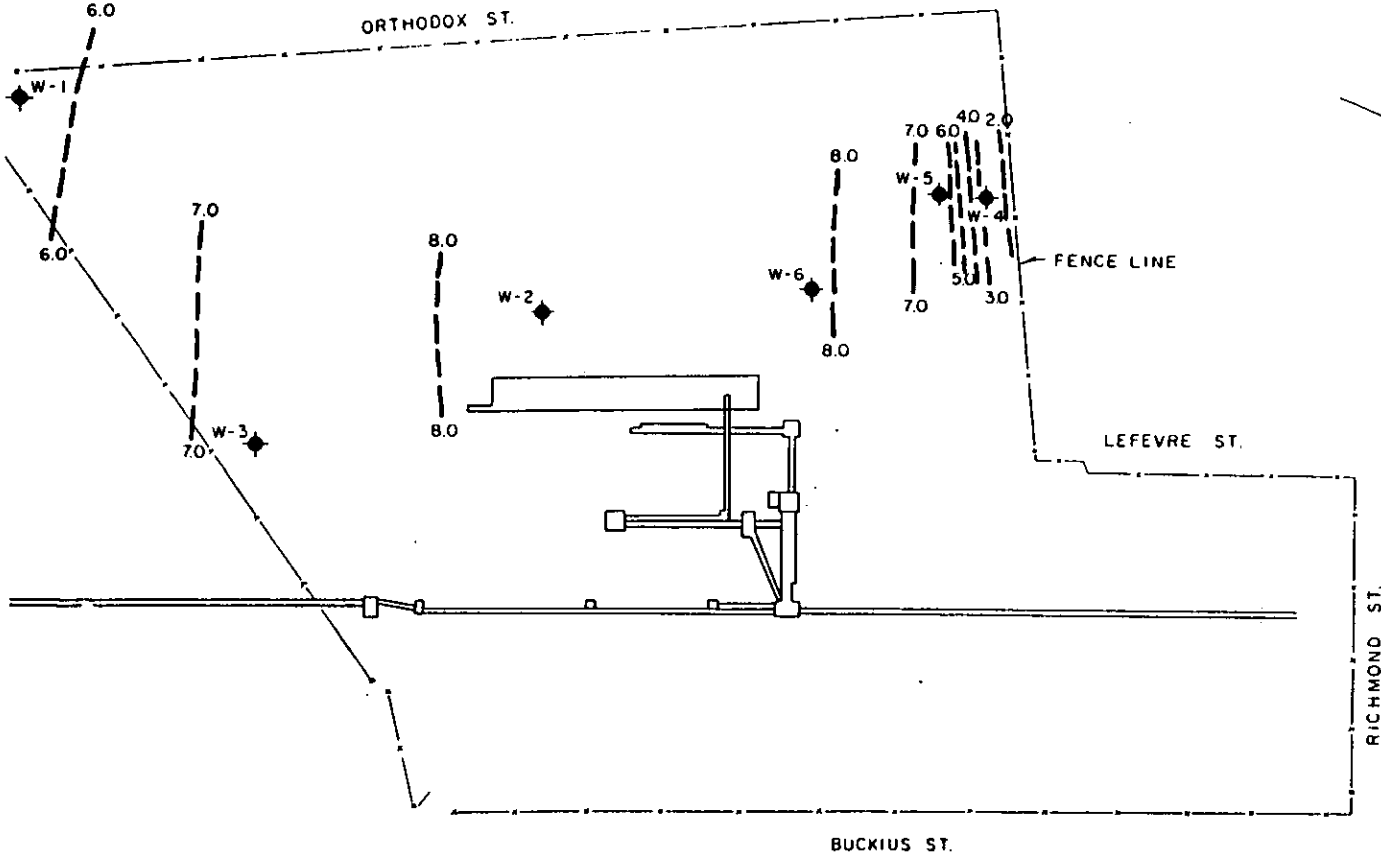
REGIONAL GROUNDWATER FLOW
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

FIGURE 4-1



SHALLOW GROUNDWATER ELEVATIONS
PHILADELPHIA COKE COMPANY
PHILADELP PENNSYLVANIA

. IGURE 4-4



LEGEND:

MONITORING WELL

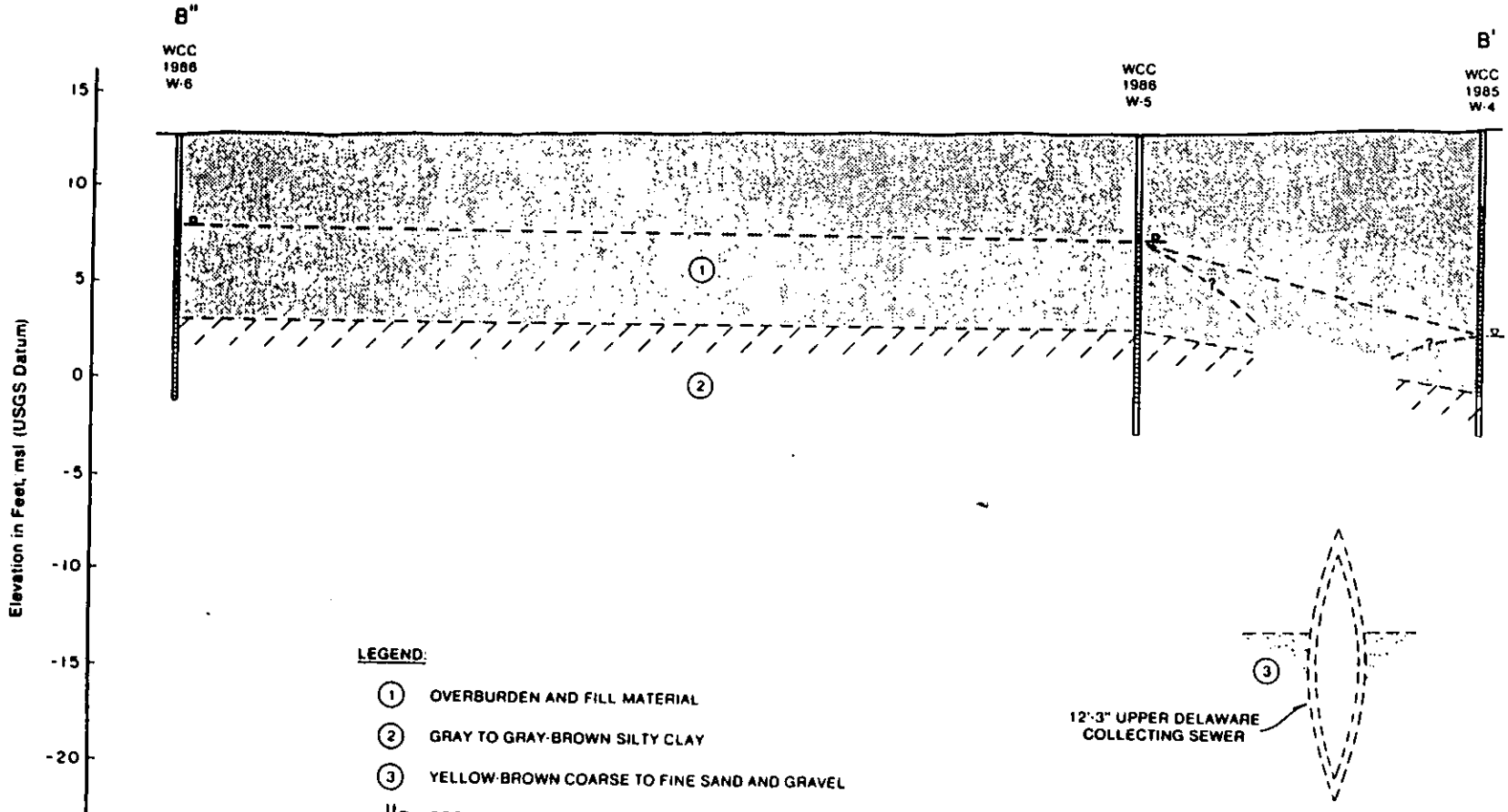
8.0 GROUNDWATER CONTOUR

GROUNDWATER ELEVATIONS, OCT. 27, 1986
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISIS AND ENVIRONMENTAL SCIENTISIS

Drawn By	T. P.	SCALE IN FEET	Date 12/8/86
Checked	T.W.T.	0 200	B4C 2145

FIGURE 4-1

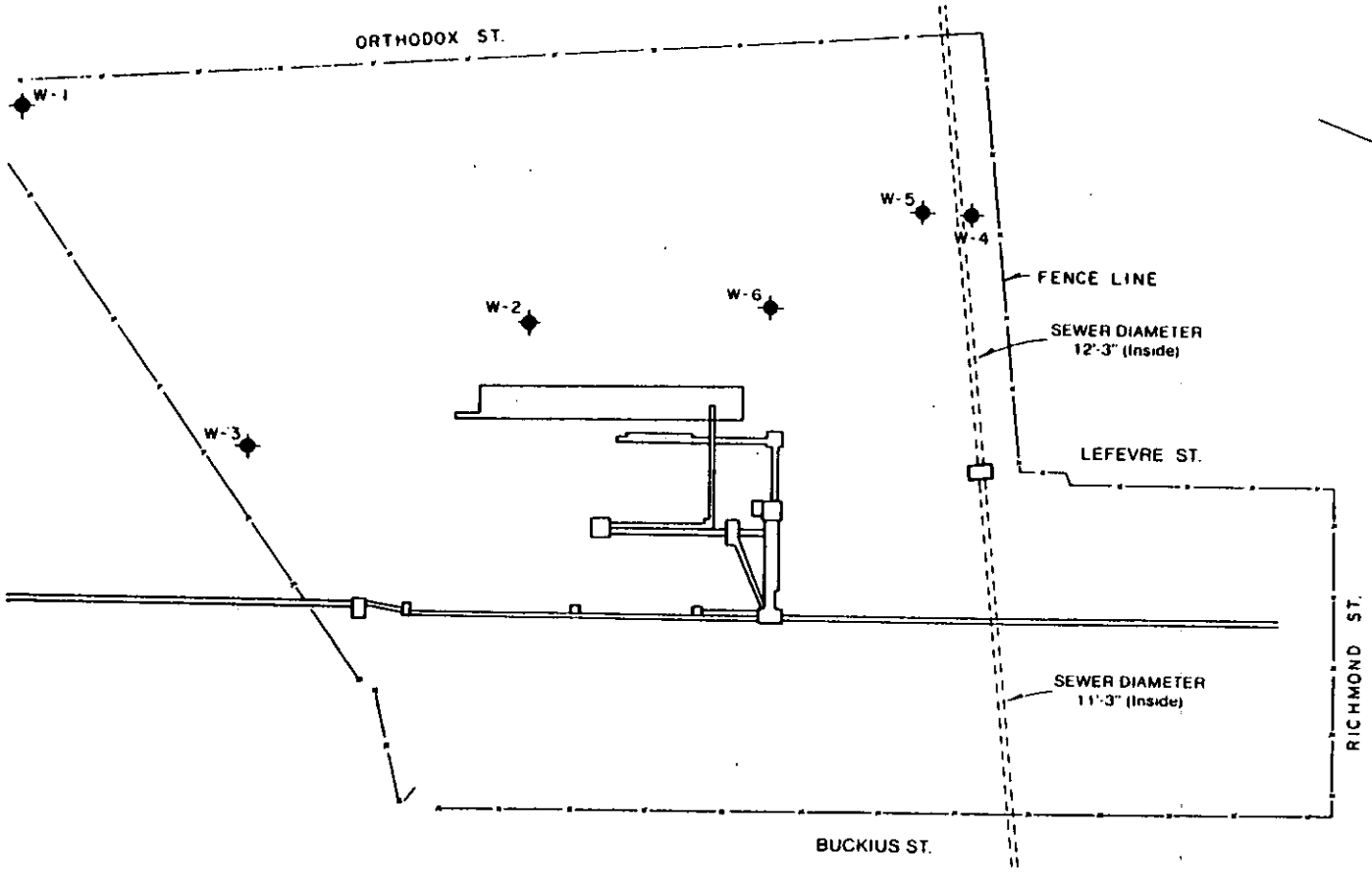


GEOLOGIC CROSS-SECTION B"-B'
UPPER DELAWARE COLLECTING SEWER
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

Drawn By D.B.	SCALE IN FEET 0 30	Date 12/10/86
Checked By R.G.G.		Job No. 84C2145

FIGURE 4.6



LEGEND:

MONITORING WELL

UPPER DELAWARE COLLECTION SEWER
LOCATION PLAN
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

Drawn By D.B	SCALE IN FEET	Date 12/15/86
Checked By A W L	0 200	84C2145

FIGURE 4-5

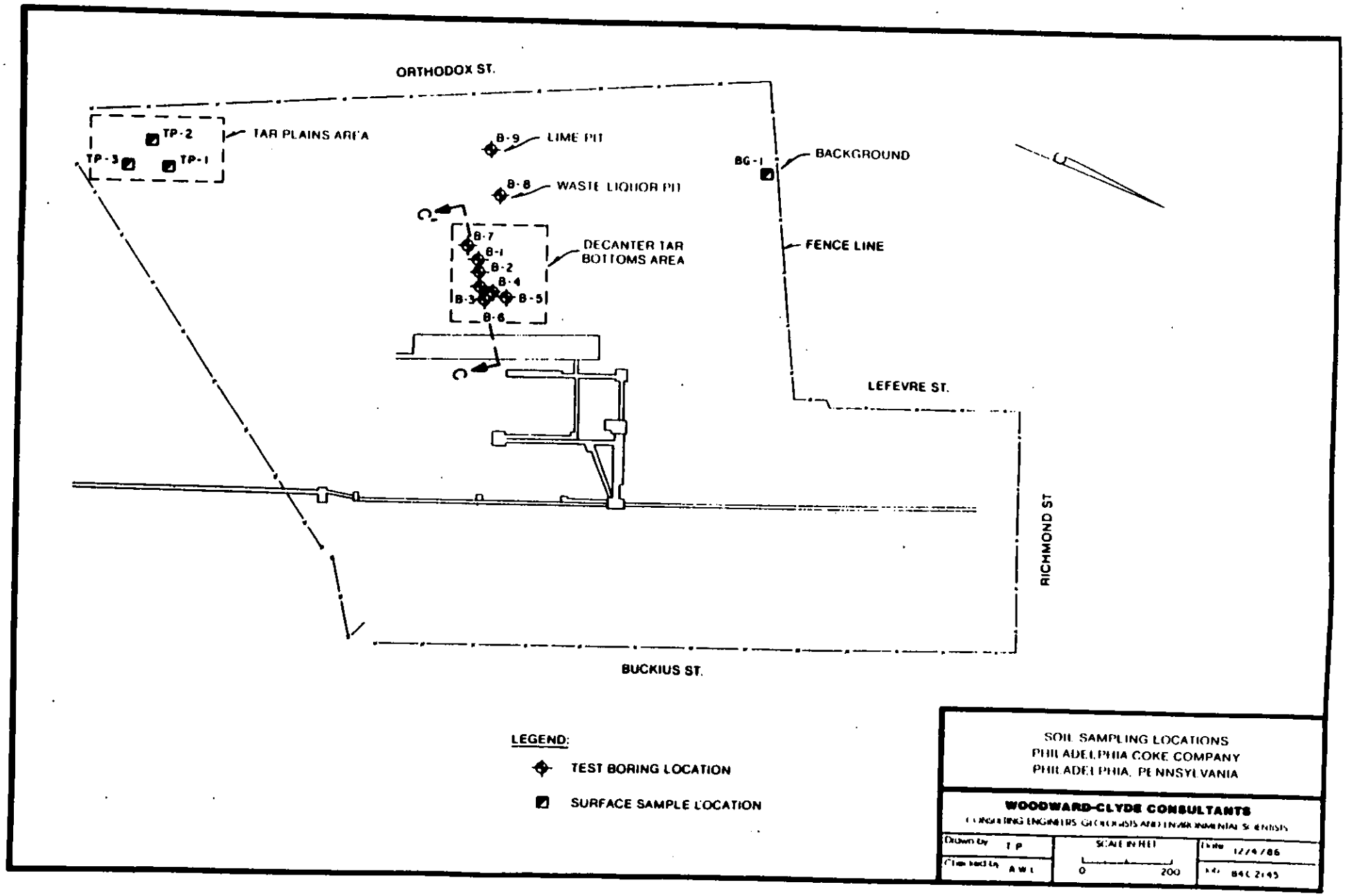
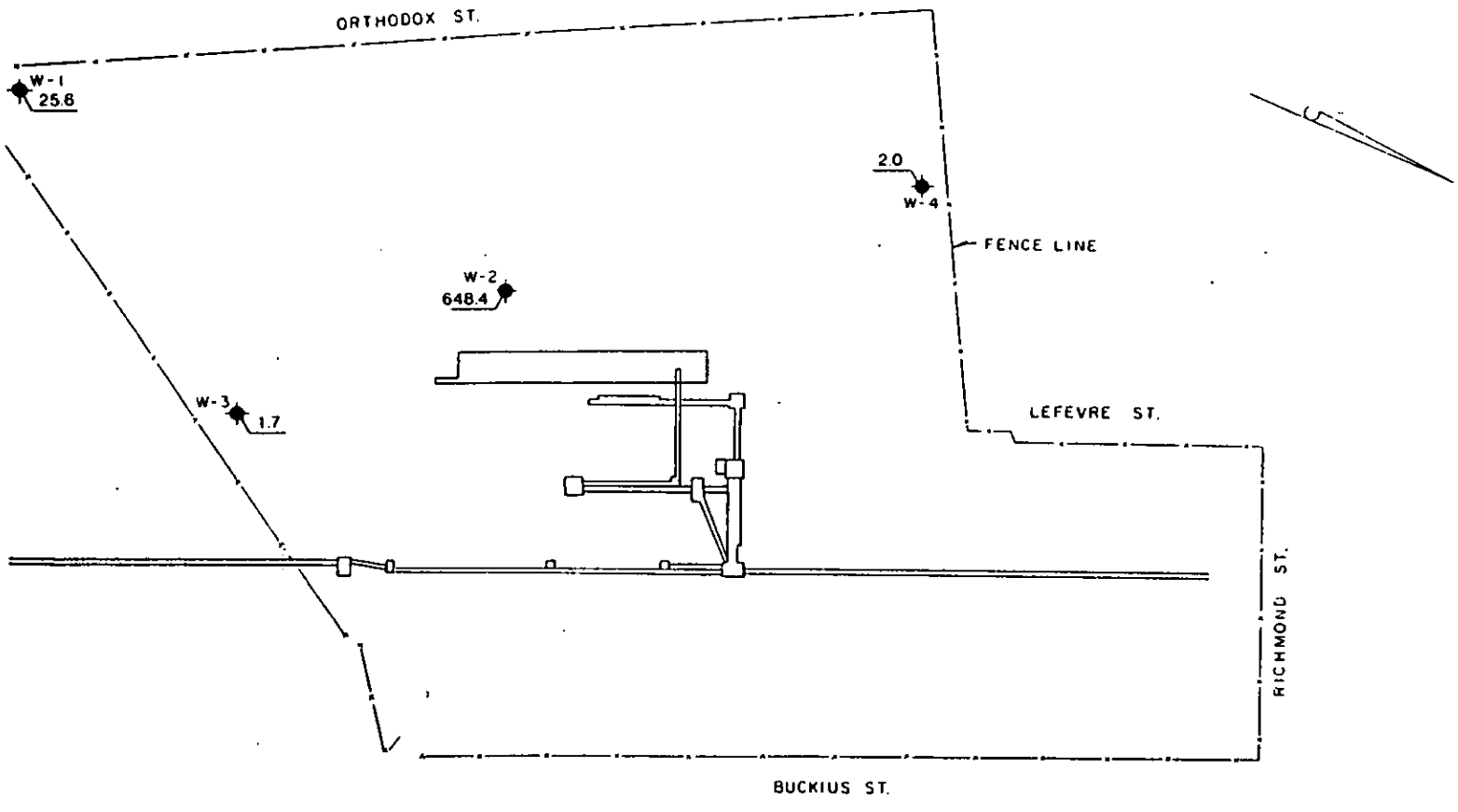

ORTHODOX ST.
TP-2
TP-3
TP-1
TAR PLAINS AREA
B-9
LIME PIT
BG-1
BACKGROUND
B-8
WASTE LIQUOR PIT
C
C'
B-7
B-1
B-2
B-4
B-3
B-5
B-6
DECANTER TAR BOTTOMS AREA
FENCE LINE
LEFEVRE ST.
RICHMOND ST
BUCKIUS ST.
LEGEND:
TEST BORING LOCATION
SURFACE SAMPLE LOCATION
SOIL SAMPLING LOCATIONS
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA
WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
Drawn by T P
Checked by A W L
SCALE IN FEET
0
200
Date 12/4/86
Job 84C 2145

FIGURE 5-1



TOTAL BASE/NEUTRAL EXTRACTABLES (ppb)
APRIL 8, 1985 TO OCTOBER 10, 1986
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS · GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

	T P		9/10/86
	E W I	0 200	84C2145

FIGURE 5.3

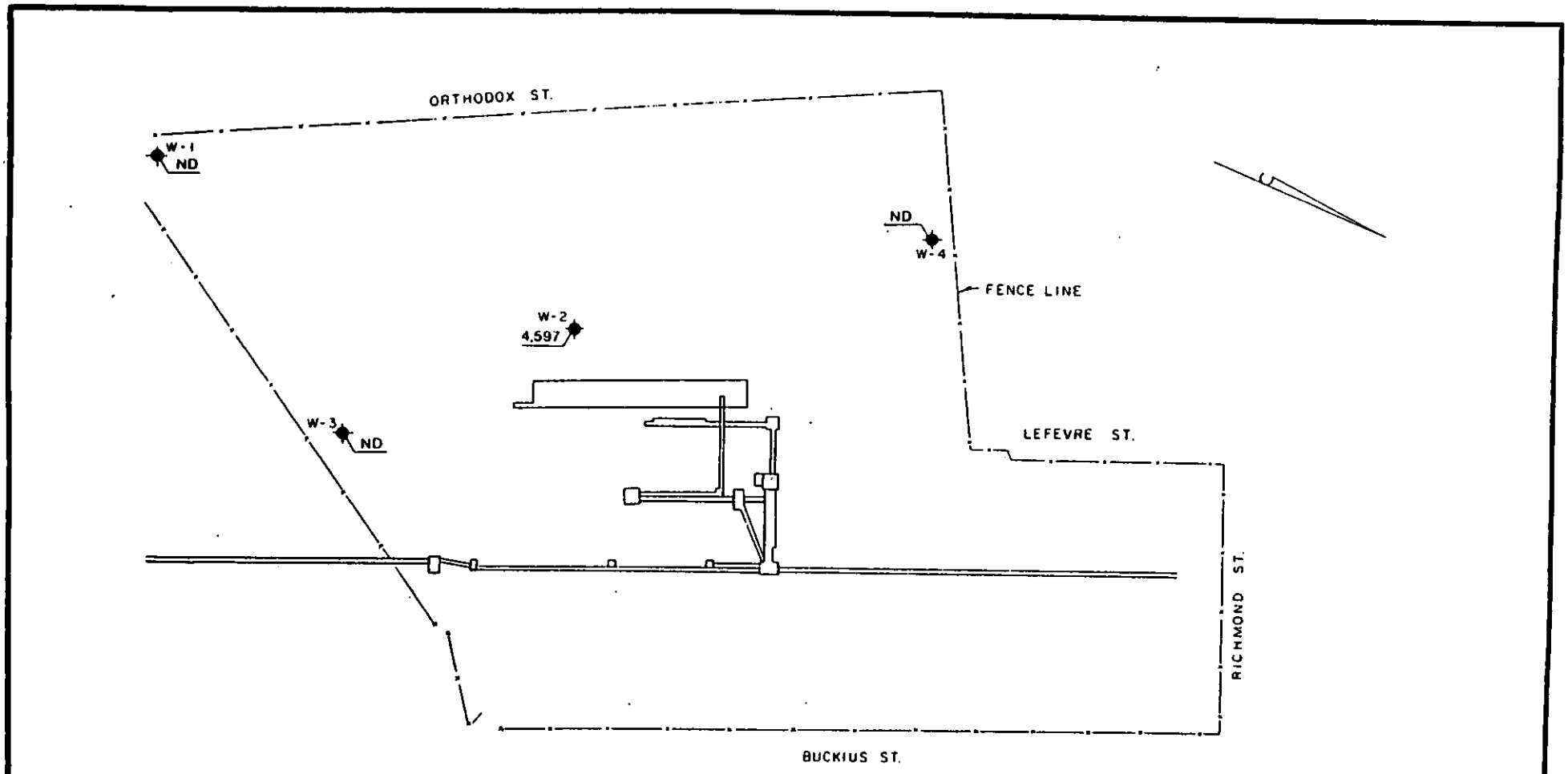
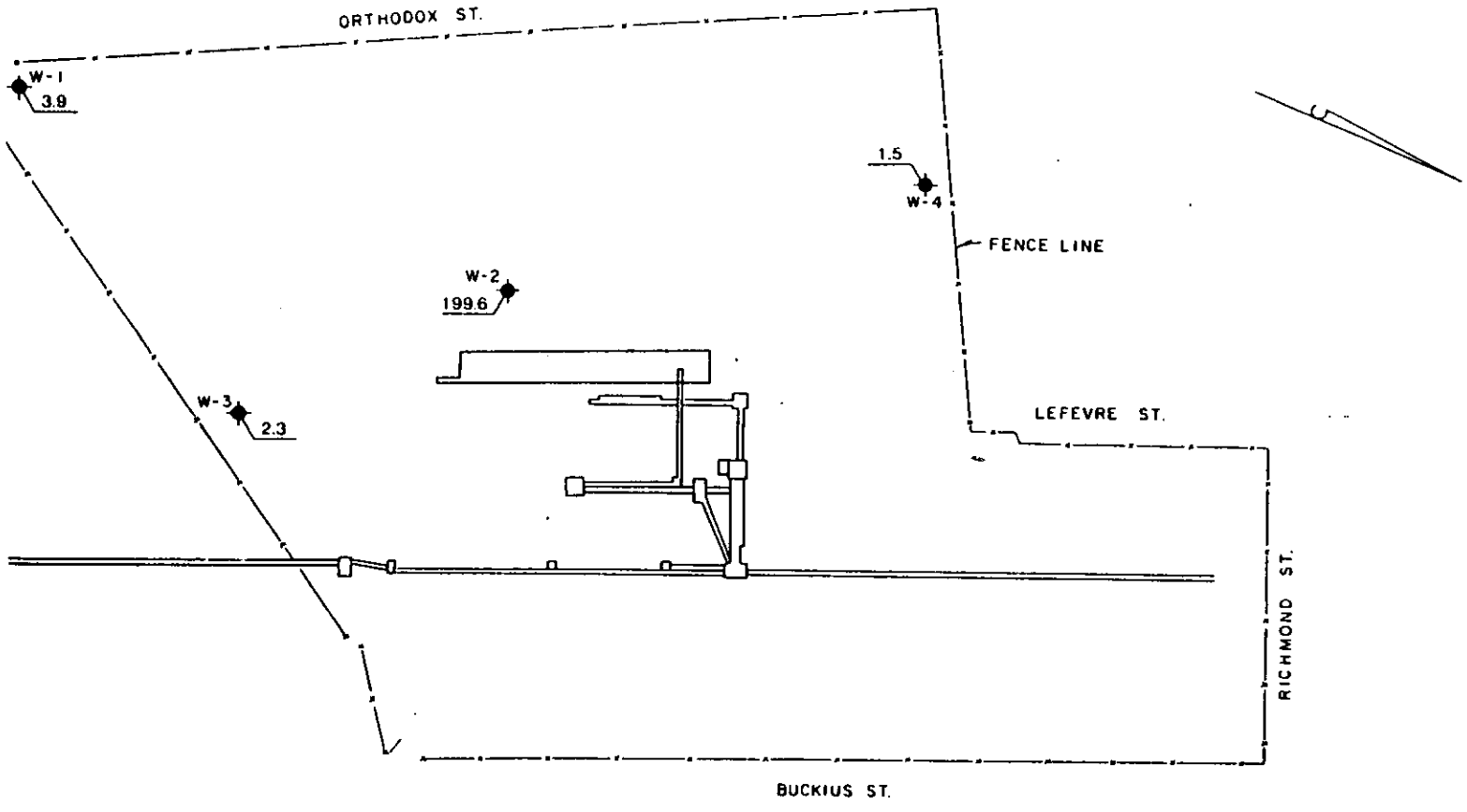

ORTHODOX ST.
W-1
ND
ND
W-4
FENCE LINE
W-2
4,597
W-3
ND
LEFEVRE ST.
RICHMOND ST.
BUCKIUS ST.
LEGEND:
MONITORING WELL LOCATION
ND NOT DETECTED
TOTAL ACID EXTRACTABLES (ppb)
APRIL 8, 1985 TO OCTOBER 10, 1986
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA
WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
T. P
T.W.T.
0
200
9/10/86
84C2145

FIGURE 5.2



LEGEND:

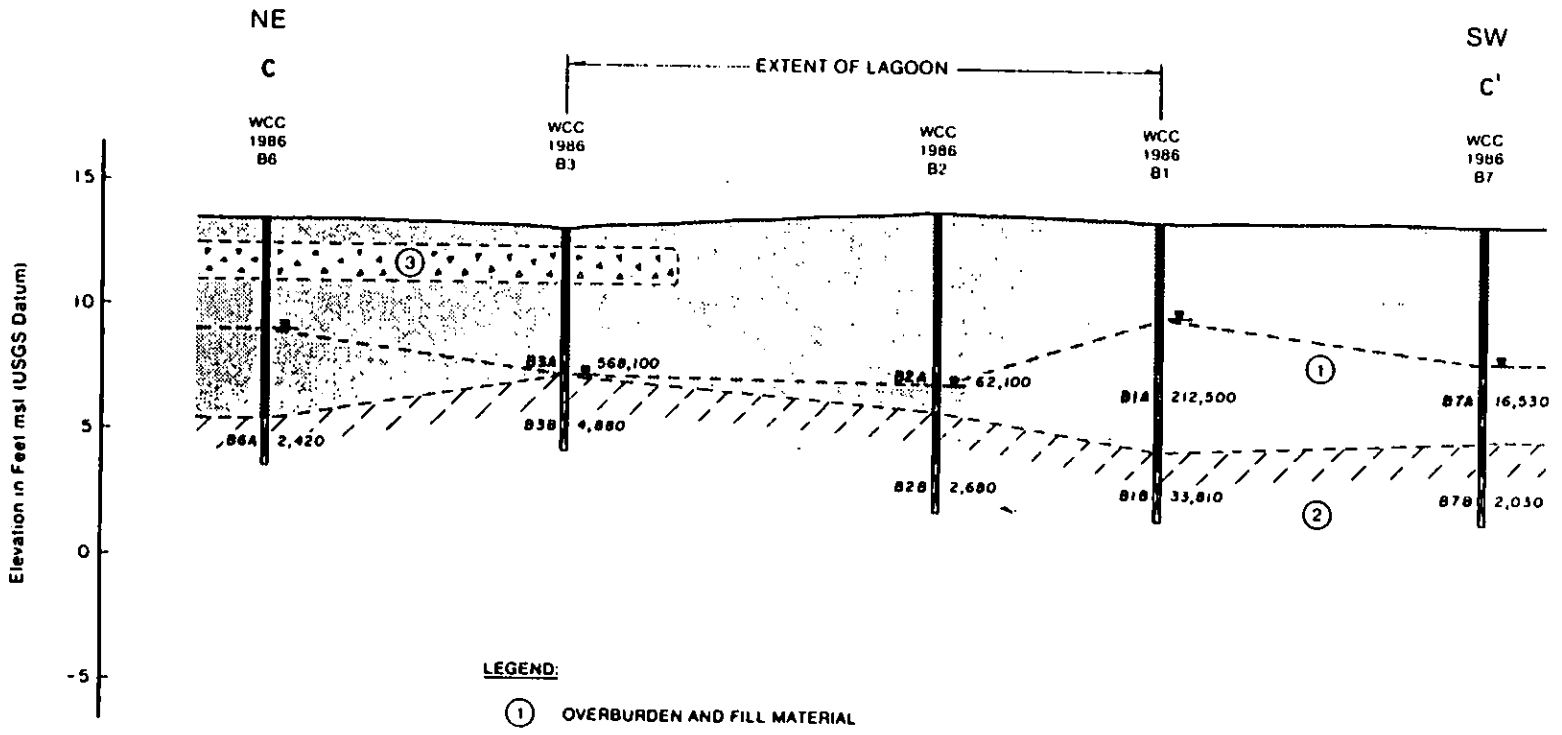
MONITORING WELL LOCATION

TOTAL VOLATILE ORGANICS (ppb)
APRIL 8, 1985 TO OCTOBER 10, 1986
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

Drawn by	T. P	SCALE IN FEET	9/10/86
Checked	T.W.T.	0 200	84C2145

FIGURE 5-1



LEGEND:

1. OVERBURDEN AND FILL MATERIAL
2. GRAY TO GRAY-BROWN SILTY CLAY
3. CONCRETE

ESTIMATED GROUNDWATER LEVELS

TEST BORING

SOIL SAMPLE LOCATION

4,880 TOTAL BASE/NEUTRAL EXTRACTABLE CONCENTRATION IN SOIL SAMPLE

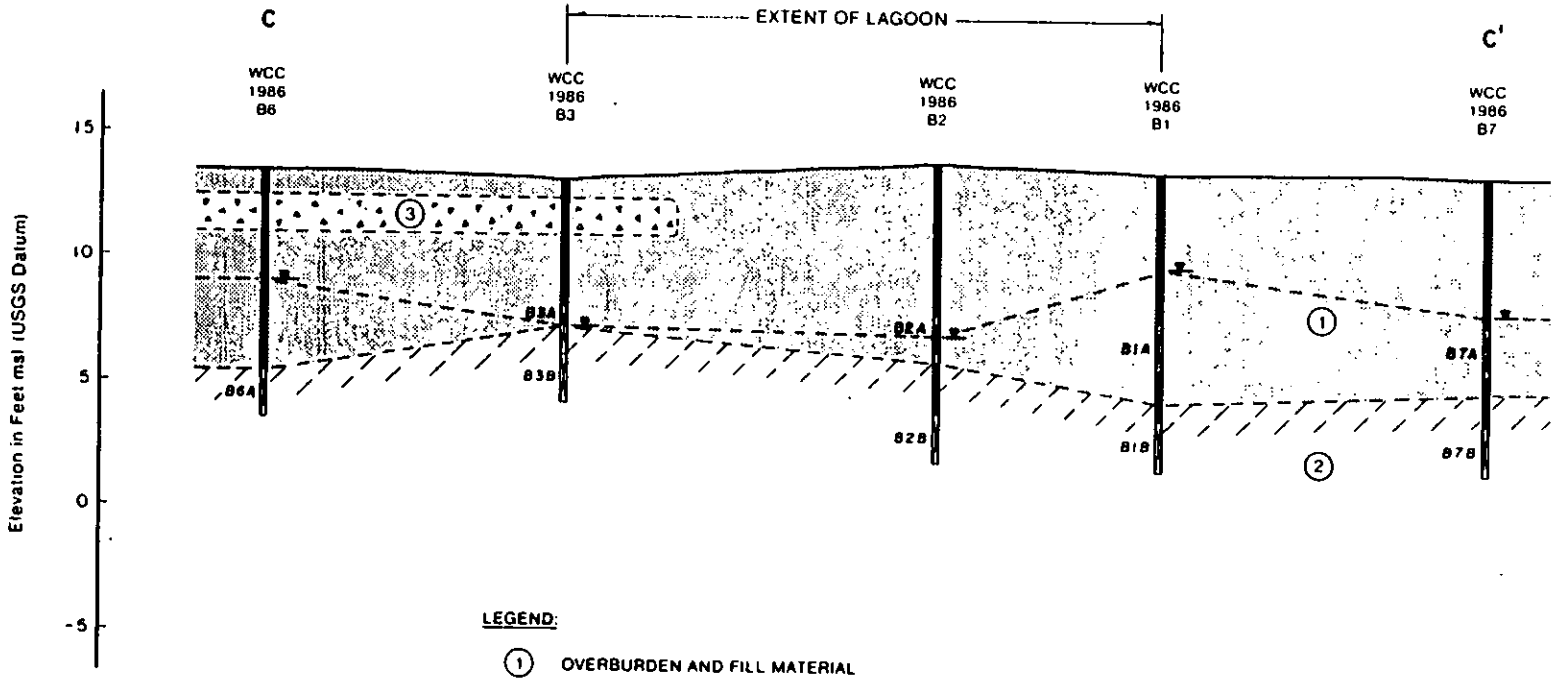
NOTE: VERTICAL EXAGGERATION x2.5

TOTAL BASE/NEUTRAL EXTACTABLES (ppb)
DECANTER TAR BOTTOMS AREA
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

Drawn by D B	SCALE IN FEET 0 13	Date 12/15/86
Checked by A W L		84C2145

FIGURE 5-6



LEGEND:

1. OVERBURDEN AND FILL MATERIAL
2. GRAY TO GRAY-BROWN SILTY CLAY
3. CONCRETE

ESTIMATED GROUNDWATER LEVELS

TEST BORING

SOIL SAMPLE LOCATION

NOTE: VERTICAL EXAGGERATION x2.5

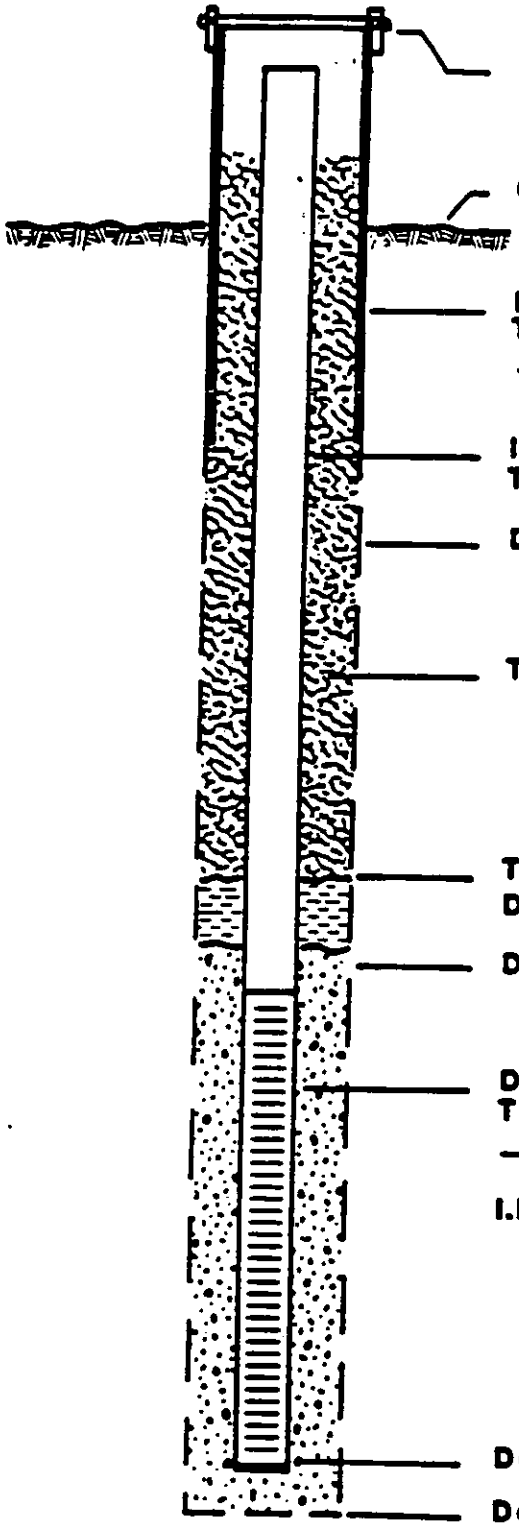
GEOLOGIC CROSS-SECTION C-C'
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

Drawn by D B	SCALE IN FEET 0 — 15	Date 12/5/86
Checked by A W L		84C2145

FIGURE 5.5

Appendix C



Elevation of top of riser pipe 14.50

Ground Elevation 12.90

I.D. of surface casing 4"
Type of surface casing steel
with locking cap

I.D. of riser pipe 2"
Type of riser pipe PVC

Diameter of borehole 8"

Type of backfill cement

Type of seal Bentonite Pellets
Depth to top of seal 2.5'

Depth to top of sand pack 3.0'

Depth to top of screen 4.0'
Type of screened section
SCH 40 10 slot PVC

I.D. of screened section 2"

Depth to bottom of well 14.0'

Depth of borehole 14.0'

REPORT OF MONITORING WELL W-6

DRAWN BY: TP	CHECKED BY: RG	PROJECT NO: 84C2145-A	DATE: 10/23/86	FIGURE NO:

Woodward-Clyde Consultants

WELL NUMBER W-1

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
VOLATILES									
	CHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	VINYL CHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	METHYLENE CHLORIDE	ug/l	ND	<1.0000	9.2000	ND	4.4000	<5.0000	ND
	ACROLEIN	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	ACRYLONITRILE	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	1,1-DICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1-DICHLOROETHANE	ug/l	ND	ND	ND	ND	<1.0000	<5.0000	ND
	TRANS-1,2-DICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROFORM	ug/l	ND	ND	ND	<1.0000	ND	<5.0000	ND
	1,2-DICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,1-TRICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CARBON TETRACHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMODICHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,2-DICHLOROPROPANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,3-DICHLOROPROPENE	ug/l	ND	ND	ND	ND	ND	NS	ND
	TRICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	NS	ND
	BENZENE	ug/l	ND	1.3000	ND	ND	ND	<5.0000	ND
	DIBROMOCHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,2-TRICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	2-CHLOROETHYLVINYL ETHER	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOFORM	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TETRACHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,2,2-TETRACHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TOLUENE	ug/l	ND	0.2000	ND	7.7000	ND	<5.0000	ND
	CHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	ETHYLBENZENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND

APPENDIX C

WATER QUALITY RESULTS

Presented in Appendix C are the analytical water quality results for the Philadelphia Coke Company plant. Analytical results are compiled through seven quarters of sampling from April 10, 1986, to October 10, 1986. Original lab reports prepared by RMC Laboratories and chain of custody documentation are not included due to the large volume of data, but are available upon request.

The water quality results are divided into four sections including: Volatile Organics, Acid Extractables, Base/Neutral Extractables, and Water Quality Parameters. In addition to analytical results presented for monitoring wells W-1 through W-4, results from trip blanks (T blank), field blanks (F blank), and field duplicates (DUP) are also included.

In results for individual parameters, an ND indicates that the parameter was not detected. A less than symbol indicates that the parameter was detected but the concentration is below the detection limits of the analytical instrument. NS indicates that the parameter was not sampled/analyzed for.

WELL NUMBER W-2DUP

CATEGORY	PARAMETER	UNITS	DATE 04/24/86 CONCENTRATION
VOLATILES			
	CHLOROMETHANE	ug/l	ND
	BROMOMETHANE	ug/l	ND
	VINYL CHLORIDE	ug/l	ND
	CHLOROETHANE	ug/l	ND
	METHYLENE CHLORIDE	ug/l	2.1000
	ACROLEIN	ug/l	ND
	ACRYLONITRILE	ug/l	ND
	1,1-DICHLOROETHENE	ug/l	ND
	1,1-DICHLOROETHANE	ug/l	ND
	TRANS-1,2-DICHLOROETHENE	ug/l	ND
	CHLOROFORM	ug/l	ND
	1,2-DICHLOROETHANE	ug/l	ND
	1,1,1-TRICHLOROETHANE	ug/l	ND
	CARBON TETRACHLORIDE	ug/l	ND
	BROMODICHLOROMETHANE	ug/l	ND
	1,2-DICHLOROPROPANE	ug/l	ND
	1,3-DICHLOROPROPENE	ug/l	ND
	TRICHLOROETHENE	ug/l	ND
	BENZENE	ug/l	66.3000
	DIBROMOCHLOROMETHANE	ug/l	ND
	1,1,2-TRICHLOROETHANE	ug/l	ND
	2-CHLOROETHYLVINYL ETHER	ug/l	ND
	BROMOFORM	ug/l	ND
	TETRACHLOROETHENE	ug/l	ND
	1,1,2,2-TETRACHLOROETHANE	ug/l	ND
	TOLUENE	ug/l	15.0000
	CHLOROBENZENE	ug/l	ND
	ETHYLBENZENE	ug/l	6.2000

WELL NUMBER W-2

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
VOLATILES									
	CHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	VINYL CHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	METHYLENE CHLORIDE	ug/l	6.2000	<1.0000	ND	ND	2.4000	<5.0000	ND
	ACROLEIN	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	ACRYLONITRILE	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	1,1-DICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1-DICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TRANS-1,2-DICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROFORM	ug/l	ND	ND	<1.0000	ND	ND	<5.0000	ND
	1,2-DICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,1-TRICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CARBON TETRACHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMODICHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,2-DICHLOROPROPANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,3-DICHLOROPROPENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TRICHLOROETHENE	ug/l	ND	<0.2000	ND	ND	ND	NS	ND
	BENZENE	ug/l	143.0000	234.0000	86.0000	ND	73.4000	490.0000	ND
	DIBROMOCHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,2-TRICHLOROETHANE	ug/l	ND	<5.0000	ND	ND	ND	<5.0000	ND
	2-CHLOROETHYLVINYL ETHER	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOFORM	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TETRACHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,2,2-TETRACHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TOLUENE	ug/l	60.0000	76.0000	81.0000	ND	17.6000	59.4000	ND
	CHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	ETHYLBENZENE	ug/l	3.0000	5.1000	43.0000	ND	ND	16.8000	ND

WELL NUMBER W-3DUP

CATEGORY	PARAMETER	UNITS	DATE 10/15/85 CONCENTRATION
VOLATILES			
	CHLOROMETHANE	ug/l	ND
	BROMOMETHANE	ug/l	ND
	VINYL CHLORIDE	ug/l	ND
	CHLOROETHANE	ug/l	ND
	METHYLENE CHLORIDE	ug/l	ND
	ACROLEIN	ug/l	ND
	ACRYLONITRILE	ug/l	ND
	1,1-DICHLOROETHENE	ug/l	ND
	1,1-DICHLOROETHANE	ug/l	ND
	TRANS-1,2-DICHLOROETHENE	ug/l	ND
	CHLOROFORM	ug/l	ND
	1,2-DICHLOROETHANE	ug/l	ND
	1,1,1-TRICHLOROETHANE	ug/l	ND
	CARBON TETRACHLORIDE	ug/l	ND
	BROMODICHLOROMETHANE	ug/l	ND
	1,2-DICHLOROPROPANE	ug/l	ND
	1,3-DICHLOROPROPENE	ug/l	ND
	TRICHLOROETHENE	ug/l	ND
	BENZENE	ug/l	ND
	DIBROMOCHLOROMETHANE	ug/l	ND
	1,1,2-TRICHLOROETHANE	ug/l	ND
	2-CHLOROETHYLVINYL ETHER	ug/l	ND
	BROMOFORM	ug/l	ND
	TETRACHLOROETHENE	ug/l	ND
	1,1,2,2-TETRACHLOROETHANE	ug/l	ND
	TOLUENE	ug/l	ND
	CHLOROBENZENE	ug/l	ND
	ETHYLBENZENE	ug/l	ND

WELL NUMBER W-3

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
VOLATILES									
	CHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	VINYL CHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	METHYLENE CHLORIDE	ug/l	3.8000	<1.0000	ND	ND	6.1000	<5.0000	ND
	ACROLEIN	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	ACRYLONITRILE	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	1,1-DICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1-DICHLOROETHANE	ug/l	ND	ND	ND	ND	<1.0000	<5.0000	ND
	TRANS-1,2-DICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROFORM	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,2-DICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,1-TRICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CARBON TETRACHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMODICHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,2-DICHLOROPROPANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,3-DICHLOROPROPENE	ug/l	ND	ND	ND	ND	ND	NS	ND
	TRICHLOROETHENE	ug/l	ND	<0.2000	ND	ND	ND	NS	ND
	BENZENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	DIBROMOCHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,2-TRICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	2-CHLOROETHYLVINYL ETHER	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOFORM	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TETRACHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,2,2-TETRACHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TOLUENE	ug/l	ND	<0.2000	ND	ND	ND	<5.0000	ND
	CHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	ETHYLBENZENE	ug/l	ND	<1.0000	ND	ND	ND	<5.0000	ND

WELL NUMBER FBLANK

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
VOLATILES								
	CHLOROMETHANE	ug/l	ND	ND	ND	ND	<5.0000	ND
	BROMOMETHANE	ug/l	ND	ND	ND	ND	<5.0000	ND
	VINYL CHLORIDE	ug/l	ND	ND	ND	ND	<5.0000	ND
	CHLOROETHANE	ug/l	ND	ND	ND	ND	<5.0000	ND
	METHYLENE CHLORIDE	ug/l	ND	<1.0000	ND	ND	16.0000	ND
	ACROLEIN	ug/l	ND	ND	ND	ND	<80.0000	ND
	ACRYLONITRILE	ug/l	ND	ND	ND	ND	<80.0000	ND
	1,1-DICHLOROETHENE	ug/l	<1.0000	ND	ND	ND	<5.0000	ND
	1,1-DICHLOROETHANE	ug/l	ND	ND	ND	<1.0000	<5.0000	ND
	TRANS-1,2-DICHLOROETHENE	ug/l	ND	ND	ND	ND	<5.0000	ND
	CHLOROFORM	ug/l	ND	<1.0000	ND	ND	<5.0000	ND
	1,2-DICHLOROETHANE	ug/l	ND	ND	ND	ND	<5.0000	ND
	1,1,1-TRICHLOROETHANE	ug/l	<1.0000	<1.0000	ND	ND	<5.0000	ND
	CARBON TETRACHLORIDE	ug/l	ND	ND	ND	ND	<5.0000	ND
	BROMODICHLOROMETHANE	ug/l	ND	ND	ND	ND	<5.0000	ND
	1,2-DICHLOROPROPANE	ug/l	ND	ND	ND	ND	<5.0000	ND
	1,3-DICHLOROPROPENE	ug/l	ND	ND	ND	ND	NS	ND
	TRICHLOROETHENE	ug/l	ND	<0.2000	ND	ND	NS	ND
	BENZENE	ug/l	ND	ND	ND	ND	<5.0000	ND
	DIBROMOCHLOROMETHANE	ug/l	ND	ND	ND	ND	<5.0000	ND
	1,1,2-TRICHLOROETHANE	ug/l	ND	ND	ND	ND	<5.0000	ND
	2-CHLOROETHYLVINYL ETHER	ug/l	ND	ND	ND	ND	<5.0000	ND
	BROMOFORM	ug/l	ND	ND	ND	ND	<5.0000	ND
	TETRACHLOROETHENE	ug/l	<1.0000	<1.0000	ND	ND	<5.0000	ND
	1,1,2,2-TETRACHLOROETHANE	ug/l	ND	ND	ND	ND	<5.0000	ND
	TOLUENE	ug/l	ND	0.2000	ND	ND	<5.0000	ND
	CHLOROBENZENE	ug/l	ND	ND	ND	ND	<5.0000	ND
	ETHYLBENZENE	ug/l	ND	<1.0000	ND	ND	<5.0000	ND

WELL NUMBER W-4

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
VOLATILES									
	CHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	VINYL CHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	METHYLENE CHLORIDE	ug/l	3.4000	<1.0000	ND	ND	ND	<5.0000	ND
	ACROLEIN	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	ACRYLONITRILE	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	1,1-DICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1-DICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TRANS-1,2-DICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROFORM	ug/l	ND	ND	ND	<1.0000	ND	<5.0000	ND
	1,2-DICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,1-TRICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CARBON TETRACHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMODICHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,2-DICHLOROPROPANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,3-DICHLOROPROPENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TRICHLOROETHENE	ug/l	ND	<0.2000	ND	ND	ND	NS	ND
	BENZENE	ug/l	ND	ND	ND	ND	ND	NS	ND
	DIBROMOCHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,2-TRICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	2-CHLOROETHYLVINYL ETHER	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOFORM	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TETRACHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,2,2-TETRACHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TOLUENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	ETHYLBENZENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND

WELL NUMBER W-1

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
ACIDS									
	PHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-CHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-NITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4-DIMETHYLPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4-DICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-CHLORO-3-METHYLPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4,6-TRICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-NITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-METHYL-4,6-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	NS	ND
	PENTACHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND

WELL NUMBER TBLANK

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
VOLATILES									
	CHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	VINYL CHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	METHYLENE CHLORIDE	ug/l	ND	<1.0000	ND	ND	ND	<5.0000	ND
	ACROLEIN	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	ACRYLONITRILE	ug/l	ND	ND	ND	ND	ND	<80.0000	ND
	1,1-DICHLOROETHENE	ug/l	1.2000	<1.0000	ND	ND	ND	<5.0000	ND
	1,1-DICHLOROETHANE	ug/l	ND	ND	ND	ND	<1.0000	<5.0000	ND
	TRANS-1,2-DICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	CHLOROFORM	ug/l	ND	1.0000	ND	ND	1.2000	<5.0000	ND
	1,2-DICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,1-TRICHLOROETHANE	ug/l	<1.0000	<1.0000	<1.0000	ND	ND	<5.0000	ND
	CARBON TETRACHLORIDE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMODICHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,2-DICHLOROPROPANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,3-DICHLOROPROPENE	ug/l	ND	ND	ND	ND	ND	NS	ND
	TRICHLOROETHENE	ug/l	ND	ND	ND	ND	ND	NS	ND
	BENZENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	DIBROMOCHLOROMETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	1,1,2-TRICHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	2-CHLOROETHYLVINYL ETHER	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	BROMOFORM	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TETRACHLOROETHENE	ug/l	2.7000	<1.0000	ND	ND	ND	<5.0000	ND
	1,1,2,2-TETRACHLOROETHANE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND
	TOLUENE	ug/l	0.3000	<0.2000	<0.2000	ND	ND	<5.0000	ND
	CHLOROBENZENE	ug/l	<1.0000	ND	ND	ND	ND	<5.0000	ND
	ETHYLBENZENE	ug/l	ND	ND	ND	ND	ND	<5.0000	ND

WELL NUMBER W-2DUP

CATEGORY	PARAMETER	UNITS	DATE 04/24/86 CONCENTRATION
ACIDS			
	PHENOL	ug/l	ND
	2-CHLOROPHENOL	ug/l	ND
	2-NITROPHENOL	ug/l	<10.0000
	2,4-DIMETHYLPHENOL	ug/l	ND
	2,4-DICHLOROPHENOL	ug/l	ND
	4-CHLORO-3-METHYLPHENOL	ug/l	ND
	2,4,6-TRICHLOROPHENOL	ug/l	ND
	2,4-DINITROPHENOL	ug/l	ND
	4-NITROPHENOL	ug/l	ND
	2-METHYL-4,6-DINITROPHENOL	ug/l	ND
	PENTACHLOROPHENOL	ug/l	ND

WELL NUMBER W-2

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
ACIDS									
	PHENOL	ug/l	2710.0000	21.0000	ND	167.0000	ND	ND	170.0000
	2-CHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-NITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4-DIMETHYLPHENOL	ug/l	27600.0000	255.0000	ND	479.0000	10.1000	663.0000	104.0000
	2,4-DICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-CHLORO-3-METHYLPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4,6-TRICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-NITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-METHYL-4,6-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	NS	ND
	PENTACHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND

WELL NUMBER: W-3005

CATEGORY	PARAMETER	UNITS	DATE 10/15/85 CONCENTRATION
ACIDS			
	PHENOL	ug/l	ND
	2-CHLOROPHENOL	ug/l	ND
	2-NITROPHENOL	ug/l	ND
	2,4-DIMETHYLPHENOL	ug/l	ND
	2,4-DICHLOROPHENOL	ug/l	ND
	4-CHLORO-3-METHYLPHENOL	ug/l	ND
	2,4,6-TRICHLOROPHENOL	ug/l	ND
	2,4-DINITROPHENOL	ug/l	ND
	4-NITROPHENOL	ug/l	ND
	2-METHYL-4,6-DINITROPHENOL	ug/l	ND
	PENTACHLOROPHENOL	ug/l	ND

ANALYTE	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
A [illegible]									
	PHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-CHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	[illegible] PHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	[illegible]	ug/l	ND	ND	ND	ND	ND	ND	ND
	[illegible] DICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-CHLORO-3-METHYLPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4,6-TRICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-NITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-METHYL-4,6-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	PENTACHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	NS	ND
								ND	ND

WELL NUMBER FBLANK

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
ACIDS								
	PHENOL	ug/l	ND	ND	ND	ND	ND	ND
	2-CHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND
	2 NITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND
	2,4-DIMETHYLPHENOL	ug/l	ND	ND	ND	ND	ND	ND
	2,4-DICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND
	4-CHLORO-3-METHYLPHENOL	ug/l	ND	ND	ND	ND	ND	ND
	2,4,6-TRICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND
	2,4-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND
	4-NITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND
	2-METHYL-4,6-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND
	PENTACHLOROPHENOL	ug/l	ND	ND	ND	ND	NS	ND
							ND	ND

WELL NUMBER W-4

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
ACIDS									
	PHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-CHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-NITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4 DIMETHYLPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4 DICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-CHLORO-3 METHYLPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4,6-TRICHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-NITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-METHYL-4,6-DINITROPHENOL	ug/l	ND	ND	ND	ND	ND	ND	ND
	PENTACHLOROPHENOL	ug/l	ND	ND	ND	ND	ND	NS	ND
								ND	ND

WELL NUMBER M-1

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
BASE/NEUTRALS									
	N-NITROSODIMETHYLAMINE	ug/l	ND	ND	ND	ND	ND	NS	NS
	BIS(2-CHLOROETHYL)ETHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,3-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,4-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROISOPROPYL)EYHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROETHANE	ug/l	ND	ND	ND	ND	ND	ND	ND
	N-NITROSODI-N-PROPYLAMINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	NITROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ISOPHORONE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROETHOXY)METHANE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2,4-TRICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	NAPHTHALENE	ug/l	<5.0000	<5.0000	ND	ND	ND	ND	ND
	HEXACHLOROBUTADIENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROCYCLOPENTADIENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-CHLORONAPHTHALENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ACENAPHTHYLENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DIMETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,6-DINITROTOLUENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ACENAPHTHENE	ug/l	ND	84.0000	ND	ND	ND	ND	ND
	2,4-DINITROTOLUENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	FLUORENE	ug/l	ND	<5.0000	ND	ND	ND	ND	ND
	DIETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-CHLOROPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	N-NITROSODIPHENYLAMINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2-DIPHENYLHYDRAZINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-BROMOPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	ND	NS	ND
	HEXACHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	PHENANTHRENE	ug/l	ND	13.0000	ND	ND	ND	ND	ND
	ANTHRACENE	ug/l	ND	ND	10.3000	ND	ND	ND	ND
	DI-N-BUTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	FLUORANTHENE	ug/l	<5.0000	ND	21.0000	ND	ND	NS	ND
	BENZIDINE	ug/l	ND	ND	ND	ND	ND	ND	NS
	PYRENE	ug/l	<5.0000	9.5000	11.0000	ND	ND	ND	ND
	BUTYL BENZYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(A)ANTHRACENE	ug/l	<10.0000	14.0000	<10.0000	ND	ND	ND	ND
	CHRYSENE	ug/l	<10.0000	ND	<10.0000	ND	ND	ND	ND
	3,3'-DICHLOROBENZIDINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<5.0000	6.7000	ND	<5.0000	ND	ND	ND
	DI-N-OCTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(B)FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(K)FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(A)PYRENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	INDENO(1,2,3-C,D)PYRENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DIBENZO(A,H)ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(G,H,I)PERYLENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,3,7,8-TETRACHLORODIBENZO-P-D	ug/l	ND	ND	ND	ND	ND	NS	ND

WELL NUMBER: BLANK

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
ACIDS									
	PHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	2-CHLOROPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	2-NITROPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	2,4-DIMETHYLPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	2,4-DICHLOROPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	4-CHLORO-3-METHYLPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	2,4,6-TRICHLOROPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	2,4-DINITROPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	4-NITROPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	2-METHYL-4,6-DINITROPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS
	PENTACHLOROPHENOL	ug/l	NS	NS	NS	NS	ND	NS	NS

WELL NUMBER M-2DUP

CATEGORY	PARAMETER	UNITS	DATE 04/24/86 CONCENTRATION
BASE/NEUTRALS			
	N-NITROSODIMETHYLAMINE	ug/l	ND
	BIS(2-CHLOROETHYL)ETHER	ug/l	ND
	1,3-DICHLOROBENZENE	ug/l	ND
	1,4-DICHLOROBENZENE	ug/l	ND
	1,2-DICHLOROBENZENE	ug/l	ND
	BIS(2-CHLOROISOPROPYL)EYHER	ug/l	ND
	HEXACHLOROETHANE	ug/l	ND
	N-NITROSODI-N-PROPYLAMINE	ug/l	ND
	NITROBENZENE	ug/l	ND
	ISOPHORONE	ug/l	ND
	BIS(2-CHLOROETHOXY)METHANE	ug/l	ND
	1,2,4-TRICHLOROBENZENE	ug/l	ND
	NAPHTHALENE	ug/l	517.0000
	HEXACHLOROBUTADIENE	ug/l	ND
	HEXACHLOROCYCLOPENTADIENE	ug/l	ND
	2-CHLORONAPHTHALENE	ug/l	ND
	ACENAPHTHYLENE	ug/l	ND
	DIMETHYL PHTHALATE	ug/l	ND
	2,6-DINITROTOLUENE	ug/l	17.0000
	ACENAPHTHENE	ug/l	ND
	2,4-DINITROTOLUENE	ug/l	ND
	FLUORENE	ug/l	ND
	DIETHYL PHTHALATE	ug/l	ND
	4-CHLOROPHENYL PHENYL ETHER	ug/l	ND
	N-NITROSODIPHENYLAMINE	ug/l	ND
	1,2-DIPHENYLHYDRAZINE	ug/l	ND
	4-BROMOPHENYL PHENYL ETHER	ug/l	ND
	HEXACHLOROBENZENE	ug/l	ND
	PHENANTHRENE	ug/l	19.5000
	ANTHRACENE	ug/l	ND
	DI-N-BUTYL PHTHALATE	ug/l	16.7000
	FLUORANTHENE	ug/l	ND
	BENZIDINE	ug/l	ND
	PYRENE	ug/l	ND
	BUTYL BENZYL PHTHALATE	ug/l	ND
	BENZO(A)ANTHRACENE	ug/l	ND
	CHRYSENE	ug/l	ND
	3,3'-DICHLOROBENZIDINE	ug/l	ND
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	ND
	DI-N-OCTYL PHTHALATE	ug/l	ND
	BENZO(B)FLUORANTHENE	ug/l	ND
	BENZO(K)FLUORANTHENE	ug/l	ND
	BENZO(A)PYRENE	ug/l	ND
	INDENO(1,2,3-C,D)PYRENE	ug/l	ND
	DIBENZO(A,H)ANTHRACENE	ug/l	ND
	BENZO(G,H,I)PERYLENE	ug/l	ND
	2,3,7,8-TETRACHLORODIBENZO-P-D	ug/l	ND

WELL NUMBER M-2

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
BASE/NEUTRALS									
	N-NITROSODIMETHYLAMINE	ug/l	ND	ND	ND	ND	ND	NS	NS
	BIS(2-CHLOROETHYL)ETHER	ug/l	ND	33.0000	ND	ND	ND	ND	15.0000
	1,3-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,4-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROISOPROPYL)EYHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROETHANE	ug/l	ND	ND	ND	83.0000	ND	ND	ND
	N-NITROSODI-N-PROPYLAMINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	NITROBENZENE	ug/l	90.0000	ND	ND	ND	ND	ND	ND
	ISOPHORONE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROETHOXY)METHANE	ug/l	15.0000	ND	ND	ND	ND	ND	ND
	1,2,4-TRICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	NAPHTHALENE	ug/l	ND	116.0000	497.0000	420.0000	339.0000	64.0000	1180.0000
	HEXACHLOROBUTADIENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROCYCLOPENTADIENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-CHLORONAPHTHALENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ACENAPHTHYLENE	ug/l	ND	32.0000	56.0000	22.0000	ND	<7.0000	13.0000
	DIMETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,6-DINITROTOLUENE	ug/l	ND	ND	ND	ND	10.6000	ND	ND
	ACENAPHTHENE	ug/l	ND	76.0000	15.0000	8.0000	ND	ND	11.0000
	2,4-DINITROTOLUENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	FLUORENE	ug/l	ND	58.0000	120.0000	45.0000	ND	29.0000	35.0000
	DIETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-CHLOROPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	N-NITROSODIPHENYLAMINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2-DIPHENYLHYDRAZINE	ug/l	ND	ND	ND	ND	ND	NS	ND
	4-BROMOPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	PHENANTHRENE	ug/l	ND	14.0000	347.0000	36.0000	ND	93.0000	91.0000
	ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND	12.0000
	DI-N-BUTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	FLUORANTHENE	ug/l	ND	ND	191.0000	12.0000	ND	31.0000	28.0000
	BENZIDINE	ug/l	ND	ND	ND	ND	ND	NS	NS
	PYRENE	ug/l	ND	6.5000	126.0000	9.0000	ND	20.0000	19.0000
	BUTYL BENZYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(A)ANTHRACENE	ug/l	ND	25.0000	ND	ND	ND	ND	ND
	CHRYSENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	3,3'-DICHLOROBENZIDINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	ND	ND	ND	<5.0000	ND	ND	ND
	DI-N-OCTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(B)FLUORANTHENE	ug/l	ND	ND	<32.0000	<25.0000	ND	ND	ND
	BENZO(K)FLUORANTHENE	ug/l	ND	ND	<32.0000	ND	ND	ND	ND
	BENZO(A)PYRENE	ug/l	ND	ND	96.0000	<25.0000	ND	ND	ND
	INDENO(1,2,3-C,D)PYRENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DIBENZO(A,H)ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(G,H,I)PERYLENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,3,7,8-TETRACHLORODIBENZO-P-D	ug/l	ND	ND	ND	ND	ND	NS	ND

WELL NUMBER M-3DUP

CATEGORY	PARAMETER	UNITS	DATE 10/15/85 CONCENTRATION
BASE/NEUTRALS			
	N-NITROSODIMETHYLAMINE	ug/l	ND
	BIS(2-CHLOROETHYL)ETHER	ug/l	ND
	1,3-DICHLOROBENZENE	ug/l	ND
	1,4-DICHLOROBENZENE	ug/l	ND
	1,2-DICHLOROBENZENE	ug/l	ND
	BIS(2-CHLOROISOPROPYL)EYHER	ug/l	ND
	HEXACHLOROETHANE	ug/l	ND
	N-NITROSODI-N-PROPYLAMINE	ug/l	ND
	NITROBENZENE	ug/l	ND
	ISOPHORONE	ug/l	ND
	BIS(2-CHLOROETHOXY)METHANE	ug/l	ND
	1,2,4-TRICHLOROBENZENE	ug/l	ND
	NAPHTHALENE	ug/l	ND
	HEXACHLOROBUTADIENE	ug/l	ND
	HEXACHLOROCYCLOPENTADIENE	ug/l	ND
	2-CHLORONAPHTHALENE	ug/l	ND
	ACENAPHTHYLENE	ug/l	ND
	DIMETHYL PHTHALATE	ug/l	ND
	2,6-DINITROTOLUENE	ug/l	ND
	ACENAPHTHENE	ug/l	ND
	2,4-DINITROTOLUENE	ug/l	ND
	FLUORENE	ug/l	ND
	DIETHYL PHTHALATE	ug/l	ND
	4-CHLOROPHENYL PHENYL ETHER	ug/l	ND
	N-NITROSODIPHENYLAMINE	ug/l	ND
	1,2-DIPHENYLHYDRAZINE	ug/l	ND
	4-BROMOPHENYL PHENYL ETHER	ug/l	ND
	HEXACHLOROBENZENE	ug/l	ND
	PHENANTHRENE	ug/l	ND
	ANTHRACENE	ug/l	ND
	DI-N-BUTYL PHTHALATE	ug/l	ND
	FLUORANTHENE	ug/l	ND
	BENZIDINE	ug/l	ND
	PYRENE	ug/l	ND
	BUTYL BENZYL PHTHALATE	ug/l	ND
	BENZO(A)ANTHRACENE	ug/l	ND
	CHRYSENE	ug/l	ND
	3,3'-DICHLOROBENZIDINE	ug/l	ND
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	ND
	DI-N-OCTYL PHTHALATE	ug/l	ND
	BENZO(B)FLUORANTHENE	ug/l	ND
	BENZO(K)FLUORANTHENE	ug/l	ND
	BENZO(A)PYRENE	ug/l	ND
	INDENO(1,2,3-C,D)PYRENE	ug/l	ND
	DIBENZO(A,H)ANTHRACENE	ug/l	ND
	BENZO(G,H,I)PERYLENE	ug/l	ND
	2,3,7,8-TETRACHLORODIBENZO-P-D	ug/l	ND

WELL NUMBER W-3

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
BASE/NEUTRALS									
	N-NITROSODIMETHYLAMINE	ug/l	ND	ND	ND	ND	ND	NS	NS
	BIS(2-CHLOROETHYL)ETHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,3-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,4-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROISOPROPYL)EYHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROETHANE	ug/l	ND	ND	ND	ND	ND	ND	ND
	N-NITROSODI-N-PROPYLAMINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	NITROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ISOPHORONE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROETHOXY)METHANE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2,4-TRICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	NAPHTHALENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROBUTADIENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROCYCLOPENTADIENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-CHLORONAPHTHALENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ACENAPHTHYLENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DIMETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,6-DINITROTOLUENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ACENAPHTHENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4-DINITROTOLUENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	FLUORENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DIETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-CHLOROPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	N-NITROSODIPHENYLAMINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2-DIPHENYLHYDRAZINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-BROMOPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	ND	NS	ND
	HEXACHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	PHENANTHRENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DI-N-BUTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZIDINE	ug/l	ND	ND	ND	ND	ND	NS	ND
	PYRENE	ug/l	ND	ND	ND	ND	ND	ND	NS
	BUTYL BENZYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(A)ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	CHRYSENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	3,3'-DICHLOROBENZIDINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	12.0000	ND	ND	<5.0000	ND	ND	ND
	DI-N-OCTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(B)FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(K)FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(A)PYRENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	INDENO(1,2,3-C,D)PYRENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DIBENZO(A,H)ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(G,H,I)PERYLENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,3,7,8-TETRACHLORODIBENZO-P-D	ug/l	ND	ND	ND	ND	ND	NS	ND

WELL NUMBER FBLANK

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
BASE/NEUTRALS								
	N-NITROSODIMETHYLAMINE	ug/l	ND	ND	ND	ND	NS	NS
	BIS(2-CHLOROETHYL)ETHER	ug/l	ND	ND	ND	ND	ND	ND
	1,3-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND
	1,4-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND
	1,2-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROISOPROPYL)EYHER	ug/l	ND	ND	ND	ND	ND	ND
	HEXACHLOROETHANE	ug/l	ND	ND	ND	ND	ND	ND
	N-NITROSODI-N-PROPYLAMINE	ug/l	ND	ND	ND	ND	ND	ND
	NITROBENZENE	ug/l	ND	ND	ND	ND	ND	ND
	ISOPHORONE	ug/l	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROETHOXY)METHANE	ug/l	ND	ND	ND	ND	ND	ND
	1,2,4-TRICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND
	NAPHTHALENE	ug/l	ND	ND	ND	ND	ND	ND
	HEXACHLOROBUTADIENE	ug/l	ND	ND	ND	ND	ND	ND
	HEXACHLOROCYCLOPENTADIENE	ug/l	ND	ND	ND	ND	ND	ND
	2-CHLORONAPHTHALENE	ug/l	ND	ND	ND	ND	ND	ND
	ACENAPHTHYLENE	ug/l	ND	ND	ND	ND	ND	ND
	DIMETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND
	2,6-DINITROTOLUENE	ug/l	ND	ND	ND	ND	ND	ND
	ACENAPHTHENE	ug/l	ND	ND	ND	ND	ND	ND
	2,4-DINITROTOLUENE	ug/l	ND	ND	ND	ND	ND	ND
	FLUORENE	ug/l	ND	ND	ND	ND	ND	ND
	DIETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND
	4-CHLOROPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	ND	ND
	N-NITROSODIPHENYLAMINE	ug/l	ND	ND	ND	ND	ND	ND
	1,2-DIPHENYLHYDRAZINE	ug/l	ND	ND	ND	ND	ND	ND
	4-BROMOPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	NS	ND
	HEXACHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND
	PHENANTHRENE	ug/l	ND	ND	ND	ND	ND	ND
	ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND
	DI-N-BUTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND
	FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND
	BENZIDINE	ug/l	ND	ND	ND	ND	ND	ND
	PYRENE	ug/l	ND	ND	ND	ND	NS	NS
	BUTYL BENZYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND
	BENZO(A)ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND
	CHRYSENE	ug/l	ND	ND	ND	ND	ND	ND
	3,3'-DICHLOROBENZIDINE	ug/l	ND	ND	ND	ND	ND	ND
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	17.0000	ND	<5.0000	ND	ND	ND
	DI-N-OCTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND
	BENZO(B)FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND
	BENZO(K)FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND
	BENZO(A)PYRENE	ug/l	ND	ND	ND	ND	ND	ND
	INDENO(1,2,3-C,D)PYRENE	ug/l	ND	ND	ND	ND	ND	ND
	DIBENZO(A,H)ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND
	BENZO(G,H,I)PERYLENE	ug/l	ND	ND	ND	ND	ND	ND
	2,3,7,8-TETRACHLORODIBENZO-P-D	ug/l	ND	ND	ND	ND	NS	ND

WELL NUMBER M-4

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
BASE/NEUTRALS									
	N-NITROSODIMETHYLAMINE	ug/l	ND	ND	ND	ND	ND	NS	NS
	BIS(2-CHLOROETHYL)ETHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,3-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,4-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2-DICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROISOPROPYL)EYHER	ug/l	ND	ND	ND	ND	ND	NO	ND
	HEXACHLOROETHANE	ug/l	ND	ND	ND	ND	ND	ND	ND
	N-NITROSODI-N-PROPYLAMINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	NITROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ISOPHORONE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-CHLOROETHOXY)METHANE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2,4-TRICHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	NAPHTHALENE	ug/l	<5.0000	ND	ND	ND	ND	ND	ND
	HEXACHLOROBUTADIENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROCYCLOPENTADIENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2-CHLORONAPHTHALENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ACENAPHTHYLENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DIMETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,6-DINITROTOLUENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	ACENAPHTHENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	2,4-DINITROTOLUENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	FLUORENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DIETHYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	4-CHLOROPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	N-NITROSODIPHENYLAMINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	1,2-DIPHENYLHYDRAZINE	ug/l	ND	ND	ND	ND	ND	NS	ND
	4-BROMOPHENYL PHENYL ETHER	ug/l	ND	ND	ND	ND	ND	ND	ND
	HEXACHLOROBENZENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	PHENANTHRENE	ug/l	<5.0000	ND	ND	ND	ND	ND	ND
	ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DI-N-BUTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	FLUORANTHENE	ug/l	<5.0000	ND	ND	ND	ND	ND	ND
	BENZIDINE	ug/l	ND	ND	ND	ND	ND	NS	NS
	PYRENE	ug/l	<5.0000	ND	ND	ND	ND	ND	ND
	BUTYL BENZYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(A)ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	CHRYSENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	3,3'-DICHLOROBENZIDINE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	8.5000	5.8000	<5.0000	<5.0000	ND	ND	ND
	DI-N-OCTYL PHTHALATE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(B)FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(K)FLUORANTHENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(A)PYRENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	INDENO(1,2,3-C,D)PYRENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	DIBENZO(A,H)ANTHRACENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	BENZO(G,H,I)PERYLENE	ug/l	ND	ND	ND	ND	ND	ND	ND
	[illegible],7,8-TETRACHLORODIBENZO-P-D	ug/l	ND	ND	ND	[illegible]	ND	NS	ND

WELL NUMBER W-1

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
WQP									
	ALKALINITY	mg/l	73.1000	251.0000	62.9000	30.2000	49.8000	98.0000	61.4000
	AMMONIA	mg/l	56.0000	333.0000	42.0000	105.0000	135.0000	164.0000	107.0000
	COLIFORM, TOTAL	col/100m	100.0000	13.0000	<2.0000	<2.0000	NS	2.0000	<2.0000
	BIOCHEMICAL OXYGEN DEMAND	mg/l	6.6000	NS	5.6000	0.9000	2.2000	42.0000	2.5000
	TOTAL ORGANIC CARBON	mg/l	8.7000	5.9700	6.9200	2.7300	3.6300	2.8000	4.8000
	CHEMICAL OXYGEN DEMAND	mg/l	48.0000	573.0000	14.5000	50.4000	18.5000	66.0000	67.1000
	CHLORIDE	mg/l	27.8000	416.0000	13.2000	12.0000	11.6000	NS	NS
	CYANIDE	mg/l	1.5000	38.0000	0.0860	0.0450	0.0090	10.3000	<0.0050
	FLUORIDE	mg/l	0.9100	1.0000	0.7500	0.6900	0.8000	1.1200	2.6000
	ALUMINUM, DISSOLVED	mg/l	<0.5000	<0.5000	NS	NS	NS	NS	NS
	ARSENIC, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS	NS
	BARIUM, DISSOLVED	mg/l	<0.5000	0.5000	NS	NS	NS	NS	NS
	CHROMIUM, DISSOLVED	mg/l	0.0050	<0.0040	0.0010	<0.0010	<0.0010	<0.0010	0.0020
	IRON, DISSOLVED	mg/l	16.4000	49.0000	4.5000	<0.1000	<0.1000	1.4000	6.4000
	LEAD, DISSOLVED	mg/l	0.0030	<0.0010	NS	NS	NS	NS	NS
	MANGANESE, DISSOLVED	mg/l	9.4000	12.0000	6.1200	6.2100	6.0000	8.9000	8.5000
	MERCURY, DISSOLVED	mg/l	<0.0002	<0.0050	NS	NS	NS	NS	NS
	SELENIUM, DISSOLVED	mg/l	0.0050	0.0050	NS	NS	NS	NS	NS
	SILVER, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS	NS
	SODIUM, DISSOLVED	mg/l	29.4000	144.0000	13.0000	12.2000	13.3000	31.0000	19.0000
	NITRATE,NITROGEN	mg/l	2.2000	<0.0050	0.9700	1.2000	0.4400	1.0400	8.3000
	TOTAL ORGANIC HALOGENS	ug/l	215.0000	19.0000	<5.0000	<5.0000	93.0000	7.0000	18.0000
	2,4 - D	ug/l	<0.2500	<2.5000	NS	NS	NS	NS	NS
	2,4,5 - TP	ug/l	<0.2500	<10.0000	NS	NS	NS	NS	NS
	LINDANE	ug/l	<0.5000	<0.0030	NS	NS	NS	NS	NS
	ENDRIN	ug/l	<0.5000	<0.0220	NS	NS	NS	NS	NS
	METHOXYCHLOR	ug/l	<2.5000	<0.0490	NS	NS	NS	NS	NS
	TOXAPHENE	ug/l	<25.0000	<0.0980	NS	NS	NS	NS	NS
	TOTAL PHENOLS	mg/l	<0.0050	0.0100	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	PH	standard	6.6400	6.4000	6.4500	6.7100	6.9000	6.5500	6.2800
	TOTAL DISSOLVED SOLIDS	umhos/cm	1120.0000	2830.0000	1400.0000	1400.0000	1210.0000	1070.0000	1260.0000
	SPECIFIC CONDUCTANCE	mg/l	1470.0000	4094.0000	1620.0000	1670.0000	2020.0000	2690.0000	2120.0000
	SULFATE	mg/l	871.0000	1675.0000	990.0000	1020.0000	1040.0000	136.0000	1080.0000

WELL NUMBER TBLANK

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
BASE/NEUTRALS									
	N-NITROSODIMETHYLAMINE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BIS(2-CHLOROETHYL)ETHER	ug/l	NS	NS	NS	NS	ND	NS	NS
	1,3-DICHLOROBENZENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	1,4-DICHLOROBENZENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	1,2-DICHLOROBENZENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BIS(2-CHLOROISOPROPYL)EYHER	ug/l	NS	NS	NS	NS	ND	NS	NS
	HEXACHLOROETHANE	ug/l	NS	NS	NS	NS	ND	NS	NS
	N-NITROSODI-N-PROPYLAMINE	ug/l	NS	NS	NS	NS	ND	NS	NS
	NITROBENZENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	ISOPHORONE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BIS(2-CHLOROETHOXY)METHANE	ug/l	NS	NS	NS	NS	ND	NS	NS
	1,2,4-TRICHLOROBENZENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	NAPHTHALENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	HEXACHLOROBUTADIENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	HEXACHLOROCYCLOPENTADIENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	2-CHLORONAPHTHALENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	ACENAPHTHYLENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	DIMETHYL PHTHALATE	ug/l	NS	NS	NS	NS	ND	NS	NS
	2,6-DINITROTOLUENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	ACENAPHTHENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	2,4-DINITROTOLUENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	FLUORENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	DIETHYL PHTHALATE	ug/l	NS	NS	NS	NS	ND	NS	NS
	4-CHLOROPHENYL PHENYL ETHER	ug/l	NS	NS	NS	NS	ND	NS	NS
	N-NITROSODIPHENYLAMINE	ug/l	NS	NS	NS	NS	ND	NS	NS
	1,2-DIPHENYLHYDRAZINE	ug/l	NS	NS	NS	NS	ND	NS	NS
	4-BROMOPHENYL PHENYL ETHER	ug/l	NS	NS	NS	NS	ND	NS	NS
	HEXACHLOROBENZENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	PHENANTHRENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	ANTHRACENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	DI-N-BUTYL PHTHALATE	ug/l	NS	NS	NS	NS	ND	NS	NS
	FLUORANTHENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BENZIDINE	ug/l	NS	NS	NS	NS	ND	NS	NS
	PYRENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BUTYL BENZYL PHTHALATE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BENZO(A)ANTHRACENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	CHRYSENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	3,3'-DICHLOROBENZIDINE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	NS	NS	NS	NS	ND	NS	NS
	DI-N-OCTYL PHTHALATE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BENZO(B)FLUORANTHENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BENZO(K)FLUORANTHENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BENZO(A)PYRENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	INDENO(1,2,3-C,D)PYRENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	DIBENZO(A,H)ANTHRACENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	BENZO(G,H,I)PERYLENE	ug/l	NS	NS	NS	NS	ND	NS	NS
	2,3,7,8-TETRACHLORODIBENZO-P-D	ug/l	NS	NS	NS	NS	ND	NS	NS

WELL NUMBER W-2DUP

CATEGORY	PARAMETER	UNITS	DATE 04/24/86 CONCENTRATION
WQP			
	ALKALINITY	mg/l	389.0000
	AMMONIA	mg/l	328.0000
	COLIFORM, TOTAL	col/100m	NS
	BIOCHEMICAL OXYGEN DEMAND	mg/l	280.0000
	TOTAL ORGANIC CARBON	mg/l	104.0000
	CHEMICAL OXYGEN DEMAND	mg/l	413.0000
	CHLORIDE	mg/l	505.0000
	CYANIDE	mg/l	29.7000
	FLUORIDE	mg/l	5.8000
	ALUMINUM, DISSOLVED	mg/l	NS
	ARSENIC, DISSOLVED	mg/l	NS
	BARIUM, DISSOLVED	mg/l	NS
	CHROMIUM, DISSOLVED	mg/l	0.0020
	IRON, DISSOLVED	mg/l	<0.1000
	LEAD, DISSOLVED	mg/l	NS
	MANGANESE, DISSOLVED	mg/l	12.0000
	MERCURY, DISSOLVED	mg/l	NS
	SELENIUM, DISSOLVED	mg/l	NS
	SILVER, DISSOLVED	mg/l	NS
	SODIUM, DISSOLVED	mg/l	261.0000
	NITRATE,NITROGEN	mg/l	<0.1500
	TOTAL ORGANIC HALOGENS	ug/l	57.0000
	2,4 - D	ug/l	NS
	2,4,5 - TP	ug/l	NS
	LINDANE	ug/l	NS
	ENDRIN	ug/l	NS
	METHOXYCHLOR	ug/l	NS
	TOXAPHENE	ug/l	NS
	TOTAL PHENOLS	mg/l	0.3100
	PH	standard	7.0600
	TOTAL DISSOLVED SOLIDS	umhos/cm	4880.0000
	SPECIFIC CONDUCTANCE	mg/l	NS
	SULFATE	mg/l	6700.0000

WELL NUMBER W-2

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
WQP									
	ALKALINITY	mg/l	1040.0000	1093.0000	709.0000	630.0000	391.0000	40.0000	1070.0000
	AMMONIA	mg/l	917.0000	1260.0000	1520.0000	682.0000	350.0000	1110.0000	1226.0000
	COLIFORM, TOTAL	col/100m	1800.0000	2400.0000	33.0000	<2.0000	NS	5.0000	350.0000
	BIOCHEMICAL OXYGEN DEMAND	mg/l	220.0000	NS	7.9000	515.0000	300.0000	120.0000	330.0000
	TOTAL ORGANIC CARBON	mg/l	5.6000	7.6700	4.5400	194.0000	109.0000	254.0000	371.0000
	CHEMICAL OXYGEN DEMAND	mg/l	1170.0000	1856.0000	1780.0000	1500.0000	393.0000	304.0000	1700.0000
	CHLORIDE	mg/l	1210.0000	1633.0000	1990.0000	773.0000	473.0000	NS	NS
	CYANIDE	mg/l	159.0000	120.0000	84.0000	24.6000	31.2000	189.0000	9.9000
	FLUORIDE	mg/l	0.9500	1.5000	2.5000	3.8000	5.6000	4.0500	3.2000
	ALUMINUM, DISSOLVED	mg/l	<0.5000	<0.5000	NS	NS	NS	NS	NS
	ARSENIC, DISSOLVED	mg/l	0.0120	0.0260	NS	NS	NS	NS	NS
	BARIUM, DISSOLVED	mg/l	<0.5000	<0.5000	NS	NS	NS	NS	NS
	CHROMIUM, DISSOLVED	mg/l	0.0510	0.0160	0.0120	0.0020	0.0010	0.0090	0.0080
	IRON, DISSOLVED	mg/l	36.8000	2.6900	0.8000	0.3500	0.2000	3.4000	0.5000
	LEAD, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS	NS
	MANGANESE, DISSOLVED	mg/l	3.0000	0.7100	0.2900	5.5300	11.4000	2.6000	0.8500
	MERCURY, DISSOLVED	mg/l	<0.0002	<0.0050	NS	NS	NS	NS	NS
	SELENIUM, DISSOLVED	mg/l	0.0050	0.0030	NS	NS	NS	NS	NS
	SILVER, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS	NS
	SODIUM, DISSOLVED	mg/l	411.0000	430.0000	420.0000	232.0000	274.0000	320.0000	430.0000
	NITRATE,NITROGEN	mg/l	<0.1500	<0.0050	0.1500	<0.1500	<0.1500	<0.5200	NS
	TOTAL ORGANIC HALOGENS	ug/l	78.0000	69.0000	<5.0000	5180.0000	NS	14.0000	99.0000
	2,4 - D	ug/l	1.1900	<2.5000	NS	NS	NS	NS	NS
	2,4,5 - TP	ug/l	<0.2500	<10.0000	NS	NS	NS	NS	NS
	LINDANE	ug/l	<0.5000	<0.0300	NS	NS	NS	NS	NS
	ENDRIN	ug/l	<0.5000	<0.2200	NS	NS	NS	NS	NS
	METHOXYCHLOR	ug/l	<2.5000	<0.4900	NS	NS	NS	NS	NS
	TOXAPHENE	ug/l	<25.0000	<0.9800	NS	NS	NS	NS	NS
	TOTAL PHENOLS	mg/l	<0.0050	36.9000	3.8500	0.7200	0.3700	2.3100	1.8400
	PH	standard	7.1500	7.4500	8.3100	7.7500	6.7500	7.7800	7.4100
	TOTAL DISSOLVED SOLIDS	umhos/cm	4920.0000	3870.0000	4190.0000	5180.0000	5290.0000	1710.0000	4850.0000
	SPECIFIC CONDUCTANCE	mg/l	8010.0000	9929.0000	9750.0000	7750.0000	6650.0000	10400.0000	11100.0000
	SULFATE	mg/l	2950.0000	2512.0000	2700.0000	3650.0000	3500.0000	2960.0000	3300.0000

WELL NUMBER H-30UP

CATEGORY	PARAMETER	UNITS	DATE 10/15/85 CONCENTRATION
WQP			
	ALKALINITY	mg/l	47.4000
	AMMONIA	mg/l	6.4000
	COLIFORM, TOTAL	col/100m	2.0000
	BIOCHEMICAL OXYGEN DEMAND	mg/l	0.1000
	TOTAL ORGANIC CARBON	mg/l	3.2400
	CHEMICAL OXYGEN DEMAND	mg/l	43.0000
	CHLORIDE	mg/l	15.3000
	CYANIDE	mg/l	0.0390
	FLUORIDE	mg/l	0.3000
	ALUMINUM, DISSOLVED	mg/l	NS
	ARSENIC, DISSOLVED	mg/l	NS
	BARIUM, DISSOLVED	mg/l	NS
	CHROMIUM, DISSOLVED	mg/l	0.0070
	IRON, DISSOLVED	mg/l	<0.1000
	LEAD, DISSOLVED	mg/l	NS
	MANGANESE, DISSOLVED	mg/l	1.0400
	MERCURY, DISSOLVED	mg/l	NS
	SELENIUM, DISSOLVED	mg/l	NS
	SILVER, DISSOLVED	mg/l	NS
	SODIUM, DISSOLVED	mg/l	42.0000
	NITRATE,NITROGEN	mg/l	16.0000
	TOTAL ORGANIC HALOGENS	ug/l	<5.0000
	2,4 - D	ug/l	NS
	2,4,5 - TP	ug/l	NS
	LINDANE	ug/l	NS
	ENDRIN	ug/l	NS
	METHOXYCHLOR	ug/l	NS
	TOXAPHENE	ug/l	NS
	TOTAL PHENOLS	mg/l	<0.0050
	PH	standard	6.2000
	TOTAL DISSOLVED SOLIDS	umhos/cm	731.0000
	SPECIFIC CONDUCTANCE	mg/l	906.0000
	SULFATE	mg/l	360.0000

WELL NUMBER W-3

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
WQP									
	ALKALINITY	mg/l	65.5000	44.2000	47.1000	39.3000	39.8000	58.0000	44.6000
	AMMONIA	mg/l	14.3000	13.1000	6.3000	1.2700	2.4800	4.5500	5.9100
	COLIFORM, TOTAL	col/100m	400.0000	1.0000	5.0000	<2.0000	NS	<2.0000	2.0000
	BIOCHEMICAL OXYGEN DEMAND	mg/l	2.4000	NS	0.9000	4.6500	6.8000	17.0000	4.7000
	TOTAL ORGANIC CARBON	mg/l	6.7000	5.5100	3.1000	1.3900	1.7500	1.6000	2.5000
	CHEMICAL OXYGEN DEMAND	mg/l	12.7000	57.3000	14.5000	36.0000	<10.0000	<10.0000	<10.0000
	CHLORIDE	mg/l	12.3000	14.8000	17.0000	11.6000	9.5000	NS	NS
	CYANIDE	mg/l	0.0040	0.0010	0.0250	0.0060	0.0570	<0.0660	0.0120
	FLUORIDE	mg/l	0.6200	0.4700	0.2800	0.4300	0.4400	0.5300	0.4900
	ALUMINUM, DISSOLVED	mg/l	<0.5000	<0.5000	NS	NS	NS	NS	NS
	ARSENIC, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS	NS
	BARIUM, DISSOLVED	mg/l	<0.5000	<0.5000	NS	NS	NS	NS	NS
	CHROMIUM, DISSOLVED	mg/l	0.0040	0.0020	0.0060	0.0020	<0.0010	<0.0010	0.0050
	IRON, DISSOLVED	mg/l	0.5000	<0.0500	0.1000	<0.1000	<0.1000	<0.1000	38.0000
	LEAD, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS	NS
	MANGANESE, DISSOLVED	mg/l	1.7000	1.4000	1.0400	0.6700	0.5800	1.3000	3.2000
	MERCURY, DISSOLVED	mg/l	0.0002	<0.0050	NS	NS	NS	NS	NS
	SELENIUM, DISSOLVED	mg/l	0.0050	0.0030	NS	NS	NS	NS	NS
	SILVER, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS	NS
	SODIUM, DISSOLVED	mg/l	54.2000	53.0000	41.0000	25.0000	23.1000	34.0000	24.0000
	NITRATE,NITROGEN	mg/l	15.3000	10.5000	15.0000	11.9000	7.0500	5.4000	5.8000
	TOTAL ORGANIC HALOGENS	ug/l	48.0000	7.0000	<5.0000	<5.0000	1040.0000	<5.0000	13.0000
	2,4 - D	ug/l	<0.2500	<1.0000	NS	NS	NS	NS	NS
	2,4,5 - TP	ug/l	<0.2500	<1.0000	NS	NS	NS	NS	NS
	LINDANE	ug/l	<0.0500	<0.0030	NS	NS	NS	NS	NS
	ENDRIN	ug/l	<0.0500	<0.0220	NS	NS	NS	NS	NS
	METHOXYCHLOR	ug/l	<0.2500	<0.0490	NS	NS	NS	NS	NS
	TOXAPHENE	ug/l	<2.5000	<0.0980	NS	NS	NS	NS	NS
	TOTAL PHENOLS	mg/l	<0.0050	<0.0050	<0.0050	<0.0050	0.0080	<0.0050	<0.0050
	PH	standard	6.5000	6.1900	6.1500	6.4000	6.9500	[illegible]700	6.4700
	TOTAL DISSOLVED SOLIDS	umhos/cm	880.0000	921.0000	762.0000	511.0000	572.0000	252.0000	848.0000
	SPECIFIC CONDUCTANCE	mg/l	1070.0000	1097.0000	903.0000	702.0000	534.0000	754.0000	583.0000
	SULFATE	mg/l	513.0000	420.0000	360.0000	249.0000	51.9000	298.0000	[illegible]0000

WELL NUMBER FBLANK

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
WQP								
	ALKALINITY	mg/l	5.1000	<1.0000	<10.0000	<10.0000	<5.0000	<10.0000
	AMMONIA	mg/l	<0.0200	<0.0200	<0.0200	0.0540	<0.0300	0.0520
	COLIFORM, TOTAL	col/100m	<1.0000	NS	<2.0000	NS	NS	NS
	BIOCHEMICAL OXYGEN DEMAND	mg/l	0.5000	NS	0.5000	1.8000	0.3000	2.5000
	TOTAL ORGANIC CARBON	mg/l	0.6000	1.2900	<0.5000	<0.5000	0.4000	<0.5000
	CHEMICAL OXYGEN DEMAND	mg/l	8.4000	<7.0000	19.7000	<10.0000	<10.0000	<10.0000
	CHLORIDE	mg/l	<3.0000	<3.0000	<3.0000	20.9000	NS	NS
	CYANIDE	mg/l	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050
	FLUORIDE	mg/l	<0.0500	<0.0500	<0.0500	<0.0500	0.0100	0.0200
	ALUMINUM, DISSOLVED	mg/l	<0.5000	<0.5000	NS	NS	NS	NS
	ARSENIC, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS
	BARIUM, DISSOLVED	mg/l	<0.5000	<0.5000	NS	NS	NS	NS
	CHROMIUM, DISSOLVED	mg/l	0.0040	0.0030	<0.0010	<0.0010	<0.0010	<0.0010
	IRON, DISSOLVED	mg/l	<0.0500	<0.0500	<0.1000	<0.1000	<0.1000	<0.1000
	LEAD, DISSOLVED	mg/l	0.0090	<0.0010	NS	NS	NS	NS
	MANGANESE, DISSOLVED	mg/l	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
	MERCURY, DISSOLVED	mg/l	<0.0002	<0.0050	NS	NS	NS	NS
	SELENIUM, DISSOLVED	mg/l	0.0030	0.0030	NS	NS	NS	NS
	SILVER, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS
	SODIUM, DISSOLVED	mg/l	<0.2000	<0.2000	0.5400	10.1000	<0.5000	<0.5000
	NITRATE,NITROGEN	mg/l	<0.1500	<0.0050	<0.1500	0.8700	<0.5200	<0.2600
	TOTAL ORGANIC HALOGENS	ug/l	26.0000	29.0000	<5.0000	69.0000	<5.0000	<5.0000
	2,4 - D	ug/l	<0.2500	<1.0000	NS	NS	NS	NS
	2,4,5 - TP	ug/l	<0.2500	<1.0000	NS	NS	NS	NS
	LINDANE	ug/l	<0.0500	<0.0020	NS	NS	NS	NS
	ENDRIN	ug/l	<0.0500	<0.0270	NS	NS	NS	NS
	METHOXYCHLOR	ug/l	<0.2500	<0.0580	NS	NS	NS	NS
	TOXAPHENE	ug/l	<2.5000	<0.0200	NS	NS	NS	NS
	TOTAL PHENOLS	mg/l	<0.0050	0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	PH	standard	6.6700	6.0500	6.2100	6.2000	6.8400	6.3300
	TOTAL DISSOLVED SOLIDS	umhos/cm	<1.0000	18.0000	37.0000	92.0000	<1.0000	392.0000
	SPECIFIC CONDUCTANCE	mg/l	32.5000	1.5000	4.6000	84.0000	1.2800	1.1200
	SULFATE	mg/l	4.2000	<15.0000	<10.0000	10.6000	11.8000	<10.0000

WELL NUMBER W-4

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
WQP									
	ALKALINITY	mg/l	89.8000	314.0000	17.9000	31.1000	19.8000	115.0000	205.0000
	AMMONIA	mg/l	20.7000	60.2000	0.2600	0.7400	0.0520	6.8000	24.1000
	COLIFORM, TOTAL	col/100m	2000.0000	8.0000	>2400.0000	2.0000	NS	<2.0000	13.0000
	BIOCHEMICAL OXYGEN DEMAND	mg/l	37.0000	NS	1.0000	3.9500	2.4000	12.0000	69.0000
	TOTAL ORGANIC CARBON	mg/l	130.0000	3.1600	2.7800	2.5500	<0.5000	6.3000	15.7000
	CHEMICAL OXYGEN DEMAND	mg/l	44.0000	269.0000	<7.0000	43.8000	11.9000	50.0000	155.0000
	CHLORIDE	mg/l	22.7000	152.0000	7.3000	5.5000	10.0000	NS	NS
	CYANIDE	mg/l	3.6000	16.8000	0.0020	0.0030	0.0030	3.6800	16.8000
	FLUORIDE	mg/l	0.1800	0.0800	0.0600	0.1700	0.1200	0.3800	0.5400
	ALUMINUM, DISSOLVED	mg/l	3.9000	<0.5000	NS	NS	NS	NS	NS
	ARSENIC, DISSOLVED	mg/l	0.0080	0.0080	NS	NS	NS	NS	NS
	BARIUM, DISSOLVED	mg/l	<0.5000	0.5000	NS	NS	NS	NS	NS
	CHROMIUM, DISSOLVED	mg/l	0.0200	0.0060	<0.0010	<0.0010	<0.0010	<0.0010	0.0040
	IRON, DISSOLVED	mg/l	17.1000	62.0000	0.2000	<0.1000	<0.1000	15.1000	177.0000
	LEAD, DISSOLVED	mg/l	0.0120	0.0020	NS	NS	NS	NS	NS
	MANGANESE, DISSOLVED	mg/l	2.3000	4.7000	0.3100	0.5900	0.2400	2.4000	2.9000
	MERCURY, DISSOLVED	mg/l	0.0005	<0.0050	NS	NS	NS	NS	NS
	SELENIUM, DISSOLVED	mg/l	0.0080	0.0040	NS	NS	NS	NS	NS
	SILVER, DISSOLVED	mg/l	<0.0010	<0.0010	NS	NS	NS	NS	NS
	SODIUM, DISSOLVED	mg/l	30.8000	184.0000	2.7000	1.9000	4.1500	9.9000	28.5000
	NITRATE,NITROGEN	mg/l	<0.1500	<0.0050	7.0000	1.2500	4.5200	0.1100	<0.2600
	TOTAL ORGANIC HALOGENS	ug/l	82.0000	18.0000	<5.0000	6.0000	NS	<5.0000	<5.0000
	2,4 - D	ug/l	<0.2500	<1.0000	NS	NS	NS	NS	NS
	2,4,5 - TP	ug/l	<0.2500	<1.0000	NS	NS	NS	NS	NS
	LINDANE	ug/l	<0.5000	<0.0030	NS	NS	NS	NS	NS
	ENDRIN	ug/l	<0.5000	<0.0220	NS	NS	NS	NS	NS
	METHOXYCHLOR	ug/l	<2.5000	<0.0490	NS	NS	NS	NS	NS
	TOXAPHENE	ug/l	<25.0000	<0.0980	NS	NS	NS	NS	NS
	TOTAL PHENOLS	mg/l	<0.0050	0.0140	<0.0050	<0.0050	0.0060	<0.0050	<0.0050
	PH	standard	6.9900	6.5700	5.8900	6.5000	6.3400	6.4900	6.6700
	TOTAL DISSOLVED SOLIDS	umhos/cm	108.0000	1320.0000	218.0000	163.0000	230.0000	210.0000	1405.0000
	SPECIFIC CONDUCTANCE	mg/l	461.0000	1777.0000	186.0000	158.0000	NS	369.0000	588.0000
	SULFATE	mg/l	111.0000	511.0000	32.0000	30.0000	51.9000	33.1000	[illegible]0000

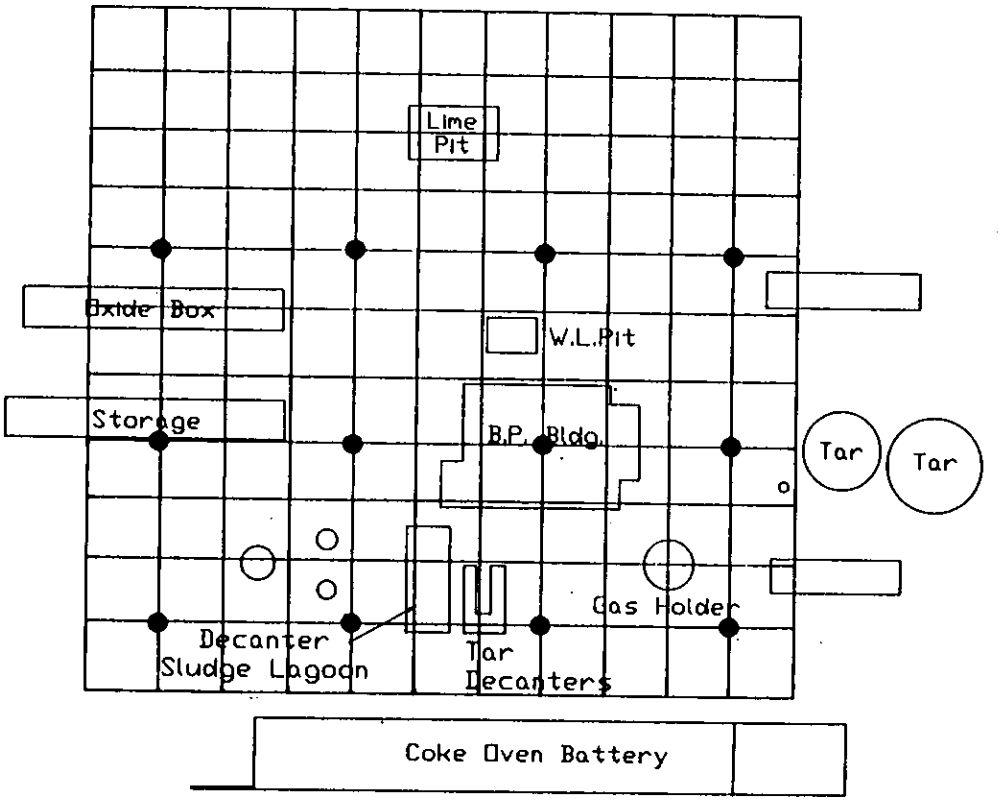
WELL NUMBER TBLANK

CATEGORY	PARAMETER	UNITS	DATE 04/10/85 CONCENTRATION	DATE 06/26/85 CONCENTRATION	DATE 10/15/85 CONCENTRATION	DATE 01/23/86 CONCENTRATION	DATE 04/24/86 CONCENTRATION	DATE 07/29/86 CONCENTRATION	DATE 10/10/86 CONCENTRATION
WQP									
	ALKALINITY	mg/l	NS	NS	NS	NS	<10.0000	NS	NS
	AMMONIA	mg/l	NS	NS	NS	NS	0.0570	NS	NS
	COLIFORM, TOTAL	col/100m	NS	NS	NS	NS	NS	NS	NS
	BIOCHEMICAL OXYGEN DEMAND	mg/l	NS	NS	NS	NS	1.8000	NS	NS
	TOTAL ORGANIC CARBON	mg/l	NS	NS	NS	NS	<0.5000	NS	NS
	CHEMICAL OXYGEN DEMAND	mg/l	NS	NS	NS	NS	<10.0000	NS	NS
	CHLORIDE	mg/l	NS	NS	NS	NS	<3.0000	NS	NS
	CYANIDE	mg/l	NS	NS	NS	NS	<0.0050	NS	NS
	FLUORIDE	mg/l	NS	NS	NS	NS	<0.0500	NS	NS
	ALUMINUM, DISSOLVED	mg/l	NS	NS	NS	NS	NS	NS	NS
	ARSENIC, DISSOLVED	mg/l	NS	NS	NS	NS	NS	NS	NS
	BARIUM, DISSOLVED	mg/l	NS	NS	NS	NS	NS	NS	NS
	CHROMIUM, DISSOLVED	mg/l	NS	NS	NS	NS	<0.0010	NS	NS
	IRON, DISSOLVED	mg/l	NS	NS	NS	NS	<0.1000	NS	NS
	LEAD, DISSOLVED	mg/l	NS	NS	NS	NS	NS	NS	NS
	MANGANESE, DISSOLVED	mg/l	NS	NS	NS	NS	<0.0500	NS	NS
	MERCURY, DISSOLVED	mg/l	NS	NS	NS	NS	NS	NS	NS
	SELENIUM, DISSOLVED	mg/l	NS	NS	NS	NS	NS	NS	NS
	SILVER, DISSOLVED	mg/l	NS	NS	NS	NS	NS	NS	NS
	SODIUM, DISSOLVED	mg/l	NS	NS	NS	NS	1.4500	NS	NS
	NITRATE,NITROGEN	mg/l	NS	NS	NS	NS	<0.1500	NS	NS
	TOTAL ORGANIC HALOGENS	ug/l	NS	NS	NS	NS	29.0000	NS	NS
	2,4 - D	ug/l	NS	NS	NS	NS	NS	NS	NS
	2,4,5 - TP	ug/l	NS	NS	NS	NS	NS	NS	NS
	LINDANE	ug/l	NS	NS	NS	NS	NS	NS	NS
	ENDRIN	ug/l	NS	NS	NS	NS	NS	NS	NS
	METHOXYCHLOR	ug/l	NS	NS	NS	NS	NS	NS	NS
	TOXAPHENE	ug/l	NS	NS	NS	NS	NS	NS	NS
	TOTAL PHENOLS	mg/l	NS	NS	NS	NS	<0.0050	NS	NS
	PH	standard	NS	NS	NS	NS	6.3600	NS	NS
	TOTAL DISSOLVED SOLIDS	umhos/cm	NS	NS	NS	NS	26.0000	NS	NS
	SPECIFIC CONDUCTANCE	mg/l	NS	NS	NS	NS	3.9000	NS	NS
	SULFATE	mg/l	NS	NS	NS	NS	11.9000	NS	NS

Figures

TABLE 3-1 (continued)

Parameters	E-2 (6-8)	E 5 (4 6)	E-11 (6-8)	G-3 (2-4)	G-5 (8-10)	G-10 (5-7)	H-2 (4-6)	H-5 (6-8)	H 6 (8-10)	H-7 (4-6)	H-11 (6-8)	Z-1 (6-8)
Naphthalene	1.700	46.000	0.280	<0.330	22.000	4.200	45.000	4.200	7.000	<0.330	3.600	<0.330
Acenapthylene	<0.330	<1.700	0.220	<0.330	<1.700	<1.700	0.860	0.200	4.500	<0.330	<0.330	<0.330
2,6-dinitrotoluene	<0.330	<1.700	<0.330	<0.330	<1.700	<1.700	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Acenapthene	<0.330	0.980	<0.330	<0.330	4.200	1.000	1.200	2.900	0.600	<0.330	<0.330	<0.330
2,4-dinitrotoluene	<0.330	<1.700	<0.330	<0.330	1.100	<1.700	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Fluorene	<0.330	2.200	<0.330	<0.330	4.400	1.300	2.300	2.500	7.600	<0.330	<0.330	<0.330
Phenanthrene	0.310	6.300	0.600	<0.330	29.000	3.000	9.500	<0.330	33.000	0.330	0.170	<0.330
Anthracene	<0.330	<1.700	0.200	<0.330	8.200	1.500	1.800	<0.330	9.000	<0.330	1.300	<0.330
Di-n-butylphthalate	<0.330	<1.700	<0.330	<0.330	<1.700	<1.700	0.730	<0.330	<0.330	<0.330	<0.330	<0.330
Fluoranthene	0.320	5.200	2.600	<0.330	15.000	5.500	5.000	<0.330	20.000	0.900	<0.330	<0.330
Pyrene	0.250	2.800	1.400	<0.330	21.000	5.400	3.400	<0.330	17.000	0.780	<0.330	<0.330
Benzo(a)Anthracene	0.160	<1.700	1.800	<0.330	11.000	2.500	2.800	2.800	18.000	0.600	0.200	<0.330
Bis(2-ethylhexyl)Phthalate	<0.330	<1.700	<0.330	0.230	<1.700	<1.700	0.270	<0.330	<0.330	<0.330	<0.330	<0.330
Chrysene	0.170	<1.700	1.900	<0.330	13.000	2.800	2.400	1.500	14.000	0.650	<0.330	<0.330
Benzo(b)Fluoranthene	0.280	<1.700	3.400	<0.330	10.000	4.200	3.300	2.400	19.000	1.100	0.200	<0.330
Benzo(k)Fluoranthene	0.280	<1.700	3.400	<0.330	10.000	4.200	3.300	2.400	19.000	1.100	0.200	<0.330
Benzo(a)Pyrene	0.150	<1.700	1.300	<0.330	6.900	2.300	2.000	1.100	9.500	0.550	<0.330	<0.330
Indeno(1,2,3 c,d)Pyrene	<0.330	<1.700	1.100	<0.330	1.700	0.950	1.000	0:350	5.400	0.220	<0.330	<0.330
Dibenzo(a,h)Anthracene	<0.330	<1.700	0.410	<0.330	1.100	<1.700	0.390	<0.330	2.100	<0.330	<0.330	<0.330
Benzo(g,h,i)Perylene	<0.330	<1.700	1.200	<0.330	2.400	<1.700	1.000	0.370	5.100	0.240	<0.330	<0.330
Total Base/Neutrals	3.62	63.48	19.81	0.23	161	38.85	86.25	20.72	190.8	6.47	5.67	<0.330



Legend:

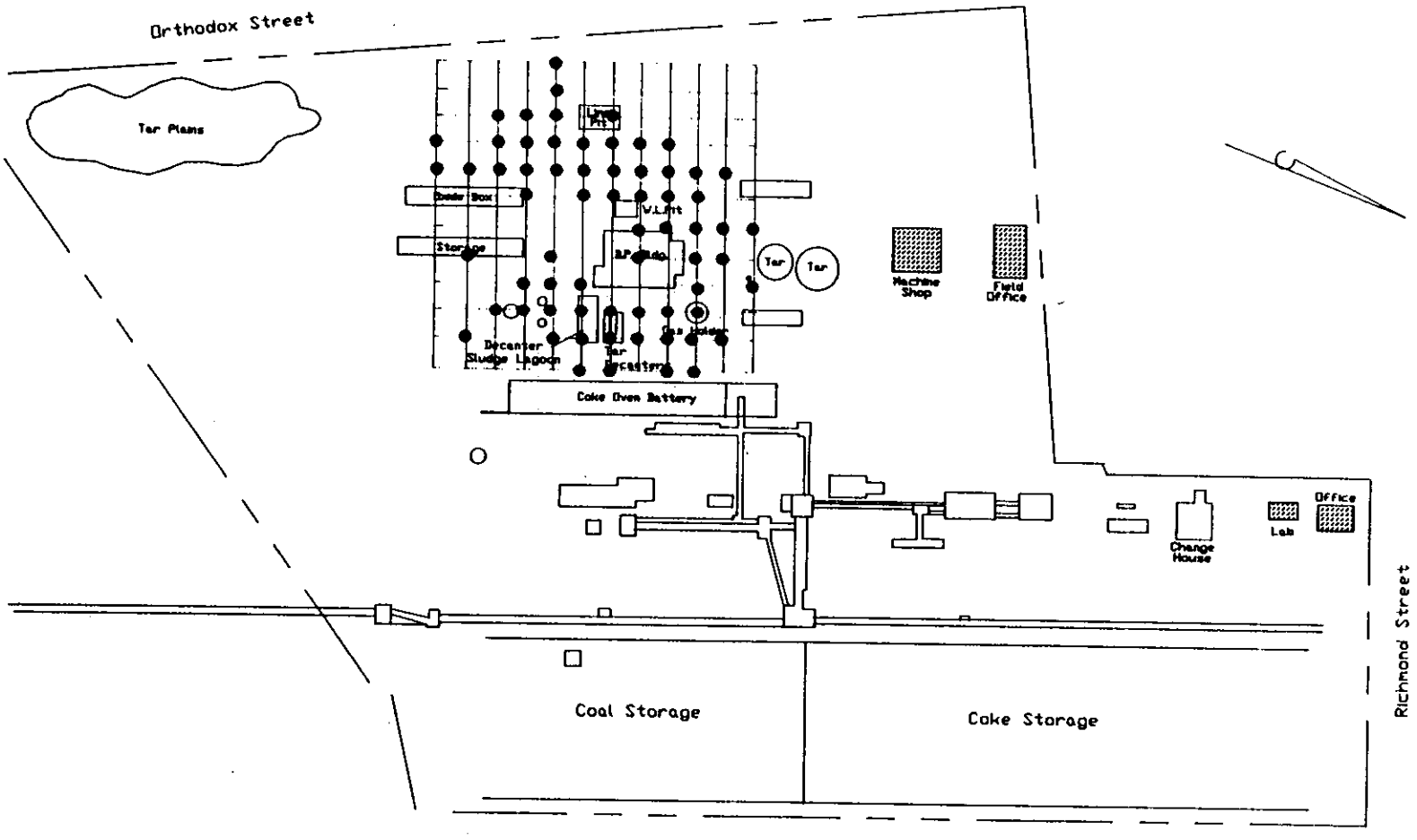
● Boring Location

PRELIMINARY SOIL BORING LOCATION PLAN
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: T.P.	Scale in Feet: 0 — 90	Date: 2/12/88
Checked by: R.G.G.		Job No. 87C2839-4

FIGURE 2-2



Legend:

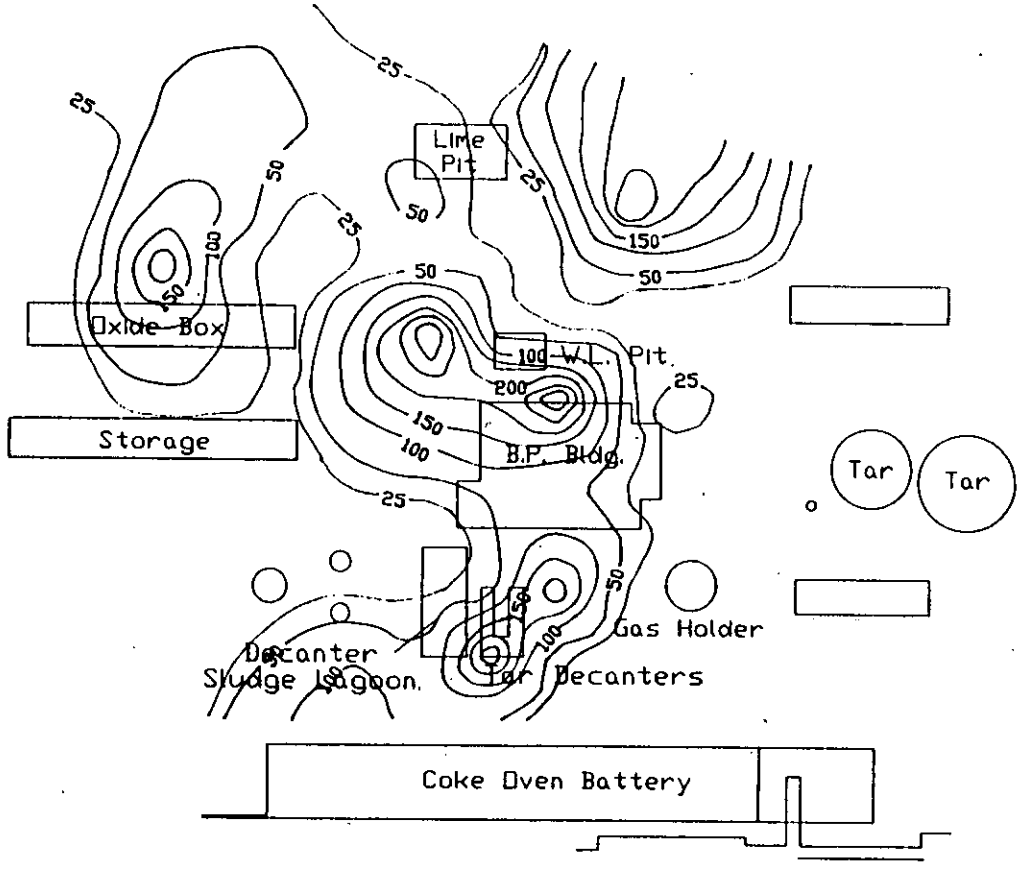
● Boring Location

EXPLORATORY BORING PROGRAM
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: T.P.	Scale in Feet: 0 — 180	Date: 2/11/88
Checked by: R.G.G.		Job No: 87C2839-4

URE 2-1



LEGEND:

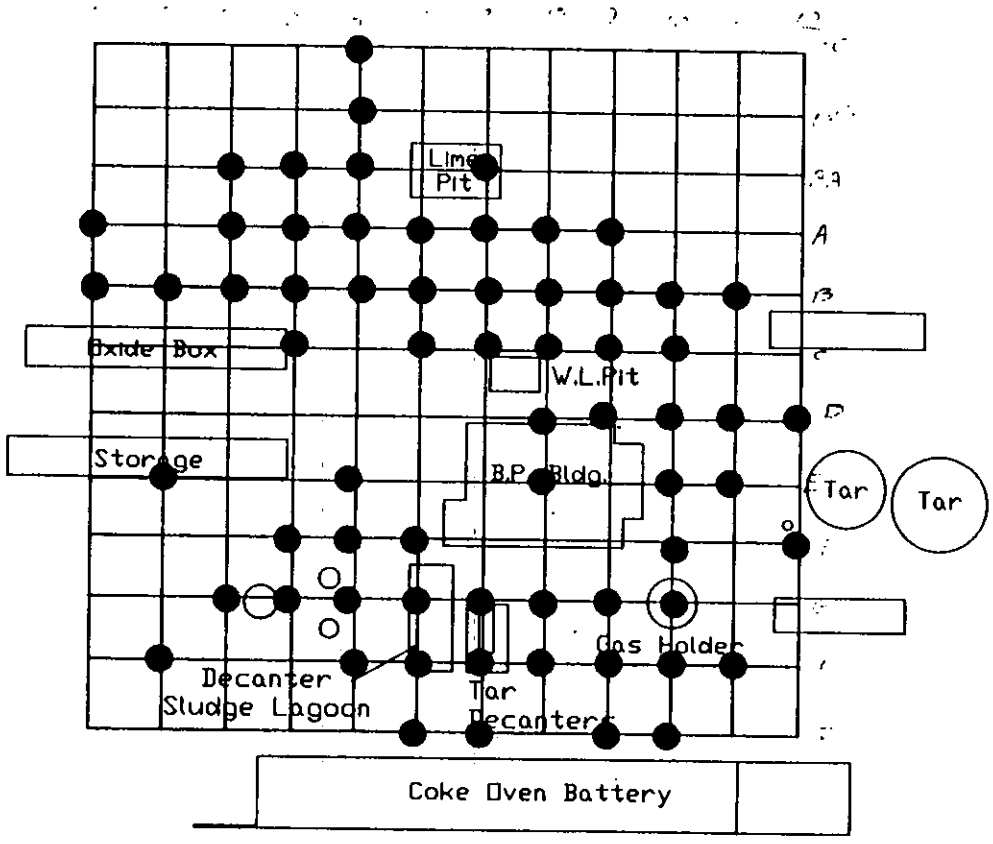
--- 50 --- RELATIVE FLUORESCENCE CONTOURS

RELATIVE FLUORESCENCE CONTOURS (0-2' DEPTH)
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: J.P.	Scale in Feet: 0 — 90	Date: 2/11/88
Checked by: R.G.G.		Job No.: 87C2839-4

FIGURE 3-1



Legend:

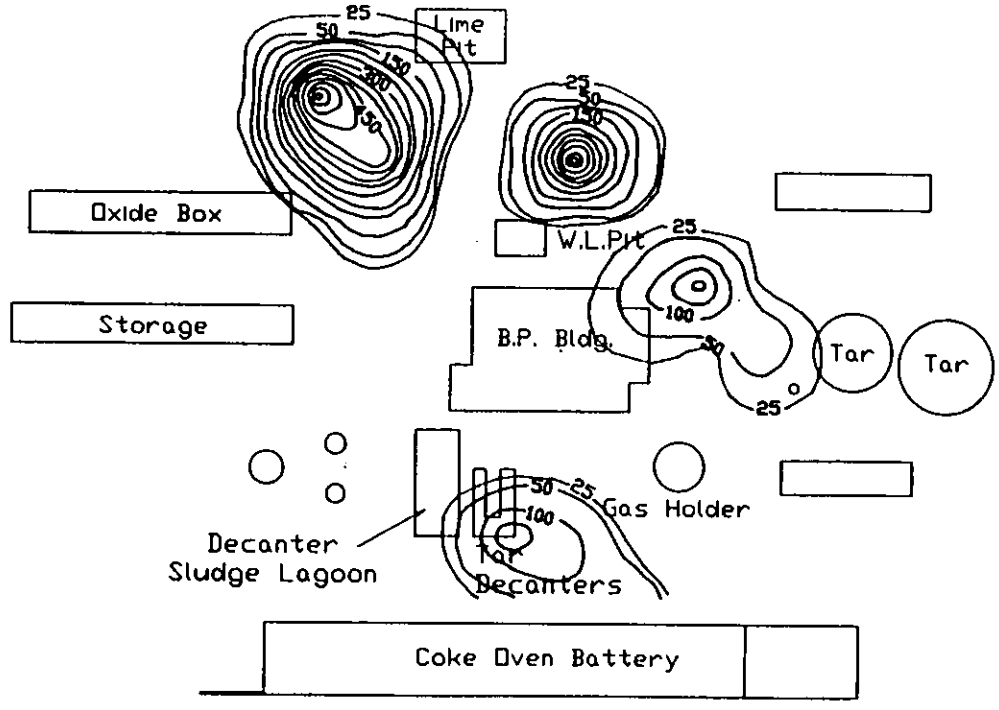
● Boring Location

BORING LOCATION PLAN
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: T.P.	Scale in Feet: 0 — 90	Date: 2/12/88
Checked by: R.G.G.		Job No. 87C2839-4

FIGURE 2-3



Legend:

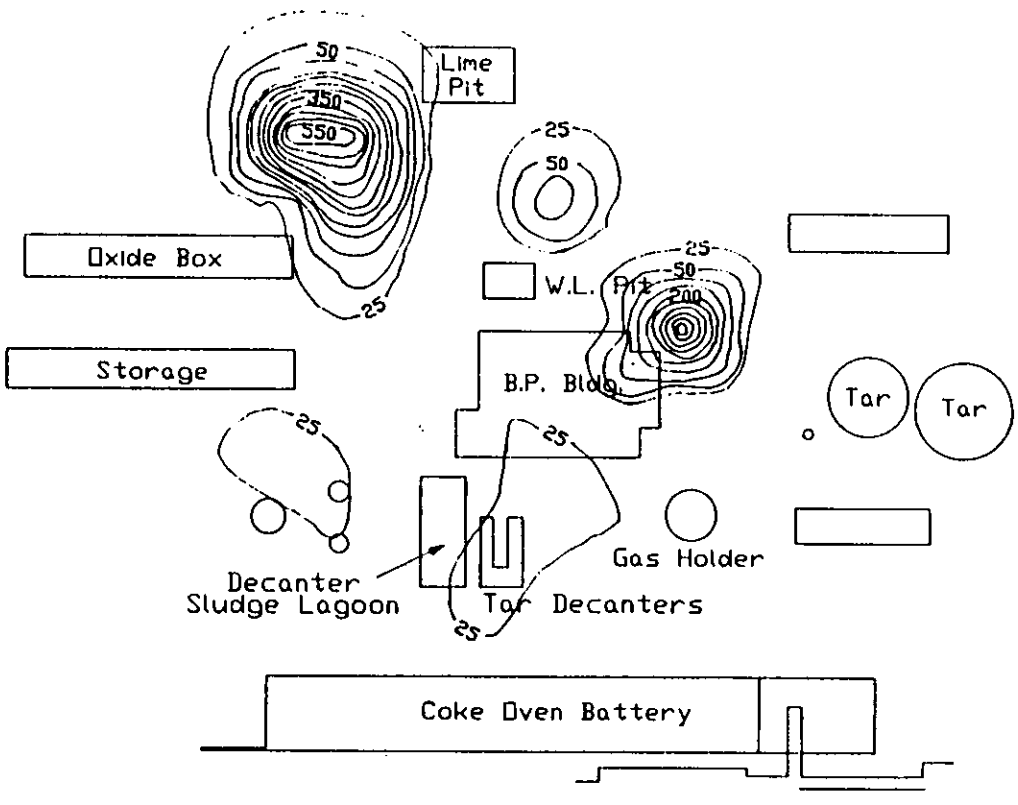
50 RELATIVE FLUORESCENCE CONTOURS

RELATIVE FLUORESCENCE CONTOURS (2-4' DEPTH)
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: T.P.	Scale in Feet: 0 — 90	Date: 2/12/88
Checked by: R.G.G.		Job No. 87C2839-4

FIGURE 3-2



LEGEND:

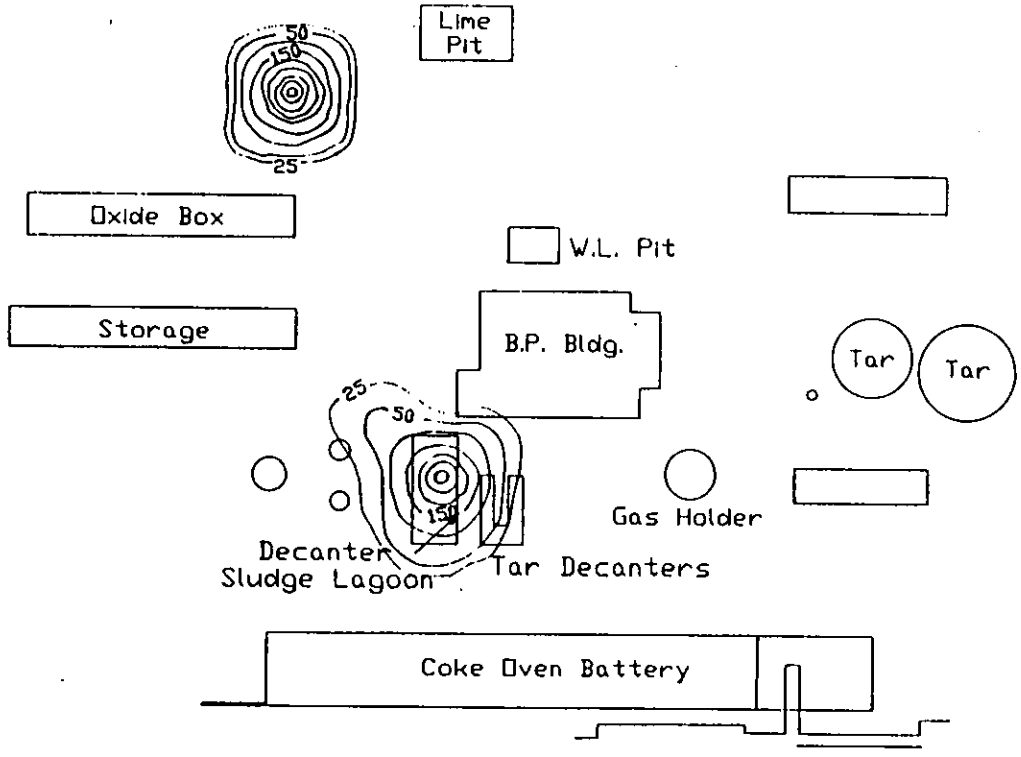
— 50 — RELATIVE FLUORESCENCE CONTOURS

RELATIVE FLUORESCENCE CONTOURS (4-6' DEPTH)
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: T.P.	Scale in Feet: 1 / 0	Date: 2/11/88
Checked by: R.G.G.		Job No.: 87C2839.4

FIGURE 3.3



LEGEND:

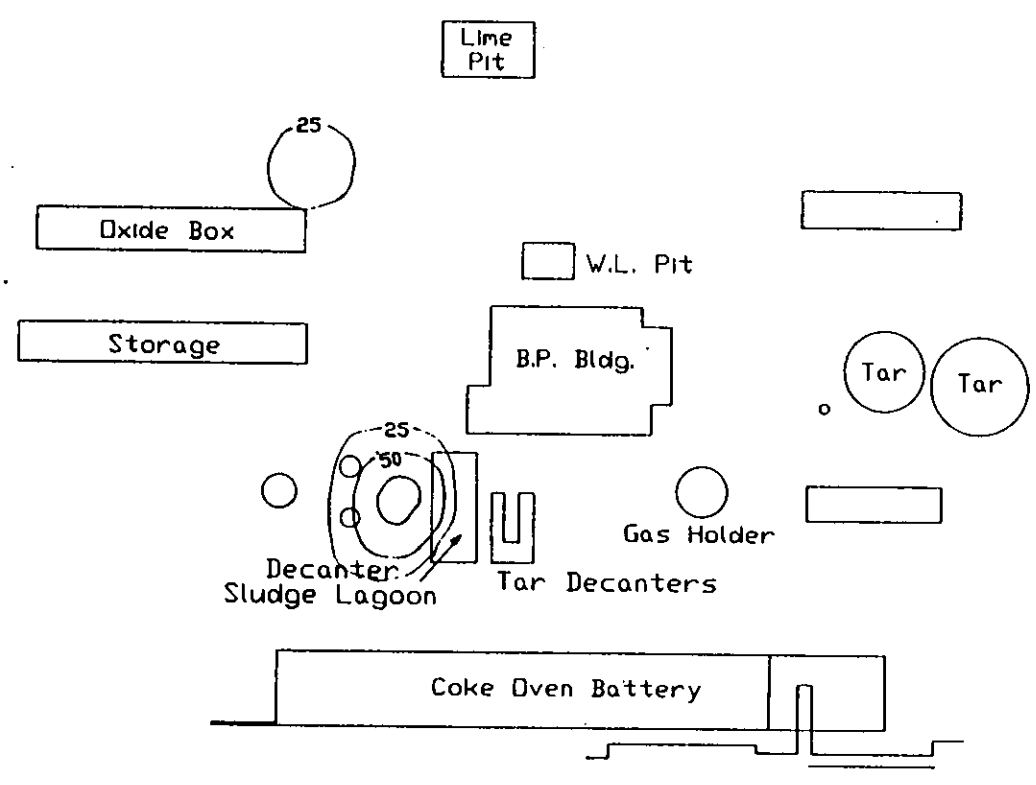
--50-- RELATIVE FLUORESCENCE CONTOURS

RELATIVE FLUORESCENCE CONTOURS (6-8' DEPTH)
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: T.P.	Scale in Feet: 0 — 90	Date: 2/11/88
Checked by: R.G.G.		Job No.: 87C2039.4

FIGURE 3.4



LEGEND:

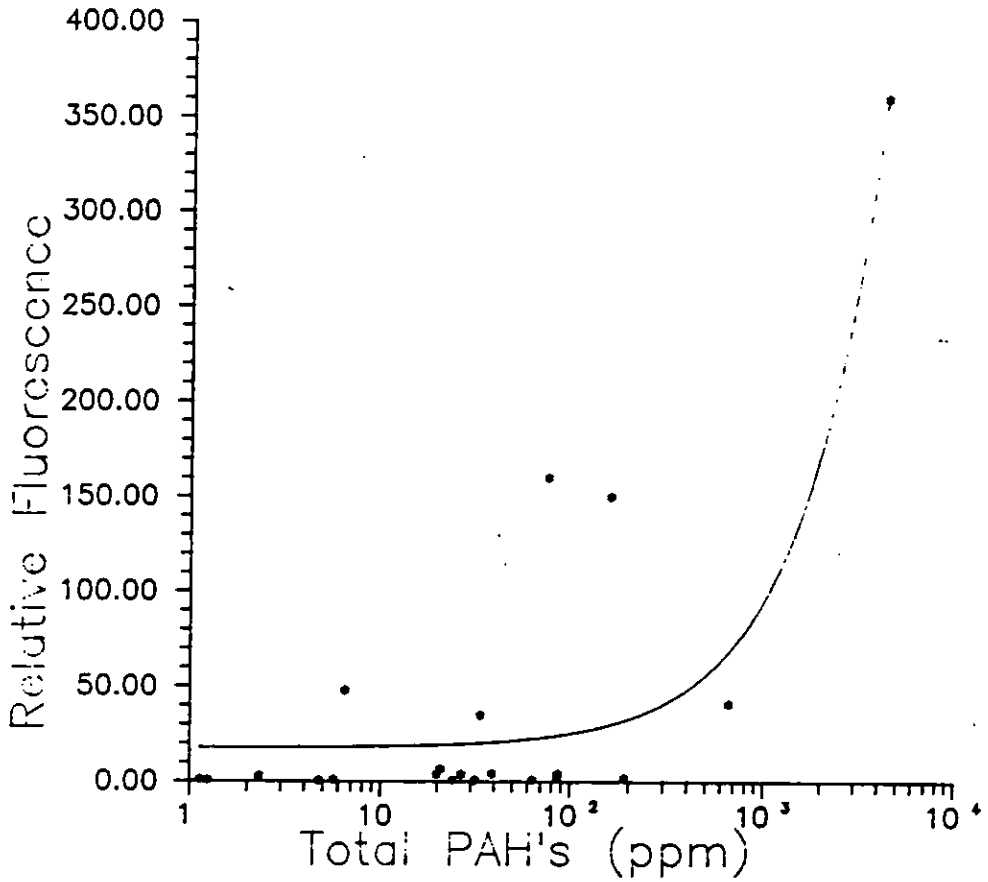
— 50 — RELATIVE FLUORESCENCE CONTOURS

RELATIVE FLUORESCENCE CONTOURS (8-10' DEPTH)
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: T.P.	Scale in Feet: 0 — 90	Date: 2/12/88
Checked by: R.G.G.		Job No.: 87C2839-4

FIGURE 3-5



FLUORESCENCE vs. PAHs

PHILADELPHIA COKE COMPANY

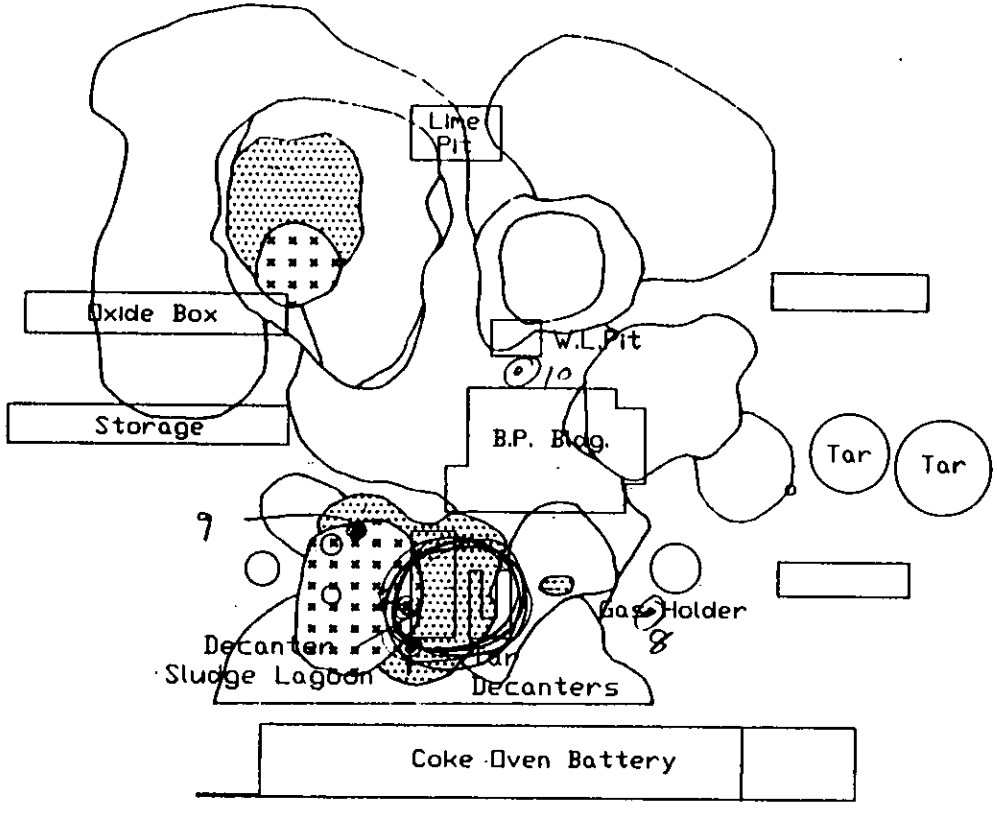
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS

Consulting Engineers, Geologists and Environmental Scientists

Drawn by: RGG		Date: 8-11-88
Checked by: PRJ		Job No: [illegible]

FIGURE 3-6



Legend:

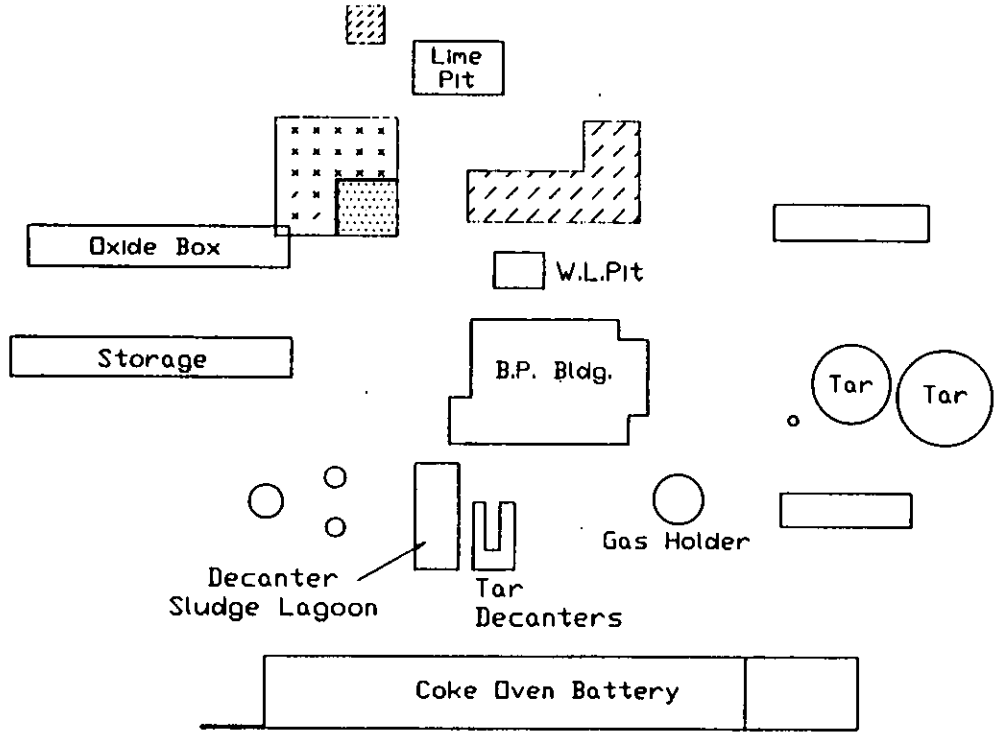
- Excavate to 2 Feet
- Excavate to 4 Feet
- Excavate to 6 Feet
- Excavate to 8 Feet
- Excavate to 10 Feet

TOTAL EXCAVATION VOLUMES
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: T.P.	Scale in Feet: 0 — 90	Date: 2/12/88
Checked by: R.G.G.		Job No. 87C2039-4

RE 4-1



Legend:

- Two Foot Excavation Depth
- Four Foot Excavation Depth
- Six Foot Excavation Depth

EXCAVATION VOLUMES
SEPARABLE COAL TAR WASTES
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

Drawn by: T.P.	Scale in Feet 0 90	Date: 2/12/88
Checked by: R.G.G.		Job No. 87C2939-4

FIGURE 4-2

SOIL CONTAMINATION ASSESSMENT
PHILADELPHIA COKE PLANT
PHILADELPHIA, PENNSYLVANIA

Prepared for:

EASTERN GAS & FUEL ASSOCIATES
WESTON, MASSACHUSETTS

Prepared by:

WOODWARD-CLYDE CONSULTANTS
Plymouth Meeting, Pennsylvania

February 15, 1988

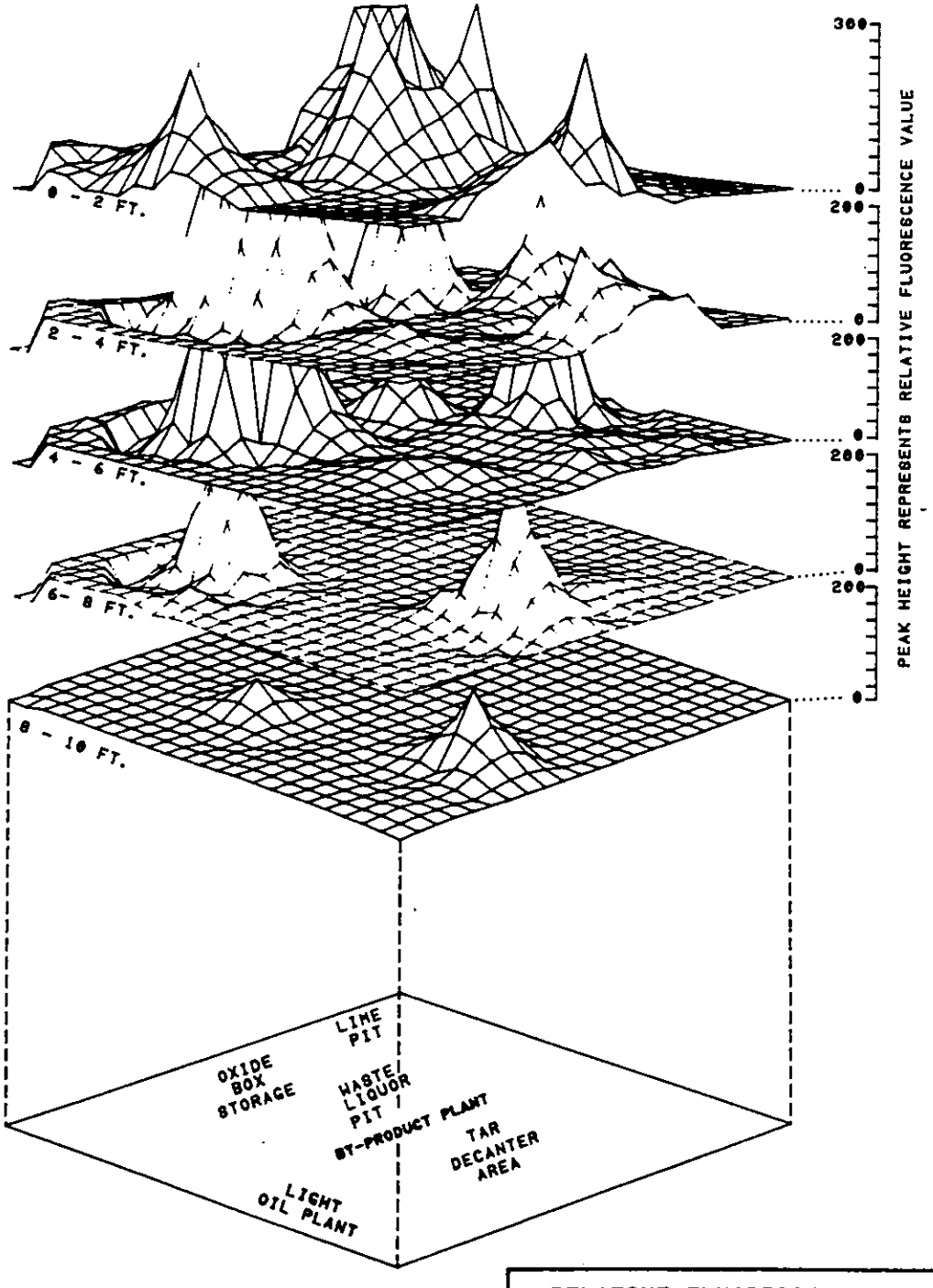
EXECUTIVE SUMMARY

Woodward-Clyde Consultants conducted a detailed soil sampling and analytical program at the Philadelphia Coke Company site in Philadelphia, Pennsylvania. The site is an abandoned coke manufacturing facility currently undergoing closure in compliance with the Pennsylvania Department of Environmental Resources Hazardous Waste Regulations. The purpose of this current study is to delineate the extent of soil contamination in the central portion of the plant and further refine areas that had previously been identified as having contamination by coal tar compounds.

WCC's site investigations for this project entailed soil borings performed on a detailed grid pattern throughout the by-product area and surrounding portions of the plant. This area of study encompassed several waste management units: tar decanter lagoon, oxide box storage, lime pit, and waste liquor pit. The borings were performed in the fill zone and the top few feet of the underlying silty clay confining unit.

Analytical work was performed in two stages for this investigation: 1) on-site fluorometric analyses of 343 samples provided detailed qualitative delineation of contamination, with rapid turn-around (approximately 24 hours) enabling feedback to the boring program as it progressed; and 2) laboratory analyses of selected samples for quantification of individual compounds and confirmation/calibration of the fluorometry. For samples where both fluorometric and laboratory analyses were performed, the data indicate a very good correlation (correlation coefficient = 0.85) between the two.

The fluorometric analyses provide a detailed, three-dimensional delineation of soil contamination, as depicted in Figure ES-1. These data clearly outline the former waste management units and associated residual contamination. Using a cleanup level of 100 parts per million of total PAHs, equivalent to a fluorometric level of 25 RFU, the total quantities of soil above this site-specific background level is estimated at approximately 22,000 cubic yards. Of this volume, approximately 3000 cubic yards consist of residual tar materials that WCC recommends for off-site disposal and approximately 19,000 yards of moderately contaminated soils amendable to on-site biological degradation treatment. A third volume, not quantified at this time, consists of debris and rubble likely to be encountered in the subsurface.



RELATIVE FLUORESCENCE IN SOILS

PHILADELPHIA COKE COMPANY

PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS

Consulting Engineers, Geologists and Environmental Scientists

Drawn by: PRJ	Scale in Feet: NTS	Date: 8-11-88
Checked by: RGG		Job No: 87C2939-4

FIGURE ES-1

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APPENDICES

1.0 INTRODUCTION

Philadelphia Coke Company, Inc. operated a coke production facility between January 1929 and March 1982. Following the plant's permanent closing in 1982 several waste management facilities located across the site were cleaned out and removed as part of the formal site closure in compliance with state and federal regulations.

Previous investigations by Woodward-Clyde Consultants (WCC) over a two year period have included the installation of 13 monitoring wells, drilling of 9 soil borings, and analyses of soil and groundwater samples. Data from these previous studies have been used to evaluated hydrogeology and contaminant distribution. Results of these investigations have identified the tar decanter area as an area of the plant where soil contamination exists. Other former waste management units at the plant (e.g., the waste liquor pit, the lime pit, the oxide box area) are within the area of interest to this study. The contamination detected has largely been from coal tar related compounds.

As described in subsequent sections of this report, WCC has conducted a detailed exploratory boring program in the central portion of the site to delineate vertical and horizontal extent of contamination. The primary purpose of this investigation is to delineate areas of soil contamination and better estimate the volumes and locations of soils requiring remediation. This program has been limited to soils in the fill zone, consisting of the upper 4 to 10 feet below grade, where the vast majority of the contamination has been detected in the past. Below the fill zone is a silty clay confining bed of low permeability. A secondary purpose of this study is to validate the use of field fluorometry techniques to delineate the concentrations of PAHs in the soils at this site.

2.0 SITE INVESTIGATION

This section of the report details field activities performed to delineate the extent of soil contamination in the by-product plant portion of the site. Section 2.0 is divided into three subsections: Exploratory Soil Boring Program (2.1), Field Fluorometric Analysis (2.2), and Laboratory Analysis (2.3). All data are presented in and interpreted subsequent sections.

2.1 EXPLORATORY SOIL BORING PROGRAM

The Exploratory Soil Boring program was initiated in December 1987 to evaluate the vertical and lateral extent of soil contamination. Prior to start up of the boring program, a 550 by 550 foot grid system was marked off and surveyed in at the site to assist in rapid location of individual soil borings (Figure 2-1). All soil borings were performed using hollow-stem auger drilling techniques. Continuous soil samples were obtained by advancing split-spoon samplers ahead of the auger flights. Soils were classified geologically by the on-site WCC geologist supervising drilling activities. Detailed geologic logs of all soil borings are included in Appendix A. Headspace analyses were performed on all soil samples using an HNu photoionizing detector (11.2 ev probe). The headspace technique assists in field screening of soils for possible volatile organic contamination. Fluorometric analysis was also performed on all soil samples. As described in Section 2.2, fluorometry is used as a preliminary screening for polynuclear aromatic hydrocarbons (PAHs) in soil. The results of all field analyses are provided on the boring logs.

All drilling and sampling equipment were carefully decontaminated between borings to minimize the potential for cross-contamination. The decontamination procedure adhered to was as follows:

- alconox wash
- potable water rinse
- acetone rinse (optional)
- steam-cleaning

In addition to the decontamination procedures between borings, a set of five dedicated split-spoon samplers were used a each boring location to minimize cross-contamination between sample depth intervals.

The soil boring program was conducted in a phased approach. In the preliminary phase, 12 borings were advanced at evenly-spaced grid locations (Figure 2-2). Fluorometric analyses were conducted in a temporary field laboratory with approximately 24 hour turn-around of results. Results of field fluorometry were used to identify the need for additional soil borings in areas around the original 12 borings. After areas of soil contamination were identified in the preliminary soil boring phase, the secondary phase was used to delineate and define the extent of contamination within each area. Field fluorometry continued throughout the program, providing feedback to select subsequent boring locations. This continuously-iterative approach enabled refinement of the locations with relatively high and low contamination levels. Throughout the boring program, samples were also collected for laboratory analyses; approximately half of these samples were taken from the original 12 boreholes, with the remainder chosen from locations thought to be representative of the range of contamination levels.

A total of 67 soil borings were performed as part of the exploratory program (Figure 2-3). Most soil borings were advanced to a depth of 10 feet through the fill and into the top of the confining silty clay/clayey silt layer. Three of the soil borings were advanced to a depth of 16 feet, well into the confining layer.

2.2 FIELD FLUOROMETRIC ANALYSIS

As mentioned briefly in Section 2.1, fluorometric analysis was used in the field to evaluate the presence/absence of polynuclear aromatic hydrocarbons (PAH's, PNA's) in the soils. This section presents the theory (2.2.1) and operational procedure utilized (2.2.2).

2.2.1 FLUOROMETRIC MEASUREMENT OF POLYNUCLEAR AROMATIC HYDROCARBONS

Fluorometry is the measurement and use of fluorescence, which is defined as the instantaneous emission of light from a molecule or atom which has absorbed light. It is possible to detect PAH's in soil or water based on the principle that PAH's fluoresce

under ultraviolet light. Since different PAH's, and different mixtures of PAH's, fluoresce to different degrees, it is necessary to calibrate the fluorometric technique to the contaminants of a particular site.

A Turner Filter fluorometer (Model 111) was utilized in this investigation. A description of the filter fluorometer's operation is described below:

- o An ultraviolet light source creates a light path;
- o the light path passes through a primary optical filter which emits a specific wavelength of light;
- o the light is transmitted through the sample;
- o the sample fluoresces at a specific wavelength; and
- o the light passes through a secondary optical filter; and is measured in the photomultiplier.

In general, fluorometric techniques can give an accurate quantification of the concentration of a specific molecule or atom. However, when several contaminants are present such as with the family of PAHs commonly present in coal tars, the procedure is considered a screening mechanism rather than an actual analysis. Assuming a fairly consistent mix of PAH's in each sample, as substantiated by the laboratory analyses discussed in Section 2.3, a direct comparison between samples can be made. When used in conjunction with laboratory analysis, fluorometry becomes a valuable tool in quantification of relative total PAH contamination.

2.2.2 FIELD FLUOROMETRY OPERATIONAL PROCEDURES

All soil samples obtained during the exploratory boring program were analyzed in the field utilizing fluorometric techniques. In order to ensure acquisition of accurate and reproducible results, the following procedures were adhered to during fluorometric analysis.

SAMPLE PREPARATION: A representative portion of soil from each soil sample is placed in a clearly labeled aluminum weighing disk. The soil sample is then

dried overnight in a vacuum dessiccation chamber. When dried, 5 grams of dry soil are weighed out and added to a labeled, 20 ml, borosilicate glass vial.

SAMPLE EXTRACTION: In order to perform fluorometric analysis on soils, a solvent extraction is required. Ten milliliters of HPLC Grade hexane is added to the dried five gram soil sample. The sample is then agitated for 30 seconds. After allowing sediment to settle, the extraction is complete.

EXTRACT DILUTION: Because part-per-million levels of total PAH's are present in the soil and the fluorometer measures in the parts-per-billion range, a 1:1,000 scale dilution of the extract is necessary prior to analysis. For some of the highly fluorescent samples, a 1:10,000 scale dilution is necessary.

EXTRACT ANALYSIS: Following extraction and dilution, 5 ml of the hexane extract is added to a borosilicate test tube. The test tube is placed in the fluorometer sample holder. The machine is activated and a value of fluorescence is read directly off the fluorometer dial (0-100). There are four levels of instrument sensitivity 1X, 3X, 10X, and 30X; 1X being the least sensitive setting. Depending on the sensitivity setting selected, a value of fluorescence is then calculated. Since the correlation between fluorescence and total PAHs is site-specific, the fluorescence readings are considered to be relative concentrations. Hence the fluorescence levels measured in this procedure are referred to in "relative fluorescence units" (RFU). The instrument's detection limit, using the above procedures, is approximately 0.3 RFU.

During the field investigation, fluorometric analysis was performed on 343 samples. For sample tracking purposes, a laboratory log book was maintained. The log book included information on assigned lab identification numbers and corresponding boring number/sample depth information, dates of sample preparation, extraction, and analysis, and results. A summary of this information is included in Appendix B.

2.3 LABORATORY ANALYSIS

To supplement soil fluorometry results, 23 soil samples, including a baseline sample, from the data set were selected for laboratory analysis. The soil samples were analyzed for priority pollutant base/neutral extractables in accordance with USEPA Method 625 (FR Volume 49, October 26, 1984). Of the 46 base/neutral compounds which are listed in Method 625, 16 are PAH compounds (Table 2-1). Each sample was also analyzed for semi-quantitative identification of a maximum of 15 peaks of non-priority pollutants in the base/neutral fraction.

To evaluate decontamination procedures, a field or rinsate blank was taken from one of the split spoon samplers. The rinsate sample was analyzed for the base/neutral compounds described above.

3.0 PRESENTATION AND DISCUSSION OF RESULTS

3.1 RELATIVE FLUORESCENCE DATA

Relative fluorescence data were collected for 343 samples at 67 soil boring locations. A summary of the raw data is included in Appendix B. In order to best present the large volume of fluorometric data, a series of contour maps have been prepared illustrating the magnitude and distribution of fluorescence values in soil samples across the site (Figures 3-1 through 3-5). The five fluorescence contour maps correspond to specific soil depth intervals sampled during the exploratory boring program.

Figure 3-1 illustrates the distribution of relative soil fluorescence across the site from zero to two feet below the ground surface. Four areas of high fluorescence are delineated: the tar decanters area, lime pit area, just west of the by-product building, and west of the oxide storage boxes.

At a depth of two to four feet below the ground surface, again, four areas are delineated possessing high values of fluorescence (Figure 3-2). These areas include:

the tar decanters area, northwest of the by-products building, west of the waste liquor pit, and northwest of the oxide box storage area. The area of high fluorescence detected in the vicinity of the lime pit at the zero to two foot depth interval is no longer present at the two to four foot depth interval.

Figure 3-3 depicts relative fluorescence at the four to six foot depth interval. Features of high fluorescence visible in the previous two depth intervals persist through the four to six foot depth interval northwest of the by-products building location and northwest of the oxide box storage.

Fluorescence values decrease significantly in the area just west of the waste liquor pit at the four to six foot depth. Fluorescence values also are lower in the tar decanter area at the four to six foot depth.

The distribution of soils with high fluorescence decreases significantly at the six to eight foot depth interval (Figure 3-4). Only two small areas are delineated with elevated readings: the tar decanter area, and northwest of the oxide storage boxes. All other previously identified areas at shallower depths do not persist with depth.

At a depth of eight to ten feet elevated values of relative fluorescence are restricted to the immediate vicinity of the tar decanter area (Figure 3-5).

3.2 PAH ANALYTICAL DATA

Results of the base/neutral extractable analyses (Method 625) are included in Table 3-1. A total of 20 compounds were detected in the base/neutral fraction, 16 of which are PAH compounds. Analytical results show that the ratios of PAH compounds in the 23 samples tested are fairly consistent. The samples consisted of predominantly four-ring and lighter PAH's with lesser amount of five- and six-ring compounds. Total PAH's ranged from 4500 ppm in B-5 to less than 0.33 ppm in G-3.

3.3 ANALYTICAL LABORATORY AND FLUORESCENCE DATA CORRELATION

As previously stated, both fluorometric and analytical laboratory soil data were collected to determine the correlation between the two techniques for measuring contaminated soils at the site. In theory, fluorometric methods are capable of measuring part per million concentrations of PAH's in soil (i.e., a direct relationship would exist between fluorescence and total PAH concentration). However, a number of factors encountered in the field can affect this ideal relationship and detract from the correlation in the data. One type of interference possibly encountered is the presence of fluorescent compounds other than PAH's; namely, the presence of naturally-occurring metals in the soil. Another type of interference affecting the correlation could be a result of heterogeneous contaminant distribution in soil samples and resultant problems associated with selecting a representative sample for both laboratory and fluorometric analyses. A third type of interference could be a result of the extraction method employed in the fluorometric procedure. High concentrations of PAH's in the soil samples could exceed the saturation limit of the hexane extract, thereby resulting in lower fluorescence values relative to total PAHs from the analytical data.

In order to take these potential interferences into account and formulate a fluorometric/analytical data correlation, sufficient samples must be analyzed for both fluorescence and quantifiable PAH laboratory analysis. As a result, 23 soil samples were identified for the dual analysis. A plot of fluorescence versus total PAH's (ppm) is included (Figure 3-6). The semi-log plot suggests a relationship between the two parameters. A linear regression performed to quantify the degree of this relationship, with a calculated correlation coefficient of 0.85, indicates a very good correlation of the data. The best fit curve is included on Figure 3-6. The strength of this correlation indicates that the interferences, discussed above are not significant at this site.

4.0 SOIL CONTAMINATION ASSESSMENT

This section of the report describes the contaminated soils (as delineated above) in terms of the site remediation. The remedial program consists of three main

elements: 1) excavation and off-site disposal of highly contaminated materials; 2) excavation and on-site treatment via biodegradation techniques of moderately contaminated soils; and 3) allowing soils at or near background levels to remain in place. (Note that the details of the bioremediation system are more fully described in separate documents prepared by WCC.)

4.1 DELINEATION OF BACKGROUND CONDITIONS

The fluorescence data discussed in previous sections provides a means of delineating the extent of the contaminated soils for the purposes of site remediation. Two primary advantages are achieved by using the fluorescence data:

1. The fluorometric analyses of 343 continuous samples from the 67 borings provides a detailed, three-dimensional quantification of residual PAH contamination; and

2. Fluorometry can be used at the time of soil excavation for on-site control of the limits of excavation, enabling analytical feedback to the excavation process.

The use of fluorometry is justified by the good correlation between fluorometric analyses and laboratory results. Based on this correlation, a total PAH concentration of 100 ppm is equivalent to a fluorescence value of 25 RFU. Note that, independent of this study, WCC has proposed the use of 100 ppm as a cleanup criteria (Appendix C). Using 25 RFU as equivalent to 100 ppm provides a delineation of the amount of contaminated soils requiring remediation. The 25 RFU contour level is shown on Figures 3-1 through 3-6. Note that the waste management units are neatly defined by the 50 RFU contours; the 25 RFU contours provide an extra measure of conservatism in extending the required excavation to include soils outside of the waste units. Thus the background soil concentrations are defined, at 25 RFU, as representative of conditions in the inter-unit areas.

4.2 SOIL CHARACTERIZATION

As described in the previous section, a value of 25 RFU has been determined to represent background in soils surrounding the waste management units. Figures 3-1 through 3-6 depict the 25 RFU contours at the various soil depth intervals. The total volume of material above background levels (within the 25 RFU contours) is estimated at approximately 22,000 cubic yards. As one might expect, the composition of materials in the fill zone are not homogeneous, but rather a mixture, including soils, soils with residual contamination, separable coal tar waste, and debris. As the composition of the contaminated materials is variable, a combination of remedial techniques (i.e. biodegradation and landfilling) will be necessary to address each component. The following text describes specific components of the contaminated materials and discusses the best suited remedial alternative.

4.2.1 NON-SOIL DEBRIS

The category of non-soil debris includes large concrete fragments, metal, underground pipe and other items below ground previously associated with the coking process. These debris materials, once contaminated are not easily cleaned and are not amenable to biodegradation. As a result, the alternative is excavation and off-site landfilling. This type debris is scattered throughout the contaminated zones. It is not possible at this time to estimate the volume of non-soil debris to be excavated; however, it certainly comprises only a small portion of all contaminated materials.

4.2.2 SEPARABLE COAL TAR WASTE

A second type of non-soil material found within the contaminated zones is separable coal tar waste. This material occurs in small pockets (ranging from a few inches to several feet) in the subsurface. The material is a hard tar and is easily removed from the surrounding soils.

Fluorometry

The separable coal tar is not suited to biodegradation because of its hardness and inability to be homogenized with the surrounding soils for treatment. As such, the most cost-effective alternative is off-site landfilling.

Separable coal tar waste was identified at a few isolated locations. At 0 to 2 feet below the ground surface a hard tar layer was encountered in borings CC-5, B-7, B-8, B-9, and A-9. The tar layer ranged in thickness from one to twelve inches. At two to four feet below the ground surface, tar was encountered in borings A-4, A-5, B-4, and B-5. Tar was also encountered at four to six feet below the ground surface at B-5. Tar thicknesses in this area ranged from one to nine inches. Figure 4-1 illustrates the areas suspected to contain separable coal tar wastes. The total volume of this material to be landfill is estimated to be roughly 3000 cubic yards.

4.2.3 SOILS WITH RESIDUAL CONTAMINATION

The remaining component makes up the majority of materials within the contaminated zone. This category includes soils with coal-tar contamination disseminated throughout the soil matrix. These soils are characterized by a PAH content of typically less than several hundred parts-per-million. The relatively even distribution of contamination and moderate levels of PAH's encountered are ideal for the application of biodegradation remedial techniques.

The volume of soils amenable to biodegradation is estimated to be 19,000 cubic yards. This volume represents the total volume of material determined to be above background minus the volume of separable coal tar waste to be landfilled. The calculation does not take into account the uncalculated volume of non-soil debris also to be landfilled. Figure 4-2 illustrates the areas and depths of soils to be bioremediated.

5.0 CONCLUSIONS

1. When used in conjunction with laboratory analysis, fluorometry is a valuable tool in the quantification of polynuclear aromatic hydrocarbons in soils. Despite the

Tables

minor interferences and varibilities, the data from this study demonstrate that a good correlation exists between fluorescence and total PAH's. This correlation has enabled a detailed delineation of the three-dimensional extent of soil contamination at the site; it will also enable the use of fluorometric techniques for field verification of the limits of excavation during remediation work.

2. Independent of this study, a value of 100 ppm total PAH's has been denoted as site background (letter to PADER dated January 28, 1988). This value is equivalent to 25 RFU. The 50 RFU contour level clearly defines contaminated zones surrounding the waste management units. The background contour of (25 RFU) adds an additional measure of conservatism by extending the required excavation to include soils beyond the waste management units.

3. The total volume of materials within the zone above background is estimated at approximately 22,000 cubic yards. These contaminated materials consist of three components: non-soil debris, separable coal-tar waste, and soils with residual contamination. The volume of non-soil debris cannot be estimated at this time. Total separable coal-tar wastes are estimated at 3,000 cubic yards. Both the non-soil debris and separable coal-tar wastes are recommended for landfilling. The remaining 19,000 cubic yards of contaminated soils are amenable to biotreatment remedial techniques.

TABLE 3 1

ANALYTICAL DATA (PPM)

PHILADELPHIA COKE COMPANY

PHILADELPHIA, PENNSYLVANIA

Parameters	AA-3 (4-6)	B 2 (6-8)	B-3 (4-6)	B-5 (4-6)	B-6 (4-6)	B-8 (4-6)	B-11 (6-8)	C-10 (4-6)	D-9 (4-6)	D 11 (4-6)	D 12 (2-4)
Naphthalene	0.600	18.000	2.500	820.000	1.600	6.800	<0.330	<0.330	3.900	4.000	1.400
Acenapthylene	0.880	5.300	0.350	39.000	0.360	0.340	<0.330	<0.330	4.700	0.790	<0.330
2,6 dinitrotoluene	<0.330	<8.300	<0.330	<33.000	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Acenapthene	0.170	<8.300	0.170	<33.000	0.540	<0.330	0.150	<0.330	0.840	<0.330	<0.330
2,4-dinitrotoluene	<0.330	<8.300	<0.330	<33.000	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Fluorene	2.900	13.000	1.600	190.000	1.100	1.900	<0.330	<0.330	3.400	0.880	<0.330
Phenanthrene	16.000	100.000	5.900	720.000	3.300	12.000	<0.330	<0.330	6.500	3.400	0.550
Anthracene	2.900	26.000	1.600	230.000	1.600	2.900	<0.330	<0.330	2.100	0.690	0.069
Di-n-butylphthalate	<0.330	<8.300	<0.330	<33.000	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Fluoranthene	13.000	140.000	4.300	660.000	2.500	11.000	0.240	0.340	3.000	2.800	0.490
Pyrene	9.000	89.000	2.800	360.000	1.800	7.600	0.210	0.300	2.500	3.400	0.450
Benzo(a)Anthracene	6.000	44.000	1.600	220.000	1.400	4.300	<0.330	<0.330	1.100	1.400	0.270
Bis(2 ethylhexyl)Phthalate	<0.330	<8.300	<0.330	<33.000	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Chrysene	5.400	36.000	1.600	180.000	1.400	4.300	0.180	0.150	1.100	1.700	0.300
Benzo(b)Fluoranthene	9.800	63.000	2.900	320.000	2.500	8.200	0.230	0.170	1.400	2.500	0.480
Benzo(k)Fluoranthene	9.800	63.000	2.900	320.000	2.500	8.200	0.230	0.170	1.400	2.500	0.480
Benzo(a)Pyrene	3.900	34.000	1.300	190.000	1.400	3.900	<0.330	<0.330	0.800	1.200	0.260
Indeno(1,2,3-c,d)Pyrene	2.100	15.000	0.850	110.000	0.900	1.900	<0.330	<0.330	0.360	0.600	<0.330
Dibenzo(a,h)Anthracene	0.870	4.100	0.300	42.000	0.300	0.870	<0.330	<0.330	0.180	0.260	<0.330
Benzo(g,h,i)Perylene	2.200	11.000	0.950	84.000	0.930	2.100	<0.330	<0.330	0.400	0.560	<0.330
Total Base/Neutrals	85.52	661.4	31.62	4485	24.13	76.31	1.24	1.13	33.68	26.68	4.749

TABLE 2-1

POLYNUCLEAR AROMATIC HYDROCARBONS
USEPA METHOD 625 SUBSET
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Naphthalene	Benzo (a) Anthracene
Acenaphthalyene	Chrysene
Acenaphthene	Benzo (b) Fluoranthene
Fluorene	Benzo (k) Fluoranthene
Phenanthrene	Benzo (a) Pyrene
Anthracene	Indeno (1,2,3 - C, d) Pyrene
Fluoranthene	Dibanzo (A, H) Anthracene
Pyrene	Benzo (g, h, i) Perylene

5120 Butler Pike
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215-825-3000
Fax 215-834-0234

Woodward-Clyde Consultants

February 24, 1989
87C2839A-6

Mr. Robert Zang
Waste Management Specialist
Pennsylvania Department of Environmental Resources
1875 New Hope Street
Norristown, PA 19401

Re: Confirmatory Analytical Data and
Backfilling Operations at
Philadelphia Coke Company

Dear Mr. Zang:

In accordance with our discussions during your inspection at the Philadelphia Coke Plant site on Wednesday, January 18, 1989, this letter transmits analytical data pertaining to confirmatory samples that were collected in the area of the former coking operations. As we discussed during your inspection, Philadelphia Coke Company intends to complete the backfilling with the imported fill currently being placed on the site.

The enclosed figure illustrates areas represented by composite soil samples that were collected from the bottom of completed excavations during the RCRA cleanup operations. Analytical data for each area composite sample are summarized in the attached table. These data indicated that the cleanup criterion of 50 ppm of the suspected carcinogenic PAH compounds (CPAH's) has been achieved. This criterion was set forth in our May 20, 1988 letter to Larry Lunsk.

The analyses indicate that the materials are non-hazardous based upon US EPA criteria for the EP Toxic inorganics. Similarly, the analyses indicated that the samples were non-reactive, as defined by RCRA requirements. In addition, no US EPA priority pollutant acid extractable compounds were measured above detectable levels.

Based upon these analytical results which demonstrate that the cleanup criterion has been achieved, the Department's authorization is requested to complete backfilling operations in the areas indicated on the attached map. Please contact us with any questions pertaining to this matter as Philadelphia Coke Company would like to complete this backfilling operation as soon as possible.

Very truly yours,

WOODWARD-CLYDE CONSULTANTS

James V. Husted, P. E.
Project Manager

JVH/sal/J5

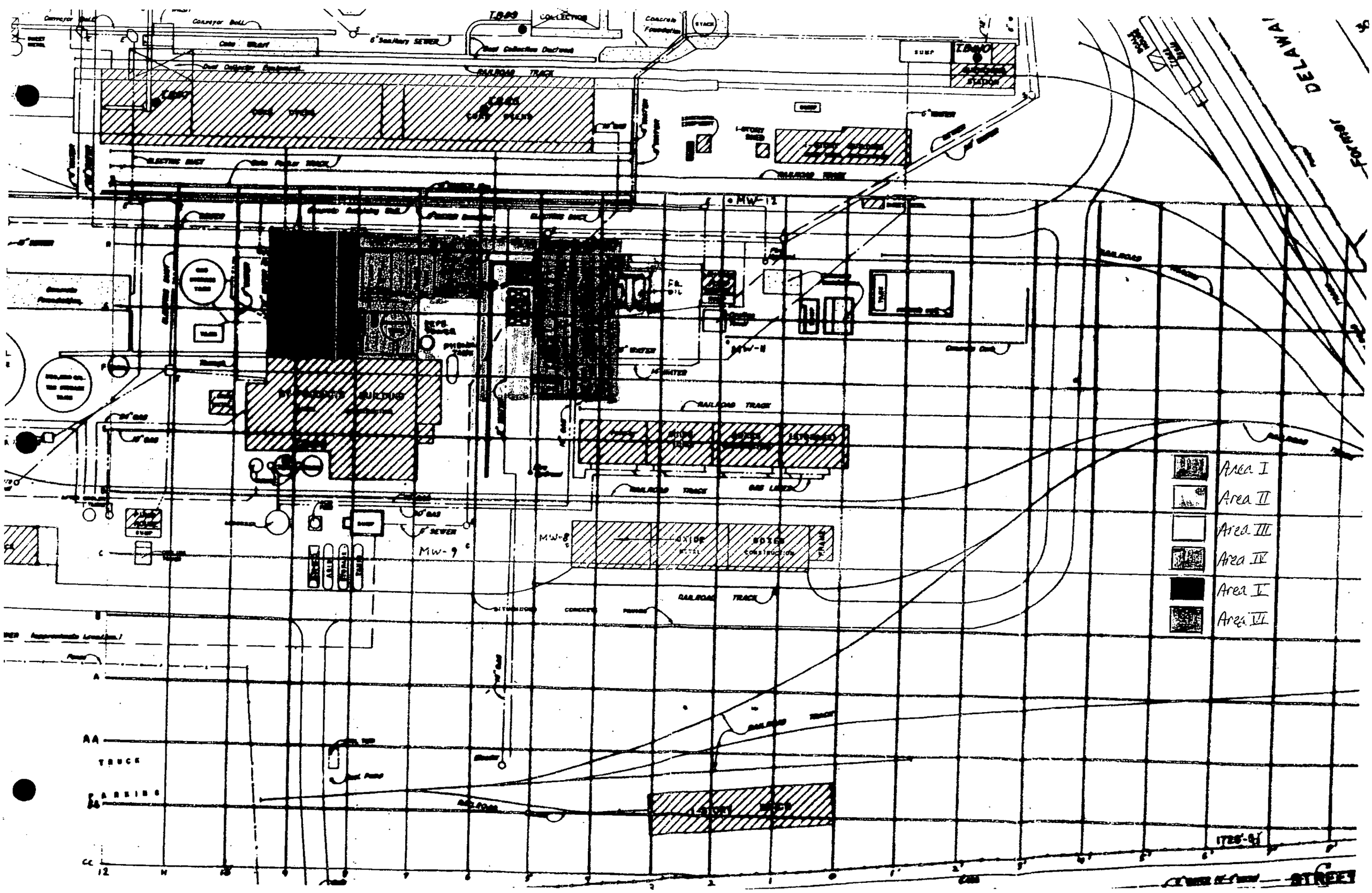
cc: Mr. J. McKenna - EG&F

PHILADELPHIA COKE PLANT SITE
CONFIRMATORY SAMPLES

	SAMPLE AREA					
	I	II	III	IV	V	VI
SAMPLE DEPTH FROM ORIGINAL GRADE (ft)	8-17	15-16	14	8-12	13	12-14
BASE NEUTRAL EXTRACTABLES (mg/kg)						
Acenaphthene	1.27	ND	ND	ND	0.50	ND
Acenaphthylene	ND	ND	ND	ND	0.47	ND
Anthracene	0.70	ND	ND	ND	1.50	ND
* Benzo (a) anthracene	1.03	ND	0.60	0.60	2.23	0.47
* Benzo (a) pyrene	0.90	ND	0.53	0.47	1.73	0.57
* Benzo (b) fluoranthene	1.23	ND	0.77	0.63	2.73	0.77
Benzo (g,h,i) perylene	0.57	ND	ND	ND	1.07	ND
Benzo (k) fluoranthene	***	ND	***	***	***	***
* Chrysene	1.37	ND	1.13	0.73	2.20	0.80
* Dibenzo (a,h) anthracene	ND	ND	ND	ND	ND	ND
Fluoranthene	1.53	ND	0.97	0.83	10.0	0.47
Fluorene	1.00	ND	ND	ND	2.57	ND
* Indeno (1,2,3-c,d) pyrene	0.47	ND	ND	ND	0.97	ND
Naphthalene	1.53	ND	0.50	ND	ND	ND
Phenanthrene	2.67	ND	0.53	0.77	11.7	0.77
Pyrene	2.33	ND	1.13	1.33	4.00	1.17
TOTAL TPAHs	16.60	0.00	6.16	5.36	41.7	5.02
TOTAL CPAHs	5.00	0.00	3.03	2.43	9.9	2.61
MOISTURE (% by weight)	32.1	40.5	32.6	36.0	25.8	31.1
EPTOX LEACHATE (mg/l)						
Arsenic	ND	0.3	0.4	0.3	0.2	0.2
Barium	0.007	ND	0.006	ND	ND	ND
Cadmium	ND	ND	0.05	ND	ND	ND
Chromium	ND	ND	ND	ND	ND	ND
Lead	ND	ND	ND	ND	ND	ND
Mercury	ND	ND	ND	ND	ND	ND
Selenium	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND
REACTIVITY	NO	NO	NO	NO	NO	NO
ACID EXTRACTABLES (mg/kg)	ND	ND	ND	ND	ND	ND

* = THESE COMPOUNDS ARE KNOWN ANIMAL CARCINOGENS; SOME ARE SUSPECTED OR SUGGESTED HUMAN CARCINOGENS
ND = CONCENTRATION IS BELOW THE DETECTION LIMIT FOR THIS COMPOUND
*** = THIS COMPOUND COULD NOT BE DISTINGUISHED FROM BENZO(B)FLUORANTHENE IN ANALYSIS; REPORTED VALUES ARE THE COMBINED CONCENTRATIONS
NO = CYANIDE AND SULFATE CONCENTRATIONS ARE BELOW THOSE WHICH ARE CONSIDERED REACTIVE

All 4 are (ww residential


MW-12
MW-11
MW-9
MW-8
RAILROAD TRACK
Area I
Area II
Area III
Area IV
Area V
Area VI

5120 Butler Pike
Plymouth Meeting
Pennsylvania 19462
215-825-3000
Fax 215-834-0234

Woodward-Clyde Consultants

September 27, 1989
87C2839A-6

Pennsylvania Department of Environmental Resources
Bureau of Waste Management
1875 New Hope Street
Norristown, PA 19401

Attention: Mr. Lawrence H. Lunsk
Waste Management Facility Supervisor

Re: Closure Certification and
Site Restoration Work Plan for
Philadelphia Coke Company

Gentlemen:

The following documents were presented to the Department on Tuesday, September 26, 1989:

- Four copies of the three-volume September 1989 Engineer's and Owner's Certification of Closure for RCRA Waste Management Units at the Philadelphia Coke Company Site, and
- Four copies of the September 1989 Draft Site Restoration Work Plan for Philadelphia Coke Company.

The RCRA Closure Certification Report provides documentation that the RCRA Waste Management Units at the Philadelphia Coke Company site have undergone clean closure in accordance with the PADER-approved closure plan. This certification report also provides documentation that all known decanter tank tar sludge (USEPA Waste I.D. No. K087) has been removed from the Philadelphia Coke Company Site and disposed in accordance with current federal and state regulations. Stockpiled materials remaining on the Philadelphia Coke Company site, including soils, paving materials and coke breeze are non-hazardous and will be managed in accordance with a Site Restoration Plan that is being developed.

During our meeting on September 26, 1989, the Draft Site Restoration Work Plan was presented and discussed. A concept was advanced to utilize these stock-piled materials to form a soil cement cap over the former main plant processing area.

Department representatives suggested exploring possible use of these materials for intermediate cover at one or more southeastern Pennsylvania landfills. Various landfills will be contacted in order to evaluate their interest in utilizing these

materials for intermediate cover. It is WCC's understanding from our discussions that a major landfill permit modification would be necessary in order for these facilities to utilize this material.

Also proposed in the Site Restoration Work Plan are methods for remediating the former fuel oil tank farm area. The proposed methods combine limited excavation, landfilling and/or land treatment, and in situ bioremediation. It is WCC's understanding that the design and permitting of these proposed methods will require coordination with the Bureau of Water Quality Management (WQM) and we look forward to discussing the concept with WQM representatives.

In the coming weeks we will be incorporating the Department's suggestions into the Site Restoration Work Plan and will submit a modified, more comprehensive work plan in the near future. In the meantime, should you have any questions pertaining to either the RCRA Certification of Closure Documents or the Draft Site Restoration Work Plan, please contact us.

Very truly yours,

WOODWARD-CLYDE CONSULTANTS

James V. Husted, P. E.
Project Manager

JVH/sal/J5

cc: Mr. J. McKenna - Eastern Enterprises
P. Jacobson - WCC

DRAFT SITE RESTORATION WORK PLAN
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Prepared for:

PHILADELPHIA COKE COMPANY

Philadelphia, Pennsylvania

Submitted by:

WOODWARD-CLYDE CONSULTANTS

Plymouth Meeting, Pennsylvania

September, 1989

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1.0 INTRODUCTION

1.1 OBJECTIVES

This Work Plan describes methods the Philadelphia Coke Company (PCC) intends to use to restore the PCC Site to a condition mutually acceptable to both PCC and the Pennsylvania Department of Environmental Resources (PADER), from an environmental perspective. These methods include:

- Restoring the former main plant processing area to a condition that will allow future beneficial use; and

- Biotreat soils in the former fuel oil tank farm area to mitigate oil contamination there.

1.2 SITE CHARACTERISTICS

As depicted on Figure 1, the Site is located in a residential/industrial area of Philadelphia adjacent to the Delaware River and occupies approximately 65 acres. A coke production facility was operated on this Site from January 1929 until its final closing in May 1982. Most structures associated with the former coking operations have been demolished to ground level.

The former main plant processing area encompasses approximately 4 acres and is shown on Figures 2 and 3. The following site features, important to restoration, are noted:

- The area (and essentially the entire site) is underlain by a silty clay layer, approximately 10 feet thick, that serves as an aquiclude;

- A relatively permeable (compared to the silty clay aquiclude) fill layer from 8 to 12 feet thick overlies the aquiclude;

- A shallow, thin saturated zone exists in the relatively permeable fill layer that overlies the aquiclude;
- Numerous concrete foundations, all of which are supported on friction pilings in the silty clay aquiclude, exist in the former main plant process area;
- Water quality in the shallow saturated fill zone has been impacted by the former plant processing operations;
- No uncontrolled migration appears to be occurring.

Since 1981 the site has undergone various stages of RCRA closure. In 1988, portions of the Site in and around the former main plant process area were excavated during closure of selected RCRA units. With the permission of the PADER, most of these excavations were backfilled with imported clean fill in 1989. Certification of closure for the RCRA units has been submitted to the PADER (WCC, September 1989).

1.3 GENERAL DESCRIPTION OF RESTORATION ACTIVITIES

1.3.1 RESTORATION OF FORMER MAIN PLANT PROCESS AREA

Restoration of the former main plant processing area will entail additional backfilling with clean imported fill and the placement of a soil/cement and bituminous pavement cap. Stockpiled soils on site will be used to form the soil cement subbase and for the bituminous pavement cap. Capping the former main plant process area in this manner provides the following advantages:

- Utilizes the slightly contaminated stockpiled soil and fill materials for a beneficial soil cement cap subbase, rather than disposing of them as wastes;
- Limits rainfall infiltration into the former main plant process area fill materials;

- Isolates the low levels of PAH compounds in the fill materials from the environment.

1.3.2 REMEDIATION OF THE FORMER FUEL OIL TANK FARM

The former fuel oil tank farm area is located near the Delaware River as shown on Figure 4. This area, which encompasses approximately 2.5 acres was used to blend No. 2 and No. 6 fuel oils for off-site use.

The former fuel oil blending area, contained two diked tank farms and a pump house. The tanks have been removed, the earthen and steel dikes were levelled and removed, and the pump house was demolished to ground level. The oil tank farm was served by a railroad siding and a truck loading station. The area is bounded by railroad right-of-ways on two sides and by a service road on the northern end.

Remediation of the former fuel oil tank farm area will include:

- Excavation and removal of visibly contaminated soil and fill materials for disposal at an approved landfill;

- In situ biotreatment of contaminated soil and fill materials remaining on site.

2.0 SCOPE OF WORK

2.1 TASK 1 - PRELIMINARY INVESTIGATIONS

2.1.1 FORMER MAIN PLANT PROCESS AREA

Remediation of the former main plant process area involves placement of an impermeable cap over the area indicated on Figure 5. The cap will incorporate layers of soil cement over a prepared subbase covered with a final layer of bituminous paving.

Soil and fill materials excavated and stockpiled as a result of 1988 closure activities will be used as raw materials for preparation of soil cement. These materials include the following:

- Slightly contaminated soil and fill materials presently stored in a covered pile over the former oxide box foundations;
- Screened macadam presently stored in a covered pile near Orthodox Street; and
- Coke breeze presently stored in an uncovered pile near Orthodox Street.

Preliminary tests with site materials have indicated that the soil cement process is applicable for use in the capping process. More detailed testing is required to determine the optimum application of soil-cement technology. Additional testing will involve the following:

- Wet-dry and freeze-thaw cycle tests (ASTM D 559 and ASTM D 560) to determine optimum cement content; and
- TCLP tests on both untreated soil and on proposed soil cement mixtures to verify the effectiveness of the soil cement matrix for immobilization of residual contaminants.

2.1.2 INVESTIGATIONS OF THE FORMER FUEL OIL TANK FARM AREA

On August 28, 1989, twelve test pits were excavated in the former fuel oil tank farm area in order to evaluate the extent of oil contamination. Observations were made visually and composite soil samples from each test pit were analyzed for petroleum hydrocarbons using a Horiba Analyzer. Figure 6 indicates the locations of the test pits and Table 1 lists the fuel oil concentrations measured.

Two composite samples of the surface soils, one intended to represent the typical surface in the former tank farm area, and one biased toward the maximum concentration (based on observable surface oil stains), were analyzed for total petroleum hydrocarbons (TPHs) by Lancaster Laboratories, Inc. of Lancaster, Pennsylvania, (see Table 2). Based on these preliminary investigations, the following describes the extent of soil contamination and nature of the soil materials.

- Approximately ten percent of the area contains surface contamination of up to 22 percent TPHs by weight.

- The two formerly diked areas are contaminated down to the top of the silty clay aquitard (5-6 foot depth) with up to two percent TPHs by weight.

- The contaminated fill materials consist of predominantly sand and gravel, with some silt and rubble.

- A shallow, thin saturated zone approximately 2 to 3 feet thick is present in the fill. In some areas, a thin layer of floating product oil is present at the top of the saturated zone.

- The volume of fuel oil-contaminated soil is estimated to be 14,000 cubic yards.

2.2 TASK 2 - REMEDIATION OF FORMER MAIN PLANT PROCESS AREA

Components for remediation of the former main plant process area are:

- Placement of additional clean imported fill to provide prepared subgrade for the soil cement cap;

- Placement of soil cement over the prepared subgrade, using the on-site stockpiled materials;

- o Installation of a bituminous pavement layer over the soil cement cap; and
- o Limitations to future uses of the capped area.

The former process area is presently being backfilled with clean fill from off-site sources. This backfilling task will continue until sufficient fill is placed to cover previous excavations and to provide a subbase with the required slope for cap installation. Upon final placement of all fill, the entire process area will be finish graded and compacted to provide the required subbase for the cap.

Moderately contaminated soil and fill materials, coke breeze, and screened macadam presently staged on site will be mixed with cement in proportions as determined by appropriate tests. The soil cement mixture will be placed in lifts over the prepared subbase. The finished soil cement cap will have an estimated thickness of approximately 2 to 3 feet over the entire capped area.

A bituminous pavement layer will be placed over the soil cement layer. The bituminous pavement layer will serve as a protective layer for the soil cement cap while preventing direct contact with the soil cement. The bituminous pavement layer will be approximately 2 inches thick over the entire soil cement cap.

Use restrictions will be required on the capped process area to prevent damage to the cap. These restrictions will be included with the property deed.

2.3 TASK 3 - REMEDIATION OF THE FORMER FUEL OIL TANK FARM AREA

Remediation of the former fuel oil tank farm area will address the following:

- o A small volume of highly contaminated surface soil;
- o Scrap metal and free product in the foundation of the pump house;

- Control of the shallow, saturated zone in the fill and floating free product in some areas;

- A large volume of slightly contaminated soils.

The remediation will be accomplished by a combination of excavation, off-site disposal, and in situ biotreatment. The use of in situ biotreatment for fuel oil-contaminated soils is a well-established technology and is preferable to landfilling because biotreatment utilizes natural microbial action to destroy organic contaminants while also being more cost effective than landfilling alone. Soils which are too highly contaminated to be biotreated will be excavated and removed to an approved landfill.

The remediation will be accomplished with minimal intrusive work and site disturbance, in three phases, as described below.

2.3.1 EXCAVATION PHASE

- Visibly contaminated surface soils will be excavated and disposed of at an approved landfill. The estimated volume of soil to be landfilled is 400 cubic yards.

- The underground piping for the water and air systems for in situ biotreatment will be installed in parallel trenches. The trenches will be excavated just into the underlying silty clay layer and perforated pipes for both water and air systems will be encased in gravel at the bottom of these trenches. The remainder of each trench will be backfilled with the displaced soils from each trench excavation. Pumps and piping to the surface will also be installed.

- Water and free product will be pumped out of the pump house foundation and scrap metal will be removed. The contaminated water will be treated to remove free product and then recycled in the biotreatment phase. The scrap metal will be removed from the site by a scrap metal dealer.

2.3.2 IN SITU BIOTREATMENT PHASE

- A groundwater pumping and recycling system will be constructed near one end of the trenches and will be operated in order to control the shallow saturated zone and recover free product. Free product will be removed from recovered groundwater and will be disposed of off-site at an approved facility. The recovered groundwater will then be used as part of the biotreatment program. Provisions will be made for temporary water storage and the addition of nutrients to the water for biotreatment. Biotreatment will continue until composite soil sampling indicates successful removal of TPH's.

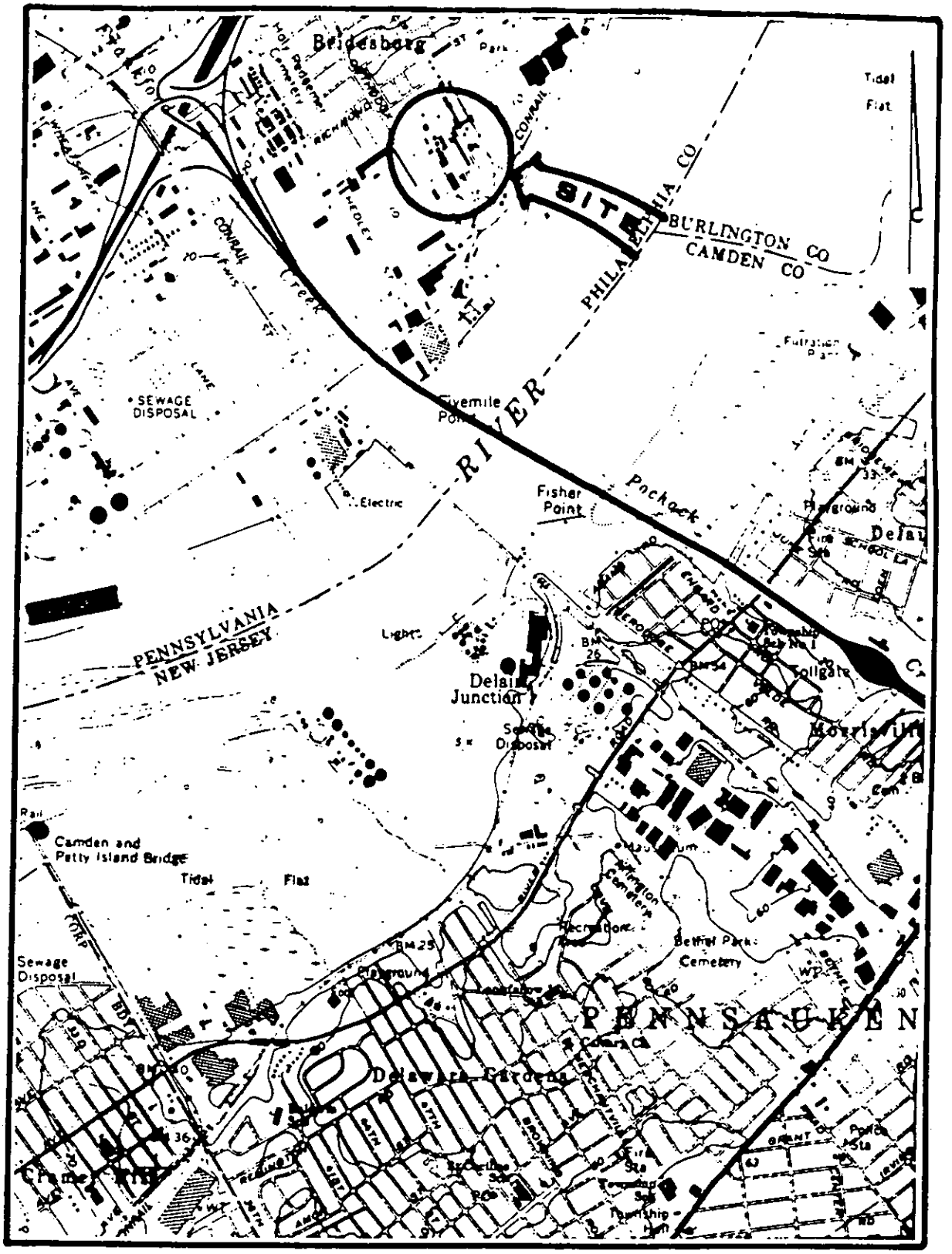
- Piping will be installed on the surface to distribute recycled groundwater evenly over the treatment area.

2.3.3 DEMOBILIZATION PHASE

- When successful removal of TPHs has been achieved, the groundwater recycle system will be shut down and all surface piping will be removed.

- A soil sampling program will be established prior to the initiation of remediation activities which will serve as an indicator of soil remediation. Operation of the in-situ biotreatment system will be continued until the rate of soil TPH disappearance slows to an asymtotic value where no significant difference (i.e., say 50 ppm) is observed between two consecutive semi-annual soil samples. At this point, the remediation will be considered complete and Philadelphia Coke will submit a request to the PADER to cease system operation.

Figures



REGIONAL LOCATION PLAN

FIGURE 1

TABLE 1
FUEL OIL CONCENTRATIONS MEASURED IN
EXPLORATORY TEST PITS
PHILADELPHIA COKE SITE

TEST PIT NO.	FUEL OIL CONC.* (ppm)
1	14,200
2	1,000
3	3,740
4	80
5	9,700
6	5,000
7	220
8	5,900
9	+++
10	12,400
11	12,100
12	+++

* OIL CONCENTRATIONS MEASURED WITH A HORIBA FIELD OIL ANALYZER

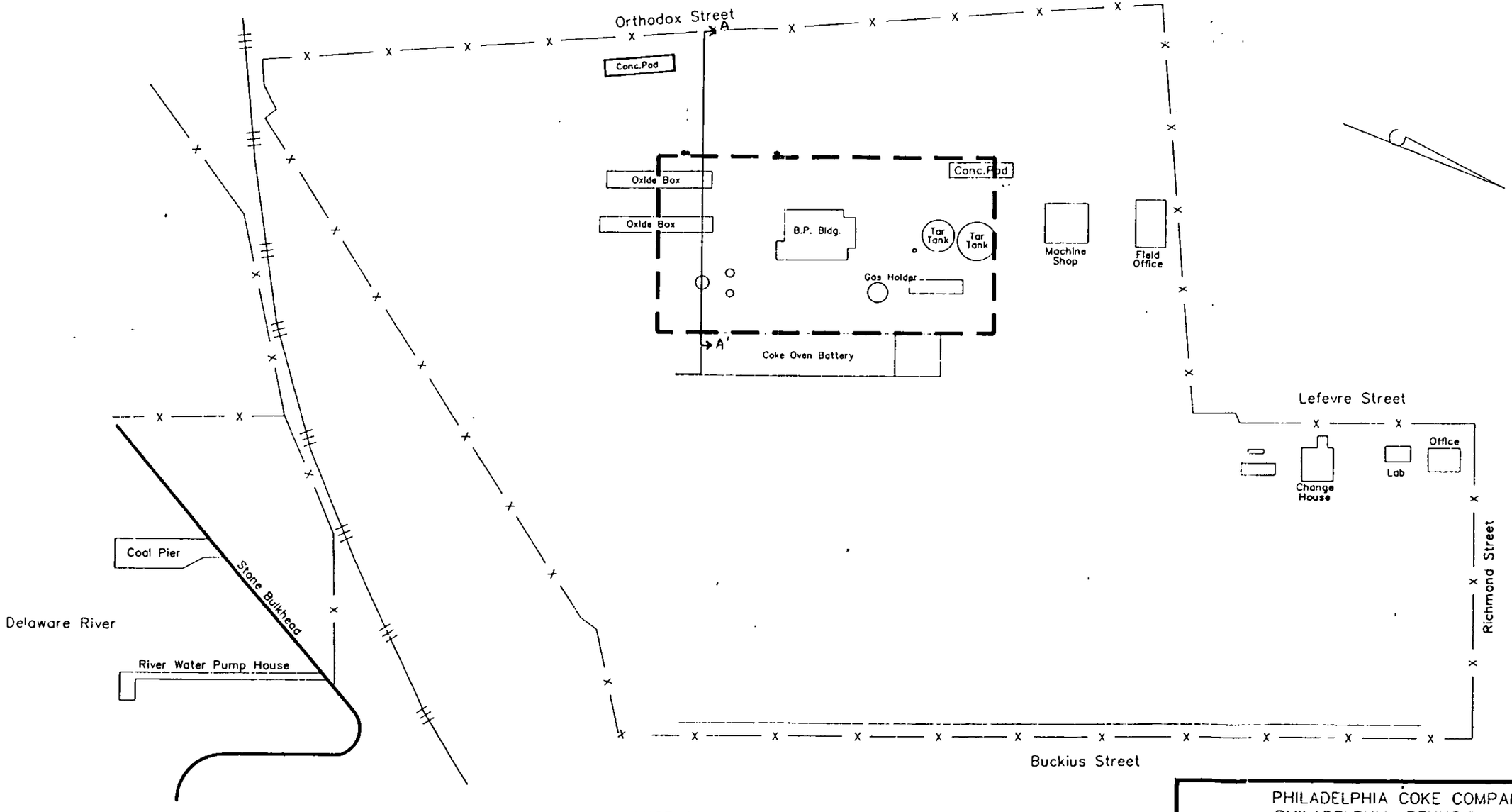
+++ MEASURED CONCENTRATION OF OIL WAS GREATER THAN 20,000 ppm

TABLE 2
FUEL OIL CONCENTRATIONS MEASURED IN
SURFACE GRAB SAMPLES
PHILADELPHIA COKE SITE

SAMPLE NO	FUEL OIL CONC.* (ppm)
1	220,000#
2	9,900

* OIL CONCENTRATIONS MEASURED BY LABORATORY TOTAL PETROLEUM HYDROCARBON ANALYSIS (LANCASTER LAB, LANCASTER, PA)

\# THIS SAMPLE WAS BIASED TOWARD THE MAXIMUM VISIBLE SURFACE CONTAMINATION. SAMPLE NUMBER 2 WAS REPRESENTATIVE OF THE TYPICAL VISIBLE SURFACE CONTAMINATION.



LEGEND:

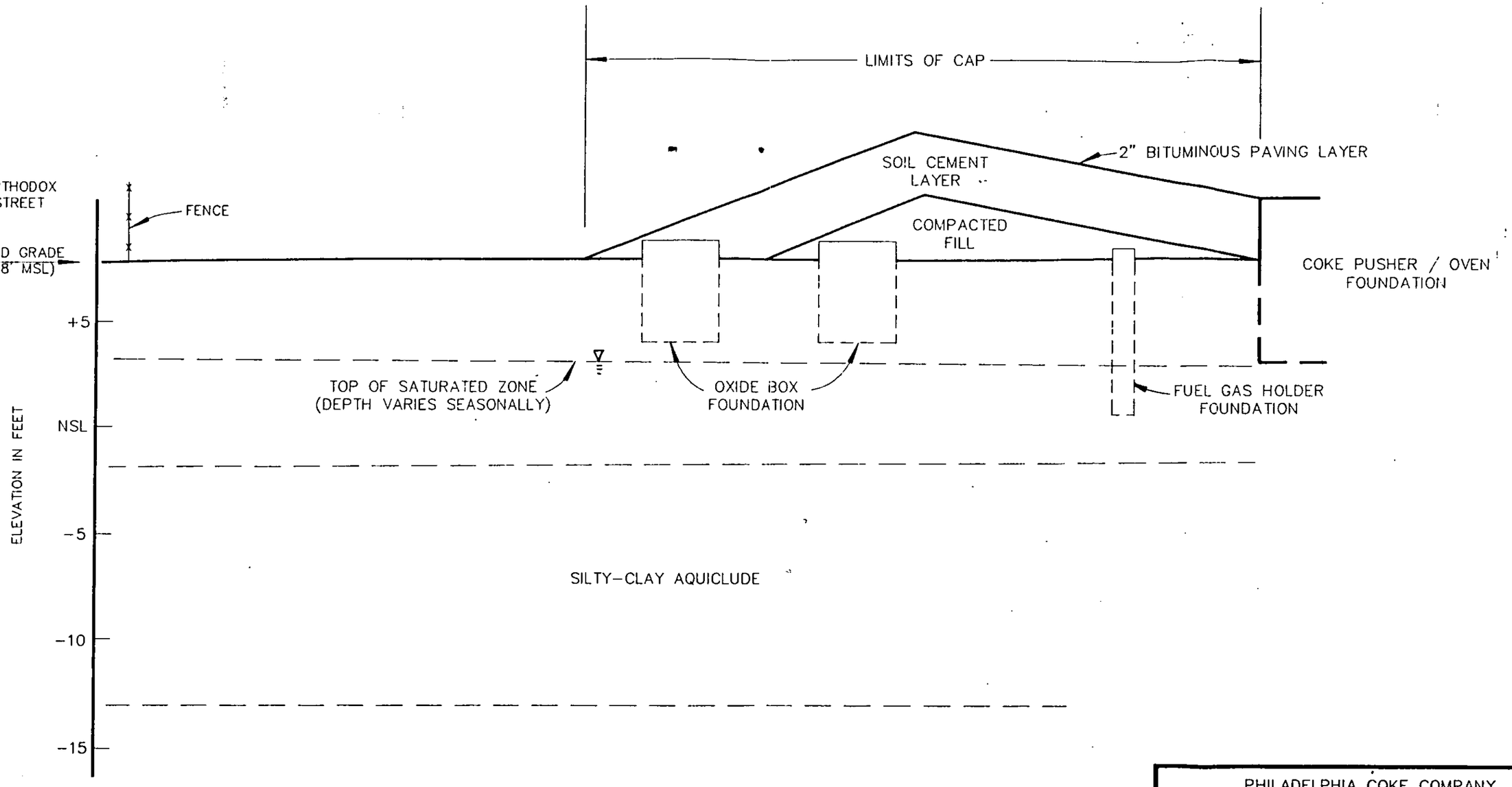
— — APPROXIMATE BOUNDARY OF FORMER MAIN PLANT PROCESS AREA

PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD–CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

MAIN PLANT PROCESS AREA

Job No.: 87C2839A6	Drawing No. 78390090	Date: 9/25/89
Checked by	Rev. No.:	
Scale: 0 — 200 FEET		FIGURE 2



NOTES:

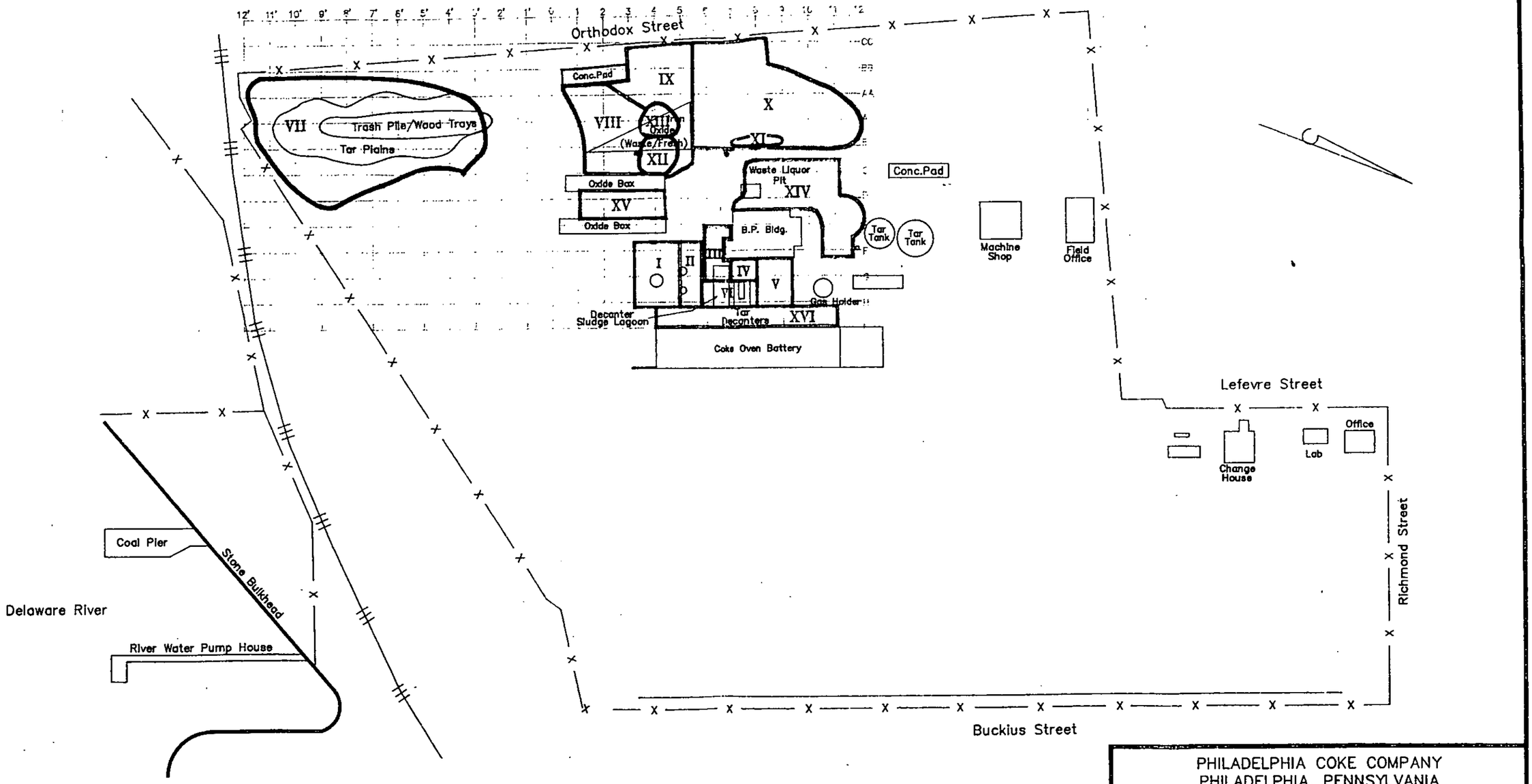
1. ALL CONCRETE FOUNDATIONS ARE SUPPORTED BY PILES WHICH ARE NOT SHOWN.
2. ONLY MAJOR STRUCTURES ARE SHOWN. SOME SMALLER FOUNDATIONS AND PIPING MAY REMAIN.
3. STOCKPLIED SOIL COVERS THE OXIDE BOX FOUNDATIONS.
4. VERTICAL SCALE EXAGGERATED.
5. DEPTH AND THICKNESS OF GEOLOGIC FORMATIONS ARE APPROXIMATE. ACTUAL THICKNESS AND DEPTH MAY VARY.

PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

SECTION A-A'

Job No.: 87C2839A6	Drawing No. 78390110	Date: 9/25/89
Checked by:	Rev. No.:	
Scale: 0 — 50 FEET		FIGURE 3



PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

CONFIRMATORY SOIL
SAMPLE AREAS

Job No.: 87C2838A6	Drawing No. 78390050	Date: 8/15/89
Checked by:	Rev. No.:	FIGURE 5
Scale: 0 — 200 FEET		

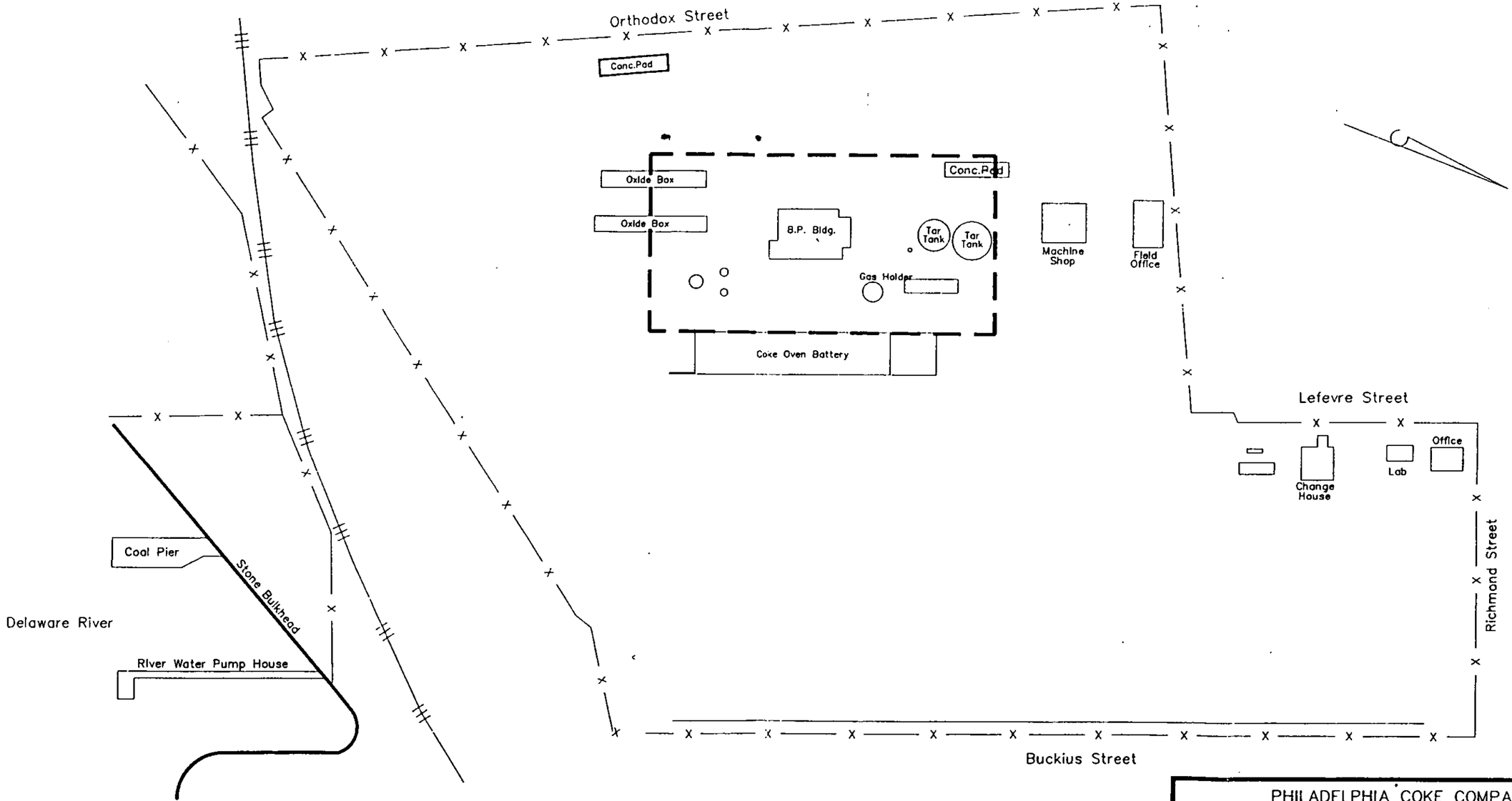
STORAGE

AREA = 53.9172 acres
PARCEL (1)

AREA = 3.5024 acres
PARCEL (2)

AREA = 3.9662 acres
PARCEL (3)

FIGURE 4: FORMER FUEL OIL TANK FARM AREA
PHILADELPHIA COKE SITE



LEGEND:

— — APPROXIMATE BOUNDARY OF CAPPED AREA

PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

EXTENT OF CAP OVER FORMER MAIN PLANT PROCESS AREA

Job No.: 37C2839A6	Drawing No. 78390100	Date: 9/25/89
Checked by:	Rev. No.:	FIGURE 5
Scale: 0 — 200 FEET		

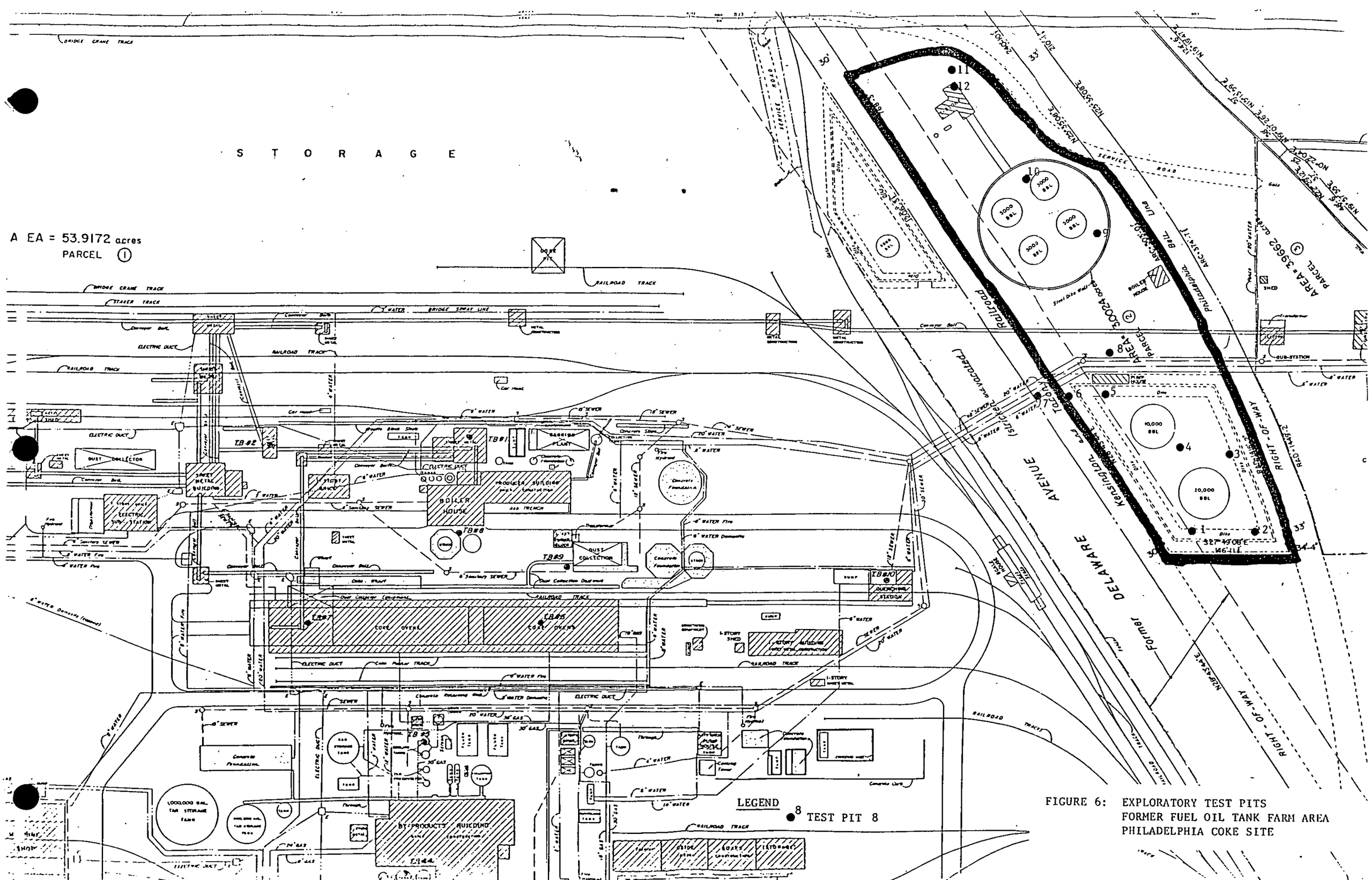


FIGURE 6: EXPLORATORY TEST PITS
FORMER FUEL OIL TANK FARM AREA
PHILADELPHIA COKE SITE

February 2, 1990
87C2839A-2

Pennsylvania Department of
Environmental Resources
1875 New Hope Street
Norristown, PA 19401

Attention: Mr. Lawrence H. Lunsk
Regional Waste Management
Facilities Supervisor

Re: Stockpile Characterization
at the Philadelphia Coke Site

Gentlemen:

As requested in your November 29, 1989 letter to Mr. Jack McKenna, Woodward-Clyde Consultants (WCC) characterized the four soil/material stockpiles currently located at the Philadelphia Coke site. These stockpiles were formed during site cleanup activities associated with closure of various RCRA units. Based upon results of RCRA characteristic analyses of these stockpiles, these materials are not hazardous wastes under current regulations.

Locations of the stockpiles are indicated on Figure 1. A brief description and estimated volume for each stockpile follows:

- Stockpile 1 (15,000 cu yd) - Soils from excavations made at the site in order to gain access to the various RCRA units. Most of this stockpile consists of materials ranging from coarse sands to silty clays.

- Stockpile 2 (1,200 cu yd) - Soils from excavations made in order to gain access to underground tanks in the former light oil plant area. These soils consist mostly of silty clays.

- Stockpile 3 (2,000 cu yd) - Coke breeze with some soil from excavation of the former tar plains area.

- Stockpiles 4A and 4B (2,900 cu yd) - Paving materials that consist of small amounts of coal tar binder mixed with cinder aggregate that resulted from excavation of several on-site roads. Material in the larger pile has been screened to less than 4 inches. Rejects from the screening form the smaller pile. The two piles are considered one for analyses and volume estimates.

Composite samples of the four stockpiles were analyzed for USEPA priority pollutant base/neutral extractables (BNE), acid extractables (AE), EP toxicity (EPTOX) or TCLP toxicity for inorganics, and RCRA reactivity (REAC). The results are summarized in Table 1 and discussed below:

- Base/neutral extractables - BNE compounds detected in stockpiles 1, 2, and 3 are the result of various coal tar leaks and spills that were inevitable (but not commonplace) during the plant's 53 years of operation.

  In addition, some of the product coal tar was used as a binder for aggregate to pave on-site roadways. This coal tar binder is the source of the BNE compounds in the stockpiled paving materials (Stockpiles 4A and 4B).

- Acid extractables - No quantifiable concentrations were observed.

- EP or TCLP toxicity for inorganics - None of the stockpiles contained sufficient concentrations of inorganic compounds to be classified EP Toxic.

- RCRA Reactivity - None of the stockpiles contained sufficient cyanide or sulfide concentrations to be classified RCRA reactive.

Accordingly, the four stockpiles are neither listed nor characteristic hazardous wastes, based upon current state and federal regulations and the chemical characterizations summarized in Table 1.

We trust these characterization results will enable the Department to continue review of the Draft Site Restoration Work Plan (WCC, September 1989), as discussed in your letter. WCC believes that the proposed soil-cement cap plan represents a beneficial re-use of these stockpiled soils.

Please contact us with any questions you may have pertaining to this matter.

Very truly yours,

WOODWARD-CLYDE CONSULTANTS

James V. Husted, P. E.
Project Manager

JVH/sal/PC3

cc: Mr. John T. McKenna,
Philadelphia Coke Company

TABLE 1

STOCKPILE CHARACTERIZATION AT THE PHILADELPHIA COKE SITE

	Stockpile 1	Stockpile 2	Stockpile 3	Stockpile 4
BNE (mg/kg dry weight basis)				
Acenaphthene	ND	ND	ND	ND
Acenaphthylene	23.0	17.2	8.51	24.5
Anthracene	66.7	33.1	14.4	47.5
Benzo(a)anthracene*	101	57.2	31.9	102
Benzo(a)pyrene*	81.5	49.0	28.1	88.0
Benzo(b+k)fluoranthene*	136	85.8	48.1	157
Benzo(g,h,i)perylene	41.5	34.7	23.6	63.0
Chrysene*	133	57.2	55.5	186
Dibenzo(a,h)anthracene*	26.7	ND	10.7	29.9
Fluorene	64.5	29.8	11.9	36.5
Fluoranthene	239	123	59.2	271
Indeno(1,2,3-c,d)pyrene*	40.8	31.9	20.0	55.0
Naphthalene	73.1	6.1	13.0	26.0
Phenanthrene	170	106	40.7	172
Pyrene	168	85.8	44.4	227
TPAHs	1365	717	410	1485
*CPAHs	519	281	194	618
AE (mg/kg dry weight basis)	ND	ND	ND	ND
Inorganics in Leachate (mg/l)				
Leachate Procedure	TCLP	EPTOX	EPTOX	EPTOX
Arsenic	ND	ND	ND	ND
Barium	0.2	0.2	0.4	0.3
Cadmium	0.008	ND	0.006	0.006
Chromium	ND	ND	ND	ND
Lead	0.70	0.07	ND	0.06
Mercury	ND	ND	ND	ND
Selenium	ND	ND	ND	ND
Silver	ND	ND	ND	ND
REAC (mg/kg)				
Cyanide	ND	ND	ND	ND
Sulfide	ND	ND	ND	ND

Note: ND indicates the measured concentration was below quantitation limits for this compound.

APPENDIX A-38

WCC Letter Dated February 8, 1990

5120 Butler Pike
Plymouth Meeting
Pennsylvania 19462
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Woodward-Clyde Consultants

February 8, 1990
87C2839A-1

Pennsylvania Department of
Environmental Resources
1875 New Hope Street
Norristown, PA 19401

Attention: Mr. Lawrence H. Lunsk
Regional Waste Management Facilities Supervisor

Re: Progress Report for
Philadelphia Coke Site

Gentlemen:

This letter updates the Department on the current status of work at the Philadelphia Coke site. Work is proceeding in four major areas:

- o Soil stockpile removal or treatment
- o Biotreatment pilot program
- o Former oil tank farm area restoration
- o Groundwater monitoring

In response to the PADER's request, Woodward-Clyde Consultants (WCC) has characterized all four of the soil/material stockpiles currently located at the site. Analyses for RCRA characteristics indicated that these soils and materials are not hazardous wastes as defined under current state and federal laws. This evaluation has been submitted to the PADER under separate cover.

As suggested by the PADER, WCC evaluated the possible use of stockpiled soils as daily cover at eight area landfills. Only one facility (GROWS Landfill in Morrisville, Bucks County, Pennsylvania) agreed to take the soils as daily cover with the written approval of the PADER. Based upon telephone conversation with both PADER and GROWS Landfill representatives, WCC understands that a major permit modification would be required in order for the landfill to accept the material as daily cover. At this writing, WCC is persuing this option with landfill representatives.

WCC is also continuing to evaluate the beneficial re-use of the stockpiled soils to form a soil-cement cap (described in the Draft Site Restoration Work Plan, September 1989) as an alternative. This option would reuse all the soils/materials stockpiled on-site as soil-cement paving base course.

The biotreatment pilot program was concluded on January 8, 1990 and a report detailing the program and its results will be issued in February. In summary, the application of biotreatment technologies to the soil matrix at the Philadelphia Coke site was able to markedly reduce the measured concentration of CPAHs; however, the goal of 50 ppm CPAHs was not reached.

At this writing, the first priority for the Philadelphia Coke site is the removal or treatment of the stockpiled soils/materials. Three alternatives that are technically and economically feasible are currently being considered for handling the stockpiled soil/materials. These include:

- o Alternative 1 - Use as landfill daily cover.
- o Alternative 2 - Use to form soil-cement base course for cap.
- o Alternative 3 - Biotreat to a technically achievable CPAH level.

Alternative 1 (using these materials as daily cover) requires the PADER's assistance in dealing with GROWS Landfill and obtaining the proper permit modifications. Alternative 2 involves using the stockpiled soils/materials in a soil-cement base course for a cap to minimize infiltration into the former process area. Alternative 3 would involve bioremediation of the stockpiled soils to a level shown to be technically feasible in the biotreatment pilot program (i.e., 220-225 ppm CPAHs). It is the Philadelphia Coke Company's intent to implement one of these alternatives as soon as possible.

WCC has initiated the concept design phase of the in situ biorestoration system for the former fuel oil tank farm area. Two downgradient monitoring wells, MW-13 and MW-14, were installed on December 14, 1989 at locations coordinated with the Department. Continuous split-spoon sampling was performed and soils were analyzed for total petroleum hydrocarbons. These two new wells were also sampled during the regular quarterly groundwater sampling round on January 11, 1990. A conceptual design for the proposed biorestoration system will be submitted to the PADER in April 1990.

The RCRA groundwater monitoring program continues with quarterly sampling rounds. The background well (MW-4R) is being sampled in quadruplicate as required by 75.265 (n) for four indicator parameters in order to perform a statistical evaluation of possible significant change in February 1991. A database of all chemical analyses for the monitoring wells has been developed and WCC is currently evaluating spacial and temporal trends in these data.

WCC would like to meet with you during the week of February 19, 1990 to discuss both ongoing and proposed work at the Philadelphia Coke site. Larry, I will call you in the next day or so to arrange a mutually convenient meeting date.

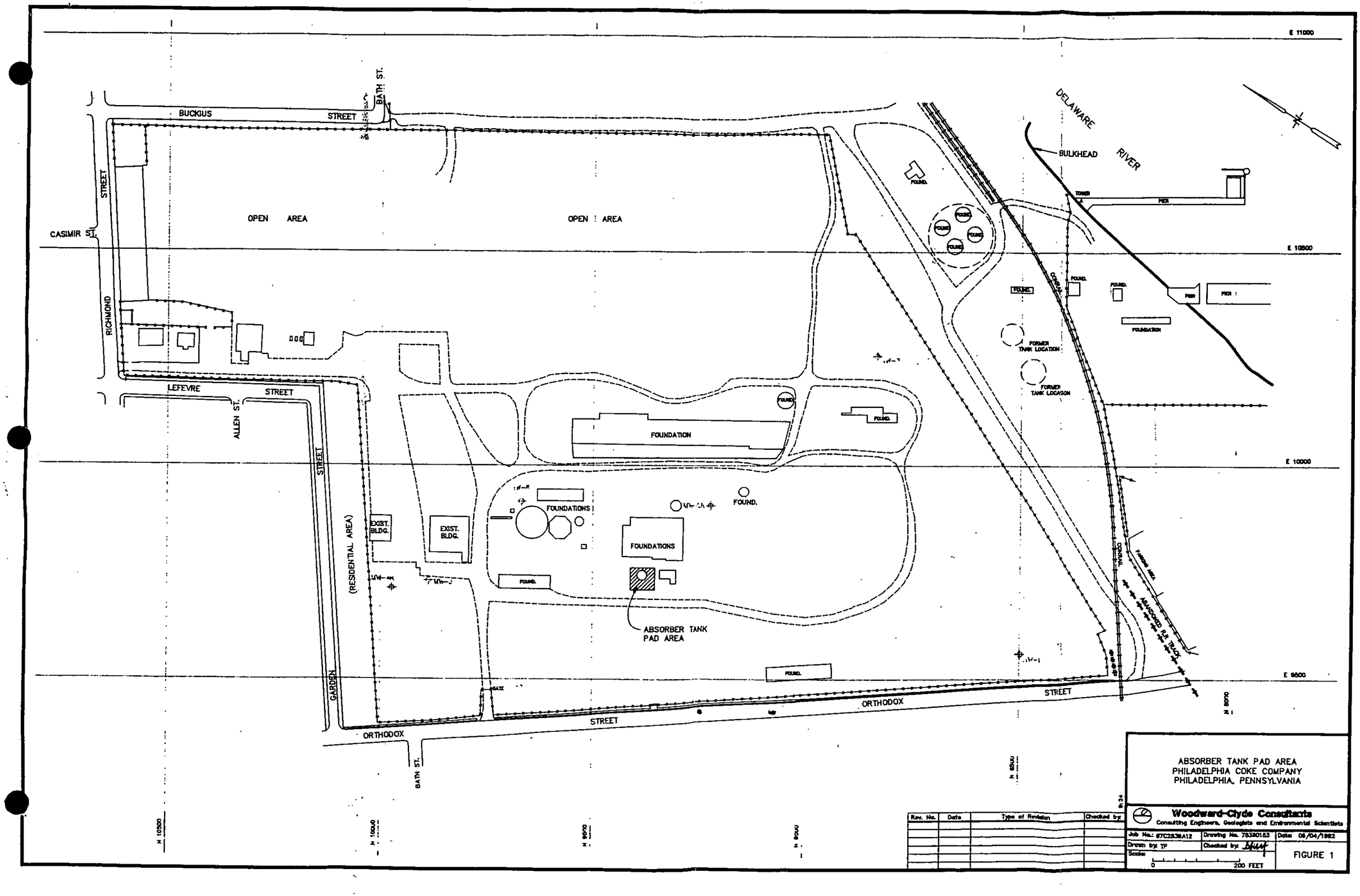
Very truly yours,

WOODWARD-CLYDE CONSULTANTS

James V. Husted, P. E.
Project Manager

JVH/sal/PC3

cc: Mr. John T. McKenna, Philadelphia Coke Company
Mr. Ken Cowan, PADER
Ms. Sara Pantelidou, PADER
Mr. Rob Zang, PADER



ABSORBER TANK PAD AREA
PHILADELPHIA COKE COMPANY
PHILADELPHIA, PENNSYLVANIA

Rev. No.	Date	Type of Revision	Checked by:

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 87C2838A12	Drawing No. 78380183	Date: 08/04/1982
Drawn by: TP	Checked by:	FIGURE 1
Scale: 0 200 FEET		

Woodward-Clyde Consultants

Engineering & sciences applied to the earth & its environment

June 9, 1992
89C2839A-6

Mr. Lawrence H. Lunsk, Supervisor
Waste Management Facilities
Pennsylvania Department of Environmental Resources
Southeast Region
555 North Lane
Suite 6010 Lee Park
Conshohocken, PA 19428

Re: Confirmatory Analytical Data and Backfilling Operations at the Philadelphia Coke Company Absorber Tank Pad Area

Dear Mr. Lunsk:

As part of the final closure and cleanup operations at the Philadelpia Coke Company site, this letter transmits analytical data pertaining to confirmatory samples that were collected after final excavation of the absorber tank pad area. This area is a portion of Sample Area XIV delineated in the Philadelphia Coke Company closure certification (WCC, September 1989). Analysis of the soil in the absorber tank pad area after the initial excavation indicated that the soil cleanup levels (set forth in the May 20, 1988 WCC letter to you) had not been achieved. Specifically, total carcinogenic polycyclic aromatic hydrocarbons (CPAHs) exceeded 50 mg/kg in the composite sample. Additional soil removal and resampling was completed in October 1990.

Figure 1 illustrates the area represented by the composite sample that was collected from the bottom of the re-excavated area. The analytical data are summarized in Table 1 and are attached as Appendix A. These data indicate that the cleanup criteria have been achieved and that the soil is nonhazardous based upon USEPA criteria for TCLP inorganics, and is non-reactive, as defined by RCRA requirements.

Based upon these analytical results, which demonstrate that the cleanup critera have been achieved, the Department's authorization is requested to complete backfilling operations in the absorber tank pad area. This area had previously been inspected by Department representatives and has been left open since October 1990 because backfilling operations were concentrated in other areas of the site. The absorber tank pad area and its surroundings are now ready for backfill to grade. Philadelphia Coke Company intends to

89C2839A.DMH/mek/PC-D2

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backfill with the imported fill currently being placed on the site. This area will then be included in the revised closure certification document to be submitted later this year.

Please contact us with any questions pertaining to this matter.

Very truly yours,

James V. Husted, P.E.
Project Manager

JVH/mek

cc: Mr. J. Hancock

TABLE 1

CONFIRMATORY SOIL SAMPLE ANALYSES[a]
ABSORBER TANK PAD AREA
PHILADELPHIA COKE COMPANY

		Composite Soil Sample	Cleanup Criteria
Base Neutral Extractables (mg/kg)			
Acenaphthene		1.09	500
Acenaphthylene		<0.47	500
Anthracene		1.01	500
*Benzo(a)anthracene		0.70	15
*Benzo(a)pyrene		0.62	15
*Benzo(b)fluoranthene		0.83	15
Benzo(g,h,i)perylene		<0.47	500
Benzo(k)fluoranthene		<0.47	500
*Chrysene		0.85	15
*Dibenzo(a,h)anthracene		<0.47	15
Fluoranthene		1.51	500
Fluorene		0.90	500
*Indeno(1,2,3-c,d)pyrene		<0.47	15
Naphthalene		4.79	500
Phenanthrene		1.64	500
Pyrene		1.75	500
	TPAHs	15.69	N/A
	*CPAHs	3.00	50
TCLP Extractable Inorganics (mg/L)			
Arsenic		<0.5	5.0
Barium		<2.0	100
Cadmium		<0.05	1.0
Chromium		<0.5	5.0
Lead		<0.5	5.0
Mercury		<0.005	0.2
Selenium		<0.5	1.0
Silver		<0.1	5.0
Reactivity (mg/kg)[b]			
Sulfide		50	500
Cyanide		<100	250
Acid Extractables (mg/kg)			
Phenol		0.73	15

[a] = All results reported on a dry weight basis
[b] = Detected concentrations of sulfide and cyanide are below levels considered reactive and hazardous
N/A = Not Applicable

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-1
MONITORING WELL W-1R (REPLACING W-1 AS OF 4-5-91)

PARAMETER	UNITS	4/10/85	8/28/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
ALKALINITY, TOTAL	mg/l	73.10	251.00	62.90	30.20	49.80	98.00	61.40	36.30
AMMONIA NITROGEN	mg/l	56.00	333.00	42.00	106.00	135.00	164.00	107.00	73.60
TOTAL COLIFORM	cfu/100 m	100.00	13.00	<2	<2		2.00	<2	<1
BIOCHEMICAL OXYGEN DEMAND	mg/l	6.80		6.80	0.90	2.20	42.00	2.50	2.40
TOTAL ORGANIC CARBON	mg/l	6.70	5.97	6.92	2.73	3.63	2.80	4.80	2.30
CHEMICAL OXYGEN DEMAND	mg/l	48.00	573.00	14.50	50.40	18.50	66.00	67.10	<10
CHLORIDE	mg/l	27.80	416.00	13.20	12.00	11.60			<10
CYANIDE, TOTAL	mg/l	1.50	38.00	0.09	0.05	0.01	10.30	<0.005	0.18
FLUORIDE	mg/l	0.91	1.00	0.75	0.69	0.80	1.12	2.60	0.69
ALUMINUM, DISSOLVED	mg/l	<0.5	<0.5						
ARSENIC, DISSOLVED	mg/l	<0.001	<0.001						
BARIUM, DISSOLVED	mg/l	<0.5	0.50						
CADMIUM, DISSOLVED	mg/l								
CHROMIUM, DISSOLVED	mg/l	0.01	<0.004	0.00	<0.001	<0.001	<0.001	0.00	<0.001
IRON, DISSOLVED	mg/l	16.40	49.00	4.50	<0.1	<0.10	1.40	6.40	3.93
LEAD, DISSOLVED	mg/l	0.00	<0.001						
MANGANESE, DISSOLVED	mg/l	9.40	12.00	6.12	6.21	6.00	6.90	6.50	4.60
MERCURY, DISSOLVED	mg/l	<0.0002	<0.005						
SELENIUM, DISSOLVED	mg/l	0.01	0.01						
SILVER, DISSOLVED	mg/l	<0.001	<0.001						
SODIUM, DISSOLVED	mg/l	29.40	144.00	13.00	12.20	13.30	31.00	19.00	<0.5
NITRATE NITROGEN	mg/l	2.20	<0.005	0.97	1.20	0.44	1.04	8.30	0.26
TOTAL ORGANIC HALOGENS	ug/l	215.00	19.00	<5	<5	93.00	7.00	18.00	46.00
PHENOLICS	mg/l	<0.005	0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
pH	standard	6.84	6.40	6.45	6.71	6.90	6.55	6.28	6.22
TOTAL DISSOLVED SOLIDS	mg/l	<1120	2830.00	1400.00	1400.00	1210.00	1070.00	1260.00	1010.00
SPECIFIC CONDUCTANCE	umhos/cm	32.50	4094.00	1620.00	1670.00	2020.00	2690.00	2120.00	1440.00
SULFATE	mg/l	4.20	1675.00	990.00	1020.00	1040.00	136.00	1080.00	<10
HERBICIDES:									
2,4-D	ug/l	<0.25	<0.25						
2,4,5-TP	ug/l	<0.25	<10						
PESTICIDES:									
ENDRIN	ug/l	<0.50	<0.022						
LINDANE	ug/l	<0.50	<0.003						
METHOXYCHLOR	ug/l	<2.5	<0.049						
TOXAPHENE	ug/l	<25	<0.098						
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<20	<20	<20	<20	<50	<50	<50	<50
4-NITROPHENOL	ug/l	<40	<40	<40	<40	<50	<50	<50	<50
2-METHYL-4,6-DINITROPHENOL	ug/l	<20	<20	<20	<20	<50	<50	<50	<50
PENTACHLOROPHENOL	ug/l	<25	<25	<25	<25	<50	<50	<50	<50
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10			
BIS(2-CHLOROETHYL)ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
HEXACHLOROETHANE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
NITROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
ISOPHORONE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
NAPHTHALENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
HEXACHLOROBUTADIENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
ACENAPHTHYLENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
DIMETHYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
ACENAPHTHENE	ug/l	<5	84.00	<5	<5	<10	<10	<10	<10
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
FLUORENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
DIETHYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-1
MONITORING WELL W-1R (REPLACING W-1 AS OF 4-5-91)

PARAMETER	UNITS	4/10/85	8/26/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10		<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
PHENANTHRENE	ug/l	<5	13.00	<5	<5	<10	<10	<10	<10
ANTHRACENE	ug/l	<5	<5	10.30	<5	<10	<10	<10	<10
DI-N-BUTYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
FLUORANTHENE	ug/l	<5	<5	21.00	<5	<10	<10	<10	<10
BENZIDINE	ug/l	<100	<100	<100	<100	<20			
PYRENE	ug/l	<5	9.50	11.00	<5	<10	<10	<10	<10
BUTYL BENZYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	14.00	<10	<10	<10	<10	<10	<10
CHRYSENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	ug/l	<10	<10	<10	<10	<20	<20	<20	<20
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<5	8.70	<5	<5	<10	<10	<10	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<10
BENZO(K)FLUORANTHENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<10
BENZO(A)PYRENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10	<10	<10	<10		<10	<10
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
BROMOMETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
VINYL CHLORIDE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
CHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
METHYLENE CHLORIDE	ug/l	<1.0	<1.0	9.20	<1.0	4.40	<5	<5	<5
ACROLEIN	ug/l	<100	<100	<100	<100	<100	<80		
ACRYLONITRILE	ug/l	<25	<25	<25	<25	<25	<80		
TRANS-1,3-DICHLOROPROPENE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TRICHLOROFLUOROMETHANE	ug/l							<5	<5
1,1-DICHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,1-DICHLOROETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
CHLOROFORM	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,2-DICHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
CARBON TETRACHLORIDE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
BROMODICHLOROMETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,2-DICHLOROPROPANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TRICHLOROETHENE	ug/l	<0.2	<0.2	<0.2	<0.2	<0.2	<5	<5	<5
BENZENE	ug/l	<1.0	1.30	<1.0	<1.0	<1.0	<5	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
BROMOFORM	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TETRACHLORDETHENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TOLUENE	ug/l	<0.2	0.20	<0.2	7.70	<0.2	<5	<5	<5
CHLOROBENZENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
ETHYLBENZENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-1
MONITORING WELL W-1R (REPLACING W-1 AS OF 4-6-81)

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89
ALKALINITY, TOTAL	mg/l	24.70	11.00	19.60	<10.0		67.20	6.00	25.00
AMMONIA NITROGEN	mg/l	85.10	107.00	122.00	72.60		151.00	20.70	11.40
TOTAL COLIFORM	cfu/100 m	<2	<1	18.00	50.00		<10	(3) <10	<2.2
BIOCHEMICAL OXYGEN DEMAND	mg/l	1.80	0.30	0.40	0.80		0.80	<6	<12
TOTAL ORGANIC CARBON	mg/l	3.70	3.00	2.20	2.10		0.90	3.30	3.10
CHEMICAL OXYGEN DEMAND	mg/l	28.80	11.00	22.60	<10.0		26.00	<50	<50
CHLORIDE	mg/l			<10.0	10.80		57.90	32.00	21.00
CYANIDE, TOTAL	mg/l	<0.005	<0.005	<0.005	<0.005		<0.009	<0.005	<0.005
FLUORIDE	mg/l	0.56	1.46	1.52	1.00		0.92	0.90	0.50
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l							<0.01	<0.01
BARIUM, DISSOLVED	mg/l							<0.1	<0.1
CADMIUM, DISSOLVED	mg/l							0.02	0.01
CHROMIUM, DISSOLVED	mg/l	<0.001	0.00	0.01	0.04		<0.002	<0.05	<0.05
IRON, DISSOLVED	mg/l	0.16	0.15	0.50	0.80		0.70		
LEAD, DISSOLVED	mg/l		–					0.06	<0.05
MANGANESE, DISSOLVED	mg/l	5.20	6.00	8.60			3.90		
MERCURY, DISSOLVED	mg/l							<0.0005	<0.0005
SELENIUM, DISSOLVED	mg/l							<0.005	<0.005
SILVER, DISSOLVED	mg/l							<0.01	<0.01
SODIUM, DISSOLVED	mg/l	9.10	10.40	13.20	12.50		71.00		
NITRATE NITROGEN	mg/l	2.20	8.35	3.35	11.50		4.80	21.20	6.50
TOTAL ORGANIC HALOGENS	ug/l	<5	<10	<5.0	248.00		141.00	6.00	8.00
PHENOLICS	mg/l	<0.005	<0.005	<0.005	<0.005		<0.005		
pH	standard	5.69	5.14	5.24	5.55		6.28	4.87	6.18
TOTAL DISSOLVED SOLIDS	mg/l	1120.00	1190.00	1080.00	848.00		1380.00	1630.00	1210.00
SPECIFIC CONDUCTANCE	umhos/cm	1470.00	1650.00	2030.00	1240.00		1950.00	1970.00	1460.00
SULFATE	mg/l	657.00	977.00	1160.00	647.00		970.00	1020.00	748.00
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2-CHLOROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DIMENTYLPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<50	<50	<50		<50	<50	<25	<25
4-NITROPHENOL	ug/l	<50	<50	<50		<50	<50	<25	<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<50	<50	<50		<50	<50	<25	<25
PENTACHLOROPHENOL	ug/l	<50	<50	<50		<50	<50	<25	<25
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l			<10		<10	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10		<10	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10		<10	<10	<10	<10
HEXACHLOROETHANE	ug/l	<10	<10	<10		<10	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10		<10	<10	<10	<10
NITROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
ISOPHORONE	ug/l	<10	<10	<10		<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10		<10	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
NAPHTHALENE	ug/l	<10	<10	<10		<10	<10	<10	<10
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10		<10	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10		<10	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10		<10	<10	<10	<10
ACENAPHTHYLENE	ug/l	<10	<10	<10		<10	<10	<10	<10
DIMETHYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10		<10	<10	<10	<10
ACENAPHTHENE	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DINITROTOLUENE	ug/l	<10	<10	<10		<10	<10	<10	<10
FLUORENE	ug/l	<10	<10	<10		<10	<10	<10	<10
DIETHYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10		<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10		<10	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-1
MONITORING WELL W-1R (REPLACING W-1 AS OF 4-5-91)

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	5/6/88	5/19/88	1/16/89	4/18/89
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10		<10	<10	<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10		<10	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
PHENANTHRENE	ug/l	<10	<10	<10		<10	<10	<10	<10
ANTHRACENE	ug/l	<10	<10	<10		<10	<10	<10	<10
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
FLUORANTHENE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZIDINE	ug/l			<20		<20	<20	<25	<25
PYRENE	ug/l	<10	<10	<10		<10	<10	<10	<10
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10		<10	<10	<10	<10
CHRYSENE	ug/l	<10	<10	<10		<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	ug/l	<20	<20	<20		<20	<20	<25	<25
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZO(A)PYRENE	ug/l	<10	<10	<10		<10	<10	<10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10		<10	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10		<10	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10	<10		<10	<10		
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
BROMOMETHANE	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
VINYL CHLORIDE	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
CHLOROETHANE	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
METHYLENE CHLORIDE	ug/l	35.00	<1.0	<1	<1		<1	<5	<5
ACROLEIN	ug/l							<100	<100
ACRYLONITRILE	ug/l							<100	<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TRICHLOROFLUOROMETHANE	ug/l						<1	<5	<5
1,1-DICHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,1-DICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
CHLOROFORM	ug/l	<1.0	2.60	<1	<1		<1	<5	<5
1,2-DICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
CARBON TETRACHLORIDE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
BROMODICHLOROMETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,2-DICHLOROPROPANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TRICHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
BENZENE	ug/l	<1.0	2.10	<1	<1		<1	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
BROMOFORM	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TETRACHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TOLUENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
CHLOROBENZENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
ETHYLBENZENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-1
MONITORING WELL W-1R (REPLACING W-1 AS OF 4-6-91)

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
ALKALINITY, TOTAL	mg/l	37.00	53.00	73.00	50.00	47.00	85.00	95.00	
AMMONIA NITROGEN	mg/l	4.00	1.10	3.50	1.30	1.80	1.80	4.70	
TOTAL COLIFORM	cfu/100 m	<2.2	>16	<2.2	<2.2	2.20	<2.2	>16	
BIOCHEMICAL OXYGEN DEMAND	mg/l	<6	<6	<6	<6		<12	<12	
TOTAL ORGANIC CARBON	mg/l	3.90	3.80	2.60	3.50	5.40	5.20	28.00	(4) 210
CHEMICAL OXYGEN DEMAND	mg/l	<50	<50	<50	<50	90.00	330.00	330.00	
CHLORIDE	mg/l	7.00	7.00	11.00	46.00	21.00	26.00	340.00	
CYANIDE, TOTAL	mg/l	<0.005	0.02	0.01	<0.005	0.04	0.05	0.05	
FLUORIDE	mg/l	0.70	0.50	0.50	0.40	0.50	0.50	0.40	
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
BARIUM, DISSOLVED	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	
CADMIUM, DISSOLVED	mg/l	0.01		0.01	<0.005	<0.005	<0.005	0.01	
CHROMIUM, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
IRON, DISSOLVED	mg/l								
LEAD, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
MANGANESE, DISSOLVED	mg/l								
MERCURY, DISSOLVED	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
SELENIUM, DISSOLVED	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01	
SILVER, DISSOLVED	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
SODIUM, DISSOLVED	mg/l	18.40	15.00	17.00		29.80	35.80	190.00	
NITRATE NITROGEN	mg/l	1.30	<0.5	0.80	4.00	<0.5	<0.5	13.50	
TOTAL ORGANIC HALOGENS	ug/l	7.00	<5	9.00	8.00	<10	18.00	100.00	(4) 240
PHENOLICS	mg/l								
pH	standard	6.93	6.19	6.71	6.30	6.26	6.58	6.29	(4) 6.39
TOTAL DISSOLVED SOLIDS	mg/l	780.00	590.00	730.00	890.00	820.00	980.00	7300.00	
SPECIFIC CONDUCTANCE	umhos/cm	954.00	805.00	1010.00	1220.00	1050.00	1130.00	6930.00	(4) 15400
SULFATE	mg/l	442.00	380.00	442.00	522.00	446.00	506.00	4760.00	
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
4-NITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
PENTACHLOROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
NITROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ISOPHORONE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
NAPHTHALENE	ug/l	<10	<10	<10	<10	<10	11.00	<10	
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIMETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ACENAPHTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
FLUORENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-1
MONITORING WELL W-1R (REPLACING W-1 AS OF 4-5-91)

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
PHENANTHRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
FLUORANTHENE	ug/l	<10	12.00	<10	<10	<10	21.00	17.00	
BENZIDINE	ug/l	<25	<25	<25	<25	<25	<25	<25	
PYRENE	ug/l	<10	<10	<10	<10	<10	15.00	15.00	
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
CHRYSENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
3,3'-DICHLOROBENZIDINE	ug/l	<25	<25	<25	<25	<25	<25	<25	
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	18.00	<10	<10	
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	13.00	<10	
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(A)PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l								
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BROMOMETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
VINYL CHLORIDE	ug/l	<10	<10	<10	<10	<10	<10	<10	
CHLOROETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	<5	<5	<5	
ACROLEIN	ug/l	<100	<100	<100	<100	<100	<100	<100	
ACRYLONITRILE	ug/l	<100	<100	<100	<100	<100	<100	<100	
TRANS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CIS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRICHLOROFLUOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRANS-1,2-DICHLOROETHENE	ug/l	<5	<5	<5	7.00	<5	<5	<5	
CHLOROFORM	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,1-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CARBON TETRACHLORIDE	ug/l	<5	<5	<5	<5	<5	<5	<5	
BROMODICHLOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROPROPANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRICHLOROETHENE	ug/l	<5	<5	<5	6.00	<5	<5	<5	
BENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
DIBROMOCHLOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
2-CHLOROETHYLVINYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
BROMOFORM	ug/l	<5	<5	<5	<5	<5	<5	<5	
TETRACHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,2,2-TETRACHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TOLUENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CHLOROBENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
ETHYLBENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-1
MONITORING WELL W-1R (REPLACING W-1 AS OF 4-6-91)

PARAMETER	UNITS	5/2/91	7/18/91	10/26/91	1/16/92	4/16/92
ALKALINITY, TOTAL	mg/l	1030.00	982.00	1350.00	680.00	431.00
AMMONIA NITROGEN	mg/l	12.60	5.40	5.60	83.80	110.00
TOTAL COLIFORM	cfu/100 m	>16	>16	<2.2	<2.2	<2.2
BIOCHEMICAL OXYGEN DEMAND	mg/l	22.00	23.00	13.00	84.00	84.00
TOTAL ORGANIC CARBON	mg/l	170.00	150.00	84.00	110.00	80.00
CHEMICAL OXYGEN DEMAND	mg/l	570.00	830.00	320.00	530.00	410.00
CHLORIDE	mg/l	494.00	262.00	110.00	283.00	330.00
CYANIDE, TOTAL	mg/l	0.30	1.55	0.14	1.35	0.57
FLUORIDE	mg/l	0.50	0.50	0.60	0.50	1.20
ALUMINUM, DISSOLVED	mg/l					
ARSENIC, DISSOLVED	mg/l		0.02	<0.01	<0.01	<0.01
BARIUM, DISSOLVED	mg/l		0.20	0.20	0.10	<0.2
CADMIUM, DISSOLVED	mg/l		0.01	0.02	<0.005	<0.005
CHROMIUM, DISSOLVED	mg/l		0.14	0.06	<0.05	<0.05
IRON, DISSOLVED	mg/l					
LEAD, DISSOLVED	mg/l		0.20	0.06	<0.05	<0.05
MANGANESE, DISSOLVED	mg/l					
MERCURY, DISSOLVED	mg/l		0.00	0.00	<0.0005	0.00
SELENIUM, DISSOLVED	mg/l		0.02	0.01	<0.005	<0.005
SILVER, DISSOLVED	mg/l		<0.01	<0.01	<0.01	<0.01
SODIUM, DISSOLVED	mg/l		297.00	147.00	232.00	230.00
NITRATE NITROGEN	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5
TOTAL ORGANIC HALOGENS	ug/l	160.00	100.00	80.00	80.00	60.00
PHENOLICS	mg/l					
pH	standard	6.87	6.98	6.98	6.54	6.55
TOTAL DISSOLVED SOLIDS	mg/l	13600.00	10800.00	7000.00	8400.00	8900.00
SPECIFIC CONDUCTANCE	umhos/cm	12600.00	9790.00	6560.00	8430.00	8420.00
SULFATE	mg/l	7900.00	6570.00	4200.00	5550.00	6700.00
HERBICIDES:						
2,4-D	ug/l					
2,4,5-TP	ug/l					
PESTICIDES:						
ENDRIN	ug/l					
LINDANE	ug/l					
METHOXYCHLOR	ug/l					
TOXAPHENE	ug/l					
ACID EXTRACTABLES:						
PHENOL	ug/l	<10	<10	<10	<10	<10
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25
4-NITROPHENOL	ug/l	<25	<25	<25	<25	<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25
PENTACHLOROPHENOL	ug/l	<25	<50	<50	<50	<50
BASE/NEUTRAL EXTRACTABLES:						
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10	<10	<10
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	<10
NITROBENZENE	ug/l	<10	<10	<10	<10	<10
ISOPHORONE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
NAPHTHALENE	ug/l	<10	<10	<10	<10	<10
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	<10
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	<10
DIMETHYL PHTHALATE	ug/l	<10	<10	16	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10
ACENAPHTHENE	ug/l	<10	<10	<10	<10	<10
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10
FLUORENE	ug/l	<10	<10	<10	<10	<10
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-1
MONITORING WELL W-1R (REPLACING W-1 AS OF 4-5-91)

PARAMETER	UNITS	5/2/91	7/18/91	10/26/91	1/16/92	4/16/92
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
PHENANTHRENE	ug/l	<10	<10	<10	<10	<10
ANTHRACENE	ug/l	<10	<10	<10	<10	<10
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10	<10	16.00
FLUORANTHENE	ug/l	<10	<10	<10	<10	<10
BENZIDINE	ug/l	<25	<25	<25	<100	<100
PYRENE	ug/l	<10	<10	<10	<10	<10
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	<10	<10
CHRYSENE	ug/l	<10	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	ug/l	<25	<20	<20	<20	<20
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	13.00	<10	<10	<10	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10
BENZO(A)PYRENE	ug/l	<10	<10	<10	<10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l					
VOLATILE ORGANICS:						
CHLOROMETHANE	ug/l	<50	<10	<10	<10	<10
BROMOMETHANE	ug/l	<50	<10	<10	<10	<10
VINYL CHLORIDE	ug/l	<50	<10	<10	<10	<10
CHLOROETHANE	ug/l	<50	<10	<10	<10	<10
METHYLENE CHLORIDE	ug/l	<25	<5	<5	<5	<5
ACROLEIN	ug/l	<500	<100	<100	<100	<100
ACRYLONITRILE	ug/l	<500	<100	<100	<100	<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<25	<5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<25	<5	<5	<5	<5
TRICHLOROFLUOROMETHANE	ug/l	<25	<5	<5	<5	<5
1,1-DICHLOROETHENE	ug/l	<25	<5	<5	<5	<5
1,1-DICHLOROETHANE	ug/l	<25	<5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<25	<5	<5	<5	<5
CHLOROFORM	ug/l	<25	<5	<5	<5	<5
1,2-DICHLOROETHANE	ug/l	<25	<5	<5	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<25	<5	<5	<5	<5
CARBON TETRACHLORIDE	ug/l	<25	<5	<5	<5	<5
BROMODICHLOROMETHANE	ug/l	<25	<5	<5	<5	<5
1,2-DICHLOROPROPANE	ug/l	<25	<5	<5	<5	<5
TRICHLOROETHENE	ug/l	<25	<5	<5	<5	<5
BENZENE	ug/l	<25	<5	<5	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<25	<5	<5	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<25	<5	<5	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<50	<10	<10	<10	<10
BROMOFORM	ug/l	<25	<5	<5	<5	<5
TETRACHLOROETHENE	ug/l	<25	<5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<25	<5	<5	<5	<5
TOLUENE	ug/l	<25	<5	<5	<5	<5
CHLOROBENZENE	ug/l	<25	<5	<5	<5	<5
ETHYLBENZENE	ug/l	<25	<5	<5	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-1
MONITORING WELL W-1R (REPLACING W-1 AS OF 4-5-91)

NOTES:

(1) 1,3 CIS-DICHLOROPROPENE AND 1,3 TRANS-DICHLOROPROPENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS FOR PERIOD 4/10/85 THROUGH 4/24/86.

(2) BENZ(A)ANTHRACENE AND CHRYSENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS. 10/15/85.

(3) ONLY SAMPLED FOR FECAL COLIFORM.

(4) THE VALUE REPORTED IS THE RESULT OF QUADRUPLICATE SAMPLES.

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-2
MONITORING WELL W-2R (REPLACING W-2 AS OF 4-18-89)

PARAMETER	UNITS	4/10/85	6/26/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
ALKALINITY, TOTAL	mg/l	1040.00	1093.00	709.00	630.00	381.00	40.00	1070.00	500.00
AMMONIA NITROGEN	mg/l	917.00	1260.00	1520.00	682.00	350.00	1110.00	1228.00	360.00
TOTAL COLIFORM	cfu/100 m	1800.00	2400.00	33.00	<2		5.00	350.00	<1
BIOCHEMICAL OXYGEN DEMAND	mg/l	220.00		7.90	515.00	300.00	120.00	330.00	570.00
TOTAL ORGANIC CARBON	mg/l	5.60	7.67	4.54	194.00	109.00	264.00	371.00	82.00
CHEMICAL OXYGEN DEMAND	mg/l	1170.00	1856.00	1760.00	1500.00	393.00	304.00	1700.00	280.00
CHLORIDE	mg/l	1210.00	1633.00	1990.00	773.00	473.00			343.00
CYANIDE, TOTAL	mg/l	159.00	120.00	84.00	24.60	31.20	189.00	339.00	40.30
FLUORIDE	mg/l	0.95	1.50	2.50	3.90	5.60	4.05	3.20	5.30
ALUMINUM, DISSOLVED	mg/l	<0.5	<0.5						
ARSENIC, DISSOLVED	mg/l	0.01	0.03						
BARIUM, DISSOLVED	mg/l	<0.5	<0.5						
CADMIUM, DISSOLVED	mg/l								
CHROMIUM, DISSOLVED	mg/l	0.05	0.02	0.01	0.00	0.00	0.01	0.01	<0.001
IRON, DISSOLVED	mg/l	36.80	2.69	0.80	0.35	0.20	3.40	0.50	28.50
LEAD, DISSOLVED	mg/l	<0.001	<0.001						
MANGANESE, DISSOLVED	mg/l	3.0	0.71	0.29	5.53	11.40	2.60	0.85	63.00
MERCURY, DISSOLVED	mg/l	<0.0002	<0.005						
SELENIUM, DISSOLVED	mg/l	0.01	0.00						
SILVER, DISSOLVED	mg/l	<0.001	<0.001						
SODIUM, DISSOLVED	mg/l	411.00	430.00	420.00	232.00	274.00	320.00	430.00	3.90
NITRATE NITROGEN	mg/l	<0.15	<0.005	0.15	<0.15	<0.15	<0.52		3.90
TOTAL ORGANIC HALOGENS	ug/l	78.00	69.00	<5	5180.00		14.00	99.00	33.00
PHENOLICS	mg/l	<0.005	36.90	3.85	0.72	0.37	2.31	1.84	0.48
pH	standard	7.15	7.45	8.31	7.75	6.75	7.78	7.41	7.10
TOTAL DISSOLVED SOLIDS	mg/l	4920.00	3870.00	4190.00	5180.00	5290.00	1710.00	4850.00	5380.00
SPECIFIC CONDUCTANCE	umhos/cm	8010.00	9929.00	9750.00	7760.00	8650.00	10400.00	11100.00	6900.00
SULFATE	mg/l	2950.00	2512.00	2700.00	3650.00	3500.00	2960.00	3300.00	44.80
HERBICIDES:									
2,4-D	ug/l	1.19	<2.5						
2,4,5-TP	ug/l	<0.25	<10						
PESTICIDES:									
ENDRIN	ug/l	<0.50	<0.22						
LINDANE	ug/l	<0.50	<0.03						
METHOXYCHLOR	ug/l	<2.5	<0.49						
TOXAPHENE	ug/l	<25	<0.98						
ACID EXTRACTABLES:									
PHENOL	ug/l	2710.00	21.00	<10	167.00	<10	<10	170.00	35.00
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2,4-DIMEHTYLPHENOL	ug/l	27600.00	255.00	<10	479.00	10.10	663.00	104.00	323.00
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<20	<20	<20	<20	<50	<50	<50	<50
4-NITROPHENOL	ug/l	<40	<40	<40	<40	<50	<50	<50	<50
2-METHYL-4,6-DINITROPHENOL	ug/l	<20	<20	<20	<20	<50	<50	<50	<50
PENTACHLOROPHENOL	ug/l	<25	<25	<25	<25	<50	<50	<50	<50
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10			
BIS(2-CHLOROETHYL)ETHER	ug/l	<5	33.00	<5	<5	<10	<10	15.00	<10
1,3-DICHLOROBENZENE	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
HEXACHLOROETHANE	ug/l	<5	<10	<5	83.00	<10	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
NITROBENZENE	ug/l	90.00	<10	<5	<5	<10	<10	<10	<10
ISOPHORONE	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	15.00	<10	<5	<5	<10	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
NAPHTHALENE	ug/l	<5	116.00	497.00	420.00	339.00	64.00	1180.00	941.00
HEXACHLOROBUTADIENE	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<5	<10	<5	<5	<10	<10	<10	<10
ACENAPHTHYLENE	ug/l	<5	32.00	56.00	22.00	<10	<7	13.00	24.00
DIMETHYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	10.60	<10	<10	<10
ACENAPHTHENE	ug/l	<5	76.00	15.00	8.00	<10	<10	11.00	15.00
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
FLUORENE	ug/l	<5	58.00	120.00	45.00	<10	29.00	35.00	55.00
DIETHYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-2
MONITORING WELL W-2R (REPLACING W-2 AS OF 4-18-89)

PARAMETER	UNITS	4/10/85	6/26/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10		<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
PHENANTHRENE	ug/l	<5	14.00	347.00	38.00	<10	93.00	91.00	70.00
ANTHRACENE	ug/l	<5	<5	<5	<5	<10	<10	12.00	<10
DI-N-BUTYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	25.00
FLUORANTHENE	ug/l	<5	<5	191.00	12.00	<10	31.00	29.00	13.00
BENZIDINE	ug/l	<100	<100	<100	<100	<20			
PYRENE	ug/l	<5	6.50	126.00	8.00	<10	20.00	19.00	<10
BUTYL BENZYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	25.00	<10	<10	<10	<10	<10	<10
CHRYSENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	ug/l	<10	<10	<10	<10	<20	<20	<20	<20
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<25	<25	32.00	<25	<10	<10	<10	<10
BENZO(K)FLUORANTHENE	ug/l	<25	<25	*	<25	<10	<10	<10	<10
BENZO(A)PYRENE	ug/l	<25	<25	96.00	<25	<10	<10	<10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10	<10	<10	<10		<10	<10
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<10	<10
BROMOMETHANE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<10	<10
VINYL CHLORIDE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<10	<10
CHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<10	<10
METHYLENE CHLORIDE	ug/l	6.20	<1.0	<1.0	<10	2.40	<5	<5	<5
ACROLEIN	ug/l	<100	<100	<100	<1000	<100	<80		
ACRYLONITRILE	ug/l	<25	<25	<25	<250	<25	<80		
TRANS-1,3-DICHLOROPROPENE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<5	<5
TRICHLOROFLUOROMETHANE	ug/l							<5	<5
1,1-DICHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
1,1-DICHLOROETHANE	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
CHLOROFORM	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
1,2-DICHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
CARBON TETRACHLORIDE	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
BROMODICHLOROMETHANE	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
1,2-DICHLOROPROPANE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<5	<5
TRICHLOROETHENE	ug/l	<0.2	<0.2	<0.2	<2.0	<0.2	<5	<5	<5
BENZENE	ug/l	143.00	234.00	86.00	<10	73.40	490.00	<5	122.00
DIBROMOCHLOROMETHANE	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<10	<10
BROMOFORM	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<5	<5
TETRACHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<50	<5.0	<5	<5	<5
TOLUENE	ug/l	60.00	76.00	81.00	<2.0	17.60	59.40	<5	24.60
CHLOROBENZENE	ug/l	<1.0	<1.0	<1.0	<10	<1.0	<5	<5	<5
ETHYLBENZENE	ug/l	3.0	5.10	43.00	<10	<1.0	16.80	<5	6.10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-2
MONITORING WELL W-2R (REPLACING W-2 AS OF 4-18-89)

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89
ALKALINITY, TOTAL	mg/l	545.00	466.00	748.00	399.00		350.00		515.00
AMMONIA NITROGEN	mg/l	360.00	447.00	553.00	248.00		188.00		221.00
TOTAL COLIFORM	cfu/100 m	2.00	<1	540.00	440.00		200.00		<2.2
BIOCHEMICAL OXYGEN DEMAND	mg/l	135.00	344.00	315.00	53.0		68.0		119.00
TOTAL ORGANIC CARBON	mg/l	110.00	116.00	102.00	62.50		8.47		110.00
CHEMICAL OXYGEN DEMAND	mg/l	1460.00	545.00	494.00	143.00		133.00		330.00
CHLORIDE	mg/l			607.00	218.00		181.00		71.00
CYANIDE, TOTAL	mg/l	48.50	47.30	77.0	10.90		7.10		42.0
FLUORIDE	mg/l	5.90	7.51	6.30	5.85		3.10		0.20
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l								<0.01
BARIUM, DISSOLVED	mg/l								<0.1
CADMIUM, DISSOLVED	mg/l								<0.005
CHROMIUM, DISSOLVED	mg/l	0.00	0.00	0.01	0.01		0.00		<0.05
IRON, DISSOLVED	mg/l	22.0	0.12	2.0	60.70		17.90		
LEAD, DISSOLVED	mg/l								<0.05
MANGANESE, DISSOLVED	mg/l	6.30	0.13	3.90	4.70		2.40		
MERCURY, DISSOLVED	mg/l								<0.0005
SELENIUM, DISSOLVED	mg/l								<0.005
SILVER, DISSOLVED	mg/l								<0.01
SODIUM, DISSOLVED	mg/l	258.00	238.00	343.00	462.00		190.00		
NITRATE NITROGEN	mg/l	<0.26	<0.26	<0.21	<0.21		<0.21		0.50
TOTAL ORGANIC HALOGENS	ug/l	16.00	20.00	46.00	106.00		182.00		50.00
PHENOLICS	mg/l	0.69	1.07	0.30			0.05		
pH	standard	7.20	8.43	6.85	7.03		7.05		8.05
TOTAL DISSOLVED SOLIDS	mg/l	5840.00	4820.00	4260.00	4990.00		3660.00		2510
SPECIFIC CONDUCTANCE	umhos/cm	709.00	6810.00	7210.00	5640.00		4160.00		3810
SULFATE	mg/l	3420.00	3880.00	3440.00	2140.00		2260.00		1680
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	66.00	<10		<11	<10		80.00
2-CHLOROPHENOL	ug/l	<10	<10	<10		<11	<10		<10
2-NITROPHENOL	ug/l	<10	<10	<10		<11	<10		<10
2,4-DIMENTYLPHENOL	ug/l	39.00	<10	33.00		<11	28.00		20.00
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10		<11	<10		<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10		<11	<10		<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10		<11	<10		<10
2,4-DINITROPHENOL	ug/l	<50	<50	<50		<55	<50		<25
4-NITROPHENOL	ug/l	<50	<50	<50		<55	<50		<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<50	<50	<50		<55	<50		<25
PENTACHLOROPHENOL	ug/l	<50	<50	<50		<55	<50		<25
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l			<10		<10	<10		<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10		<10	<10		<10
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10		<10
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10		<10
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10		<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	28.00	<10		<10	<10		<10
HEXACHLOROETHANE	ug/l	<10	<10	<10		<10	<10		<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10		<10	<10		<10
NITROBENZENE	ug/l	<10	<10	<10		<10	<10		<10
ISOPHORONE	ug/l	<10	<10	<10		<10	<10		<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10		<10	<10		<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10		<10
NAPHTHALENE	ug/l	299.00	118.00	<10		39.00	70.00		290.00
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10		<10	<10		<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10		<10	<10		<10
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10		<10	<10		<10
ACENAPHTHYLENE	ug/l	<10	14.00	<10		11.00	<10		<10
DIMETHYL PHTHALATE	ug/l	<10	<10	<10		<10	<10		<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10		<10	<10		<10
ACENAPHTHENE	ug/l	16.00	<10	<10		<10	<10		10.00
2,4-DINITROTOLUENE	ug/l	<10	<10	<10		<10	<10		<10
FLUORENE	ug/l	26.00	<10	25.00		30.00	16.00		<10
DIETHYL PHTHALATE	ug/l	<10	<10	<10		<10	<10		<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10		<10	<10		<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10		<10	<10		<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-2
MONITORING WELL W-2R (REPLACING W-2 AS OF 4-18-89)

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	6/19/88	1/18/89	4/18/89
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10		<10	<10		<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10		<10	<10		<10
HEXACHLOROBENZENE	ug/l	<10	<10	<10		<10	<10		<10
PHENANTHRENE	ug/l	<10	<10	27.00		64.00	16.00		30.00
ANTHRACENE	ug/l	<10	<10	<10		14.00	<10		<10
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10		<10	<10		<10
FLUORANTHENE	ug/l	<10	<10	<10		22.00	<10		30.00
BENZIDINE	ug/l			<20		<20	<20		<25
PYRENE	ug/l	<10	<10	<10		31.00	<10		30.00
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10		<10	<10		<10
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10		<10	<10		20.00
CHRYSENE	ug/l	<10	<10	<10		<10	<10		20.00
3,3'-DICHLOROBENZIDINE	ug/l	<20	<20	<20		<20	<20		<25
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	11.00		<10	<10		10.00
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10		<10	<10		<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10		<10	<10		20.00
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10		<10	<10		<10
BENZO(A)PYRENE	ug/l	<10	<10	<10		<10	<10		10.00
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10		<10	<10		<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10		<10	<10		<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10		<10	<10		<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10	<10		<10	<10		
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<2.0	<2.0	<2	<2		<2		<10
BROMOMETHANE	ug/l	<2.0	<2.0	<2	<2		<2		<10
VINYL CHLORIDE	ug/l	<2.0	<2.0	<2	<2		<2		<10
CHLOROETHANE	ug/l	<2.0	<2.0	<2	<2		<2		<10
METHYLENE CHLORIDE	ug/l	32.00	<1.0	<1	<1		<1		<5
ACROLEIN	ug/l								<100
ACRYLONITRILE	ug/l								<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<1.0	22.00	<1	<1		<1		<5
CIS-1,3-DICHLOROPROPENE	ug/l	<1.0	<1.0	<1	<1		<1		<5
TRICHLOROFLUOROMETHANE	ug/l						<1		<5
1,1-DICHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1		<5
1,1-DICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1		<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1		<5
CHLOROFORM	ug/l	<1.0	<1.0	<1	<1		<2		<5
1,2-DICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1		<5
1,1,1-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1		<5
CARBON TETRACHLORIDE	ug/l	<1.0	<1.0	<1	<1		<1		<5
BROMODICHLOROMETHANE	ug/l	<1.0	<1.0	<1	<1		<1		<5
1,2-DICHLOROPROPANE	ug/l	<1.0	<1.0	<1	<1		<1		<5
TRICHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1		<5
BENZENE	ug/l	105.00	190.00	95.00	40.00		22.00		110.00
DIBROMOCHLOROMETHANE	ug/l	<1.0	<1.0	<1	<1		<1		<5
1,1,2-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1		<5
2-CHLOROETHYLVINYL ETHER	ug/l	<1.0	<2.0	<2	<2		<2		<10
BROMOFORM	ug/l	<1.0	<1.0	<1	<1		<1		<5
TETRACHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1		<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1		<5
TOLUENE	ug/l	33.00	48.00	16.00	10.00		7.00		13.00
CHLOROBENZENE	ug/l	<1.0	<1.0	<1	<1		<1		<5
ETHYLBENZENE	ug/l	7.50	9.80	10.00	3.00		3.00		12.00

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-2
MONITORING WELL W-2R (REPLACING W-2 AS OF 4-18-89)

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
ALKALINITY, TOTAL	mg/l	520.00	426.00	355.00	243.00	178.00	211.00	167.00	
AMMONIA NITROGEN	mg/l	178.00	181.00	107.00	73.10	53.40	56.80	57.90	
TOTAL COLIFORM	cfu/100 m	2.20	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	
BIOCHEMICAL OXYGEN DEMAND	mg/l	123.00	118.00	88.00	48.00		27.00	16.00	
TOTAL ORGANIC CARBON	mg/l	120.00	120.00	100.00	68.00	62.00	52.00	39.00	* 38
CHEMICAL OXYGEN DEMAND	mg/l	380.00	380.00	330.00	250.00	180.00	170.00	140.00	
CHLORIDE	mg/l	78.00	87.00	102.00	85.00	74.00	68.00	47.00	
CYANIDE, TOTAL	mg/l	0.330	0.30	0.260	0.19	0.12	0.10	0.11	
FLUORIDE	mg/l	0.30	0.20	0.20	0.20	0.20	0.20	0.10	
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
BARIUM, DISSOLVED	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	
CADMIUM, DISSOLVED	mg/l	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	
CHROMIUM, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
IRON, DISSOLVED	mg/l								
LEAD, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
MANGANESE, DISSOLVED	mg/l								
MERCURY, DISSOLVED	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
SELENIUM, DISSOLVED	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
SILVER, DISSOLVED	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
SODIUM, DISSOLVED	mg/l	161.00	171.00	195.00	188.00	145.00	159.00	123.00	
NITRATE NITROGEN	mg/l	<0.5	<0.5	<0.5	<0.5	0.60	<0.5	<0.5	
TOTAL ORGANIC HALOGENS	ug/l	100.00	210.00	230.00	180.00	120.00	140.00	70.00	* 72.5
PHENOLICS	mg/l								
pH	standard	10.0	9.91	9.91	9.34	9.76	8.85	9.28	* 9.29
TOTAL DISSOLVED SOLIDS	mg/l	3240.00	3000.00	2700.00	2400.00	2800.00	2500.00	2600.00	
SPECIFIC CONDUCTANCE	umhos/cm	3330.00	3380.00	3360.00	3240.00	3230.00	3070.00	3060.00	* 2960
SULFATE	mg/l	1580.00	1480.00	1620.00	1440.00	1740.00	1720.00	1670.00	
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	133.00	242.00	185.00	80.00	47.00	43.00	25.00	
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DIMEHTYLPHENOL	ug/l	15.00	28.00	25.00	11.00	<10	<10	<10	
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
4-NITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
PENTACHLOROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROETHYLIETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
NITROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ISOPHORONE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
NAPHTHALENE	ug/l	117.00	166.00	197.00	146.00	154.00	147.00	136.00	
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIMETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ACENAPHTHENE	ug/l	10.00	11.00	11.00	<10	12.00	11.00	13.00	
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
FLUORENE	ug/l	<10	<10	10.00	<10	<10	10.00	12.00	
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-2
MONITORING WELL W-2R (REPLACING W-2 AS OF 4-18-89)

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
PHENANTHRENE	ug/l	<10	14.00	18.00	11.00	18.00	16.00	18.00	
ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZIDINE	ug/l	<25	<25	<25	<25	<25	<25	<25	
PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
CHRYSENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
3,3'-DICHLOROBENZIDINE	ug/l	<25	<25	<25	<25	<25	<25	<25	
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(A)PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l								
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<50	<10	<10	<10	<10	<10	<10	
BROMOMETHANE	ug/l	<50	<10	<10	<10	<10	<10	<10	
VINYL CHLORIDE	ug/l	<50	<10	<10	<10	<10	<10	<10	
CHLOROETHANE	ug/l	<50	<10	<10	<10	<10	<10	<10	
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	<5	<5	<5	
ACROLEIN	ug/l	<500	<100	<100	<100	<100	<100	<100	
ACRYLONITRILE	ug/l	<500	<100	<100	<100	<100	<100	<100	
TRANS-1,3-DICHLOROPROPENE	ug/l	<25	<5	<5	<5	<5	<5	<5	
CIS-1,3-DICHLOROPROPENE	ug/l	<25	<5	<5	<5	<5	<5	<5	
TRICHLOROFLUOROMETHANE	ug/l	31.00	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHENE	ug/l	<25	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHANE	ug/l	<25	<5	<5	<5	<5	<5	<5	
TRANS-1,2-DICHLOROETHENE	ug/l	<25	<5	<5	<5	<5	<5	<5	
CHLOROFORM	ug/l	<25	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROETHANE	ug/l	<25	<5	<5	<5	<5	<5	<5	
1,1,1-TRICHLOROETHANE	ug/l	<25	<5	<5	<5	<5	<5	<5	
CARBON TETRACHLORIDE	ug/l	<25	<5	<5	<5	<5	<5	<5	
BROMODICHLOROMETHANE	ug/l	<25	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROPROPANE	ug/l	<25	<5	<5	<5	<5	<5	<5	
TRICHLOROETHENE	ug/l	<25	<5	<5	<5	<5	<5	<5	
BENZENE	ug/l	68.00	62.00	54.00	94.00	62.00	64.00	97.00	
DIBROMOCHLOROMETHANE	ug/l	<25	<5	<5	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE	ug/l	<25	<5	<5	<5	<5	<5	<5	
2-CHLOROETHYLVINYL ETHER	ug/l	<50	<10	<10	<10	<10	<10	<10	
BROMOFORM	ug/l	<25	<5	<5	<5	<5	<5	<5	
TETRACHLOROETHENE	ug/l	<25	<5	<5	<5	<5	<5	<5	
1,1,2,2-TETRACHLOROETHANE	ug/l	<25	<5	<5	<5	<5	<5	<5	
TOLUENE	ug/l	<25	6.00	7.00	6.00	<5	<5	<5	
CHLOROBENZENE	ug/l	<25	<5	<5	<5	<5	<5	<5	
ETHYLBENZENE	ug/l	<25	6.00	7.00	9.00	6.00	6.00	8.00	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-2
MONITORING WELL W-2R (REPLACING W-2 AS OF 4-18-89)

PARAMETER	UNITS	5/2/91	7/18/91	10/25/91	1/16/92	4/16/92
ALKALINITY, TOTAL	mg/l	178.00	118.00	176.00	171.00	116.00
AMMONIA NITROGEN	mg/l	39.20	43.60	58.20	62.90	61.00
TOTAL COLIFORM	cfu/100 m	<2.2	<2.2	<2.2	>16	<2.2
BIOCHEMICAL OXYGEN DEMAND	mg/l	19.00	21.00	21.00	23.00	24.00
TOTAL ORGANIC CARBON	mg/l	34.00	37.00	44.00	42.00	35.00
CHEMICAL OXYGEN DEMAND	mg/l	400.00	210.00	160.00	200.00	180.00
CHLORIDE	mg/l	52.00	44.00	44.00	40.00	37.00
CYANIDE, TOTAL	mg/l	0.11	0.04	0.10	0.63	0.16
FLUORIDE	mg/l	0.20	0.20	0.20	0.20	0.20
ALUMINUM, DISSOLVED	mg/l					
ARSENIC, DISSOLVED	mg/l		0.01	<0.01	<0.01	<0.01
BARIUM, DISSOLVED	mg/l		0.20	0.30	0.10	<0.2
CADMIUM, DISSOLVED	mg/l		<0.005	<0.005	<0.005	<0.005
CHROMIUM, DISSOLVED	mg/l		0.06	<0.05	<0.05	<0.05
IRON, DISSOLVED	mg/l					
LEAD, DISSOLVED	mg/l		0.31	0.17	<0.05	<0.05
MANGANESE, DISSOLVED	mg/l					
MERCURY, DISSOLVED	mg/l		0.00	0.00	<0.0005	<0.0002
SELENIUM, DISSOLVED	mg/l		<0.005	<0.005	<0.005	<0.005
SILVER, DISSOLVED	mg/l		<0.01	<0.01	<0.01	<0.01
SODIUM, DISSOLVED	mg/l		142.00	132.00	122.00	115.00
NITRATE NITROGEN	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5
TOTAL ORGANIC HALOGENS	ug/l	10.00	70.00	70.00	61.00	80.00
PHENOLICS	mg/l					
pH	standard	8.98	9.27	9.21	9.10	9.01
TOTAL DISSOLVED SOLIDS	mg/l	2620.00	2540.00	2500.00	2180.00	2170.00
SPECIFIC CONDUCTANCE	umhos/cm	2850.00	2940.00	2870.00	2810.00	2550.00
SULFATE	mg/l	1580.00	1.00	1640.00	1690.00	1600.00
HERBICIDES:						
2,4-D	ug/l					
2,4,5-TP	ug/l					
PESTICIDES:						
ENDRIN	ug/l					
LINDANE	ug/l					
METHOXYCHLOR	ug/l					
TOXAPHENE	ug/l					
ACID EXTRACTABLES:						
PHENOL	ug/l	28.00	23.00	24.00	25.00	25.00
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25
4-NITROPHENOL	ug/l	<25	<25	<25	<25	<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25
PENTACHLOROPHENOL	ug/l	<25	<25	<50	<50	<50
BASE/NEUTRAL EXTRACTABLES:						
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10	<10	<10
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	<10
NITROBENZENE	ug/l	<10	<10	<10	<10	<10
ISOPHORONE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
NAPHTHALENE	ug/l	109.00	75.00	93.00	71.00	68.00
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	<10
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	<10
DIMETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10
ACENAPHTHENE	ug/l	13.00	10.00	14.00	13.00	14.00
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10
FLUORENE	ug/l	12.00	12.00	13.00	12.00	16.00
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-2
MONITORING WELL W-2R (REPLACING W-2 AS OF 4-18-89)

PARAMETER	UNITS	5/2/91	7/18/91	10/25/91	1/16/92	4/16/92
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
PHENANTHRENE	ug/l	23.00	26.00	21.00	36.00	38.00
ANTHRACENE	ug/l	<10	<10	<10	<10	10.00
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10	<10	17.00
FLUORANTHENE	ug/l	11.00	19.00	<10	33.00	31.00
BENZIDINE	ug/l	<25	<25	<100	<100	<100
PYRENE	ug/l	11.00	16.00	<10	32.00	28.00
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	13.00	16.00
CHRYSENE	ug/l	<10	<10	<10	13.00	16.00
3,3'-DICHLOROBENZIDINE	ug/l	<25	<20	<20	<20	<20
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10	10.00	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10	12.00	12.00
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10	<10	11.00
BENZO(A)PYRENE	ug/l	<10	<10	<10	12.00	13.00
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l					
VOLATILE ORGANICS:						
CHLOROMETHANE	ug/l	<10	<10	<10	<10	<10
BROMOMETHANE	ug/l	<10	<10	<10	<10	<10
VINYL CHLORIDE	ug/l	<10	<10	<10	<10	<10
CHLOROETHANE	ug/l	<10	<10	<10	<10	<10
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	<5
ACROLEIN	ug/l	<100	<100	<100	<100	<100
ACRYLONITRILE	ug/l	<100	<100	<100	<100	<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5
TRICHLOROFLUOROMETHANE	ug/l	<5	<5	<5	<5	<5
1,1-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5
1,1-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5
CHLOROFORM	ug/l	<5	<5	<5	<5	<5
1,2-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
CARBON TETRACHLORIDE	ug/l	<5	<5	<5	<5	<5
BROMODICHLOROMETHANE	ug/l	<5	<5	<5	<5	<5
1,2-DICHLOROPROPANE	ug/l	<5	<5	<5	<5	<5
TRICHLOROETHENE	ug/l	<5	<5	<5	<5	<5
BENZENE	ug/l	70.00	77.00	89.00	90.00	110.00
DIBROMOCHLOROMETHANE	ug/l	<5	<5	<5	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<10	<10	<10	<10	<10
BROMOFORM	ug/l	<5	<5	<5	<5	<5
TETRACHLOROETHENE	ug/l	<5	<5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<5	<5	<5	<5	<5
TOLUENE	ug/l	<5	<5	<5	<5	<5
CHLOROBENZENE	ug/l	<5	<5	<5	<5	<5
ETHYLBENZENE	ug/l	7.00	6.00	<5	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-2
MONITORING WELL W-2R (REPLACING W-2 AS OF 4-18-89)

NOTES:

(1) 1,3 CIS-DICHLOROPROPENE AND 1,3 TRANS-DICHLOROPROPENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS FOR PERIOD 4/10/85 THROUGH 4/24/86.

(2) BENZ(A)ANTHRACENE AND CHRYSENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS. 10/16/85.

(3) ONLY SAMPLED FOR FECAL COLIFORM.

(4) THE VALUE REPORTED IS THE RESULT OF QUADRUPLICATE SAMPLES.

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-3

PARAMETER	UNITS	4/10/85	6/26/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
ALKALINITY, TOTAL	mg/l	65.50	44.20	47.10	39.30	39.80	58	44.60	62.40
AMMONIA NITROGEN	mg/l	14.30	13.10	6.30	1.27	2.48	4.55	5.91	2.64
TOTAL COLIFORM	cfu/100 m	400	1	5	<2		<2	2	<1
BIOCHEMICAL OXYGEN DEMAND	mg/l	2.40		0.90	4.65	6.80	17	4.70	4.10
TOTAL ORGANIC CARBON	mg/l	6.70	5.51	3.10	1.39	1.76	1.60	2.50	2.60
CHEMICAL OXYGEN DEMAND	mg/l	12.70	57.30	14.50	36.0	<10	<10	<10	38.70
CHLORIDE	mg/l	12.30	14.80	17.0	11.60	9.50			<10
CYANIDE, TOTAL	mg/l	0.004	0.001	0.025	0.008	0.057	0.066	0.012	0.015
FLUORIDE	mg/l	0.62	0.47	0.28	0.43	0.44	0.53	0.49	0.42
ALUMINUM, DISSOLVED	mg/l	<0.5	<0.5						
ARSENIC, DISSOLVED	mg/l	<0.001	<0.001						
BARIUM, DISSOLVED	mg/l	<0.5	<0.5						
CADMIUM, DISSOLVED	mg/l								
CHROMIUM, DISSOLVED	mg/l	0.004	0.002	0.006	0.002	<0.001	<0.001	0.005	<0.001
IRON, DISSOLVED	mg/l	0.50	<0.05	0.10	<0.1	<0.10	<0.1	38	0.24
LEAD, DISSOLVED	mg/l	<0.001	<0.001						
MANGANESE, DISSOLVED	mg/l	1.70	1.40	1.04	0.67	0.58	1.30	3.20	0.20
MERCURY, DISSOLVED	mg/l	0.0002	<0.005						
SELENIUM, DISSOLVED	mg/l	0.005	0.003						
SILVER, DISSOLVED	mg/l	<0.001	<0.001						
SODIUM, DISSOLVED	mg/l	54.20	53	41	25.0	23.10	34.0	24.0	268
NITRATE NITROGEN	mg/l	15.30	10.50	15	11.90	7.05	5.40	5.80	<0.26
TOTAL ORGANIC HALOGENS	ug/l	48	7	<5	<5	1040	<5	13	10
PHENOLICS	mg/l	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	0.008
pH	standard	6.50	6.19	6.15	6.40	6.95	6.37	6.47	6.44
TOTAL DISSOLVED SOLIDS	mg/l	880	921	762	611	672	252	848	331
SPECIFIC CONDUCTANCE	umhos/cm	1070	1097	903	702	534	764	583	432
SULFATE	mg/l	513	420	380	249	51.90	298	200	3252
HERBICIDES:									
2,4-D	ug/l	<0.25	<1.0						
2,4,5-TP	ug/l	<0.25	<1.0						
PESTICIDES:									
ENDRIN	ug/l	<0.05	<0.022						
LINDANE	ug/l	<0.05	<0.003						
METHOXYCHLOR	ug/l	<0.25	<0.049						
TOXAPHENE	ug/l	<2.5	<0.098						
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
2,4-DINITROPHENOL	ug/l	<20	<20	<20	<20	<50	<50	<50	<55
4-NITROPHENOL	ug/l	<40	<40	<40	<40	<50	<50	<50	<55
2-METHYL-4,6-DINITROPHENOL	ug/l	<20	<20	<20	<20	<50	<50	<50	<55
PENTACHLOROPHENOL	ug/l	<25	<25	<25	<25	<50	<50	<50	<55
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10			
BIS(2-CHLOROETHYL)ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
1,3-DICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
1,4-DICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
1,2-DICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
HEXACHLOROETHANE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
N-NITROSODI-N-PROPYLAMINE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
NITROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
ISOPHORONE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
BIS(2-CHLOROETHOXY)METHANE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
1,2,4-TRICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
NAPHTHALENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
HEXACHLOROBUTADIENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
HEXCHLOROCYCLOPENTADIENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
2-CHLORONAPHTHALENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
ACENAPHTHYLENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
DIMETHYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
ACENAPHTHENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
FLUORENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
DIETHYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
4-CHLOROPHENYL PHENYL ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	<11

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-3

PARAMETER	UNITS	4/10/85	8/26/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10		<10	<11
4-BROMOPHENYL PHENYL ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
HEXACHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
PHENANTHRENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
ANTHRACENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
DI-N-BUTYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
FLUORANTHENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
BENZIDINE	ug/l	<100	<100	<100	<100	<20			
PYRENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
BUTYL BENZYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<11
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
CHRYSENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
3,3'-DICHLOROBENZIDINE	ug/l	<10	<10	<10	<10	<20	<20	<20	<22
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	12	<5	<5	<5	<10	<10	<10	<11
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	<11
BENZO(B)FLUORANTHENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<11
BENZO(K)FLUORANTHENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<11
BENZO(A)PYRENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<11
INDENO(1,2,3-C,D)PYRENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<11
DIBENZ(A,H)ANTHRACENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<11
BENZO(G,H,I)PERYLENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<11
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10	<10	<10	<10		<10	<11
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
BROMOMETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
VINYL CHLORIDE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
CHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
METHYLENE CHLORIDE	ug/l	3.80	<1.0	<1.0	<1.0	6.10	<5	<5	<5
ACROLEIN	ug/l	<100	<100	<100	<100	<100	<80		
ACRYLONITRILE	ug/l	<25	<25	<25	<25	<25	<80		
TRANS-1,3-DICHLOROPROPENE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TRICHLOROFLUOROMETHANE	ug/l							<5	<5
1,1-DICHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,1-DICHLOROETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
CHLOROFORM	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,2-DICHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
CARBON TETRACHLORIDE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
BROMODICHLOROMETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,2-DICHLOROPROPANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TRICHLOROETHENE	ug/l	<0.2	<0.2	<0.2	<0.2	<0.2	<5	<5	<5
BENZENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
BROMOFORM	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TETRACHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TOLUENE	ug/l	<0.2	<0.2	<0.2	<0.2	<0.2	<5	<5	<5
CHLOROBENZENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
ETHYLBENZENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-3

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89
ALKALINITY, TOTAL	mg/l	58.70	55.60	43.60	55.40		51.90	49	46
AMMONIA NITROGEN	mg/l	1.20	2.40	0.47	1.60		2.33	1.20	1.20
TOTAL COLIFORM	cfu/100 m		<1	510	270		170	(3) <10	<2.2
BIOCHEMICAL OXYGEN DEMAND	mg/l	2.90	0.90	1.50	4.60		5.0	<6	<6
TOTAL ORGANIC CARBON	mg/l	2.10	1.50	2.20	1.40		0.59	1.10	1.10
CHEMICAL OXYGEN DEMAND	mg/l	14.50	<10	<10	<10.0		10.40	<50	<50
CHLORIDE	mg/l			<10.0	<10		<10	4	3
CYANIDE, TOTAL	mg/l	0.009	0.010	0.028	0.067		<0.009	0.04	0.027
FLUORIDE	mg/l	0.44	0.50	0.47	0.47		0.50	0.40	0.30
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l							<0.01	<0.01
BARIUM, DISSOLVED	mg/l							0.10	<0.1
CADMIUM, DISSOLVED	mg/l							<0.005	<0.005
CHROMIUM, DISSOLVED	mg/l	0.002	0.003	0.004	0.013		0.004	<0.05	<0.05
IRON, DISSOLVED	mg/l	<0.1	<0.1	<0.1	0.30		<0.1		
LEAD, DISSOLVED	mg/l							<0.05	<0.05
MANGANESE, DISSOLVED	mg/l	0.20	0.20	0.30	0.20		0.20		
MERCURY, DISSOLVED	mg/l							<0.0005	<0.0005
SELENIUM, DISSOLVED	mg/l							0.008	0.008
SILVER, DISSOLVED	mg/l							<0.01	<0.01
SODIUM, DISSOLVED	mg/l	11.40	11.60	9.18	8.30		7.80		
NITRATE NITROGEN	mg/l	2.80	2.45	1.38	1.99		1.55	2.80	2.20
TOTAL ORGANIC HALOGENS	ug/l	<5	100	9	96		123	<5	8
PHENOLICS	mg/l	<0.005	<0.005	<0.005	<0.005		<0.005		
pH	standard	6.39	6.30	6.28	6.54		6.21	6.49	6.61
TOTAL DISSOLVED SOLIDS	mg/l	278	272	204	236		216	220	250
SPECIFIC CONDUCTANCE	umhos/cm	353	328	242	303		273	310	3510
SULFATE	mg/l	99.0	91	67.50	83.70		72.70	89	99
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2-CHLOROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<50	<50	<50		<50	<50	<25	<25
4-NITROPHENOL	ug/l	<50	<50	<50		<50	<50	<25	<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<50	<50	<50		<50	<50	<25	<25
PENTACHLOROPHENOL	ug/l	<50	<50	<50		<50	<50	<25	<25
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l			<10		<11	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10		<11	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10		<11	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10		<11	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10		<11	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10		<11	<10	<10	<10
HEXACHLOROETHANE	ug/l	<10	<10	<10		<11	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10		<11	<10	<10	<10
NITROBENZENE	ug/l	<10	<10	<10		<11	<10	<10	<10
ISOPHORONE	ug/l	<10	<10	<10		<11	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10		<11	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10		<11	<10	<10	<10
NAPHTHALENE	ug/l	<10	<10	<10		<11	<10	<10	<10
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10		<11	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10		<11	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10		<11	<10	<10	<10
ACENAPHTHYLENE	ug/l	<10	<10	<10		<11	<10	<10	<10
DIMETHYL PHTHALATE	ug/l	<10	<10	<10		<11	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10		<11	<10	<10	<10
ACENAPHTHENE	ug/l	<10	<10	<10		<11	<10	<10	<10
2,4-DINITROTOLUENE	ug/l	<10	<10	<10		<11	<10	<10	<10
FLUORENE	ug/l	<10	<10	<10		<11	<10	<10	<10
DIETHYL PHTHALATE	ug/l	<10	<10	<10		<11	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10		<11	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10		<11	<10	<10	<10

PHILADELPHIA COKE COMPANY
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MONITORING WELL W-3

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10		<11	<10	<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10		<11	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<10	<10	<10		<11	<10	<10	<10
PHENANTHRENE	ug/l	<10	<10	<10		<11	<10	<10	<10
ANTHRACENE	ug/l	<10	<10	<10		<11	<10	<10	<10
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<01		<11	<10	<10	<10
FLUORANTHENE	ug/l	<10	<10	<10		<11	<10	<10	<10
BENZIDINE	ug/l			<20		<11	<20	<26	<26
PYRENE	ug/l	<10	<10	<10		<11	<10	<10	<10
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10		<11	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10		<11	<10	<10	<10
CHRYSENE	ug/l	<10	<10	<10		<11	<10	<10	<10
3,3'-DICHLOROBENZIDINE	ug/l	<20	<20	<20		<11	<20	<26	<26
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10		<11	<10	<10	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10		<11	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10		<11	<10	<10	<10
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10		<11	<10	<10	<10
BENZO(A)PYRENE	ug/l	<10	<10	<10		<11	<10	<10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10		<11	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10		<11	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10		<11	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10	<10		<11	<10		
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
BROMOMETHANE	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
VINYL CHLORIDE	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
CHLOROETHANE	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
METHYLENE CHLORIDE	ug/l	34	<1.0	<1	<1		<1	<5	<5
ACROLEIN	ug/l							<100	<100
ACRYLONITRILE	ug/l							<100	<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TRICHLOROFLUOROMETHANE	ug/l	<1.0					<1	<5	<5
1,1-DICHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,1-DICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
CHLOROFORM	ug/l	<1.0	1.30	<1	<1		<1	<5	<5
1,2-DICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
CARBON TETRACHLORIDE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
BROMODICHLOROMETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,2-DICHLOROPROPANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TRICHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
BENZENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<2.0	<2.0	<2	<2		<2	<10	<10
BROMOFORM	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TETRACHLOROETHENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
TOLUENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
CHLOROBENZENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5
ETHYLBENZENE	ug/l	<1.0	<1.0	<1	<1		<1	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-3

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
ALKALINITY, TOTAL	mg/l	61	53	48	55	49	72	98	
AMMONIA NITROGEN	mg/l	1.40	0.50	0.60	1.50	1.40	2.00	1.90	
TOTAL COLIFORM	cfu/100 m	9.20	>16	<2.2	<2.2	<2.2	<2.2	<2.2	
BIOCHEMICAL OXYGEN DEMAND	mg/l	<12	7	<6	13		<12	<6	
TOTAL ORGANIC CARBON	mg/l	1.60	1.60	1.30	1.20	2.20	2.00	2.10	(4) 2.2
CHEMICAL OXYGEN DEMAND	mg/l	<50	<50	<50	60	100	460	60	
CHLORIDE	mg/l	2	2	3	5	15	34	29	
CYANIDE, TOTAL	mg/l	0.039	0.038	0.032	0.094	0.016	0.174	0.120	
FLUORIDE	mg/l	0.40	0.40	0.4	0.40	0.40	0.40	0.30	
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
BARIUM, DISSOLVED	mg/l	<0.1	0.10	<0.1	0.10	0.10	<0.2	<0.2	
CADMIUM, DISSOLVED	mg/l	<0.006		<0.005	<0.005	<0.005	<0.005	<0.005	
CHROMIUM, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
IRON, DISSOLVED	mg/l								
LEAD, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
MANGANESE, DISSOLVED	mg/l								
MERCURY, DISSOLVED	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
SELENIUM, DISSOLVED	mg/l	<0.005	<0.005	<0.005	<0.005	0.009	<0.005	<0.005	
SILVER, DISSOLVED	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
SODIUM, DISSOLVED	mg/l	10.40	8.70	9.70	10.60	11.60	25.50	26.30	
NITRATE NITROGEN	mg/l	2.10	2.10	0.9	0.80	1.90	2.80	0.90	
TOTAL ORGANIC HALOGENS	ug/l	<5	<5	<5	<5	<5	<5	7	(4) <5
PHENOLICS	mg/l								
pH	standard	6.30	6.21	6.34	6.47	6.21	6.38	6.28	(4) 6.30
TOTAL DISSOLVED SOLIDS	mg/l	230	220	240	290	380	720	790	
SPECIFIC CONDUCTANCE	umhos/cm	300	304	323	330	505	955	1060	(4) 1290
SULFATE	mg/l	79	82	101	96	153	379	412	
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
4-NITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
PENTACHLOROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROETHYLIETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROISOPROPYLIETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
NITROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ISOPHORONE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
NAPHTHALENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIMETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ACENAPHTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
FLUORENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-3

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/6/90	7/10/90	10/11/90	1/8/91	2/20/91
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
PHENANTHRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZIDINE	ug/l	<26	<26	<26	<26	<26	<26	<26	
PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
CHRYSENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
3,3'-DICHLOROBENZIDINE	ug/l	<26	<26	<26	<26	<26	<26	<26	
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(A)PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l								
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BROMOMETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
VINYL CHLORIDE	ug/l	<10	<10	<10	<10	<10	<10	<10	
CHLOROETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	<5	<5	<5	
ACROLEIN	ug/l	<100	<100	<100	<100	<100	<100	<100	
ACRYLONITRILE	ug/l	<100	<100	<100	<100	<100	<100	<100	
TRANS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CIS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRICHLOROFLUOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRANS-1,2-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CHLOROFORM	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,1-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CARBON TETRACHLORIDE	ug/l	<5	<5	<5	<5	<5	<5	<5	
BROMODICHLOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROPROPANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRICHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
BENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
DIBROMOCHLOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
2-CHLOROETHYLVINYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
BROMOFORM	ug/l	<5	<5	<5	<5	<5	<5	<5	
TETRACHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,2,2-TETRACHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TOLUENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CHLOROBENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
ETHYLBENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-3

PARAMETER	UNITS	5/2/91	7/18/91	10/26/91	1/16/92	4/16/92
ALKALINITY, TOTAL	mg/l	78	140	106	124.00	130.00
AMMONIA NITROGEN	mg/l	2.10	1.40	3.10	3.00	4.00
TOTAL COLIFORM	cfu/100 m	<2.2	5.20	5.20	5.20	<2.2
BIOCHEMICAL OXYGEN DEMAND	mg/l	<6	<6	<6	<12	8.00
TOTAL ORGANIC CARBON	mg/l	2.60	3.10	4.40	2.60	3.10
CHEMICAL OXYGEN DEMAND	mg/l	<50	380	70	140.00	220.00
CHLORIDE	mg/l	42	25	35	18.00	17.00
CYANIDE, TOTAL	mg/l	0.042	0.086	0.038	<0.005	0.075
FLUORIDE	mg/l	0.30	0.40	0.50	0.40	0.40
ALUMINUM, DISSOLVED	mg/l					
ARSENIC, DISSOLVED	mg/l		0.01	<0.01	<0.01	<0.01
BARIUM, DISSOLVED	mg/l		<0.2	0.10	<0.2	<0.2
CADMIUM, DISSOLVED	mg/l		<0.005	<0.005	0.079	<0.005
CHROMIUM, DISSOLVED	mg/l		0.08	<0.05	0.080	<0.05
IRON, DISSOLVED	mg/l					
LEAD, DISSOLVED	mg/l		0.06	<0.05	0.100	<0.05
MANGANESE, DISSOLVED	mg/l					
MERCURY, DISSOLVED	mg/l		0.008	<0.0005	<0.0005	<0.0002
SELENIUM, DISSOLVED	mg/l		0.011	<0.005	<0.005	<0.005
SILVER, DISSOLVED	mg/l		<0.01	<0.01	0.070	<0.01
SODIUM, DISSOLVED	mg/l		49.30	63.80	73.30	64.90
NITRATE NITROGEN	mg/l	4.70	1.30	3.30	1.40	<1
TOTAL ORGANIC HALOGENS	ug/l	<5	<5	8	7.00	<5
PHENOLICS	mg/l					
pH	standard	6.24	6.70	6.20	6.36	6.50
TOTAL DISSOLVED SOLIDS	mg/l	1110	1050	1590	1500	1480
SPECIFIC CONDUCTANCE	umhos/cm	1390	1320	1840	1750	1760
SULFATE	mg/l	611	560	940	900	1000
HERBICIDES:						
2,4-D	ug/l					
2,4,5-TP	ug/l					
PESTICIDES:						
ENDRIN	ug/l					
LINDANE	ug/l					
METHOXYCHLOR	ug/l					
TOXAPHENE	ug/l					
ACID EXTRACTABLES:						
PHENOL	ug/l	<10	<10	<10	<10	<10
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25
4-NITROPHENOL	ug/l	<25	<25	<25	<25	<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25
PENTACHLOROPHENOL	ug/l	<25	<25	<50	<50	<50
BASE/NEUTRAL EXTRACTABLES:						
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10	<10	<10
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	<10
NITROBENZENE	ug/l	<10	<10	<10	<10	<10
ISOPHORONE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
NAPHTHALENE	ug/l	<10	<10	<10	<10	<10
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	<10
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	<10
DIMETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10
ACENAPHTHENE	ug/l	<10	<10	<10	<10	<10
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10
FLUORENE	ug/l	<10	<10	<10	<10	<10
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-3

PARAMETER	UNITS	5/2/91	7/18/91	10/25/91	1/16/92	4/16/92
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
PHENANTHRENE	ug/l	<10	<10	<10	<10	<10
ANTHRACENE	ug/l	<10	<10	<10	<10	<10
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
FLUORANTHENE	ug/l	<10	<10	<10	<10	<10
BENZIDINE	ug/l	<25	<25	<100	<100	<100
PYRENE	ug/l	<10	<10	<10	<10	<10
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	<10	<10
CHRYSENE	ug/l	<10	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	ug/l	<25	<20	<20	<20	<20
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10	<10	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10
BENZO(A)PYRENE	ug/l	<10	<10	<10	<10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l					
VOLATILE ORGANICS:						
CHLOROMETHANE	ug/l	<10	<10	<10	<10	<10
BROMOMETHANE	ug/l	<10	<10	<10	<10	<10
VINYL CHLORIDE	ug/l	<10	<10	<10	<10	<10
CHLOROETHANE	ug/l	<10	<10	<10	<10	<10
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	<5
ACROLEIN	ug/l	<100	<100	<100	<100	<100
ACRYLONITRILE	ug/l	<100	<100	<100	<100	<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5
TRICHLOROFLUOROMETHANE	ug/l	<5	<5	<5	<5	<5
1,1-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5
1,1-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5
CHLOROFORM	ug/l	<5	<5	<5	<5	<5
1,2-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
CARBON TETRACHLORIDE	ug/l	<5	<5	<5	<5	<5
BROMODICHLOROMETHANE	ug/l	<5	<5	<5	<5	<5
1,2-DICHLOROPROPANE	ug/l	<5	<5	<5	<5	<5
TRICHLOROETHENE	ug/l	<5	<5	<5	<5	<5
BENZENE	ug/l	<5	<5	<5	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<5	<5	<5	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<10	<10	<10	<10	<10
BROMOFORM	ug/l	<5	<5	<5	<5	<5
TETRACHLOROETHENE	ug/l	<5	<5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<5	<5	<5	<5	<5
TOLUENE	ug/l	<5	<5	<5	<5	<5
CHLOROBENZENE	ug/l	<5	<5	<5	<5	<5
ETHYLBENZENE	ug/l	<5	<5	<5	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-3

NOTES:

(1) 1,3 CIS-DICHLOROPROPENE AND 1,3 TRANS-DICHLOROPROPENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS FOR PERIOD 4/10/85 THROUGH 4/24/88.

(2) BENZ(A)ANTHRACENE AND CHRYSENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS. 10/15/85.

(3) ONLY SAMPLED FOR FECAL COLIFORM.

(4) THE VALUE REPORTED IS THE RESULT OF QUADRUPLICATE SAMPLES.

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-4
MONITROING WELL W-4R (REPLACING W-4 AS OF 4-18-89)

PARAMETER	UNITS	4/10/85	8/26/85	10/15/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
ALKALINITY, TOTAL	mg/l	89.80	314.00	17.90	31.10	19.80	116.00	206.00	<10
AMMONIA NITROGEN	mg/l	20.70	60.20	0.26	0.74	0.05	6.80	24.10	0.08
TOTAL COLIFORM	cfu/100 m	2000.00	8.00	>2400	2.00		<2	13.00	<1
BIOCHEMICAL OXYGEN DEMAND	mg/l	37.00		1.0	3.95	2.40	12.00	69.00	22.00
TOTAL ORGANIC CARBON	mg/l	130.00	3.16	2.78	2.55	<0.5	6.30	15.70	2.50
CHEMICAL OXYGEN DEMAND	mg/l	44.00	269.00	<7	43.80	11.90	50.00	166.00	<10
CHLORIDE	mg/l	22.70	152.00	7.30	6.50	10.0			<10
CYANIDE, TOTAL	mg/l	3.60	16.80	0.00	0.00	0.00	3.68	16.80	0.01
FLUORIDE	mg/l	0.18	0.08	0.06	0.17	0.12	0.38	0.54	0.12
ALUMINUM, DISSOLVED	mg/l	3.90	<0.5						
ARSENIC, DISSOLVED	mg/l	0.01	0.01						
BARIUM, DISSOLVED	mg/l	<0.5	0.50						
CADMIUM, DISSOLVED	mg/l								
CHROMIUM, DISSOLVED	mg/l	0.020	0.01	<0.001	<0.001	<0.001	<0.001	0.00	<0.001
IRON, DISSOLVED	mg/l	17.10	62.00	0.20	<0.1	<0.10	16.10	177.00	21.50
LEAD, DISSOLVED	mg/l	0.01	0.00						
MANGANESE, DISSOLVED	mg/l	2.30	4.70	0.31	0.59	0.24	2.40	2.90	0.40
MERCURY, DISSOLVED	mg/l	0.00	<0.005						
SELENIUM, DISSOLVED	mg/l	0.01	0.00						
SILVER, DISSOLVED	mg/l	<0.001	<0.001						
SODIUM, DISSOLVED	mg/l	30.80	184.00	2.70	1.90	4.15	9.90	28.60	9.10
NITRATE NITROGEN	mg/l	<0.15	<0.005	7.0	1.25	4.52	0.11	<0.26	2.83
TOTAL ORGANIC HALOGENS	ug/l	82.00	18.00	<5	8.00		<5	<5	12.00
PHENOLICS	mg/l	<0.005	0.01	<0.005	<0.005	0.01	<0.005	<0.005	<0.005
pH	standard	6.89	6.57	6.89	6.50	6.34	6.49	6.67	6.25
TOTAL DISSOLVED SOLIDS	mg/l	108.00	1320.00	218.00	163.00	230.00	210.00	1405.00	206.00
SPECIFIC CONDUCTANCE	umhos/cm	461.00	1777.00	186.00	158.00		389.00	588.00	194.00
SULFATE	mg/l	111.00	511.00	32.00	30.00	51.90	33.10	80.00	662.00
HERBICIDES:									
2,4-D	ug/l	<0.25	<1.0						
2,4,5-TP	ug/l	<0.25	<1.0						
PESTICIDES:									
ENDRIN	ug/l	<0.50	<0.022						
LINDANE	ug/l	<0.50	<0.003						
METHOXYCHLOR	ug/l	<2.5	<0.049						
TOXAPHENE	ug/l	<25	<0.098						
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
2,4-DINITROPHENOL	ug/l	<20	<20	<20	<20	<50	<50	<50	<60
4-NITROPHENOL	ug/l	<40	<40	<40	<40	<50	<50	<50	<60
2-METHYL-4,6-DINITROPHENOL	ug/l	<20	<20	<20	<20	<50	<50	<50	<60
PENTACHLOROPHENOL	ug/l	<25	<25	<25	<25	<50	<50	<50	<60
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10			
BIS(2-CHLOROETHYL)ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
1,3-DICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
1,4-DICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
1,2-DICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
HEXACHLOROETHANE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
N-NITROSODI-N-PROPYLAMINE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
NITROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
ISOPHORONE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
BIS(2-CHLOROETHOXY)METHANE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
1,2,4-TRICHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
NAPHTHALENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
HEXACHLOROBUTADIENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
HEXCHLOROCYCLOPENTADIENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
2-CHLORONAPHTHALENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
ACENAPHTHYLENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
DIMETHYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
ACENAPHTHENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
FLUORENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
DIETHYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
4-CHLOROPHENYL PHENYL ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	<12

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-4
MONITROING WELL W-4R (REPLACING W-4 AS OF 4-18-89)

PARAMETER	UNITS	4/10/85	8/26/85	10/16/85	1/23/86	4/24/86	7/29/86	10/10/86	1/8/87
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10		<10	<12
4-BROMOPHENYL PHENYL ETHER	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
HEXACHLOROBENZENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
PHENANTHRENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
ANTHRACENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
DI-N-BUTYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
FLUORANTHENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
BENZIDINE	ug/l	<100	<100	<100	<100	<20			
PYRENE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
BUTYL BENZYL PHTHALATE	ug/l	<5	<5	<5	<5	<10	<10	<10	<12
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
CHRYSENE	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
3,3'-DICHLOROBENZIDINE	ug/l	<10	<10	<10	<10	<20	<20	<20	<24
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	8.60	5.80	<5	<5	<10	<10	<10	<12
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	<12
BENZO(B)FLUORANTHENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<12
BENZO(K)FLUORANTHENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<12
BENZO(A)PYRENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<12
INDENO(1,2,3-C,D)PYRENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<12
DIBENZ(A,H)ANTHRACENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<12
BENZO(G,H,I)PERYLENE	ug/l	<25	<25	<25	<25	<10	<10	<10	<12
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10	<10	<10	<10		<10	<12
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
BROMOMETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
VINYL CHLORIDE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
CHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
METHYLENE CHLORIDE	ug/l	3.40	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
ACROLEIN	ug/l	<100	<100	<100	<100	<100	<80		
ACRYLONITRILE	ug/l	<25	<25	<25	<25	<25	<80		
TRANS-1,3-DICHLOROPROPENE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TRICHLOROFLUOROMETHANE	ug/l							<5	<5
1,1-DICHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,1-DICHLOROETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
CHLOROFORM	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,2-DICHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
CARBON TETRACHLORIDE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
BROMODICHLOROMETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,2-DICHLOROPROPANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TRICHLOROETHENE	ug/l	<0.2	<0.2	<0.2	<0.2	<0.2		<5	<5
BENZENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10
BROMOFORM	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TETRACHLOROETHENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	<5
TOLUENE	ug/l	<0.2	<0.2	<0.2	<0.2	<0.2	<5	<5	<5
CHLOROBENZENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5
ETHYLBENZENE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<5	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-4
MONITROING WELL W-4R (REPLACING W-4 AS OF 4-18-89)

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/9/88	5/19/88	1/18/89	4/18/89
ALKALINITY, TOTAL	mg/l	19.20	<10.0	68.90		22.90	18.8	52.00	755.00
AMMONIA NITROGEN	mg/l	0.13	0.23	22.90		0.18		0.50	2.10
TOTAL COLIFORM	cfu/100 m	<2	<1	>800		>8000		(3) <10	>16
BIOCHEMICAL OXYGEN DEMAND	mg/l	2.60	1.40	32.00		4.40	6.50	<12	174.00
TOTAL ORGANIC CARBON	mg/l	1.60	2.25	4.30		4.09	0.58	2.90	56.00
CHEMICAL OXYGEN DEMAND	mg/l	56.10	<10	49.00		17.70		200.00	300.00
CHLORIDE	mg/l			14.50		12.60	<10	6.00	19.00
CYANIDE, TOTAL	mg/l	<0.005	<0.005	4.40		<0.009		<0.01	83.0
FLUORIDE	mg/l	0.14	0.19	0.22		0.20	0.26	0.20	0.20
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l							<0.01	<0.01
BARIUM, DISSOLVED	mg/l							<0.1	0.10
CADMIUM, DISSOLVED	mg/l							<0.005	<0.005
CHROMIUM, DISSOLVED	mg/l	<0.001	<0.001	0.00		0.01	<0.002	<0.05	<0.05
IRON, DISSOLVED	mg/l	<0.1	<0.1	1.0		3.30	0.20		
LEAD, DISSOLVED	mg/l		-					<0.05	<0.05
MANGANESE, DISSOLVED	mg/l	0.30	0.34	0.90		1.0	0.60		
MERCURY, DISSOLVED	mg/l							<0.0005	<0.0005
SELENIUM, DISSOLVED	mg/l							<0.005	<0.005
SILVER, DISSOLVED	mg/l							<0.01	<0.01
SODIUM, DISSOLVED	mg/l	3.40	3.40	29.60		7.30	4.0		
NITRATE NITROGEN	mg/l	2.0	3.09	<0.21		2.50	<0.21	5.0	<0.5
TOTAL ORGANIC HALOGENS	ug/l	<5	30.00	<5		120.00		<5	13.00
PHENOLICS	mg/l	<0.005	<0.005	<0.005		<0.005			
pH	standard	6.05	6.02	6.10		6.41	6.51	6.35	7.01
TOTAL DISSOLVED SOLIDS	mg/l	161.00	141.75	252.00		146.00	184.00	180.00	1210.00
SPECIFIC CONDUCTANCE	umhos/cm	182.00	148.50	382.00		216.00	187.00	240.00	2440.00
SULFATE	mg/l	43.60	44.00	104.00		41.40	43.40	52.00	326.00
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<11		<10		<10	<10
2-CHLOROPHENOL	ug/l	<10	<10	<11		<10		<10	<10
2-NITROPHENOL	ug/l	<10	<10	<11		<10		<10	<10
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<11		<10		<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10	<11		<10		<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<11		<10		<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<11		<10		<10	<10
2,4-DINITROPHENOL	ug/l	<50	<50	<54		<50		<25	<25
4-NITROPHENOL	ug/l	<50	<50	<54		<50		<25	<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<50	<50	<54		<50		<25	<25
PENTACHLOROPHENOL	ug/l	<50	<50	<54		<50		<25	<25
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l			<11		<11	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<11		<11	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<10	<10	<11		<11	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<10	<10	<11		<11	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<10	<10	<11		<11	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<11		<11	<10	<10	<10
HEXACHLOROETHANE	ug/l	<10	<10	<11		<11	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<11		<11	<10	<10	<10
NITROBENZENE	ug/l	<10	<10	<11		<11	<10	<10	<10
ISOPHORONE	ug/l	<10	<10	<11		<11	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<11		<11	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<11		<11	<10	<10	<10
NAPHTHALENE	ug/l	<10	<10	<11		<11	<10	<10	<10
HEXACHLOROBUTADIENE	ug/l	<10	<10	<11		<11	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<11		<11	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<10	<10	<11		<11	<10	<10	<10
ACENAPHTHYLENE	ug/l	<10	<10	<11		<11	<10	<10	<10
DIMETHYL PHTHALATE	ug/l	<10	<10	<11		<11	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<11		<11	<10	<10	<10
ACENAPHTHENE	ug/l	<10	<10	<11		<11	<10	<10	<10
2,4-DINITROTOLUENE	ug/l	<10	<10	<11		<11	<10	<10	<10
FLUORENE	ug/l	<10	<10	<11		<11	<10	<10	<10
DIETHYL PHTHALATE	ug/l	<10	<10	<11		<11	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<11		<11	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<11		<11	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-4
MONITROING WELL W-4R (REPLACING W-4 AS OF 4-18-88)

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<11		<11	<10	<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<11		<11	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<10	<10	<11		<11	<10	<10	<10
PHENANTHRENE	ug/l	<10	<10	<11		<11	<10	<10	<10
ANTHRACENE	ug/l	<10	<10	<11		<11	<10	<10	<10
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<11		<11	<10	<10	<10
FLUORANTHENE	ug/l	<10	<10	<11		<11	<10	<10	<10
BENZIDINE	ug/l			<21		<22	<20	<25	<25
PYRENE	ug/l	<10	<10	<11		<11	<10	<10	<10
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<11		<11	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	<10	<11		<11	<10	<10	<10
CHRYSENE	ug/l	<10	<10	<11		<11	<10	<10	<10
3,3'-DICHLOROBENZIDINE	ug/l	<20	<20	<21		<22	<20	<25	<25
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<11		17.00	<10	<10	20.00
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<11		<11	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<11		<11	<10	<10	<10
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<11		<11	<10	<10	<10
BENZO(A)PYRENE	ug/l	<10	<10	<11		<11	<10	<10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<11		<11	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<11		<11	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<11		<11	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10	<11		<11	<10		
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<2.0	<2.0	<2		<2		<10	<10
BROMOMETHANE	ug/l	<2.0	<2.0	<2		<2		<10	<10
VINYL CHLORIDE	ug/l	<2.0	<2.0	<2		<2		<10	<10
CHLOROETHANE	ug/l	<2.0	<2.0	<2		<2		<10	<10
METHYLENE CHLORIDE	ug/l	32.00	<1.0	<1		<1		<5	<5
ACROLEIN	ug/l							<100	<100
ACRYLONITRILE	ug/l							<100	<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<1.0	<1.0	<1		<1		<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<1.0	<1.0	<1		<1		<5	<5
TRICHLOROFLUOROMETHANE	ug/l					<1		<5	<5
1,1-DICHLOROETHENE	ug/l	<1.0	<1.0	<1		<1		<5	<5
1,1-DICHLOROETHANE	ug/l	<1.0	<1.0	<1		<1		<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1.0	<1.0	<1		<1		<5	<5
CHLOROFORM	ug/l	<1.0	<1.0	<1		<1		<5	<5
1,2-DICHLOROETHANE	ug/l	<1.0	<1.0	<1		<1		<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1		<1		<5	<5
CARBON TETRACHLORIDE	ug/l	<1.0	<1.0	<1		<1		<5	<5
BROMODICHLOROMETHANE	ug/l	<1.0	<1.0	<1		<1		<5	<5
1,2-DICHLOROPROPANE	ug/l	<1.0	<1.0	<1		<1		<5	<5
TRICHLOROETHENE	ug/l	<1.0	<1.0	<1		<1		<5	<5
BENZENE	ug/l	<1.0	<1.0	<1		<1		<5	<5
DIBROMOCHLOROMETHANE	ug/l	<1.0	<1.0	<1		<1		<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1		<1		<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<1.0	<2.0	<2		<2		<10	<10
BROMOFORM	ug/l	<1.0	<1.0	<1		<1		<5	<5
TETRACHLOROETHENE	ug/l	<1.0	<1.0	<1		<1		<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<1.0	<1.0	<1		<1		<5	<5
TOLUENE	ug/l	<1.0	<1.0	<1		<1		<5	<5
CHLOROBENZENE	ug/l	<1.0	<1.0	<1		<1		<5	<5
ETHYLBENZENE	ug/l	<1.0	<1.0	<1		<1		<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-4
MONITROING WELL W-4R (REPLACING W-4 AS OF 4-18-89)

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
ALKALINITY, TOTAL	mg/l	632.00	677.00	694.00	659.00	685	760	753	
AMMONIA NITROGEN	mg/l	95.0	87.60	103.00	103.00	257	134	164	
TOTAL COLIFORM	cfu/100 m	>16	>16	>16	>16	>16	>16	>16	
BIOCHEMICAL OXYGEN DEMAND	mg/l	74.00	90.00	173.00	193.00		344	453	
TOTAL ORGANIC CARBON	mg/l	25.00	34.00	(4) 51	(4) 55	(4) 58	(4) 87	(4) 110	(4) 95
CHEMICAL OXYGEN DEMAND	mg/l	150.00	190.00	280.00	310.00	350	520	580	
CHLORIDE	mg/l	7.00	11.00	12.00	13.00	12	17	21	
CYANIDE, TOTAL	mg/l	<0.005	0.10	0.20	0.10	0.026	0.097	0.334	
FLUORIDE	mg/l	0.20	0.20	0.10	0.10	0.1	0.1	0.1	
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l	0.01	0.01	<0.01	<0.01	0.01	0.02	0.02	
BARIUM, DISSOLVED	mg/l	0.10	<0.1	0.20	0.10	0.1	<0.2	<0.2	
CADMIUM, DISSOLVED	mg/l	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	
CHROMIUM, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
IRON, DISSOLVED	mg/l								
LEAD, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
MANGANESE, DISSOLVED	mg/l								
MERCURY, DISSOLVED	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
SELENIUM, DISSOLVED	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
SILVER, DISSOLVED	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
SODIUM, DISSOLVED	mg/l	93.40	131.00	178.00	210.00	193	344	400	
NITRATE NITROGEN	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TOTAL ORGANIC HALOGENS	ug/l	8.00	9.00	(4) 10	(4) 11	(4) 8	(4) 13	(4) 20	(4) 14
PHENOLICS	mg/l								
pH	standard	6.87	6.86	(4) 6.81	(4) 6.82	(4) 6.81	(4) 6.76	(4) 6.70	(4) 6.70
TOTAL DISSOLVED SOLIDS	mg/l	640.00	820.00	840.00	1100.00	1140	1720	2310	
SPECIFIC CONDUCTANCE	umhos/cm	1170.00	1520.00	(4) 2010	(4) 2250	(4) 2080	(4) 3180	(4) 3900	(4) 3900
SULFATE	mg/l	34.00	61.00	186.00	273.00	184	577	1060	
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
4-NITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
PENTACHLOROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<25	
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
NITROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ISOPHORONE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
NAPHTHALENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIMETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ACENAPHTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
FLUORENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<10	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-4
MONITROING WELL W-4R (REPLACING W-4 AS OF 4-19-89)

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10	<10	<10	
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
PHENANTHRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZIDINE	ug/l	<25	<25	<25	<25	<25	<25	<25	
PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
CHRYSENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
3,3'-DICHLOROBENZIDINE	ug/l	<25	<25	<25	<25	<25	<25	<25	
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(A)PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10	<10	<10	<10	<10	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l								
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BROMOMETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
VINYL CHLORIDE	ug/l	<10	<10	<10	<10	<10	<10	<10	
CHLOROETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	<5	<5	<5	
ACROLEIN	ug/l	<100	<100	<100	<100	<100	<100	<100	
ACRYLONITRILE	ug/l	<100	<100	<100	<100	<100	<100	<100	
TRANS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CIS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRICHLOROFLUOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRANS-1,2-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CHLOROFORM	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,1-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CARBON TETRACHLORIDE	ug/l	<5	<5	<5	<5	<5	<5	<5	
BROMODICHLOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROPROPANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRICHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
BENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
DIBROMOCHLOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
2-CHLOROETHYLVINYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
BROMOFORM	ug/l	<5	<5	<5	<5	<5	<5	<5	
TETRACHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,2,2-TETRACHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TOLUENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CHLOROBENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
ETHYLBENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-4
MONITROING WELL W-4R (REPLACING W-4 AS OF 4-16-89)

PARAMETER	UNITS	6/2/91	7/16/91	10/25/91	1/16/92	4/16/92
ALKALINITY, TOTAL	mg/l	794	752	819	931.00	1060.00
AMMONIA NITROGEN	mg/l	131	128	154	202.00	268.00
TOTAL COLIFORM	cfu/100 m	<2.2	<2.2	9.20	>16	
BIOCHEMICAL OXYGEN DEMAND	mg/l	212	250	286	440.00	590.00
TOTAL ORGANIC CARBON	mg/l	70.00	77.00	90.00	130.00	160.00
CHEMICAL OXYGEN DEMAND	mg/l	400	480	420	710.00	880.00
CHLORIDE	mg/l	14	16	19	22.00	26.00
CYANIDE, TOTAL	mg/l	0.354	0.337	1.340	2.29	0.94
FLUORIDE	mg/l	0.2	0.1	<0.1	<0.1	<0.1
ALUMINUM, DISSOLVED	mg/l					
ARSENIC, DISSOLVED	mg/l		0.02	0.14	0.01	0.01
BARIUM, DISSOLVED	mg/l		0.3	0.8	0.20	0.30
CADMIUM, DISSOLVED	mg/l		<0.005	<0.005	<0.005	<0.005
CHROMIUM, DISSOLVED	mg/l		<0.05	0.56	<0.05	<0.05
IRON, DISSOLVED	mg/l					
LEAD, DISSOLVED	mg/l		<0.05	0.31	<0.05	<0.05
MANGANESE, DISSOLVED	mg/l					
MERCURY, DISSOLVED	mg/l		<0.0005	0.00	<0.0005	0.00
SELENIUM, DISSOLVED	mg/l		<0.005	<0.005	<0.005	<0.005
SILVER, DISSOLVED	mg/l		<0.01	<0.01	<0.01	<0.01
SODIUM, DISSOLVED	mg/l		309	322	517.00	695.00
NITRATE NITROGEN	mg/l	<0.5	<0.5	<0.5	<0.5	<2
TOTAL ORGANIC HALOGENS	ug/l	10.00	7.00	10.00	12.00	18.00
PHENOLICS	mg/l					
pH	standard	6.96	6.88	6.88	6.83	6.66
TOTAL DISSOLVED SOLIDS	mg/l	1210	1360	1360	2310.00	190.00
SPECIFIC CONDUCTANCE	umhos/cm	2510.00	2790.00	2790.00	4380.00	330.00
SULFATE	mg/l	295	428	428	949.00	23.00
HERBICIDES:						
2,4-D	ug/l					
2,4,5-TP	ug/l					
PESTICIDES:						
ENDRIN	ug/l					
LINDANE	ug/l					
METHOXYCHLOR	ug/l					
TOXAPHENE	ug/l					
ACID EXTRACTABLES:						
PHENOL	ug/l	<10	<10	<10	<10	<10
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25
4-NITROPHENOL	ug/l	<25	<25	<25	<25	<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25
PENTACHLOROPHENOL	ug/l	<25	<25	<50	<50	<50
BASE/NEUTRAL EXTRACTABLES:						
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLORO)ISOPROPYL)ETHER	ug/l	<10	<10	<10	<10	<10
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	<10
NITROBENZENE	ug/l	<10	<10	<10	<10	<10
ISOPHORONE	ug/l	<10	<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
NAPHTHALENE	ug/l	<10	<10	<10	<10	<10
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	<10
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	<10
DIMETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10
ACENAPHTHENE	ug/l	<10	<10	<10	<10	<10
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10
FLUORENE	ug/l	<10	<10	<10	<10	<10
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-4
MONITROING WELL W-4R (REPLACING W-4 AS OF 4-18-89)

PARAMETER	UNITS	5/2/91	7/19/91	10/26/91	1/16/92	4/16/92
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	<10
PHENANTHRENE	ug/l	<10	<10	<10	<10	<10
ANTHRACENE	ug/l	<10	<10	<10	<10	<10
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10	<10	18.00
FLUORANTHENE	ug/l	<10	<10	<10	<10	13.00
BENZIDINE	ug/l	<25	<25	<100	<10	14.00
PYRENE	ug/l	<10	<10	<10	<10	<10
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10	<10	<10
CHRYSENE	ug/l	<10	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	ug/l	<25	<25	<20	<10	<10
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10	<10	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10	<10	<10
BENZO(A)PYRENE	ug/l	<10	<10	<10	<10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l					
VOLATILE ORGANICS:						
CHLOROMETHANE	ug/l	<10	<10	<10	<10	<10
BROMOMETHANE	ug/l	<10	<10	<10	<10	<10
VINYL CHLORIDE	ug/l	<10	<10	<10	<10	<10
CHLOROETHANE	ug/l	<10	<10	<10	<10	<10
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	<5
ACROLEIN	ug/l	<100	<100	<100	<100	<100
ACRYLONITRILE	ug/l	<100	<100	<100	<100	<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5
TRICHLOROFLUOROMETHANE	ug/l	<5	<5	<5	<5	<5
1,1-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5
1,1-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5
CHLOROFORM	ug/l	<5	<5	<5	<5	<5
1,2-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
CARBON TETRACHLORIDE	ug/l	<5	<5	<5	<5	<5
BROMODICHLOROMETHANE	ug/l	<5	<5	<5	<5	<5
1,2-DICHLOROPROPANE	ug/l	<5	<5	<5	<5	<5
TRICHLOROETHENE	ug/l	<5	<5	<5	<5	<5
BENZENE	ug/l	<5	<5	<5	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<5	<5	<5	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<10	<10	<10	<10	<10
BROMOFORM	ug/l	<5	<5	<5	<5	<5
TETRACHLOROETHENE	ug/l	<5	<5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<5	<5	<5	<5	<5
TOLUENE	ug/l	<5	<5	<5	<5	<5
CHLOROBENZENE	ug/l	<5	<5	<5	<5	<5
ETHYLBENZENE	ug/l	<5	<5	<5	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-4
MONITORING WELL W-4R (REPLACING W-4 AS OF 4-18-89)

NOTES:

(1) 1,3 CIS-DICHLOROPROPENE AND 1,3 TRANS-DICHLOROPROPENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS FOR PERIOD 4/10/85 THROUGH 4/24/86.

(2) BENZ(A)ANTHRACENE AND CHRYSENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS. 10/15/85.

(3) ONLY SAMPLED FOR FECAL COLIFORM.

(4) THE VALUE REPORTED IS THE RESULT OF QUADRUPLICATE SAMPLES.

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-5

PARAMETER	UNITS	4/16/87	7/17/87	10/28/87	2/11/88	3/8/88	6/19/88	1/18/89	4/18/89
ALKALINITY, TOTAL	mg/l	126	130	145	96.0		126	113	
AMMONIA NITROGEN	mg/l	1.70	2.30	2.88	0.54		4.62	0.6	145
TOTAL COLIFORM	cfu/100 ml	33	80	>800	>8000		4200	*<10	<2.2
BIOCHEMICAL OXYGEN DEMAND	mg/l	5.30	10.60	27.0	15.0		8.50	<12	<12
TOTAL ORGANIC CARBON	mg/l	6.60	10.10	7.70	9.10		1.03	6.40	4.60
CHEMICAL OXYGEN DEMAND	mg/l	419	15	88.9	40.0		101	130	360
CHLORIDE	mg/l			<10	<10		<10	5	3
CYANIDE, TOTAL	mg/l	<0.005	<0.005	0.015	<0.009		<0.009	<0.005	<0.005
FLUORIDE	mg/l	0.33	0.42	0.36	0.34		0.34	0.30	0.30
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l							<0.01	<0.01
BARIUM, DISSOLVED	mg/l							0.20	0.20
CADMIUM, DISSOLVED	mg/l							<0.005	<0.005
CHROMIUM, DISSOLVED	mg/l	<0.001	0.001	0.008	0.023		<0.002	<0.05	<0.05
IRON, DISSOLVED	mg/l	9.30	<0.1	0.7	21.0		11.60		
LEAD, DISSOLVED	mg/l							<0.05	<0.05
MANGANESE, DISSOLVED	mg/l	1.20	0.77	1.20	1.30		1.20		
MERCURY, DISSOLVED	mg/l							<0.0005	<0.0005
SELENIUM, DISSOLVED	mg/l							<0.005	<0.005
SILVER, DISSOLVED	mg/l							<0.01	<0.01
SODIUM, DISSOLVED	mg/l	5.20	6.30	7.11	6.60		4.60		
NITRATE NITROGEN	mg/l	<0.28	<0.28	<0.21	<0.21		<0.21	0.50	<0.5
TOTAL ORGANIC HALOGENS	ug/l	17	<10	64	152		158	140	68
PHENOLICS	mg/l	<0.005	<0.005	<0.005			<0.005		
pH	standard	6.79	6.67	6.23	6.67		6.50	6.44	6.71
TOTAL DISSOLVED SOLIDS	mg/l	244	242	247	248		206	210	210
SPECIFIC CONDUCTANCE	umhos/cm	325	346	314	281		312	310	3240
SULFATE	mg/l	31.90	52	23.30	47.60		41.90	57	35
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2-CHLOROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10		<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<50	<50	<10		<50	<50	<25	<25
4-NITROPHENOL	ug/l	<50	<50	<10		<50	<50	<25	<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<50	<50	<10		<50	<50	<25	<25
PENTACHLOROPHENOL	ug/l	<50	<50	<10		<50	<50	<25	<25
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l			<10		<10	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10		<10	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10		<10	<10	<10	<10
HEXACHLOROETHANE	ug/l	<10	<10	<10		<10	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10		<10	<10	<10	<10
NITROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
ISOPHORONE	ug/l	<10	<10	<10		<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10		<10	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
NAPHTHALENE	ug/l	43	15	28		16	11	30	20
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10		<10	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10		<10	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10		<10	<10	<10	<10
ACENAPHTHYLENE	ug/l	<10	<10	<10		<10	<10	<10	<10
DIMETHYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10	<10		<10	<10	<10	<10
ACENAPHTHENE	ug/l	<10	11	27		12	<10	20	10
2,4-DINITROTOLUENE	ug/l	<10	<10	<10		<10	<10	<10	<10
FLUORENE	ug/l	16	14	24		10	<10	20	10
DIETHYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10		<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10		<10	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-5

PARAMETER	UNITS	4/16/87	7/17/87	10/26/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10		<10	<10	<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10		<10	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<10	<10	<10		<10	<10	<10	<10
PHENANTHRENE	ug/l	48	30	41		38	<10	70	30
ANTHRACENE	ug/l	<10	<10	12		10	<10	20	<10
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
FLUORANTHENE	ug/l	18	<10	20		14	<10	50	20
BENZIDINE	ug/l	<10		<20		<20	<20	<25	<25
PYRENE	ug/l	<10	17	20		32	<10	50	20
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	<10	<10		<10	<10	20	<10
CHRYSENE	ug/l	<10	<10	<10		<10	<10	20	10
3,3'-DICHLOROBENZIDINE	ug/l	<20	<20	<20		<10	<20	<25	<25
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10	<10		<10	<10	20	<10
BENZO(K)FLUORANTHENE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZO(A)PYRENE	ug/l	<10	<10	<10		<10	<10	10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10		<10	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10		<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10		<10	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10	<10		<10	<10		
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<2	<2	<2	<2		<2	<10	<10
BROMOMETHANE	ug/l	<2	<2	<2	<2		<2	<10	<10
VINYL CHLORIDE	ug/l	<2	<2	<2	<2		<2	<10	<10
CHLOROETHANE	ug/l	<2	<2	<2	<2		<2	<10	<10
METHYLENE CHLORIDE	ug/l	19	<1	<1	<1		<1	<5	<5
ACROLEIN	ug/l							<100	<100
ACRYLONITRILE	ug/l							<100	<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<1	<1	<1	<1		<1	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<1	<1	<1	<1		<1	<5	<5
TRICHLOROFLUOROMETHANE	ug/l						<1	<5	<5
1,1-DICHLOROETHENE	ug/l	<1	<1	<1	<1		<1	<5	<5
1,1-DICHLOROETHANE	ug/l	<1	<1	<1	<1		<1	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1	5.90	10	8		6	14	8
CHLOROFORM	ug/l	<1	<0.1	<1	<1		<2	<5	<5
1,2-DICHLOROETHANE	ug/l	<1	<1	<1	<1		<1	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<1	<1	<1	<1		<1	<5	<5
CARBON TETRACHLORIDE	ug/l	<1	<1	<1	<1		<1	<5	<5
BROMODICHLOROMETHANE	ug/l	<1	<1	<1	<1		<1	<5	<5
1,2-DICHLOROPROPANE	ug/l	<1	<1	<1	<1		<1	<5	<5
TRICHLOROETHENE	ug/l	<1	81	55	39		11	91	20
BENZENE	ug/l	<1	<1	<1	<1		<1	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<1	<1	<1	<1		<1	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<1	<1	<1	<1		<1	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<2	<2	<1	<2		<1	<10	<10
BROMOFORM	ug/l	<1	<1	<1	<1		<1	<5	<5
TETRACHLOROETHENE	ug/l	<1	86	41	28		19	140	44
1,1,2,2-TETRACHLOROETHANE	ug/l	<1	<1	<1	<1		<1	<5	<5
TOLUENE	ug/l	<1	<1	<1	<1		<1	<5	<5
CHLOROBENZENE	ug/l	<1	<1	<1	<1		<1	<5	<5
ETHYLBENZENE	ug/l	<1	<1	<1	<1		1	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-5

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
ALKALINITY, TOTAL	mg/l	213	151	117	122	187	157	141	
AMMONIA NITROGEN	mg/l	9.30	2.50	<0.5	1.90	10.30	4.00	1.00	
TOTAL COLIFORM	cfu/100 ml	>16	>16	>16	<2.2	9.20	<2.2	2.20	
BIOCHEMICAL OXYGEN DEMAND	mg/l	12	<12	7.00	<12		13.00	29.00	
TOTAL ORGANIC CARBON	mg/l	7.30	7.20	8.60	5.40	10.00	4.20	11.00	* 3.6
CHEMICAL OXYGEN DEMAND	mg/l	110	320	400	280	660	320	4130	
CHLORIDE	mg/l	4	2	6	2	4	3	5	
CYANIDE, TOTAL	mg/l	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	0.007	
FLUORIDE	mg/l	0.40	0.30	0.30	0.20	0.30	0.20	0.10	
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	
BARIUM, DISSOLVED	mg/l	0.20	0.10	0.10	0.20	0.20	<0.2	<0.2	
CADMIUM, DISSOLVED	mg/l	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	
CHROMIUM, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
IRON, DISSOLVED	mg/l								
LEAD, DISSOLVED	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
MANGANESE, DISSOLVED	mg/l								
MERCURY, DISSOLVED	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
SELENIUM, DISSOLVED	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
SILVER, DISSOLVED	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
SODIUM, DISSOLVED	mg/l	8.60	5.60	4.10	4.00	6.10	4.00	6.20	
NITRATE NITROGEN	mg/l	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	
TOTAL ORGANIC HALOGENS	ug/l	36	22	150	130	27	21	53	* 20.5
PHENOLICS	mg/l								
pH	standard	6.81	6.52	6.64	6.52	6.43	6.41	6.33	* 6.4
TOTAL DISSOLVED SOLIDS	mg/l	260	110	190	190	210	210	200	
SPECIFIC CONDUCTANCE	umhos/cm	418	306	343	286	464	328	293	* 267
SULFATE	mg/l	17	10	51	31	9	4	24	
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10	<10	<10	<10	<10	<100	
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<100	
2-NITROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<100	
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<100	
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<100	
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<100	
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	<10	<10	<100	
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<250	
4-NITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<250	
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<250	
PENTACHLOROPHENOL	ug/l	<25	<25	<25	<25	<25	<25	<250	
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<100	
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10	<10	<10	<10	<100	
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10	<10	<10	<10	<100	
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	<10	<10	<100	
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<100	
NITROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
ISOPHORONE	ug/l	<10	<10	<10	<10	<10	<10	<100	
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	<10	<10	<100	
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
NAPHTHALENE	ug/l	15	123	49	34	98	49	170	
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
DIMETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<100	
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
ACENAPHTHENE	ug/l	18	60	34	22	63	36	110	
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
FLUORENE	ug/l	11	57	34	22	42	34	120	
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<100	
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<100	
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	<10	<10	<100	

PHILADELPHIA COKE COMPANY
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MONITORING WELL W-6

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/6/90	7/10/90	10/11/90	1/8/91	2/20/91
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	<10	<10	<100	
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<100	
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
PHENANTHRENE	ug/l	11	184	88	71	103	77	480	
ANTHRACENE	ug/l	<10	52	33	23	30	21	120	
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<100	
FLUORANTHENE	ug/l	<10	108	71	42	63	41	340	
BENZIDINE	ug/l	<25	<25	<25	<25	<25	<25	<250	
PYRENE	ug/l	<10	86	60	48	70	40	240	
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<100	
BENZ(A)ANTHRACENE	ug/l	<10	40	19	16	26	13	<100	
CHRYSENE	ug/l	<10	48	22	18	28	16	<100	
3,3'-DICHLOROBENZIDINE	ug/l	<25	<25	<25	<25	<25	<25	<250	
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<100	
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	<10	<10	<100	
BENZO(B)FLUORANTHENE	ug/l	<10	27	12	<10	20	10	<100	
BENZO(K)FLUORANTHENE	ug/l	<10	22	<10	<10	<10	<10	<100	
BENZO(A)PYRENE	ug/l	<10	30	12	11	18	<10	<100	
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	11	<10	<10	<10	<10	<100	
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	<10	<10	<100	
BENZO(G,H,I)PERYLENE	ug/l	<10	14	<10	<10	<10	<10	<100	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l								
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
BROMOMETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
VINYL CHLORIDE	ug/l	<10	<10	<10	<10	<10	<10	<10	
CHLOROETHANE	ug/l	<10	<10	<10	<10	<10	<10	<10	
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	<5	<5	<5	
ACROLEIN	ug/l	<100	<100	<100	<100	<100	<100	<100	
ACRYLONITRILE	ug/l	<100	<100	<100	<100	<100	<100	<100	
TRANS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CIS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRICHLOROFLUOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRANS-1,2-DICHLOROETHENE	ug/l	40	32	11	17	24	26	76	
CHLOROFORM	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,1-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CARBON TETRACHLORIDE	ug/l	<5	<5	<5	<5	<5	<5	<5	
BROMODICHLOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,2-DICHLOROPROPANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TRICHLOROETHENE	ug/l	8	<5	36	36	<5	<5	75	
BENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
DIBROMOCHLOROMETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
2-CHLOROETHYLVINYL ETHER	ug/l	<10	<10	<10	<10	<10	<10	<10	
BROMOFORM	ug/l	<5	<5	<5	<5	<5	<5	<5	
TETRACHLOROETHENE	ug/l	<5	<5	160	110	7	49	20	
1,1,2,2-TETRACHLOROETHANE	ug/l	<5	<5	<5	<5	<5	<5	<5	
TOLUENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
CHLOROBENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	
ETHYLBENZENE	ug/l	<5	<5	<5	<5	<5	<5	<5	

PHILADELPHIA COKE COMPANY
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MONITORING WELL W-6

PARAMETER	UNITS	5/2/91	7/18/91	10/26/91	1/16/92	4/16/92
ALKALINITY, TOTAL	mg/l	101	116	159	176	
AMMONIA NITROGEN	mg/l	1.20	2.70	3.00	4.70	
TOTAL COLIFORM	cfu/100 ml	9.20	>16	>16	<2.2	
BIOCHEMICAL OXYGEN DEMAND	mg/l	7.00	11.00	11.00	10	
TOTAL ORGANIC CARBON	mg/l	3.60	4.60	6.00	3.10	
CHEMICAL OXYGEN DEMAND	mg/l	100	110	120	90	
CHLORIDE	mg/l	3	3	3	3	
CYANIDE, TOTAL	mg/l	<0.005	<0.005	<0.005	<0.005	
FLUORIDE	mg/l	0.30	0.30	0.30	0.30	
ALUMINUM, DISSOLVED	mg/l					
ARSENIC, DISSOLVED	mg/l		0.08	0.08	<0.01	
BARIUM, DISSOLVED	mg/l		0.40	0.60	<0.1	
CADMIUM, DISSOLVED	mg/l		<0.005	<0.005	<0.005	
CHROMIUM, DISSOLVED	mg/l		0.27	0.30	<0.05	
IRON, DISSOLVED	mg/l					
LEAD, DISSOLVED	mg/l		0.36	0.55	<0.05	
MANGANESE, DISSOLVED	mg/l					
MERCURY, DISSOLVED	mg/l		0.0033	0.0038	<0.0005	
SELENIUM, DISSOLVED	mg/l		0.006	<0.005	<0.005	
SILVER, DISSOLVED	mg/l		<0.01	<0.01	<0.01	
SODIUM, DISSOLVED	mg/l		5.00	3.60	5.30	
NITRATE NITROGEN	mg/l	<0.5	<0.5	<0.5	<0.5	
TOTAL ORGANIC HALOGENS	ug/l	48	52	32	7	
PHENOLICS	mg/l					
pH	standard	6.53	6.53	6.46	6.45	
TOTAL DISSOLVED SOLIDS	mg/l	160	200	260	170	
SPECIFIC CONDUCTANCE	umhos/cm	253	292	368	380	
SULFATE	mg/l	16	19	16	11	
HERBICIDES:						
2,4-D	ug/l					
2,4,5-TP	ug/l					
PESTICIDES:						
ENDRIN	ug/l					
LINDANE	ug/l					
METHOXYCHLOR	ug/l					
TOXAPHENE	ug/l					
ACID EXTRACTABLES:						
PHENOL	ug/l	<10	<10	<10	<10	
2-CHLOROPHENOL	ug/l	<10	<10	<10	<10	
2-NITROPHENOL	ug/l	<10	<10	<10	<10	
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<10	<10	
2,4-DICHLOROPHENOL	ug/l	<10	<10	<10	<10	
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<10	<10	
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<10	<10	
2,4-DINITROPHENOL	ug/l	<25	<25	<25	<25	
4-NITROPHENOL	ug/l	<25	<25	<25	<25	
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<25	<25	
PENTACHLOROPHENOL	ug/l	<25	<25	<50	<50	
BASE/NEUTRAL EXTRACTABLES:						
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<10	<10	
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<10	<10	
1,3-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	
1,4-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	
1,2-DICHLOROBENZENE	ug/l	<10	<10	<10	<10	
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10	<10	<10	
HEXACHLOROETHANE	ug/l	<10	<10	<10	<10	
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<10	<10	
NITROBENZENE	ug/l	<10	<10	<10	<10	
ISOPHORONE	ug/l	<10	<10	<10	<10	
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<10	<10	
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<10	<10	
NAPHTHALENE	ug/l	<10	56	78	38	
HEXACHLOROBUTADIENE	ug/l	<10	<10	<10	<10	
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<10	<10	
2-CHLORONAPHTHALENE	ug/l	<10	<10	<10	<10	
ACENAPHTHYLENE	ug/l	<10	<10	<10	<10	
DIMETHYL PHTHALATE	ug/l	<10	<10	<10	<10	
2,6-DINITROTOLUENE	ug/l	<10	<10	<10	<10	
ACENAPHTHENE	ug/l	<10	38	66	38	
2,4-DINITROTOLUENE	ug/l	<10	<10	<10	<10	
FLUORENE	ug/l	<10	46	65	35	
DIETHYL PHTHALATE	ug/l	<10	<10	<10	<10	
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<10	<10	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-5

PARAMETER	UNITS	5/2/91	7/18/91	10/25/91	1/16/92	4/16/92
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<10	<10	
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<10	<10	
HEXACHLOROBENZENE	ug/l	<10	<10	<10	<10	
PHENANTHRENE	ug/l	<10	118	218	107	
ANTHRACENE	ug/l	<10	40	56	32	
DI-N-BUTYL PHTHALATE	ug/l	<10	69	<10	<10	
FLUORANTHENE	ug/l	<10	<10	102	68	
BENZIDINE	ug/l	<25	<25	<100	<100	
PYRENE	ug/l	<10	66	105	80	
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<10	<10	
BENZ(A)ANTHRACENE	ug/l	<10	27.00	34	23	
CHRYSENE	ug/l	<10	31.00	35	24	
3,3'-DICHLOROBENZIDINE	ug/l	<25	<25	<20	<20	
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<10	<10	
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<10	<10	
BENZO(B)FLUORANTHENE	ug/l	<10	15	28	13	
BENZO(K)FLUORANTHENE	ug/l	<10	14	<10	11	
BENZO(A)PYRENE	ug/l	<10	18	<10	15	
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<10	<10	
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<10	<10	
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<10	<10	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l					
VOLATILE ORGANICS:						
CHLOROMETHANE	ug/l	<10	<10	<10	<10	
BROMOMETHANE	ug/l	<10	<10	<10	<10	
VINYL CHLORIDE	ug/l	<10	<10	<10	<10	
CHLOROETHANE	ug/l	<10	<10	<10	<10	
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	
ACROLEIN	ug/l	<100	<100	<100	<100	
ACRYLONITRILE	ug/l	<100	<100	<100	<100	
TRANS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	
CIS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	
TRICHLOROFLUOROMETHANE	ug/l	<5	<5	<5	<5	
1,1-DICHLOROETHENE	ug/l	<5	<5	<5	<5	
1,1-DICHLOROETHANE	ug/l	<5	<5	<5	<5	
TRANS-1,2-DICHLOROETHENE	ug/l	20	59	35	9	
CHLOROFORM	ug/l	<5	<5	<5	<5	
1,2-DICHLOROETHANE	ug/l	<5	<5	<5	<5	
1,1,1-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	
CARBON TETRACHLORIDE	ug/l	<5	<5	<5	<5	
BROMODICHLOROMETHANE	ug/l	<5	<5	<5	<5	
1,2-DICHLOROPROPANE	ug/l	<5	<5	<5	<5	
TRICHLOROETHENE	ug/l	22	12	<5	<5	
BENZENE	ug/l	<5	<5	<5	<5	
DIBROMOCHLOROMETHANE	ug/l	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	
2-CHLOROETHYLVINYL ETHER	ug/l	<10	<10	<10	<10	
BROMOFORM	ug/l	<5	<5	<5	<5	
TETRACHLOROETHENE	ug/l	23	17	<5	<5	
1,1,2,2-TETRACHLOROETHANE	ug/l	<5	<5	<5	<5	
TOLUENE	ug/l	<5	<5	<5	<5	
CHLOROBENZENE	ug/l	<5	<5	<5	<5	
ETHYLBENZENE	ug/l	<5	<5	<5	<5	

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-6

NOTES:

(1) 1,3 CIS-DICHLOROPROPENE AND 1,3 TRANS-DICHLOROPROPENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS F PERIOD 4/10/85 THROUGH 4/24/86.

(2) BENZ(A)ANTHRACENE AND CHRYSENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS. 10/16/85.

(3) ONLY SAMPLED FOR FECAL COLIFORM.

(4) THE VALUE REPORTED IS THE RESULT OF QUADRUPLICATE SAMPLES.

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-6

PARAMETER	UNITS	4/16/87	7/17/87	10/26/87	2/11/88	3/8/88	5/19/88	1/18/89	4/18/89
ALKALINITY, TOTAL	mg/l	218.00	268.00	257		327.00	288.00	269.00	338.00
AMMONIA NITROGEN	mg/l	43.6	52.00	72.00		89.0	45.0	60.0	82.5
TOTAL COLIFORM	cfu/100 ml	<2	<1	>40000		7500.00	(3) <10	<2.2	>16
BIOCHEMICAL OXYGEN DEMAND	mg/l	10.5	53.5	33.0		42.5	21.00	32.00	29.00
TOTAL ORGANIC CARBON	mg/l	5.9	15.2	13.9		4.27	6.2	7.00	9.9
CHEMICAL OXYGEN DEMAND	mg/l	1290.00	31.00	66.1		198.00	580.00	440.00	310.00
CHLORIDE	mg/l			25.8		31.2	8.00	24.00	12.00
CYANIDE, TOTAL	mg/l	3.1	2.9	10.9		1.76	0.102	6.20	0.014
FLUORIDE	mg/l	0.33	0.44	0.41		0.40	0.3	0.3	0.3
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l						<0.01	<0.01	<0.01
BARIUM, DISSOLVED	mg/l						<0.1	0.1	0.1
CADMIUM, DISSOLVED	mg/l						<0.005	<0.005	<0.005
CHROMIUM, DISSOLVED	mg/l	<0.001	0.001	0.004		0.031	<0.05	<0.05	<0.05
IRON, DISSOLVED	mg/l	1.7	0.1	0.5		1.2			
LEAD, DISSOLVED	mg/l						<0.05	<0.05	<0.05
MANGANESE, DISSOLVED	mg/l	2.3	1.4	1.3		1.8			
MERCURY, DISSOLVED	mg/l						<0.0005	<0.0005	<0.0005
SELENIUM, DISSOLVED	mg/l						<0.005	<0.005	<0.005
SILVER, DISSOLVED	mg/l						<0.01	<0.01	<0.01
SODIUM, DISSOLVED	mg/l	40.8	97.00	63.00		72.0			64.5
NITRATE NITROGEN	mg/l	<0.26	<0.26	<0.21		<0.21	0.8	<0.5	<0.5
TOTAL ORGANIC HALOGENS	ug/l	<5	<10	142.00		113.00	5.00	<5	<5
PHENOLICS	mg/l	<0.005	<0.005	<0.005		0.009			
pH	standard	7.40	7.40	7.40		7.15	7.46	7.39	7.20
TOTAL DISSOLVED SOLIDS	mg/l	492.00	640.00	436.00		526.00	360.00	560.00	480.00
SPECIFIC CONDUCTANCE	umhos/cm	846.00	1110.00	1010.00		1160.00	820.00	1100.00	1040.00
SULFATE	mg/l	141.00	212.00	210.00		290.00	128.00	259.00	180.00
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10	<10		<10	<10	<10	<10	<10
2-CHLOROPHENOL	ug/l	<10	<10		<10	<10	<10	<10	<10
2-NITROPHENOL	ug/l	<10	<10		<10	<10	<10	<10	<10
2,4-DIMENTYLPHENOL	ug/l	<10	<10		<10	<10	<10	<10	<10
2,4-DICHLOROPHENOL	ug/l	<10	<10		<10	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10		<10	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10		<10	<10	<10	<10	<10
2,4-DINITROPHENOL	ug/l	<50	<50		<50	<50	<25	<25	<25
4-NITROPHENOL	ug/l	<50	<50		<50	<50	<25	<25	<25
2-METHYL-4,6-DINITROPHENOL	ug/l	<50	<50		<50	<50	<25	<25	<25
PENTACHLOROPHENOL	ug/l	<50	<50		<50	<50	<25	<25	<25
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l				<11	<10	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10		<11	<10	<10	<10	<10
1,3-DICHLOROBENZENE	ug/l	<10	<10		<11	<10	<10	<10	<10
1,4-DICHLOROBENZENE	ug/l	<10	<10		<11	<10	<10	<10	<10
1,2-DICHLOROBENZENE	ug/l	<10	<10		<11	<10	<10	<10	<10
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10	<10		<11	<10	<10	<10	<10
HEXACHLOROETHANE	ug/l	<10	<10		<11	<10	<10	<10	<10
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10		<11	<10	<10	<10	<10
NITROBENZENE	ug/l	<10	<10		<11	<10	<10	<10	<10
ISOPHORONE	ug/l	<10	<10		<11	<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10		<11	<10	<10	<10	<10
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10		<11	<10	<10	<10	<10
NAPHTHALENE	ug/l	<10	<10		29.00	<10	40.00	20.00	<10
HEXACHLOROBUTADIENE	ug/l	<10	<10		<11	<10	<10	<10	<10
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10		<11	<10	<10	<10	<10
2-CHLORONAPHTHALENE	ug/l	<10	<10		<11	<10	<10	<10	<10
ACENAPHTHYLENE	ug/l	<10	16.00		21.00	<10	30.00	30.00	19.00
DIMETHYL PHTHALATE	ug/l	<10	<10		<11	<10	<10	<10	<10
2,6-DINITROTOLUENE	ug/l	<10	<10		<11	<10	<10	<10	<10
ACENAPHTHENE	ug/l	27.00	18.00		<11	13.00	50.00	40.00	35.00
2,4-DINITROTOLUENE	ug/l	<10	<10		<11	<10	<10	<10	<10
FLUORENE	ug/l	24.00	13.00		11.00	<10	30.00	20.00	18.00
DIETHYL PHTHALATE	ug/l	<10	<10		<11	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10		<11	<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	ug/l	<10	<10		<11	<10	<10	<10	<10

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-6

PARAMETER	UNITS	4/16/87	7/17/87	10/29/87	2/11/88	3/9/88	5/19/88	1/18/89	4/18/89
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10		<11	<10	<10	<10	<10
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10		<11	<10	<10	<10	<10
HEXACHLOROBENZENE	ug/l	<10	<10		<11	<10	<10	<10	<10
PHENANTHRENE	ug/l	<10	<10		<11	<10	<10	<10	<10
ANTHRACENE	ug/l	<10	<10		<11	<10	<10	<10	<10
DI-N-BUTYL PHTHALATE	ug/l	<10	<10		<11	<10	<10	<10	<10
FLUORANTHENE	ug/l	17.00	<10		<11	<10	10.00	<10	<10
BENZIDINE	ug/l				<22	<20	<26	<26	<26
PYRENE	ug/l	17.00	<10		<11	<10	20.00	<10	<10
BUTYL BENZYL PHTHALATE	ug/l	<10	<10		<11	<10	<10	<10	<10
BENZ(A)ANTHRACENE	ug/l	<10	<10		<11	<10	<10	<10	<10
CHRYSENE	ug/l	<10	<10		<11	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	ug/l	<20	<20		<22	<20	<26	<26	<26
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10		<11	<10	<10	<10	<10
DI-N-OCTYL PHTHALATE	ug/l	<10	<10		<11	<10	<10	<10	<10
BENZO(B)FLUORANTHENE	ug/l	<10	<10		<11	<10	<10	<10	<10
BENZO(K)FLUORANTHENE	ug/l	<10	<10		<11	<10	<10	<10	<10
BENZO(A)PYRENE	ug/l	<10	<10		<11	<10	<10	<10	<10
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10		<11	<10	<10	<10	<10
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10		<11	<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	ug/l	<10	<10		<11	<10	<10	<10	<10
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l	<10	<10		<11	<10			
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<2.0	<2.0	<2		<2	<10	<10	<10
BROMOMETHANE	ug/l	<2.0	<2.0	<2		<2	<10	<10	<10
VINYL CHLORIDE	ug/l	<2.0	<2.0	<2		<2	<10	<10	<10
CHLOROETHANE	ug/l	<2.0	<2.0	<2		<2	<10	<10	<10
METHYLENE CHLORIDE	ug/l	24.00	<1.0	<1		<1	<5	<5	<5
ACROLEIN	ug/l						<100	<100	<100
ACRYLONITRILE	ug/l						<100	<100	<100
TRANS-1,3-DICHLOROPROPENE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
CIS-1,3-DICHLOROPROPENE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
TRICHLOROFLUOROMETHANE	ug/l					<1	<5	<5	<5
1,1-DICHLOROETHENE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
1,1-DICHLOROETHANE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
TRANS-1,2-DICHLOROETHENE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
CHLOROFORM	ug/l	<1.0	<1.0	<1		<2	<5	<5	<5
1,2-DICHLOROETHANE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
1,1,1-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
CARBON TETRACHLORIDE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
BROMODICHLOROMETHANE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
1,2-DICHLOROPROPANE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
TRICHLOROETHENE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
BENZENE	ug/l	<1.0	<1.0	3.00		<1	<5	<5	<5
DIBROMOCHLOROMETHANE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
1,1,2-TRICHLOROETHANE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
2-CHLOROETHYLVINYL ETHER	ug/l	<2.0	<2.0	<2		<2	<10	<10	<10
BROMOFORM	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
TETRACHLOROETHENE	ug/l	<1.0	1.00	<1		<1	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
TOLUENE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
CHLOROBENZENE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5
ETHYLBENZENE	ug/l	<1.0	<1.0	<1		<1	<5	<5	<5

PHILADELPHIA COKE COMPANY
GROUNDWATER MONITORING DATABASE

MONITORING WELL W-6

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
ALKALINITY, TOTAL	mg/l	364.00		347.00	314.00	360.00	454.00	348.00	
AMMONIA NITROGEN	mg/l	39.8		55.2	43.6	79.3	65.6	9.1	
TOTAL COLIFORM	cfu/100 ml	2.2		2.2	<2.2	<2.2	<2.2	<2.2	
BIOCHEMICAL OXYGEN DEMAND	mg/l	28.00		63	24.00		38.00	63.00	
TOTAL ORGANIC CARBON	mg/l	8.9		8.1	7.0	9.6	10.0	7.5	(4) 6.6
CHEMICAL OXYGEN DEMAND	mg/l	350.00		1290.00	430.00	60.00	270.00	1980.00	
CHLORIDE	mg/l	8.00		28.00	19.00	12.00	16.00	16.00	
CYANIDE, TOTAL	mg/l	0.152		0.410	0.104	0.158	0.057	0.427	
FLUORIDE	mg/l	0.3		0.2	0.2	0.3	0.2	0.1	
ALUMINUM, DISSOLVED	mg/l								
ARSENIC, DISSOLVED	mg/l	<0.01		0.01	<0.01	<0.01	<0.01	0.01	
BARIUM, DISSOLVED	mg/l	0.1		0.1	0.1	0.1	<0.2	<0.2	
CADMIUM, DISSOLVED	mg/l			<0.005	<0.005	<0.005	<0.005	<0.005	
CHROMIUM, DISSOLVED	mg/l	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	
IRON, DISSOLVED	mg/l								
LEAD, DISSOLVED	mg/l	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	
MANGANESE, DISSOLVED	mg/l								
MERCURY, DISSOLVED	mg/l	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
SELENIUM, DISSOLVED	mg/l	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	
SILVER, DISSOLVED	mg/l	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01	
SODIUM, DISSOLVED	mg/l	43.4		45.1	39.3	65.8	74.6	37.5	
NITRATE NITROGEN	mg/l	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	
TOTAL ORGANIC HALOGENS	ug/l	<5		8.00	5.00	<5	6.00	11.00	(4) <10
PHENOLICS	mg/l								
pH	standard	7.20		7.48	7.24	7.12	7.43	6.97	(4) 6.82
TOTAL DISSOLVED SOLIDS	mg/l	430.00		540.00	570.00	570.00	650.00	500.00	
SPECIFIC CONDUCTANCE	umhos/cm	920.00		1180.00	1160.00	1270.00	1300.00	1030.00	(4) 1010
SULFATE	mg/l	146.00		218.00	249.00	190.00	169.00	157.00	
HERBICIDES:									
2,4-D	ug/l								
2,4,5-TP	ug/l								
PESTICIDES:									
ENDRIN	ug/l								
LINDANE	ug/l								
METHOXYCHLOR	ug/l								
TOXAPHENE	ug/l								
ACID EXTRACTABLES:									
PHENOL	ug/l	<10		<10	<10	<10	<10	<50	
2-CHLOROPHENOL	ug/l	<10		<10	<10	<10	<10	<50	
2-NITROPHENOL	ug/l	<10		<10	<10	<10	<10	<50	
2,4-DIMEHTYLPHENOL	ug/l	<10		<10	<10	<10	<10	<50	
2,4-DICHLOROPHENOL	ug/l	<10		<10	<10	<10	<10	<50	
4-CHLORO-3-METHYLPHENOL	ug/l	<10		<10	<10	<10	<10	<50	
2,4,6-TRICHLOROPHENOL	ug/l	<10		<10	<10	<10	<10	<50	
2,4-DINITROPHENOL	ug/l	<26		<26	<26	<26	<26	<130	
4-NITROPHENOL	ug/l	<26		<26	<26	<26	<26	<130	
2-METHYL-4,6-DINITROPHENOL	ug/l	<26		<26	<26	<26	<26	<130	
PENTACHLOROPHENOL	ug/l	<26		<26	<26	<26	<26	<130	
BASE/NEUTRAL EXTRACTABLES:									
N-NITROSODIMETHYLAMINE	ug/l	<10		<10	<10	<10	<10	<50	
BIS(2-CHLOROETHYL)ETHER	ug/l	<10		<10	<10	<10	<10	<50	
1,3-DICHLOROBENZENE	ug/l	<10		<10	<10	<10	<10	<50	
1,4-DICHLOROBENZENE	ug/l	<10		<10	<10	<10	<10	<50	
1,2-DICHLOROBENZENE	ug/l	<10		<10	<10	<10	<10	<50	
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	<10		<10	<10	<10	<10	<50	
HEXACHLOROETHANE	ug/l	<10		<10	<10	<10	<10	<50	
N-NITROSODI-N-PROPYLAMINE	ug/l	<10		<10	<10	<10	<10	<50	
NITROBENZENE	ug/l	<10		<10	<10	<10	<10	<50	
ISOPHORONE	ug/l	<10		<10	<10	<10	<10	<50	
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10		<10	<10	<10	<10	<50	
1,2,4-TRICHLOROBENZENE	ug/l	<10		<10	<10	<10	<10	<50	
NAPHTHALENE	ug/l	44.00		72.00	66.00	34.00	18.00	180.00	
HEXACHLOROBUTADIENE	ug/l	<10		<10	<10	<10	<10	<50	
HEXCHLOROCYCLOPENTADIENE	ug/l	<10		<10	<10	<10	<10	<50	
2-CHLORONAPHTHALENE	ug/l	<10		<10	<10	<10	<10	<50	
ACENAPHTHYLENE	ug/l	35.00		37.00	36.00	32.00	26.00	<50	
DIMETHYL PHTHALATE	ug/l	<10		<10	<10	<10	<10	<50	
2,6-DINITROTOLUENE	ug/l	<10		<10	<10	<10	<10	<50	
ACENAPHTHENE	ug/l	69.00		69.00	63.00	71.00	56.00	154.00	
2,4-DINITROTOLUENE	ug/l	<10		<10	<10	<10	<10	<50	
FLUORENE	ug/l	45.00		49.00	47.00	40.00	33.00	111.00	
DIETHYL PHTHALATE	ug/l	<10		<10	<10	<10	<10	<50	
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10		<10	<10	<10	<10	<50	
N-NITROSODIPHENYLAMINE	ug/l	<10		<10	<10	<10	<10	<50	

PHILADELPHIA COKE COMPANY
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MONITORING WELL W-6

PARAMETER	UNITS	8/1/89	10/30/89	1/11/90	4/5/90	7/10/90	10/11/90	1/8/91	2/20/91
1,2-DIPHENYLHYDRAZINE	ug/l	<10		<10	<10	<10	<10	<50	
4-BROMOPHENYL PHENYL ETHER	ug/l	<10		<10	<10	<10	<10	<50	
HEXACHLOROBENZENE	ug/l	<10		<10	<10	<10	<10	<50	
PHENANTHRENE	ug/l	13.00		27.00	21.00	14.00	<10	64.00	
ANTHRACENE	ug/l	<10		16.00	10.00	<10	<10	<50	
DI-N-BUTYL PHTHALATE	ug/l	<10		<10	<10	<10	<10	<50	
FLUORANTHENE	ug/l	26.00		44.00	28.00	24.00	12.00	113.00	
BENZIDINE	ug/l	<26		<26	<26	<26	<26	<130	
PYRENE	ug/l	21.00		46.00	30.00	26.00	11.00	116.00	
BUTYL BENZYL PHTHALATE	ug/l	<10		<10	<10	<10	<10	<50	
BENZ(A)ANTHRACENE	ug/l	<10		21.00	16.00	10.00	<10	50.00	
CHRYSENE	ug/l	11.00		23.00	17.00	11.00	<10	54.00	
3,3'-DICHLOROBENZIDINE	ug/l	<26		<26	<26	<26	<26	<130	
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10		<10	<10	<10	<10	<50	
DI-N-OCTYL PHTHALATE	ug/l	<10		<10	<10	<10	<10	<50	
BENZO(B)FLUORANTHENE	ug/l	<10		18.00	14.00	12.00	<10	59.00	
BENZO(K)FLUORANTHENE	ug/l	<10		12.00	<10	<10	<10	<50	
BENZO(A)PYRENE	ug/l	<10		16.00	12.00	<10	<10	<50	
INDENO(1,2,3-C,D)PYRENE	ug/l	<10		10.00	<10	<10	<10	<50	
DIBENZ(A,H)ANTHRACENE	ug/l	<10		<10	<10	<10	<10	<50	
BENZO(G,H,I)PERYLENE	ug/l	<10		10.00	<10	<10	<10	<50	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l								
VOLATILE ORGANICS:									
CHLOROMETHANE	ug/l	<10		<10	<10	<10	<10	<10	
BROMOMETHANE	ug/l	<10		<10	<10	<10	<10	<10	
VINYL CHLORIDE	ug/l	<10		<10	<10	<10	<10	<10	
CHLOROETHANE	ug/l	<10		<10	<10	<10	<10	<10	
METHYLENE CHLORIDE	ug/l	<5		<5	<5	<5	<5	<5	
ACROLEIN	ug/l	<100		<100	<100	<100	<100	<100	
ACRYLONITRILE	ug/l	<100		<100	<100	<100	<100	<100	
TRANS-1,3-DICHLOROPROPENE	ug/l	<5		<5	<5	<5	<5	<5	
CIS-1,3-DICHLOROPROPENE	ug/l	<5		<5	<5	<5	<5	<5	
TRICHLOROFLUOROMETHANE	ug/l	<5		<5	<5	<5	<5	<5	
1,1-DICHLOROETHENE	ug/l	<5		<5	<5	<5	<5	<5	
1,1-DICHLOROETHANE	ug/l	<5		<5	<5	<5	<5	<5	
TRANS-1,2-DICHLOROETHENE	ug/l	<5		<5	<5	<5	<5	<5	
CHLOROFORM	ug/l	<5		<5	<5	<5	<5	<5	
1,2-DICHLOROETHANE	ug/l	<5		<5	<5	<5	<5	<5	
1,1,1-TRICHLOROETHANE	ug/l	<5		<5	<5	<5	<5	<5	
CARBON TETRACHLORIDE	ug/l	<5		<5	<5	<5	<5	<5	
BROMODICHLOROMETHANE	ug/l	<5		<5	<5	<5	<5	<5	
1,2-DICHLOROPROPANE	ug/l	<5		<5	<5	<5	<5	<5	
TRICHLOROETHENE	ug/l	<5		<5	<5	<5	<5	<5	
BENZENE	ug/l	<5		<5	<5	<5	<5	<5	
DIBROMOCHLOROMETHANE	ug/l	<5		<5	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE	ug/l	<5		<5	<5	<5	<5	<5	
2-CHLOROETHYLVINYL ETHER	ug/l	<10		<10	<10	<10	<10	<10	
BROMOFORM	ug/l	<5		<5	<5	<5	<5	<5	
TETRACHLOROETHENE	ug/l	<5		<5	<5	<5	<5	<5	
1,1,2,2-TETRACHLOROETHANE	ug/l	<5		<5	<5	<5	<5	<5	
TOLUENE	ug/l	<5		<5	<5	<5	<5	<5	
CHLOROBENZENE	ug/l	<5		<5	<5	<5	<5	<5	
ETHYLBENZENE	ug/l	<5		<5	<5	<5	<5	<5	

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PARAMETER	UNITS	5/2/91	7/18/91	10/26/91	1/16/92	4/16/92
ALKALINITY, TOTAL	mg/l	263.00	318.00	400.00	385.00	
AMMONIA NITROGEN	mg/l	31.2	36.8	50.8	46.8	
TOTAL COLIFORM	cfu/100 ml	<2.2	2.2	>16	16.00	
BIOCHEMICAL OXYGEN DEMAND	mg/l	<12	22.00	21.00	26.00	
TOTAL ORGANIC CARBON	mg/l	5.6	6.8	9.6	8.0	
CHEMICAL OXYGEN DEMAND	mg/l	130.00	490.00	<50	<50	
CHLORIDE	mg/l	8.00	8.00	16.00	24.00	
CYANIDE, TOTAL	mg/l	0.034	0.240	0.028	1.48	
FLUORIDE	mg/l	0.3	0.3	0.3	0.3	
ALUMINUM, DISSOLVED	mg/l					
ARSENIC, DISSOLVED	mg/l		0.06	0.40	<0.01	
BARIUM, DISSOLVED	mg/l		0.4	0.4	<0.1	
CADMIUM, DISSOLVED	mg/l		<0.005	<0.005	<0.005	
CHROMIUM, DISSOLVED	mg/l		0.19	0.21	<0.05	
IRON, DISSOLVED	mg/l					
LEAD, DISSOLVED	mg/l		0.44	0.45	<0.05	
MANGANESE, DISSOLVED	mg/l					
MERCURY, DISSOLVED	mg/l		0.0028	0.0029	<0.0005	
SELENIUM, DISSOLVED	mg/l		<0.005	<0.005	<0.005	
SILVER, DISSOLVED	mg/l		<0.01	<0.01	<0.01	
SODIUM, DISSOLVED	mg/l		37.2	46.0	55.4	
NITRATE NITROGEN	mg/l	<0.5	<0.5	<0.5	<0.5	
TOTAL ORGANIC HALOGENS	ug/l	<5	<5	8.00	<5	
PHENOLICS	mg/l					
pH	standard	6.95	7.18	8.00	7.14	
TOTAL DISSOLVED SOLIDS	mg/l	420.00	430.00	600.00	560.00	
SPECIFIC CONDUCTANCE	umhos/cm	839.00	868.00	1070.00	1190.00	
SULFATE	mg/l	162.00	135.00	143.00	174.00	
HERBICIDES:						
2,4-D	ug/l					
2,4,5-TP	ug/l					
PESTICIDES:						
ENDRIN	ug/l					
LINDANE	ug/l					
METHOXYCHLOR	ug/l					
TOXAPHENE	ug/l					
ACID EXTRACTABLES:						
PHENOL	ug/l	<10	<10	<20	<10	
2-CHLOROPHENOL	ug/l	<10	<10	<20	<10	
2-NITROPHENOL	ug/l	<10	<10	<20	<10	
2,4-DIMEHTYLPHENOL	ug/l	<10	<10	<20	<10	
2,4-DICHLOROPHENOL	ug/l	<10	<10	<20	<10	
4-CHLORO-3-METHYLPHENOL	ug/l	<10	<10	<20	<10	
2,4,6-TRICHLOROPHENOL	ug/l	<10	<10	<20	<10	
2,4-DINITROPHENOL	ug/l	<25	<25	<50	<25	
4-NITROPHENOL	ug/l	<25	<25	<50	<25	
2-METHYL-4,6-DINITROPHENOL	ug/l	<25	<25	<50	<25	
PENTACHLOROPHENOL	ug/l	<25	<50	<100	<50	
BASE/NEUTRAL EXTRACTABLES:						
N-NITROSODIMETHYLAMINE	ug/l	<10	<10	<20	<10	
BIS(2-CHLOROETHYL)ETHER	ug/l	<10	<10	<20	<10	
1,3-DICHLOROBENZENE	ug/l	<10	<10	<20	<10	
1,4-DICHLOROBENZENE	ug/l	<10	<10	<20	<10	
1,2-DICHLOROBENZENE	ug/l	<10	<10	<20	<10	
BIS(2-CHLORDISOPROPYL)ETHER	ug/l	<10	<10	<20	<10	
HEXACHLOROETHANE	ug/l	<10	<10	<20	<10	
N-NITROSODI-N-PROPYLAMINE	ug/l	<10	<10	<20	<10	
NITROBENZENE	ug/l	<10	<10	<20	<10	
ISOPHORONE	ug/l	<10	<10	<20	<10	
BIS(2-CHLOROETHOXY)METHANE	ug/l	<10	<10	<20	<10	
1,2,4-TRICHLOROBENZENE	ug/l	<10	<10	<20	<10	
NAPHTHALENE	ug/l	<10	48.00	<20	32.00	
HEXACHLOROBUTADIENE	ug/l	<10	<10	<20	<10	
HEXCHLOROCYCLOPENTADIENE	ug/l	<10	<10	<20	<10	
2-CHLORONAPHTHALENE	ug/l	<10	<10	<20	<10	
ACENAPHTHYLENE	ug/l	20.00	33.00	<20	23.00	
DIMETHYL PHTHALATE	ug/l	<10	<10	<20	<10	
2,6-DINITROTOLUENE	ug/l	<10	<10	<20	<10	
ACENAPHTHENE	ug/l	35.00	56.00	37.00	51.00	
2,4-DINITROTOLUENE	ug/l	<10	<10	<20	<10	
FLUORENE	ug/l	20.00	51.00	<20	34.00	
DIETHYL PHTHALATE	ug/l	<10	<10	<20	<10	
4-CHLOROPHENYL PHENYL ETHER	ug/l	<10	<10	<20	<10	
N-NITROSODIPHENYLAMINE	ug/l	<10	<10	<20	<10	

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PARAMETER	UNITS	5/2/91	7/18/91	10/25/91	1/16/92	4/16/92
1,2-DIPHENYLHYDRAZINE	ug/l	<10	<10	<20	<10	
4-BROMOPHENYL PHENYL ETHER	ug/l	<10	<10	<20	<10	
HEXACHLOROBENZENE	ug/l	<10	<10	<20	<10	
PHENANTHRENE	ug/l	<10	20.00	<20	16.00	
ANTHRACENE	ug/l	<10	11.00	<20	<10	
DI-N-BUTYL PHTHALATE	ug/l	<10	<10	<20	<10	
FLUORANTHENE	ug/l	<10	32.00	<20	24.00	
BENZIDINE	ug/l	<25	<25	<200	<100	
PYRENE	ug/l	<10	31.00	<20	<10	
BUTYL BENZYL PHTHALATE	ug/l	<10	<10	<20	<10	
BENZ(A)ANTHRACENE	ug/l	<10	16.00	<20	12.00	
CHRYSENE	ug/l	<10	19.00	<20	13.00	
3,3'-DICHLOROBENZIDINE	ug/l	<25	<25	<40	<20	
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	<10	<10	<20	<10	
DI-N-OCTYL PHTHALATE	ug/l	<10	<10	<20	<10	
BENZO(B)FLUORANTHENE	ug/l	<10	14.00	<20	<10	
BENZO(K)FLUORANTHENE	ug/l	<10	13.00	<20	<10	
BENZO(A)PYRENE	ug/l	<10	13.00	<20	<10	
INDENO(1,2,3-C,D)PYRENE	ug/l	<10	<10	<20	<10	
DIBENZ(A,H)ANTHRACENE	ug/l	<10	<10	<20	<10	
BENZO(G,H,I)PERYLENE	ug/l	<10	<10	<20	<10	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ug/l					
VOLATILE ORGANICS:						
CHLOROMETHANE	ug/l	<10	<10	<10	<10	
BROMOMETHANE	ug/l	<10	<10	<10	<10	
VINYL CHLORIDE	ug/l	<10	<10	<10	<10	
CHLOROETHANE	ug/l	<10	<10	<10	<10	
METHYLENE CHLORIDE	ug/l	<5	<5	<5	<5	
ACROLEIN	ug/l	<100	<100	<100	<100	
ACRYLONITRILE	ug/l	<100	<100	<100	<100	
TRANS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	
CIS-1,3-DICHLOROPROPENE	ug/l	<5	<5	<5	<5	
TRICHLOROFLUOROMETHANE	ug/l	<5	<5	<5	<5	
1,1-DICHLOROETHENE	ug/l	<5	<5	<5	<5	
1,1-DICHLOROETHANE	ug/l	<5	<5	<5	<5	
TRANS-1,2-DICHLOROETHENE	ug/l	<5	<5	<5	<5	
CHLOROFORM	ug/l	<5	<5	<5	<5	
1,2-DICHLOROETHANE	ug/l	<5	<5	<5	<5	
1,1,1-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	
CARBON TETRACHLORIDE	ug/l	<5	<5	<5	<5	
BROMODICHLOROMETHANE	ug/l	<5	<5	<5	<5	
1,2-DICHLOROPROPANE	ug/l	<5	<5	<5	<5	
TRICHLOROETHENE	ug/l	<5	<5	<5	<5	
BENZENE	ug/l	<5	<5	<5	<5	
DIBROMOCHLOROMETHANE	ug/l	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE	ug/l	<5	<5	<5	<5	
2-CHLOROETHYLVINYL ETHER	ug/l	<10	<10	<10	<10	
BROMOFORM	ug/l	<5	<5	<5	<5	
TETRACHLOROETHENE	ug/l	<5	<5	<5	<5	
1,1,2,2-TETRACHLOROETHANE	ug/l	<5	<5	<5	<5	
TOLUENE	ug/l	<5	<5	<5	<5	
CHLOROBENZENE	ug/l	<5	<5	<5	<5	
ETHYLBENZENE	ug/l	<5	<5	<5	<5	

PHILADELPHIA COKE COMPANY
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MONITORING WELL W-6

NOTES:

(1) 1,3 CIS-DICHLOROPROPENE AND 1,3 TRANS-DICHLOROPROPENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS FOR PERIOD 4/10/85 THROUGH 4/24/86.

(2) BENZ(A)ANTHRACENE AND CHRYSENE COULD NOT BE RESOLVED, VALUES REPORTED INDICATE THE SUM OF BOTH COMPOUNDS. 10/16/85.

(3) ONLY SAMPLED FOR FECAL COLIFORM.

(4) THE VALUE REPORTED IS THE RESULT OF QUADRUPLICATE SAMPLES.