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ECOLOGICAL RISK ASSESSMENT / WETLANDS REMEDIAL INVESTIGATION ADDENDUM (ERA/WRIA)

IRON HORSE PARK SUPERFUND SITE
OPERABLE UNIT 4
North Billerica, Massachusetts

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EXECUTIVE SUMMARY

The Iron Horse Park Superfund Site occupies approximately 553 acres in North Billerica, Massachusetts, near the Tewksbury town line, approximately 20 miles northwest of Boston. The site is divided into four operable units (OUs). OU-1 is the Boston & Maine (B&M) Wastewater Lagoons, OU-2 is the Shaffer Landfill, and OU-3 was originally the remainder of the site, including an active industrial complex (the Iron Horse Industrial Park), a railyard, numerous manufacturing operations, open storage facilities, landfills, and lagoons. Investigational activities, including a baseline ecological risk assessment (BERA), were completed for OU-3 in 1997. At the time of the FS for OU-3, it was decided that site-wide surface water, sediment, and groundwater required additional investigation and the OU-3 feasibility study (FS) was then limited to site source areas. Therefore, OU-4 includes site-wide surface water, sediment, and groundwater, and addresses the areas within the OU-3 site boundaries where ecological risks were identified in the 1997 BERA (i.e., on-site surface water and sediment in wetland habitats).

There are abundant wetlands and forested areas at the site. Approximately 20% of the site is forested while 17% is wetland habitat. All of the upland habitat was eliminated from further study in the 1997 BERA, which is the majority of the 553-acre site. Based on the results of the 1997 BERA, M&E conducted additional investigative activities in on-site wetlands and ponds, and has prepared this focused ecological risk assessment/wetland remedial investigation addendum (ERA/WRIA) to support a focused FS for OU-4, including the selection of a remedy to control ecological risks to the environment.

Based on conclusions of the 1997 BERA, the Problem Formulation and list of chemicals of potential concern (COPCs) were refined and measurement and assessment endpoints were selected for further evaluation. Specifically, the ERA/WRIA was designed to address potential risks to the environment identified during the 1997 OU-3 BERA, including risks to aquatic receptors exposed to target metals in surface water, risks to benthic invertebrates directly exposed to 4,4'-DDD, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and

target metals in sediment within the on-site wetlands and ponds, and risks to predatory birds (e.g., heron) indirectly exposed to PAHs and target metals in biota within on-site habitats that support fish for their diet. Target metals are identified as those metals potentially contributing to risk as determined in the OU-3 BERA and include: aluminum, arsenic, barium, silver, chromium, cobalt, copper, iron, manganese, lead, vanadium, and zinc.

The 2004 sampling was conducted as a supplemental effort focusing on risks identified in the 1997 BERA in wetlands and surface waters. The assumption of the approach was that by using historic and screening-level sediment characterization data (e.g., Microtox® analysis), the areas of worst-case sediment contamination and potential toxicity could be identified. These worst-case sediment areas were selected and sampled in 2004 (analyzed for chemistry and toxicity), along with supplemental surface water characterization, under the premise that the level of risk associated with the worst-case areas would clarify the level of risk to receptors on-site.

Supplemental sampling in 2004 included additional chemical analysis of surface water and sediment, toxicity testing in surface water and sediment, and fish tissue sampling. Surface water samples were collected from one reference area (Round Pond) and four on-site surface water areas, including the Middlesex Canal, Richardson Pond, B&M Pond, and Content Brook. These samples were used to evaluate toxicity to aquatic receptors from exposure to target metals in surface water. Surface water samples were analyzed for toxicity, as well as in triplicate for total and dissolved metals and alkalinity. Surface water toxicity tests were conducted on daphnid (*Ceriodaphnia dubia*) and minnow (*Pimephales promelas*).

Fish tissue samples were also collected at these five open-water locations (four on-site and one reference) to model dietary exposure of heron based on site-specific fish tissue concentrations of PAHs and target metals.

Sediment samples were collected to further evaluate toxicity to benthic invertebrates from exposure to 4,4'-DDD, PCBs, PAHs, and target metals in sediment within the on-site wetlands

and ponds. Sediment samples were collected in a phased approach. Based on historic data and site reconnaissance, twenty on-site sampling locations and three reference locations were selected for field screening for target metals, PAHs, PCBs, and Microtox® toxicity. Based on the field-screening results, a subset of four on-site sediment sampling locations was selected to represent the sediments with highest potential toxicity. The least toxic/contaminated location among the three potential reference locations was selected for analysis as the representative reference location. These five sediment samples, including four non reference and one reference location, were evaluated using laboratory sediment toxicity testing and analytical methods. These data, in conjunction with historic data and field-screening results, were used to evaluate the potential toxicity of site-related contaminants on benthic organisms.

The ERA/WRIA data demonstrate that similar patterns of contaminants in sediment and surface water were found in 2004 and 1993. The ERA/WRIA based conclusions of risk on the evaluation of the combined data set from 1993 and 2004, the 2004 toxicity data, along with the supporting patterns of the Microtox® data, and the previous evaluations of the 1997 BERA.

Based on the analysis of surface water data and surface water toxicity testing, the risk to aquatic invertebrates from exposure to metals in surface water is negligible. Since the study was designed to evaluate exposure scenarios representing the highest contaminant concentrations on-site, and for surface water these did not exceed levels associated with toxicity or ecological effects, the conclusion can be made that there is no unacceptable ecological effects to the selected receptor from exposure to surface water at any of the site areas.

Based on the concentrations of contaminants detected in fish tissue compared to residue effect levels, the risk to fish from exposure to COPCs at the site is negligible. In the majority of the water bodies on-site, the risk from exposure to COPCs in surface water is also negligible. There is low risk to minnows in West Middlesex Canal, based on uncertain results from one surface water toxicity test. Based on the lack of supporting data from other lines of evidence, and lack of the association of this risk to surface water COPCs measured, the risk to minnows is not

considered significant.

The dietary modeling results for the great blue heron indicate that the concentrations of COPCs in fish collected on-site are below levels expected to cause ecological effects. The risk to piscivorous birds feeding at the site is negligible. Since the exposure scenarios representing the maximum contaminant concentrations on-site did not exceed levels associated with adverse effects for great blue heron dietary models, the conclusion can be made that there are no unacceptable ecological effects to great blue heron populations feeding in the site area.

The risks to benthic invertebrates exposed to sediment contaminants of concern are negligible (no evidence of risk) at Content Brook, low in West Middlesex Canal, and moderate in B&M Pond and the Unnamed Brook. The areal distribution of COPCs contributing to risk demonstrates a spatial pattern of highest concentrations in the upstream and central portions of the site (Unnamed Brook and B&M Pond wetland). Total PAHs, chromium, copper, lead, and zinc have the highest concentration in the upstream and central portions of the site and diminish in concentration downgradient in the Middlesex Canal and in Content Brook. In addition, the highest observed effects in the sediment toxicity test and Microtox® analysis show a pattern consistent with the contaminant distribution.

This spatial pattern of contaminant concentration and associated sediment toxicity supports an interpretation that the site-related COPCs are likely to have been transported short distances downstream, as sediment-bound particles, and settled or re-deposited in depositional environments along the Unnamed Stream or in areas of B&M Pond. The significance of the spatial distribution of PAHs and metals on-site is that it indicates these major COPCs have migrated downstream to B&M Pond, but have not migrated further downgradient to Content Brook or off-site.

Based on the analysis of the three selected indicators/endpoints, there are no indications of unacceptable ecological risk to aquatic receptors or predatory birds on-site. Evidence suggests

that there is high exposure to organic and metal contaminants of concern for benthic invertebrates on the site. Risks from the exposure to sediments are highest in the Unnamed Brook and B&M Pond. Based on the evaluation of benthic invertebrate data, there are unacceptable ecological risks to benthic invertebrates in the Unnamed Brook and B&M Pond, with uncertain risk in Richardson Pond at SD-111. Based on the low sediment toxicity, and low magnitude and frequency of sediment benchmark exceedances in West Middlesex Canal and Content Brook, the risks to benthic invertebrates are low or negligible in these areas, and do not represent an unacceptable risk.

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SECTION 1.0
INTRODUCTION

The U.S. Environmental Protection Agency, Region I, New England (EPA) headquartered in Boston, Massachusetts contracted with Metcalf & Eddy, Inc. (M&E), of Wakefield, Massachusetts under EPA's Response Action Contract (RAC) to provide Remedial Investigation/Feasibility Study (RI/FS) services for Operable Unit 4 (OU-4) of the Iron Horse Park Superfund Site in North Billerica, Massachusetts (the site). This focused ecological risk assessment/wetlands RI addendum (ERA/WRIA) was prepared as an addendum to the baseline ecological risk assessment (BERA) conducted for Operable Unit 3 (OU-3) (M&E, 1997) and to support the focused FS for OU-4.

1.1 Site Background

The site occupies approximately 553 acres in North Billerica, Massachusetts, near the Tewksbury town line, approximately 20 miles northwest of Boston (Figure 1-1). The site is bounded on the north by the B&M railroad tracks, on the west by High Street and an auto salvage yard, on the east by Gray Street, and on the south by a wetland, Pond Street, and the Middlesex Canal (Figure 1-2). The Middlesex Canal flows through the site to the east, where it joins Content Brook at the southeastern edge of the Shaffer Landfill. It then flows to the Shawsheen River and ultimately to the Merrimack River to the north. There are abundant wetlands and forested areas at the site. Approximately 20% of the site is forested while 17% is wetland habitat. In addition, several large wetland complexes border the site which increases the total acreage of the wetlands at the site to 266 acres.

The site is divided into four operable units. OU-1 is the Boston & Maine (B&M) Wastewater Lagoons, OU-2 is the Shaffer Landfill, and OU-3 was originally the remainder of the site, including an active industrial complex (the Iron Horse Industrial Park), a railyard, numerous manufacturing operations, open storage facilities, landfills, and lagoons. Investigational activities, including a BERA, were completed for OU-3 in 1997. At the time of the FS for OU-3, it was

decided that site-wide surface water, sediment, and groundwater required additional investigation and the OU-3 FS was then limited to site source areas. Therefore, OU-4 includes site-wide surface water, sediment, and groundwater, and addresses the areas within the OU-3 site boundaries where ecological risks were identified in the 1997 BERA (i.e., on-site surface water and sediment in wetland habitats). Based on the results of the OU-3 BERA, M&E conducted additional investigative activities in on-site wetlands and ponds, and has prepared this focused ERA/WRIA to support a focused FS for OU-4 and the selection of a remedy to control ecological risks to the environment. The focused FS will supplement the RI (M&E, 1997) and FS (M&E, 2004a) for OU-3.

1.2 Site History

The site was purchased by the B&M Railroad (now known as B&M Corporation) in 1911. Since 1911, a variety of industrial disposal practices have resulted in the creation of numerous lagoons, landfills, and open storage areas. The B&M Railroad began operations at the site in 1913, including the operation of an oil and sludge recycling area beginning sometime prior to 1938. The B&M Railroad has operated the site's sewage collection system since 1924. The system includes subsurface sewer lines, a dismantled pump house, two unlined filter lagoons, and one overflow lagoon. These wastewater lagoons are OU-1 of the site. In addition to septic wastes, the lagoons also received industrial/hazardous wastes such as solvents, waste oils, and other chemicals from various floor and yard drains found throughout the industrial park. Sludge from the bottom of these lagoons was periodically dredged during the past 60 years of operation and deposited in piles adjacent to the lagoons.

In 1944, the B&M Railroad sold land in the western portion of the site to Johns Manville Products Corporation, which at that time began to manufacture structural insulating board that contained asbestos. Three unlined lagoons were built to dispose of the resulting asbestos sludge waste. The B&M Railroad also leased land in the eastern portion of the site to Johns Manville to be used as a landfill for asbestos sludge and other asbestos mill wastes generated by their manufacturing operations. EPA capped this landfill in 1984.

In 1961, the Johns Manville Products Corporation sold the western portion of its land to the General Latex and Chemical Corporation, which manufactured acrylic and vinyl acetate polymers and copolymers used in fabrics, paper, and insulation. The liquid filtrate from the latex and polymerization wastes was discharged to the ground through sand filters. This practice was discontinued in May 1982, when General Latex was connected to the Billerica sewer system.

In 1966, the B&M Corporation sold 106 acres of land north of the Middlesex Canal and east of Pond Street to Phillip Shaffer. This land later became the Shaffer Landfill and is currently OU-2 of the site. This landfill received commercial and residential waste materials from private clients, wastewater treatment sludge from the town of Billerica, and domestic waste from Billerica residents. The landfill stopped receiving waste in April 1986. The Potentially Responsible Parties (PRPs) completed construction of the remedy for the landfill in 2003.

According to 1969 aerial photographs, the B&M Corporation was using a parcel of land located east of the railyard on the south side of the Middlesex Canal as a borrow pit for sand and gravel. This area was leased by B&M Corporation to Reclamation Services, Inc. (RSI) for use as a landfill to dispose of municipal and light industrial waste. In 1976, the B&M Corporation sold approximately 150 acres of primarily developed land to the Massachusetts Bay Transportation Authority (MBTA), which has since used the land to operate passenger rail service. The B&M Corporation now leases much of this land from the MBTA.

M&E finalized the RI for OU-3 in 1997. RI sampling data collected between June 1993 to August 1995 for groundwater, surface soil, subsurface soil, surface water, and sediment from nine potential source areas within the site (the B&M Railroad Landfill, B&M Locomotive Shop Disposal Areas, the RSI Landfill, the Old B&M Oil/Sludge Recycling Area, the Contaminated Soils Area, the Asbestos Landfill, the Asbestos Lagoons, and Site-Wide Surface Water and Sediment Contamination) indicated the presence of contaminants. A BERA was also conducted as part of the RI for OU-3 (M&E, 1997).

Two separate Records of Decision (ROD) address soil contamination at OU-1 (B&M Lagoons) and OU-2 (Shaffer Landfill). For OU-1, the completed remedy included the excavation of contaminated soils and sludge, and off-site treatment via asphalt batching. The implemented remedy for OU-2 included reconstruction of a landfill cap over the 60 acres, maintenance and monitoring of the landfill gas and leachate collection systems, and continued monitoring of groundwater and surface water quality. The ROD for OU-3 selected source control remedies to address the remaining surface soil contamination across the site. The ROD for OU-4 is planned to address site-wide groundwater and the wetland areas of the site.

The following sections briefly describe contamination previously detected at the potential source areas and in site-wide surface water and sediment, and provide a brief summary of the results of the BERA conducted for OU-3. Further discussion of historical surface water and sediment sampling data and the results of the 1997 BERA are presented in Sections 2.2 and 2.4, respectively.

B&M Railroad Landfill. The B&M Railroad landfill is approximately 14 acres in size and is located in a former wetland area, north of the Middlesex Canal and east of the railyard. The wetland area was filled in by the B&M Railroad and used to dispose of various kinds of debris. Similar types of organic compounds including volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), phthalates, petroleum hydrocarbons, pesticides, and polychlorinated biphenyls (PCBs) were detected in surface and subsurface soils, with the highest concentrations occurring in subsurface soils. These contaminants were considerably less prevalent in groundwater.

RSI Landfill. The 6-acre RSI Landfill, located east of the B&M railyard near the Asbestos Landfill, is bounded on the south by the Unnamed Brook and on the east by a wetland, which is drained by the Middlesex Canal. Waste and fill present in the west-central portion of the landfill include organic compounds and metals, detected in subsurface soils, and pesticides, PCBs, and phthalates, found in subsurface and surface soils. Aromatic VOCs, pesticides, and PCBs were

detected in groundwater at low concentrations.

B&M Locomotive Shop Disposal Areas. The B&M Locomotive Shop Disposal Areas consist of two disposal areas (A and B) separated by a manmade channel that flows into the Unnamed Brook. Metals and organic compounds including pesticides, PAHs, and petroleum hydrocarbons were detected in surface and subsurface soils in both areas. An isolated occurrence of PCBs was also noted at one subsurface soil location. A few organic compounds (including one VOC, a few pesticides, and one PCB Aroclor) and metals were detected in groundwater in the downgradient and vicinity wells.

Old B&M Oil/Sludge Recycling Area. The 6-acre Old B&M Oil/Sludge Recycling Area was established sometime prior to 1938 for the purpose of recycling oil. Contaminants detected in surface and subsurface soils consist primarily of PAHs, long-chain alkanes, and petroleum hydrocarbons. Numerous pesticides and PCBs were detected in the northern area, and metals were measured in both areas. Although aromatic VOCs, PAHs, and petroleum hydrocarbons were generally not present in groundwater, chlorinated VOCs and metals were detected. Metals, which were detected primarily in shallow overburden groundwater, included arsenic, chromium, cobalt, lead, mercury, nickel, and zinc. Petroleum hydrocarbons were measured in one well and several inches of floating product were observed in one piezometer in the southern oil/sludge area.

Contaminated Soils Area. The Contaminated Soils Area is located in the center of the site and is approximately 50 acres in size. Contaminated soil was first identified as a problem in this area after a random soil boring program conducted across the site indicated elevated levels of lead (310 to 76,600 parts per million [ppm]) at nine out of forty locations. Organic compounds, including PAHs, petroleum hydrocarbons, and pesticides, were measured in surface soils in localized areas. Lead and manganese were the metals that were detected most often and in the highest concentrations.

Asbestos Landfill. The site has historically been identified with asbestos contamination due to asbestos landfilling operations conducted by Johns Manville over a 32-year period. Although EPA capped the Asbestos Landfill in 1984, asbestos materials have been found outside the limits of the cap. However, the results of the off-site soil sampling indicated that, with one exception, there were no detectable levels of asbestos in residential areas. No additional analytical data were collected for this area as part of the RI.

Asbestos Lagoons. In addition to the Asbestos Landfill, there are three unlined asbestos lagoons on Johns Manville property. Groundwater samples collected from beneath the lagoons contained VOCs (primarily aromatic and chlorinated VOCs), PAHs, PCBs, and pesticides. Chlorinated VOCs and metals (arsenic, cobalt, lead, and zinc) were detected in the shallow overburden, deep overburden, and bedrock flow zones.

Site-Wide Surface Water and Sediment Contamination. Two rounds of surface water and sediment sampling conducted in June and September of 1993 revealed aromatic and chlorinated VOCs at multiple surface water locations. In general, PAHs, pesticides, and metals were detected more often and in higher concentrations in the data from the June sampling round compared to data collected in September. In the vicinity of Shaffer Landfill, specific conductance and metals concentrations were higher than in other areas of the site. Similar to surface water, the frequency of detection and the concentrations of contaminants in sediment, including aromatic and chlorinated VOCs, PAHs, pesticides, and PCBs, were generally greater in June than September. Metals were detected at similar concentrations during both sediment sampling rounds.

During September 2004, sediment samples were collected at 20 site locations and 3 reference locations, as part of this ERA/WRIA. These samples underwent field-screening analyses, and a subset of four site samples and one reference sample was selected from the field-screening results for full characterization, including toxicity testing. Surface water and fish were collected from four on-site and one reference area for laboratory analysis, which included surface water toxicity testing. Analytical and field-screening results of these samples are discussed in Section 2.

Toxicity testing results are detailed in Section 6.

OU-3 BERA Results. The evaluation of ecological risk in aquatic habitats identified minimal risks from surface water in the Middlesex Canal. However, the evaluation indicated the potential for adverse effects on aquatic populations as a result of the observed concentrations of metals in surface water in the Wetland 2 Group (barium, iron, and lead), Richardson Pond Group (barium, iron, and lead), and Content Brook Wetland Group (barium, aluminum, arsenic, iron, manganese, and silver). Figure 1-2 shows the location of these wetland areas.

The results of the evaluation of potential risks to benthic receptors due to exposure to sediment contaminants of potential concern (COPCs) in the Middlesex Canal indicate potential risks in West Middlesex Canal from exposure to semi-volatile organic compounds (SVOCs) and also from exposure to copper, lead, PCBs, and 4,4'-DDD on a limited spacial scale. Results of the sediment analysis for benthic receptors also indicated potential adverse effects on benthic invertebrate communities could occur as a result of the observed concentrations of PAHs and metals in sediments in the Wetland 2 Group, Richardson Pond Group, and Content Brook Wetland Group.

A potential for adverse effects on piscivorus bird populations from fish COPC ingestion, modeled from sediment data, was identified in the Wetland 2 Group, Richardson Pond Group, and the Content Brook Wetland Group from exposures to metals and SVOCs (particularly dibenz(a,h)anthracene).

1.3 Project Objectives and Overview

This ERA/WRIA was prepared as an addendum to the BERA conducted for OU-3 (M&E, 1997). The primary objective of the ERA/WRIA is to support selection of a remedy to control ecological risks to the environment. To date, investigational work performed at the site has identified the potential for ecological risks associated with the presence of COPCs in surface water, sediment, and biota. The results of the OU-3 BERA are provided in detail in Section 2.4. This ERA/WRIA

focuses on supporting the selection of a remedy by evaluating environmental data collected to fill data gaps and more accurately characterize the risk of adverse effects to ecological receptors. The focused ERA/WRIA will be used to select an approach for the control of ecological risks at the site.

Specifically, the ERA/WRIA was designed to address potential risks to the environment identified during the 1997 OU-3 BERA including:

- Risks to aquatic receptors directly exposed to target metals in surface water in the Middlesex Canal (downgradient of the Johns-Manville outfall prior to its removal), Richardson Pond, B&M Pond, and Content Brook;

- Risks to benthic invertebrates directly exposed to 4,4'-DDD, PCBs, PAHs, and target metals in sediment within the on-site wetlands and ponds; and

- Risks to predatory birds (e.g., heron) indirectly exposed to PAHs and target metals in biota within the Middlesex Canal (downgradient of the Johns-Manville outfall prior to its removal), Richardson Pond, B&M Pond, and Content Brook.

Target metals are identified as those metals potentially contributing to risk as determined in the OU-3 BERA and include: aluminum, arsenic, barium, silver, chromium, cobalt, copper, iron, manganese, lead, vanadium, and zinc.

All of the upland habitat was eliminated from further study in the 1997 ERA, which is the majority of the 553-acre site. The 2004 sampling was conducted as a supplemental sampling round focusing on risks identified in the 1997 ERA in wetlands and surface waters. The assumption of the approach was that by using historic and screening-level sediment characterization data (e.g., Microtox® analysis), the areas of worst-case sediment contamination and potential toxicity could be identified. These worst-case areas were selected and sampled in 2004 (analyzed for chemistry

and toxicity), along with supplemental surface water characterization, under the premise that the level of risk associated with the worst-case areas would clarify the level of risk to receptors on-site.

To address the specific risk issues identified in the OU-3 BERA, supplemental surface water, sediment, and fish tissue samples were collected for the ERA/WRIA. Surface water samples were collected from one reference area (Round Pond) and four surface water areas on-site including the Middlesex Canal, Richardson Pond, B&M Pond, and Content Brook. These samples were used to evaluate toxicity to aquatic receptors from exposure to target metals in surface water. Fish tissue samples were also collected at these five open water locations (four on-site and one reference) to model dietary exposure of heron based on site-specific fish tissue concentrations of PAHs and target metals.

Sediment samples were collected to further evaluate toxicity to benthic invertebrates from exposure to 4,4'-DDD, PCBs, PAHs, and target metals in sediment within the on-site wetlands and ponds. Sediment samples were collected in a phased approach. Based on historic data and site reconnaissance, twenty on-site sampling locations and three reference locations were selected for field screening for target metals, PAHs, PCBs, and Microtox® toxicity. Based on the field-screening results, a subset of four on-site sediment sampling locations was selected to represent the sediments with highest potential toxicity. The least toxic/contaminated location among the three potential reference locations was selected for analysis as the representative reference location. These five sediment samples, including four non-reference and one reference location, were evaluated using laboratory sediment toxicity testing and analytical methods. These data in conjunction with historic data and field-screening results were used to evaluate the potential toxicity of site-related contaminants on benthic organisms.

Data from the 2004 sediment, surface water, and fish sampling were presented and discussed in a Data Evaluation Report (M&E, 2005) in preparation for use in the ERA/WRIA. The ERA/WRIA data demonstrated that similar patterns of contaminants in sediment and surface water were found

in 2004 and 1993. The ERA/WRIA based conclusions of risk on the toxicity data, along with the supporting patterns of the Microtox® data, and the previous evaluations of the 1997 ERA.

SECTION 2.0
SITE CHARACTERIZATION

The environmental setting of the site was initially characterized in the BERA conducted for OU-3 (M&E, 1997). In this section, a description of the environmental setting, including topography and hydrology, general habitat characteristics, and protected species evaluation of the site is provided, summarized, and updated from the 1997 BERA. In addition, the nature and extent of contamination is discussed, based on both 1993 data and 2004 data, including a comparison of the results of the 1993 and 2004 sediment sampling data. Section 2.4 summarizes the results of the 1997 BERA, which were the basis of this ERA/WRIA.

2.1 Environmental Setting

The site is an active industrial complex and railyard with a long history of activities (since 1911) which have resulted in contamination of soils, groundwater, surface water, sediment, and air. The site is surrounded by wooded areas and wetlands, serving as habitat for various wildlife species. This section provides a summary of habitat characterization and protected species at the site. Site topography and hydrology are also discussed, as well as the nature and extent of contamination and fate and transport issues.

2.1.1 Topography and Hydrology

The Iron Horse Industrial Park can be characterized as expansive, relatively unvegetated, and flat. The industrial park is surrounded by upland areas on the south-southeast side, including several small forested hills near Pond Street, and low lying wetland areas on the western, northern, and northeastern side of the site (Figure 1-2). The topographic relief of the site is approximately 50 feet, with the highest elevation of approximately 150 feet on the eastern side of the site and the lowest of approximately 100 feet on the northeast side near the B&M Pond. Other significant topographic features include several disposal areas which contain a mixture of vegetative cover (M&E, 1995).

Locally, the physiography of the Billerica area is characteristic of the region, which consists of small hills, wetlands, and ponds, connected by small meandering streams. The site is located within the Content Brook watershed, which is part of the Shawsheen River drainage basin. The site is on the western edge of the Shawsheen River drainage basin; a drainage divide occurs near High Street, west of which drainage is to the Concord River. The Middlesex Canal, which crosses the site from west to east, is the main conveyance for surface water at the site and drains to the northeast through the main wetland areas of the site. A smaller stream, which is known as the Unnamed Brook, crosses the site from south to north along the eastern edge of the Iron Horse Industrial Park. Other surface water bodies include the B&M Pond, located just east of the B&M Railroad Landfill, and a ponded area of the Unnamed Brook west of the B&M Lagoons. Site drainage is to the north and east towards Content Brook, which lies just east of Shaffer Landfill.

Based on information obtained from a planning map recorded with the Middlesex Registry of Deeds (Lowell, Massachusetts) in 1911, a small stream, Cold Brook, originally flowed across the center of the site, even after construction of the Middlesex Canal in 1803. According to the map, Cold Brook originated near or within what is now the Old B&M Oil/Sludge Recycling Area and flowed northeast and then east through what is now the B&M Landfill. Besides the Middlesex Canal, Cold Brook was apparently the major surface water conveyance on the site. The subsequent construction of the B&M Railroad spur and B&M Railroad Landfill evidently prompted the filling of Cold Brook and its associated wetlands and the construction of alternate surface water drainage pathways such as the Unnamed Brook. For this reason, the Unnamed Brook and the other north-flowing brook on the west side of the site have altered or man-made channels along much of their reaches.

The Middlesex Canal is a man-made waterway completed in 1803 to facilitate the transportation of goods between Boston and Lowell. Where possible, the canal was routed to intercept low-lying wetlands and existing surface water bodies. In some areas, the canal was constructed with a bottom consisting of compacted clay.

The Middlesex Canal enters the site on the west side along High Street. A former barge turnout north of the canal is located to the northwest of the Asbestos Lagoons. According to GZA (1987), local topographic maps, and hydrologic maps (Gay and Delaney, 1980 and 1981), flow in the Middlesex Canal at the site near High Street is to the west, toward the Concord River, suggesting the existence of a regional surface water divide. East of the inferred divide, the canal flows east along the northern perimeter of the site until it is directed under the railroad spur through a culvert. Water flowing through the culvert emerges at an outfall just north of the B&M Railroad Landfill, where it then flows into B&M Pond, acting as a conveyance of drainage for the B&M Pond and the wetlands south of the pond. The Middlesex Canal joins Content Brook approximately 250 feet east of the southeast end of Shaffer Landfill.

Based on a historical map of the canal (MCA, 1967) and historical groundwater elevation data (M&E, 1994a), the Middlesex Canal formerly flowed eastward across the site before it was rerouted to the north to construct the railroad spur. Thus, the central portion of the site under the railroad spur contains a portion of the canal that was filled in. As mentioned above, the canal now flows along the northern perimeter of the site and is directed under the railroad spur and into the B&M Pond through a culvert. The now-filled portion of the canal was formerly connected to the segment south of the B&M Landfill and connected to the B&M Pond.

The Unnamed Brook, which contributes to the drainage of the southern and eastern portions of the site, originates south of the site, just east of the Purity Supreme warehouse, and flows west and then northeast across the site. Southeast of the B&M Locomotive Shop Disposal Areas, the Unnamed Brook is intersected by a canal that was observed to extend from the Area A and Area B, to the southeast towards Pond Street. Although it was not measured, based on the topography, flow in this canal is most likely west toward the Unnamed Brook. After the confluence with the man-made canal, the Unnamed Brook flows toward B&M Pond discharging to a large wetland northeast of the RSI and Asbestos Landfills.

Richardson Pond, located north of Shaffer Landfill, is fed by Long Pond from the north and is

drained by Content Brook to the southeast. Richardson Pond is surrounded by a large wetland area which divides the pond into two sections (M&E, 1995).

The site overlies low-yield and medium-yield aquifers. Although not currently in use, community public water supply wells are located less than 1 mile east of the site in Tewksbury. The Interim Wellhead Protection Area (IWPA) for one of the Tewksbury wells previously extended to within approximately 500 feet of the site on the northeast side, but has since been reduced in size due to well inactivity. Groundwater in both the overburden and bedrock aquifers generally enters the site from the southwest and flows to the northeast. Based on seepage meter, staff gauge, and mini-piezometer results (M&E, 1997), the potential for groundwater to discharge to surface water was evident throughout most of the site.

2.1.2 Habitat Characterization Summary

The site is composed of industrial areas, wetlands, and upland habitats (Figure 2-1). Approximately 20% of the 553-acre site is forested, while 17% is wetland habitat. In addition, several large wetland complexes (Figure 2-2) border the site, including Richardson Pond (Wetland 3) and Fox Brook (Wetland 8) wetlands, which is also bordered by Middlesex Canal. The total acreage of wetlands at the site to 266 acres. Many of the wetland areas on the site were defined and named in the Ecological Characterization Report (M&E, 1995). A qualitative function and values assessment of each wetland is found in Section 7.1.1.2 of the OU-3 Final RI Report (M&E, 1997).

The site can be divided into two portions: areas west of Pond Street and areas east of Pond Street. The western portion of the site contains the current industrial sections which are primarily unvegetated. These areas include railyards, buildings, roads, and parking areas. In addition, three landfills occupy the western portion of the site and include the RSI, B&M Railroad, and the Asbestos Landfills. The B&M Railroad Landfill contains a mixture of early successional field habitat with areas of bare soil and pockets of saplings and shrubs. The other two landfills are open field habitats with 100% herbaceous cover dominated by early successional grasses and

herbaceous species. The remaining undeveloped areas within the western portion of the site is covered by forest and wetland habitats. The upland habitats are dominated by oak/hickory/maple forest with mixed areas of hardwood/softwood forest (oak/hickory/white pine) in patches mainly near the Pond Street boundary. The largest tract of undisturbed forest in the site occurs west of Pond Street and south of the Asbestos Landfill. This tract is 50 acres in area and is dominated by a dense canopy of oak/pine with a very open understory. Lastly, there are some scrub and shrub habitats in the western portion of the site (M&E, 1995).

The eastern portion of the site (including Shaffer Landfill, OU-2) is composed of capped landfill (60%) and wetland (20%) with the remainder consisting of upland and scrub/shrub habitat that border the landfill and wetland areas. Three wetland complexes border the eastern portion of the site: the Content Brook wetland system (Wetland 9), Richardson Pond wetland system (Wetland 3), and the forested wetland south of Shaffer Landfill and Middlesex Canal (Wetlands 6 & 8 (Figure 2-2).

Although portions of the site are industrial in nature and provide little, if any, suitable habitat for terrestrial and aquatic receptors, the diversity of vegetation types present in the non-industrial portions at and near the site provide potential habitat for a wide variety of wildlife species. Prior reconnaissance field surveys indicated 39 species of birds, including water birds such as Canada geese (*Branta canadensis*), mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), belted kingfisher (*Ceryle alcyon*), great blue heron (*Ardea herodias*) and green heron (*Butorides striatus*), raptors such as the red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*), (both observed by M&E (1995)), and passerines such as American goldfinch (*Carduelis tristis*), American robin (*Turdus migratorius*), black-capped chickadee (*Parus atricapillus*), blue jay (*Cyanocitta cristata*), wood thrush (*Hylocichla mustelina*), tree swallow (*Tachycineta bicolor*), red-winged blackbird (*Agelaius phoeniceus*), and common yellow-throat (*Geothlypis trichas*). Mammalian species observed included eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), shrew spp., woodchuck (*Marmota monax*), beaver (*Castor canadensis*), eastern chipmunk (*Tamias striatus*), opossum (*Didelphis virginiana*), red fox

(*Vulpes vulpes*), striped skunk (*Mephitis mephitis*), and white-tailed deer (*Odocoileus virginianus*). Three species of frogs including bullfrog (*Rana catesbeiana*), green frog (*Rana clamitans*), and northern leopard frog (*Rana pipiens*) were noted in the reconnaissance survey. In addition, newts and salamanders, although not observed during surveys, also are likely to occur given the available habitat. Both portions of the site had common snapping turtles (*Chelydra serpentina*) and eastern painted turtles (*Chrysemys picta*). No snakes were observed during the surveys, although many are suspected of inhabiting the site.

Although a formal fish survey has not been conducted, during the 2004 fish sampling event 12 species of fish were collected, including bluegill (*Lepomis macrochirus*), pumpkinseed (*Lepomis gibbosus*), yellow perch (*Perca flavescens*), largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*), brown bullhead (*Ameiurus nebulosus*), yellow bullhead (*Ameiurus natalis*), golden shiner (*Notemigonus crysoleucas*), longnose dace (*Rhinichthys cataractae*), American eel (*Auguilla rostrata*), redfin pickerel (*Esox americanus*), and chain pickerel (*Esox niger*). Golden shiner and longnose dace were the most abundant fish species collected and pumpkinseed and chain pickerel were the least common.

Two types of aquatic habitats were observed during a benthic macroinvertebrates reconnaissance conducted during previous investigations at the site (M&E, 1997). Lentic habitats were generally characterized by no flow and located within a pond or unchannelized wetland. Lotic habitats were characterized by some flow, at times seasonal, and were located in a channelized area of stream or wetland. In general, the macroinvertebrate survey did not find any overt adverse effects that appeared to be related to site contaminants.

2.1.3 Protected Species

For the 1997 BERA, Massachusetts Natural Heritage and Endangered Species Program (MNHESP) and the U.S. Fish and Wildlife Service (USFWS) indicated that there were no state- or federally-listed threatened or endangered species within the site (M&E, 1997). Recent correspondence with the USFWS (USFWS, 2005), dated May 12, 2005, indicated that there were

no federally-listed or proposed, threatened, or endangered species or critical habitats under the jurisdiction of the USFWS, known to occur in the project area.

On July 21, 2004, MNHESP, in a response to a request for information (MNHESP, 2004; see Appendix D), indicated that blue-spotted salamander (*Ambystoma laterale*) habitat occurs in the vicinity of the site (Figure 2-3). Specifically, information from MNHESP indicated that estimated habitat WH 7095 and priority habitat PH 258 overlap Content Brook and Richardson Pond. In Massachusetts, blue-spotted salamander is a species of special concern. Blue-spotted salamander was the only state-protected species identified in the vicinity of the site by MNHESP.

According to the MNHESP fact sheet for the blue-spotted salamander (MNHESP, 2005a), this species is usually found in relatively mature deciduous forests with vernal ponds. It spends its entire life underground except for a short breeding period. In spring, on warm rainy nights, the salamanders migrate above ground to ponds to breed. The females salamander lays eggs in a series of gelatinous masses at the bottom of the pond. Since vernal ponds are, by definition, temporary or isolated water bodies and free of resident fish populations, the salamander eggs are able to develop, hatch, and mature (MNHESP, 2005b). Egg masses and young salamander larvae typically do not survive to reproduce in the presence of fish, which prey upon them.

Several species of fish, including redfin pickerel, bullhead, American eel, and golden shiner were identified in Content Brook, and bullhead and golden shiner were identified in Richardson Pond. Thus, it is unlikely that either Content Brook or Richardson Pond are blue-spotted salamander habitat.

The MNHESP data for the potential vernal pool in vicinity of the Unnamed Brook is based on 2001 aerial photography (Figure 2-3), and do not represent certified or verified vernal pools. The surface water feature at the location of the yellow dot is a man-made pond associated with the Unnamed Brook, formerly called the Fire Pond. Unnamed Brook flows through the Fire Pond; it is an excavated, widened, and deepened portion of the Unnamed Brook. This feature is

hydrologically connected to B&M Pond through the B&M Pond wetlands. As noted in the BERA, during field work in 1993, a large number of small blue gills were observed in the Fire Pond. Because the pond is not hydrologically isolated, does not dry up during the summer, and is know to have a fish population present, it does not meet the basic criteria to be considered a vernal pool. It is, therefore, not potential habitat for the blue-spotted salamander.

Although the surrounding forest may provide habitat when the salamander is underground, the actual breeding site within estimated habitat and priority habitat is probably a potential vernal pool which was identified by MNHESP in 2001 during an aerial survey (Figure 2-3). The vernal pool is approximately 1,000 feet northeast of Content Brook and 1,000 feet east of Richardson Pond, well outside of the site boundaries. Additionally, there is no hydrologic connectivity (either via surficial flow or groundwater) between a potential vernal pool in the upland forest and the site. Exposure pathways from COPCs related to site-associated surface water and sediments are absent for blue-spotted salamander. Since the blue-spotted salamander is unlikely to occur within the influence of the site, it was not evaluated as a receptor species in the ERA/WRIA.

2.2 Nature and Extent

The following sections discuss the nature and extent of contamination at the site, based on both the 1993 and 2004 sampling results. The 1993 and 2004 data sets are discussed separately in Sections 2.2.1 and 2.2.2, respectively. A discussion of the sampling and analytical procedures used in 1993 is provided in the OU-3 RI Report (M&E, 1997). A discussion of the sampling and analytical procedures used in 2004 is provided in the Data Evaluation Report (M&E, 2005). A comparative discussion of the two sediment data sets is provided in Section 2.2.3. Sample-specific analytical results for both the 1993 and 2004 data sets are presented in Appendix A.

2.2.1 1993 Sampling Data

During 1993, more than 126 analytes including both organic compounds and metals in surface and subsurface soil, groundwater, surface water, and sediment were detected. The sources of contamination in the environmental media are primarily attributed to past industrial and railroad

operations, as well as associated disposal activities at the Iron Horse Industrial Park. However, on-going activities (e.g., vehicular activity, railroad operations, maintenance operations, etc.) at the site may continue to contribute certain types of contamination (e.g., PAHs, petroleum hydrocarbons, etc.).

In general, organic compounds and elevated metal concentrations were found in surface and subsurface soils throughout the site. The types of organic compounds that were characteristic of most source areas include pesticides, PAHs, and petroleum hydrocarbons. Elevated concentrations were often found for some metals (arsenic, manganese, and lead). Volatile organic compounds (VOCs), phenolics, and PCBs were also frequently detected in subsurface soils.

Similar types of organic compounds and metals detected in soil were also detected in groundwater. However, the frequency of detection and concentrations measured were typically less than those found in soils. VOCs, primarily aromatic and chlorinated in character, were more frequently detected and were present in higher concentrations than SVOCs (PAHs, phenolics, and phthalates), pesticides, PCBs, and petroleum hydrocarbons. Metals likely to have originated from the potential source areas include arsenic, chromium, manganese, lead, and zinc. The OU-3 FS evaluated groundwater clean-up at the site and developed estimates of time to reach remedial action objectives. The estimates, in most cases, were well above EPA's default remediation period of 30 years. Therefore, it was decided that although the implemented remedies for OU-1 and OU-2, as well as selected remedies for source control under OU-3, do not specifically address groundwater remediation at the site, the removal and/or capping of source materials within the potential source areas would assist in mitigating future releases of hazardous materials from the soil to the groundwater, and groundwater contamination would be addressed as a part of OU-4.

Surface water and sediment sampling locations (see Figure 2-23) were situated in different environmental settings across the site, ranging from free-flowing channels in the Middlesex Canal and Content Brook, to emergent wetland environments in Richardson Pond, to a small almost

stagnant channel in the Unnamed Brook. The chemical characteristics of the surface water bodies varied due to the differing environmental settings, as well as differences in nearby activities.

Organic compounds and elevated metal concentrations were detected in surface water locations across the site during 1993. The dominant types of organic compounds detected consist of aromatic and chlorinated VOCs, PAHs, phenolic compounds, and pesticides. While petroleum hydrocarbons were not detected in any of the surface water locations, PCBs were detected only in September 1993 at two locations. For the most part, more organic compounds were detected in June 1993 than in September 1993. In all, organic compounds were found at 35 surface water locations in June 1993 and at 22 locations in September 1993, with at least one organic compound detected in one or more surface water locations from each of areas sampled during one or both sampling rounds. The same types of organic compounds and metals detected in surface water were also found in soils from the various source areas in the industrial park, as well as soils and groundwater from nearby areas.

During both sampling rounds, aromatic VOCs were found in locations east of Pond Street, and at Richardson Pond and the Shaffer Landfill Wetlands. Chlorinated VOCs were primarily associated with the surface water location in the sedimentation pond south of the RSI Landfill. To a lesser extent, chlorinated VOCs were also detected in nearby surface water locations in the RSI Wetland Area, the Middlesex Canal associated with the B&M Pond, and the Unnamed Brook. Phenolic compounds and PAHs were detected in locations neighboring railroad tracks, roads, and Shaffer Landfill. These types of organic compounds were more prevalent in June 1993 than in September 1993. Pesticides were also more frequently detected in June 1993. Sixteen pesticides were identified in June 1993, compared to the eight identified in September 1993. Pesticides, as well as PAHs, were also present in at least one of the background surface water locations. The presence of pesticides was widespread, with at least one compound detected at 29 of the surface water locations. However, concentrations were indicative of residual levels, which are most likely adsorbed to particulates in the water column. Likewise, the infrequent detections of PCBs at relatively low concentrations suggest that the PCBs are being adsorbed to particulates.

In addition to major metal ions, metals were commonly found at many of the surface water locations as well as at background surface water locations during 1993. In total, manganese and 13 other metals were found. In particular, elevated concentrations of chromium, copper, lead, manganese, vanadium, and zinc were found across the site. Although there were no distinct trends, surface water in the Shaffer Landfill Wetlands east of the landfill exhibited the most elevated metal concentrations and specific conductances.

In general, the surface water locations where more organic compounds as well as elevated metal concentrations were consistently measured include the southwest corner of Richardson Pond (adjacent to the commuter rail line tracks and the bottom of the Pond Street embankment), Shaffer Landfill Wetland locations, one location in Content Brook, and the sample collected at the base of a discharge pipe in the sedimentation pond off the Unnamed Brook.

During June 1993, a total of 46 site-wide sediment locations were sampled. Only 43 sediment locations were sampled during September 1993 because of dry conditions at three locations. As with surface water, organic compounds and elevated metal concentrations were detected at sediment locations across the site. Background sediment displayed chemical characteristics similar to those of associated surface water. The primary organic compounds detected in background sediment were PAHs and pesticides, both of which are common to residential and industrialized areas. In addition, the types of metals found at background locations include arsenic, chromium, cobalt, copper, lead, mercury, vanadium, and zinc.

The most prevalent types of organic compounds found in site-wide sediments were PAHs, petroleum hydrocarbons, pesticides, and PCBs. Volatile organic compounds (aromatic and chlorinated) were also commonly found, but less often and in lower concentrations. Aromatic VOCs were more prevalent in June 1993 than in September 1993 and were found at more locations and at higher concentrations than chlorinated VOCs. Aromatic VOCs (BTEX compounds and chlorobenzene) were detected at 14 sediment locations, most of which are scattered throughout the geographical location groupings, east of Pond Street. Chlorinated

VOCs were primarily detected in June 1993 at three locations, all of which were east of Pond Street. In contrast, chlorinated VOCs were not present in the sediment sample collected from the location within the sedimentation pond where elevated chlorinated VOC concentrations were found at the corresponding surface water location.

In comparison, PAHs and pesticides were more widespread than VOCs, occurring in as many as 44 sediment locations. Like VOCs, PAHs and pesticides tended to be detected more frequently and in higher total concentrations in each location in June 1993 compared to September 1993. Multiple PAHs and pesticides were identified at most of the locations. For PAHs, the highest concentrations were usually reported for the larger, more substituted compounds. In addition, petroleum hydrocarbons and other fuel/petroleum-related combustion compounds (e.g., dibenzofuran, phenolics, carbazole) generally occurred at sediment locations where PAHs were prevalent. For pesticides, the DDT group was detected more frequently and at higher concentrations than other pesticides. Of the 20 pesticides identified in June 1993, only seven were reported in September 1993. Both PAHs and pesticides were also present in background sediment locations.

Although PCBs were not as widespread as PAHs and pesticides, as many as six Aroclors were identified at 29 sediment locations in June 1993. In comparison, one Aroclor (1248) was found at three of the 29 locations in September 1993. The highest concentrations occurred at the four sediment locations in the northern portion of the Middlesex Canal, which is west of Pond Street and directly north of the Asbestos Lagoons. PCB contamination in this portion of the canal, as well as in the stormwater drain system, wells, and soils in the vicinity of the canal and the BNZ facilities that are south of the Asbestos Lagoons, has been historically documented since 1986 (CDM, 1987; GZA, 1987). A summary of the PCB contamination in this area is summarized in the PCB Contamination Evaluation Report (M&E, 1994b). Although PCB-contaminated sludge and sediment from the stormwater catch basins was removed in 1986 (GZA, 1987), previous findings indicated that sediments in this section of the canal remained contaminated, with individual Aroclor concentrations as high as 2,000 µg/kg. Additionally, PCBs were found in June

1993 at one location within four other geographical groupings: B&M Pond, Richardson Pond, Shaffer Landfill Wetlands, and the man-made canal near the B&M Locomotive Shop Disposal Areas.

In addition to major metal ions, beryllium, barium, manganese, and 13 other metals were detected in sediments across the site. There were no apparent distribution patterns. Arsenic, lead, and zinc were among the metals detected most often and at more elevated concentrations than those found in the background sediments.

The sediments in the Asbestos Lagoons exhibited different chemical characteristics. The three unlined trenches located on BNZ property were used until 1985 for the disposal of a 50% liquid asbestos slurry from the Johns-Manville manufacturing operations. Currently, the solidified asbestos slurry is exposed in the two end lagoons. The central lagoon is covered with topsoil/fill and sparse vegetation. The samples collected from the lagoons consisted of a solidified asbestos slurry in the form of a dry, white chalky-fibrous material. No other waste material, staining, or discoloration was observed in the lagoons.

A few organic compounds including two VOCs, one phthalate, and one PAH were each detected once in Asbestos Lagoon sediments. In comparison, several pesticides were detected at the four sampling locations. Since the samples collected represent surficial conditions and pesticides are not associated with the manufacturing operations, the presence of pesticides have likely resulted from large-scale spraying of the general area.

Metal concentrations were generally similar between individual samples from the Asbestos Lagoons. While several metals were present, calcium concentrations were substantially elevated in comparison to other metals. This is attributed to the fact that calcium-enriched minerals are typically major components of plasterboard.

2.2.2 2004 Sampling Data

Based on the results of the OU-3 BERA, supplemental sampling in the wetland areas of the site was conducted to support the ERA/WRIA. Surface water, sediment, and fish sampling locations are shown on Figures 2-4, 2-5, and 2-6. Analytical data are presented by medium in Tables 2-1, 2-2, and 2-6. As part of the fixed-laboratory PAH analysis for fish and sediment, the laboratory reported two additional compounds not traditionally considered as belonging to the class of compounds called PAHs. These two other SVOCs, biphenyl and dibenzofuran, are listed separately on Tables 2-2 and 2-6.

2.2.2.1 Surface Water. Surface water samples were collected at five locations corresponding to where fish sampling was to occur, including Richardson Pond (SW-RP samples), Content Brook (SW-CB samples), West Middlesex Canal (SW-MC samples), B&M Pond (SW-BM samples), and Round Pond (SW-RF reference samples). Surface water samples were analyzed for toxicity, as well as in triplicate for total and dissolved metals and alkalinity. Surface water toxicity tests were conducted on daphnid *(Ceriodaphnia dubia*) and minnow (*Pimephales promelas*) and are further discussed in Section 6.1.1.

The additional surface water samples collected in 2004 indicated elevated concentrations of both total and dissolved barium and manganese in each surface water body, including the reference location. Dissolved aluminum, arsenic, lead, and zinc were also detected in surface water (see Table 2-1). Content Brook was the area from which most of the maximum detected metals concentrations were detected; maximum detects for both total and dissolved aluminum, barium, manganese, and zinc, dissolved cobalt, and total lead were detected in samples collected from Content Brook. Maximum total and dissolved arsenic, calcium, and magnesium concentrations were detected at Richardson Pond. From B&M Pond, the only maximum detects that were observed were for total copper and dissolved lead.

2.2.2.2 Fish. Fish samples were collected from four on-site surface water bodies (B&M Pond, Richardson Pond, Middlesex Canal down gradient of the Johns-Manville outfall, and Content

Brook) and the reference water body (Round Pond). Fish sampling locations were selected based on habitats that could support fish. All fish appeared to be in excellent physical condition with no major abnormalities or parasites, with the exception of one golden shiner, collected from Round Pond, which had parasites.

Overall, the highest concentrations of most metals, including aluminum, arsenic, barium, chromium, cobalt, copper and manganese were detected in fish tissue samples collected from B&M Pond. The highest concentrations of lead, silver and zinc were detected in samples collected from Content Brook. The fish tissue samples from the reference pond, as well as Richardson Pond, generally had low concentrations of metals. Samples from the West Middlesex Canal had metals concentrations higher than the reference pond, although concentrations of chromium, cobalt, vanadium, and zinc were similar to those detected in Round Pond (Table 2-2).

PAHs were detected in fish tissue samples collected from all site areas (Table 2-2). Overall, the highest concentrations of PAHs were detected in fish from B&M Pond. The highest concentrations of the PAH acenaphthene were found in fish tissue samples collected from B&M Pond, one sample from Content Brook, and one sample from West Middlesex Canal. The maximum phenanthrene concentration was found in a sample collected from B&M Pond. Fish samples collected from the reference location were non-detect or estimated below the detection limit for anthracene, pyrene, and perylene. Two other SVOCs, biphenyl and dibenzofuran, were detected in fish tissue from each site area, but were not detected in the reference fish samples.

2.2.2.3 Sediment. Sediment sampling locations were selected in 2004 to represent 1993 sampling locations which had shown elevated levels of contamination and based on visual observations made during a site reconnaissance. In most cases, the staked location from historical sampling was located and samples were collected within a few feet of the previously sampled location. If a previous sampling location was not located or if sampling was to occur in a new location, the sediment sampling locations were selected based on where sediment deposition was likely to have occurred. The rationale for selection of sediment sampling locations is provided in

Table 2-3. A more detailed discussion regarding the selection of sediment sampling locations is provided in Section 2 of the Data Evaluation Report (M&E, 2005).

Field screening was performed on the twenty on-site sampling locations and the three reference locations in order to select four on-site sediment sampling locations to undergo full characterization analysis. Sediment field-screening results for target metals, PAHs, PCBs, and Microtox® toxicity are discussed below and presented in Table 2-4.

Target Metals Field Screening. Field-screening analysis was performed using X-ray fluorescence spectrometry (XRF) for ten metals for the sediment samples collected, including arsenic, barium, cobalt, copper, chromium, lead, manganese, silver, vanadium, and zinc. The results are reported on a dry weight basis and are summarized in Table 2-4.

Arsenic was detected in 10 of the 23 sediment samples collected, with results ranging from 40.6 to 334 mg/kg, and detections occurring within at least one sample collected from each area, except the reference location, Round Pond. The highest arsenic concentrations were recorded in sample SED-01 (334 mg/kg) from Content Brook. Three of four samples from Content Brook had detectable arsenic concentrations and Richardson Pond sample, SED-14, also recorded an elevated arsenic concentration (317 mg/kg).

Lead concentrations were detected in 22 of the 23 sediment samples collected. The average lead concentration in sediment was 285 mg/kg. Lead was detected at all areas, including the reference area. The highest concentrations were in samples SED-05 (822 mg/kg) from B&M Pond, SED-11 (929 mg/kg) from West Middlesex Canal, and SED-17 (914 mg/kg) from the Unnamed Brook. The sediment samples from Content Brook and Round Pond, the reference location, contained lead at concentrations less than 200 mg/kg.

Detectable concentrations of barium were recorded in 18 of the 23 sediment samples collected. The detected concentrations ranged between 83.7 and 497 mg/kg, with the highest barium

concentration in SED-20 collected from the Unnamed Brook. Copper was detected in 4 of 23 total samples, with detected concentrations between 121 and 930 mg/kg. These samples were collected from B&M Pond, the West Middlesex Canal, and the Unnamed Brook. Manganese was found at detectable concentrations in six sediment samples. The highest manganese concentrations were detected in B&M Pond samples SED-06 and SED-07 (839 and 3,120 mg/kg, respectively). All sediment samples collected from the reference pond contained detectable manganese concentrations (333 to 581 mg/kg). Zinc was detected in 21 of 23 sediment samples, with an average concentration of 370 mg/kg. The highest zinc concentrations were detected at locations SED-05 (3,870 mg/kg) collected from B&M Pond and SED-13 (1,090 mg/kg) collected within the Richardson Pond wetland. Chromium was only detected in sample SED-19 collected from the Unnamed Brook (511 mg/kg). Cobalt, silver, and vanadium were not detected at concentrations above their specific detection limit in any sample.

PAH Field Screening. The field-screening results for total PAHs, corrected for dry weight, are summarized in Table 2-4. All PAH results are discussed in dry weight. Total PAH concentrations were detected in all samples, with an average concentration of 51.1 mg/kg in the 23 samples. The highest concentrations were detected in samples SED-05 (161.6 mg/kg) and SED-07 (163.13 mg/kg) from B&M Pond, SED-12 (156.8 mg/kg) from the West Middlesex Canal, and SED-18 (116.84 mg/kg) from the Unnamed Brook.

PAH concentrations were 20 mg/kg or less in Content Brook and at Round Pond, the reference location. Of the four sediment samples from the B&M Pond area, two had total PAHs greater than 160 mg/kg, and the other two samples had total PAH concentrations less than 20 mg/kg. Samples from the West Middlesex Canal had total PAH concentrations ranging between 47.36 and 156.8 mg/kg, with the exception of sample SED-11 (6.1 mg/kg). PAH detections within samples from the Unnamed Brook ranged between 28.24 and 116.84 mg/kg. In Richardson Pond, total PAH concentrations ranged between 7.69 and 59.36 mg/kg.

PCB Field Screening. The field-screening results for total PCBs, corrected for dry weight, are

summarized in Table 2-4. In all sediment samples, total PCB concentrations were below the detection limit, specific to percent solids of the sample.

Microtox® Screening. The Microtox® results were used in conjunction with the other field-screening analyses to select sediment samples for full characterization analysis, and to also provide evidence for relative sediment toxicity. Microtox® utilizes a bioluminescent bacterium, *Vibrio fischeri*, where a reduction in light output serves as a measure of toxicity, and percent effect, or reduction in light, is quantified at 5 and 15 minutes. The percent effect after the 5 minute time period is representative of acute toxicity, while that after the 15 minute time period serves as a measure of chronic toxicity. Both the 5 minute and 15 minute percent effects are measured against controls. For example, if the measured luminescence of the bacteria was less than that of the control after 5 minutes, the percent effect at 5 minutes would be a positive percent effect. However, if after the 15 minute period there was no difference in the measured luminescence of the same sample as compared to that of the control, the percent effect after 15 minutes would be 0%. Therefore, a sample could have a positive percent effect at 5 minutes, but no percent effect at 15 minutes. Microtox® testing was performed on whole sediment samples.

Use of Microtox® screening for sediment samples is supported by a number of studies documenting the consistency of the Microtox® results with the results reported of both sediment invertebrate toxicity tests and macroinvertebrate field surveys (Doherty, 2001; Day *et al.*, 1995; Giesy *et al.*, 1988; and Giesy and Hoke, 1989). According to these reports, the Microtox® solid-phase test was shown to be sensitive to a variety of contaminants in sediments. Because of differences in modes of action and differences between organisms, bacteria do not respond to all chemicals in the same manner and degree as other forms of aquatic life. For example, bacteria are thought to be sensitive to metals, showing particularly high sensitivity to copper (Giesy *et al.*, 1988). However, Microtox® results may display less sensitive to common pesticides and other chlorinated compounds such as PCBs (Giesy *et al.*, 1988). Microtox® is also less sensitive to ammonia in sediment pore water than *C. dubia* or *P. promelas*. Because of the differences in the results of microbial assays from those of higher organisms, microbial tests are often used along

with other bioassays, as another screening tool and line of evidence for the toxicity of sediments to aquatic organisms.

The Microtox® screening results for site sediment samples are presented in Table 2-4 and Figure 2-7. In two samples collected from B&M Pond and East Middlesex Canal (SED-05 and SED-08, respectively), the highest response (approximately 60% effect) was measured at 5 minutes. SED-05 was selected for full characterization. From the West Middlesex Canal, two sediment samples (SED-10 and SED-11) showed approximately 50% effect at 15 minutes; SED-11 was one of the samples chosen for full characterization. Three of the four samples from Content Brook (SED-01, SED-02, and SED-04) showed percent effects ranging from 28% to 37% at 5 minutes, including SED-01 which was also selected for full characterization. Lower percent effects were observed from samples from the Unnamed Brook (SED-17, SED-18, SED-19, and SED-20), Richardson Pond (SED-13, SED-14, and SED-15), and Round Pond (reference samples SED-21, 22, and 23), with the exception of sample SED-16 from Richardson Pond which showed approximately a 45% effect at 15 minutes.

Full Characterization Results. Five sediment samples were selected for full characterization analyses, including four that were based on either elevated field-screening results (three site samples) or the lowest field-screening result (one reference sample), as well as one location within B&M Pond that had been the location of the highest historical 4,4'-DDD detection. Since the samples were screened for toxicity, PAHs, PCBs, and ten target metals, there were numerous variables to consider within the field-screening results to select samples for full characterization analyses. In addition, a spatial separation of full characterization samples across the site was desired, to better characterize site-wide risks during the ERA/WRIA.

Sediment samples selected for full characterization include SED-01 (within the Content Brook Area), SED-05 (within B&M Pond), SED-11 (within the West Middlesex Canal), SED-18 (within the Unnamed Brook), and SED-22 (within the reference area - Round Pond). The locations of the sediment samples selected for full characterization are depicted on Figure 2-6. No samples

were selected from Richardson Pond for full characterization. The rationale for the selection of sediment samples for full characterization is provided in Table 2-5. Historical data, as well as the field-screening results were considered during the selection of samples for full characterization. Samples selected for full characterization were analyzed for grain size, toxicity, and chemical analyses including TOC, target metals, 4,4'-DDD, PCBs, and PAHs. Full characterization results are provided in Table 2-6.

Full characterization analysis of sediment samples confirmed elevated total PAHs for B&M Pond and the Unnamed Brook, where as lower concentrations (i.e., comparable to the reference location) were detected for West Middlesex Canal and Content Brook.

Metals field screening indicated detected concentrations of several target metals, including arsenic, chromium, copper, lead, manganese, silver, and zinc in one or more sediment samples. Fixed-laboratory metal analysis of sediment samples collected from B&M Pond indicated the highest concentrations of most metals, except arsenic and manganese. For this location, concentrations of arsenic, barium, chromium, cobalt, copper, lead, and zinc exceeded the reference metal concentrations by one to two orders of magnitude. Sediment samples collected from Content Brook had the highest concentrations of arsenic and manganese. The lowest metals concentrations of the site locations were detected in the West Middlesex Canal sediment sample. The highest concentrations of 4,4'-DDD, Aroclor-1254 and Aroclor-1260 were detected in the sample from B&M Pond. Lower concentrations of 4-4'-DDD were reported for sediment samples collected from Content Brook and the Unnamed Brook. The reference location indicated a 4-4'-DDD concentration at a comparable level as found in the Unnamed Brook.

2.2.3 Comparison of 1993 and 2004 Sediment Data

The following sections compare sediment chemistry results from the 2004 sample collection to data collected in June and September of 1993. Section 2.2.3.1 compares the field-screening data from 20 stations to historic data, while Section 2.2.3.2 compares the results of the laboratory analytical results of 5 samples collected in 2004 to the 1993 analytical data, as well as field-

screening results for the 2004 samples. Table 2-7 includes sample identifiers associated with the 2004 sampling round, as well as the corresponding 1993 sampling location. Because some 2004 sediment samples were collected from new sampling locations (e.g., SED-07 and SED-14), no comparison to historical data has been provided. Sample specific analytical results are presented in Appendix A.

2.2.3.1 Sediment Field-Screening Data Comparison

Some sampling locations from 2004 represent the same locations sampled 1993. Table 2-7 provides a comparison of the 2004 sediment field-screening results to the 1993 analytical data by sampling location. This section compares the 2004 field-screening results to fixed laboratory analytical data collected across the site in 1993 in order to look at site-wide patterns of contaminants. Since only four sediment samples were selected for fixed-laboratory analysis in 2004, the 20 field-screening samples from 2004 provide a synopsis of relative contaminant concentrations at a larger number of locations across the site for comparison purposes. Note that due to the nature of field-screening data, detection limits for a number of analytes were elevated compared to 1993 detection limits.

PAHs. A comparison of total detected PAHs for 2004 (field-screening) to 1993 (fixed-laboratory data) is shown in Figure 2-8. Note that only 2004 locations with comparative 1993 data are presented and areas are designated using 2004 sample location identifiers. With the exception of three samples, the 2004 PAH field-screening data were found to be higher (in some cases by an order of magnitude) than the 1993 total PAH results. Based on this limited comparison, the result of the 2004 field screening appear to be generally biased high for sampling locations with lower levels of PAHs.

The three locations where the 2004 field-screening results were less than the 1993 total PAH data include SED-03 (Content Brook), SED-13 (Richardson Pond), and SED-20 (Unnamed Brook). For SED-03, the 2004 field-screening result of 14.5 mg/kg was less than, but comparable to, the September 1993 result of 18.8 mg/kg. However, both of these values are higher than the June

1993 results of 1.3 and 3.1 mg/kg (field duplicate). For SED-13, the 2004 field-screening result (approximately 60 mg/kg) was considerably lower than each of the 1993 total PAH results (ranging from 181 to 208 mg/kg). For SED-20, the 2004 field-screening result (approximately 28 mg/kg) was also significantly lower than the June 1993 total PAH value (324 mg/kg). However, the September 1993 result was reported as non-detected. These variations in PAH concentrations within the 1993 data set illustrate the relatively heterogeneous nature of the sediments in these areas.

Overall, the PAH field-screening method appears to provide an overestimate of PAH concentrations. However, these data, in conjunction with the 1993 results were useful in distinguishing sediment locations with elevated PAH concentrations, and provided valuable information when selecting samples for full analytical characterization in 2004.

PCBs. The 2004 PCB field-screening results were reported as non-detect for each sampling location. Figure 2-9 depicts a comparison of the 2004 reporting limits to the 1993 analytical results. The values presented for the 1993 data in Figure 2-9 represent the sum of all detected aroclors. For samples that were non-detect for all aroclors, the single reporting limit value presented for the sample is the lowest of the two aroclor reporting limits for that sample. With the exception of one location, SED-11, each of the 2004 reporting limits were greater than the corresponding 1993 value. Historically, sediments from SED-11 had the highest detected PCB concentration (2 mg/kg in June 1993). It should be noted that SED-11 was submitted for fixed-laboratory PCB analysis in 2004 and the results indicated a total PCB concentration of 0.0228 mg/kg. The highest PCB detection limit (6.25 mg/kg) was reported for SED-16 (Richardson Pond), however this sample was not selected for off-site laboratory analysis. The detection limit for this sample, as well as others, was elevated due to required dilution resulting from the high moisture content and thus, low percent solids of the sediment.

Overall, this field-screening method was somewhat useful in confirming that PCBs are not ubiquitous chemicals of concern at the site, as indicated by the historical data. Although the

results of the 2004 PCB field screening did not directly impact the selection of a sample for full analytical characterization, this field-screening method can be used for the identification and delineation of significantly-impacted PCB areas.

Target Metals. Figures 2-10 through 2-14 illustrate the comparison of the 2004 field-screening data and 1993 fixed laboratory analytical data for the metals arsenic, chromium, copper, lead and zinc, respectively. Detected concentrations only are presented in these figures. Table 2-7 provides a summary of the results, including non-detect values and a range of error associated with the field-screening results. Overall, the majority of 2004 field-screening metals results were higher in concentration that the corresponding 1993 metals data. Non-detect reporting limit concentrations for some metals (see Table 2-7), such as chromium, were an order or magnitude greater than the corresponding detected 1993 results, indicating that the field-screening method may be biased high and is less sensitive than the corresponding fixed-laboratory analytical method.

The highest arsenic concentrations in sediment were found at location SED-01 in Content Brook (SED-01) in both 2004 and 1993. At all site locations, positive field-screening results for arsenic were higher than the historical result.

Field-screening data for chromium were non-detect, except for one location (SED-19, Unnamed Brook) where chromium was detected at a concentration of 511 mg/kg. Historical data indicate the presence of low-level chromium concentrations at several locations in each area.

For several sediment locations (e.g., SED-01, -03, and -04 in Content Brook), both field-screening and fixed-laboratory results were non-detect for copper. The highest reported concentrations of copper were observed at location SED-17 (Unnamed Brook) in both the 2004 field-screening and 1993 data.

Location SED-17 also had the highest historical lead concentration, the although 2004 field-screening result was less than half the historical concentration. For most sampling locations, the

lead field-screening results were greater than, but comparable to, the 1993 results.

The highest field-screening value for zinc was reported for location SED-05 (B&M Pond), which was the location of the highest 1993 zinc concentrations. Elevated zinc concentrations were also found in Richardson Pond (SED-13). In general, positive field-screening results for zinc were greater than the corresponding 1993 results.

In general, the field-screening method was useful in targeting sediments with greater impact from certain metals and for assisting in the selection of samples for fixed-laboratory analysis. This field-screening method was found to be much less sensitive to chromium, as the majority of field-screening results consisted of non-detect reporting limits.

2.2.3.2 Fixed-Laboratory Analytical Data Comparison

Based on a review of the field-screening results, five sediment samples were selected for a full characterization of analytical parameters, including 4,4'-DDD, PAHs, PCBs, and target metals. For definitive chemical analyses, the laboratories performed the analytical procedures according to the M&E Delivery of Analytical Services (DAS) specifications included in Appendix H of the Sampling and Analysis Plan (M&E, 2004b). A discussion of the analytical parameters is provided in Section 3.1.2 of the Data Evaluation Report (M&E, 2005). The locations selected for full characterization analysis include SED-18 (Unnamed Brook), SED-11 (Middlesex Canal), SED-05 (B&M Pond), SED-01 (Content Brook) and the Reference Location SED-22 (Round Pond). With the exception of the Reference Location, the sample locations above correspond to 1993 sample locations, which allow for the following limited comparison of 2004 and 1993 fixed-laboratory sediment data. Table 2-8 provides the comparison of the 2004 and corresponding 1993 fixed-laboratory data. The following discussion compares the 1993 laboratory data to both the 2004 field-screening and fixed-laboratory analytical data for the four site locations.

PAHs. Total PAH analytical data from the four sampling locations selected in 2004, were compared to the associated 2004 field-screening data and the corresponding 1993 total PAH data

(Figure 2-15). Reference data from 2004 are also provided on Figure 2-15. With the exception of SED-18 (Unnamed Brook), the 2004 field-screening results for these locations were found to be generally comparable to results of sediments analyzed at the laboratory.

For sample SED-18, the field-screening result is more than an order of magnitude greater than the sum of detected PAHs from the 2004 laboratory analysis, as well as the 1993 data. The total PAH results of SED-05 (B&M Pond) was approximately twice the concentration of the fixed-laboratory field duplicate sample (SED-25) for the same location, suggesting that the sample matrix was variable and heterogenous. For this sample, the field-screening result was more comparable with sum of PAHs from the fixed-laboratory analysis than for any other sample, possibly due to the elevated level of PAHs in the sample.

PCBs and 4,4'-DDD. Overall, the detection limits achieved for the 2004 fixed-laboratory PCB data set are lower than the detection limits of the 1993 data (Table 2-8). Figure 2-16 illustrates a comparison of the fixed-laboratory detected total PCB concentrations between 1993 and 2004. Among the five samples that underwent fixed-laboratory analysis during 2004, the highest concentrations of total PCBs were detected in B&M Pond (SED-05) and its duplicate SED-25. When compared to the 1993 analytical data, the 2004 total PCB concentrations for SED-05 are almost an order of magnitude greater than the 1993 results. For sample SED-11 (West Middlesex Canal), the 2004 PCB results are significantly less than the 1993 results. Table 2-8 shows that the 1993 data included elevated concentrations of Aroclor 1248, whereas the 2004 data was non-detect for Aroclor 1248, and reports a low concentration for Aroclor 1242. Comparably low concentrations of PCBs were reported for SED-18 and SED-01.

The highest concentrations of 4,4'-DDD were also observed at B&M Pond (SED-05) (Figure 2-17). Concentrations of 4,4'-DDD for the 2004 (102 ug/kg) and 1993 (83 ug/kg) data set compare well at this location. Note that the September 1993 result for SED-05 was rejected, and therefore, not available for comparison. The reference location indicated low concentrations of 4,4'-DDD and PCBs at levels comparable to SED-18 and SED-01.

Target Metals. Figures 2-18 through 2-22 illustrate the comparison of total detected concentrations of arsenic, chromium, copper, lead, and zinc between 1993 and 2004. The highest 2004 concentrations of each detected metal, with the exception of arsenic, was observed in SED-05 (B&M Pond), where metal concentrations were, in general, between 2 - 30 times greater than in the other water bodies. The 1993 data also indicate that these metals were found at higher concentrations at B&M Pond, but not at the magnitude observed in the 2004 data, suggesting that some metal concentrations in B&M Pond may be increasing over time.

The highest 2004 concentrations of arsenic were found in SED-01 (Content Brook), which compare well with the historical data for this metal, although arsenic concentrations were found at somewhat lower levels in 1993. Lower concentrations of arsenic were reported for SED-05 (B&M Pond) and SED-18 (Unnamed Brook), which were also comparable to the 1993 data. SED-18 was also observed to have comparable 1993 and 2004 sediment concentrations of chromium, copper, lead, and zinc. Relatively low metal concentrations were found in the 2004 sediment at SED-11, which are comparable to the 1993 data and similar in concentration to the metal concentrations of the reference location (SED-22). Of this limited data set, SED-11 appears to be the least impacted by these metals.

2.3 Fate and Transport Issues

The high organic carbon content of surface and subsurface soil acts to retain many types of organic compounds and metals, as indicated by the elevated concentrations of less mobile organic compounds such as PAHs, petroleum hydrocarbons, pesticides, and PCBs. Surface soils potentially migrate across the ground surface and eventually into nearby surface water bodies by overland flow. Precipitation percolates through the waste and contaminated surface and subsurface soil, dissolves contaminants, and transports them to groundwater.

Although historical site data indicate relatively low concentrations of VOCs, SVOCs, pesticides, PCBs, and metals in groundwater, the more mobile organic compounds (chlorinated and aromatic VOCs and PAHs such as naphthalene) were found in higher concentrations. Transport of

contaminants in overburden groundwater is likely attenuated by adsorption to organic soils, dispersion, and degradation. However, fractured bedrock encountered throughout the site may be a likely transport pathway for the mobile chlorinated VOCs that were detected in bedrock groundwater. In several areas, elevated metal concentrations in deep overburden and bedrock groundwater may be indicative of vertical migration and transport.

Although the ROD for OU-3 does not specify an active groundwater remedy be implemented at this time, the remedy for OU-2 addressed the migration of contaminated surface soil by reconstruction of the Shaffer Landfill cap and implementation and maintenance of landfill gas and leachate drainage systems. In addition, the remedy for OU-1 addressed the subsurface through the excavation of contaminated soils and sludge, and off-site treatment via asphalt batching. Likewise, the selected remedies of source control for remaining contaminated soils (OU-3) would address this contaminant migration pathway from soils into groundwater.

Throughout the site, groundwater discharges to surface water and contributes contaminants to surface water. Inflow to surface water also consists of surface water runoff via overland flow and direct rainfall. Data collected indicate that fewer organic compounds were detected in September 1993 than in June 1993, which may reflect conditions of decreased groundwater discharge and overland flow runoff in late summer and early fall. Adsorption to sediments is likely the primary attenuation mechanism for contaminants in surface water.

Primary transport pathways for sediments include overland flow runoff from the adjacent land mass, including the potential source areas, and resuspension in the flowing water bodies, especially the Middlesex Canal and the Unnamed Brook. Pesticides were frequently detected in sediment across the site. PCBs have been detected in the Middlesex Canal due to past discharges from the Johns-Mansville facility (currently on BNZ Materials property). The adsorption of contaminants is likely, since the sediments are high in organic carbon content. Since surface water velocities are not high within the site, scouring and resuspension of sediments is not a dominant transport mechanism, but becomes more important during storm events that result in periods of

high flow.

2.4 Summary of 1997 OU-3 BERA Conclusions

The 1997 BERA for OU-3 included an evaluation of the potential adverse effects of site COPCs to receptor populations in both terrestrial and aquatic habitats. Seven terrestrial habitat areas were described in Section 1.2 (the B&M Railroad Landfill, B&M Locomotive Shop Disposal Areas, the RSI Landfill, the Old B&M Oil/Sludge Recycling Area, the Contaminated Soils Area, the Asbestos Landfill, and the Asbestos Lagoons). Aquatic habitats were separated into the West Middlesex Canal Group, Wetland 2 Group, including Unnamed Brook, East Middlesex Canal Group, Richardson Pond Group, and Content Brook Wetland Group as shown on Figure 1-2. The sections below summarize the selection of COPCs, receptors and exposure pathways, and risk conclusions by area of the 1997 OU-3 BERA. The results of a benthic macroinvertebrate community assessment conducted as part of the 1997 OU-3 BERA are also presented.

2.4.1 Contaminants of Potential Concern

The data utilized in the 1997 OU-3 BERA were collected between June and September 1993. Seventy-seven shallow soil samples (0-12 inches) were collected from the seven terrestrial areas and used to evaluate risk to terrestrial receptors at these areas. For two of these terrestrial areas (Old B&M Oil/Sludge Recycling Area and the Contaminated Soils Area), the soil samples were analyzed, but data were not quantitatively evaluated for potential effects to terrestrial receptors since these two areas were determined to have limited terrestrial habitat.

Forty-six sediment samples (0-6 inches deep) were used in selecting sediment COPCs. Surface water samples were also collected from all 46 locations sediment locations in June 1993. During September 1993 a second round of surface water samples were taken at the majority of the locations, with a few excluded due to low water levels.

Surface water, sediment and soil analytical data were summarized by medium and grouped by area. Contaminant concentrations in each medium were screened against medium-specific

benchmarks. In addition, if chemicals in each medium were detected site-wide in 5% or fewer of the samples, then these compounds were eliminated from further evaluation. Maximum detected concentrations of metals were also compared to medium-specific background concentrations. Those metals detected at concentrations less than background levels were eliminated as COPCs, however, in selection of COPCs carried forward to the ERA/WRIA, those COPCs eliminated solely based on background were re-assessed.

The B&M Railroad Landfill and the Contaminated Soils Area contained numerous PAHs and pesticides at elevated concentrations. The B&M Railroad Landfill had the largest number of COPCs (33), with 16 of these being PAH compounds.

The COPCs identified in sediment were primarily PAHs, pesticides, and metals. Many of the metals (e.g., aluminum, barium, iron, manganese, and vanadium) were detected in the majority of sediment samples and were selected as COPCs. Those sediment groups that contained more ponded (standing water) sampling areas (Wetland 2 Group, Richardson Pond Group, and Content Brook Wetland Group) had the greatest number of COPCs. The two areas characterized primarily as more stream-like (flowing water), West Middlesex Canal Group and East Middlesex Canal Group, contained the fewest sediment COPCs. The location and magnitude of the concentrations of COPCs in sediment observed in the 1993 data compared to the 2004 data were discussed in Section 2.2.3.

Analysis and COPC selection for surface water were based on total concentrations of metals, because dissolved metals analysis for surface water was not routinely done at the time of the 1993 data collection. Similar to the results of the sediment COPC screening, a larger number of COPCs were identified in the ponded habitats (Wetland 2 Group, which includes B&M Pond, Richardson Pond Group and Content Brook Wetland Group), as opposed to the stream habitats (East and West Middlesex Canal Groups). The COPCs selected for surface water were primarily metals.

2.4.2 Summary of Receptors and Pathways

Table 2-9 summarizes the assessment and measurement endpoints selected for the 1997 OU-3 BERA. Potential exposure pathways were identified for terrestrial and aquatic receptors. For surface soils, terrestrial invertebrates (earthworms) and small mammals (short-tailed shrew) were selected as representative receptor species. The potential effect of soil contaminates was evaluated by a comparison to average COPC concentrations to screening benchmarks.

The potential effect of site-related contaminants on aquatic receptors was evaluated in the 1997 OU-3 BERA through comparisons of surface water and sediment COPC concentrations to surface water and sediment benchmarks. The potential effect of site-related contaminants on a predatory bird population was evaluated through a food-chain model for the great blue heron. The model estimated the potential dose to great blue heron from ingesting fish based on modeling fish tissue COPC concentrations from surface water and sediment. The heron diet was assumed to be composed primarily of fish, with a minor contribution from benthic invertebrates. In addition, a qualitative survey of benthic invertebrates was conducted to evaluate the composition of the invertebrate community in comparison with reference locations.

2.4.3 Summary of Risk by Area

Adverse effects to soil invertebrates and short-tailed shrews from dietary exposures of SVOCs, pesticides, and metals from the ingestion of earthworms, surface soil, and surface water at the B&M Railroad Landfill, RSI Landfill, and B&M Locomotive Shop Disposal Areas (Areas A and B) were evaluated. The results of the earthworm and short-tailed shrew analyses indicated the potential for reductions in both soil invertebrate and small mammal populations at the B&M Railroad Landfill and B&M Locomotive Shop Disposal Areas (Areas A and B). In general, metals and SVOCs (mostly PAHs) are the two contaminant groups of concern. The proposed remedies (source control via capping and/or excavation) for these areas are expected to eliminate the exposure pathways for terrestrial receptors.

The evaluation of ecological risk in aquatic habitats identified minimal risks from surface water in

the Middlesex Canal. The results of the evaluation of potential risks to benthic receptors due to exposure to sediment COPCs in the Middlesex Canal indicate potential risks from exposure to SVOCs and also from exposure to copper, lead, PCBs, and 4,4'-DDD on a limited spacial scale.

The BERA evaluation also indicated the potential for adverse effects on aquatic populations as a result of the observed concentrations of metals in surface water in the Wetland 2 Group (barium, iron, and lead), Richardson Pond Group (barium, iron, and lead), and Content Brook Wetland Group (aluminum, arsenic, barium, iron, manganese, and silver). In addition, maximum surface water concentrations indicated potential risk from exposure to chromium, cobalt, copper, and vanadium in surface water site-wide. Results of the sediment analysis for benthic receptors indicated potential adverse effects on benthic invertebrate communities could occur as a result of the observed concentrations of PAHs and metals in sediments in the Wetland 2 Group, Richardson Pond Group, and Content Brook Wetland Group.

A potential for adverse effects on piscivorus bird populations from fish COPC ingestion, modeled from sediment data, was identified in the Wetland 2 Group, Richardson Pond Group, and the Content Brook Wetland Group from exposures to metals and SVOCs (particularly dibenz(a,h)anthracene).

2.4.4 Benthic Macroinvertebrate Community Analysis

As part of the 1997 OU-3 BERA data collection, macroinvertebrate samples were collected at sampling locations (see Figure 2-23) in on-site and reference areas following procedures identified in Plafkin *et al.* (1989). Of the 24 benthic invertebrate sampling locations, five (RS-01, RS-02, MC-01, RW-01, and RP-04) were located away from known sources of on-site contamination and were considered reference locations. In general, the macroinvertebrates were sorted and identified taxonomically to family-level. If greater than 50 individuals of a taxon were enumerated, the count was reported as greater than 50 (Appendix A, Attachment A). The habitat quality of each sampling location was also evaluated by qualitatively assessing the following five habitat parameters: bottom scouring and deposition; pool/riffle, run/bend ratio; bank stability;

bank vegetative stability; and streamside cover.

Two types of aquatic habitats were observed among the sampling locations in which benthic macroinvertebrates were sampled. Lentic habitats were generally characterized by no flow and were located within a pond or unchannelized wetland. Lotic habitats were generally characterized by some flow, at least seasonally, and were located in a channelized area of a stream or wetland.

The presence of ephemeroptera, plecoptera, and trichoptera (EPT) were also characterized for the sampling locations. The absence of pollution-sensitive benthic invertebrates such as the EPT taxa is often an indicator of some impairment in the stream habitat. The only EPT taxa that were present in any on-site surface water/sediment group were trichoptera. However, this is likely the result of the low gradient and depositional habitats at most sampling locations, and, as a result, indices based on EPT taxa did not provide much information on water quality among the benthic reconnaissance locations.

In the West Middlesex Canal Group (MC-02, MC-03, MC-04), the macroinvertebrate communities seemed to be generally similar to the lotic reference locations. No amphipoda were collected at MC-02, but this is probably related to low concentrations of dissolved oxygen (DO), as MC-02 had one of the lowest DO concentrations measured at any sampling location.

In the Wetland 2 Group, the macroinvertebrate community at UB-02 was similar to that at the lentic reference locations. The macroinvertebrate communities at sampling locations UB-01 and UB-03 were similar to that of the lotic reference locations. Sampling location UB-04 had fewer Amphipoda, but 17% of the organisms collected were EPT taxa, specifically trichoptera, of which four of five individuals were hydropsychidae or net-spinning caddisflies that require some current. This difference is likely related to the moderate current and more sandy, less organic sediments at UB-04.

In the Richardson Pond Group, RP-01 differed from the lotic reference locations in that fewer

individuals and fewer amphipoda were collected. However, this sampling location had no flow and the DO concentration was low. Sampling location RP-03 was similar to the lentic reference locations, but fewer invertebrate taxa, fewer individuals, and no mollusca were collected at RP-02. However, RP-02 had the lowest measured DO concentration of any sampling location.

In the East Middlesex Canal Group, sampling location MC-05 was relatively similar in benthic composition to the lotic reference locations. Few taxa were collected at MC-09, but several hydropsychidae were collected (10% EPT organisms). As with UB-04, this difference was related to the moderate current and lower organic carbon content of sediments that characterized MC-09. Sampling location MC-10 was similar to the lotic reference locations in the number of taxa and individuals collected, but differed in that diptera were the dominant taxa, instead of amphipoda. However, many of these diptera were in the family ptychopteridae, which is characteristic of highly organic sediments, such as those described for MC-10, and does not necessarily indicate adverse effects from exposure to sediment contaminants.

In the Content Brook Wetland Group, MC-06, MC-07, and MC-08 were all similar in benthic composition to the lotic reference locations, and CB-03 was similar in benthic composition to the lentic reference locations. Sampling location CB-01 differed from the lotic reference locations in that fewer taxa, individuals, mollusca, and amphipoda were collected. There was no flow at CB-01, but no surface water data were available for this sampling location to determine the possible influence of DO. Sampling location CB-02 differed from the lentic reference locations in that fewer taxa, individuals, and no mollusca were collected, but the number of damselflies (i.e., anisoptera) collected was the most of any site, except CB-03. This difference may be related to the relatively low DO concentration that was measured and to habitat characteristics.

In general, qualitative evaluation of the macroinvertebrate survey data did not find any overt adverse effects that appeared to be related to site contaminants. Most of the effects appeared to be related to differences in DO concentrations, flow, and sediment characteristics. However, more subtle effects may not have been detectable because of the lack of replication and

quantitative evaluation of data, the low number of individuals collected at most sampling locations, and dissimilarities in physical characteristics among the reference and site-associated sampling locations.

Subsequent to the 1997 OU-3 BERA, a quantitative evaluation of the benthic macroinvertebrate data was conducted in early 2004 in order to reduce the uncertainty concerning the conclusion of no overt effect due to site contaminants. A multivariate analysis of the benthic invertebrate data was conducted in conjunction with an analysis of: (1) environmental variables measured during the survey; and (2) sediment benchmark hazard indices of contaminant levels in sediment at the sampling stations. The hazard index of the sediments was calculated as the mean Probable Effect Concentration (PEC) quotient (Appendix B, Attachment B).

A summary of the multivariate analysis is presented in Appendix B. The multivariate ordination used to analyze the 1997 OU-3 BERA macroinvertebrate data for differences in community structure was a correspondence analysis (CA). A further description of the analytical methods is provided in Appendix B.

A biplot ordination of the invertebrate site scores indicated that the reference sites were not different as a group from the other sites (Appendix B, Figure 1). A comparison of the distribution of the site-scores for axes 1-4 of the CA ordination was done with box plots, along with a comparison of the eigenvalues for each axis (Appendix B, Figure 2). Based on an evaluation of these results, there were no discernible effects that indicated that community structure was different between reference sites as one group and on-site locations as a second group.

The community site scores derived from the CA ordination were regressed against the environmental variables recorded at the sites (Appendix B, Table 1 and Table 2). The variables that represented contamination and toxicity at the sites showed very weak correlations with community structure. The highest correlation coefficient of the community composition data was with habitat characteristics (bend ratio) from which the sample was collected. This result is not

unexpected, because the bend ratio may represent sinuosity of a water body, which is important in creating habitat features in an aquatic environment. Consequently, additional habitat features increase the heterogeneity of an aquatic environment, and in turn will contribute to supporting different taxa, which increase the community structure. These characteristics of the habitat showed more influence over the community composition than did any response to measured toxicity gradients.

The CA analysis supported the earlier conclusions of the qualitative analysis of the macroinvertebrate data. There were no discernible patterns that indicated that community structure was different between reference and on-site benthic communities. In addition, the analysis did not detect any strong community response that appeared to be related to site contaminants. The inability of the evaluation to detect responses to contaminants may be attributed to sampling method, the insufficient level of taxonomic identification, and the characteristic noise in benthic community data, which may overwhelm the more subtle, but potentially important, responses to chemical gradients. This result does not imply that the benthic community is unaffected by contaminant distribution, only that the data collected were not detailed enough to allow these patterns to be seen within the variation of response of the community composition to other environmental variables.

SECTION 3.0
ERA/WRIA APPROACH

This ERA/WRIA was prepared as an addendum to the BERA conducted for OU-3 (M&E, 1997). Receptors, wetland areas, and contaminants which were not found to pose ecological risk in the BERA were not carried forward to this ERA/WRIA. Risk identified in the 1997 OU-3 BERA are furthered evaluated based on additional data collected in 2004, and are the subject of this ERA/WRIA. This section identifies the contaminants and receptors selected for further evaluation, and presents the problem formulation, the endpoints, and the site conceptual model for the ERA/WRIA.

3.1 Identification of Contaminants and Receptors for Further Evaluation

The 1997 OU-3 BERA identified potential risk to ecological receptors from exposure to surface soils, site-wide sediment and surface water, and through the aquatic food chain to semi-aquatic predatory birds. Because the proposed remedy for IHP OU-3 (source control via capping and/or excavation) for upland soil areas is expected to eliminate the exposure pathways for terrestrial receptors, no terrestrial receptors were identified for further evaluation as a part of the OU-4 ERA/WRIA.

Based on the 1997 OU-3 BERA, PAHs in sediment, and target metals in surface water and sediment were identified as COPCs. In addition, there was potential risk associated with dietary exposures of great blue heron to target metals and PAHs through the ingestion of fish. Because the maximum concentration of 4,4'-DDD resulted in a hazard quotient (HQ) greater than 10 in Wetland 2 Group, the focused risk assessment was expanded to include consideration of this pesticide. Although PCBs were not identified in the 1997 OU-3 BERA conclusions as causing elevated risk site-wide, PCBs have been of concern historically in the West Middlesex Canal. Due to this, and comments received by MADEP on the BERA, PCBs were included as sediment COPCs.

The 1997 OU-3 BERA identified potential risk to benthic invertebrates exposed to sediment COPCs. The evaluation was based on comparison of sediment concentrations of COPCs to sediment quality benchmarks and calculated HQs. Due to the complete exposure pathway and level of contaminants in the sediments, the benthic invertebrate community was selected as a receptor community for the on-site sediment areas in the ERA/WRIA. This community plays important roles in the ecology of the surface waters and wetlands including nutrient cycling and decomposition of organic matter, as well as serving as a prey base for fish and other semi-aquatic consumers such as waterfowl. Since invertebrates spend part or all of their life cycles in or on the sediments, they represent a group of organisms with high exposure to sediment contaminants. Invertebrates, serving as a prey base, may also serve as a source of transfer of contaminants to organisms which prey upon them, including fish, waterfowl, and semi-aquatic mammals. Benthic invertebrates were selected due to their position and importance in the aquatic food web, potential sensitivity to a range of contaminants, as well as the availability of practical methods for measuring toxicity to representative species in bioassays.

Based on the potential exposure of aquatic receptors to COPCs in surface water identified in the 1997 OU-3 BERA, aquatic life, including fish and invertebrates directly exposed to surface water, were selected as receptors for the ERA/WRIA. These receptors were selected due to potential for exposure, the importance of both communities in the ecosystem, sensitivity of these receptors to contaminants in surface water, as well as the availability of practical methods for measuring toxicity to representative species in bioassays.

The great blue heron was used in the 1997 OU-3 BERA as a semi-aquatic predatory species to evaluate the potential for adverse effects on predatory populations from food-chain exposures in on-site surface water and wetland habitats. The 1997 OU-3 BERA heron models were limited by the lack of site-specific fish tissue data upon which dietary exposures of contaminants were based. In the 1997 OU-3 BERA models, exposures doses for the heron were estimated using surface water and sediment concentrations to estimate tissue concentration in fish. The ERA/WRIA approach identified the great blue heron as a receptor requiring additional evaluation in order to

reduce the uncertainty in the earlier models by using site-specific fish tissue data and updated toxicity reference values (TRVs).

3.2 Problem Formulation

The selection of COPCs and complete exposure pathways for the ERA/WRIA were based on the results of the1997 OU-3 BERA, as described in Section 3.1. The 1997 BERA identified potential risk to ecological receptors from exposure to COPCs in sediment and surface water, and through the aquatic food chain to semi-aquatic predatory birds. Therefore, the objective of the ERA/WRIA for OU-4 is to further evaluate the risk of adverse effects of contaminants in sediment, surface water, and biota on ecological receptors, either through direct exposure to contaminants in sediment and surface water or through indirect exposure through the food web. Previous investigations established that concentrations of some contaminants exceed screening-level benchmarks in surface water and sediment even though the benthic community study indicated there was no discernible impact at about 20 site locations relative to five reference locations. Screening-level food web modeling indicated that there were potential effects on heron through fish consumption based on modeled (not measured) fish tissue contaminant concentrations. Therefore, the sampling and analysis program for the work described herein was designed to measure toxicity of sediment and surface water on aquatic organisms and to refine the food web model for heron using fish tissue analysis and updated TRVs from the literature.

The ERA/WRIA was designed to address the following concerns:

- Risks to aquatic receptors directly exposed to target metals in surface water in the Middlesex Canal (downgradient of the Johns-Manville outfall), Richardson Pond, B&M Pond, and Content Brook.

  RISK QUESTIONS:

  1. *Are the levels of site contaminants in surface water sufficient to cause biologically significant alteration or impair the functioning of aquatic invertebrate communities?*

2. *Are the levels of site contaminants in surface water or fish tissue sufficient to cause biologically significant survival, growth, or reproductive impairment in warmwater fish populations?*

- Risks to benthic invertebrates directly exposed to 4,4'-DDD, PCBs, PAHs, and target metals in sediment within the on-site wetlands and ponds (Unnamed Brook, Middlesex Canal, B&M Pond, and Content Brook).

  RISK QUESTION:

  1. *Are the levels of site contaminants in sediments in on-site waterbodies sufficient to cause biologically significant alteration or impair the functioning of benthic macroinvertebrate communities?*

- Risks to predatory birds (e.g., heron) indirectly exposed to PAHs and target metals in biota within the Middlesex Canal (downgradient of the Johns-Manville outfall), Richardson Pond, B&M Pond, and Content Brook.

  RISK QUESTION:

  1. *Are the levels of site contaminants in fish tissue from on-site water bodies sufficient to cause biologically significant survival, growth, or reproductive impairment in great blue heron populations?*

3.3 Assessment and Measurement Endpoints

Endpoints in the ERA/WRIA define ecological attributes that are to be protected (assessment endpoints) and a measurable characteristic of those attributes (measurement endpoints) that can be used to gauge the degree of impact that has or may occur. Assessment endpoints most often relate to attributes of biological populations or communities. They contain an entity (e.g., great blue heron population) and an attribute of that entity (e.g., survival rate). At hazardous waste sites, the entity in the assessment endpoint is typically an individual species or community, often referred to as an indicator species or indicator community, respectively. The assessment population is often defined as the population within the defined area of study.

Measurement endpoints are related to the assessment endpoint, and are the effects that can be measured or observed (e.g., toxicity in invertebrate bioassays). Measurement endpoints are most often used as surrogates for assessment endpoints since, in most cases, the assessment endpoint itself cannot be readily measured or observed. Criteria for the selection of assessment endpoints include: unambiguous operational definition, accessibility to prediction and measurement, susceptibility to the hazardous agent, biological relevance, and societal relevance (Suter, 1993).

Assessment and measurement endpoints for the ERA/WRIA are summarized in Table 3-1. For each of the individual indicator species or community, the assessment endpoint references an impact on survival, growth, or reproduction of the assessment population or community within the defined site. Adverse effects on populations can be inferred from measures associated with impaired survival, growth, or reproduction. Some COPC exposures may be associated with sub-lethal effects which do not directly influence mortality or reproductive success. However, these sub-lethal effects may increase the probability of death or negatively influence reproduction by enhancing susceptibility to predation or parasitism, or weakening competitive ability.

3.4 Site Conceptual Model

The site conceptual model summarizes the release of contaminants from industrial and urban sources, which have been transported through groundwater discharge, surface drainage, and sediment transport to surface water and sediment (secondary sources) within various area of the site. The complete ecological exposure pathways are also summarized in the site conceptual model (Figure 3-1).

As described in Sections 1.1 and 3.1, groundwater, surface water, sediments, and soil contamination were studied in the 1997 RI for OU-3. Groundwater in both the overburden and bedrock aquifers generally enters the site from the southwest and flows to the northeast. Similarly, surface water flows onto the site from the south and flows to the northeast, where it converges with B&M Pond and associated wetlands. Based on seepage meter, staff gauge, and mini-piezometer results summarized in the OU-3 RI and FS (M&E, 1997; M&E, 2004a), the

potential for groundwater to discharge to surface water was evident throughout most of the site.

Groundwater studies conducted as part of the OU-3 FS included groundwater modeling, which utilized site-specific information such as boring logs, slug tests, water levels from monitoring wells and staff gauges, and stream seepage tests to simulate groundwater migration used to estimate relative times to achieve remedial action objectives (RAOs) for groundwater cleanup. The modeling indicated that the time to reach RAOs was greater than the EPA default period of 30 years. As a result, EPA decided to address potential groundwater cleanup by initially performing source control measures, then monitoring groundwater and evaluating trends in contaminant concentrations that result from those actions as part of OU-4.

Contaminated sediments and surface water at the site are likely the result of contaminated groundwater discharge and runoff containing contaminated soils. Based on the transport pathways described and the results of the BERA conducted for OU-3, the primary ecological receptors for potential exposure to contaminated media at the site include organisms such as benthic invertebrates and aquatic receptors directly exposed to contaminants in sediment and surface water, and piscivorus birds that feed primarily on fish that may be impacted by site-related contamination. The aquatic and semi-aquatic receptors include organisms such as invertebrates in the surface water (zooplankton community), warmwater fish, predatory birds, and benthic invertebrates exposed to sediments impacted by COPCs. Based on the OU-3 BERA results, the indicator species and indicator communities identified at the site selected for further evaluation included aquatic receptors (zooplankton and fish), benthic invertebrates, and predatory birds, represented by the great blue heron.

Each of these indicator species or indicator communities may be exposed to substantial levels of contaminants through direct contact with and consumption of contaminated abiotic media or through the consumption of prey items that carry contaminant body burdens. The site conceptual model shows the exposure pathways by which these species may be exposed to COPCs (Figure 3-2). This model allows evaluation of direct and indirect (food-chain) impacts on major

components of the aquatic and semi-aquatic receptors at the site.

SECTION 4.0
HAZARD IDENTIFICATION

The COPCs evaluated in the ERA/WRIA were selected based on the results of the 1997 OU-3 BERA, as discussed in Section 2.4. The supplemental sampling for the ERA/WRIA was designed to more accurately characterize the risks to specific ecological receptors by collecting environmental data to fill data gaps.

To address these specific risk issues, supplementary surface water, sediment, and fish tissue samples were collected for the ERA/WRIA. Surface water samples were collected from one reference area (Round Pond) and four surface water areas on-site including the Middlesex Canal, Richardson Pond, B&M Pond, and Content Brook. These samples were used to evaluate toxicity to aquatic receptors from exposure to target metals in surface water. Fish tissue samples were also collected at these five open-water locations (four on-site and one reference) to model dietary exposure of heron based on site-specific fish tissue concentrations of PAHs and target metals.

Sediment samples were collected to further evaluate toxicity to benthic invertebrates from exposure to 4,4'-DDD, PCBs, PAHs, and target metals in sediment within the on-site wetlands and ponds. Sediment samples were collected in a phased approach. Based on historic data and a site reconnaissance, twenty on-site sampling locations and three reference locations were selected for field screening for target metals, PAHs, PCBs, and Microtox® toxicity. Based on the field-screening results, a subset of four on-site sediment sampling locations were selected to represent the sediments with highest potential toxicity. The least toxic/contaminated location among the three reference locations sampled was selected for analysis as the representative reference location. These five sediment samples, including four site and one reference location, were evaluated using laboratory sediment toxicity testing and analytical methods. These data were used to evaluate the potential toxicity of site-related contaminants on benthic organisms from locations representing the highest contaminant levels based on historic data and field-screening results.

The data from the sediment, surface water, and fish sampling described above were discussed in a Data Evaluation Report (M&E, 2005) in preparation for use in the ERA/WRIA. Field-screening and full characterization results were summarized and discussed in Section 2.2.

4.1 Summary of COPCs by Medium

As discussed in Section 3.1, the COPCs selected for analysis in this ERA/WRIA were based on the 1997 OU-3 BERA results. The supplemental sampling data for the COPCs are summarized by medium in the following sections. The selected COPCs are presented and discussed with respect to detection frequency and comparison to ecological benchmarks.

4.1.1 Surface Water

The maximum total and dissolved metal concentrations in surface water detected at the four surface water sampling locations (triplicate samples) are summarized in Table 4-1. Dissolved metal concentrations are compared to surface water benchmarks. The following sources were used, in the order presented, as benchmarks for screening surface water for potential ecotoxicity:

- Freshwater Chronic USEPA National Recommended Water Quality Criteria (NRWQC) (USEPA, 2002)

- USEPA Ecotox Thresholds (Tier II) for Surface Water (USEPA, 1996)

- Secondary Chronic Values (SCVs) for aquatic biota developed by Oak Ridge National Laboratory (Suter & Tsao, 1996)

The 2002 USEPA chronic NRWQC are the preferred surface water benchmarks for aquatic organisms because they are based on single chemical chronic toxicity tests with numerous species. Ecotox Thresholds (ETs) are the next preferred surface water benchmark because they are based on chronic NRWQC in freshwater or on Great Lakes Tier II values. The NRWQC values for metals are frequently expressed as dissolved metal concentrations because dissolved

concentrations more closely approximate the bioavailable fraction of metal in the water column than the total fraction. Freshwater NRWQC and Tier II values for many metals are dependent on water hardness; these values were adjusted for a site-specific hardness value of 40.2 mg/kg $CaCO_3$, following guidance provided by USEPA (2002).

Total chromium, silver, and vanadium were not detected in any surface water samples. Total copper was estimated at concentrations slightly above the detection limit in all samples collected from B&M Pond, but was below detection limits in all of the filtered (dissolved) samples. Based on detection frequency, chromium, copper, silver, and vanadium are not considered contaminants of concern in surface water.

Calcium and magnesium were measured to calculate hardness values. As these are considered naturally-occurring metals and essential nutrients, they are not considered contaminants of concern for surface water.

Aluminum, arsenic, barium, lead, manganese, and zinc were detected in the majority of the surface water samples, and cobalt was detected in one filtered sample. Among these, arsenic, cobalt, lead, and zinc were not detected at concentrations above screening criteria. For all but cobalt, the screening criteria were based on NRWQC values. Cobalt was not detected in the total metals sample, but was detected in dissolved fraction below the Tier II screening value, and consequently was not selected as a contaminant of concern. Total aluminum in surface water was above the NRWQC value, and was selected as a contaminant of concern. The only metals exceeding screening criteria were aluminum, barium, and manganese which are further considered as contaminants of concern in surface water.

4.1.2 Sediment

The maximum concentrations of contaminants selected for analysis in the four on-site sample locations (West Middlesex Canal, Unnamed Brook, B&M Pond, and Content Brook) and one reference sample location (Round Pond) selected for full characterization are summarized in Table

4-2. The number of exceedances of screening-level benchmarks among the four samples is also provided. Sample-specific results are presented in Appendix A.

Maximum detected levels of chemicals were compared to sediment quality criteria. The sets of criteria used in the screening, in order of selection, consisted of:

- USEPA Office of Solid Waste and Emergency Response Ecotox Thresholds (ETs) - Sediment Quality Criteria (SQCs), Sediment Quality Benchmarks (SQBs), or NOAA-Effects Range Low (ERLs) (USEPA, 1996);

- Ontario Ministry of Environment and Energy (OMEE) Lowest Effects Levels (LELs) (Persuad *et al.*, 1993), used when a screening value from USEPA (1996) was not available;

- Oak Ridge National Laboratory (ORNL) Sediment Secondary Chronic Values (SCVs) (Jones *et al*., 1997) used when a screening value from Persuad *et al.* (1993) was not available; and

- National Oceanic and Atmospheric Administration (NOAA) Threshold Effects Levels (TELs) (Buchman, 1999) used when a screening value was not available in any of the above.

SQBs, SCVs, and SQCs, as presented in their respective documents, are based on a sediment organic carbon content of 1%. Although the actual organic carbon content of all sediment samples were greater than 1%, screening criterion were not adjusted upward in order to maintain a conservative screening process.

The majority of the maximum detected concentrations among all of the chemicals were found in sample SED-05 from B&M Pond. The total PAH concentration detected in the B&M Pond

sediment sample (SED-05 and duplicate SED-25) was 129,975 µg/kg. For PAH compounds, the concentration was two to three orders of magnitude greater than that from the reference pond sample (SED-22). A total PAH concentration of 12,097 µg/kg was detected in SED-18, collected from the Unnamed Brook. Lower concentrations of PAHs were detected in SED-11, collected from the West Middlesex Canal, and SED-01, collected within Content Brook, with the concentrations of the same order as SED-22, the reference sample. With the exception of one SVOC (biphenyl), all of the PAHs and dibenzofuran were detected in one or more samples and were selected as contaminants of concern.

The highest concentrations of 4,4'-DDD, Aroclor-1254, and Aroclor-1260 were detected in SED-05 (and duplicate SED-25). Aroclor-1016, -1221, and -1232 were not detected in any sample and were not selected as contaminants of concern. Aroclor-1248 was not selected as a contaminant of concern as it was detected only in sample SED-01, at a concentration below the LEL screening level.

Among the target metals measured, each was detected in all of the sediment samples. Maximum metal concentrations were measured in SED-05 (B&M Pond) and in SED-01 (Content Brook) with the highest aluminum measured in sediment at SED-18. Three metals, aluminum, cobalt, and silver, did not exceed sediment screening benchmarks and were, therefore, not selected as contaminants of concern. Barium and vanadium were selected as contaminants of concern as they were above the reference concentrations, and did not have a screening value.

4.1.3 Fish Tissue

During the 2004 sampling event, four site water bodies (B&M Pond, Content Brook, Richardson Pond, and West Middlesex Canal) and one reference water body (Round Pond) were included in the fish sampling investigation. A total of 146 fish were collected, consisting of 12 species: bluegill *(Leopomis macrochirus*), pumpkinseed (*Lepomis gibbosus*), yellow perch (*Perca flavescens*), largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*), brown bullhead (*Ameirus nebulosus*), yellow bullhead (*Ameirus natalis*), golden shiner

(*Notemigonus crysoleucas*), longnose dace (*Rhinichthys cataractae*), American eel (*Auguilla rostrata*) redfin pickerel (*Esox americanus*), and chain pickerel (*Esox niger*). Golden shiner and longnose dace were the most abundant fish species collected. Pumpkinseed and chain pickerel were the least common. Further discussion on how the 146 fish collected were composited into 20 tissue samples and submitted for laboratory analysis is found in Section 3.3 of the Data Evaluation Report (M&E 2005).

All fish collected during this study, except the American eel, are not known to migrate over significant distances and may be considered local residents of the site area. Fish feeding behavior, which varies between species, was not considered in this evaluation.

Fish analyses included an external examination, measurements of weight and length, and laboratory analyses for target metals, PAHs, and lipid content. All of the PAHs (including the two SVOCs biphenyl and dibenzofuran) and metals detected in fish tissue (Table 4-3) were selected as contaminants of concern for comparison to fish tissue residue benchmarks (Section 6.1.2) and used in modeling heron dietary exposure (Section 6.3).

SECTION 5.0
EXPOSURE ASSESSMENT

Exposure assessment describes the potential or actual contact of contaminants of concern with receptors. For contaminants of concern identified in site media (surface water, sediment, and biota), contact is quantified as the amount of the chemical ingested, inhaled, or in direct contact with the body of the organism. Alternatively, for contaminants of concern that may be internally absorbed, exposure is evaluated by the amount of the contaminant in the target tissue. Exposure characterization for each of the receptor species is presented in the following subsections.

5.1 Aquatic Receptors

Aquatic receptors include organisms directly exposed to surface water in streams, ponds, and wetlands within the site. These include small invertebrates in the water column (zooplankton), amphibians, and fish. Based on previous studies (M&E, 1997), metals in site-wide surface water which exceeded surface water quality benchmarks protective of aquatic life, were selected as COPCs. The potential exposure of aquatic life to these COPCs is discussed with respect to exceedances of surface water benchmarks. In addition, the exposure of fish to site COPCs was assessed by evaluating the concentration of COPCs in fish tissue among species and sampling locations by comparison to reference samples.

5.1.1 Comparison to Surface Water Benchmarks

The exposure of surface water aquatic receptors (fish, aquatic invertebrates, and amphibian larvae) can be estimated by direct comparison of maximum measured concentrations in each habitat area to benchmarks. In general, the highest dissolved metals concentrations were observed in Content Book surface water samples. Among the surface water COPCs, the concentrations of both barium and manganese were above Tier II screening values in all 12 of the samples collected (Table 4-1). The maximum detected concentration of total aluminum exceeded the NRWQC value in 1 sample. The maximum concentrations of aluminum, manganese, and barium were measured in surface water from Content Brook (SW-CB-02 and SW-CB-03). The

maximum values for these metals were also higher than the maximum concentrations detected at the reference location, Round Pond. These data indicate that aquatic receptors are potentially exposed to concentrations of aluminum, manganese, and barium above surface water benchmarks. The potential effects of COPCs in surface water were evaluated in toxicity tests, discussed in Section 6.1.1.

5.1.2 Fish Tissue

In addition to direct exposure to COPCs in surface water, both direct and indirect (food-chain) exposures of fish to COPCs were evaluated in the major water bodies by measuring the concentration of selected COPC in fish tissue. During the fish sampling event, a total of 146 fish were collected, consisting of 12 species (see Section 2). Fish were analyzed for target metals, PAHs, and lipid content. All of the PAHs, as well as two SVOCs (biphenyl and dibenzofuran) and metals detected in fish tissue (Table 4-3) were selected as contaminants of concern for evaluation of fish tissue residue benchmarks (Section 6.1.2) and used in modeling of heron dietary exposure (Section 6.3).

Analysis of 23 PAHs, 2 SVOCs, and 11 metals was conducted on twenty site and five reference composite fish samples (Table 4-3). Four bullhead samples collected from B&M Pond were analyzed; 10 PAHs, 2 SVOCs, and 11 metals were detected in fish tissue from these samples. One redfin pickerel, four bullhead, one American eel, and one golden shiner samples collected from Content Brook were analyzed; 6 PAHs, 2 SVOCs and 11 metals were detected in fish tissue from Content Brook. Two bullhead and two golden shiner samples collected from Richardson Pond were analyzed; 2 PAHs, 2 SVOCs, and 10 metals were detected in fish tissue from Richardson Pond. Three bullhead, one American eel, and one longnose dace samples collected from the Middlesex Canal were analyzed; 8 PAHs, 2 SVOCs, and 11 metals were detected in fish tissue from Middlesex Canal. Three bullhead, one chain pickerel, and one American eel samples collected from the reference pond were analyzed; 3 PAHs and 10 metals were detected in reference area fish tissue. Silver was not detected in any of the reference samples. None of the COPCs detected in fish tissue are generally considered to bioaccumulate. Each fish tissue sample

was also analyzed for lipid content. Maximum contaminant concentrations in fish tissue grouped by species and area of collection are shown in Table 5-1.

5.1.2.1 Evaluation of SVOC Exposure

Among the SVOCs detected in fish tissue, 10 were PAHs. Biphenyl and dibenzofuran were detected in the majority of the site samples, with maximum detected values in bullhead from B&M Pond. Across the site ponds, eight of the maximum PAH concentrations in fish tissue occurred in B&M Pond, and two occurred in the Middlesex Canal (Table 5-1). All maximum PAH concentrations were found in bullhead tissue. The highest average concentrations of nine PAHs occurred in B&M Pond, and one (pyrene) occurred in the Middlesex Canal (Table 5-2). Only three PAHs were detected in reference tissue (anthracene, pyrene, and perylene). Maximum and average concentrations of PAHs were higher in site ponds than the reference pond (Tables 5-1 and 5-2) with the exception of perylene which was only detected in reference tissue.

The fish tissue PAH results indicate that, regardless of the species and location, and with the exception of one reference sample, the PAHs present in fish were low molecular weight (LMW) PAHs (Table 5-1). LMW PAHs generally include PAHs that contain two or three aromatic rings and are considered to be acutely toxic to some organisms (Eisler, 2000). LMW PAHs are not suspected as being potentially carcinogenic. Pyrene and fluoranthene, both with four aromatic rings and molecular weights of 202 grams/mol, are included as LMW PAHs due to their similarities with the non-carcinogenic LMW PAHs. Therefore, for the purpose of this evaluation, LMW PAHs are those PAHs with molecular weights less than or equal to 202 grams/mole. Examples of LMW PAHs include naphthalenes, fluorenes, phenanthrenes, anthracenes. PAHs containing up to seven aromatic rings with molecular weights greater than 202 grams/mole (e.g., benzo-PAHs, chrysene, and indeno(1,2,3-cd)pyrene) are considered high molecular weight (HMW) PAHs and include all PAHs suspected as potential carcinogens (Eisler, 2000).

LMW PAHs are considered to be more soluble in water, and less soluble in tissue than the HMW PAHs, which have higher lipid solubility (Eisler, 1987). Although elevated levels of HMW PAHs

were detected in site sediments, no HMW PAHs were detected in fish tissue samples collected at the site locations. Only one HMW PAH (perylene) was estimated at 1.3 ug/kg in the reference fish sample RF-BH-1. The absence of detectable levels of HMW PAHs in site fish tissue indicates that HMW PAHs are not bio-accumulating within the fish, even in water bodies with elevated HMW PAH concentrations, such as B&M Pond sediment.

Studies in the scientific literature also indicate that HMW PAHs do not accumulate to a significant extent in fish (West *et al.*, 1984 cited in Eisler, 1987). HMW PAHs, most notably benzo(a)pyrene, are potent inducers of biotransformation enzymes located primarily in the liver, resulting in the accelerated metabolism of PAHs to metabolites with higher water-solubility and excretability (Sipes and Gandolphi, 1991). Even in environments heavily contaminated with both LMW and HMW PAHs, fish tissue PAH concentrations tend to be low because fish have a tendency to metabolize PAHs extensively and rapidly (Eisler, 1987).

The highest concentrations of LMW PAHs in fish tissue were observed in bullhead collected from B&M Pond (Table 5-1). B&M Pond (SED-05) also had the highest sediment concentration for total PAHs based on the 2004 data set (Table 2-6). The majority of the detected PAHs were also detected at lower concentrations in Middlesex Pond fish tissue, mainly in bullhead samples. The only PAHs detected in reference pond samples were anthracene, pyrene, and perylene in bullhead tissue.

Even though PAHs tend to be metabolized and excreted rapidly by fish, the concentrations measured of the LMW PAHs in fish tissue from B&M Pond may indicate chronic exposure doses that exceed the capacity of fish such as bullheads to metabolize and excrete the PAHs. Because the processes responsible for biotransformation and excretion (e.g., binding to enzymes and renal tubular secretion) have a finite capacity, at high PAH concentrations, the capacity of the specific processes may be exceeded and the tissue concentrations of the PAHs may increase. For example, elevated fish tissue PAH concentrations may be a direct result of saturation of the binding capacity of specific metabolic enzymes or the depletion of cofactors necessary for the

metabolic pathways. However, the presence of detectable levels of LMW PAHs in bullhead tissue from B&M Pond may be an indirect result of the exposure to other environmental contaminants which act as competitive and/or noncompetitive inhibitors for the same pathways and processes responsible for PAH metabolism and excretion. As tissue PAH concentrations increase, regardless of the underlying mechanism, adverse effects on fish may be noted when PAH tissue concentrations are present at levels that exceed a toxicity threshold level.

A site-wide comparison of lipid content (percent lipids) and associated total fish tissue PAH concentrations for all fish species suggests that these data, overall, are not well correlated (Figure 5-1). This conclusion is somewhat expected since individual PAHs are metabolized at different rates by the various species of fish (Eisler, 1987). Furthermore, LMW PAHs are the predominate class of PAHs present in fish tissue, and these compounds are not considered to be highly soluble in fat tissue. Therefore, it is somewhat expected that total PAH concentrations versus percent lipids will be variable. However, bullhead data from B&M Pond suggests that a correlation between PAHs and percent lipids may be present.

A comparison of the total PAH concentrations and percent lipids for bullhead only is shown in Figure 5-2. In this figure, the data points associated with B&M Pond are differentiated from other site data points. There appears to be a stronger correlation between total PAH concentrations in fish tissue and percent lipids of the bullhead from B&M Pond, where the highest total PAH sediment concentration was reported. These data may indicate a direct or indirect effect on PAH metabolism and excretion in B&M Pond bullhead. Alternatively, this correlation noted in B&M Pond bullhead tissue may be an artifact, resulting from a combination of factors, including the influence of a single outlier (a high total PAH data point of 138 μg/kg) in combination with a small sample size (n=4). When reviewing site-wide bullhead data, exclusive of the B&M Pond data, fish tissue PAH concentrations are not highly correlated with lipid content, likely due to the high rate of metabolism of PAHs coupled with their higher relative water solubility. The potential toxicity of the site-wide and B&M Pond fish tissue PAH levels is discussed in Section 6.1.2.

5.1.2.2 Evaluation of Metal Exposure

Across the site ponds, maximum concentrations of the eleven detected metals showed greater variation among locations and species than did PAHs (Table 5-1). Six maximum concentrations occurred in Content Brook, three maximum concentrations occurred in Middlesex Canal, one maximum concentration (zinc) occurred in both Richardson Pond and the Middlesex Canal. The maximum concentration of arsenic at the reference pond (0.31 mg/kg in bullhead tissue) slightly exceeded the site maximum concentration (0.29 mg/kg). The six maximum concentrations identified in Content Brook occurred in bullhead. Two of the maximum concentrations in Middlesex Canal occurred in bullhead, and one occurred in longnose dace. The maximum zinc concentration occurred in both golden shiner in Richardson Pond and longnose dace in Middlesex Canal. For the site water bodies, the maximum arsenic concentration identified (0.29 mg/kg in Content Brook) occurred in redfin pickerel.

The same COPCs which were detected in site fish tissue were also detected in reference area tissue, expect for silver which was not detected in reference tissue. In general, maximum concentrations of COPCs detected in fish tissue exceeded concentrations in tissue collected from the reference area by less than an order of magnitude. However, in Richardson Pond, maximum concentrations of six metals (aluminum, chromium, cobalt, copper, lead, and vanadium) were below maximum reference concentrations. In addition, as stated above, the maximum arsenic detection occurred in a bullhead sample collected from Round Pond.

The highest average concentrations of aluminum, arsenic, barium, chromium, cobalt, and vanadium were detected in fish tissue samples collected from B&M Pond (Table 5-2). The highest average concentrations of copper, lead, and silver occurred in Content Brook. The highest average concentration of zinc occurred in Richardson Pond, and the highest average concentration manganese occurred in Middlesex Canal. The average fish tissue concentrations from the site generally exceeded average tissue concentrations from the reference area, but were generally within a factor 5 of concentrations in the reference pond (Table 5-2). However, in Richardson Pond, the average concentrations of five metals (aluminum, chromium, copper, lead,

and vanadium) were below average reference concentrations.

5.2 Benthic Invertebrates

The exposure of benthic invertebrates to sediment COPCs was evaluated by comparing sediment concentrations of contaminants of concern from the four samples selected for full characterization to sediment-quality screening benchmarks (Table 5-3). The contaminants of concern were identified in Section 4.3.2 as those contaminants with a site-wide maximum detected concentration above sediment screening benchmarks.

5.2.1 Comparison to Sediment Benchmarks

Table 5-3 compares concentrations of contaminants of concern from individual samples to the original screening benchmark, and also to the probable effect concentration (PEC) (MacDonald *et al.*, 2000). The PEC value is a consensus-based sediment quality guideline, based on literature values from field studies, above which adverse effects are expected to occur more often than not.

The maximum concentrations of total PAHs, 4,4'-DDD, Aroclor-1254, Aroclor-1260, and five of the eight sediment metal contaminants of concern were recorded in B&M Pond sediment (SED-05). Note that the results of SED-05 and its field duplicate, SED-25, were averaged prior to comparison. Individual PAH concentrations in sediment exceeded PEC values only at SED-05. Total PAH concentrations exceeded the screening benchmark concentration at SED-05 and SED-18.

For 4,4'-DDD, the PEC concentration was only exceeded at SED-05, although all locations had 4,4'-DDD at concentrations above the screening benchmark, including the reference location (Round Pond). Among the detected PCBs, there were no available PEC values. Aroclor-1242 was only detected at a fairly low concentration at SED-11. Aroclors-1254 and -1260 were detected at low concentrations at SED-18 and at higher concentrations at SED-05. Together, the concentrations of Aroclors-1254 and 1260 exceed the PEC for total PCBs at this sampling location.

Among the metals, no PEC values were exceeded at SED-11 or SED-22. The only contaminant of concern in sediment at SED-01 (Content Brook) above a PEC value was arsenic (360 mg/kg). Arsenic, chromium, copper, lead, and zinc exceeded PEC values in sediment from B&M Pond (SED-05). Arsenic, copper and lead were above PEC values at SED-18.

Sediment data indicate exposure to sediment concentrations of contaminants of concern at levels potentially causing adverse effects for PAHs (particularly at SED-05), 4,4'-DDD at SED-05, PCBs at SED-05, and for metals at several locations at the site. The potential effects of contaminants of concern in sediment were evaluated in toxicity tests and discussed in Section 6.2.

5.2.2 Sediment Characteristics

In June and September of 1993, total organic carbon (TOC) analyses were conducted on sediment samples collected from five site locations, including the Unnamed Brook, Drainage Ditch, RSI Wetland Area, Asbestos Lagoons, and Middlesex Canal. During the 2004 sampling round, sediment was collected from two of the 1993 locations, including the Unnamed Brook (SED-18) and the Middlesex Canal (SED-11). Two additional site locations were sampled in 2004, including SED-01 (Content Brook) and SED-05 (B&M Pond Area), as well as one reference location, SED-22 (Round Pond).

In this section, the 1993 and 2004 TOC results are compared by area. To aid in the comparison, additional sediment sample characteristics, including total combustible organics (TCO), percent moisture, and grain size analysis, which typically correlate to TOC data, are also discussed and shown in Table 5-4. Much of the 1993 data is presented in terms of TCO, not as TOC. TOC and TCO data, in theory, should be roughly equivalent. However, because of differing analytical methods, TOC and TCO results typically vary slightly. As an example, the results reported for TOC and TCO (shown on Table 5-4) are very similar for sediment sampling location SD-322, which was sampled during both June and September 1993 (and in duplicate in September 1993). For the purposes of the current evaluation, TOC and TCO will be used interchangeably in the discussion below to correlate the 1993 and 2004 results. Location SD-322 TOC/TCO data is

presented on Table 5-4 to demonstrate the comparability of the TOC/TCO method results. This location does not correspond to any 2004 sampling location and has not been included in the comparative discussion below.

Overall, TOC results from the 2004 sampling round were found to be generally consistent with the TCO results reported in 1993 for samples collected within the same vicinity, as shown in Table 5-4. The 2004 TOC values ranged from 16.1 to 32.3% for site samples. The corresponding 1993 TCO values ranged from 10.6 to 74.2%. In general, these values are significantly higher than expected TOC values for New England which are typically less than 12% (Mitsch and Gosselink, 2000). The 2004 TOC value measured for the reference area sample, SED-22, was 86.5%.

Based on a review of the sediment characterization data, the elevated TOC data relative to typical New England values may be due to a number of reasons. The sediments collected during the 2004 round generally had elevated percent moisture, which may have impacted TOC results since results are reported on a dry weight basis. The presence of roots and leaves within the sediment samples may also contribute to the higher TOC results. In addition, sheens on the surface water that were observed in the field for many of the 2004 sampling location may be associated with contaminant-based carbon sources within the sediment matrix, leading to higher than expected TOC results. Sheens observed on the surface water may be indicative of petroleum contamination within the sediments, which may be responsible for increased TOC levels. The following sections discuss the TOC/TCO data, by location.

Unnamed Brook

Sediment samples at SD-013 were collected during June and September 1993. This location was resampled as SED-18 during 2004. TCO values collected during June and September 1993 were 34.3 and 19.7%, respectively, while the TOC value measured in the 2004 sample was 32.3%. Percent moisture values for these samples were similar, also, with values ranging between 66.1 to 77.9%. Grain size analyses, however, provided differing distributions of sediment grain sizes

between the 1993 and 2004 samples. The 1993 samples contained more silt and clay, often associated with higher TOC/TCO values, than the 2004 sample contained. This difference, however, may be attributable to field sampling or laboratory analysis techniques and does not appear to impact the TOC/TCO results. The elevated TOC/TCO results obtained at SED-18 and SD-013 relative to typical New England values may be due to the combination of high moisture content and the presence of a biological sheen which was noted on the field sampling sheets during 2004 (M&E, 2004), as well as a high silt/clay content.

Middlesex Canal

Sediment sample SED-11 was collected during 2004 in the vicinity of sediment sample SD-308, collected during June and September 1993. The TOC value measured for SED-11 was generally consistent with TCO values determined for the 1993 SD-308 sample. The percent moisture for SED-11 was somewhat higher than that for SD-308. However, the grain size analyses indicate much higher percentages of silt and clay for SD-308, than for SED-11. Overall, the TOC result obtained for SED-11 appears to be consistent with TCO results from sediments collected during 1993 at SD-308.

Content Brook

During 2004, sediment sample SED-01 was collected within the immediate vicinity of 1993 sediment sampling location SD-030. As shown on Table 5-4, TOC/TCO results for these samples are very similar, ranging between 24.8 to 28.3%. Percent moisture values are also consistent. Grain size analyses for these samples indicate, however, that the 2004 sample had lesser fractions of silt and clay than did the 1993 samples.

B&M Pond Area

Sediment sample SED-05 was collected during 2004 in the vicinity of historic location SD-304, sampled in 1993. The TOC result reported for SED-05 (27.7%) was lower than those reported for SD-304 from June and September 1993 (74.2% and 39.9%, respectively). Grain size analyses

also differed, with higher fractions of silt and clay being reported for SD-304 than for SED-05. Percent moisture values were generally consistent. The data indicate the sediment composition at these locations were variable, with lower organic content and higher sand/gravel content at SED-05 in 2004.

A field duplicate sediment sample was collected for SED-05 (which was named SED-25) and the TOC result (272% TOC) was an order of magnitude greater than the original sample result. A review of the laboratory data indicated that due to the high organic content of SED-25, a reduced sample mass of 0.4 mg was analyzed for the field duplicate, where as 3.4 mg-sample was analyzed for SED-05. The laboratory analysis was conducted in duplicate and the relative percent difference (a laboratory QC measure) for SED-05 and SED-25 were 11% and less than 1%, respectively, both within acceptable QC criteria. Although these sediment samples were field duplicates, the sample results demonstrate significant sample heterogeneity. The presence of sheens at this location may have enhanced the TOC result for the field duplicate analysis. Further, the very high percent moisture and significantly reduced sample aliquot would contribute to increased uncertainty surrounding the SED-25 TOC result. Due to the anomalous nature of this TOC result, SED-25 was not further considered for use in the risk characterization.

Round Pond

A reference sediment sample was collected in open water from Round Pond (SED-22). This sample was observed to consist of a high organic fraction with roots and leaves, with some silt and fine sand. A percent TOC value of 86.6% was reported for this sample. Although data from Round Pond was not collected during the 1993 sampling rounds, this value is significantly higher than the TOC values reported for all other 2004 samples, which may be due to a high organic matter fraction within the sample, consisting of roots and leaves, as noted on the field sampling sheets (M&E, 2005).

5.3 Food Chain Modeling – Heron

Estimates of exposures for wildlife were quantified for the selected wildlife receptor, the great

blue heron. Dietary exposure models were used to make estimates of dietary exposure to selected contaminants of concern. Doses were calculated by estimating the ingested dose using site-specific fish tissue data. Field methods, sampling locations, and analytical results for fish, are discussed in detail in the Data Evaluation Report (M&E, 2005) and tissue data are summarized in Tables 2-2 and 4-3.

5.3.1 Exposure Calculations and Assumptions

Fish samples were collected for tissue analysis in Content Brook, West Middlesex Canal, B&M Pond, Richardson Pond, and Round Pond (reference location). A summary of the fish tissue results is presented in Table 4-3. For the heron dietary exposure models, the maximum detected concentration among all of the four on-site sampling locations for each contaminant of concern was used. Unless a contaminant was detected in one or more of the fish tissue samples, it was not selected as a contaminant of concern.

Total contaminant doses for wildlife are typically calculated by summing doses via the ingestion of food, water, and sediment with the following equation:

$$Dose_{total} = + Dose_{food} + Dose_{sediment} + Dose_{water} \qquad \text{(Equation 1)}$$

where,

$Dose_{total}$ = total amount of COPC ingested per day (mg COPC/kg body weight [wet] - day)

$Dose_{food}$ = COPC ingested per day via food (mg COPC/kg body weight [wet]-day)

$Dose_{sediment}$ = COPC ingested per day via sediment (mg COPC/kg body weight [wet]-day)

$Dose_{water}$ = COPC ingested per day via water (mg COPC/kg body weight [wet]-day)

In addition to the ingestion of contaminants accumulated in food items, receptors also may be exposed to chemicals through the ingestion of surface water or sediment. Because the concentrations of contaminants of concern in surface water are low, the total potential dose from surface water exposure to contaminants of concern for the heron was assumed to be negligible. In addition, for great blue heron, the exposure from incidental sediment ingestion is also assumed

to be a minor component of the diet. Based on the foraging method of a piscivorus predatory bird, the exposure to sediment while catching fish is low. Using the assumptions that the contribution of sediment and water to total dietary dose is minimal, Equation 1 is simplified to:

$Dose_{total} = Dose_{food}$ (Equation 2)

For the heron model, the dose of each chemical that would be expected to be obtained from the ingestion of food (fish) was estimated using the following equation:

$Dose_{food} = FCR * P_{fish} * C_{fish} * ASUF * TSUF$ (Equation 3)

Where,

$Dose_{food}$ = COPC ingested per day via food (mg COPC/kg body weight [wet]-day);

FCR = food consumption rate (kg food [wet]/kg body weight [wet]-day);

P_{fish} = proportion of fish in diet (unitless)

C_{fish} = maximum COPC concentration in fish (mg COPC/kg fish [wet]);

ASUF = areal site use factor (unitless); and

TSUF = temporal site use factor (unitless).

The areal site use factor for the site is conservatively set at 1, which assumes that the site was the only foraging area for an individual. This is a worst-case scenario, and is a source of uncertainty in the model. In addition, the temporal site use factor of 1 was assumed, meaning that the modeled dose assumes the heron forages in this area daily, year-round. This also, is a worst-case assumption, and contributes to the uncertainty of the model. An oral bioavailability factor of 1 was assumed for each contaminant of concern evaluated in the ingestion pathway. The use of an oral bioavailability factor of 1, utilized to be conservative, assumes that 100% of the chemical ingested in the diet is bioavailable. In each of these cases, the assumptions contribute to a scenario of maximum exposure.

Exposure parameters, values, and supporting citations for the great blue heron model are provided in Table 1 of Appendix B. Heron exposures were calculated for all samples collected within suitable habitat throughout the site to compute a single site-wide scenario, since the foraging ranges of this species is relatively large. Total dietary exposure to contaminants for great blue heron are based on 100% fish. Data used in the reference models for heron included all fish data collected in Round Pond. The maximum concentrations among all fish tissue data collected were used for the reference heron model. Results of the food chain model are discussed in Section 6.3

SECTION 6.0
ECOLOGICAL EFFECTS ASSESSMENT

The results of the exposure analyses and evidence for existing and potential adverse effects on the receptor species are evaluated in the following sections. The relationship of stressor (contaminant of concern) levels and ecological effects are evaluated. Evidence for adverse effects on receptors based on toxicity studies are presented.

6.1 Aquatic Receptors

Surface water data indicate that aquatic receptors are potentially exposed to concentrations of aluminum, manganese, and barium above surface water benchmarks. No other surface water contaminants exceeded ecological effects benchmarks. Aquatic receptors potentially exposed to elevated dissolved metals include invertebrates, amphibians, and fish. To further evaluate the potential effects of contaminants of concern in surface water on invertebrates, surface water toxicity tests were performed on a daphnid (*Ceriodaphnia dubia*). To evaluate potential effects on fish populations, two endpoints were evaluated. Surface water toxicity tests were performed on the fathead minnow (*Pimephales promelas*) and the data collected for contaminant concentrations in fish tissue were compared to tissue residue benchmarks. These results are presented in Sections 6.1.1 and 6.1.2, respectively. No specific endpoint for amphibian receptors was evaluated. However, the results of the surface water toxicity tests are summarized and results are discussed with respect to toxicity to other sensitive species in Section 6.1.3.

6.1.1 Toxicity Testing Results

Three sets of assays for the daphnid, *C. dubia*, were performed and survival varied between 70% and 100% (Table 6-1). Laboratory controls met test acceptability criteria for both survival and reproduction endpoints for *C. dubia* assays. Laboratory control survival was 100% in each series. Reproduction in the laboratory controls ranged from 28.4 to 33.7 juveniles per female.

From statistical comparison with the laboratory control, Round Pond, the reference location, was

the only body of water where survival of *C. dubia* was significantly reduced. Since survival was lowest at the reference location, comparisons of survival at site locations to the reference data showed greater survival, and statistical comparisons to detect differences were not preformed (Table 6-1).

Reproduction, measured as the number of juveniles produced per female, ranged from 21.9 to 33.2 juveniles per female (Table 6-2). Reproduction was lower in samples from Richardson Pond and Round Pond, the reference location. However, comparison of reproduction data for *C. dubia* to Round Pond showed that reproduction in the site locations was not statistically different from that observed at Round Pond. The two surface water bodies having the lowest DO concentrations in the surface water were Richardson Pond and Round Pond with 1.35 and 0.90 mg/L DO, respectively.

Survival rates ranged from 57.5% to 100% in assays performed with minnows, *P. promelas* (Table 6-3). Survival in the sample from the West Middlesex Canal (57.5%) was statistically less than both the laboratory control and the reference pond. Growth, measured as mean dry weight, ranged from 0.346 to 0.534 mg/fish (Table 6-4). Growth was not significantly lower in any of the site samples when compared to the laboratory controls. However, minnow growth in water from Content Brook and Middlesex Canal was statistically less than Round Pond, the reference location.

Although statistical analyses have been preformed against both control and reference samples for the surface water toxicity tests, there is some uncertainty in these comparisons. As discussed in the Data Evaluation Report (M&E, 2005), due to holding time considerations, surface water samples were analyzed as they were received with each group of samples receiving its own laboratory control treatment. There is added uncertainty in the statistical results for the surface water toxicity tests when the comparisons to reference samples were calculated since these sample groups were run on different days using different laboratory controls. The laboratory data indicate that the control run with the reference pond (RF-01) showed higher growth rates during

the test than any other sample groups (Table 6-4). There was a significant reduction in survival of *P. promelas* (minnows) in water from the Middlesex Canal (MC-01) as compared to laboratory controls or the reference location (Table 6-3). There was reduction in growth at MC-01 and for Content Brook surface water (CB-01) which was only statistically significant when compared to the reference pond (not as compared to the corresponding laboratory control) (Table 6-4). There were higher growth rates in the control that was run in the same batch as the reference pond. It is not clear from the results if the difference observed (statistically significant) in growth from CB-01 and MC-01 as compared to reference is real, or an artifact of which samples were run on which days in the lab. Based on the uncertainty of these comparison between laboratory analysis groups, as well as the small reduction in growth observed (11% in Content Brook and 29% in Middlesex Canal), this endpoint is not interpreted as evidence of toxicity to minnows in either Middlesex Canal or Content Brook.

6.1.2 Fish Tissue Residue Comparison

Maximum and average concentrations of COPCs in fish tissue were compared to published toxicity reference values (TRVs) indicative of potential impairment for freshwater species in the families Ictaluridae, Cyprinidae, Esocidae, Percidae, and Centrarchidae (Tables 6-5 to 6-8 for the four on-site surface water bodies). If none for these warmwater species were available, TRVs from studies using Salmonidae were selected. Fish TRVs were selected from tissue benchmark concentrations obtained from the Environmental Residue-Effects Database (ERED) maintained by the U.S. Army Corps of Engineers (USACOE) and the USEPA (USACOE/USEPA, 2004). If available and appropriate, TRVs which were associated with chronic exposures (i.e., long duration exposures) and which reported no-observed-effects doses (NOEDs) relating to reproduction or mortality were selected. When a suitable NOED was unavailable, studies which reported lowest-observed-effects doses (LOEDs) were used. If both NOEDs or LOEDs were unavailable, then an LD_{50} value was selected, as was the case for 1-methylnaphthalene. In some cases, TRVs with endpoints relating to reproduction or mortality were not available in the literature. In these cases, TRVs associated with other effects (e.g., growth or behavior) were used and assumed to indirectly affect survival and/or reproductive capacity.

The ERED contained fish TRVs for six of the twelve PAHs and dibenzofuran: acenaphthene (3.5 mg/kg), dibenzofuran (8.1 mg/kg), fluoranthene (20 mg/kg), fluorene (8 mg/kg), 1-methylnaphthalene (2,920 mg/kg), phenanthrene (17 mg/kg), and pyrene (20 mg/kg). TRVs for anthracene, biphenyl, 2,6-dimethylnaphthalene, 1-methylphenanthrene, and 2,3,5-trimethylnaphthalene were not identified. A comparison of measured PAH concentrations in fish tissue to available TRVs shows that all maximum and average fish tissue PAH concentrations were below TRVs. Although PAH levels in tissue indicate higher exposures of bottom feeding fish such as bullheads in B&M Pond, the resulting fish tissue concentrations measured from these fish are below levels associated with effects.

The ERED contained fish TRVs for seven of the eleven metal COPCs: arsenic (0.52 mg/kg), chromium (3.8 mg/kg), copper (13 mg/kg), lead (16 mg/kg), silver (0.12 mg/kg), vanadium (9.6 mg/kg), and zinc (68 mg/kg). TRVs for aluminum, barium, cobalt and manganese were not available. A comparison of measured metal concentrations in fish tissue to available TRVs shows that all maximum and average concentrations of metals in fish tissue were below TRVs.

6.1.3 Summary of Ecological Effects on Aquatic Receptors

Based on the toxicity test results, there is no evidence of surface water toxicity to water column invertebrates. The toxicity tests for minnows showed lower survival in West Middlesex Canal water, and a small, but statistically significant reduction in growth compared to the field reference sample. As discussed in Section 6.1.1, the conclusion of reduced growth is uncertain.

Surface water samples were not analyzed for PAHs in 2004, primarily because PAHs were not identified in the 1997 BERA as COPCs in surface water. Also, due to the low solubility of PAHs in water, surface water is generally not the primary pathway for exposure of PAHs to fish. The surface water toxicity tests have high associated uncertainty due to the ephemeral nature of exposures. The lack of target COCs in the Middlesex Canal does not discount the toxicity data, however, the lack of correspondence to identified COCs indicates that metals are unlikely to

cause the toxicity.

Among the locations tested for surface water toxicity, there were no maximum surface water metal concentrations measured at MC-01 (West Middlesex Canal). The only surface water exceedances for metals in the West Middlesex Canal were for barium and manganese. The concentration of both of these contaminants of concern was higher in other samples that were tested for surface water toxicity (Figure 6-1) than they were in West Middlesex Canal samples. Aluminum was also selected as a surface water contaminant of concern because of a single exceedance of the NRWQC value in Content Brook (Figure 6-2). Aluminum concentrations in West Middlesex Canal surface water samples did not exceed the NRWQC and were comparable in concentration to reference samples. The reduced survival of minnows in West Middlesex Canal is not clearly related to any of the measured contaminants of concern in surface water. The reduced growth of minnows in West Middlesex Canal compared to reference is uncertain.

Fish tissue contaminant data were also analyzed to evaluate if the direct or indirect (food-chain) exposure to COPCs resulted in tissue concentrations that are above levels associated with adverse effects. Although concentrations of some LMW PAHs and metals are elevated in comparison to reference fish tissue concentrations, these COPC concentrations were below levels associated with adverse effects on fish. The data indicate that the tissue levels of all COPCs with available TRVs are below levels associated with adverse effects on fish.

A specific endpoint was not evaluated for amphibians. However, the data collected on-site indicates there is negligible risk to aquatic invertebrates and low risk to fish based on toxicity testing and fish tissue analyses. As discussed in Section 2.1.3, MNHESP, in a response to a request for information, indicated that blue-spotted salamander (*Ambystoma laterale*) habitat occurs in the vicinity of the site. The preferred habitat for blue-spotted salamander, a species of special concern in Massachusetts, is in relatively mature deciduous forests with vernal ponds. It spends its entire life underground except for a short breeding period. In spring, on warm rainy nights, the salamanders migrate above ground to ponds to breed. The only exposure route for

blue-spotted salamander to site-related contaminants in surface water would result from exposure to water in Content Brook or Content Brook wetlands. These areas are not preferred habitat, since Content Brook supports a fish population that could prey on salamander eggs. Surface water from Content Brook water would not influence the water quality of vernal pool habitat on or adjacent to the site, as the vernal pools are temporary and hydrologically isolated. Therefore, there is no complete exposure route for the blue-spotted salamander, if it were to be present in the vicinity of the site.

Based on the low probability of suitable habitat for blue-spotted salamander on-site in any area affected by site-related contaminants in surface water and the lack of evidence for risk to other sensitive receptors, the risk to blue-spotted salamander from exposure to contaminants of concern in the Content Brook area of the site is negligible.

6.2 Benthic Invertebrates

Sediment analytical data indicate that benthic invertebrate receptors are potentially exposed to contaminants of concern at concentrations above effects-based benchmarks at each of the four on-site sample locations (West Middlesex Canal, Unnamed Brook, B&M Pond, and Content Brook) selected for full characterization. In addition, elevated Microtox® toxicity was observed in sediments from West Middlesex Canal, Content Brook, and B&M Pond. The highest contaminant concentrations included, PAHs (particularly at SED-05), 4,4'-DDD at SED-05, PCBs at SED-05, and metals at several locations at the site. Figures 6-3 through 6-6 show contaminant concentrations in sediment and benchmark values. To further evaluate the potential effects of contaminants of concern in sediment on benthic invertebrates, 10-day laboratory sediment toxicity tests were performed on two species, the midge, *Chironomus tentans* and an amphipod, *Hyalella azteca* (Figure 6-7). These results are compared to Microtox® toxicity results in the following section.

6.2.1 Toxicity Testing Results

In ten-day toxicity tests, average survival of the midge larvae, *C. tentans*, in the sediment from the

reference location (Round Pond) was 77.5%, with a range of 70 to 100% in on-site sediment samples (Table 6-9). The highest chironomid growth was observed at SED-01 (Content Brook), which exceeded growth in both the reference (SED-22) and lab control (Table 6-10). Both survival and growth of individuals in the reference sediment from Round Pond were not statistically different from the laboratory control. The survival of midge larvae in the sediment sample collected from the West Middlesex Canal (SED-11, 71.3%) was significantly lower than the laboratory control, but not when compared to the reference location sediment (Table 6-9). Growth of *C. tentans* was statistically lower in sediment collected from B&M Pond (SED-05), West Middlesex Canal (SED-11), and the Unnamed Brook (SED-18) than both the laboratory control and reference location sediment (Table 6-10, Figure 6-7)).

The mean 10-day survival of amphipods, *H. azteca*, observed in the reference sediment was 92.5%, which was statistically less than the 100% survival in the laboratory control (Table 6-11). However, growth was not statistically lower in the reference sample as compared to the laboratory control sample (Table 6-12). Survival of amphipods maintained in sediment samples from Content Brook (SED-01), B&M Pond (SED-05), and West Middlesex Canal (SED-11), ranging from 87.5% to 92.5%, were statistically lower than the laboratory control (100%), but did not show a statistically significant decrease compared to the reference sample (Round Pond, 92.5%). The survival of amphipods on sediment from the Unnamed Brook (SED-18) was 7.5% and statistically lower than both the reference and control samples. Growth data of amphipods in sediment from the four site locations were not statistically lower than the laboratory control or the reference location. The results of all of the toxicity tests are summarized, in comparison to the reference sample (Round Pond, SED-22), in Figure 6-7.

Microtox® solid phase assay results were also reported for the four locations where the invertebrate bioassays were conducted. Among the toxicity testing locations, SED-05 (B&M Pond) displayed the highest toxicity based on the Microtox® response, with SED-11 (West Middlesex Canal) and SED-01 (Content Brook) displaying lower toxicity (Table 2-4 and Figure 2-7). The lowest percent effects were observed from samples from the Unnamed

Brook (SED-18).

6.2.2 Summary of Ecological Effects on Benthic Invertebrates

The most significant response among the toxicity tests was a low (8%) survival of *H. azteca* at SED-18. The 10-day tests also showed the lowest growth of *C. tentans* at SED-18.

None of the other test results for sediment toxicity to *H. azteca* were statistically different from the reference location. For the midge, *C. tentans*, there was statistically lower growth at three locations, B&M Pond (SED-05), West Middlesex Canal (SED-11), and the Unnamed Brook (SED-18). No reduction in survival or growth of either organism was observed for Content Brook sediments, however, sediment toxicity at Content Brook was observed in the Microtox® assay. Sediment concentrations of contaminants of concern were below PECs for the reference location, Round Pond (Table 5-3). Sediment concentrations of contaminants of concern were also below PEC values in Content Brook sediments with the exception of arsenic (360 mg/kg). The corresponding invertebrate toxicity testing showed no significant effects in these locations. However, the Microtox® results documented sediment toxicity from exposure to sediment from Content Brook.

6.3 Food Chain Modeling – Heron

The potential for effects on great blue heron feeding in the site was estimated using food-chain modeling. The dose of each chemical that would be expected to be obtained from the ingestion of food (fish) was estimated using the Equation 3 presented in Section 5.3.1 and exposure assumptions presented in Appendix C. Contaminant daily dose estimates were compared to TRVs to evaluate the effect of exposure on indicator species. This comparison was quantified as follows:

$$\text{Hazard Quotient (HQ)} = \frac{\text{Modeled Total Dose}}{\text{TRV}} \qquad \text{(Equation 4)}$$

where,

Modeled Total Dose = dose of contaminant calculated from food chain model (mg/kg-bw-day)
TRV = Toxicity Reference Value (mg/kg-bw-day)

An HQ less than 1 indicates harm is unlikely, while an HQ greater than 1 suggests that a contaminant is present at a concentration which may affect the survival or reproductive capacity of an exposed individual.

6.3.1 Toxicity Reference Values

Mammalian and avian TRVs for contaminants of concern were obtained from the literature (Table 6-13). If available and appropriate, TRVs were selected which were associated with chronic exposures (i.e., long duration exposures) and no adverse effects (NOAELs - no-observed-adverse-effect levels), relating to reproduction or mortality. For this ERA/WRIA, it is assumed that TRVs representing sub-lethal and non-reproductive endpoints, may indirectly affect the survival or reproduction of the exposed individual, potentially leading to a reduction in site populations.

With the exception of silver, the TRVs for all of the metals were based on studies form other avian species. A limited number of TRVs for SVOCs based on other avian species were available for heron. Several of the avian TRVs for PAHs were taken from studies with mammalian species, although the LWM PAHs were evaluated together using a TRV for mallard. The mallard TRV was based on a LOAEL for hepatic function and was adjusted by a factor of 10 to convert this value to a NOAEL. It is sometimes recommended that the TRV be adjusted by a factor of 10 to account for inter-species extrapolations (Sample *et al.*, 1997). However, if the relative sensitivity of the two species is not known, this factor can add a large uncertainty, without much scientific basis. For this ERA/WRIA, no adjustment factor was applied for interspecies extrapolations. The uncertainty associated with TRVs is further discussed in Section 7.4.

In some cases, TRVs with endpoints relating to reproduction or mortality were not available in the literature. TRVs associated with other effects (systemic, hematological, carcinogenic,

neurological, hepatic) are assumed to indirectly affect survival and/or reproductive capacity. Consistent with equations in Sample *et al.* (1996), no body scaling factors were used for avian species.

6.3.2 Hazard Calculations

The maximum contaminant daily dose estimates were compared to TRVs to evaluate the effect of exposure on indicator species using the hazard quotient method (Equation 4). HQs for the great blue heron are based on maximum doses, using the maximum concentration in fish tissue to estimate daily dose. Tables 6-14 and 6-15 present the HQs for the site-wide and reference data sets, respectively.

The models evaluated the ecological effects of dietary exposure of great blue heron site-wide to metals and PAHs (including biphenyl) detected in fish tissue. None of the HQs exceeded 1 for the site-wide dietary exposures from fish to any of the metals or PAHs. Among the metals, all estimated doses were well below the reference toxicity values for avian species.

A TRV for LWM PAHs (acenaphthene, anthracene, fluorene, naphthalene, and phenanthrene) was compared to the daily dose for these PAHs found in fish tissue. This TRV is based on a study of mallards where the ducks were fed diets with 4,000 mg/kg of LMW PAHs for a period of 7 months. There were no visible signs of toxicity, but liver weight in the birds increased by 25% (Patton and Dieter, 1980). The total daily dose based on site-specific fish tissue data was several orders of magnitude less than the TRVs for LMW PAHs based on the mallard study.

Using maximum exposure concentrations and NOAEL TRVs, all HQs for heron were less than one. The observed HQs were similar to those calculated for reference locations. The highest HQ for the reference model was 0.4 for zinc, which was similar to the HQ calculated for zinc at the site (HQ = 0.5). The two other metals with site-wide HQ values greater than 0.1 were for lead (HQ = 0.4) and chromium (HQ = 0.5). A sum of the HQs for the metal COPCs would result in a Hazard Index (HI) of 1 on-site and 0.5 for the reference model. These results indicate dietary

exposure of great blue heron to concentrations of COPCs in fish collected on-site are below levels expected to cause ecological effects.

SECTION 7.0
RISK CHARACTERIZATION

Risk characterization includes three major components: risk estimation, risk description, and uncertainty analysis. Risk estimation consists of integrating the exposure profiles with the effects information to clarify the relationships between the contaminant concentrations and the potential ecological effects and evaluating associated uncertainties. Risk description provides information important for interpreting the risk results and identifies a threshold for adverse effects on the assessment endpoint. The risk is evaluated in the context of the significance of any adverse effects and the lines of evidence supporting their likelihood. The uncertainty analysis discusses potential sources of error, and the relative certainty associated with estimates of risk.

7.1 Selection of Risk Characterization Methodology

The primary objective of the ERA/WRIA is to support selection of a well-supported remedy to control ecological risks to the environment. The 1997 BERA identified potential risk to ecological receptors from exposure to COPCs in sediment and surface water, and through the aquatic food chain to semi-aquatic predatory birds. To further evaluate risks identified in the 1997 BERA, the ERA/WRIA was designed to address the following:

- Risks to aquatic receptors directly exposed to target metals in surface water in the Middlesex Canal, Richardson Pond, B&M Pond, and Content Brook;

- Risks to benthic invertebrates directly exposed to 4,4'-DDD, PCBs, PAHs, and target metals in sediment within the on-site aquatic habitats (Unnamed Brook, West Middlesex Canal, B&M Pond, and Content Brook); and

- Risks to predatory birds (e.g., heron) indirectly exposed to PAHs and target metals in biota within the Middlesex Canal, Richardson Pond, B&M Pond, and Content Brook.

The results of the analyses presented in the ERA/WRIA are used in Section 7.2 to develop an estimate of the risk posed to the receptors included in the assessment endpoints identified in Section 3.3.

The strategy of the ERA/WRIA was to focus on selected receptor species and conduct supplemental toxicity testing at a limited number of locations associated with the highest potential toxicity and/or contaminant concentrations within the major surface water/wetland habitats at the site. Based on this sampling strategy, if the sampling locations representing the highest potential toxicity and/or contaminant concentrations at the site were not associated with toxicity or ecological effects, then the conclusion could be made that there are no unacceptable ecological effects to the selected receptor across the site. By basing the selection of the sediment and surface water sampling locations on the 1993 data and field screening the sediment toxicity testing locations to select those locations representing the highest toxicity and/or contaminant concentrations for the COPCs, the ERA/WRIA strategy would allow the limited toxicity testing data to be used to draw the conclusion of no significant ecological risk toxicity if toxicity at the selected locations (representing the highest toxicity and/or exposures site-wide) is below effects levels.

In the case of the benthic invertebrates, toxicity was found at the contaminant concentrations observed in the selected sampling locations. The results for each of the test organisms are evaluated to determine if the individual toxicity tests illustrate a dose (contaminant concentration) - response (survival or growth) relationship. With the limited number of toxicity test samples, these relationships were not detected (see Section 7.3). Therefore, in Section 7.3, no-observed-effects concentrations (NOECs) were calculated for each sediment contaminant of concern. The contaminants of concern detected above NOEC values, assumed to potentially contribute to observed toxicity in the sediment samples, are further evaluated using HQs in Section 7.3.

7.2 Risk Estimation

Risk estimation consists of integrating the exposure profiles with the effects information to clarify the relationships between the contaminant concentrations and the potential ecological effects. This section reviews the contaminant concentrations and compares these to evidence for ecological effects, which includes exceedances of effects-based benchmarks, results of site-specific toxicity tests, or results of food chain modeling (Tables 7-1 through 7-3). Based on the results of the effects data for each receptor and exposure area, a risk level was identified (Table 7-4). These risk levels are defined as follows and are discussed for each endpoint in the following sections:

Negligible Risk: No evidence of toxicity to receptors from exposure to contaminants of concern.

1. No toxicity as compared to reference locations in toxicity tests.
2. No HQs greater than 1 in food chain modeling (HQs based on NOAEL TRVs and maximum exposure concentrations).
3. No HQs greater than 1 for fish tissue (HQs based on maximum tissue concentrations and NOED).

Low Risk:

1. One toxicity testing endpoint showing significant reduction in growth, reproduction, or survival as compared to reference samples.
2. Minor exceedances of HQ values in food chain modeling using NOAEL TRVs and maximum exposure concentrations (HQs based on LOAEL TRVs and maximum exposure concentrations < 1).
3. Minor exceedances of HQ values in fish tissue using maximum tissue concentrations and NOED (HQs based on maximum tissue concentration and LOED < 1).

Moderate Risk:

1. More than one toxicity testing endpoint showing significant reduction in growth, reproduction, or survival as compared to reference samples.
2. Exceedances of HQ values in food chain modeling (HQs based on LOAEL TRVs and average exposure concentrations > 1).

3. Exceedances of HQ values in fish tissue (HQs based on average tissue concentration and LOED).

High Risk:

1. A majority of the toxicity testing endpoints showing significant reduction in growth, reproduction, or survival as compared to reference samples.
2. Exceedances of HQ values in food chain modeling (HQs > 10 based on LOAEL TRVs and average exposure concentrations).
3. Exceedances of HQ values in fish tissue (HQs > 10 based on average tissue concentration and LOED).

7.2.1 Surface Water

The risk to aquatic life included the evaluation of two receptor communities exposed to surface water at the site. These receptor communities included warm water fish and aquatic invertebrates. A summary of the risk endpoints is provided in Table 7-1.

7.2.1.1 Aquatic Invertebrate Community. The assessment endpoint for the aquatic invertebrate community (zooplankton) exposed to surface water contaminants was:

Sustainability (survival, growth, reproduction) of local populations of aquatic invertebrates.

Exposure data indicated that three metals (aluminum, barium, and manganese) exceeded screening criteria (Table 4-1). The maximum detected concentrations of both barium and manganese were above the Tier II screening values in all 12 of the samples collected. The highest observed concentrations of both manganese and barium were measured in surface water from Content Brook wetland (SW-CB-03). The only exceedance of the NRWQC for total aluminum was in one (SW-CB-02) of three samples from Content Brook.

These data indicate that aquatic receptors are potentially exposed to concentrations of metals, particularly manganese and barium, above surface water benchmarks. However, the data from

studies of barium and manganese have not indicated either to normally be toxic to freshwater aquatic life. Normal concentrations of manganese in freshwater are below levels likely to cause toxicity (USEPA, 1986a). Experimental data for dissolved barium indicates that concentrations above 50 ug/L would cause toxicity, which is above the maximum concentration observed on-site (USEPA, 1986a). Toxicity of metals in surface water were further evaluated in laboratory toxicity testing, and are discussed below.

To evaluate the potential toxicity of exposure to metals in surface water, 10-day toxicity tests were performed with the freshwater invertebrate, *C. dubia* (Table 7-1). As discussed in Section 6.1, toxicity tests showed no significant reduction in either survival or reproduction as compared to the reference pond (Round Pond). Reproduction was lower in samples from Round Pond, the reference location, than the laboratory control samples. However, comparison of on-site reproduction data for *C. dubia* against Round Pond showed that reproduction in the other site locations was not statistically different from that observed at Round Pond.

These data indicate that the exposure to metals in surface water above benchmarks do not result in toxicity to water column invertebrates. Risk to aquatic invertebrates from exposure to metals in surface water is negligible.

7.2.1.2 Warmwater Fish Populations.

The assessment endpoint for the warm water fish was:

Sustainability (survival, growth, reproduction) of local populations of warm water fish.

As summarized above, exposure data indicated that barium and manganese exceeded the Tier II screening criteria in surface water. The only exceedance of the NRWQC for total aluminum was in one of three samples from Content Brook. There were no exceedances of NRWQCs by dissolved metals.

To evaluate the potential toxicity of exposure to metals in surface water to fish, two lines of evidences were evaluated: laboratory toxicity tests exposing minnows (*P. promelas*) to surface water collected from the site and analysis of fish tissue collected from the site (Table 7-1).

To evaluate the potential toxicity of exposure to metals in surface water, 10-day toxicity tests were performed with the minnow, *P. promelas.* As summarized in Section 6.1, the toxicity tests for minnows showed lower survival in West Middlesex Canal water than the laboratory control water and the reference site (Round Pond) water. Although the growth of minnows at both West Middlesex Canal and Content Brook were significantly less than the reference site (Round Pond), there is uncertainty associated with these endpoints (Section 6.1.1). In the growth tests, there was no significant difference as compared to growth in the laboratory controls, which were run in the same analytical group. Due to the uncertainty associated with these comparisons, this endpoint is not interpreted as evidence of toxicity to minnows in either Middlesex Canal or Content Brook (Table 7-1).

Among the locations tested for surface water toxicity, there were no maximum surface water metal concentrations measured at SW-MC-01 (West Middlesex Canal). The only surface water exceedances for metals in the West Middlesex Canal were for barium and manganese. The concentrations of both of these contaminants of concern were higher in other samples tested for surface water toxicity than in West Middlesex Canal samples. The reduced survival relative to the reference location at West Middlesex Canal is not clearly related to any of the measured contaminants of concern in surface water. This result represents a low, but uncertain risk to minnows based on the toxicity testing endpoint from exposure to surface water in the West Middlesex Canal.

The maximum observed total aluminum concentration site-wide occurred in one of the Content Brook samples (SW-CB-02), and exceeded the NRWQC. The samples for the toxicity test were co-located with the analytical sample collected at SW-CB-01. The low risk to minnows in the toxicity testing is consistent with the low contaminant concentrations in surface water in

Content Brook.

In addition to the minnow toxicity tests, fish tissue data, collected for the primary purpose of supporting the evaluation of the heron modeling, were also used to evaluate potential effects from exposures to site contaminants of concern. Fish tissue analyses integrate exposures of fish to contaminants in the environment. Although discussed here under surface water exposure, exposure of fish to environmental contaminants also includes exposures from incidental sediment ingestion for fish that forage for benthic invertebrates, and food chain exposures from ingestion of aquatic plants or animal life.

Evaluation of fish tissue analytical data in Section 5.1.2 indicated that exposures to PAHs and metals by fish inhabiting the site were greater than exposures concentrations in Round Pond, resulting in lower tissue concentrations within reference fish. Comparison of measured PAH and metal concentrations in fish tissue to available TRVs shows that all maximum and average concentrations of COPCs detected in fish tissue were below TRVs. Although the exposure of fish to some contaminants, particularly PAHs in B&M Pond, may be high, the comparison to TRVs associated with effects indicates negligible risk to fish.

Using the definitions of risk categories defined in Section 7.2, Table 7-1 summarized the risks at the four surface water locations. Based on the these criteria, the risks to aquatic receptors exposed to surface water contaminants of concern are negligible (no evidence of risk) in Richardson Pond, Content Brook, and B&M Pond and low in West Middlesex Canal (Table 7-4). The low risk to minnows based on the toxicity testing endpoint from the exposure to surface water in the West Middlesex Canal is not clearly related to any of the measured contaminants in surface water, and does not correspond to any exceedances of NRWQCs.

7.2.2 Sediments

Benthic Invertebrate Community. The assessment endpoint for the benthic invertebrate community was:

Sustainability (survival, growth, reproduction) of local populations of benthic invertebrates.

The sediment data indicate exposure to sediment contaminant concentrations at levels potentially causing adverse effects for PAHs (particularly at SED-05), 4,4'-DDD at SED-05, PCBs at SED-05, and for metals at several site locations. Arsenic, chromium, copper, lead, and zinc exceeded PEC concentrations in sediment from B&M Pond (SED-05). Arsenic, copper, and lead were above PEC concentrations at SED-18 (Unnamed Brook). These data indicate that benthic invertebrates are potentially exposed to concentrations of contaminants at some site locations at levels that have been associated with effects in other studies.

To evaluate the potential toxicity of exposure to COPCs in sediments, 10-day toxicity tests were performed with the midge, *C. tentans*, and the amphipod, *H. azteca*. As summarized in Section 6.2, the toxicity tests for *C. tentans* showed survival was not significantly lower on sediments from West Middlesex Canal, B&M Pond, Content Brook, or Unnamed Brook, as compared to the reference sediment (Round Pond). *C. tentans* survival at the sediment sample collected from the West Middlesex Canal (SED-11, 71.3%) was significantly lower than the laboratory control, but not when compared to the reference location sediment. For the midge, *C. tentans*, there was statistically lower growth at three locations, B&M Pond (SED-05), West Middlesex Canal (SED-11), and the Unnamed Brook (SED-18).

The greatest response associated with the *H. azteca* survival and growth toxicity test was a very low (8%) survival of *H. azteca* at SED-18. None of the other test results for sediment toxicity to *H. azteca* was statistically different from the reference location.

No reduction in survival or growth of either organism was observed for Content Brook sediments. Concentrations of contaminants of concern were below effects levels for the invertebrate toxicity tests in Content Brook sediments, as well as at the reference location, Round Pond. There was, however, moderate toxicity in the Microtox® tests at SED-01 (Content

Brook), indicating a potential effect on bacterial growth that did not correspond to toxicity in the invertebrate assays.

Although SED-18 (Unnamed Brook) showed the greatest sediment toxicity in the laboratory toxicity test, it did not have the highest concentration of any of the measured contaminant of concern concentrations. SED-18 also showed negligible toxicity in the Microtox® screening test. Among the contaminants of concern, arsenic, copper, and lead concentrations were above PECs at SED-18, however, higher concentrations of each metal were measured at SED-05, which had lower sediment toxicity in the invertebrate bioassays. PAH concentrations were elevated at SED-18 compared to the other site samples, with the exception of SED-05 (B&M Pond). These results do not clearly identify an individual contaminant that is likely associated with the toxicity in these sediments. The relationship of the contaminants of concern to toxicity endpoints is further discussed in Section 7.3.

Using the definitions of risk categories defined in Section 7.2, Table 7-2 summarizes the risk at the four sediment locations. Based on these criteria, the risks to benthic invertebrates exposed to sediment contaminants of concern are negligible (no evidence of risk) at Content Brook, low in B&M Pond and West Middlesex Canal, and moderate in the Unnamed Brook (Table 7-4).

7.2.3 Food Chain

The assessment endpoint for the great blue heron was:

Sustainability (survival, growth, reproduction) of local populations of piscivorus birds.

Food chain modeling of dietary exposure was used to evaluate risks to piscivorus birds (e.g., great blue heron) indirectly exposed to PAHs and target metals in biota within the Middlesex Canal, Richardson Pond, B&M Pond, and Content Brook via ingestion of fish. All of the PAHs and metals detected in fish tissue were selected as contaminants of concern and used in modeling of heron dietary exposure (Table 6-14).

Using maximum exposure concentrations and NOAEL TRVs, all HQs for heron were less than one (Table 7-3). These results indicate dietary exposure of great blue heron to concentrations of contaminants in fish collected at the site are below levels expected to cause ecological effects, and the risk to piscivorus birds, even feeding exclusively at the site, would be negligible (Table 7-4).

7.3 Risk Description

Risk description provides information important for interpreting the risk results and identifies a threshold for adverse effects on the assessment endpoint. As presented in Section 7.2, negligible risks to aquatic receptors from exposure to surface water contaminants of concern were identified for the majority of the site, with a low risk in West Middlesex Canal. Risks to aquatic invertebrates from exposure to metals in West Middlesex Canal water were determined to be negligible in toxicity tests. The low risk in West Middlesex Canal is based on toxicity tests with minnows, the results of which were not clearly related to any of the measured contaminants of concern in surface water, and do not correspond to any exceedances of NRWQCs.

The risk to piscivorus birds, such as great blue heron, feeding at the site was also determined to be negligible. Based on the results for aquatic receptors and food chain effects, this section focuses on interpreting risk results and identifying thresholds for adverse effects for sediments.

7.3.1 Calculations of Apparent Effects Thresholds in Sediments

A summary of the sediment contaminant of concern concentrations from the locations evaluated with sediment toxicity testing is provided in Table 7-5. The risks to benthic invertebrates exposed to sediment contaminants of concern are negligible (no evidence of risk) at Content Brook and the reference location, Round Pond. Risks to benthic invertebrates, based on the toxicity testing endpoints were low for West Middlesex Canal and B&M Pond, and moderate in the Unnamed Brook.

The highest contaminant concentrations in B&M Pond sediments did not result in the highest

toxicity, as measured in the invertebrate toxicity tests. Evaluation of the sediment chemistry data indicates there is no clear dose-response relationship to any contaminant or group of contaminants measured in the sediment. The characteristics of the sediment, including factors such as the acid volatile sulfide (AVS) content and TOC content, can have important influence on the availability and toxicity of COPCs. However, AVS data are not available for the sediments, and the TOC data are limited. Expressing total PAH concentrations as a fraction of the TOC present can be useful to define the association of toxicity to PAH concentrations, accounting for the effect that higher TOC has in reducing the effective toxicity of the PAHs bound in an organic matrix. However, for the present study, the reported TOC values have a high associated uncertainty due to the low percent solid concentrations of the samples. In addition, there was very little difference in the reported TOC concentrations in the sediments of interest. B&M Pond with high PAH concentrations and low toxicity had a reported TOC of 27%, whereas, the Unnamed Brook with lower PAH concentrations and higher toxicity had a similar TOC of 32%. This indicates that the TOC concentration does little to explain the relative toxicity in these two sediment samples.

To further define the potential contribution of the contaminants present to sediment toxicity results, a type of apparent effects threshold (AET) approach was utilized. The AET approach is an empirical data evaluation approach to identify concentrations of chemicals in sediments that are associated with adverse effects (Barrick *et al.*, 1988; USEPA, 1992b). The basic concept of the AET approach is to match sediment chemistry field data to observable biological effects (e.g., toxicity test results). A suspected contaminated sample is statistically compared to a reference sample to determine if significant differences exist for each target biological indicator or endpoint. Using this approach, the AET value for a given chemical is the sediment concentration above which a particular adverse effect has been found to be statistically significant relative to the reference conditions. The AET values then are used as predictors of adverse effects where only sediment chemistry data are available. The AET approach is useful in screening out samples where there is low likelihood of associated effects.

The AET approach is generally used when a large data set is available. For the current data set,

the AET concept is applied to a limited number of samples of paired chemistry and toxicity data. For the paired sediment chemistry and toxicity data from the four site surface water bodies and the one reference pond, a no-observed-effects concentration (NOEC) was defined to identify samples and contaminants that are unlikely to have associated biological effects, based on the toxicity testing results. These are used to screen out contaminants in the sediments samples from some of the site areas.

The selection of a NOEC is based on the assumption that, for a given sediment sample, if no toxic effects were detected in the toxicity tests, similar concentrations of the same contaminants would not be likely to result in adverse effects in other sediment samples. Uncertainty associated with this assumption is further discussed in Section 7.4.

The selection of a NOEC is based on identifying sediments with no toxic effects to the test organisms. Based on the toxicity test results, Content Brook was determined to show no statistically significant difference in survival or growth for either test organism based on comparisons to the field reference. Using Content Brook and Round Pond (reference) as samples with no adverse effects, the NOEC for each contaminant is defined as the higher of the two sediment concentrations measured in sediment from these samples, or the higher of the two detection limits for non-detected contaminants of concern (Table 7-5).

All of the NOECs for metals are based on sediment concentrations measured in Content Brook (SED-01). The total PAH concentration from Content Brook of 1,932 ug/kg is also based on PAH concentrations in Content Brook. The NOECs for 4,4'-DDD (14.5 ug/kg), Aroclor-1260 (13.7 ug/kg), and total PCBs (28 ug/kg) are based on sediment concentrations from Round Pond, which were associated with no adverse effects in the toxicity tests. In comparison to PECs (MacDonald *et al.*, 2000), the majority of the site-specific NOECs are low, as they are less than the corresponding PECs (Table 7-5). Aroclor-1242 or Aroclor-1254 concentrations were below detection limits at both Round Pond and Content Brook; the NOECs for these COPCs were estimated as the higher of the two detection limits (Table 7-5).

The analytical data for 4,4'-DDD at SED-11 was rejected during data validation, due to interference in the sample resulting in dual column precision nonconformance. The rejected value, recorded by the laboratory, was 3.1 ug/kg. Since the result was rejected primarily because it may represent a false positive, it is reasonable to use the rejected value as an estimated possible maximum concentration for 4,4'-DDD in this sample.

Using the site-specific NOECs, three of the metal COPCs can be eliminated as contributors to the observed toxicity in any of the site sediment samples. Arsenic, barium, and manganese concentrations were all lower than the NOEC at the three sediment sampling locations (B&M Pond, Unnamed Brook, and West Middlesex Canal) that showed some potential toxicity (Table 7-5).

In addition, the concentrations of all of the metal contaminants of concern in West Middlesex Canal were less than NOECs, as was the total PAH concentration. The estimated value for 4,4'-DDD and the sample-specific detection limits for Aroclor-1260 and Aroclor-1254 were at or below NOECs in West Middlesex Canal. Total PCBs were also less than the NOEC. The only contaminant with a value above the estimated NOEC was for Aroclor-1242 in West Middlesex Canal. Based on this evaluation, the majority of the COPCs in the West Middlesex Canal can be screened out from contributing to the observed toxicity in this sediment sample.

The contaminants of concern detected above NOEC values, assumed to potentially contribute to observed toxicity in the sediment samples, are further evaluated using HQs in Table 7-6. The HQ is the ratio of the measured sediment contaminant concentration to a TRV, which is potentially associated with effects on benthic invertebrates. A HQ less than 1 indicates harm is unlikely, while a HQ greater than 1 suggests that a COPC is present at a concentration which may affect the survival, growth, or reproductive capacity of exposed benthic organisms. TRVs in sediment were selected based on PEC values (MacDonald *et al.*, 2000). The PEC value is a consensus-based sediment quality guideline, based on literature values from field studies, above which adverse effects are expected to occur more often than not. These values are not site-specific.

No PEC values were available for Aroclor-1242, Aroclor-1254, Aroclor-1260 or vanadium, so site-specific NOEC values were conservatively used as TRVs for these contaminants to calculate the HQs.

The comparison of the TRV to sediment concentrations shows higher HQs for B&M Pond than HQs for the Unnamed Brook. Metal HQs for B&M Pond ranged from 2 (vanadium) to 8 (zinc). HQs for total PAHs, 4,4'-DDD and total PCBs ranged from 3 (4,4'-DDD) to 7 (total PCBs). The TRVs for the Aroclors were not based on PECs, but on NOEC values derived from site data, resulting in higher HQs. For the Unnamed Brook, the HQ analysis indicates HQs for copper, lead, and vanadium of 1 to 3. However, based on a total PCB HQ of less than one, there is no strong evidence that the observed concentration of Aroclor-1254 or Aroclor-1260 are likely to contribute to the observed toxicity in the sediment samples. Similarly, in West Middlesex Canal, the HQ for Aroclor-1242 was greater than 1. There is low confidence in this HQ estimate since the TRV is based on the detection limit. In addition, like the Unnamed Brook, the total PCB HQ was less than one. Consequently, there is no strong evidence that the observed concentration of Aroclor-1242 is likely to contribute to the observed toxicity in the sediment sample. Overall, the data from West Middlesex Canal indicate that the low toxicity observed in the sediment is not clearly related to a single contaminant.

The lack of contaminants in West Middlesex Canal at concentrations that are likely to cause toxicity is consistent with the observed toxicity testing results which indicated low risk to benthic invertebrates. The HQs at B&M Pond ranging from 2 to 408, indicate a mix of contaminants that could contribute to the observed toxicity, including PAHs, 4,4'-DDD, PCBs, and/or several metals (chromium, copper, lead, vanadium, and zinc). The relatively high Microtox® toxicity at SED-05 in B&M Pond is consistent with these results. In particular, the highest observed sediment copper concentration was measured at SED-05. Microtox® assays are relatively sensitive to copper concentrations, and the Microtox® result for SED-05 may reflect metals toxicity in the sediment.

The highest observed toxicity among the samples evaluated for invertebrate sediment toxicity was at Unnamed Brook (SED-18). Based on the HQ evaluation, the contaminants of concern most likely contributing to the toxicity observed at SED-18 (Table 7-2) are lead, vanadium, and/or copper. However, the Microtox® results show very low toxicity to microbial activity for this location.

Lead and copper concentrations within sediments from B&M Pond (low risk) were 2 to 3 times higher than levels measured in sediments from the Unnamed Brook (moderate risk). It is unknown if this observation is an artifact of the sensitivity and variability of the toxicity testing results, or if it is a reflection of lower toxicity due to differences between the sediment sample matrices. A number of factors can influence the relative toxicity of metals (see uncertainty discussion, Section 7.4). Differences in the biogeochemistry of the sediment samples frequently result in difference in ecotoxicity between the same level of metals in two different sediment samples. Many characteristics of the sediments can contribute to differences in the availability and toxicity of metals, including the presence of other metals, the amount of organic carbon present, or differences in sediment characteristics including pH, redox conditions, or physical structure of the sediments. Data are unavailable to reliably determine the cause of the differences in response in the toxicity tests to the contaminants of concern present in the sediments.

7.3.2 Recommendations for Risk-Based Clean-up Concentrations

One goal of the ERA/WRIA was to propose risk-based Preliminary Remediation Goals (PRGs), if possible, based on the results of the additional sampling and conclusions of the risk characterization. Based on the results of the risk characterization, no significant ecological risks were observed for aquatic invertebrates or fish from direct exposure to dissolved metals in surface water. The results of the site-specific toxicity testing have demonstrated that the levels of metals identified in the 1997 BERA as surface water COPCs are not likely associated with adverse effects on aquatic life. Therefore, the development of PRGs for surface water is not necessary.

The ERA/WRIA also determined that dietary exposure of great blue heron to concentrations of

COPCs in fish collected at the site are below levels expected to cause ecological effects. The risk to piscivorus birds feeding at the site would be negligible. Therefore, development of PRGs associated with risks to predatory birds exposed to COPCs through dietary uptake is also not necessary.

The only medium for which PRGs are necessary is sediment. The areas for which potential risks to benthic invertebrates from exposure to sediment contaminants were identified were B&M Pond, West Middlesex Canal, and the Unnamed Brook. The contaminants of concern identified that may contribute the observed sediment toxicity for B&M Pond and the Unnamed Brook are listed in Table 7-7. The site-specific data available for the development of PRGs in sediments are limited. All eight contaminants of concern were identified as potentially contributing to toxicity in B&M Pond, whereas only copper, lead, and vanadium were identified as potentially contributing to the toxicity at the Unnamed Brook. As discussed above, the data from West Middlesex Canal indicate that the low toxicity observed in the sediment is not clearly related to sediment contaminant concentrations.

With limited site-specific effects data, the approach for developing recommended PRGs involved using site-specific NOECs as lower range (most protective) PRG values, and an upper range PRG set at the PEC (non-site specific) levels (Table 7-7). Comparing these values, the NOECs are generally an order of magnitude less than the PEC values. Draft PRGs developed as part of the OU-3 FS are also presented for comparative purposes. In all cases, the upper range PRGs are higher than the draft PRGs developed for the OU-3 FS.

Figure 7-1 summarizes the risk to benthic invertebrates related to sediment contaminants of concern at the site. The sediment data for the 8 contaminants of concern identified in Table 7-7 for both 2004 and the 1993 data set are shown. Values above the proposed upper PRG (based on the PEC) are shown in red, and the values exceeding the lower PRG (based on site-specific NOECs) are shown in blue. The figure illustrates the distribution of contaminants of concern contributing to risk associated with the higher observed toxicity in the Unnamed Brook and B&M

Pond.

Figure 7-2 presents the Microtox® results summarized across the site. For the purposes of this figure, the higher of the two values from the 5-minute or 15-minute assay results (Table 2-4) were categorized for each sample. Percent effect values less than 10% were categorized as negligible toxicity, from 10 to 25% as low toxicity, from 25 to 50% as a moderate toxicity, and above 50%, as high toxicity. These categories are used simply to summarize the results (Table 2-4 and Figure 2-7) to a single relative value to illustrate the results on Figure 7-2. The data showed low Microtox® toxicity in the Unnamed Brook, in contrast to the sediment contaminant concentrations and the invertebrate toxicity tests at SED-18. Elevated Microtox® toxicity (moderate to high) was found in West Middlesex Canal sediments and at SED-05 and SED-08, both associated with B&M Pond. Lower Microtox® toxicity was found in Richardson Pond, with the exception of sample SED-16. The Microtox® results also showed moderate toxicity in Content Brook in three of the four samples tested.

Figure 7-1 illustrates that the highest contaminant of concern concentrations are associated with the sediments in the Unnamed Brook and B&M Pond. These data are consistent with the findings of the 1997 BERA, which indicated that the Wetland 2 Group, including the Unnamed Brook and the B&M Pond area, as well as the small tributaries of the Unnamed Brook at the southern edge of the site, had historically high concentrations of metals, mainly copper and lead. Invertebrate assays indicated that toxicity was highest site-wide in sediment at SED-18, a depositional area at the southern end of a ponded area in the Unnamed Brook.. Lead concentrations in the sediment of the Unnamed Brook at SD-010 were lower in 1993, in the main channel of the brook, just below the open water depositional area of the small pond (Fire Pond) associated with Unnamed Brook. Lead concentrations were also elevated at SD-322, in a pool adjacent to the main channel of Unnamed Brook, just downstream of SD-010. Further downstream, where the Unnamed Brook drains toward the B&M Pond wetland complex, lead concentrations were elevated in 1993 samples (SD-118 and SD-301). The 1993 sample in the B&M wetlands south of the Middlesex Canal (SD-108) indicated generally low contaminant concentrations, but with an elevated

detection of 4,4'-DDD in June 1993.

The site area with the highest COPC concentrations in both the 1993 and 2004 samples was B&M Pond. The edges of the open water areas near the B&M Railroad Landfill (SD-304 and SED-05) showed consistently high concentrations of PAHs, 4,4'-DDD, chromium, copper, lead, and zinc. Samples along the portion of the Middlesex Canal channel that bisects the B&M wetlands, and samples from the eastern edge of the B&M Pond in 1993 (SD-107), showed relatively low concentrations of COPCs.

Negligible risk to benthic invertebrates was identified in the Content Brook sediments and low risk in the West Middlesex Canal. These toxicity test results were consistent with the relatively low concentrations of contaminants of concern, and few exceedances of PRGs in these two site areas. There were no sediment concentrations in the 1993 or 2004 samples from Content Brook exceeding the upper range PRGs, set at the PECs.

Risk to benthic invertebrates in the West Middlesex Canal was low at SED-11. There were a limited number of upper range PRG exceedances in the 1993 data, and none at SED-11 in the 2004 sample. The elevated PCB measurement at SD-308 in June 1993 was not replicated in the September 1993 sample, nor were PCBs detected elsewhere at levels of concern in the canal in 1993 or 2004. The levels of contaminants of concern in the canal are consistent with the observed low toxicity to sediment invertebrates measured in the 2004 toxicity test. The Microtox® toxicity data, however, indicated moderate to high toxicity for all four of the sediment samples collected in the West Middlesex Canal.

There were no invertebrate toxicity testing results for sediments in Richardson Pond. The 1993 data indicated generally low concentrations of all COPCs with the exception of location SD-111. Field-screening data indicated elevated metals and PAH concentrations in the sample next to the railroad right-of-way (SED-13), which may serve as a source of metals and PAHs. There is uncertainty associated with the risk in this sample, as no toxicity testing was conducted.

7.4 Uncertainty Analysis

There is uncertainty associated with estimates of risk in any risk assessment, as the risk estimates are based on a number of assumptions regarding exposure and toxicity. There is uncertainty associated with the site conceptual model, with natural variation and parameter error, and with model error (USEPA, 1997). A thorough understanding of the uncertainties associated with risk estimates is critical to understanding predicted risks and placing them in proper perspective. In addition to those already discussed in previous sections, important sources of uncertainty associated with the ERA/WRIA are addressed below.

Uncertainty associated with the site conceptual model (Figure 3-2) includes assumptions about the sources of contaminants and the fate and transport of the contaminants at the site. The prediction of risk in this assessment does not distinguish the sources of contaminants that are identified as contaminants of concern. In an urban watershed, the source of contaminants for metals in sediments can not always be distinguished from site-related compounds or other local run-off or up-stream sources. However, the number of sediment samples collected within the site provides reasonable confidence in the estimation of exposure from sediment, and utilization of reference areas provides a mechanism for evaluating the potential source of common contaminants. There is some uncertainty with the Richardson Pond samples adjacent to the railroad, as the source of contaminants in this area could be influenced by the railroad, and not be strictly site-related.

There is uncertainty associated with assumptions used in selecting COPCs for evaluation in the ERA/WRIA, as well as screening and selecting contaminants of concern. Based on the OU-3 BERA and subsequent evaluation by EPA, media and COPCs requiring further study were identified. Any uncertainties in the sampling, screening, and selection of COPCs in the OU-3 BERA are incorporated into the current ERA/WRIA evaluation. This means that, if for example, a high detection limit resulted in the elimination of a contaminant from the OU-3 BERA, the uncertainty of risk associated with that contaminant is not addressed in the ERA/WRIA. This applies mainly to the dietary model for the heron. However, the toxicity tests performed as part

of the ERA/WRIA would have documented toxicity from any contaminant present, and would not be specific to certain COPCs.

In addition, there was some uncertainty in the screening of contaminants of concern in the ERA/WRIA. For example, Aroclor-1016 and Aroclor-1232 were eliminated as sediment contaminants of concern based on detection frequency. However, the detection limits for these chemicals at one location, SED-05, exceeded the screening benchmarks, and thus are contributing sources of uncertainty in the ERA/WRIA.

Another step in the ERA/WRIA that contributes to the uncertainty in the risk conclusions is the method used to select representative sampling locations among previously sampled areas of the site. Since the selection of sampling stations was based on careful review of the 1993 data, as well as confirmation of potential contaminant levels using field-screening methods, the confidence in the selection of sampling locations to represent areas of highest contaminant concentrations and potential toxicity is fairly high.

There is uncertainty in sampling design. There is large spatial variability in distribution of sediment contaminants. Individual sediment sample concentrations are collected as representative of an area of a water body; variation between locations and sampling rounds are related to both spatial and temporal changes.

Although the surface water is a more homogenous medium, concentrations of individual constituents are ephemeral and influenced by a number of factors. In addition, the sampling methods used in the collection of surface water for toxicity testing can contribute to uncertainty. Surface water samples were collected in triplicate from five locations within various water bodies located in and around the site from September 21, 2004 through September 24, 2004. Surface water samples were collected using a teflon-coated dipper to transfer sample aliquots to three separate sample containers. For the dissolved target metals sample aliquot, surface water was placed into an interim bottle from which volume was later pumped through a 0.45 μm filter and

transferred to another bottle to be submitted to the laboratory. Aliquots of all three replicates were sent to a laboratory for chemical analysis. A subsample from one of the three replicates (for each water body this sample was designated with a suffix of -01) was sent to a separate laboratory for toxicity testing for both minnows and daphnids. There is some uncertainty in the correspondence of the chemical constituents in the separate sample containers to the results of the toxicity tests. In addition, as discussed in Section 6.1.3, the chemical concentrations were not measured for all constituents in the toxicity test, leading to uncertainty in the interpretation of the response of test organisms when toxicity was measured.

Related to the sampling design, there is some uncertainty associated with applying the results of the sediment toxicity to Richardson Pond, as no sample for toxicity analysis was collected from Richardson Pond. However, the highest concentrations of contaminants of concern, which were associated with contributing to risk to benthic invertebrates, were not measured in Richardson Pond. The study design incorporates the assumption that, in general, similar levels of contaminants at two different locations will generally show similar levels of effects. However, as seen in the sediment toxicity results, this is not always the case because of the large number of factors that act to alter the availability and toxicity of a contaminant in the sediment matrix.

The selection of a NOEC is based on the assumption that, in a given sediment sample, if no toxic effects were detected in the toxicity tests, similar concentrations of the same contaminants would not likely result in adverse effects in other sediment samples. Although there is uncertainty associated with this assumption, it is a conservative assumption because a no-effect level is selected as a threshold which may be much lower than a threshold likely to produce effects for a particular contaminant. In addition, the levels of a contaminants likely associated with toxicity is actually quite variable depending on sediment characteristics such as grain size, TOC, AVS, and other compounds present in the mixture. A comparison of selected NOEC values to published TECs (MacDonald *et al.*, 2000) indicates that the site-specific NOECs are conservative. As defined by MacDonald *et al.*, the TECs are consensus-based guidelines and represent a sediment concentration below which sediment toxicity is not predicted to occur. All of the selected

NOECs, with the exception of arsenic (NOEC = 360 mg/kg; TEC = 10 mg/kg), are below the published TEC values, indicating that the NOECs are protective and consistent with effects concentrations in other studies.

Exposure estimates used in the heron model are a source of uncertainty in the ERA/WRIA. Values for exposure parameters (e.g., body weight, food intake rate) were based on literature values, not site-specific data. For instance, it was assumed, based on other studies, that approximately 100% of the heron diet is comprised of fish for the dietary models. Heron may also ingest other animals such as crayfish and amphibians. The collection of site-specific fish tissue data increased the confidence in the exposure estimates of dietary doses. The size and age of fish used for estimating dietary dose can also influence the results of the model. However, using maximum detected tissue concentrations likely provided a conservative estimate for the heron model. The approach maintained in the ERA/WRIA was to utilize conservative exposure parameters while maintaining a realistic evaluation of the potential for risk.

Uncertainty in the heron model was also associated with the selection of TRVs. Efforts were made to find TRVs for similar species and relevant studies for all of the contaminants of concern. However, TRVs for avian species are limited. The lack of TRVs for PAHs contributed to the uncertainty of the model. However, a TRV for LMW PAHs derived from a study of mallards was used to assess toxicity to heron. NOAEL TRVs for avian species based survival or reproductive endpoints were available for all of the metals.

7.5 Risk Conclusions and Evaluation of Ecological Significance

Risks to aquatic invertebrates from exposure to metals in surface water is negligible. Since the study was designed to evaluate exposure scenarios representing the highest contaminant concentrations on-site, and for surface water, these did not exceed levels associated with toxicity or ecological effects, the conclusion can be made that there is no unacceptable ecological effects to the selected receptor from exposure to surface water at any of the site areas.

Based on the concentrations of contaminants detected in fish tissue, compared to residue effect levels, the risk to fish from exposure to COPCs on the site is negligible. In the majority of the water bodies on-site, the risk from exposure to COPCs in surface water was also negligible. There was low risk to minnows in West Middlesex Canal. Based the lack of supporting data from other lines of evidence, and lack of the association of this risk to surface water COPCs measured, the risk to minnows is uncertain.

The dietary modeling results for the great blue heron indicated the concentrations of COPCs in fish collected on-site are below levels expected to cause ecological effects. The risk to piscivorus birds, feeding at the site would be negligible. Since the exposure scenarios representing the maximum contaminant concentrations on-site did not exceed levels associated with adverse effects for great blue heron dietary models, the conclusion can be made that there is no unacceptable ecological effects to great blue heron populations feeding in the site area.

The risks to benthic invertebrates exposed to sediment contaminants of concern are negligible (no evidence of risk) at Content Brook, low in B&M Pond and West Middlesex Canal, and moderate in the Unnamed Brook. Figure 7-1 summarizes the risk to benthic invertebrates related to sediment contaminants of concern at the site. Values above the proposed upper PRG (based on the PEC) are shown in red, and the values exceeding the lower PRG (based on site-specific NOECs) are shown in blue. The results of the toxicity tests are represented by the red, yellow and green dots representing moderate, low, and negligible toxicity to benthic invertebrates, respectively.

The figure illustrates an areal distribution of COPCs contributing to risk with a spatial pattern of highest concentrations upstream and in the center of the site (Unnamed Brook and B&M Pond wetland). Total PAHs, chromium, copper, lead, and zinc have the highest concentration in the upstream and center of the site and diminish in concentration downgradient in the Middlesex Canal and in Content Brook.

Figures 2-8 through 2-13 document this same pattern of contaminant distribution across the site. In these figures, the data are plotted with the most upstream locations to the left (Unnamed Brook) and the downstream to the right (Content Brook). For all contaminants, with the exception of arsenic and total PCBs (Figure 2-9), the pattern of contaminant distribution is consistent. In addition, the highest observed effects in the sediment toxicity test and Microtox® analysis (Figure 2-7) shows a pattern consistent with the contaminant distribution.

This spatial pattern of contaminant concentration and associated sediment toxicity supports an interpretation that the site-related COPCs are likely to have been transported short distances downstream, as sediment-bound particles, and settled or re-deposited in depositional environments along the Unnamed Stream or in areas of B&M Pond. This is consistent with the physical-chemical properties of the major COPCs (PAHs and metals) that readily partition or bind to organic carbon particles and are transported in flowing water and deposit in slow moving stream, open water, or wetland habitats that maybe temporarily flooded. The significance of the spatial distribution of PAHs and metals on site is that it indicates these major COPCs have migrated downstream to B&M Pond, but have not migrated further downgradient to Content Brook, or off-site. Based on this interpretation of the data, B&M Pond and its associated wetland complex appears to be acting as a sink for the COPCs, and effectively functions to immobilize sediment-bound contaminants to a large degree on-site. This interpretation is supported by the lower concentrations of COPCs downgradient of B&M Pond and elevated concentrations upgradient and in the pond.

In contrast, total PCB concentrations are higher in the Middlesex Canal and in Richardson Pond than in other site-sediments. This distribution pattern for PCBs is different than the major COPCs in the previous discussion. The potential reason is non-site-related sources of PCBs in Richardson Pond which include the railroad bordering the pond to the west.

Sediment arsenic concentrations also show a different pattern of distribution from that of the major COPCs. The highest arsenic concentrations were measured downstream in Content Brook

at levels equal to or higher than those on site (Figure 2-10). This would indicate a different source and/or transport process for arsenic. However, the areas of elevated sediment arsenic were not associated with sediment toxicity or results in Microtox® analyses. Based on the lack of toxicity of Content Brook sediments, at the highest observed concentrations of arsenic measured on site, no significant ecological risk was attributed to arsenic in site sediments.

Based on the risks identified to benthic invertebrates exposed to COPCs in sediment, thresholds for adverse effects for sediments were developed and preliminary PRGs proposed for total PAHs, total PCBs, 4,4'-DDD, chromium, copper, lead, vanadium, and zinc (Table 7-7).

Table 7-8 summarizes the risks identified for each receptor with consideration of the level of risk to the population or community, the uncertainty associated with the analysis, and the amount and quality of the affected resource. The results are interpreted further within the context of the magnitude of the effect, the uncertainty of the estimates, and the ecological significance of the effect.

Each endpoint has associated with it a magnitude of risk and a degree of uncertainty. The ecological significance related to each receptor/endpoint is evaluated in terms of factors defined by USEPA (1997). An evaluation of these factors is used to clarify if risks associated with contamination are present at levels that represent unacceptable ecological risk. Each of these six categories evaluated in Table 7-8 are briefly described below.

- Endangered or sensitive species. The only species of special concern identified as potentially occurring in the vicinity of the site was blue-spotted salamander. Based on the habitat of this species, it was determined that exposure pathways from contaminants related to site-associated surface water and sediments are absent for blue-spotted salamander. Risks to this species from potential exposure to site-related contamination is negligible.

- Magnitude of the effect and level of biological organization affected. The magnitude of the effect is the level of risk measured in the evaluation of the assessment endpoints (Section 7.2). The ranking of this effect in Table 7-8 reflects the level or risk for each receptor species as identified in the left-hand portion of the table. The uncertainty of the risk estimate is considered in the evaluation of this factor. The level of organization affected is related to whether the risk is to individuals, populations, or communities.

- Likelihood the effect will occur or continue. The likelihood that effects will occur or continue is related to both the uncertainty of the risks to the receptors and the ability of the contaminants to bioaccumulate or biomagnify into the food chain.

- Relative importance of the affected area to the surrounding habitat. The relative importance of the receptor's habitat affected by the potential impact relates to the ecological relationship of the affected area to the surrounding habitat. Its importance to the functioning of the surrounding habitat is related to the ability to serve as a nursery, wildlife migration corridor, or overwintering habitat, etc. The benthic invertebrate community may serve as a prey base for local aquatic and semi-aquatic communities. However, the habitat is not know to be part of a wildlife migration corridor or serve as a unique nursery or over-wintering habitat.

- Extent to which the affected area is highly sensitive or ecologically unique. The degree to which the affected area itself (directly) represents highly sensitive or ecologically-unique (essential) habitat to the receptor population is related to the quality of the habitat based on factors other than contaminant concentrations. These include physical structure, vegetative community structure and diversity, size of the contiguous habitat area, and uniqueness of the habitat in the local environment. These habitat characteristics relate to the quality of habitat for each receptor species/community in terms of serving as foraging, breeding, or nursery areas. The quality of the habitats on-site vary, however, in general the wetland and surface water habitats are not highly sensitive or ecologically unique.

- Recovery potential of the affected receptor and chemical persistence. The recovery potential relates to the likelihood an affected receptor will not recover from the effect of site releases, and also to the persistence of the chemicals in the environment. Species are less likely to recover from an effect of exposure if it has a long generation time or limited foraging range, resulting in more intense exposure of individuals. Invertebrate populations have short generation times, and are likely to rapidly recover as stressors, such as site-related contaminants, are removed. However, the chemicals observed in the sediments are generally persistent in the environment.

The magnitude of the potential risk was considered in evaluating the significance of each factor; a receptor with low risk generally shows a low ecological significance of the potential effect, and did not lead to a conclusion of unacceptable ecological risk (Table 7-8). Unacceptable Risk is defined in USEPA (1997) as a predicted impact to a local population or community of sufficient magnitude, severity, areal extent, and duration that they will not be able to recover and/or maintain themselves in a healthy state. Additionally, these effects are predicted to exceed the natural variation in similar reference areas.

Based on the analysis of the three selected indicators/endpoints, there were no indications of unacceptable ecological risk associated with risk to aquatic receptors or predatory birds on-site. Evidence suggests that there is high exposure to organic and metal contaminants of concern for benthic invertebrates on the site. Risks from the exposure to sediments were highest in the Unnamed Brook and B&M Pond. Based on the evaluation of the benthic invertebrate data, there were unacceptable ecological risks to benthic invertebrates in the Unnamed Brook and B&M Pond, with uncertain risk in Richardson Pond at SD-111. Using the site-specific toxicity data and published PEC values, AET were developed and preliminary PRGs were proposed for benthic invertebrates. PRGs were proposed for total PAHs, PCBs, 4,4'-DDD, chromium, copper, lead, vanadium, and zinc in B&M Pond. PRGs were proposed for copper, lead and vanadium in the Unnamed Brook. Based on the low sediment toxicity, and low magnitude and frequency of PRG exceedances in West Middlesex Canal and Content Brook, the risks to benthic invertebrates are low, and do not represent an unacceptable risk. Applying the PRGs to Richardson Pond, the only

station with potential risk to benthic invertebrates that represents an unacceptable risk is SD-111.

Figure 7-1 summarizes the distribution of risk based on toxicity testing and concentrations of contaminants of concern across the site, based on both 1993 and 2004 sediment chemistry data. Figure 7-2 presents the Microtox® results from the 20 sediment field-screening locations for comparison. The highest contaminant concentrations are clearly associated with the sediments in the Unnamed Brook and B&M Pond, and one sample adjacent to B&M Pond in Richardson Pond. These are the locations of numerous PEC exceedances, as well as elevated Microtox® toxicity in B&M Pond.

All locations in the Unnamed Brook and B&M Pond with exceedances of proposed PRGs are considered to pose unacceptable risk to benthic invertebrates, and will be considered in the FS for remedial action. Among the locations associated with Richardson Pond, only SD-111 showed a number of exceedances of PRGs, and may represent risk to invertebrates. The PRGs will be applied in Unnamed Brook and B&M Pond through comparison of both the most recent data and the 1993 data. The FS may also propose gathering additional extent of contamination data for better delineation of the spatial scale of exceedances across the site.

SECTION 8.0
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TABLES

Table 2-1. Summary of 2004 Surface Water Analytical Results
Iron Horse Park Superfund Site - OU-4

M&E Sample ID	SW-RP-01	SW-RP-02	SW-RP-03	SW-MC-01	SW-MC-21	SW-MC-02	SW-MC-03
Date Sampled	09/22/04	09/22/04	09/22/04	09/23/04	09/23/04	09/23/04	09/23/04
Comments				FD of SW-MC-21	FD of SW-MC-01		
Dissolved Metals (ug/L)							
Aluminum	15.0 U	15.0 U	15.0 U	23.2 J	21.4 J	21.5 J	20.8 J
Arsenic	2.8 J	2.8 J	2.7 J	1.3 J	1.2 J	1.3 J	1.3 J
Barium	25.5	25.1	25.2	26.6	26.6	26.7	26.4
Calcium	13400	13300	13300	12000	12000	12000	12000
Chromium	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cobalt	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Copper	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Lead	0.19 J	0.16 J	0.13 J	0.41	0.31	0.39	0.34
Magnesium	3190	3170	3150	2040	2060	2050	2040
Manganese	216	214	214	135	133	132	131
Silver	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vanadium	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	5.0 U	5.0 U	5.0 U	9.5 J	5.0 U	5.0 U	5.0 U
Total Metals (ug/L)							
Aluminum	15.0	17.5 J	16.0 J	31.1	40.8	39.9	40.0
Arsenic	3.4 J	3.4 J	3.3 J	1.4 J	1.4 J	1.5 J	1.5 J
Barium	24.9	24.7	24.7	25.9	26.2	26.3	26.5
Calcium	13300	13200	13100	11800	11900	11900	11900
Chromium	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cobalt	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Copper	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Lead	0.25	0.27	0.25	0.66	0.69	0.75	0.80
Magnesium	3190	3160	3150	2040	2060	2060	2060
Manganese	219	218	216	140	146	154	164
Silver	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vanadium	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity (mg/L)							
Alkalinity, Total as $CaCO_3$	32.6	33.4	38.6	30.4	30.9	33.4	31.5

Table 2-1. Summary of 2004 Surface Water Analytical Results
Iron Horse Park Superfund Site - OU-4

M&E Sample ID Date Sampled Comments	SW-CB-01 09/23/04	SW-CB-02 09/23/04	SW-CB-03 09/23/04	SW-BM-01 09/21/04	SW-BM-02 09/21/04	SW-BM-03 09/21/04	SW-RF-01 09/24/04	SW-RF-02 09/24/04	SW-RF-03 09/24/04
Dissolved Metals (ug/L)									
Aluminum	49.6	50.2	54.2	26.4 J	27.0 J	28.1 J	34.3	36.9	38.4
Arsenic	1.7 J	1.7 J	1.8 J	2.3 J	2.2 J	2.1 J	1.0 J	1.0 J	1.1 J
Barium	39.1	39.1	39.4	24.1	24.7	24.4	18.1	18.3	18.3
Calcium	13200	13200	13200	10300	10400	10300	8940	8970	8950
Chromium	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cobalt	1.0 U	1.0 U	1.1 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Copper	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Lead	0.34	0.37	0.45	0.83	0.70	0.61	0.41	0.31	0.32
Magnesium	2500	2490	2500	1740	1760	1740	1660	1670	1670
Manganese	263	263	274	128	127	112	177	175	173
Silver	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vanadium	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	5.5 J	6.0 J	12.6	6.2 J	5.0 U	5.0 U	8.2 J	5.0 U	5.0 U
Total Metals (ug/L)									
Aluminum	73.2	152.0	71.2	52.2	52.0	51.1	42.5	37.0	36.2
Arsenic	2.5 J	3.1 J	2.4 J	2.6 J	2.5 J	2.6 J	1.1 J	1.1 J	1.1 J
Barium	38.9	41.2	38.7	24.3	24.2	23.9	18.8	18.2	18.1
Calcium	13100	13300	13100	10300	10200	10200	8970	8960	8960
Chromium	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cobalt	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Copper	1.0 U	1.0 U	1.0 U	1.1 J	1.1 J	1.4 J	1.0 U	1.0 U	1.0 U
Lead	1.0	1.7	0.96	1.6	1.6	1.6	0.58	0.44	0.41
Magnesium	2500	2530	2500	1760	1750	1730	1670	1680	1680
Manganese	282	330	280	136	137	123	253	230	200
Silver	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vanadium	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	5.0 U	6.7 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity (mg/L)									
Alkalinity, Total as $CaCO_3$	35.5	36.7	36.2	27.2	23.7	27.7	20.7	21.8	13.9

EB - As a qualifier for soil/sediment samples: Analyte is also detected in the equipment blank
FD - Field Duplicate
J - The concentration is an estimated quantity
mg/Kg - milligrams per Kilogram
mg/L - milligrams per Liter
PAL - Project Action Limit
R - The data are rejected as unusable
U - Analyte was analyzed for but not detected
ug/Kg - micrograms per Kilogram
ug/L - micrograms per Liter
UJ - The sample quantitation limit is an estimated quantity

Table 2-2. Summary of Fish Tissue Analytical Results
Iron Horse Park Superfund Site - OU-4

M&E Sample ID Date Sampled Comments	BM-BH-1 09/21/04	BM-BH-2 09/21/04	BM-BH-3 09/21/04	BM-BH-4 09/21/04	CB-RP-1 09/23/04	CB-BH-1 09/30/04	CB-BH-2 09/30/04	CB-BH-3 09/30/04	CB-BH-4 09/30/04	CB-AE-1 09/23/04	CB-GS-1 09/30/04	RP-BH-1 09/22/04
Metals (mg/kg)												
Aluminum	20 J	13	7.4	15	11	1.4 J	12	11	11	12	0.82 UJ	2.1 U
Arsenic	0.16 J	0.074 J	0.10 J	0.13 J	0.29 J	0.047 J	0.078 J	0.059 J	0.062 J	0.10 J	0.059 J	0.090 J
Barium	2.1 J	1.5 J	2.2 J	2.2 J	2.8 J	0.69 J	0.50 J	0.27 J	1.7 J	1.8 J	1.4 J	1.2 J
Chromium	0.85 J	1.7 J	1.0 J	0.83 J	1.2 J	2.8 J	0.69 J	0.61 J	0.79 J	0.68 J	0.29 J	0.47 J
Cobalt	0.046 J	0.062 J	0.093 J	0.053 J	0.057 J	0.10 J	0.028 J	0.027 J	0.039 J	0.055 J	0.057 J	0.016 J
Copper	3.4 J	4.8 J	4.2 J	2.9 J	3.4 J	0.49 J	2.8 J	1.2 J	13 J	6.2 J	0.46 J	0.61 J
Lead	0.27 J	0.26 J	0.30 J	0.32 J	0.31 J	0.12 J	0.38 J	0.15 J	2.3 J	0.93 J	0.028 J	0.043 J
Manganese	6.0 J	6.2 J	13.0 J	6.8 J	11.0 J	6.0 J	3.6 J	1.9 J	7.8 J	7.9 J	5.1 J	6.0 J
Silver	0.0032 U	0.0037 J	0.0032 U	0.0032 U	0.0030 U	0.0031 U	0.0030 U	0.0031 U	0.021 J	0.010 J	0.0032 U	0.0031 U
Vanadium	0.050 J	0.041 J	0.053 J	0.044 J	0.053 J	0.054 J	0.032 J	0.070 J	0.041 J	0.029 J	0.026 J	0.031 J
Zinc	14 J	16 J	24 J	14 J	34 J	17 J	16 J	14 J	17 J	21 J	28 J	12 J
Polynuclear Aromatic Hydrocarbons (ug/Kg)												
Naphthalene	7.4 UJ	2.9 UJ	2.5 UJ	4.4 UJ	2.8 UJ	2.4 UJ	3.0 UJ	2.1 UJ	2.1 UJ	2.8 UJ	2.6 UJ	3.7 UJ
2-Methylnaphthalene	8.9 UJ	2.1 U	2.7 UJ	7.4 UJ	2.2 UJ	2.1 U	2.1 U	2.1 U	2.1 U	2.7 UJ	2.1 U	2.1 U
1-Methylnaphthalene	6.2 J	2.1 U	2.1 U	4.3 J	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.6 J	2.1 U	2.1 U
2,6-Dimethylnaphthalene	6.7 J	1.7 J	3.0 J	7.0 J	1.4 J	2.1 U	2.1 U	2.1 U	2.1 U	2.1 J	1.2 J	2.1 U
Acenaphthylene	2.0 U	2.1 U	3.2 UJ	2.1 U	2.1 UJ	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 UJ
Acenaphthene	30 J	9.4 J	7.2 J	11 J	3.6 UJ	7.2 J	2.9 UJ	2.1 UJ	2.1 U	4.8 UJ	2.4 UJ	3.0 UJ
Fluorene	24 J	7.7 J	6.2 UJ	9.6 J	3.0 UJ	3.9 UJ	2.6 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.7 UJ
2,3,5-Trimethylnaphthalene	4.1 J	2.1 U	2.1 U	2.6 J	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	1.1 J	2.1 U
Phenanthrene	29 J	9.2 UJ	8.5 UJ	15 J	3.1 UJ	5.2 UJ	3.5 UJ	3.5 UJ	2.7 UJ	3.8 UJ	3.2 UJ	4.4 UJ
Anthracene	7.1 J	2.1 J	1.6 J	3.6 J	1.6 J	2.1 J	1.6 J	2.1 U	2.1 U	2.6 J	2.1 U	1.4 J
1-Methylphenanthrene	1.2 J	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Fluoranthene	12 J	5.0 UJ	5.2 UJ	8.5 UJ	2.4 UJ	2.1 U	2.6 UJ	2.1 UJ	2.1 UJ	5.8 UJ	2.1 U	2.1 UJ
Pyrene	5.4 J	2.3 J	1.6 J	3.0 J	1.8 J	2.1 UJ	1.8 J	2.1 UJ	2.1 UJ	4.3 J	2.1 UJ	1.4 J
Benz[a]anthracene	2.1 UJ	2.1 UJ	2.1 U	2.1 U	3.2 UJ	2.1 UJ	2.8 UJ	2.1 UJ	2.1 U	2.6 UJ	2.1 U	2.1 U
Chrysene	2.3 UJ	2.1 UJ	2.1 U	2.1 U	2.6 UJ	2.1 UJ	2.3 UJ	2.1 UJ	2.1 U	2.1 UJ	2.1 U	2.1 U
Benzo[b]fluoranthene	2.2 UJ	2.1 UJ	2.1 U	2.1 UJ	3.6 UJ	2.1 UJ	2.5 UJ	2.1 U	2.1 U	2.1 UJ	2.1 U	2.1 UJ
Benzo[k]fluoranthene	2.0 UJ	2.1 UJ	2.1 U	2.1 UJ	3.4 UJ	2.1 UJ	2.2 UJ	2.1 UJ	2.1 U	2.1 UJ	2.1 U	2.1 UJ
Benzo[e]pyrene	2.0 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Benzo[a]pyrene	2.0 UJ	2.1 U	2.1 U	2.1 U	3.6 UJ	2.1 UJ	2.2 UJ	2.1 U	2.1 U	2.1 UJ	2.1 U	2.1 UJ
Perylene	2.0 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Indeno[1,2,3-cd]pyrene	2.0 UJ	2.1 UJ	2.1 U	2.1 U	4.1 UJ	2.1 UJ	2.6 UJ	2.1 U	2.1 U	2.1 U	2.1 U	2.1 UJ
Dibenz[a,h]anthracene	2.0 UJ	2.1 UJ	2.1 U	2.1 U	3.8 UJ	2.1 UJ	2.8 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ
Benzo[g,h,i]perylene	2.0 UJ	2.1 UJ	2.1 U	2.1 U	4.7 UJ	2.1 UJ	3.0 UJ	2.1 U	2.1 U	2.1 UJ	2.1 U	2.1 UJ
Total PAHs[(1)]	126	23	13	56	4.8	9	3.4	--	--	12	2.3	2.8
Other SVOCs (ug/Kg)												
Biphenyl	2.4 J	2.1 U	1.3 J	2.9 J	2.4 J	2.1 U	2.4 J	2.1 U	2.1 U	1.2 J	2.1 U	2.1 U
Dibenzofuran	9.5	4.4	2.1 U	3.2	1.9 J	1.6 J	2.7 J	1.4 J	2.2 J	2.7 J	2.4 J	1.4 J
Percent Lipids (%)												
Percent Lipids	1.8	0.84	0.80	0.94	0.83	2.4	0.81	0.96	0.51	1.7	1.6	1.5

Table 2-2. Summary of Fish Tissue Analytical Results
Iron Horse Park Superfund Site - OU-4

M&E Sample ID Date Sampled Comments	RP-BH-2 09/22/04	RP-GS-1 09/22/04	RP-GS-2 09/22/04	MC-BH-1 09/23/04	MC-BH-2 09/23/04	MC-BH-3 09/23/04	MC-AE-1 09/23/04	MC-LD-1 09/23/04	RF-BH-1 10/01/04	RF-BH-2 10/01/04	RF-BH-3 10/01/04	RF-CP-1 09/24/04	RF-AE-1 09/24/04
Metals (mg/kg)													
Aluminum	2.1 U	2.7	2.0 U	3.2	10	23	6.8	10	0.68 UJ	9.3	3.6	1.6 U	5.0
Arsenic	0.087 J	0.12 J	0.13 J	0.015 J	0.13 J	0.075 J	0.041 J	0.21 J	0.012 J	0.031 J	0.018 J	0.013 J	0.029 J
Barium	1.2 J	2.8 J	2.7 J	0.98 J	1.2 J	0.99 J	0.56 J	3.8 J	0.64 J	0.52 J	0.21 J	0.22 J	0.55 J
Chromium	0.31 J	0.37 J	0.26 J	0.36 J	0.29 J	0.50 J	0.63 J	0.21 J	0.55 J	0.47 J	0.40 J	0.18 J	0.27 J
Cobalt	0.019 J	0.022 J	0.021 J	0.032 J	0.036 J	0.048 J	0.022 J	0.056 J	0.023 J	0.026 J	0.015 J	0.0068 J	0.011 J
Copper	0.73 J	0.49 J	0.46 J	0.49 J	0.81 J	4.7 J	11 J	0.88 J	0.48 J	0.43 J	0.48 J	1.3 J	1.0 J
Lead	0.049 J	0.038 J	0.047 J	0.039 J	0.28 J	0.41 J	0.54 J	0.083 J	0.052 J	0.14 J	0.062 J	0.054 J	0.083 J
Manganese	3.8 J	13 J	8.4 J	21 J	3.5 J	3.4 J	4.1 J	14 J	4.5 J	1.8 J	0.55 J	6.6 J	8.5 J
Silver	0.0032 U	0.0032 U	0.0031 U	0.0029 U	0.0030 U	0.0029 U	0.0031 J	0.0033 U	0.0032 U	0.0030 U	0.0031 U	0.0030 U	0.0032 U
Vanadium	0.019 J	0.012 J	-- R	0.041 J	0.040 J	0.067 J	0.021 J	0.039 J	0.033 J	0.063 J	0.025 J	-- R	0.018 J
Zinc	16 J	30 J	36 J	13 J	9.6 J	12 J	22 J	36 J	13 J	8.2 J	6.9 J	34 J	24 J
Polynuclear Aromatic Hydrocarbons (ug/Kg)													
Naphthalene	5.2 UJ	3.0 UJ	6.4 UJ	2.5 UJ	4.0 UJ	3.2 UJ	3.9 UJ	2.8 U	2.4 UJ	2.1 UJ	2.2 UJ	2.3 UJ	3.4 UJ
2-Methylnaphthalene	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.9 UJ	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
1-Methylnaphthalene	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	3.0 J	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
2,6-Dimethylnaphthalene	2.1 U	2.1 U	2.2 U	2.2 U	2.2 J	2.1 J	2.0 J	3.6	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Acenaphthylene	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 UJ	2.1 U	7.0 UJ	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Acenaphthene	5.5 UJ	3.7 UJ	4.5 UJ	3.5 UJ	2.1 U	5.8 UJ	10 J	5.6 U	6.0 UJ	2.1 U	2.2 U	2.2 U	2.0 U
Fluorene	4.2 UJ	2.3 UJ	4.1 UJ	2.7 UJ	13 J	4.6 UJ	2.9 UJ	4.7 UJ	2.2 UJ	2.1 U	2.2 UJ	2.2 U	2.0 UJ
2,3,5-Trimethylnaphthalene	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Phenanthrene	7.7 UJ	4.5 UJ	5.1 UJ	7.7 UJ	13 J	11 UJ	4.9 UJ	6.5 U	3.6 UJ	3.7 UJ	5.4 UJ	2.8 UJ	3.2 UJ
Anthracene	1.6 J	2.1 U	1.5 J	1.4 J	6 J	2.2 J	2.1 U	3.1 J	2.1 U	1.1 J	2.2 U	2.2 U	2.0 U
1-Methylphenanthrene	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.2 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Fluoranthene	3.2 UJ	2.1 U	2.2 UJ	3.8 UJ	17 J	6.1 UJ	2.8 UJ	3.5 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Pyrene	1.7 J	1.8 J	1.1 J	2.8 J	7.1 J	4.1 J	2.1 UJ	1.6 J	1.2 J	2.1 UJ	1.1 J	2.2 UJ	2.0 UJ
Benz[a]anthracene	2.1 U	2.1 U	2.2 U	2.2 UJ	2.1 UJ	2.2 UJ	2.1 U	2.2 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Chrysene	2.1 UJ	2.1 U	2.2 U	2.2 UJ	2.1 UJ	2.5 UJ	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Benzo[b]fluoranthene	2.1 UJ	2.1 U	2.2 UJ	2.2 UJ	2.1 UJ	2.2 UJ	2.1 U	2.2 UJ	2.1 UJ	2.1 U	2.2 U	2.2 U	2.0 U
Benzo[k]fluoranthene	2.1 UJ	2.1 U	2.2 UJ	2.2 UJ	2.1 U	2.2 UJ	2.1 U	2.2 U	2.1 UJ	2.1 U	2.2 U	2.2 U	2.0 U
Benzo[e]pyrene	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.2 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Benzo[a]pyrene	2.1 UJ	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.2 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Perylene	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.2 U	1.3 J	2.1 U	2.2 U	2.2 U	2.0 U
Indeno[1,2,3-cd]pyrene	2.1 UJ	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U	2.2 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Dibenz[a,h]anthracene	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.1 UJ	2.2 UJ	2.1 UJ	2.2 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Benzo[g,h,i]perylene	2.1 UJ	2.1 U	2.2 UJ	2.2 U	2.1 U	2.2 U	2.1 U	2.2 UJ	2.1 UJ	2.1 U	2.2 U	2.2 U	2.0 U
Total PAHs[1]	3.3	1.8	2.6	4.2	58	8	12	11	2.5	1.1	1.1	--	--
Other SVOCs (ug/Kg)													
Biphenyl	2.8 J	2.1 U	2.2 U	2.2 U	1.3 J	1.1 J	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Dibenzofuran	2.7 J	1.6 J	1.7 J	2.2 U	7.2	3.4	2.1 U	3.8	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Percent Lipids (%)													
Percent Lipids	2.5	1.8	2.8	2.8	1.5	1.9	5.2	2.1	0.98	0.88	1.6	0.52	7.9

[1] Total PAH results are the sum of detected concentrations. Non-detect values were not included, as they were assumed to be zero for this summation
EB - As a qualifier for soil/sediment samples: Analyte is also detected in the equipment blank
FD - Field Duplicate
J - The concentration is an estimated quantity
mg/Kg - milligrams per Kilogram
mg/L - milligrams per Liter
PAL - Project Action Limit
R - The data are rejected as unusable
U - Analyte was analyzed for but not detected
ug/Kg - micrograms per Kilogram
ug/L - micrograms per Liter
UJ - The sample quantitation limit is an estimated quantity

TABLE 2-3
SEDIMENT SAMPLE LOCATION RATIONALE
IRON HORSE PARK SUPERFUND SITE - OU-4

Area	Sample ID	Historical Sampling Location	Rationale/Relative Contaminant Concentrations[1]
Content Brook			
	SED-01	SD-030	Maximum silver and arsenic
	SED-02	SD-310	Maximum aluminum; intermediate DDD
	SED-03	SD-102	Slightly lower levels of metals; intermediate DDD
	SED-04	SD-117	Lower levels of metals than SD-102
B&M Pond			
	SED-05	SD-304	Maximum chromium, zinc, and DDD
	SED-06	SD-107	low DDD; less than half concentrations of metals in SD-304
	SED-07	New location	Sample in pond toward NW corner
	SED-08	New location	Berm breach between SD-016 and SD-303
W. Middlesex Canal			
	SED-09	SD-029	Maximum vanadium and cobalt
	SED-10	SD-028	Maximum manganese
	SED-11	SD-308	higher PAHs than SD-029/028; variable metals
	SED-12	SD-026	intermediate DDD; variable metals
Richardson Pond			
	SED-13	SD-111	Maximum barium; intermediate DDD
	SED-14	New location	Near SD-111, but in open water
	SED-15	SD-309	Intermediate metals; intermediate PAHs
	SED-16	SD-314	low PAHs, low metals
Unnamed Brook			
	SED-17	SD-317	Maximum lead and copper
	SED-18	SD-013	High metals
	SED-19	SD-010	High PAHs; lower metals than SD-013; intermediate DDD
	SED-20	SD-118	Maximum PAHs
Round Pond			
	SED-21	reference	wetland area at end of John E. Smith Drive
	SED-22	reference	backwater area at end of John E. Smith Drive
	SED-23	reference	open water sample in pond

[1] Based on historical results from 1993 events.

Table 2-4

Summary of Sediment Field Screening Results

Iron Horse Park Superfund Site - OU-4

Sample ID	Microtox® Results		Total PAHs [1] (mg/kg)	Total PCBs [1] (mg/kg)	Metals [1,2] (mg/kg)									
	% Effect 5 min.	% Effect 15 min.			As	Ba	Co	Cu	Cr	Pb	Mn	Ag	V	Zn
SED-01	28.63	0	9.34	<1.32	334 +/- 60	403 +/- 130	< 1200	< 180	< 1200	< 47	< 2400	< 280	< 1800	< 110
SED-02	37.08	0	16.60	<2.5	145 +/- 40	281 +/- 100	< 1000	< 130	< 820	117 +/- 31	< 1600	< 250	< 2500	184 +/- 59
SED-03	0	0	14.55	<2.27	46 +/- 30	147 +/- 79	< 430	< 89	< 390	135 +/- 27	< 700	< 250	< 1800	81.7 +/- 40
SED-04	35.98	1.16	20.00	<1.22	< 36	229 +/- 120	< 390	< 99	< 390	63 +/- 23	< 640	< 330	< 1900	65.9 +/- 42
SED-05	59.16	0	161.6 E	<2.0	132 +/- 76	< 180	< 110	690 +/- 180	< 880	822 +/- 75	< 1600	< 360	< 1400	3870 +/- 210
SED-06	13.64	5.96	12.86	<0.72	< 49	265 +/- 140	< 450	< 110	< 430	148 +/- 31	839 +/- 510	< 330	< 2800	196 +/- 56
SED-06-DUP	NA	NA	NA	<0.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SED-07	4.27	0	163.13	<3.33	142 +/- 69	230 +/- 140	< 990	< 140	< 870	749 +/- 67	3120 +/- 1100	< 360	< 1900	612 +/- 84
SED-08	62.95	27.82	15.38	<2.38	< 49	210 +/- 130	< 640	< 120	< 550	134 +/- 30	< 1000	< 360	< 1800	371 +/- 66
SED-08-DUP	NA	NA	NA	NA	< 54	233 +/- 130	< 760	< 150	< 640	137 +/- 35	< 1200	< 330	< 1900	414 +/- 79
SED-09	28.42	13.07	84.67	<4.17	147 +/- 51	< 140	< 880	174 +/- 100	< 720	269 +/- 44	< 1400	< 310	< 2200	473 +/- 81
SED-10	4.2	55.61	47.36	<3.57	84 +/- 47	219 +/- 87	< 690	< 130	< 600	240 +/- 43	< 1100	< 240	< 1900	284 +/- 68
SED-11	0	45.72	6.12	<1.0	< 97	345 +/- 110	< 360	< 98	< 400	929 +/- 69	< 580	< 250	< 2100	< 61
SED-11-DUP	NA	NA	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SED-12	35.66	14.54	156.8 E	<1.61	< 54	271 +/- 110	< 760	< 130	< 660	147 +/- 33	< 1300	< 280	< 1900	409 +/- 73
SED-13	13.74	0	59.36	<1.52	< 74	399 +/- 160	< 1100	< 180	< 850	334 +/- 50	< 1600	< 330	< 2200	1090 +/- 120
SED-14	0	0	36.27	<4.54	317 +/- 56	279 +/- 110	< 820	< 140	< 690	263 +/- 42	< 1300	< 270	< 1900	466 +/- 77
SED-15	7.75	0	7.69	<3.13	41 +/- 24	170 +/- 97	< 450	< 78	< 370	106 +/- 21	< 720	< 280	< 1800	80.7 +/- 34
SED-16	0	45.48	24.13	<6.25	< 47	< 110	< 280	< 79	< 300	242 +/- 30	< 480	< 300	< 1400	206 +/- 42
SED-17	0	0	73.33	<0.83	< 87	389 +/- 100	< 550	930 +/- 110	< 480	914 +/- 60	< 900	< 220	< 1400	359 +/- 65
SED-18	0	0	116.84	<1.32	57 +/- 37	209 +/- 100	< 370	121 +/- 63	< 340	332 +/- 35	< 600	< 270	< 1400	162 +/- 43
SED-18-DUP	NA	NA	NA	<1.32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SED-19	5.6	0	87.85 E	<0.63	< 31	449 +/- 120	< 310	< 92	511 +/- 200	136 +/- 20	< 490	< 250	< 1500	100 +/- 35
SED-20	6.51	0	28.24	<0.81	< 32	497 +/- 92	< 270	< 72	< 270	146 +/- 20	479 +/- 300	< 180	< 1300	150 +/- 34
SED-21	0	0	14.44	<2.78	< 37	< 110	< 220	< 66	< 220	179 +/- 25	< 360	< 270	< 1400	225 +/- 39
SED-21-DUP	NA	NA	NA	NA	< 29	< 99	< 160	< 55	< 180	192 +/- 19	333 +/- 190	< 240	< 1200	197 +/- 29
SED-22	0	0	6.67	<2.78	< 31	84 +/- 52	< 300	< 76	< 310	63 +/- 19	581 +/- 340	< 190	< 1500	53.1 +/- 34
SED-23	7.89	0	12.60	<10	< 21	< 73	< 190	< 59	< 210	42 +/- 12	490 +/- 230	< 300	< 1400	92.7 +/- 27

[1] Dry weight corrected result

[2] For metals, detected results are shown as recorded result + standard deviation for each metal

E - Estimated value; exceeds upper limit of calibration

TABLE 2-5
RATIONALE FOR SELECTION OF SEDIMENT SAMPLES FOR FULL CHARACTERIZATION
IRON HORSE PARK SUPERFUND SITE - OU-4

Area	Sample Location	Rationale for Selection
Content Brook Area	SED-01	Maximum arsenic detection
B&M Pond	SED-05	Maximum historical DDD detection, high Microtox toxicity, Cu, Pb, and PAHs
West Middlesex Canal	SED-11	Highest historical PCB detections, high Microtox toxicity and Pb
Unnamed Brook	SED-18	High PAHs, low metals and Microtox toxicity (Microtox assay is not very sensitive to PAHs)
Round Pond	SED-22	No detectable Microtox toxicity (lower Pb than SED-21, lower Microtox results than SED-23)

Table 2-6. Summary of 2004 Sediment Analytical Results
Iron Horse Park Superfund Site - OU-4

M&E Sample ID Date Sampled Comments	SED-01 09/14/04	SED-05 09/15/04 FD of SED-25	SED-25 09/15/04 FD of SED-05	SED-11 09/16/04	SED-18 09/16/04	SED-22 09/13/04
Polychlorinated Biphenyls (PCBs) and 4,4-DDD (ug/Kg dry wt.)						
4,4'-DDD	2.69 J	102 J	83 J	-- R	17.9 J	14.5
Aroclor-1016	6.5 U	65.1 U	65.9 U	6.6 U	6.62 U	6.65 U
Aroclor-1221	13 U	130 U	132 U	13.2 U	13.2 U	13.3 U
Aroclor-1232	6.5 U	65.1 U	65.9 U	6.6 U	6.62 U	6.65 U
Aroclor-1242	6.5 U	65.1 U	65.9 U	22.8	6.62 U	6.65 U
Aroclor-1248	14.8	65.1 U	65.9 U	6.6 U	6.62 U	6.65 U
Aroclor-1254	6.5 U	2870 J	2520 J	6.6 U	36.3	6.65 U
Aroclor-1260	11.5 J	1910 J	1970 J	6.6 U	20.1 J	13.7 J
Total Organic Carbon (mg/Kg dry wt.)						
TOC Average Duplicates	253000	277000	2720000	161000	323000	865000
Metals (mg/Kg dry wt.)						
Aluminum	6500	9900	16000	4200	16000	4700
Arsenic	360 J	60 J	90 J	2.9 J	61 J	3.1 J
Barium	370 EB	250 EB	400 EB	28 EB	110 EB	27 EB
Chromium	14 J	520 J	870 J	10 J	34 J	8 J
Cobalt	7.8 J	24 J	38 J	2 J	18 J	2.3 J
Copper	19 J	550 J	850 J	5 J	210 J	8.8 J
Lead	35 J	620 J	1000 J	16 J	380 J	30 J
Manganese	1600 JEB	380 JEB	830 JEB	220 JEB	490 JEB	250 JEB
Silver	0.27 J	0.57 J	0.86 J	0.033 J	0.17 J	0.069 J
Vanadium	19 J	30 J	58 J	7.5 J	28 J	13 J
Zinc	110 JEB	2700 JEB	4400 JEB	21 JEB	150 JEB	42 JEB

Table 2-6. Summary of 2004 Sediment Analytical Results
Iron Horse Park Superfund Site - OU-4

M&E Sample ID	SED-01	SED-05	SED-25	SED-11	SED-18	SED-22
Date Sampled	09/14/04	09/15/04	09/15/04	09/16/04	09/16/04	09/13/04
Comments		FD of SED-25	FD of SED-05			
Polynuclear Aromatic Hydrocarbons (PAHs) (ug/Kg dry wt.)						
Naphthalene	59 EBJ	2800 EBJ	1700 EBJ	52 EBJ	360 EBJ	18 EBJ
2-Methylnaphthalene	21 J	3300 J	1800 J	20 J	410 J	10 J
1-Methylnaphthalene	28 EBJ	2700 EBJ	1500 EBJ	67 EBJ	390 EBJ	9.6 EBJ
2,6-Dimethylnaphthalene	37 J	1300 J	730 J	24 J	360 J	6 J
Acenaphthylene	31 J	3800 J	2300 J	5.4 J	98 J	11 J
Acenaphthene	17 J	5300 J	3400 J	7.3 J	83 J	7.1 J
Fluorene	21 J	6200 J	4000 J	11 J	260 J	12 J
2,3,5-Trimethylnaphthalene	3.9 J	310 J	190 J	3.8 J	220 J	2.1 J
Phenanthrene	93 EBJ	13000 EBJ	7200 EBJ	29 EBJ	1100 EBJ	84 EBJ
Anthracene	42 J	6700 J	4400 J	8.2 J	360 J	19 J
1-Methylphenanthrene	12 EBJ	1100 EBJ	720 EBJ	1.8 EBJ	370 EBJ	12 EBJ
Fluoranthene	230 EBJ	24000 EBJ	11000 EBJ	70 EBJ	2000 EBJ	150 EBJ
Pyrene	160 EBJ	16000 EBJ	7300 EBJ	48 EBJ	1200 EBJ	84 EBJ
Benzo[a]anthracene	91 J	14000 J	7700 J	24 J	640 J	43 J
Chrysene	140 J	14000 J	8100 J	36 J	770 J	69 J
Benzo[b]fluoranthene	160 EBJ	11000 EBJ	6200 EBJ	36 EBJ	810 EBJ	59 EBJ
Benzo[k]fluoranthene	300 J	10000 J	5300 J	32 J	700 J	120 J
Benzo[e]pyrene	120 J	7200 J	3800 J	24 J	430 J	43 J
Benzo[a]pyrene	130 J	11000 J	5300 J	27 J	560 J	49 J
Perylene	52 J	2700 J	1300 J	56 J	430 J	41 J
Indeno[1,2,3-cd]pyrene	80 J	6200 J	2700 J	13 J	240 J	32 J
Dibenz[a,h]anthracene	25 J	2200 J	1000 J	3.8 J	76 J	9 J
Benzo[g,h,i]perylene	79 J	5200 J	2300 J	14 J	230 J	33 J
Total PAHs[(1)]	1932	170010	89940	613	12097	923
Other SVOCs (ug/Kg dry wt.)						
Biphenyl	5.3 J	150 J	91 J	7.4 J	79 J	2.4 UJ
Dibenzofuran	17 J	3700 J	2200 J	6.7 J	240 J	7.2 J

[(1)] Total PAH results are the sum of detected concentrations. Non-detect values were not included, as they were assumed to be zero for this summation
EB - As a qualifier for soil/sediment samples: Analyte is also detected in the equipment blank
FD - Field Duplicate
J - The concentration is an estimated quantity
mg/Kg - milligrams per Kilogram
mg/L - milligrams per Liter
PAL - Project Action Limit
R - The data are rejected as unusable
U - Analyte was analyzed for but not detected
ug/Kg - micrograms per Kilogram
ug/L - micrograms per Liter
UJ - The sample quantitation limit is an estimated quantity
Metal and PAH samples for sediments were freeze dried

TABLE 2-7
COMPARISON OF 2004 FIELD SCREENING RESULTS TO 1993 ANALYTICAL DATA - SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

Sample ID	Date Collected	Total PAHs [1] (mg/kg)	Total PCBs [1] (mg/kg)	Metals [1,2] (mg/kg)									
				As	Ba	Co	Cu	Cr	Pb	Mn	Ag	V	Zn
SED-01	Sep-04	9.34	1.32 U	334 +/- 60	403 +/- 130	1200 U	180 U	1200 U	47 U	2400 U	280 U	1800 U	110 U
SD030	Jun-93	0.404	0.10 U	256	253	17.7	15.4 U	14.7	39.3	2080	6.7	19.5	40.3
SD030	Sep-93	0.14 J	0.10 U	142	107	14.1	13.6 U	11.9 UJ	35.8 J	897	2 U	18.7	38.5 U
SED-02	Sep-04	16.60	2.50 U	145 +/- 40	281 +/- 100	1000 U	130 U	820 U	117 +/- 31	1600 U	250 U	2500 U	184 +/- 59
SD310	Jun-93	1.88	0.02	19	101	15	35.1	35.3	61.8	468	1.8	41.9	78.5
SD310	Sep-93	3.51	0.06 U	18.6	155	17.4	49.3	56.5	50.9 J	663	1.3 U	73.4	115
SED-03	Sep-04	14.55	2.27 U	46.2 +/- 30	147 +/- 79	430 U	89 U	390 U	135 +/- 27	700 U	250 U	1800 U	81.7 +/- 40
SD102	Jun-93	1.31	0.11 U	21.2	47.6	3.4	18.4 U	16.1	101	230	2.3 U	24.4	65.5
SD102-DUP	Jun-93	3.08	0.11 U	20.8	45.6	2.5 U	17.5 U	14.7	100	203	2.1 U	22.7	61.3
SD102	Sep-93	18.77	0.08 U	8	30.8	2.7 U	11.1 U	11.5 U	50.6 J	99.2	1.7 U	14.6	34.2 U
SED-04	Sep-04	20.00	1.22 U	36 U	229 +/- 120	390 U	99 U	390 U	63.2 +/- 23	640 U	330 U	1900 U	65.9 +/- 42
SD117	Jun-93	0.07	0.45 U	4.5 J	21.9	1.6 U	2 U	7.7 U	7.8 J	79.2	1 U	9.8	10 U
SD117-DUP	Sep-93	0.127	0.041 U	7.1 J	20.2	1.9 U	4.7 U	8.6 U	15.2	149	1.1 U	11.5	11.6 J
SD117	Sep-93	0.12	0.050 U	4.6 J	16.9	1.9 U	4.2 U	7.8 U	14.6	103	1.2 U	10	10.7 J
SED-05	Sep-04	161.60 E	2.00 U	132 +/- 76	180 U	110 U	690 +/- 180	880 U	822 +/- 75	1600 U	360 U	1400 U	3870 +/- 210
SD304	Jun-93	36.20	0.57	40.8 J	197 J	24 J	157 J	106 J	396	745	R	32.1 J	998 J
SD304	Sep-93	12.33	R	39 J	143 J	21 J	77.8 J	61.5 J	161 J	643 J	R	27.5 J	446 J
SED-06	Sep-04	12.86	0.72 U	49 U	265 +/- 140	450 U	110 U	430 U	148 +/- 31	839 +/- 510	330 U	2800 U	196 +/- 56
SED-06-DUP	Sep-04	NA	0.72 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD107	Jun-93	1.75	0.03	6	20.5	5.2 U	10.3 U	8.5 U	22.8	112	1.3 U	8.1	55.2
SD107	Sep-93	4.16	0.05 U	4.3	14.5	4.5	6.6 J	5.3 U	20.8 J	80.8 J	1.5 U	5.7	38.1 J
SED-07	Sep-04	163.13	3.33 U	142 +/- 69	230 +/- 140	990 U	140 U	870 U	749 +/- 67	3120 +/- 1100	360 U	1900 U	612 +/- 84
SED-08	Sep-04	15.38	2.38 U	49 U	210 +/- 130	640 U	120 U	550 U	134 +/- 30	1000 U	360 U	1800 U	371 +/- 66
SED-08-DUP	Sep-04	NA	NA	54 U	233 +/- 130	760 U	150 U	640 U	137 +/- 35	1200 U	330 U	1900 U	414 +/- 79

TABLE 2-7
COMPARISON OF 2004 FIELD SCREENING RESULTS TO 1993 ANALYTICAL DATA - SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

Sample ID	Date Collected	Total PAHs [1] (mg/kg)	Total PCBs [1] (mg/kg)	Metals [1,2] (mg/kg)									
				As	Ba	Co	Cu	Cr	Pb	Mn	Ag	V	Zn
SED-09	Sep-04	84.67	4.17 U	147 +/- 51	140 U	880 U	174 +/- 100	720 U	269 +/- 44	1400 U	310 U	2200 U	473 +/- 81
SD029	Jun-93	14.00 U	0.02	5	14.1	2.3 U	6.4 U	9.8 U	12.7	54.4	0.9 U	7.4	11.7 U
SD029	Sep-93	1.28	0.48 J	101 J	111 J	48.6 J	134 J	75.9 J	257 J	194 J	R	110 J	225 J
SED-10	Sep-04	47.36	3.57 U	84.4 +/- 47	219 +/- 87	690 U	130 U	600 U	240 +/- 43	1100 U	240 U	1900 U	284 +/- 68
SD028	Jun-93	0.17	0.03	17.1	17.7	4.6	8.9	13.1 U	18.8	401	0.9 U	12.8	20.2 U
SD028	Sep-93	0.67	R	57 J	103 J	21.6 J	73.6 J	130 J	189 J	3320 J	R	47.7 J	135 J
SD028-DUP	Sep-93	1.16	0.62 J	58.9 J	60.9 J	17.4 J	49 J	70.4 J	118 J	2170 J	R	39.2 J	89 J
SED-11	Sep-04	6.12	1.00 U	97 U	345 +/- 110	360 U	98 U	400 U	929 +/- 69	580 U	250 U	2100 U	61 U
SED-11-DUP	Sep-04	NA	1.00 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD308	Jun-93	0.50	2.00	5.2	36.1	3.2 U	10.7 U	13.5 U	41.7	203	1.6 U	7.3	45.8
SD308	Sep-93	0.14	0.31 J	9.6	44.2	4.9	24.8 J	21.5	88.1 J	211 J	2.1 U	10.9	117 J
SED-12	Sep-04	156.80 E	1.61 U	54 U	271 +/- 110	760 U	130 U	660 U	147 +/- 33	1300 U	280 U	1900 U	409 +/- 73
SD026	Jun-93	21.00 U	0.004	9.5	24.5	3.8 U	19	16.6 U	34	126	1.1 U	10.8	83.1
SD026-DUP	Jun-93	0.64	0.024	8.5	22.5	3.2 U	17.2	13.1 U	29.7	112	1 U	9	72.4
SD026	Sep-93	0.46 U	0.045 U	6 U	16.9 J	2.5 U	11.5	9.8 UJ	10.5 U	74.7 J	0.9 U	7.3	39.4
SED-13	Sep-04	59.36	1.52 U	74 U	399 +/- 160	1100 U	180 U	850 U	334 +/- 50	1600 U	330 U	2200 U	1090 +/- 120
SD111	Jun-93	181	0.48	21.7 J	287	19.9	190	64.6	400 J	534	2.3	76.4	669
SD111-DUP	Sep-93	201	0.64 U	28.7	253	13.7	206	51.7	333	416	3.8 U	58.8	614 J
SD111	Sep-93	208	0.62 U	24.2	286	19.3	181	63.7	326	549	1.8 U	76.5	604 J
SED-14	Sep-04	36.27	4.54 U	317 +/- 56	279 +/- 110	820 U	140 U	690 U	263 +/- 42	1300 U	270 U	1900 U	466 +/- 77
SED-15	Sep-04	7.69	3.13 U	40.6 +/- 24	170 +/- 97	450 U	78 U	370 U	106 +/- 21	720 U	280 U	1800 U	80.7 +/- 34
SD309	Jun-93	1.07	0.14 U	4.7 J	77 J	4.6 J	13.9 J	R	55.9 J	185 J	R	13.9 J	32.5 J
SD309	Sep-93	0.12	0.09 U	1.2 UJ	18.4	1.7 U	11.4	13.6 U	6.7 J	93.9	2 U	7.1	7.8 J
SED-16	Sep-04	24.13	6.25 U	47 U	110 U	280 U	79 U	300 U	242 +/- 30	480 U	300 U	1400 U	206 +/- 42
SD314	Jun-93	0.54 U	0.33 U	R	32.5 J	R	R	R	7 J	153 J	R	R	R
SD314-DUP	Jun-93	100.00 UJ	0.33 U	R	30.2	R	R	R	29.7	240	R	R	R
SD314-DUP	Sep-93	0.84	R	R	21.8 J	R	18.9 J	R	12.7 U	235 J	R	R	R
SD314	Sep-93	1.20	R	4 U	21 J	R	37.3 J	R	16.3 J	175 J	R	R	R

TABLE 2-7
COMPARISON OF 2004 FIELD SCREENING RESULTS TO 1993 ANALYTICAL DATA - SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

Sample ID	Date Collected	Total PAHs [1] (mg/kg)	Total PCBs [1] (mg/kg)	Metals [1,2] (mg/kg)									
				As	Ba	Co	Cu	Cr	Pb	Mn	Ag	V	Zn
SED-17	Sep-04	73.33	0.83 U	87 U	389 +/- 100	550 U	930 +/- 110	480 U	914 +/- 60	900 U	220 U	1400 U	359 +/- 65
SD317	Jun-93	19.19	0.32	31.1 J	124 J	18.8 J	3600 J	72 J	2970 J	291 J	2.9 J	33.8 J	368 J
SD317	Sep-93	4.84	0.06 U	20.1	175	16.4	2120 J	42	1590 J	363 J	2.8 U	29.6	634 J
SED-18	Sep-04	116.84	1.32 U	57 +/- 37	209 +/- 100	370 U	121 +/- 63	340 U	332 +/- 35	600 U	270 U	1400 U	162 +/- 43
SED-18-DUP	Sep-04	NA	1.32 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD013	Jun-93	7.35	0.024 J	28.3 J	105 J	14.2 J	289 J	27.2 J	418 J	1010 J	R	25.2 J	149 J
SD013	Sep-93	1.83	0.07 U	28.1	181	24.7	138 J	55	238 J	697 J	2.9 U	52.5	191 J
SED-19	Sep-04	87.85 E	0.63 U	31 U	449 +/- 120	310 U	92 U	511 +/- 200	136 +/- 20	490 U	250 U	1500 U	100 +/- 35
SD010	Jun-93	10.17	0.013	6.5	36.3	6.1	36.9	13.4 U	60.8	150	1.1 U	11.9	51.8
SD010	Sep-93	6.03	0.043 U	4.6	15.8	3.2	20.7 J	7.8 U	36.2 J	89.9 J	1.3 U	7	23.2 J
SED-20	Sep-04	28.24	0.81 U	32 U	497 +/- 92	270 U	72 U	270 U	146 +/- 20	479 +/- 300	180 U	1300 U	150 +/- 34
SD118	Jun-93	324.10	0.042 J	20.2	109	12.2	117	29.8	214	527	1.4 U	28	225
SD118	Sep-93	12.00 U	0.05 U	14.8	63.6	7.5	148 J	13.8	1580 J	178 J	1.6 U	14	101 J
SED-21	Sep-04	14.44	2.78 U	37 U	110 U	220 U	66 U	220 U	179 +/- 25	360 U	270 U	1400 U	225 +/- 39
SED-21-DUP	Sep-04	NA	NA	29 U	99 U	160 U	55 U	180 U	192 +/- 19	333 +/- 190	240 U	1200 U	197 +/- 29
SED-22	Sep-04	6.67	2.78 U	31 U	83.7 +/- 52	300 U	76 U	310 U	63.3 +/- 19	581 +/- 340	190 U	1500 U	53.1 +/- 34
SED-23	Sep-04	12.60	10.00 U	21 U	73 U	190 U	59 U	210 U	41.7 +/- 12	490 +/- 230	300 U	1400 U	92.7 +/- 27

[1] Dry weight corrected result

[2] For metals, detected results are shown as recorded result + standard deviation for each metal

E - Estimated value; exceeds upper limit of calibration

U - Analyte was analyzed for but not detected. Detection limit presented.

J - The concentration is an estimated quantity.

R -Value is rejected.

TABLE 2-8
COMPARISON OF 2004 AND 1993 FIXED LABORATORY ANALYTICAL DATA - SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

M&E Sample ID	SED-01	SD030	SD030	SED-05	SED-25	SD304	SD304
Date Sampled	09/14/04	06/15/93	09/15/93	09/15/04	09/15/04	6/11/1993	9/16/1993
Comments				FD of SED-25	FD of SED-05		
Polychlorinated Biphenyls (PCBs) and 4,4-DDD (ug/kg dry wt.)							
4,4'-DDD	2.69 J	1.2 J	10 U	102 J	83 J	83 J	-- R
Aroclor-1016	6.5 U	100 U	100 U	65.1 U	65.9 U	280 U	-- R
Aroclor-1221	13 U	210 U	210 U	130 U	132 U	560 U	-- R
Aroclor-1232	6.5 U	100 U	100 U	65.1 U	65.9 U	280 U	-- R
Aroclor-1242	6.5 U	100 U	100 U	65.1 U	65.9 U	280 U	-- R
Aroclor-1248	14.8	100 U	100 U	65.1 U	65.9 U	570	-- R
Aroclor-1254	6.5 U	100 U	100 U	2870 J	2520 J	280 U	-- R
Aroclor-1260	11.5 J	100 U	100 U	1910 J	1970 J	280 U	-- R
Total Detected PCBs	26	0	0	4780	4490	570	NA
Total Organic Carbon (mg/kg dry wt.)							
TOC (%)	25.3	NA	NA	27.7	272	NA	NA
TOC Average Duplicates	253000			277000	2720000		
Metals (mg/kg dry wt.)							
Aluminum	6500	7490	6600	9900	16000	6180 J	5120 J
Arsenic	360 J	256	142	60 J	90 J	40.8 J	39 J
Barium	370 EB	253	107	250 EB	400 EB	197 J	143 J
Chromium	14 J	14.7 J	11.9 UJ	520 J	870 J	106 J	61.5 J
Cobalt	7.8 J	17.7	14.1	24 J	38 J	24 J	21 J
Copper	19 J	15.4 U	13.6 U	550 J	850 J	157 J	77.8 J
Lead	35 J	39.3	35.8 J	620 J	1000 J	396 J	161 J
Manganese	1600 JEB	2080	897	380 JEB	830 JEB	745 J	643 J
Silver	0.27 J	6.7	2 U	0.57 J	0.86 J	-- R	-- R
Vanadium	19 J	19.5	18.7	30 J	58 J	32.1 J	27.5 J
Zinc	110 JEB	40.3	38.5 U	2700 JEB	4400 JEB	998 J	446 J

TABLE 2-8
COMPARISON OF 2004 AND 1993 FIXED LABORATORY ANALYTICAL DATA - SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

M&E Sample ID	SED-01	SD030	SD030	SED-05	SED-25	SD304	SD304
Date Sampled	09/14/04	06/15/93	09/15/93	09/15/04	09/15/04	6/11/1993	9/16/1993
Comments				FD of SED-25	FD of SED-05		
Polynuclear Aromatic Hydrocarbons (PAHs) (ug/kg dry wt.)							
Naphthalene	59 EBJ	190 J	140 J	2800 EBJ	1700 EBJ	810 J	-- R
2-Methylnaphthalene	21 J	1000 U	1000 U	3300 J	1800 J	390 J	-- R
1-Methylnaphthalene	28 EBJ	NA	NA	2700 EBJ	1500 EBJ	NA	NA
2,6-Dimethylnaphthalene	37 J	NA	NA	1300 J	730 J	NA	NA
Acenaphthylene	31 J	1000 U	1000 U	3800 J	2300 J	220 J	-- R
Acenaphthene	17 J	1000 U	1000 U	5300 J	3400 J	1300 J	720 J
Fluorene	21 J	1000 U	1000 U	6200 J	4000 J	1100 J	830 J
2,3,5-Trimethylnaphthalene	3.9 J	NA	NA	310 J	190 J	NA	NA
Phenanthrene	93 EBJ	45 J	1000 U	13000 EBJ	7200 EBJ	4200	2700 J
Anthracene	42 J	1000 U	1000 U	6700 J	4400 J	770 J	390 J
1-Methylphenanthrene	12 EBJ	NA	NA	1100 EBJ	720 EBJ	NA	NA
Fluoranthene	230 EBJ	61 J	1000 U	24000 EBJ	11000 EBJ	6800	2200 J
Pyrene	160 EBJ	48 J	1000 U	16000 EBJ	7300 EBJ	6700	2300 J
Benzo[a]anthracene	91 J	1000 U	1000 U	14000 J	7700 J	2900	550 J
Chrysene	140 J	1000 U	1000 U	14000 J	8100 J	2700 J	790 J
Benzo[b]fluoranthene	160 EBJ	60 J	1000 U	11000 EBJ	6200 EBJ	3300 J	440 J
Benzo[k]fluoranthene	300 J	1000 U	1000 U	10000 J	5300 J	2500 J	800 J
Benzo[e]pyrene	120 J	NA	NA	7200 J	3800 J	NA	NA
Benzo[a]pyrene	130 J	1000 U	1000 U	11000 J	5300 J	1600 J	610 J
Perylene	52 J	NA	NA	2700 J	1300 J	NA	NA
Indeno[1,2,3-cd]pyrene	80 J	1000 U	1000 U	6200 J	2700 J	950 J	-- R
Dibenz[a,h]anthracene	25 J	1000 U	1000 U	2200 J	1000 J	2800 UJ	-- R
Benzo[g,h,i]perylene	79 J	1000 U	1000 U	5200 J	2300 J	2800 UJ	-- R
Total Detected PAHs	1932	404	140	170010	89940	36240	12330
Other SVOCs (ug/kg dry wt.)							
Biphenyl	5.3 J	NA	NA	150 J	91 J	NA	NA
Dibenzofuran	17 J	1000 U	1000 U	3700 J	2200 J	560 J	260 J

TABLE 2-8
COMPARISON OF 2004 AND 1993 FIXED LABORATORY ANALYTICAL DATA - SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

M&E Sample ID	SED-11	SD308	SD308	SED-18	SD013	SD013	SED-22
Date Sampled	09/16/04	6/10/1993	9/14/1993	09/16/04	6/9/1993	9/14/1993	09/13/04
Comments							
Polychlorinated Biphenyls (PCBs) and 4,4-DDD (ug/kg dry wt.)							
4,4'-DDD	-- R	1.2 J	6.1 UJ	17.9 J	13 U	7.1 UJ	14.5
Aroclor-1016	6.6 U	65 U	61 UJ	6.62 U	130 U	71 UJ	6.65 U
Aroclor-1221	13.2 U	130 U	120 UJ	13.2 U	260 U	140 UJ	13.3 U
Aroclor-1232	6.6 U	65 U	61 UJ	6.62 U	130 U	71 UJ	6.65 U
Aroclor-1242	22.8	65 U	61 UJ	6.62 U	130 U	71 UJ	6.65 U
Aroclor-1248	6.6 U	2000	310 J	6.62 U	24 J	71 UJ	6.65 U
Aroclor-1254	6.6 U	65 U	61 UJ	36.3	130 U	71 UJ	6.65 U
Aroclor-1260	6.6 U	65 U	61 UJ	20.1 J	130 U	71 UJ	13.7 J
Total Detected PCBs	23	2000	310	56	24	0	14
Total Organic Carbon (mg/kg dry wt.)							
TOC (%)	16.1	NA	NA	32.3			86.5
TOC Average Duplicates	161000			323000			865000
Metals (mg/kg dry wt.)							
Aluminum	4200	5590	5800	16000	11100 J	30200 J	4700
Arsenic	2.9 J	5.2	9.6	61 J	28.3 J	28.1	3.1 J
Barium	28 EB	36.1	44.2	110 EB	105 J	181	27 EB
Chromium	10 J	13.5 U	21.5	34 J	27.2 J	55	8 J
Cobalt	2 J	3.2 U	4.9	18 J	14.2 J	24.7	2.3 J
Copper	5 J	10.7 U	24.8 J	210 J	289 J	138 J	8.8 J
Lead	16 J	41.7	88.1 J	380 J	418 J	238 J	30 J
Manganese	220 JEB	203	211 J	490 JEB	1010 J	697 J	250 JEB
Silver	0.033 J	1.6 U	2.1 U	0.17 J	-- R	2.9 U	0.069 J
Vanadium	7.5 J	7.3	10.9	28 J	25.2 J	52.5	13 J
Zinc	21 JEB	45.8	117 J	150 JEB	149 J	191 J	42 JEB

TABLE 2-8
COMPARISON OF 2004 AND 1993 FIXED LABORATORY ANALYTICAL DATA - SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

M&E Sample ID	SED-11	SD308	SD308	SED-18	SD013	SD013	SED-22
Date Sampled	09/16/04	6/10/1993	9/14/1993	09/16/04	6/9/1993	9/14/1993	09/13/04
Comments							
Polynuclear Aromatic Hydrocarbons (PAHs) (ug/kg dry wt.)							
Naphthalene	52 EBJ	650 U	620 UJ	360 EBJ	360 J	710 UJ	18 EBJ
2-Methylnaphthalene	20 J	650 U	620 UJ	410 J	480 J	710 UJ	10 J
1-Methylnaphthalene	67 EBJ	NA	NA	390 EBJ	NA	NA	9.6 EBJ
2,6-Dimethylnaphthalene	24 J	NA	NA	360 J	NA	NA	6 J
Acenaphthylene	5.4 J	650 U	620 UJ	98 J	1300 U	710 UJ	11 J
Acenaphthene	7.3 J	650 U	620 UJ	83 J	230 J	710 UJ	7.1 J
Fluorene	11 J	650 U	620 UJ	260 J	290 J	710 UJ	12 J
2,3,5-Trimethylnaphthalene	3.8 J	NA	NA	220 J	NA	NA	2.1 J
Phenanthrene	29 EBJ	49 J	620 UJ	1100 EBJ	930 J	180 J	84 EBJ
Anthracene	8.2 J	650 U	620 UJ	360 J	190 J	710 UJ	19 J
1-Methylphenanthrene	1.8 EBJ	NA	NA	370 EBJ	NA	NA	12 EBJ
Fluoranthene	70 EBJ	83 J	620 UJ	2000 EBJ	1300	440 J	150 EBJ
Pyrene	48 EBJ	120 J	69 J	1200 EBJ	1300	470 J	84 EBJ
Benzo[a]anthracene	24 J	66 J	620 UJ	640 J	490 J	160 J	43 J
Chrysene	36 J	41 J	620 UJ	770 J	500 J	170 J	69 J
Benzo[b]fluoranthene	36 EBJ	140 J	620 UJ	810 EBJ	500 J	150 J	59 EBJ
Benzo[k]fluoranthene	32 J	650 U	620 UJ	700 J	460 J	150 J	120 J
Benzo[e]pyrene	24 J	NA	NA	430 J	NA	NA	43 J
Benzo[a]pyrene	27 J	650 U	70 J	560 J	320 J	110 J	49 J
Perylene	56 J	NA	NA	430 J	NA	NA	41 J
Indeno[1,2,3-cd]pyrene	13 J	650 U	620 UJ	240 J	1300 UJ	710 UJ	32 J
Dibenz[a,h]anthracene	3.8 J	650 U	620 UJ	76 J	1300 UJ	710 UJ	9 J
Benzo[g,h,i]perylene	14 J	650 U	620 UJ	230 J	1300 UJ	710 UJ	33 J
Total Detected PAHs	613	499	139	12097	7350	1830	923
Other SVOCs (ug/kg dry wt.)							
Biphenyl	7.4 J	NA	NA	79 J	NA	NA	2.4 UJ
Dibenzofuran	6.7 J	650 U	620 UJ	240 J	220 J	710 UJ	7.2 J

EB - As a qualifier for soil/sediment samples: Analyte is also detected in the equipment blank
FD - Field Duplicate
J - The concentration is an estimated quantity
mg/kg - milligrams per Kilogram
mg/L - milligrams per Liter
R - The data are rejected as unusable
U - Analyte was analyzed for but not detected
ug/kg - micrograms per Kilogram
ug/L - micrograms per Liter
UJ - The sample quantitation limit is an estimated quantity
NA - Not Analyzed
Metal and PAH samples for sediments were freeze dried

TABLE 2-9
ASSESSMENT AND MEASUREMENT ENDPOINT SUMMARY FOR 1997 BERA
IRON HORSE PARK SUPERFUND SITE - OU-4

Assessment Endpoint	Indicators of Effects	Measurement Endpoint
FOR TERRESTRIAL HABITATS		
Evidence of significant reduction in soil invertebrate populations.	Surface soil contaminant concentrations exceed toxicity benchmarks for earthworms.	Comparison of average exposure Hazard Quotient (HQ) for earthworms to toxicity reference values.
Evidence of significant reduction in small mammal populations.	Exposures exceed toxicity doses for short-tailed shrews.	Comparison of average exposure HQ for short-tailed shrews to toxicity reference values.
FOR AQUATIC HABITATS		
Evidence of significant reduction in aquatic populations.	Surface water and/or sediment contaminant concentrations exceed toxicity benchmarks for water column and benthic receptors.	Comparison of site Hazard Quotient (HQ) for water column and benthic receptors to toxicity reference values.
Evidence of significant reduction in aquatic populations.	Impairment of the invertebrate community relative to reference locations.	Comparison of site and reference benthic data.
Evidence of significant reduction in migratory bird population.	Exposures exceed toxicity doses for great blue heron.	Comparison of site HQ for great blue heron to toxicity reference values.

TABLE 3-1
ASSESSMENT AND MEASUREMENT ENDPOINT SUMMARY FOR ERA/WRIA
IRON HORSE PARK SUPERFUND SITE - OU-4

Assessment Endpoints	Measurement Endpoints
Aquatic Life	
Sustainability (survival, growth, reproduction) of local populations of warmwater fish	• Compare the concentrations of COPCs measured in surface water samples collected in on-site and reference locations to surface water benchmarks which are indicative of potential harm to aquatic life • Compare toxicity of surface water samples collected in four on-site water bodies to samples collected from reference locations using the fathead minnow (*Pimphales promelas*) laboratory bioassays • Compare tissue concentrations of COPCs measured in fish caught within the site to those same tissue concentrations to fish caught at reference locations • Compare tissue concentrations of COPCs measured in fish caught within the site to published fish tissue benchmarks which are indicative of potential impairment
Sustainability (survival, growth, reproduction) of local populations of aquatic invertebrates	• Compare the concentrations of COPCs measured in surface water samples collected in on-site and reference locations to surface water benchmarks which are indicative of potential harm to aquatic life • Compare toxicity of surface samples collected in four on-site water bodies to samples collected from reference locations using the daphnid (*Daphnia dubia*) laboratory bioassays
Benthic Invertebrate Community	
Sustainability (survival, growth, reproduction) of local populations of benthic invertebrates	• Compare the concentrations of COPCs measured in sediment samples collected in the on-site and reference locations to sediment benchmarks which are indicative of potential impairment • Compare toxicity of sediment samples collected in the site to samples collected from reference locations using *Hyalella azteca* and *Chironomus tentans* laboratory bioassays
Wildlife Receptors	
Sustainability (survival, growth, reproduction) of local populations of piscivorus birds	• Quantify the average and maximum daily exposures to COPCs in the great blue heron via the consumption of animal prey (100% fish); compare these modeled exposures to published values which are indicative of potential impairment

TABLE 4-1
CONTAMINANT SCREENING FOR SURFACE WATER
IRON HORSE PARK SUPERFUND SITE - OU-4

Chemical	Frequency of Detection[1]	Maximum Detected Concentration (ug/L)	Location of Maximum Detected Concentration	Maximum Reference Sample Concentration	Unadjusted Criterion (ug/L)	Screening Criterion[2] (ug/L)	Type	Number of Exceedances	Reason for Exclusion[6]
Inorganics (Total)									
Aluminum	12/12	152	SW-CB-02	42.5	87	87	NRWQC	1	
Arsenic	12/12	3.4	SW-RP-01 and SW-RP-02	1.1					
Barium	12/12	41.2	SW-CB-02	18.8					
Calcium	12/12	13,300	SW-RP-01 and SW-CB-02	8,970					
Chromium	0/12	ND	ND	ND					
Cobalt	0/12	ND	ND	ND					
Copper	3/12	1.4	SW-BM-03	ND					
Lead	12/12	1.7	SW-CB-02	0.58					
Magnesium	12/12	3,190	SW-RP-01	1,680					
Manganese	12/12	330	SW-CB-02	253					
Silver	0/12	ND	ND	ND					
Vanadium	0/12	ND	ND	ND					
Zinc	1/12	6.7	SW-CB-02	ND					
Inorganics (Dissolved)									
Aluminum	9/12	54.2	SW-CB-03	38.4					
Arsenic	12/12	2.8	SW-RP-01 and SW-RP-02	1.1	150	150	NRWQC [3]	0	BSV
Barium	12/12	39.4	SW-CB-03	18.3	4	4	Tier II	12	
Calcium	12/12	13,400	SW-RP-01	8,970	NA	NA	NA	0	NUT
Chromium	0/12	ND	ND	ND	109.5	35	NRWQC [4],[5]	0	DF
Cobalt	1/12	1.1	SW-CB-03	ND	3	3	Tier II	0	BSV
Copper	0/12	ND	ND	ND	13.5	4.1	NRWQC [4]	0	DF
Lead	12/12	0.83	SW-BM-01	0.41	4.2	0.9	NRWQC [4]	0	BSV
Magnesium	12/12	3,190	SW-RP-01	1,670	NA	NA	NA	0	NUT
Manganese	12/12	274	SW-CB-03	177	80	80	Tier II	12	
Silver	0/12	ND	ND	ND	0.36	0.36	SCV	0	DF
Vanadium	0/12	ND	ND	ND	19	19	Tier II	0	DF
Zinc	5/12	12.6	SW-CB-03	8.2	177	55	NRWQC [4]	0	BSV

[1] Frequency of detection among the 12 study area samples.
[2] The NRWQC for aluminum is based on total concentration. For other metals the dissolved metals concentrations are compared to screening benchmarks because dissolved concentrations correspond to the NRWQC or TIER II value and represent bioavailable form of the metal.
[3] Value reported for arsenic(III).
[4] Metals criteria adjusted for hardness (40.2 mg/L as $CaCO_3$) using equations provided in USEPA, 2002.
[5] Value reported for chromium(III). It is assumed that chromium in surface water is present in reduced form.
[6] Reasons for exclusion were that maximum detected level was below the screening value (BSV), the frequency of detection was less than or equal to 5% (DF), and/or the analyte was a major nutrient.

COPC - Chemical of Potential Concern
ND - Not Detected
NRWQC - Freshwater Chronic National Recommended Water Quality Criterion (USEPA 1986a,b; 1987; 1992a, 1998, 2002).
SCV - Secondary Chronic Value as presented in Suter and Tsao (1996).
Tier II - Ecotox Thresholds Great Lakes Water Quality Initiative Tier II Methodology (USEPA, 1996).
NA - Screening criterion Not Available
BSV - Below Screening Value
DF - Detection Frequency
NUT - Nutrient

TABLE 4-2
CONTAMINANT SCREENING FOR SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

Chemical	Frequency of Detection	Maximum Detected Concentration[1]	Location of Maximum Detected Concentration	Maximum Reference Sample Concentration	Screening Criterion[2]	Type	Number of Exceedances	Reason for Exclusion[3]
PAHs (ug/kg)								
Acenaphthene	4/4	4,350	SED-05	7.1	620	SQC	1	
Acenaphthylene	4/4	3,050	SED-05	11	44	ERL	2	
Anthracene	4/4	5,550	SED-05	19	85.3	ERL	2	
Benzo(a)anthracene	4/4	10,850	SED-05	43	261	ERL	2	
Benzo(a)pyrene	4/4	8,150	SED-05	49	430	ERL	2	
Benzo(b)fluoranthene	4/4	8,600	SED-05	59	240	LEL[4]	2	
Benzo(e)pyrene	4/4	5,500	SED-05	43	NA	NA	NA	
Benzo(g,h,i)perylene	4/4	3,750	SED-05	33	170	LEL	2	
Benzo(k)fluoranthene	4/4	7,650	SED-05	120	240	LEL	3	
Chrysene	4/4	11,050	SED-05	69	384	ERL	2	
Dibenz(a,h)anthracene	4/4	1,600	SED-05	9.0	63.4	ERL	2	
2,6-Dimethylnaphthalene	4/4	1,015	SED-05	6.4	NA	NA	NA	
Fluoranthene	4/4	17,500	SED-05	150	2900	SQC	1	
Fluorene	4/4	5,100	SED-05	12	540	SQB	1	
Indeno(1,2,3-cd)pyrene	4/4	4,450	SED-05	32	200	LEL	2	
1-Methylnaphthalene	4/4	2,100	SED-05	9.6	130	SCV	2	
2-Methylnaphthalene	4/4	2,550	SED-05	10	70	ERL	2	
1-Methylphenanthrene	4/4	910	SED-05	12	NA	NA	NA	
Naphthalene	4/4	2,250	SED-05	18	480	SQB	1	
Perylene	4/4	2,000	SED-05	41	NA	NA	NA	
Phenanthrene	4/4	10,100	SED-05	84	850	SQC	2	
Pyrene	4/4	11,650	SED-05	84	660	ERL	2	
2,3,5-Trimethylnaphthalene	4/4	250	SED-05	2.1	NA	NA	NA	
Total PAH[5]	4/4	129,975	SED-05	923	4022	ERL	2	
Other SVOCs (ug/kg)								
Biphenyl	4/4	121	SED-05	ND	1,100	SQB	0	BSV
Dibenzofuran	4/4	2,950	SED-05	7.2	2000	SQB	1	
Pesticides/PCBs (ug/kg)								
4,4'-DDD	3/3	92.5	SED-05	14.5	2	ERL	2	
Aroclor-1016	0/4	ND	ND	ND	5	LEL	0	DF[6]
Aroclor-1221	0/4	ND	ND	ND	120	SCV	0	DF[6]
Aroclor-1232	0/4	ND	ND	ND	7	LEL	0	DF[6]
Aroclor-1242	1/4	22.8	SED-11	ND	NA	NA	NA	
Aroclor-1248	1/4	14.8	SED-01	ND	30	LEL	0	BSV
Aroclor-1254	2/4	2,695	SED-05	ND	60	LEL	1	
Aroclor-1260	3/4	1,940	SED-05	13.7	5	LEL	3	

TABLE 4-2
CONTAMINANT SCREENING FOR SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

Chemical	Frequency of Detection	Maximum Detected Concentration[1]	Location of Maximum Detected Concentration	Maximum Reference Sample Concentration	Screening Criterion[2]	Type	Number of Exceedances	Reason for Exclusion[3]
Inorganics (mg/kg)								
Aluminum	4/4	16,000	SED-18	4,700	25,500	TEL	0	BSV
Arsenic	4/4	360	SED-01	3.1	8.2	ERL	3	
Barium	4/4	370	SED-01	27	NA	NA	NA	
Chromium	4/4	695	SED-05	8.0	81	ERL	1	
Cobalt	4/4	31	SED-05	2.3	50	LEL*	0	BSV
Copper	4/4	700	SED-05	8.8	34	ERL	2	
Lead	4/4	810	SED-05	30	47	ERL	2	
Manganese	4/4	1,600	SED-01	250	460	LEL	3	
Silver	4/4	0.72	SED-05	0.069	1.0	ERL	0	BSV
Vanadium	4/4	44	SED-05	13	NA	NA	NA	
Zinc	4/4	3,550	SED-05	42	150	ERL	1	

(1) Results presented for SED-05 are average values for SED-05 and its duplicate SED-25
(2) Organic benchmarks based on 1% sediment organic carbon content
(3) Reasons for exclusion were that the maximum detected level was below the screening value (BSV) and/or the frequency of detection was less than or equal to 5% (DF)
(4) Screening value for benzo(k)fluoranthene
(5) Total PAHs calculated as the sum of detected individual PAH concentrations
(6) Aroclor-1016, Aroclor-1221, and Aroclor-1232 were eliminated based on DF; however the detection limits for these chemicals at SED-05 exceeded the screening benchmarks, and thus are considered sources of uncerainty.

DF - detection frequency
BSV - below screening value
COPC - Contaminant of potential ecological concern
ERL - NOAA Effects Range-Low (Long *et al*., 1995; Long and Morgan, 1990)
SCV - Secondary Chronic Value (Jones *et al*., 1997)
SQC - USEPA Sediment Quality Criterion (USEPA, 1996)
SQB - USEPA Office of Solid Waste and Emergency Response Sediment Quality Benchmark (USEPA, 1996)
LEL - Ontario Ministry of Environment and Energy Lowest Effect Level (Persaud *et al*., 1993)
LEL*- Ontario Ministry of Environment and Energy Lowest Effect Level (OME, 1996)
TEL - Threshold Effects Level (Buchman, 1999)
NA - not available
ND - not detected

TABLE 4-3
CONTAMINANT SUMMARY TABLE FOR FISH TISSUE
IRON HORSE PARK SUPERFUND SITE - OU-4

Chemical	Frequency of Detection	Maximum Detected Concentration	Location of Maximum Detected Concentration	Maximum Reference Sample Concentration
PAHs (ug/kg)				
Acenaphthene	6/20	30	BM-BH-1	ND
Acenaphthylene	0/20	ND	ND	ND
Anthracene	15/20	7.1	BM-BH-1	1.1
Benzo(a)anthracene	0/20	ND	ND	ND
Benzo(a)pyrene	0/20	ND	ND	ND
Benzo(b)fluoranthene	0/20	ND	ND	ND
Benzo(e)pyrene	0/20	ND	ND	ND
Benzo(g,h,i)perylene	0/20	ND	ND	ND
Benzo(k)fluoranthene	0/20	ND	ND	ND
Chrysene	0/20	ND	ND	ND
Dibenz(a,h)anthracene	0/20	ND	ND	ND
2,6-Dimethylnaphthalene	10/20	7.0	BM-BH-4	ND
Fluoranthene	3/20	17	MC-BH-2	ND
Fluorene	4/20	24	BM-BH-1	ND
Indeno(1,2,3-cd)pyrene	0/20	ND	ND	ND
1-Methylnaphthalene	4/20	6.2	BM-BH-1	ND
2-Methylnaphthalene	0/20	ND	ND	ND
1-Methylphenanthrene	1/20	1.2	BM-BH-1	ND
Naphthalene	0/20	ND	ND	ND
Perylene	0/20	ND	ND	1.3
Phenanthrene	3/20	29	BM-BH-1	ND
Pyrene	15	7.1	MC-BH-2	1.2
2,3,5-Trimethylnaphthalene	3/20	4.1	BM-BH-1	ND
Other SVOCs (ug/kg)				
Biphenyl	9/20	2.9	BM-BH-4	ND
Dibenzofuran	16/20	10	BM-BH-1	ND
Inorganics (mg/kg)				
Aluminum	16/20	23	MC-BH-3	9.3
Arsenic	20/20	0.29	CB-RP-1	0.03
Barium	20/20	3.8	MC-LD-1	0.64
Chromium	20/20	2.8	CB-BH-1	0.6
Cobalt	20/20	0.10	CB-BH-1	0.03
Copper	20/20	13	CB-BH-4	1.3
Lead	20/20	2.3	CB-BH-4	0.14
Manganese	20/20	21	MC-BH-1	8.5
Silver	4/20	0.02	CB-BH-4	ND
Vanadium	19/20	0.07	CB-BH-3	0.06
Zinc	20/20	36	RP-GS-2	34

ND - not detected
MC - Middlesex Canal
CB - Content Brook
RP - Richardson Pond
BM - B&M Pond

TABLE 5-1
SUMMARY OF CONTAMINANTS DETECTED IN FISH TISSUE
MAXIMUM CONCENTRATIONS BY SPECIES AND AREA
IRON HORSE PARK SUPERFUND SITE - OU-4

COPC[1]	B&M Pond	Content Brook				Richardson Pond		Middlesex Canal			Reference Pond		
	Bullhead	Redfin Pickerel	Bullhead	American Eel	Golden Shiner	Bullhead	Golden Shiner	Bullhead	American Eel	Longnose Dace	Bullhead	Chain Pickerel	American Eel
PAHs (ug/kg)													
Acenaphthene	**30**	ND	7.2	ND	ND	ND	ND	ND	10	ND	ND	ND	ND
Anthracene	**7.1**	1.6	2.1	2.6	ND	1.6	1.5	6.0	ND	3.0	1.1	ND	ND
2,6-Dimethylnaphthalene	**7.0**	1.4	ND	2.1	1.2	ND	ND	2.2	2.0	ND	ND	ND	ND
Fluoranthene	12	ND	ND	ND	ND	ND	ND	**17**	ND	ND	ND	ND	ND
Fluorene	**24**	ND	ND	ND	ND	ND	ND	13	ND	ND	ND	ND	ND
1-Methylnaphthalene	**6.2**	ND	ND	2.6	ND	ND	ND	ND	ND	3.0	ND	ND	ND
1-Methylphenanthrene	**1.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	**29**	ND	ND	ND	ND	ND	ND	13	ND	3.1	ND	ND	ND
Pyrene	5.4	1.8	1.8	4.3	ND	1.7	1.8	**7.1**	ND	1.6	1.2	ND	ND
2,3,5-Trimethylnaphthalene	**4.1**	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND
Perylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	ND
Other SVOCs (ug/kg)													
Biphenyl	**2.9**	2.4	2.4	1.2	ND	2.8	ND	1.3	ND	ND	ND	ND	ND
Dibenzofuran	**9.5**	1.9	2.7	2.7	2.4	2.7	1.7	7.2	ND	ND	ND	ND	ND
Inorganics (mg/kg)													
Aluminum	20	11	12	12	ND	ND	2.7	**23**	6.8	10	9.3	ND	5.0
Arsenic	0.16	0.29	0.1	0.10	0.06	0.09	0.13	0.13	0.04	0.21	**0.31**	0.01	0.03
Barium	2.2	2.8	1.7	1.8	1.4	1.2	2.80	1.2	0.56	**3.8**	0.64	0.22	0.55
Chromium	1.7	1.2	**2.8**	0.68	0.29	0.47	0.37	0.5	0.63	0.21	0.55	0.18	0.27
Cobalt	0.09	0.06	**0.1**	0.06	0.06	0.02	0.02	0.05	0.02	0.06	0.03	0.01	0.01
Copper	4.8	3.4	**13**	6.2	0.46	0.73	0.49	4.7	11	0.88	0.48	1.3	1.0
Lead	0.32	0.31	**2.3**	0.93	0.03	0.05	0.05	0.41	0.54	0.08	0.14	0.05	0.08
Manganese	13	11	7.8	7.9	5.1	6.0	13	**21**	4.1	14	4.5	6.6	8.5
Silver	0.004	ND	**0.02**	0.01	ND	ND	ND	ND	0.003	ND	ND	ND	ND
Vanadium	0.05	0.05	**0.07**	0.03	0.03	0.03	0.01	0.067	0.02	0.04	0.06	R	0.02
Zinc	24	34	17	21	28	16	**36**	13	22	**36**	13	34	24

Notes:

[1] COPCs include those analytes detected in one or more fish tissue sample (see Table 4-3 for full analyte list)

COPC- Chemical of potential concern
ND - not detected

R - data rejected

Shaded values indicate maximum detections for that specific COPC

TABLE 5-2
SUMMARY OF AVERAGE FISH TISSUE COPC CONCENTRATIONS
IRON HORSE PARK SUPERFUND SITE - OU-4

COPC [1]	Average Tissue Concentration (mg/kg bw) [2]				
	B&M Pond	Content Brook	Richardson Pond	Middlesex Canal	Reference
PAHs					
Acenaphthene	**0.014**	0.0023	0.0021	0.0037	ND
Anthracene	**0.0036**	0.0016	0.0014	0.0028	0.0011
2,6-Dimethylnaphthalene	**0.0046**	0.0013	0.0011	0.0022	ND
Fluoranthene	**0.0053**	0.0014	0.0012	0.0050	ND
Fluorene	**0.011**	0.0013	0.0017	0.0041	ND
1-Methylnaphthalene	**0.0032**	0.0013	0.0011	0.0015	ND
1-Methylphenanthrene	**0.00109**	0.00105	0.00106	0.00108	ND
Phenanthrene	**0.013**	0.0018	0.0027	0.0056	ND
Pyrene	0.0031	0.0017	0.0015	**0.0033**	0.0011
2,3,5-Trimethylnaphthalene	**0.0022**	0.0011	0.0011	0.0011	ND
Perylene	ND	ND	ND	ND	**0.0011**
Other SVOCs					
1,1'-Biphenyl	**0.0019**	0.0015	0.0015	0.0011	ND
Dibenzofuran	**0.0045**	0.0021	0.0019	0.0033	ND
Inorganics					
Aluminum	**14**	8.4	1.5	11	3.8
Arsenic	**0.12**	0.099	0.11	0.094	0.021
Barium	**2.0**	1.3	1.98	1.5	0.43
Chromium	**1.1**	1.0	0.35	0.40	0.37
Cobalt	**0.064**	0.052	0.020	0.039	0.016
Copper	3.8	**3.9**	0.57	3.6	0.74
Lead	0.29	**0.60**	0.044	0.27	0.078
Manganese	8.0	6.2	7.8	**9.2**	4.4
Silver	0.0021	**0.0055**	0.0016	0.0018	ND
Vanadium	**0.047**	0.044	0.021	0.042	0.035
Zinc	17	21	**24**	19	17

[1] COPCs are the chemicals that were detected in tissue in one or more sample collected in any of the four on-site study areas.
[2] Average values presented include one-half the detection limit for non-detected results.

COPC - Chemical of Potential Concern
bw - body weight
ND - not detected
Shaded values indicate the maximum of the averages for that specific COPC

TABLE 5-3
COMPARISON OF SEDIMENT COC CONCENTRATIONS TO BENCHMARK VALUES
IRON HORSE PARK SUPERFUND SITE - OU-4

COPC	Screening Benchmark[1]	PEC	Study Area				Reference Area
			SED-05	SED-01	SED-11	SED-18	SED-22
PAHs (ug/kg)							
Acenaphthene	620	NA	4,350	17	7.3	83	7.1
Acenaphthylene	44	NA	3,050	31	5.4	98	11
Anthracene	85	845	**5,550**	42	8.2	360	19
Benzo[a]anthracene	261	1,050	**10,850**	91	24	640	43
Benzo[a]pyrene	430	1,450	**8,150**	130	27	560	49
Benzo[b]fluoranthene	240	NA	8,600	160	36	810	59
Benzo[e]pyrene	NA	NA	5,500	120	24	430	43
Benzo[g,h,i]perylene	170	NA	3,750	79	14	230	33
Benzo[k]fluoranthene	240	NA	7,650	300	32	700	120
Chrysene	384	1,290	**11,050**	140	36	770	69
Dibenz[a,h]anthracene	63	NA	1,600	25	3.8	76	9.0
2,6-Dimethylnaphthalene	NA	NA	1,015	37	24	360	6.4
Fluoranthene	2,900	2,230	**17,500**	230	70	2,000	150
Fluorene	540	536	**5,100**	21	11	260	12
Indeno[1,2,3-cd]pyrene	200	NA	4,450	80	13	240	32
1-Methylnaphthalene	130	NA	2,100	28	67	390	9.6
2-Methylnaphthalene	70	NA	2,550	21	20	410	10
1-Methylphenanthrene	NA	NA	910	12	1.8	370	12
Naphthalene	480	561	**2,250**	59	52	360	18
Perylene	NA	NA	2,000	52	56	430	41
Phenanthrene	850	1,170	**10,100**	93	29	1,100	84
Pyrene	660	1,520	**11,650**	160	48	1,200	84
2,3,5-Trimethylnaphthalene	NA	NA	250	3.9	3.8	220	2.1
Total PAH	4,022	22,800	**129,975**	1,932	613	12,097	923
Other SVOCs (ug/kg)							
Dibenzofuran	2,000	NA	2,950	17	6.7	240	7.2
Pesticides/PCBs (ug/kg)							
4,4'-DDD	2	28	**92.5**	2.69	R	17.9	14.5
Aroclor-1242	NA	NA	ND	ND	22.8	ND	ND
Aroclor-1254	60	NA	2,695	ND	ND	36.3	ND
Aroclor-1260	5	NA	1,940	11.5	ND	20.1	13.7
Total PCB	60[2]	676	**4,728**	14	23	74	28
Metals (mg/kg)							
Arsenic	8	33	**75**	**360**	2.9	**61**	3.1
Barium	NA	NA	325	370	28	110	27
Chromium	81	111	**695**	14	10	34	8.0
Copper	34	149	**700**	19	5.0	**210**	8.8
Lead	47	128	**810**	35	16	**380**	30
Manganese	460	NA	605	1,600	220	490	250
Vanadium	NA	NA	44	19	7.5	28	13
Zinc	150	459	**3,550**	110	21	150	42

[1] Sediment screening bechmarks as presented in Table 4-2

[2] Sediment screening benchmark for Total PCB is TEC - threshold effects concentration (MacDonald *et al*., 2000), based on 1% organic carbon

Shaded values exceed PEC

PEC - Probable effects concentration (MacDonald *et al*., 2000)

NA - Benchmark not available

ND - Not detected

R - Value rejected

TABLE 5-4
SEDIMENT SAMPLE TOTAL ORGANIC CARBON COMPARISONS
IRON HORSE PARK SUPERFUND SITE - OU-4

Area	Sample Location	Date Sampled	% TOC	% TCO	% Moisture	Grain Size Description
Unnamed Brook	SED-18	Sep-04	32.3	NA	66.1	2% gravel, 70% sand, 28% silt and clay
	SD-013	Jun-93	NA	34.3	77.9	0% gravel, 42% sand, 58% silt and clay
	SD-013	Sep-93	NA	19.7	67.5	0% gravel, 16% sand, 84% silt and clay
	SD-322	Jun-93	2.0	2.2	19.3	8% gravel, 89% sand, 3% silt and clay
	SD-322	Sep-93	2.4 J	4.2	30.1	14% gravel, 79% sand, 7% silt and clay
	SD-322 (FD)	Sep-93	3.9	2.6	19.8	18% gravel, 77% sand, 5% silt and clay
Middlesex Canal	SED-11	Sep-04	16.1	NA	72.0	17% gravel, 79% sand, 4% silt and clay
	SD-308	Jun-93	NA	14.2	44.4	1% gravel, 81% sand, 19% silt and clay
	SD-308	Sep-93	NA	10.6	51.8	0% gravel, 76% sand, 24% silt and clay
Content Brook Area	SED-01	Sep-04	25.3	NA	66.8	2% gravel, 82% sand, 16% silt and clay
	SD-030	Jun-93	NA	28.3	69.4	0% gravel, 46% sand, 54% silt and clay
	SD-030	Sep-93	NA	24.8	69.5	0% gravel, 51% sand, 49% silt and clay
B&M Pond Area	SED-05	Sep-04	27.7	NA	88.8	4% gravel, 87% sand, 8% silt and clay
	SD-304	Jun-93	NA	74.2	73.7	1% gravel, 37% sand, 62% silt and clay
	SD-304	Sep-93	NA	39.9	85.9	0% gravel, 47% sand, 53% silt and clay
Round Pond	SED-22	Sep-04	86.5	NA	82.5	0% gravel, 88% sand, 12% silt and clay

NA - Not Analyzed
FD - Field Duplicate
J - Estimated result

TABLE 6-1
***CERIODAPHNIA DUBIA* SURVIVAL SUMMARY**
IRON HORSE PARK SUPERFUND SITE - OU-4

Site	Mean Survival (%)	Distribution	Variance	t-Test Statistics			Significant Difference
				t Value	Critical t Value	p Value	
Statistical Comparison of Survival Against Laboratory Control							
Lab Control	100.00%	-	-	-	-	-	-
SW-BM-01	80.00%	Non-normal	Unequal	1.5000	1.8331	0.0839	NO
SW-RP-01	100.00%	-	-	-	-	-	NO
Lab Control	100.00%	-	-	-	-	-	-
SW-MC-01	100.00%	-	-	-	-	-	NO
SW-CB-01	90.00%	Non-normal	Unequal	1.0000	1.8331	0.1717	NO
Lab Control	100.00%	-	-	-	-	-	-
SW-RF-01	70.00%	Non-Normal	Unequal	1.9640	1.8331	0.0406	YES
Statistical Comparison of Survival Against Project Reference Site - SW-RF-01							
SW-RF-01	70.00%						
SW-BM-01	80.00%	-	-	-	-	-	NO
SW-RP-01	100.00%	-	-	-	-	-	NO
SW-MC-01	100.00%	-	-	-	-	-	NO
SW-CB-01	90.00%	-	-	-	-	-	NO

‡ - Statistical significance evaluated at p=0.05 ; in cases were the evaluated endpoint was equal to or greater than experienced in the laboratory control, statistical analysis may not have been conducted.

TABLE 6-2
***CERIODAPHNIA DUBIA* REPRODUCTION SUMMARY**
IRON HORSE PARK SUPERFUND SITE - OU-4

Site	Mean Juvenile per Adult	Distribution	Variance	t-Test Statistics			Significant Difference
				t Value	Critical t Value	p Value	
Statistical Comparison of Reproduction Against Laboratory Control							
Lab Control	28.4	-	-	-	-	-	-
SW-BM-01	22.5	Normal	Equal	1.4715	1.7341	0.0792	NO
SW-RP-01	21.9	Normal	Equal	2.0405	1.7341	0.0281	YES
Lab Control	32	-	-	-	-	-	
SW-MC-01	30.9	Normal	Equal	0.3308	1.7341	0.3723	NO
SW-CB-01	33.2	-	-	-	-	-	NO
Lab Control	33.7						-
SW-RF-01	23.6	Normal	Equal	2.7205	1.7341	0.007	YES
Statistical Comparison of Reproduction Against Project Reference Site - SW-RF-01							
SW-RF-01	23.6						
SW-BM-01	22.5	Normal	Equal	0.2235	1.7341	0.4128	NO
SW-RP-01	21.9	Normal	Equal	0.4264	1.7341	0.3374	NO
SW-MC-01	30.9	Normal	Equal	-1.234	1.7341	0.8835	NO
SW-CB-01	33.2	Normal	Equal	-1.4174	1.7341	0.9133	NO

‡ - Statistical significance evaluated at p=0.05 ; in cases were the evaluated endpoint was equal to or greater that experienced in the laboratory control, no statistical analysis was conducted.

TABLE 6-3
***PIMEPHALES PROMELAS* SURVIVAL SUMMARY**
IRON HORSE PARK SUPERFUND SITE - OU-4

Site	Mean Survival (%)	Distribution	Variance	t-Test Statistics			Significant Difference
				t Value	Critical t Value	p Value	
Statistical Comparison of Survival Against Laboratory Control							
Lab Control	87.50%	-	-	-	-	-	-
SW-BM-01	77.50%	Normal	Equal	1.2127	1.9432	0.1354	NO
SW-RP-01	100.00%	-	-	-	-	-	NO
Lab Control	97.50%	-	-	-	-	-	-
SW-MC-01	57.50%	Normal	Equal	2.9943	1.9432	0.0121	YES
SW-CB-01	87.50%	Normal	Equal	1.5194	1.9432	0.0897	NO
Lab Control	100.00%	-	-	-	-	-	-
SW-RF-01	87.50%	Normal	Unequal	1.6894	2.3534	0.0949	NO
Statistical Comparison of Survival Against Project Reference Site - SW-RF-01							
SW-RF-01	87.50%						
SW-BM-01	77.50%	Normal	Equal	0.9664	1.9432	0.1856	NO
SW-RP-01	100.00%	-	-	-	-	-	NO
SW-MC-01	57.50%	Normal	Equal	2.0148	1.9432	0.0453	YES
SW-CB-01	87.50%	Normal	Equal	0.0381	1.9432	0.4854	NO

‡ - Statistical significance evaluated at p=0.05 ; in cases were the evaluated endpoint was equal to or greater that experienced in the laboratory control, no statistical analysis was conducted.

TABLE 6-4
***PIMEPHALES PROMELAS* GROWTH SUMMARY**
IRON HORSE PARK SUPERFUND SITE - OU-4

Site	Mean Weight (mg)	Distribution	Variance	t-Test Statistics			Significant Difference
				t Value	Critical t Value	p Value	
Statistical Comparison of Growth Against Laboratory Control							
Lab Control	0.477	-	-	-	-	-	-
SW-BM-01	0.429	Normal	Equal	1.1894	1.9432	0.1396	NO
SW-RP-01	0.534	-	-	-	-	-	NO
Lab Control	0.448	-	-	-	-	-	
SW-MC-01	0.346	Normal	Equal	1.3909	1.9432	0.1068	NO
SW-CB-01	0.437	Normal	Equal	0.2567	1.9432	0.403	NO
Lab Control	0.482	-	-	-	-	-	-
SW-RF-01	0.490	-	-	-	-	-	NO
Statistical Comparison of Growth Against Project Reference Site - SW-RF-01							
SW-RF-01	0.490						
SW-BM-01	0.429	Normal	Equal	1.6281	1.9432	0.0773	NO
SW-RP-01	0.534	Normal	Equal	-0.683	1.9432	0.7399	NO
SW-MC-01	0.346	Normal	Equal	3.0933	1.9432	0.0106	YES
SW-CB-01	0.437	Normal	Equal	2.2471	1.9432	0.0329	YES

‡ - Statistical significance evaluated at p=0.05 ; in cases were the evaluated endpoint was equal to or greater that experienced in the laboratory control, no statistical analysis was conducted.

TABLE 6-5
COMPARISON OF COPC CONCENTRATIONS IN FISH TISSUE AT MIDDLESEX CANAL TO REFERENCE SAMPLES AND TISSUE RESIDUE BENCHMARKS
IRON HORSE PARK SUPERFUND SITE - OU-4

							Residue-Effects Data									
Chemical of Potential Concern [1]	Maximum Conc. mg/kg bw	Reference Maximum Conc. mg/kg bw	Ratio	Average Conc.[2] mg/kg bw	Reference Average Conc.[2] mg/kg bw	Ratio	Tissue Benchmark Conc. mg/kg	Hazard Quotient (maximum)	Species[3]	Effect	Endpoint	Fraction	Exposure Route	Life-Stage	Effect	ERED Reference ID [4]
PAHs																
Acenaphthene	0.01	ND	-	0.0037	ND	-	3.5	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole body	Absorption	Immature	na	URS10
Anthracene	0.006	0.0011	5.5	0.0028	0.0011	2.6	na	N/A								
2,6-Dimethylnaphthalene	0.0022	ND	-	0.0022	ND	-	na	N/A								
Fluoranthene	0.017	ND	-	0.0050	ND	-	20	<1	*Cyprinus carpio* (Common carp)	Biochemical	NOED	Whole body	Injection	na	No significant increase in EROD activity and P450 1A protein in liver. Residue is injected dose.	URS218
Fluorene	0.013	ND	-	0.0041	ND	-	8	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Muscle	Ingestion	Not Supplied	More tissue concentrations reported in paper than recored in ERED	MEC03-039
1-Methylnaphthalene	0.003	ND	-	0.0015	ND	-	2,920	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	LD50	Whole body	Injection	na	Median lethal dose	URS121
1-Methylphenanthrene	ND	ND	-	0.0011	ND	-	na	N/A								
Phenanthrene	0.013	ND	-	0.0056	ND	-	17	<1	*Carassium auratus* (Goldfish)	Mortality	NOED	Whole body	Water	Adult	na	JA234
Pyrene	0.0071	0.0012	5.9	0.0033	0.0011	3.1	20	<1	*Cyprinus carpio* (Common carp)	Biochemical	LOED	Whole body	Injection	na	Significant increase in EROD activity and P450 1A protein in liver. Residue is injected dose.	URS218
2,3,5-Trimethylnaphthalene	ND	ND	-	0.0011	ND	-	na	N/A								
Other SVOCs																
Biphenyl	0.0013	ND	-	0.0011	ND	-	na	N/A								
Dibenzofuran	0.0072	ND	-	0.0033	ND	-	8.1	<1	*Oncorhynchus mykiss* (Rainbow trout)	Behavior	NOED	Muscle	Ingestion	Not Supplied	More tissue concentrations reported in paper than recored in ERED	MEC03-039
Inorganics																
Aluminum	23	9.3	2.5	11	3.8	2.8	na	N/A								
Arsenic	0.21	0.031	6.8	0.094	0.021	4.6	0.52	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole Body	Absorption	Immature	No effect on mortality	URS10
Barium	3.8	0.64	5.9	1.5	0.43	3.5	na	N/A								
Chromium	0.63	0.55	1.1	0.40	0.37	1.1	3.8	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Liver	Absorption	Immature	No mortality	URS215
Cobalt	0.056	0.026	2.2	0.039	0.016	2.4	na	N/A								
Copper	11	1.3	8.5	3.6	0.74	4.8	13	<1	*Lepomis macrochirus* (Bluegill)	Growth	LOED	Gill	Combined	Immature	Effect on growth - over 22 month period	JB5
Lead	0.54	0.14	3.9	0.27	0.078	3.5	16	<1	*Salvelinus fontinalis* (Brook trout)	Reproduction	NOED	Liver	Water	Juvenile	na	JA207
Manganese	21	8.5	2.5	9.2	4.4	2.1	na	N/A								
Silver	0.0031	ND	-	0.0018	ND	-	0.12	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole Body	Water	Juvenile	na	JA88
Vanadium	0.067	0.063	1.1	0.042	0.035	1.2	9.6	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Liver	Ingestion	Immature	No effect on mortality	URS120
Zinc	36	34	1.1	19	17	1.1	68	<1	*Salvelinus fontinalis* (Brook trout)	Reproduction	NOED	Liver	Water	Juvenile	Spawning, percent viable eggs	JA206

[1] COPCs are the chemicals that were detected in tissue in one or more sample collected in any of the four on-site study areas.
[2] Average values presented include one-half the detection limit for non-detected results.
[3] ERED database records of several freshwater fish were queried - members of Ictaluridae, Centrarchidae, Cyprinidae, Percidae, and Esocidae. If none of the warmwater species were avaialable, TRVs were selected from studies using Salmonidae.
[4] Citations for primary references are provided in the ERED database

Conc. - concentration
COPC - Chemical of Potential Concern
ID - identification number
bw - body weight
na - no test data available in the ERED database
N/A - Hazard quotient could not be calcualted because COPC was not detected or lacks a TRV
ND - not detected
NOED - no observed effect dose
LOED - lowest observed effect dose
Ratio = study area average concentration divided by reference average concentration

TABLE 6-6
COMPARISON OF COPC CONCENTRATIONS IN FISH TISSUE AT B&M POND TO REFERENCE SAMPLES AND TISSUE RESIDUE BENCHMARKS
IRON HORSE PARK SUPERFUND SITE - OU-4

							Residue-Effects Data									
Chemical of Potential Concern [1]	Maximum Conc. mg/kg bw	Reference Maximum Conc. mg/kg bw	Ratio	Average Conc.[2] mg/kg bw	Reference Average Conc.[2] mg/kg bw	Ratio	Tissue Benchmark Conc. mg/kg	Hazard Quotient (maximum)	Species[3]	Effect	Endpoint	Fraction	Exposure Route	Life-Stage	Effect	ERED Reference ID [4]
PAHs																
Acenaphthene	0.03	ND	-	0.014	ND	-	3.5	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole body	Absorption	Immature	na	URS10
Anthracene	0.0071	0.0011	6.5	0.0036	0.0011	3.4	na	N/A								
2,6-Dimethylnaphthalene	0.007	ND	-	0.0046	ND	-	na	N/A								
Fluoranthene	0.012	ND	-	0.0053	ND	-	20	<1	*Cyprinus carpio* (Common carp)	Biochemical	NOED	Whole body	Injection	na	No significant increase in EROD activity and P450 1A protein in liver. Residue is injected dose.	URS218
Fluorene	0.024	ND	-	0.011	ND	-	8	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Muscle	Ingestion	Not Supplied	More tissue concentrations reported in paper than recored in ERED	MEC03-039
1-Methylnaphthalene	0.0062	ND	-	0.0032	ND	-	2,920	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	LD50	Whole body	Injection	na	Median lethal dose	URS121
1-Methylphenanthrene	0.0012	ND	-	0.0011	ND	-	na	N/A								
Phenanthrene	0.029	ND	-	0.013	ND	-	17	<1	*Carassium auratus* (Goldfish)	Mortality	NOED	Whole body	Water	Adult	na	JA234
Pyrene	0.0054	0.0012	4.5	0.0031	0.0011	2.8	20	<1	*Cyprinus carpio* (Common carp)	Biochemical	LOED	Whole body	Injection	na	Significant increase in EROD activity and P450 1A protein in liver. Residue is injected dose.	URS218
2,3,5-Trimethylnaphthalene	0.0041	ND	-	0.0022	ND	-	na	N/A								
Other SVOCs																
Biphenyl	0.0029	ND	-	0.0019	ND	-	na	N/A								
Dibenzofuran	0.0095	ND	-	0.0045	ND	-	8.1	<1	*Oncorhynchus mykiss* (Rainbow trout)	Behavior	NOED	Muscle	Ingestion	Not Supplied	More tissue concentrations reported in paper than recored in ERED	MEC03-039
Inorganics																
Aluminum	20	9.3	2.2	14	3.8	3.6	na	N/A								
Arsenic	0.16	0.031	5.2	0.12	0.021	5.6	0.52	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole Body	Absorption	Immature	No effect on mortality	URS10
Barium	2.2	0.64	3.4	2.0	0.43	4.7	na	N/A								
Chromium	1.7	0.55	3.1	1.1	0.37	2.9	3.8	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Liver	Absorption	Immature	No mortality	URS215
Cobalt	0.093	0.026	3.6	0.064	0.016	3.9	na	N/A								
Copper	4.8	1.3	3.7	3.8	0.74	5.2	13	<1	*Lepomis macrochirus* (Bluegill)	Growth	LOED	Gill	Combined	Immature	Effect on growth - over 22 month period	JB5
Lead	0.32	0.14	2.3	0.29	0.078	3.7	16	<1	*Salvelinus fontinalis* (Brook trout)	Reproduction	NOED	Liver	Water	Juvenile	na	JA207
Manganese	13	8.5	1.5	8.0	4.4	1.8	na	N/A								
Silver	0.0037	ND	-	0.0021	ND	-	0.12	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole Body	Water	Juvenile	na	JA88
Vanadium	0.053	0.063	0.84	0.047	0.035	1.4	9.6	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Liver	Ingestion	Immature	No effect on mortality	URS120
Zinc	24	34	0.71	17	17	0.99	68	<1	*Salvelinus fontinalis* (Brook trout)	Reproduction	NOED	Liver	Water	Juvenile	Spawning, percent viable eggs	JA206

[1] COPCs are the chemicals that were detected in tissue in one or more sample collected in any of the four on-site study areas.
[2] Average values presented include one-half the detection limit for non-detected results.
[3] ERED database records of several freshwater fish were queried - members of Ictaluridae, Centrarchidae, Cyprinidae, Percidae, and Esocidae. If none of the warmwater species were avaialable, TRVs were selected from studies using Salmonidae.
[4] Citations for primary references are provided in the ERED database

TABLE 6-7

COMPARISON OF COPC CONCENTRATIONS IN FISH TISSUE AT RICHARDSON POND TO REFERENCE SAMPLES AND TISSUE RESIDUE BENCHMARKS

IRON HORSE PARK SUPERFUND SITE - OU-4

							Residue-Effects Data									
Chemical of Potential Concern [1]	Maximum Conc. mg/kg bw	Reference Maximum Conc. mg/kg bw	Ratio	Average Conc.[2] mg/kg bw	Reference Average Conc.[2] mg/kg bw	Ratio	Tissue Benchmark Conc. mg/kg	Hazard Quotient (maximum)	Species[3]	Effect	Endpoint	Fraction	Exposure Route	Life-Stage	Effect	ERED Reference ID [4]
PAHs																
Acenaphthene	ND	ND	-	0.0021	ND	na	3.5	N/A	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole body	Absorption	Immature	na	URS10
Anthracene	0.0016	0.0011	1.5	0.0014	0.0011	1.3	na	N/A								
2,6-Dimethylnaphthalene	ND	ND	-	0.0011	ND	na	na	N/A								
Fluoranthene	ND	ND	-	0.0012	ND	na	20	N/A	*Cyprinus carpio* (Common carp)	Biochemical	NOED	Whole body	Injection	na	No significant increase in EROD activity and P450 1A protein in liver. Residue is injected dose.	URS218
Fluorene	ND	ND	-	0.0017	ND	na	8	N/A	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Muscle	Ingestion	Not Supplied	More tissue concentrations reported in paper than recored in ERED	MEC03-039
1-Methylnaphthalene	ND	ND	-	0.0011	ND	na	2,920	N/A	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	LD50	Whole body	Injection	na	Median lethal dose	URS121
1-Methylphenanthrene	ND	ND	-	0.0011	ND	na	na	N/A								
Phenanthrene	ND	ND	-	0.0027	ND	na	17	N/A	*Carassium auratus* (Goldfish)	Mortality	NOED	Whole body	Water	Adult	na	JA234
Pyrene	0.0018	0.0012	1.5	0.0015	0.0011	1.4	20	<1	*Cyprinus carpio* (Common carp)	Biochemical	LOED	Whole body	Injection	na	Significant increase in EROD activity and P450 1A protein in liver. Residue is injected dose.	URS218
2,3,5-Trimethylnaphthalene	ND	ND	-	0.0011	ND	na	na	N/A								
Other SVOCs																
Biphenyl	0.0028	ND	-	0.0015	ND	na	na	N/A								
Dibenzofuran	0.0027	ND	-	0.0019	ND	na	8.1	<1	*Oncorhynchus mykiss* (Rainbow trout)	Behavior	NOED	Muscle	Ingestion	Not Supplied	More tissue concentrations reported in paper than recored in ERED	MEC03-039
Inorganics																
Aluminum	2.7	9.3	0.29	1.5	3.8	0.38	na	N/A								
Arsenic	0.13	0.031	4.2	0.11	0.021	5.2	0.52	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole Body	Absorption	Immature	No effect on mortality	URS10
Barium	2.8	0.64	4.4	2.0	0.43	4.6	na	N/A								
Chromium	0.47	0.55	0.85	0.35	0.37	0.94	3.8	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Liver	Absorption	Immature	No mortality	URS215
Cobalt	0.022	0.026	0.85	0.020	0.016	1.2	na	N/A								
Copper	0.73	1.3	0.56	0.57	0.74	0.78	13	<1	*Lepomis macrochirus* (Bluegill)	Growth	LOED	Gill	Combined	Immature	Effect on growth - over 22 month period	JB5
Lead	0.049	0.14	0.35	0.044	0.078	0.57	16	<1	*Salvelinus fontinalis* (Brook trout)	Reproduction	NOED	Liver	Water	Juvenile	na	JA207
Manganese	13	8.5	1.5	7.8	4.4	1.8	na	N/A								
Silver	ND	ND	-	0.0016	ND	na	0.12	N/A	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole Body	Water	Juvenile	na	JA88
Vanadium	0.031	0.063	0.49	0.021	0.035	0.59	9.6	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Liver	Ingestion	Immature	No effect on mortality	URS120
Zinc	36	34	1.1	24	17	1.4	68	<1	*Salvelinus fontinalis* (Brook trout)	Reproduction	NOED	Liver	Water	Juvenile	Spawning, percent viable eggs	JA206

(1) COPCs are the chemicals that were detected in tissue in one or more sample collected in any of the four on-site study areas.
(2) Average values presented include one-half the detection limit for non-detected results.
(3) ERED database records of several freshwater fish were queried - members of Ictaluridae, Centrarchidae, Cyprinidae, Percidae, and Esocidae. If none of the warmwater species were avaialable, TRVs were selected from studies using Salmonidae.
(4) Citations for primary references are provided in the ERED database

TABLE 6-8
COMPARISON OF COPC CONCENTRATIONS IN FISH TISSUE AT CONTENT BROOK TO REFERENCE SAMPLES AND TISSUE RESIDUE BENCHMARKS
IRON HORSE PARK SUPERFUND SITE - OU-4

							Residue-Effects Data									
Chemical of Potential Concern (1)	Maximum Conc. mg/kg bw	Reference Maximum Conc. mg/kg bw	Ratio	Average Conc. (2) mg/kg bw	Reference Average Conc. (2) mg/kg bw	Ratio	Tissue Benchmark Conc. mg/kg	Hazard Quotient (maximum)	Species (3)	Effect	Endpoint	Fraction	Exposure Route	Life-Stage	Effect	ERED Reference ID (4)
PAHs																
Acenaphthene	0.0072	ND	-	0.0023	ND	-	3.5	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole body	Absorption	Immature	na	URS10
Anthracene	0.0026	0.0011	2.4	0.0016	0.0011	1.5	na	N/A								
2,6-Dimethylnaphthalene	0.0021	ND	-	0.0013	ND	-	na	N/A								
Fluoranthene	ND	ND	-	0.0014	ND	-	20	N/A	*Cyprinus carpio* (Common carp)	Biochemical	NOED	Whole body	Injection	na	No significant increase in EROD activity and P450 1A protein in liver. Residue is injected dose.	URS218
Fluorene	ND	ND	-	0.0013	ND	-	8	N/A	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Muscle	Ingestion	Not Supplied	More tissue concentrations reported in paper than recored in ERED	MEC03-039
1-Methylnaphthalene	0.0026	ND	-	0.0013	ND	-	2,920	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	LD50	Whole body	Injection	na	Median lethal dose	URS121
1-Methylphenanthrene	ND	ND	-	0.0011	ND	-	na	N/A								
Phenanthrene	ND	ND	-	0.0018	ND	-	17	N/A	*Carassium auratus* (Goldfish)	Mortality	NOED	Whole body	Water	Adult	na	JA234
Pyrene	0.0043	0.0012	3.6	0.0017	0.0011	1.6	20	<1	*Cyprinus carpio* (Common carp)	Biochemical	LOED	Whole body	Injection	na	Significant increase in EROD activity and P450 1A protein in liver. Residue is injected dose.	URS218
2,3,5-Trimethylnaphthalene	0.0011	ND	-	0.0011	ND	-	na	N/A								
Other SVOCs																
Biphenyl	0.0024	ND	-	0.0015	ND	-	na	N/A								
Dibenzofuran	0.0027	ND	-	0.0021	ND	-	8.1	<1	*Oncorhynchus mykiss* (Rainbow trout)	Behavior	NOED	Muscle	Ingestion	Not Supplied	More tissue concentrations reported in paper than recored in ERED	MEC03-039
Inorganics																
Aluminum	12	9.3	1.3	8.4	3.8	2.2	na	N/A								
Arsenic	0.29	0.031	9.4	0.099	0.021	4.8	0.52	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole Body	Absorption	Immature	No effect on mortality	URS10
Barium	2.8	0.64	4.4	1.3	0.43	3.1	na	N/A								
Chromium	2.8	0.55	5.1	1.0	0.37	2.7	3.8	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Liver	Absorption	Immature	No mortality	URS215
Cobalt	0.1	0.026	3.8	0.052	0.016	3.2	na	N/A								
Copper	13	1.3	10	3.9	0.74	5.3	13	1	*Lepomis macrochirus* (Bluegill)	Growth	LOED	Gill	Combined	Immature	Effect on growth - over 22 month period	JB5
Lead	2.3	0.14	16	0.60	0.078	7.7	16	<1	*Salvelinus fontinalis* (Brook trout)	Reproduction	NOED	Liver	Water	Juvenile	na	JA207
Manganese	11	8.5	1.3	6.2	4.4	1.4	na	N/A								
Silver	0.021	ND	-	0.0055	ND	-	0.12	<1	*Lepomis macrochirus* (Bluegill)	Mortality	NOED	Whole Body	Water	Juvenile	na	JA88
Vanadium	0.07	0.063	1.1	0.044	0.035	1.3	9.6	<1	*Oncorhynchus mykiss* (Rainbow trout)	Mortality	NOED	Liver	Ingestion	Immature	No effect on mortality	URS120
Zinc	34	34	1.0	21	17	1.2	68	<1	*Salvelinus fontinalis* (Brook trout)	Reproduction	NOED	Liver	Water	Juvenile	Spawning, percent viable eggs	JA206

(1) COPCs are the chemicals that were detected in tissue in one or more sample collected in any of the four on-site study areas.
(2) Average values presented include one-half the detection limit for non-detected results.
(3) ERED database records of several freshwater fish were queried - members of Ictaluridae, Centrarchidae, Cyprinidae, Percidae, and Esocidae. If none of the warmwater species were avaialable, TRVs were selected from studies using Salmonidae.
(4) Citations for primary references are provided in the ERED database

Conc. - concentration
COPC - Chemical of Potential Concern
ID - identification number
bw - body weight
na - no test data available in the ERED database
N/A - Hazard quotient could not be calcualted because COPC was not detected or lacks a TRV
ND - not detected
NOED - no observed effect dose
LOED - lowest observed effect dose
Ratio = study area average concentration divided by reference average concentration

TABLE 6-9
***CHIRONOMUS TENTANS* SURVIVAL SUMMARY**
IRON HORSE PARK SUPERFUND SITE - OU-4

Site	Mean Survival (%)	Distribution	Variance	t-Test Statistics			Significant Difference
				t Value	Critical t Value	p Value	
Statistical Comparison of Survival Against Laboratory Control							
Lab Control	83.80%						
SED-22	77.50%	Normal	Equal	0.9946	1.8946	0.1765	NO
SED-01	90.00%	Normal	Equal	-1.1632	1.77613	0.8679	NO
SED-05	93.80%	Normal	Equal	-2.0281	1.8946	0.9589	NO
SED-11	71.30%	Normal	Equal	2.1719	1.8946	0.0332	YES
SED-18	88.80%	Normal	Equal	-1.1929	1.8946	0.8641	NO
Statistical Comparison of Survival Against Project Reference Site - SED-22							
SED-22	77.50%						
SED-01	90.00%	Normal	Equal	-1.8964	1.8946	0.9501	NO
SED-05	93.80%	Normal	Equal	-3.475	1.8946	0.9948	NO
SED-11	71.30%	Normal	Equal	1.2556	1.8946	0.1248	NO
SED-18	88.80%	Normal	Equal	-1.8853	1.8946	0.9493	NO

Collection Locations:

SED-01	Content Brook
SED-05	B&M Pond
SED-11	Middlesex Canal
SED-18	Unnamed Brook
SED-22	Reference Pond

TABLE 6-10
***CHIRONOMUS TENTANS* GROWTH SUMMARY**
IRON HORSE PARK SUPERFUND SITE - OU-4

Site	Mean AFDW (mg)	Distribution	Variance	t-Test Statistics			Significant Difference
				t Value	Critical t Value	p Value	
Statistical Comparison of Growth Against Laboratory Control							
Lab Control	2.03						
SED-22	1.84	Normal	Equal	1.6067	1.8946	0.0761	NO
SED-01	2.21	Normal	Equal	-1.2646	1.8946	0.8767	NO
SED-05	1.34	Normal	Equal	8.2081	1.8946	0	YES
SED-11	1.4	Normal	Equal	5.6588	1.8946	0.0004	YES
SED-18	0.94	Normal	Equal	17.2139	1.8946	0	YES
Statistical Comparison of Growth Against Project Reference Site - SED-22							
SED-22	1.84						
SED-01	2.21	Normal	Equal	-2.758	1.7613	0.9923	NO
SED-05	1.34	Normal	Equal	4.5019	1.7613	0.0002	YES
SED-11	1.4	Normal	Equal	3.2943	1.7613	0.0027	YES
SED-18	0.94	Normal	Equal	8.4356	1.7613	0	YES

AFDW - Ash-free dry weight

Collection Locations:

SED-01	Content Brook
SED-05	B&M Pond
SED-11	Middlesex Canal
SED-18	Unnamed Brook
SED-22	Reference Pond

TABLE 6-11
***HYALELLA AZTECA* SURVIVAL SUMMARY**
IRON HORSE PARK SUPERFUND SITE - OU-4

Site	Mean Survival (%)	Distribution	Variance	t-Test Statistics			Significant Difference
				t Value	Critical t Value	p Value	
Statistical Comparison of Survival Against Laboratory Control							
Lab Control	100						
SED-22	92.5	Non Normal	Unequal	3.074	1.8946	0.009	YES
SED-01	96.3	Non Normal	Unequal	2.0494	1.8946	0.0398	YES
SED-05	87.5	Non Normal	Unequal	5.2354	1.8946	0.0006	YES
SED-11	87.5	Non Normal	Unequal	2.1806	1.8946	0.0328	YES
SED-18	7.5	Non Normal	Unequal	17.5529	1.8946	0	YES
Statistical Comparison of Survival Against Project Reference Site - SED-22							
SED-22	92.5						
SED-01	96.3	Normal	Equal	-1.1482	1.8946	0.8557	NO
SED-05	87.5	Normal	Equal	1.5614	1.8946	0.0812	NO
SED-11	87.5	Normal	Equal	0.836	1.8946	0.2154	NO
SED-18	7.5	Non Normal	Equal	12.2955	1.8946	0	YES

Collection Locations:

SED-01	Content Brook
SED-05	B&M Pond
SED-11	Middlesex Canal
SED-18	Unnamed Brook
SED-22	Reference Pond

TABLE 6-12
***HYALELLA AZTECA* GROWTH SUMMARY**
IRON HORSE PARK SUPERFUND SITE - OU-4

Site	Mean AFDW (mg)	Distribution	Variance	t-Test Statistics			Significant Difference
				t Value	Critical t Value	p Value	
Statistical Comparison of Growth Against Laboratory Control							
Lab Control	0.08						
SED-22	0.077	Normal	Equal	0.6173	1.8946	0.2783	NO
SED-01	0.087	Normal	Equal	-0.8792	1.8946	0.7958	NO
SED-05	0.077	Normal	Equal	0.53	1.8946	0.3063	NO
SED-11	0.07	Normal	Equal	1.339	1.8946	0.1112	NO
SED-18	0.097	Normal	Unequal	-0.5068	2.92	0.6687	NO
Statistical Comparison of Growth Against Project Reference Site - SED-22							
SED-22	0.077						
SED-01	0.087	Normal	Equal	-1.153	1.8946	0.8566	NO
SED-05	0.077	Normal	Equal	0.1433	1.8946	0.445	NO
SED-11	0.07	Normal	Equal	1.2637	1.8946	0.1234	NO
SED-18	0.097	Normal	Unequal	-0.5987	2.92	0.6949	NO

AFDW - Ash-free dry weight

Collection Locations:

SED-01	Content Brook
SED-05	B&M Pond
SED-11	Middlesex Canal
SED-18	Unnamed Brook
SED-22	Reference Pond

TABLE 6-13
TOXICITY REFERENCE VALUES FOR HERON
IRON HORSE PARK SUPERFUND SITE - OU-4

Chemical of Potential Concern[1]	Test Species	Body Weight (kg) [2]	Exposure Route and Duration Class	Duration	System	Test TRV mg/kg - d	Test TRV Type	NOAEL [3]	Source	Wildlife TRV[3] (mg/kg-d)
Semivolatile Organics										
Acenaphthene	See LMW PAHs									NA
Anthracene	See LMW PAHs									NA
Biphenyl	rat	0.35	oral in diet	60 d	development	50.00	NOAEL	50		50
Dibenzofuran	NA									NA
2,6-Dimethylnaphthalene	NA									NA
Fluoranthene	mouse	0.03	oral gavage (intermediate)	13 wk	hepatic	125	NOAEL	125	EPA, 1988e (in ATSDR, 1995)	125
Fluorene	See LMW PAHs									NA
1-Methylnaphthalene	mouse	0.03	oral in diet	81 wk	reproductive	143.7	NOAEL	143.70	Maruta et al., 1997 (in ATSDR, 2003)	143.7
1-Methylphenanthrene	NA									NA
Phenanthrene	See LMW PAHs									NA
Pyrene	mouse	0.03	oral in food (intermediate)	19-29 d	reproductive	133.3	NOAEL	133.3	ATSDR, 1995	133.3
2,3,5-Trimethylnaphthalene	NA									NA
Low Molecular Weight PAHs[4]	mallard	1.00	oral	7 mo	hepatic	400.0	LOAEL	40.0	Patton & Dieter, 1980	40
Metals										
Aluminum	ringed dove	0.16	oral in diet (chronic)	4 mo	reproductive	109.7	NOAEL	109.7	Carriere et al., 1986 (in Sample et al., 1996)	110
Arsenic	mallard	1.00	oral in diet (chronic)	128 d	mortality	5.14	NOAEL	5.14	USFWS, 1964 (in Sample et al., 1996)	5.1
Barium	1-day old chickens	0.121	oral in diet (subchronic)	4 wk	mortality	208	NOAEL	208	Johnson, et al., 1960 (in Sample et al., 1996)	208
Chromium	black duck	1.25	oral in diet (chronic)	10 mo	reproductive	1.0	NOAEL	1.0	Haseltine et al., unpubl. (in Sample et al., 1996)	1.0
Cobalt	avian herbivore	NA	oral in diet	NA	reproductive	7.61	NOAEL	7.61	ECO-SSL, USEPA 2003	7.6
Copper	1-day old chickens	0.5	oral in diet (chronic)	10 wk	mortality	47.0	NOAEL	47.0	Mehring et al., 1960 (in Sample et al., 1996)	47
Lead	Japanese quail	0.15	oral in diet (chronic)	12 wk	reproductive	1.1	NOAEL	1.1	Edens, et al., 1976 (in Sample et al., 1996)	1.1
Manganese	1-day old J. quail	0.072	oral in diet (chronic)	75 d	growth	977	NOAEL	977	Laskey and Edens, 1985 (in Sample et al., 1996)	977
Silver	rat	0.35	oral in water (acute)	2 wk	mortality	181.2	NOAEL	181.2	Walker, 1971 (in ATSDR, 1990)	181
Vanadium	mallard	1.17	oral in diet (chronic)	12 wk	mortality	11.4	NOAEL	11.4	White & Dieter, 1978 (in Sample et al., 1996)	11
Zinc	white leg-horn	1.94	oral in diet (chronic)	44 wk	reproductive	15	NOAEL	15	Stahl et al., 1990 (in Sample et al., 1996)	15

[1] COPC or analyte/compound used in toxicological testing.

[2] Body weight for mouse and rat based on USEPA 1985 (cited in Sample, et al., 1996), other body weights are actual body weights of animals used in test.

[3] Wildlife TRV = NOAEL. Test NOAELs were not adjusted for wildlife species body weight.

[4] LMW PAHs (Low Molecular Weight PAHs) apply to acenaphthene, anthracene, fluorene, naphthalene, and phenanthrene.

d - day(s)
wk - week(s)
mo - month(s)
COPC - Chemical of Potential Concern
TRV - Toxicity Reference Value
NOAEL - No Observed Adverse Effect Level
LOAEL - Lowest Observed Adverse Effect Level
NA - Not Available

TABLE 6-14
HAZARD QUOTIENTS FOR HERON - SITEWIDE
MAXIMUM CASE
IRON HORSE PARK SUPERFUND SITE - OU-4

Chemical of Potential Concern	Total Dose (mg/kg-day)	TRV (mg/kg-day)	Total HQ	Percent Fish HQ	Percent Sediment HQ	Percent Surface Water HQ
SVOCs						
Acenaphthene	5.70E-03	NA	NA	NA	NA	NA
Anthracene	1.35E-03	NA	NA	NA	NA	NA
Biphenyl	5.51E-04	50	<0.1	100%	NA	NA
Dibenzofuran	1.81E-03	NA	NA	NA	NA	NA
2,6-Dimethylnaphthalene	1.33E-03	NA	NA	NA	NA	NA
Fluoranthene	3.23E-03	125	<0.1	100%	NA	NA
Fluorene	4.56E-03	NA	NA	NA	NA	NA
1-Methylnaphthalene	1.18E-03	144	<0.1	100%	NA	NA
1-Methylphenanthrene	2.28E-04	NA	NA	NA	NA	NA
Phenanthrene	5.51E-03	NA	NA	NA	NA	NA
Pyrene	1.35E-03	133	0.0	100%	NA	NA
2,3,5-Trimethylnaphthalene	7.79E-04	NA	NA	NA	NA	NA
Low Molecular Weight PAHs	1.71E-02	40	<0.1	100%	NA	NA
Metals						
Aluminum	4.37E+00	110	<0.1	100%	NA	NA
Arsenic	5.51E-02	5.1	<0.1	100%	NA	NA
Barium	7.22E-01	208	<0.1	100%	NA	NA
Chromium	5.32E-01	1.0	0.5	100%	NA	NA
Cobalt	1.90E-02	7.6	<0.1	100%	NA	NA
Copper	2.47E+00	47	<0.1	100%	NA	NA
Lead	4.37E-01	1.1	0.4	100%	NA	NA
Manganese	3.99E+00	977	<0.1	100%	NA	NA
Silver	3.99E-03	181	<0.1	100%	NA	NA
Vanadium	1.33E-02	11	<0.1	100%	NA	NA
Zinc	6.84E+00	15	0.5	100%	NA	NA

HQ = Hazard quotient
TRV = Toxicity Reference Value
Total Dose = Sum of exposure from ingestion of food (fish)
NA = Not Applicable

TABLE 6-15
HAZARD QUOTIENTS FOR HERON - REFERENCE
MAXIMUM CASE
IRON HORSE PARK SUPERFUND SITE - OU-4

Chemical of Potential Concern	Total Dose (mg/kg-day)	TRV (mg/kg-day)	Total HQ	Percent Fish HQ	Percent Sediment HQ	Percent Surface Water HQ
SVOCs						
Acenaphthene	ND	NA	NA	NA	NA	NA
Anthracene	2.09E-04	NA	NA	NA	NA	NA
Biphenyl	ND	50	NA	NA	NA	NA
Dibenzofuran	ND	NA	NA	NA	NA	NA
2,6-Dimethylnaphthalene	ND	NA	NA	NA	NA	NA
Fluoranthene	ND	125	NA	NA	NA	NA
Fluorene	ND	NA	NA	NA	NA	NA
1-Methylnaphthalene	ND	144	NA	NA	NA	NA
1-Methylphenanthrene	ND	NA	NA	NA	NA	NA
Phenanthrene	ND	NA	NA	NA	NA	NA
Pyrene	2.28E-04	133	<0.1	1.0	NA	NA
2,3,5-Trimethylnaphthalene	ND	NA	NA	NA	NA	NA
Low Molecular Weight PAHs	2.09E-04	40	<0.1	100%	NA	NA
Metals						
Aluminum	1.77E+00	110	<0.1	100%	NA	NA
Arsenic	5.89E-03	5.1	<0.1	100%	NA	NA
Barium	1.22E-01	208	<0.1	100%	NA	NA
Chromium	1.05E-01	1.0	0.1	100%	NA	NA
Cobalt	4.94E-03	7.6	<0.1	100%	NA	NA
Copper	2.47E-01	47	<0.1	100%	NA	NA
Lead	2.66E-02	1.1	<0.1	100%	NA	NA
Manganese	1.62E+00	977	<0.1	100%	NA	NA
Silver	ND	181	NA	NA	NA	NA
Vanadium	1.20E-02	11	<0.1	100%	NA	NA
Zinc	6.46E+00	15	0.4	100%	NA	NA

HQ = Hazard quotient
TRV = Toxicity Reference Value
Total Dose = Sum of exposure from ingestion of food (fish)
NA = Not Applicable

TABLE 7-1
SUMMARY OF RISK ENDPOINTS FOR AQUATIC LIFE
IRON HORSE PARK SUPERFUND SITE - OU-4

Location	Sample ID	*C. dubia* [1]		*P. promelas* [1]		Fish Tissue[2]
		survival	reproduction	survival	growth	
Richardson Pond	SW-RP-01	-	-	-	-	No HQs > 1
West Middlesex Canal	SW-MC-01	-	-	57.5%*	- [3]	No HQs > 1
B&M Pond	SW-BM-01	-	-	-	-	No HQs > 1[4]
Content Brook	SW-CB-01	-	-	-	-[3]	No HQs > 1

[1] Endpoints from toxicity tests are based on statistically significant difference ($p<0.05$) from reference;
"-" indicates no significant difference from reference sample.
"*" indicates statistical decrease from reference

[2] HQ - Hazard quotients based on the ratio of maximum measured tissue concentration to tissue residue effects benchmark (Tables 6-5 to 6-8)

[3] Although the statistical comparisons indicated a statistical difference from reference, there was no significant difference from the laboratory control. Due to the small reduction in growth and the differences in the laboratory controls, these results are not considered a biologically significant reduction in the endpoint.

[4] No HQs > 1 for any COPCs, however, elevated tissue concentrations of PAHs observed in B&M pond

TABLE 7-2
SUMMARY OF RISK ENDPOINTS FOR BENTHIC INVERTEBRATES
IRON HORSE PARK SUPERFUND SITE - OU-4

Location	Sample ID	*C. tentans* [1]		*H. azteca* [1]	
		survival	growth[2]	survival	growth
Unnamed Brook	SED-18	-	51%*	8%*	-
West Middlesex Canal	SED-11	-	76%*	-	-
B&M Pond	SED-05	-	73%*	-	-
Content Brook	SED-01	-	-	-	-

[1] Endpoints from toxicity tests are based on statistically significant difference ($p<0.05$) from reference;
"-" indicates no significant difference from reference sample.
"*" indicates statistical decrease from reference
[2] Percent growth values based on comparison to growth in reference

TABLE 7-3
SUMMARY OF RISK TO GREAT BLUE HERON BASED ON DIETARY MODELING
IRON HORSE PARK SUPERFUND SITE - OU-4

Location	COPC	HQs[1]
Site-wide	PAHs	<1
	Metals	<1

(1) HQ based on ratio of dietary dose estimate to NOAEL TRV;
HQs for individual COPCs presented in Table 6-14.

HQ = Hazard quotient

TRV = Toxicity Reference Value

NOAEL = No observed adverse efect level

TABLE 7-4
SUMMARY OF RISK BY ASSESSMENT ENDPOINT
IRON HORSE PARK SUPERFUND SITE - OU-4

Location	Risk Category[1]	Explanation
Aquatic Receptors		
Richardson Pond	Negligible	• No toxicity compared to reference locations • No tissue benchmark exceedances in fish
West Middlesex Canal	Low	• Statistically significant toxicity for one endpoint based on comparisons to reference locations • No tissue benchmark exceedances in fish
B&M Pond	Negligible	• No toxicity compared to reference locations • No tissue benchmark exceedances in fish
Content Brook	Negligible	• No toxicity compared to reference locations • No tissue benchmark exceedances in fish
Great Blue Heron		
Sitewide	Negligible	• No HQs > 1 in dietary models using NOAEL TRVs and maximum exposure concentrations
Benthic Invertebrates		
Unnamed Brook	Moderate	• Statistically significant toxicity to more than one receptor based on comparisons to reference locations
West Middlesex Canal	Low	• Statistically significant toxicity for one endpoint based on comparisons to reference locations
B&M Pond	Low	• Statistically significant toxicity for one endpoint based on comparisons to reference locations
Content Brook	Negligible	• No toxicity compared to reference locations

[1] Level of risk assigned according to categories (negligible, low, moderate, or high) as described in Section 7.2

TABLE 7-5
SELECTION OF SEDIMENT COC NO OBSERVED EFFECTS CONCENTRATIONS
IRON HORSE PARK SUPERFUND SITE - OU-4

COC	PEC	NOEC[1]		Reference Area	Study Area			
				Round Pond (SED-22)	Content Brook (SED-01)	B&M Pond (SED-05)	W. Middlesex Canal (SED-11)	Unnamed Brook (SED-18)
PAHs (ug/kg)								
Total PAH	22,800	1,932	<	923	1,932	129,975	***613***	12,097
Pesticides/PCBs (ug/kg)								
4,4'-DDD	28	14.5	<	14.5	2.69	92.5	***3.1*** R	18
Aroclor-1242	NA	6.6 DL		6.6 DL	6.5 DL	65 DL	23	***6.6*** DL
Aroclor-1254	NA	6.6 DL		6.6 DL	6.5 DL	2,695	***6.6*** DL	36
Aroclor-1260	NA	13.7		13.7	12	1,940	***6.6*** DL	20
Total PCBs	676	28	<	28	14	4,728	***23***	74
Metals (mg/kg)								
Arsenic	33	360		3.1	360	***75***	***2.9***	***61***
Barium	NA	370		27	370	***325***	***28***	***110***
Chromium	111	14	<	8.0	14	695	***10***	34
Copper	149	19	<	8.8	19	700	***5.0***	210
Lead	128	35	<	30	35	810	***16***	380
Manganese	NA	1,600		250	1,600	***605***	***220***	***490***
Vanadium	NA	19		13	19	44	***7.5***	28
Zinc	459	110	<	42	110	3,550	***21***	150

[1] NOEC set as the higher of the concentration observed at locations with no observed effects (SED-01 or SED-22)
< indicates that the NOEC is below the PEC

COC - Contaminant of Concern
NOEC - No observed effects concentration
PEC - Probable effects concentration (MacDonald *et al*., 2000)
NA - Benchmark not available
DL - Value represents the detection limit - compound was not detected
R - Value rejected - the value for SED-11 is the estimated maximum concentration (see text)
100 - Bold/italic values are at or below NOEC

TABLE 7-6
HAZARD QUOTIENTS FOR SEDIMENT COCs
IRON HORSE PARK SUPERFUND SITE - OU-4

COC	**TRV[1]**	B&M Pond (SED-05)	HQ	W. Middlesex Canal (SED-11)	HQ	Unnamed Brook (SED-18)	HQ
PAHs (ug/kg)							
Total PAH	22,800	132,925	**6**			12,337	<1
Pesticides/PCBs (ug/kg)							
4,4'-DDD	28	92.5	**3**			18	<1
Aroclor-1242	6.6[2]	65[3]	**10**	23	**3**		
Aroclor-1254	6.6[2]	2,695	**408**			36	**6**
Aroclor-1260	13.7[2]	1,940	**142**			20	1
Total PCB	676	4,728	**7**	23	<1	74	<1
Metals (mg/kg)							
Chromium	111	695	**6**			34	<1
Copper	149	700	**5**			210	1
Lead	128	810	**6**			380	**3**
Vanadium	19[2]	44	**2**			28	1
Zinc	459	3,550	**8**			150	<1

[1] TRV - toxicity reference value is set as PEC, unless otherwise noted.
[2] No PEC value was available for Aroclor-1242, Aroclor-1254, Aroclor-1260 or vanadium, consequently, the NOEC is used.
[3] The sediment concentration is based on the detection limit

COC - Contaminant of Concern
NOEC - No observed effects concentration
PEC - Probable effects concentration (MacDonald *et al*., 2000)
NA - Benchmark not available
ND - Not detected
R - Value rejected

TABLE 7-7
PROPOSED PRELIMINARY REMEDIATION GOALS FOR SEDIMENT
IRON HORSE PARK SUPERFUND SITE - OU-4

COC	Draft PRG OU-3 FS[1]	Lower PRG (NOEC)	Upper PRG (PEC)
Organics (ug/kg)			
Total PAH	4,500	1,932	22,800
Total PCB	NA	28	676
4,4'-DDD	12	15	28
Metals (mg/kg)			
Chromium	43	14	111
Copper	21	19	149
Lead	43	35	128
Vanadium	NA	19	NA
Zinc	NA	110	459

Notes
[1] Draft PRGs presented in the OU-3 FS

COC - Contaminant of Concern
NOEC - No-observed-effects concentration
PEC - Probable-effects concentration (MacDonald *et al*., 2000)
PRG - Preliminary Remediation Goal
NA - Benchmark not available

TABLE 7-8
SUMMMARY OF RISK CONCLUSIONS

Receptor/ Endpoint	INCREASING LEVEL OF RISK FROM NEGLIGIBLE TO HIGH → → → → → → →				Ecological Significance [1]						Unacceptable Ecological Risk[8]
	Negligible Risk Potential	Low Risk Potential	Moderate Risk	High Risk	Endangered or sensitive species[2]	Level of biological organization affected[3]	Likelihood the effect will occur or continue[4]	Relative importance of the affected area to the surrounding habitat[5]	Extent to which the affected area is highly sensitive or ecologically unique[6]	Recovery potential of the affected receptor and chemical persistence[7]	
Great Blue Heron	Sitewide				No	_	_	_	_	_	No
Aquatic receptors	Richardson Pond B&M Pond Content Brook	West Middlesex Canal			No	_	_	_	_	_	No
Benthic Invertebrate Communities	Content Brook	West Middlesex Canal	Unnamed Brook B&M Pond		No	M/H[9]	M/H [10]	L	L	M/H [11]	Yes

RATING: N = NEGLIGIBLE, L = LOW, M = MODERATE, H = HIGH , U = UNCERTAIN

NOTES:

1 Ecological significance is defined in USEPA (1997) or OSWER Directive 9285.7-28, "Ecological Risk Assessment and Risk Management Principles for Superfund Sites," dated October 7, 1999.
The six categories address the factors recommended in the OSWER guidance to be considered in evaluating the significance of ecological effects.
The significance of each factor was evaluated for receptors/endpoints with a level of risk greater than negligible; a low risk to the receptor generally equates to low ecological significance.
"-" indicates factor not evaluated

2 Although MANESP identified potential habitat for blue -spotted salamander in the vicinty of the Site, evaluation of the potential exposure indicated that there is negligible risk to this species due to the lack of an exposure route for site COPCs based on the habitat requirements of the species. No other rare, threatened or endangered species were identified.

3 The of biological organization affected (individual, local population, or community).

4 The likelihood that effects will occur or continue in terms of bioaccumulation or biomagnification into the food chain.

5 The extent to which the affected area is important to the functioning of the surrounding habitat (e.g., wildlife migration corridor, overwintering habitat, etc.).

6 The degree to which the affected area itself (directly) represents highly sensitive or ecologically unique (essential) habitat to the receptor population (e.g., nursery habitat).

7 The likelihood an affected receptor will not recover from the effect of site releases (i.e., species has long generation time or limited foraging range, chemical persistance in the environment).

8 Unacceptable Risk is defined in USEPA (see footnote 1) as a predicted impact to a local population or community of sufficient magnitude, severity, areal extent, and duration that they will not be able to recover and/or maintain themselves in a healthy state. Additionally, these effects are predicted to exceed the natural variation in similar reference areas.

9 Toxicity represents potential effects to community (high level of organization), based on loss of sensitive invertebrate species.

10 Based on toxicity testing data and corresponding distibution of COPCs in sediment, the probability for effects on benthic invertebrates is moderate/high in portions of the site.

11 Potential for recovery is good, since the receptor community has a generation time that is short, but the COPCs are persistent in the environment.

FIGURES

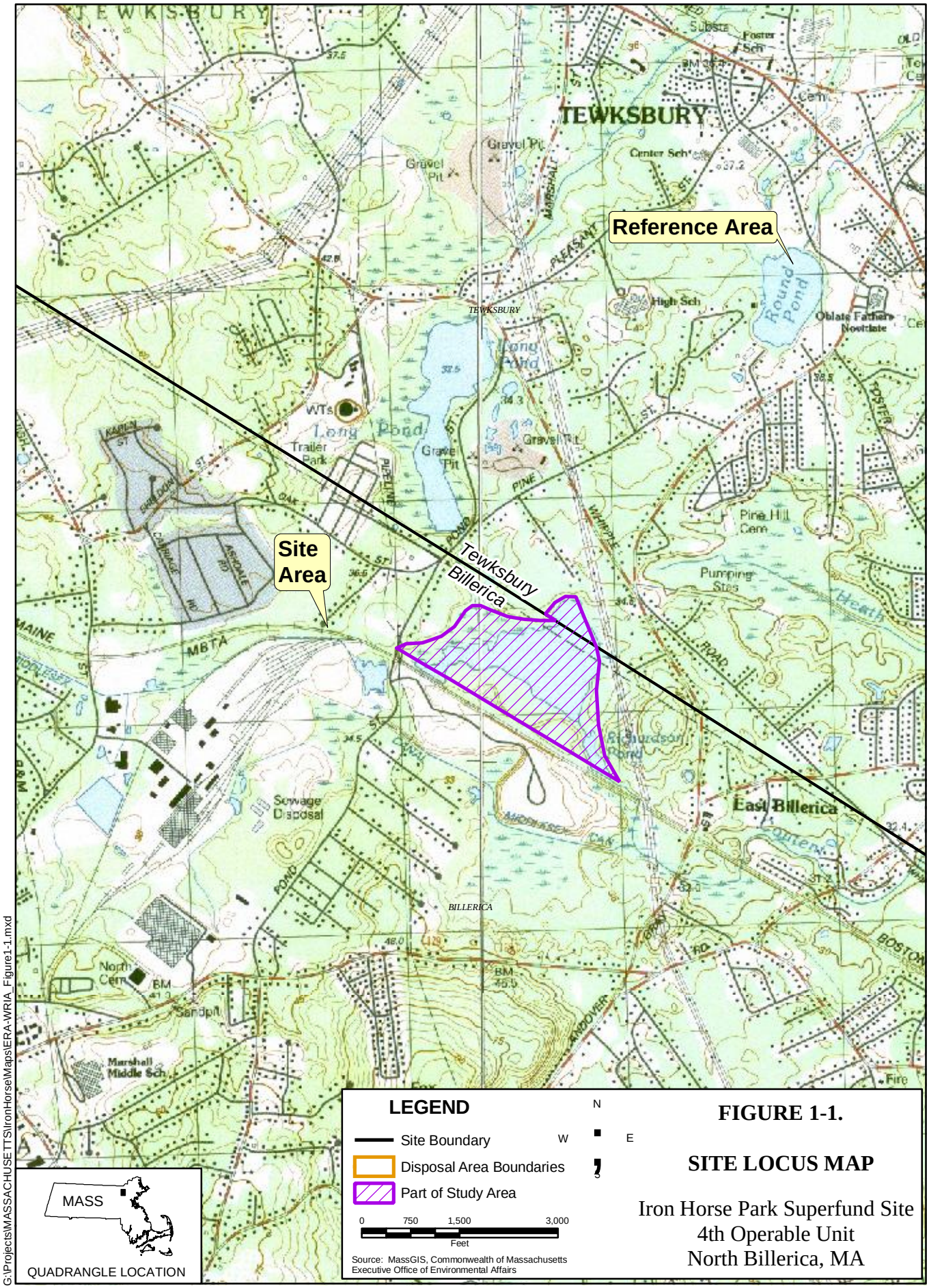

FIGURE 1-1.

SITE LOCUS MAP

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

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Contaminated Soils Area

West Middlesex Canal Group (AOC #8a)

BOSTON AND MAINE

Middlesex Canal

Middlesex Canal

Barge Turnout

Extent of Railroad Not Shown

M.B.T.A

B&M Railroad Landfill

B&M Pond

Richardson Pond

Richardson Pond Group (AOC # 8d)

General Latex and Chemical Corp.

Johns-Manville Outfall

B N Z Materials

Asbestos Lagoons

Unnamed Brook

Eastern Terminals (Georgel McQuesten)

Wood Fabricators

RSI Landfill

Middlesex Canal

Shaffer

Asbestos Landfill

B&M Wastewater Lagoons

HIGH STREET

Landfill

Content Brook Wetland Group (AOC #8e)

Content Brook

Extent of Railroad Not Shown

M.B.T.A

Wetland 2 Group (AOC #8b)

Old B&M Oil/Sludge Recycling Area

M.B.T.A

A

B&M Locomotive Shop Disposal Areas (A and B)

POND STREET

GRAY STREET

Penn Culvert Co.

B

Man-made Canal

East Middlesex Canal Group (AOC #8c)

LEGEND

- Property Boundary
- Site Boundary
- Roads
- Railroad
- Disposal Area Boundary
- Approximate Location of Johns-Manville Outfall
- Surface Water
- Wetlands
- Lagoon
- Building
- Content Brook Wetland Group
- East Middlesex Canal Group
- Richardson Pond Group
- West Middlesex Canal Group
- Wetland 2 Group

N

W E

S

800 400 0 800

Feet

Locations for all features area approximate.
Extent of wetland and surface waters are limited to areas confirmed during wetlands reconnaissance on July 15, 1993 and November 8, 1994

Source: MassGIS, Commonwealth of Massachusetts
Executive Office of Environmental Affairs

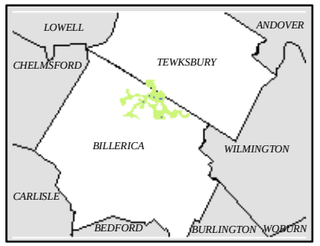

FIGURE 1-2

SITE MAP

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

G:\Projects\MASSACHUSETTS\IronHorse\Maps\ERA-WRIA_Figure1-2.mxd

LEGEND

- Site Boundary
- Road
- Railroad
- Fence
- Building
- Canal
- Disposal Area Boundary
- Lagoon
- Stream
- *Palustrine Open Water*
- *Upland Forest*
- *Upland Scrub/Shrub*
- *Wetland*

N
W E
S

800 400 0 800
Feet

Locations for all features area approximate.
Extent of wetland and surface waters are limited to areas confirmed during wetlands reconnaissance on July 15, 1993 and November 8, 1994

Source: MassGIS, Commonwealth of Massachusetts
Executive Office of Environmental Affairs

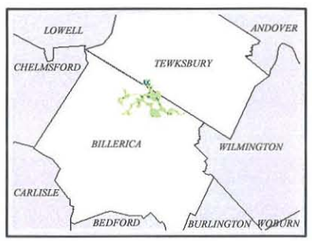

FIGURE 2-1

WETLAND and UPLAND HABITATS

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

G:\Projects\MASSACHUSETTS\IronHorse\Maps\ERA-WRIA_Figure2-1.mxd

Wetland 10
BOSTON AND MAINE
Middlesex Canal
Middlesex Canal
Wetland 1
Extent of Railroad Not Shown
Contaminated Soil Area
B&M Railroad Landfill
B&M Pond
Richardson Pond
Wetland 3
Asbestos Lagoons
Wetland 11
Wetland 2
Middlesex Canal
Shaffer
RSI Landfill
Unnamed Brook
Asbestos Landfill
HIGH STREET
Wetland 5
B&M Wastewater Lagoons
Wetland 6
Wetland 7
Landfill
Content
Old B&M Oil/Sludge Recycling Area
Extent of Railroad Not Shown
A
B
B&M Locomotive and Shop Disposal Areas (A and B)
POND STREET
Man-made Canal
Wetland 4
Wetland 8
Wetland 9
Brook
GRAY STREET

LEGEND

- Site Boundary
- Road
- Railroad
- Fence
- Building
- Canal
- Disposal Area Boundary
- Lagoon
- Stream
- *Palustrine Emergent Wetland*
- *Palustrine Forested Wetland*
- *Palustrine Scrub/Shrub Wetland*
- *Palustrine Open Water*

N W E S

800 400 0 800
Feet

Locations for all features area approximate.
Extent of wetland and surface waters are limited to areas confirmed during wetlands reconnaissance on July 15, 1993 and November 8, 1994

Source: MassGIS, Commonwealth of Massachusetts
Executive Office of Environmental Affairs

LOWELL
ANDOVER
CHELMSFORD
TEWKSBURY
BILLERICA
WILMINGTON
CARLISLE
BEDFORD
BURLINGTON
WOBURN

FIGURE 2-2

WETLAND TYPES

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

G:\Projects\MASSACHUSETTS\IronHorse\Maps\ERA-WRIA_Figure2-2.mxd

LEGEND

- Property Boundary
- Railroad
- Disposal Area Boundary
- Building
- Lagoon
- Surface Water
- Wetlands
- Estimated and Priority Habitat for Blue-spotted Salamander
- Potential Vernal Pool 2001 NHESP Aerial Survey Data

N W E S

800 400 0 800
Feet

Locations for all features area approximate.
Extent of wetland and surface waters are limited to areas confirmed during wetlands reconnaissance on July 15, 1993 and November 8, 1994

Source: MassGIS, Commonwealth of Massachusetts
Executive Office of Environmental Affairs

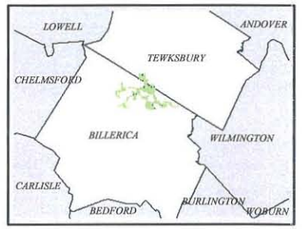

FIGURE 2-3.

ESTIMATED AND PRIORITY HABITAT FOR THE BLUE SPOTTED SALAMANDER

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

G:\Projects\MASSACHUSETTS\IronHorse\Maps\ERA-WRIA_Figure2-3.mxd

Contaminated Soils Area
West Middlesex Canal Group (AOC #8a)
BOSTON AND MAINE
Middlesex Canal
Barge Turnout
Extent of Railroad Not Shown
M.B.T.A
SED-10
SED-09
SED-11
SED-12
General Latex and Chemical Corp.
B N Z Materials
Asbestos Lagoons
Unnamed Brook
Eastern Terminals (George McQuesten)
Wood Fabricators
RSI Landfill
SED-20
Asbestos Landfill
B&M Wastewater Lagoons
SED-19
SED-18
HIGH STREET
Old B&M Oil/Sludge Recycling Area
SED-17
A
B
B&M Locomotive Shop Disposal Areas (A and B)
Penn Culvert Co.
Purity Supreme
Man-made Canal
POND STREET
Wetland 2 Group (AOC #8b)
B&M Railroad Landfill
SED-07
SED-05
B&M Pond
SED-06
SED-13
SED-14
SED-08
Richardson Pond
SED-16
Richardson Pond Group (AOC # 8d)
SED-15
Shaffer
Landfill
SED-02
Content Brook
Content Brook Wetland Group (AOC #8e)
SED-04
SED-01
SED-03
GRAY STREET
East Middlesex Canal Group (AOC #8c)

LEGEND

- Property Boundary
- Railroad
- Disposal Area Boundary
- Building
- Lagoon
- Surface Water
- Wetlands
- 2004 Sediment Sampling Location

N
W E
S

800 400 0 800
Feet

Locations for all features area approximate.
Extent of wetland and surface waters are limited to areas confirmed during wetlands reconnaissance on July 15, 1993 and November 8, 1994

Source: MassGIS, Commonwealth of Massachusetts
Executive Office of Environmental Affairs

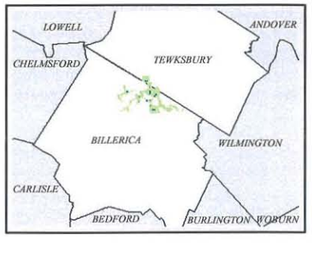

FIGURE 2-4.

SEDIMENT SAMPLING LOCATIONS FOR SCREENING-LEVEL ANALYSIS

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

G:\Projects\MASSACHUSETTS\IronHorse\Maps\ERA-WRIA_Figure2-4.mxd

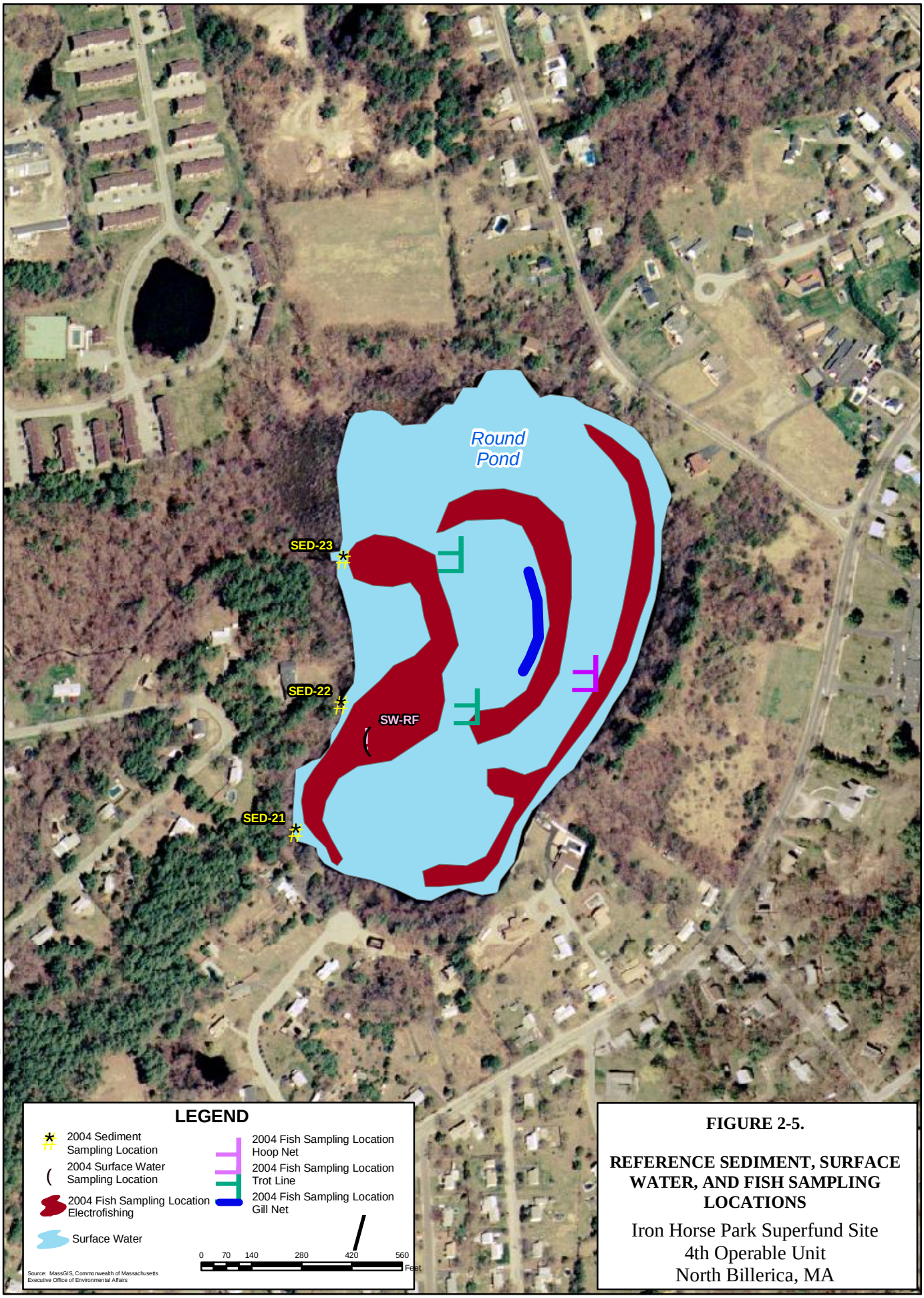

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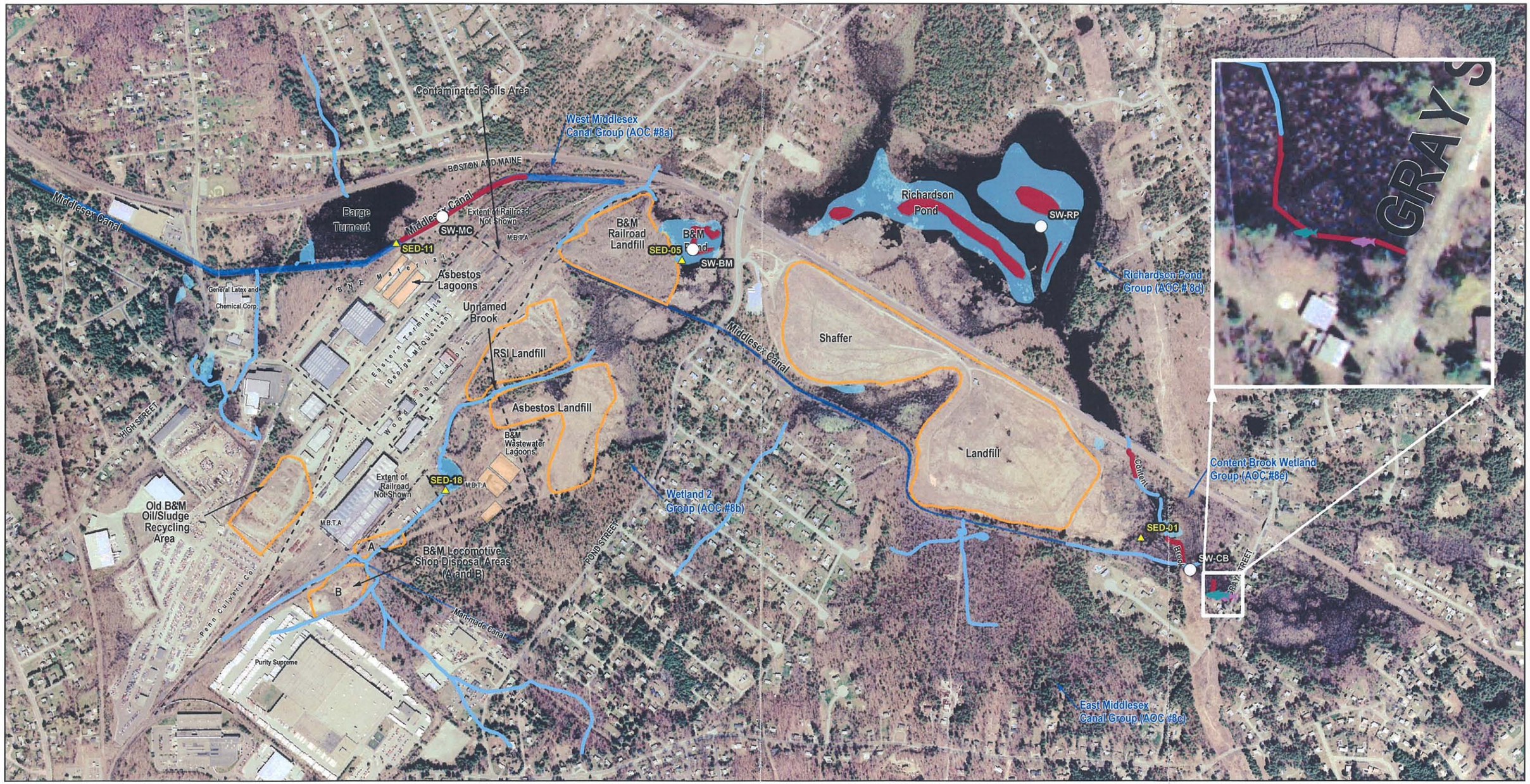
FIGURE 2-5.

REFERENCE SEDIMENT, SURFACE WATER, AND FISH SAMPLING LOCATIONS

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA



LEGEND

- Property Boundary
- Railroad
- Disposal Area Boundary
- Building
- Lagoon
- Surface Water
- Wetlands
- 2004 Fish Sampling Location Electrofishing
- 2004 Fish Sampling Location Hoop Net
- 2004 Fish Sampling Location Trot Line
- 2004 Sediment Sampling Location
- 2004 Surface Water Sampling Location

N W E S

800 400 0 800
Feet

Locations for all features area approximate.
Extent of wetland and surface waters are limited to areas confirmed during wetlands reconnaissance on July 15, 1993 and November 8, 1994

Source: MassGIS, Commonwealth of Massachusetts
Executive Office of Environmental Affairs

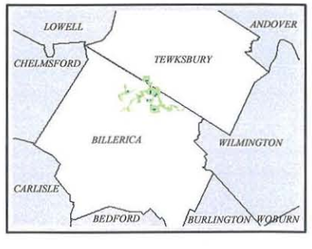


FIGURE 2-6.

SEDIMENT, SURFACE WATER, AND FISH SAMPLING LOCATIONS FOR LABORATORY ANALYSIS

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

G:\Projects\MASSACHUSETTS\IronHorse\Maps\ERA-WRIA_Figure2-6.mxd

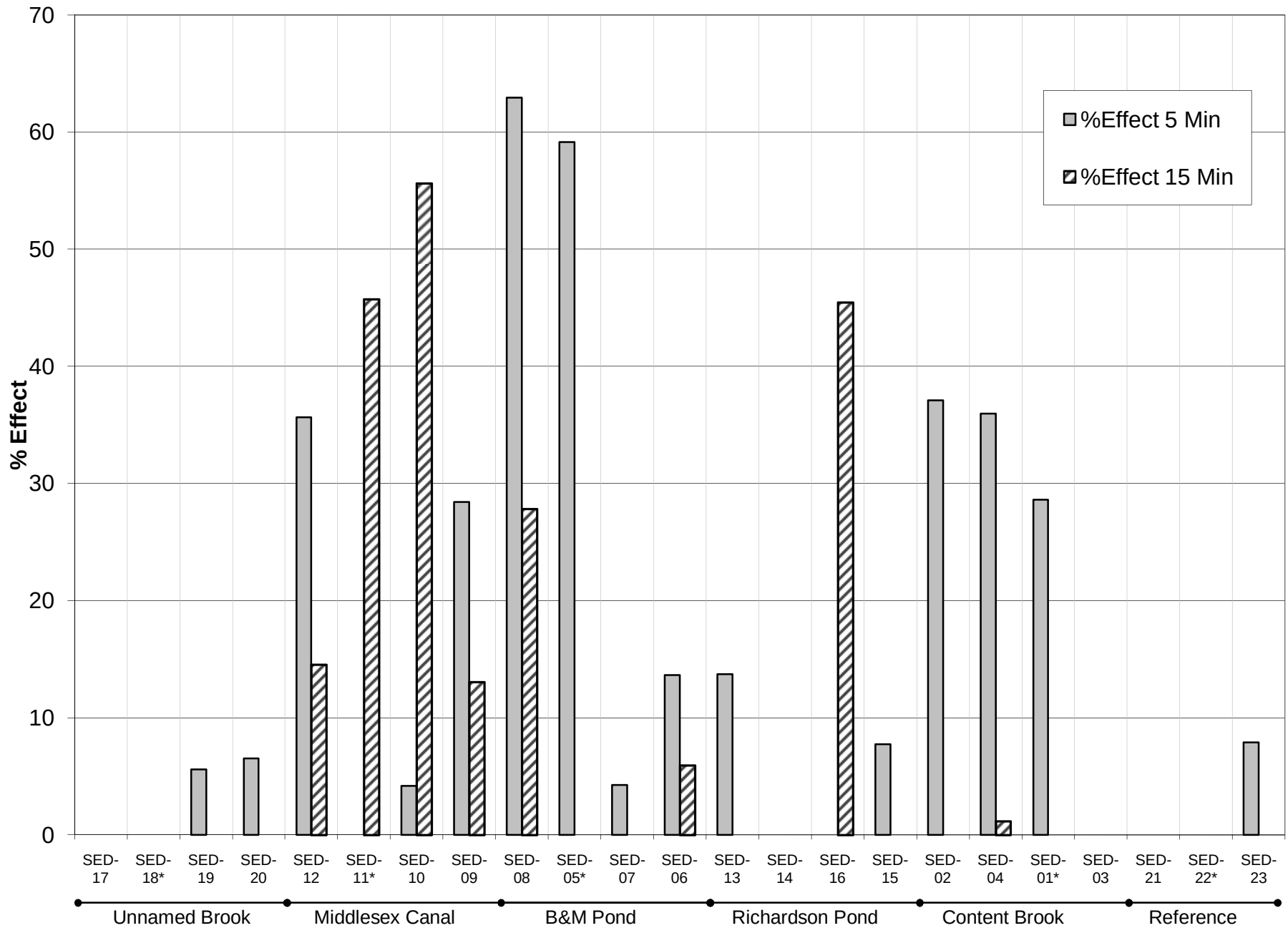


Figure 2-7. Microtox® Analysis Results

***** sample underwent full characterization

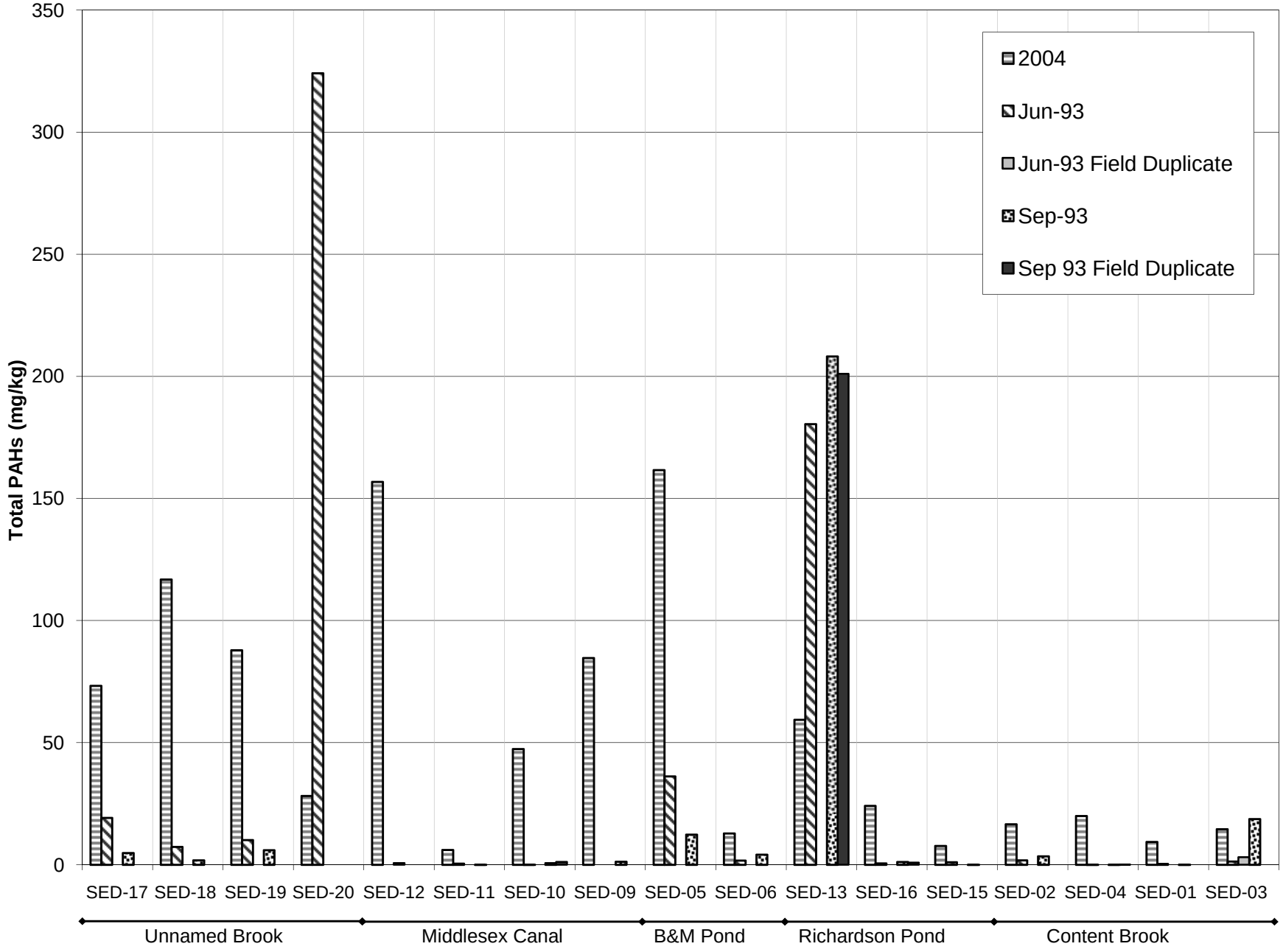


Figure 2-8. Comparison of Total PAH Screening Data from 2004 and Fixed-Laboratory Data from 1993

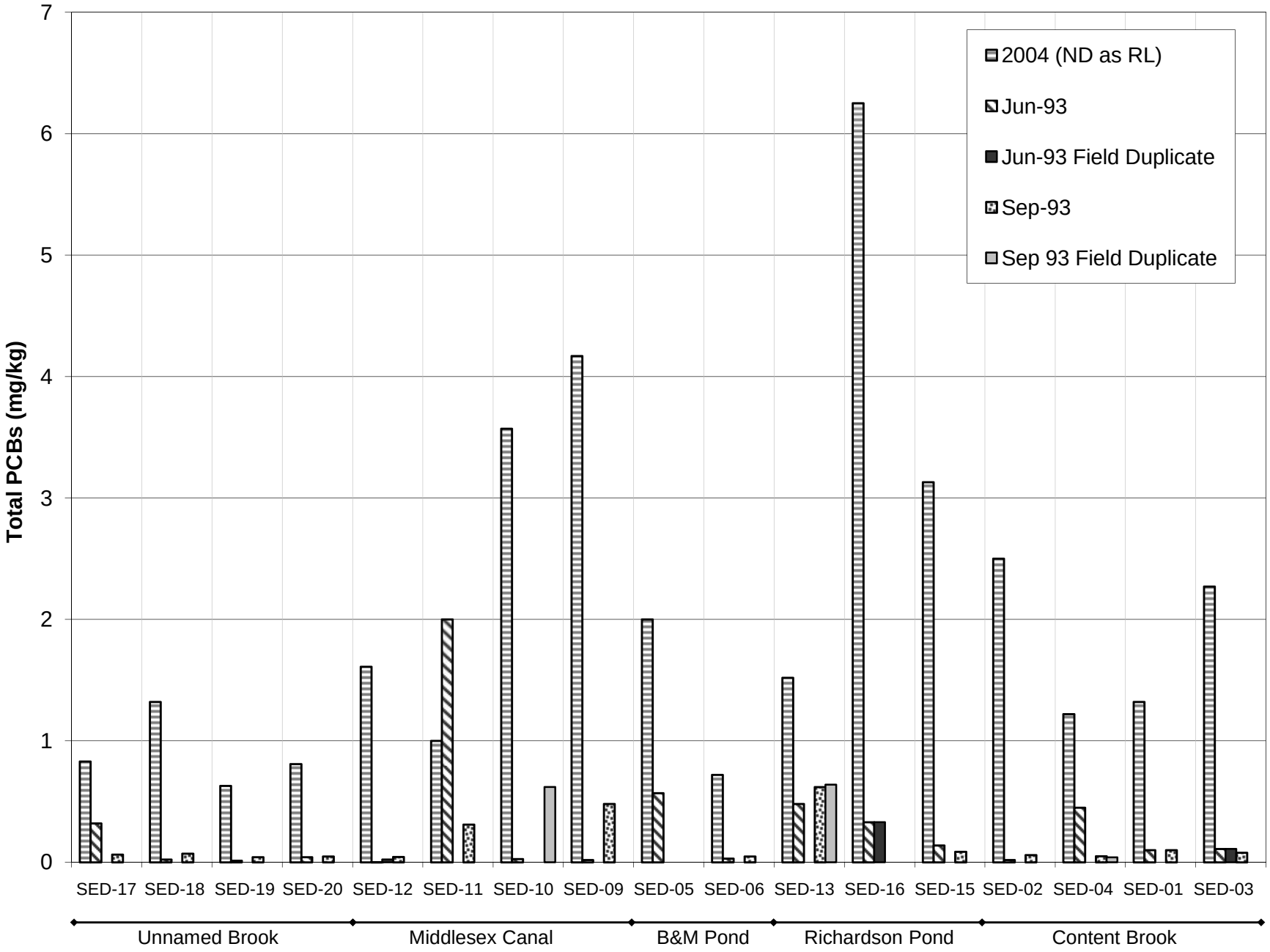


Figure 2-9. Comparison of Total PCB Screening Data from 2004 and Fixed-Laboratory Data from 1993

ND - Non Detect
RL - Reference Level

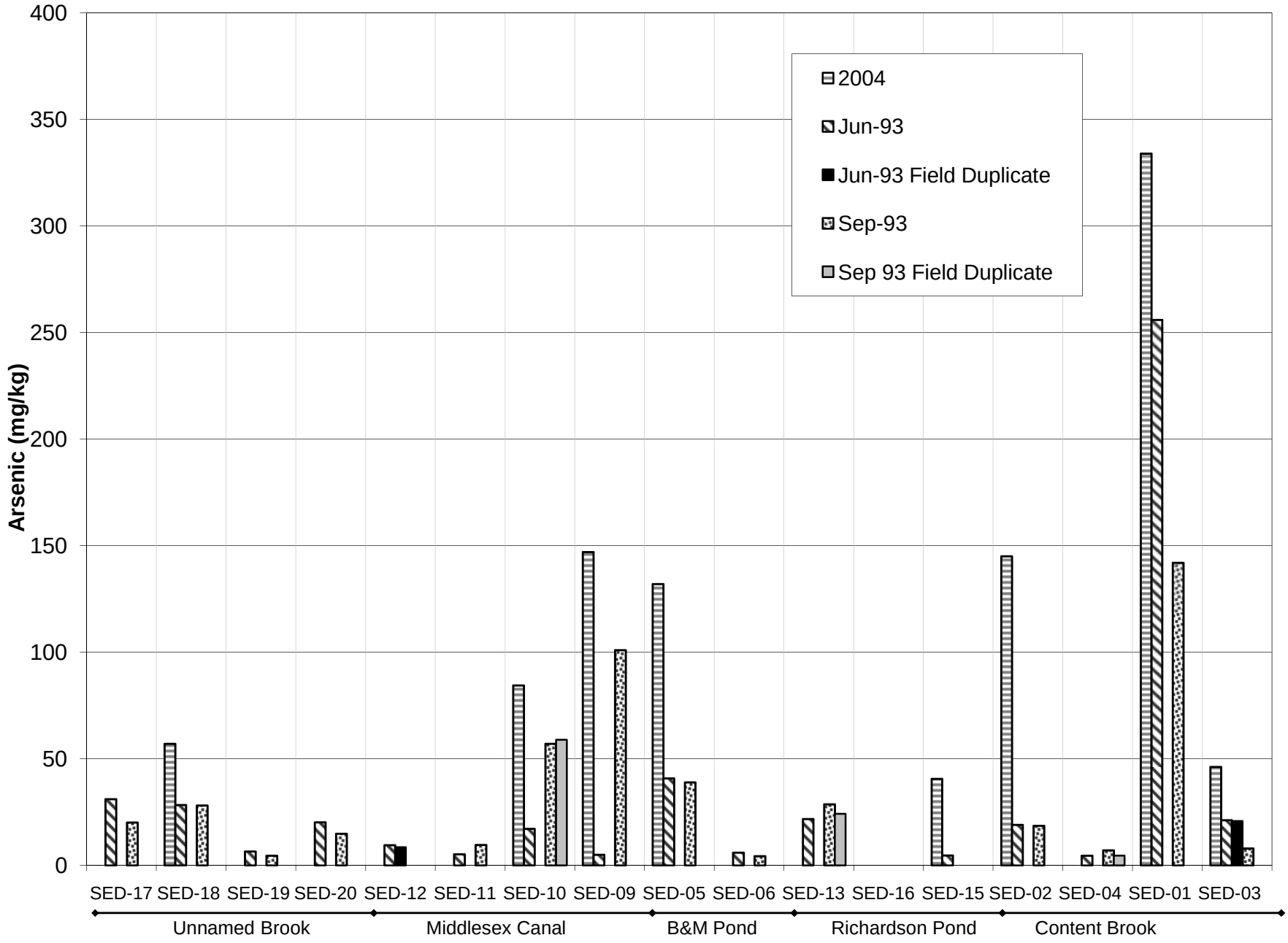


Figure 2-10. Comparison of 2004 Screening Data and 1993 Fixed-Laboratory Data for Detected Arsenic

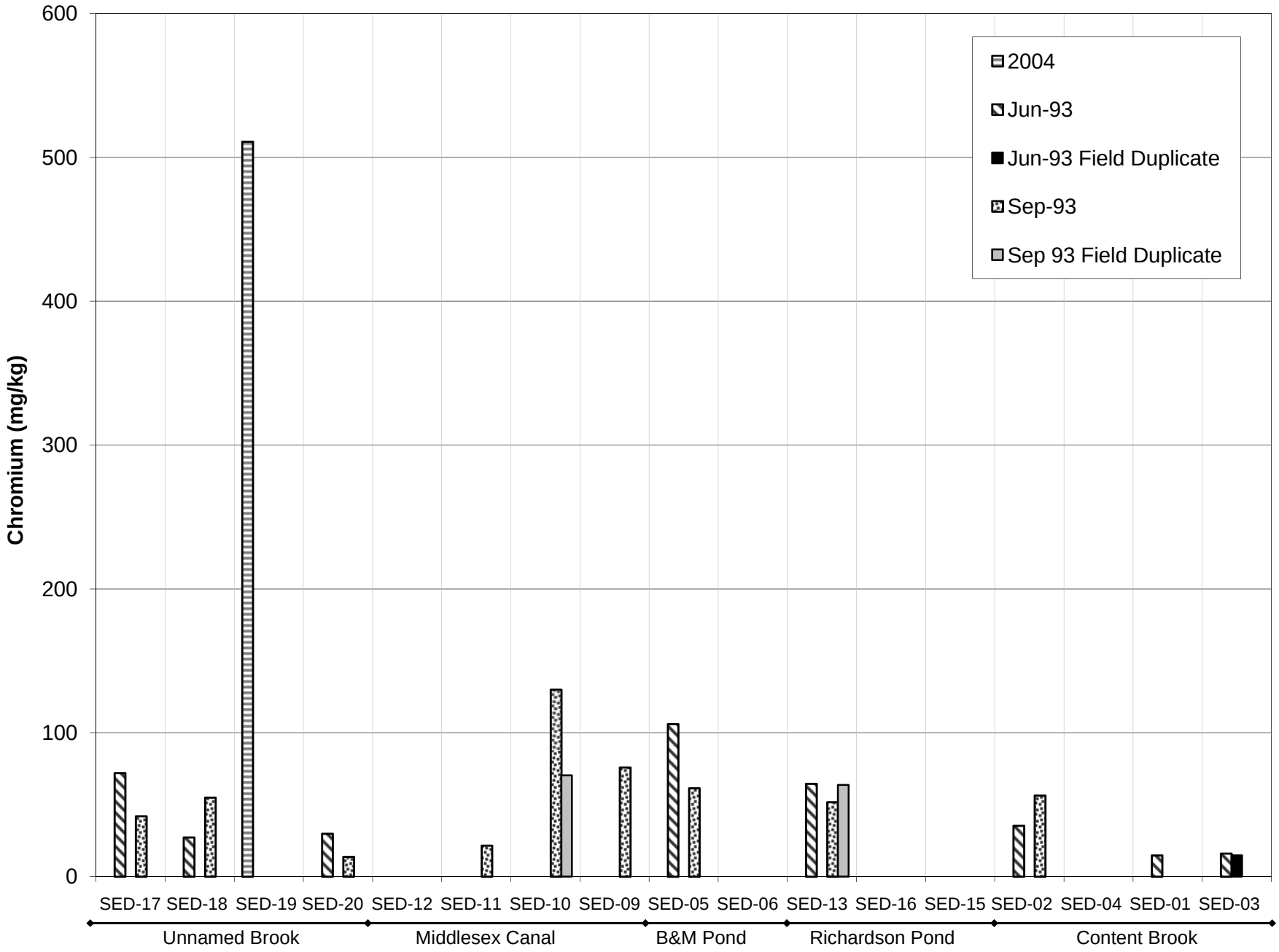


Figure 2-11. Comparison of 2004 Screening Data and 1993 Fixed-Laboratory Data for Detected Chromium

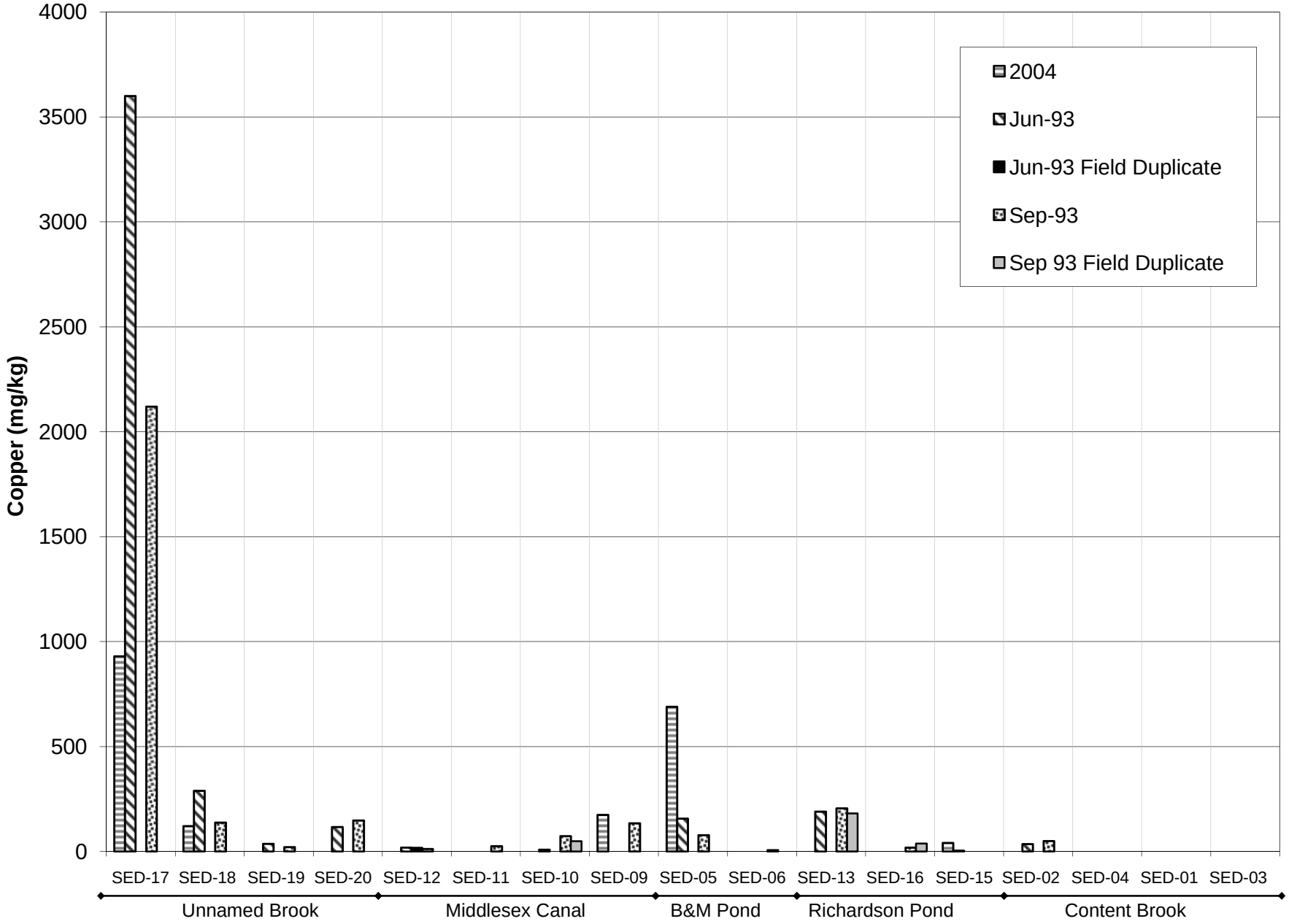


Figure 2-12. Comparison of 2004 Screening Data and 1993 Fixed-Laboratory Data for Detected Copper

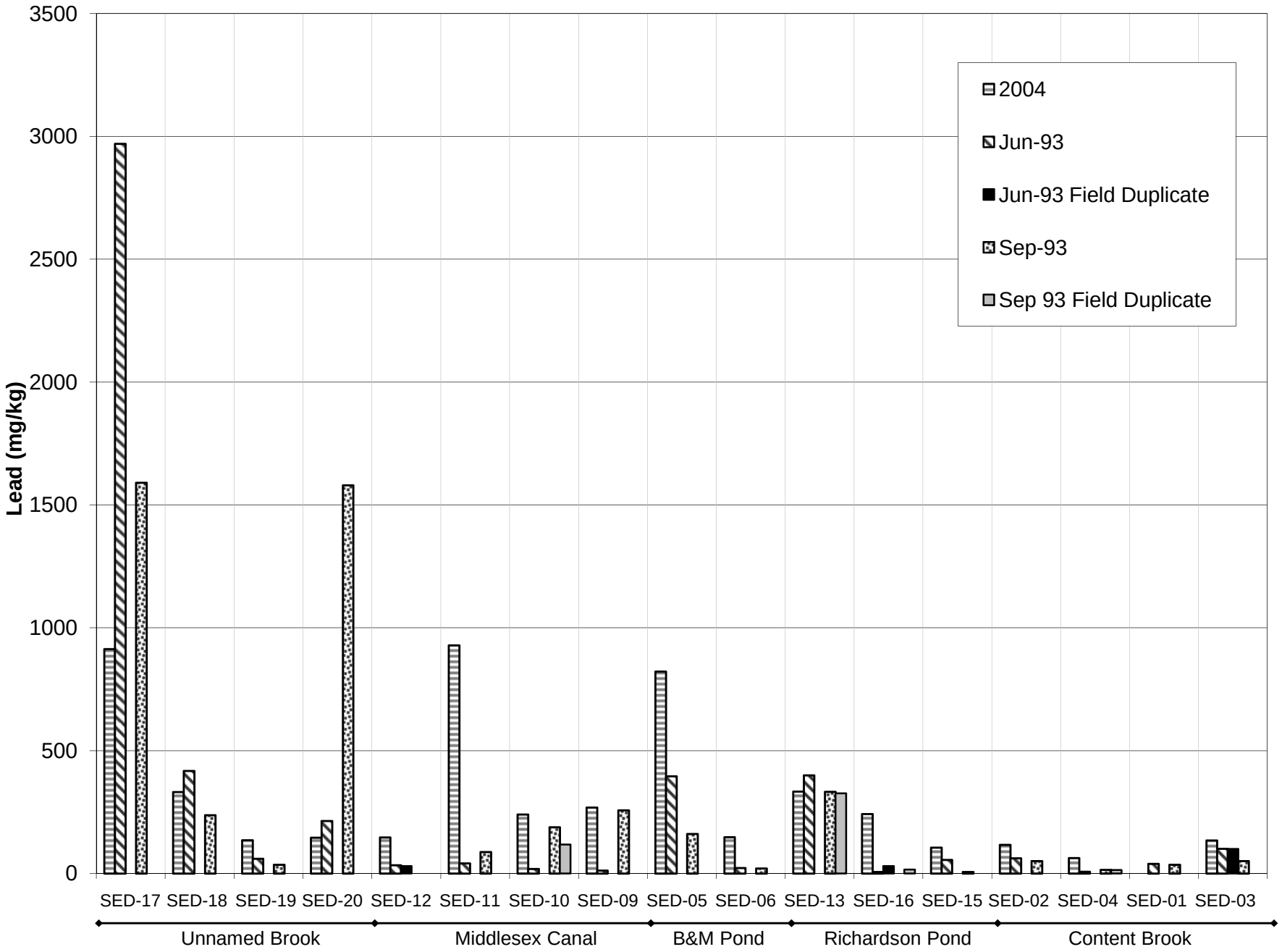


Figure 2-13. Comparison of 2004 Screening Data and 1993 Fixed-Laboratory Data for Detected Lead

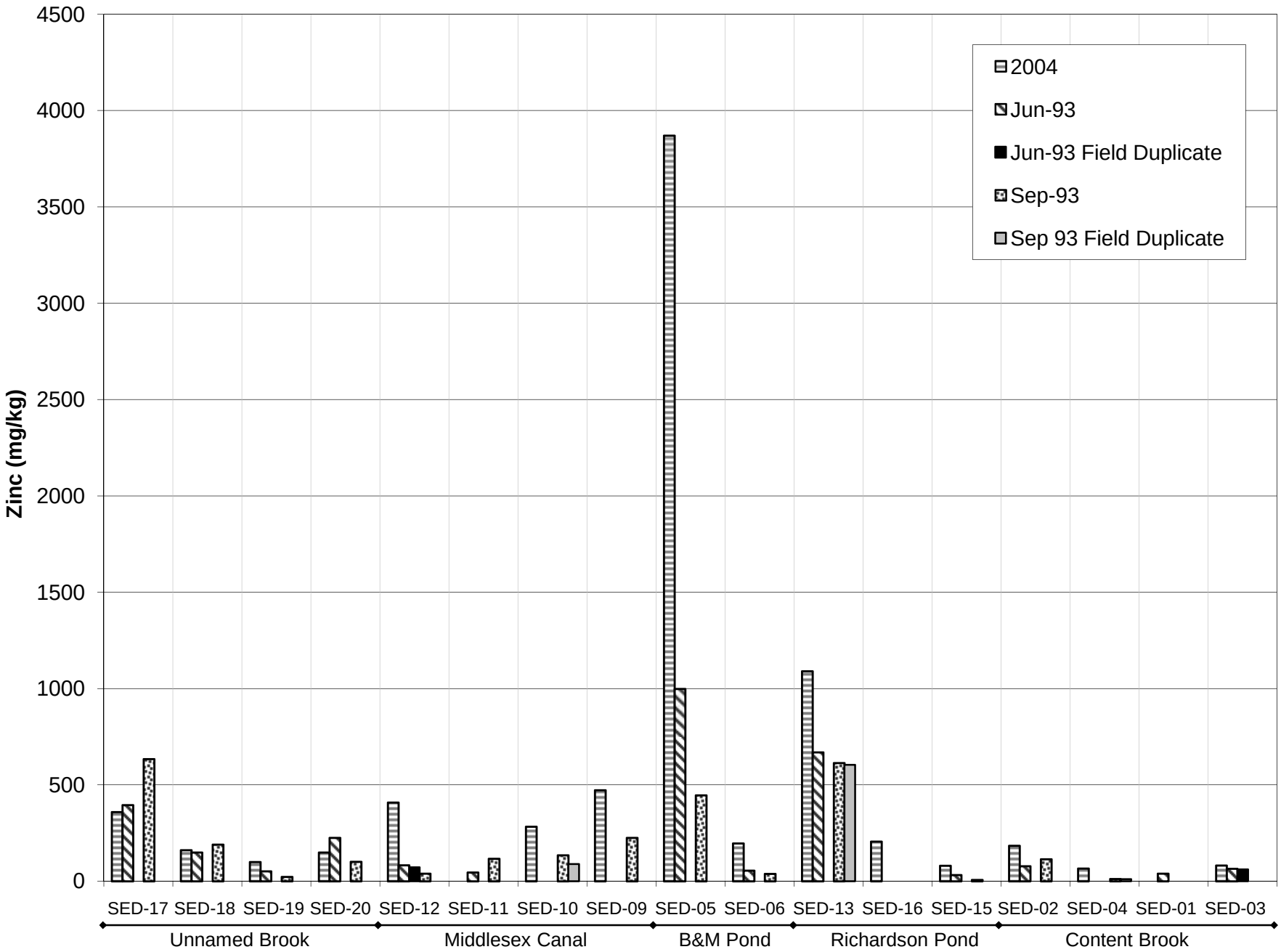


Figure 2-14. Comparison of 2004 Screening Data and 1993 Fixed-Laboratory Data for Detected Zinc

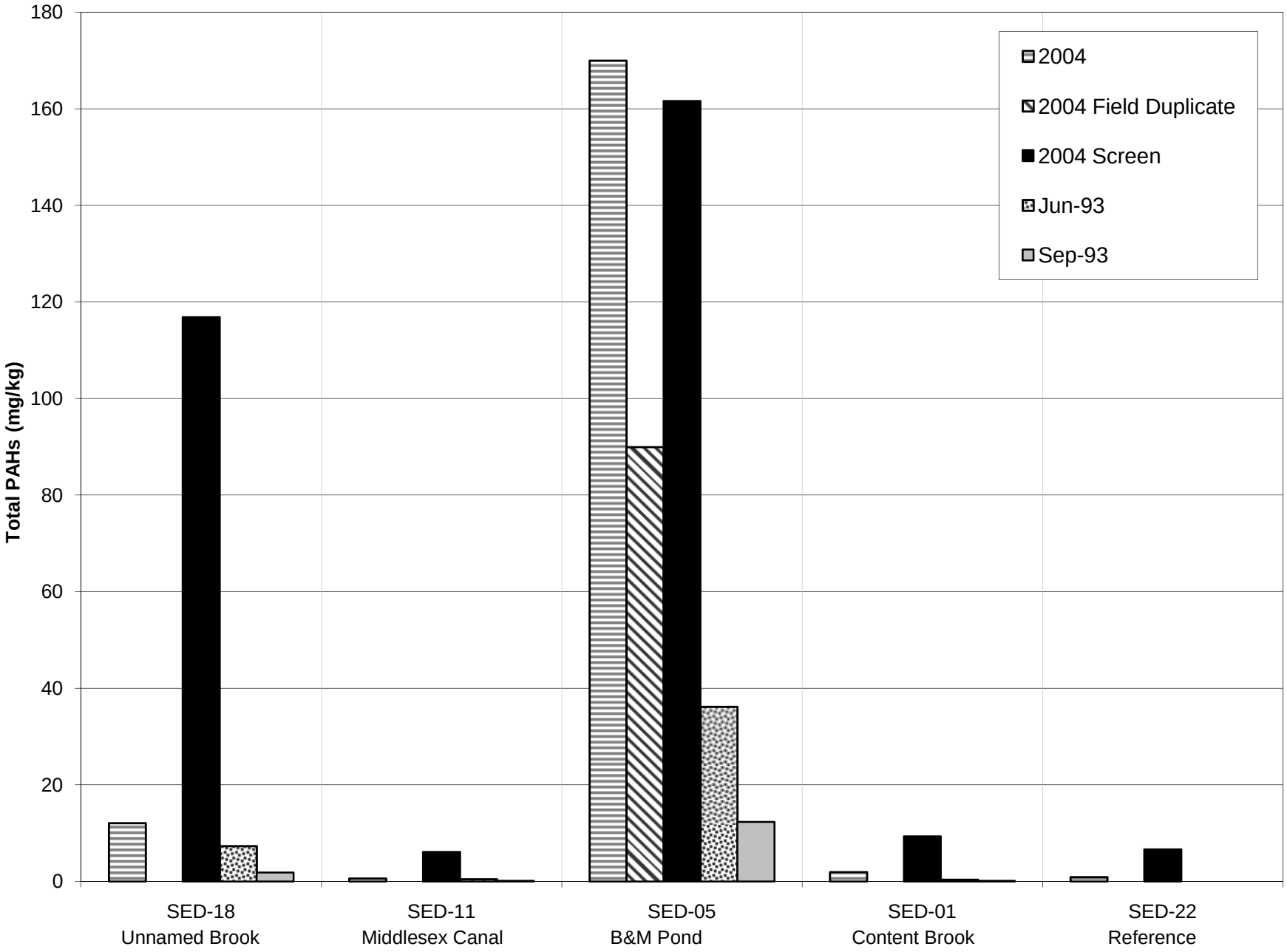


Figure 2-15. Comparison of Total Detected PAHs in Selected Sediment Sampling Locations in 1993 and 2004

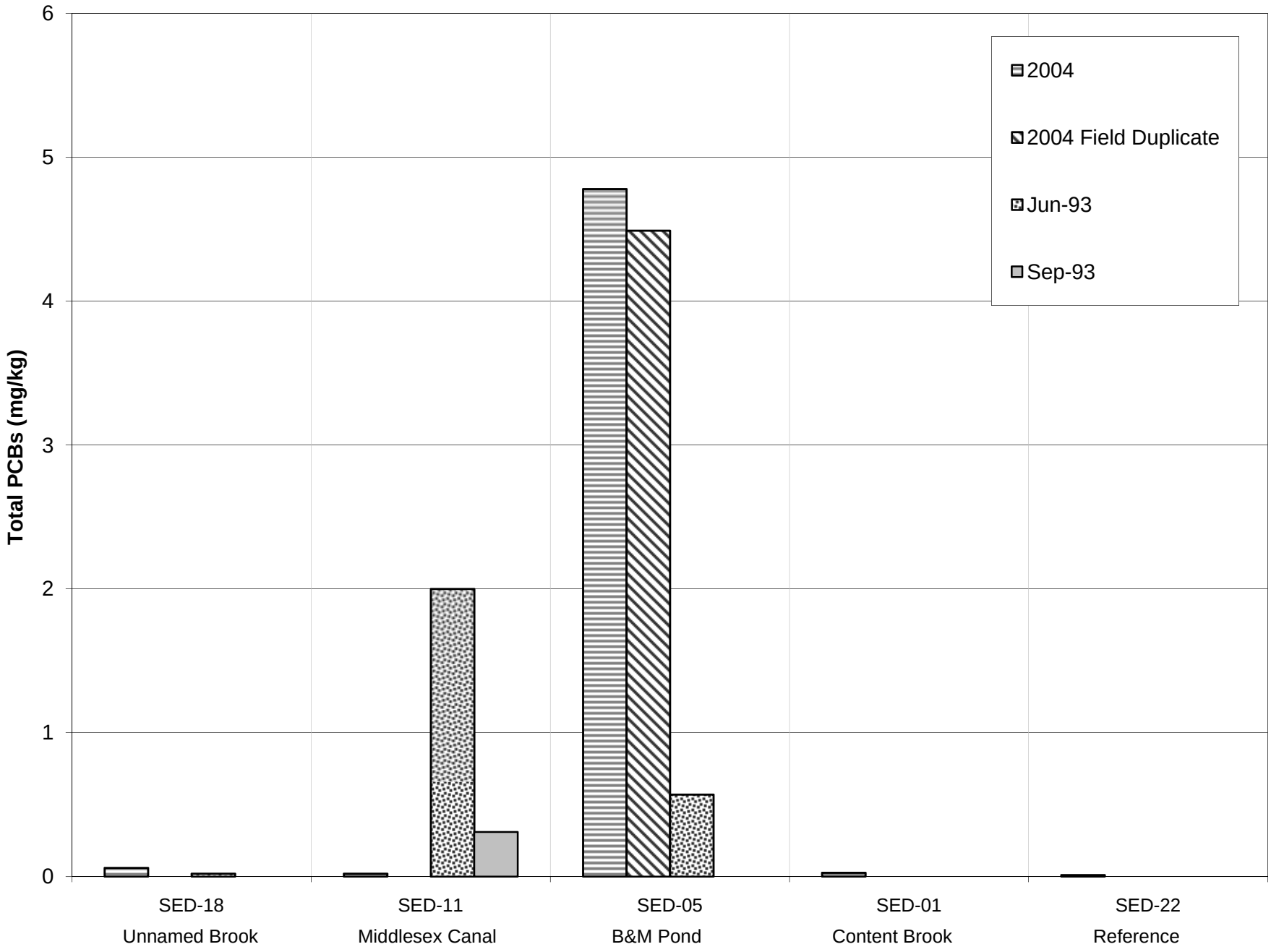


Figure 2-16. Comparison of Total Detected PCBs in Selected Sediment Sampling Locations in 1993 and 2004

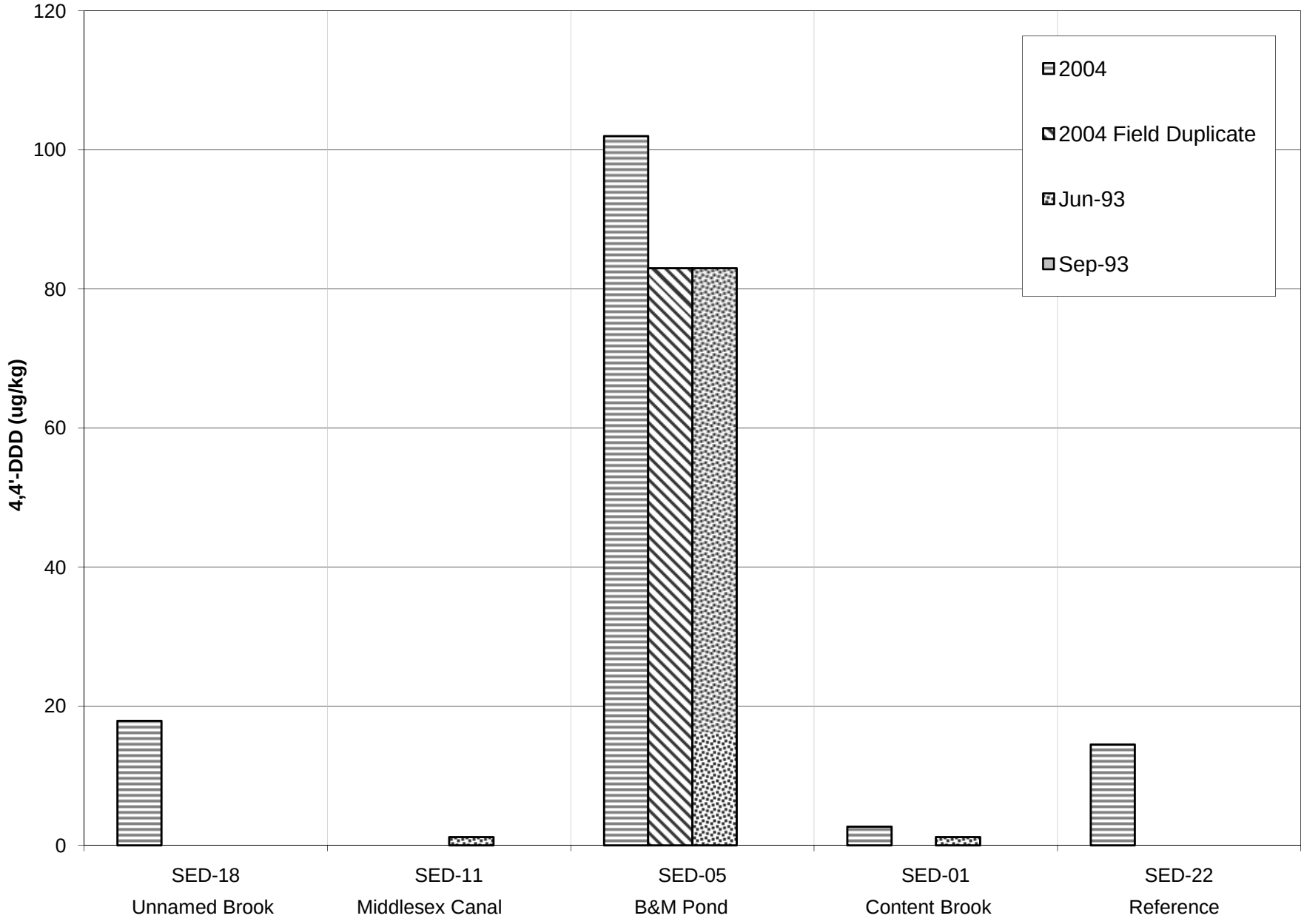


Figure 2-17. Comparison of Detected 4,4'-DDD in Selected Sediment Sampling Locations in 1993 and 2004

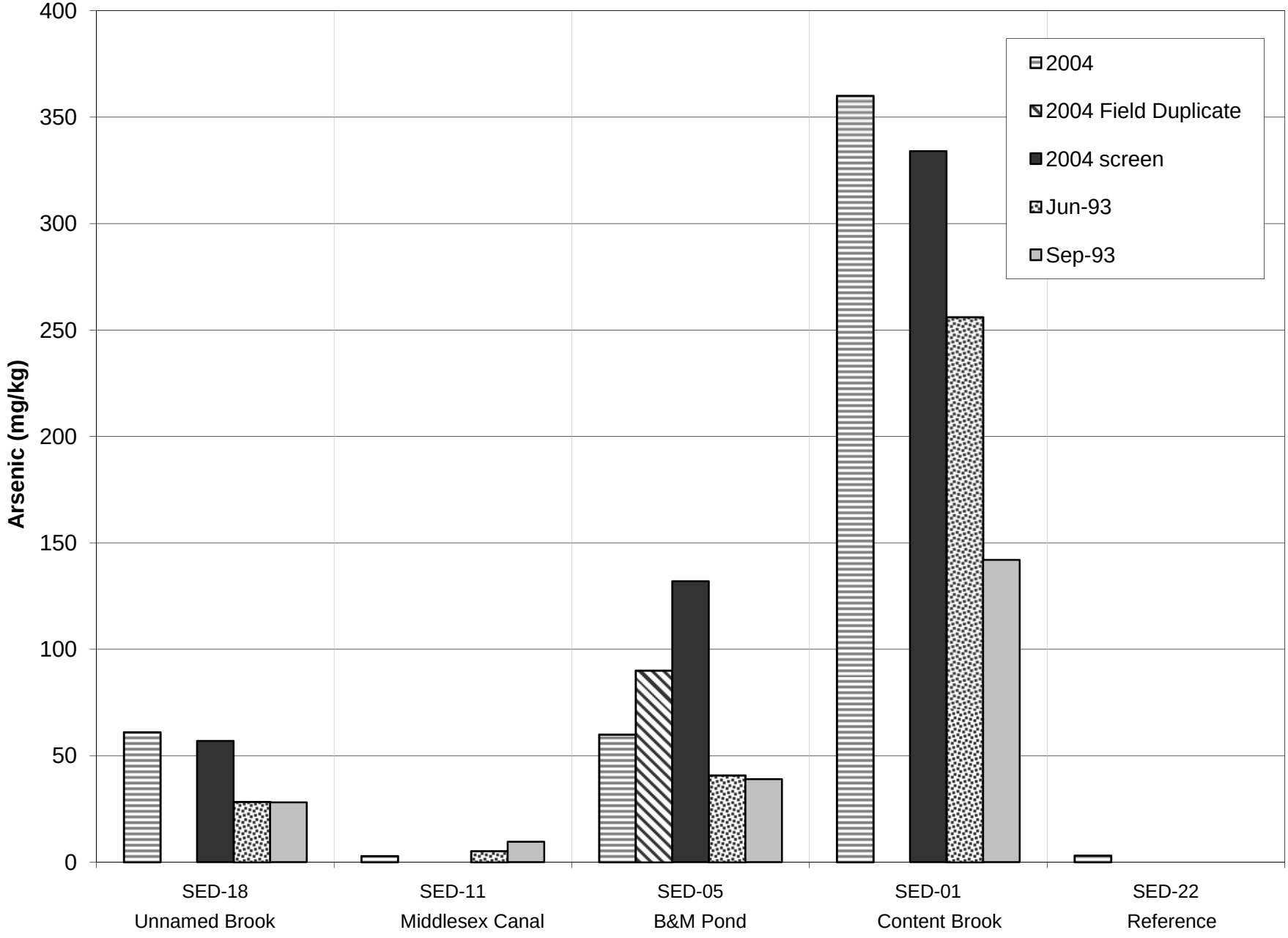


Figure 2-18. Comparison of Detected Arsenic Concentrations in Selected Sediment Sampling Locations in 1993 and 2004

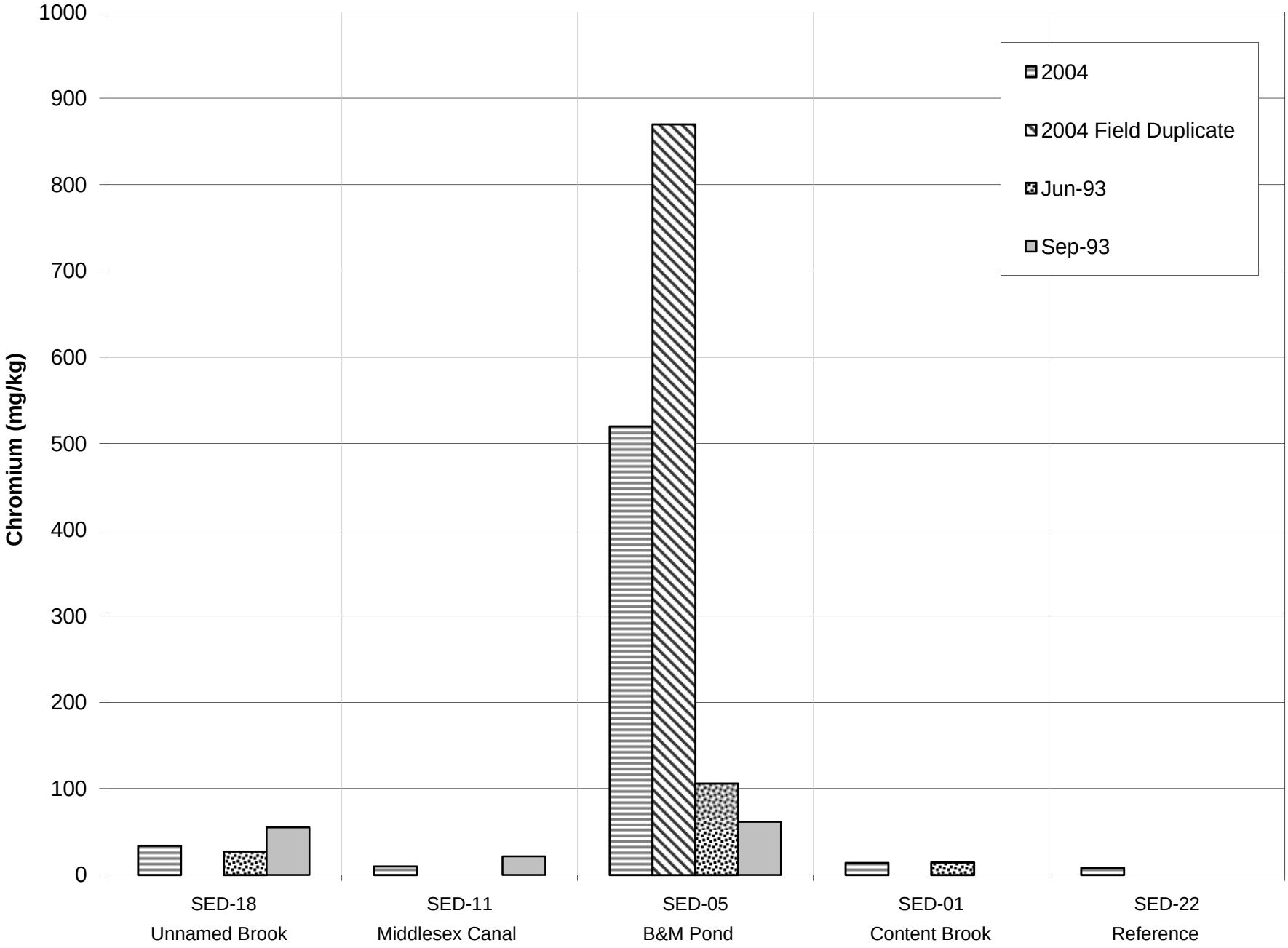


Figure 2-19. Comparison of Detected Chromium Concentrations in Selected Sediment Sampling Locations in 1993 and 2004

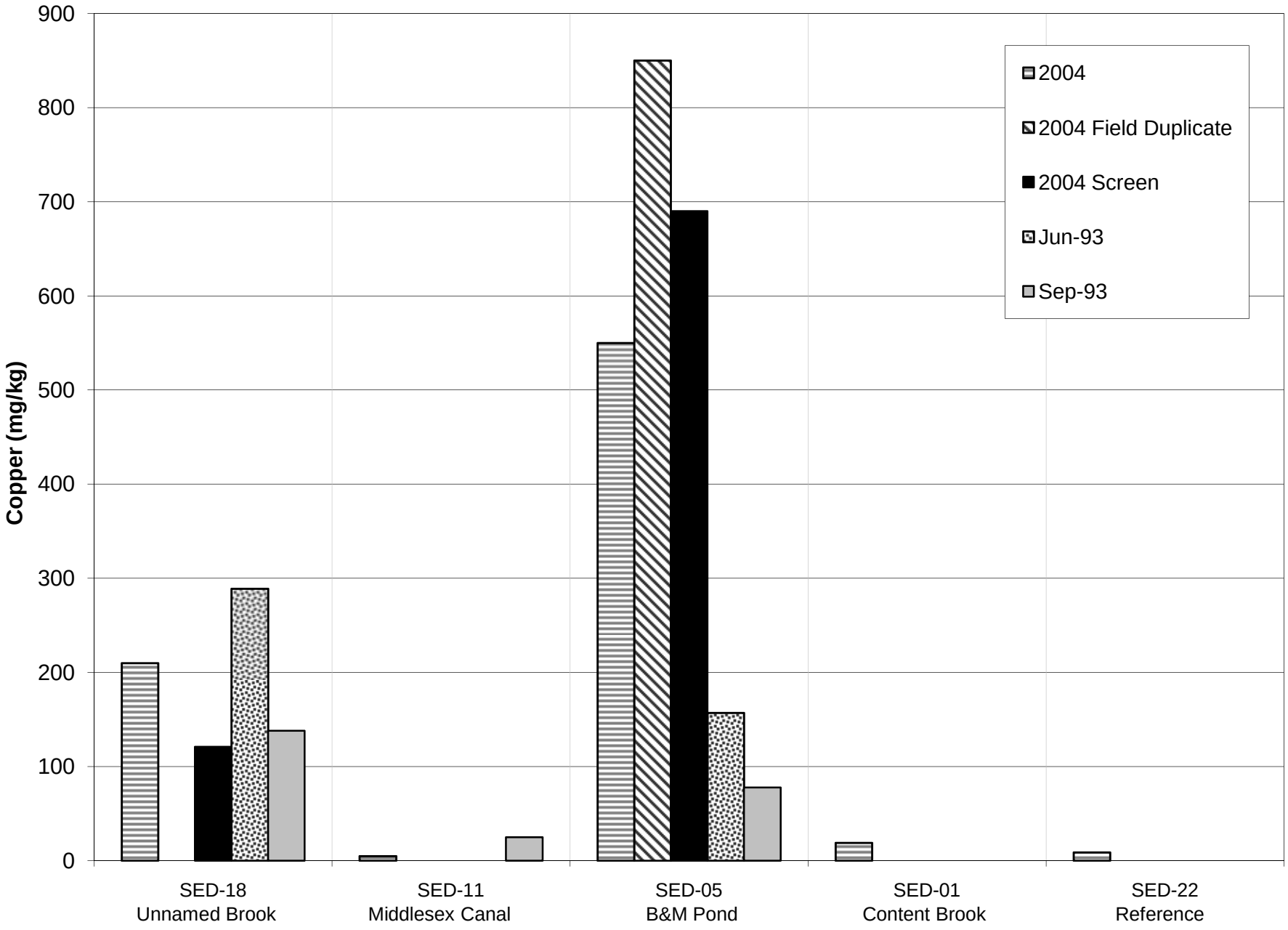


Figure 2-20. Comparison of Detected Copper Concentrations in Selected Sediment Sampling Locations in 1993 and 2004

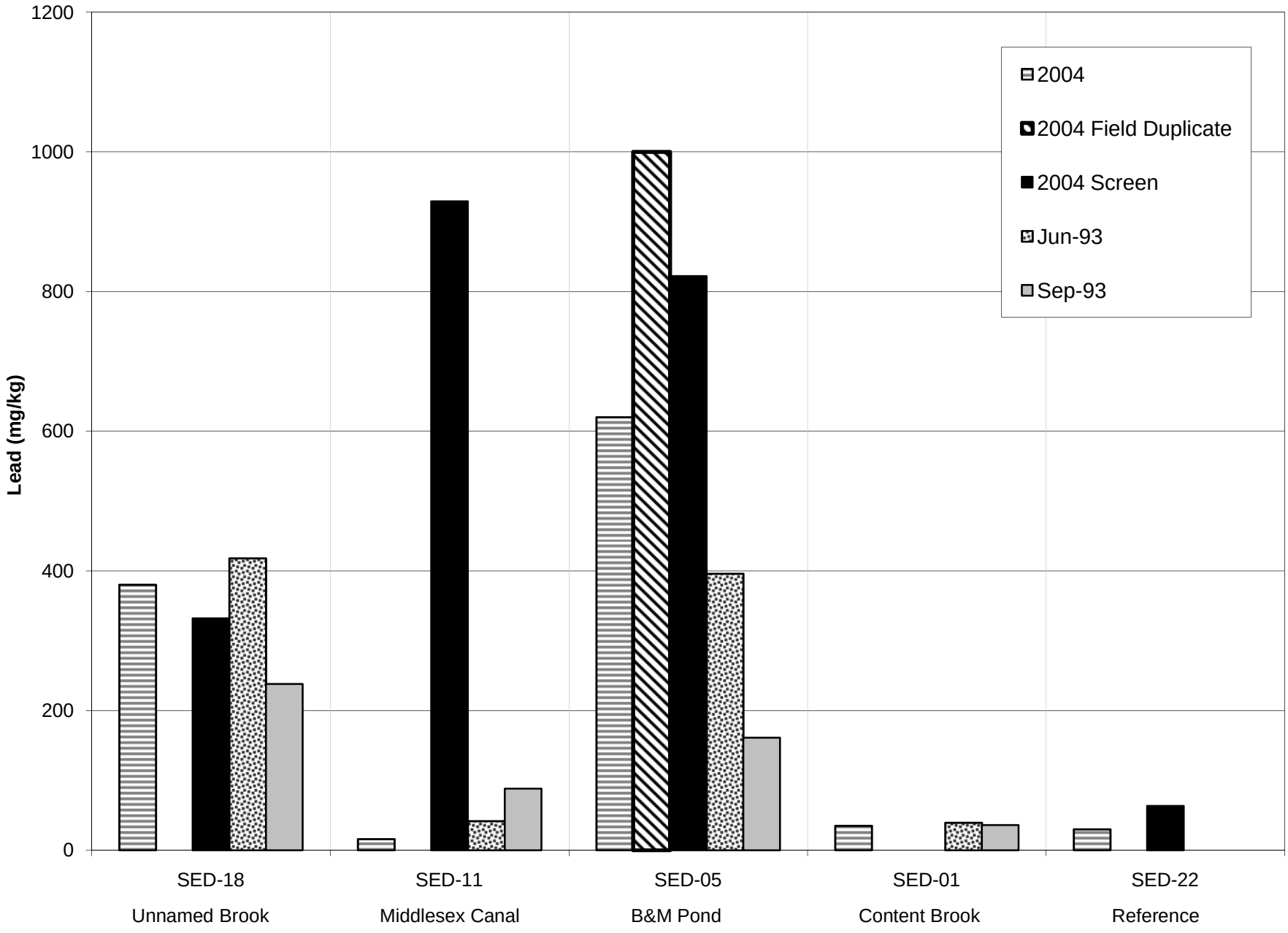


Figure 2-21. Comparison of Detected Lead Concentrations in Selected Sediment Sampling Locations in 1993 and 2004

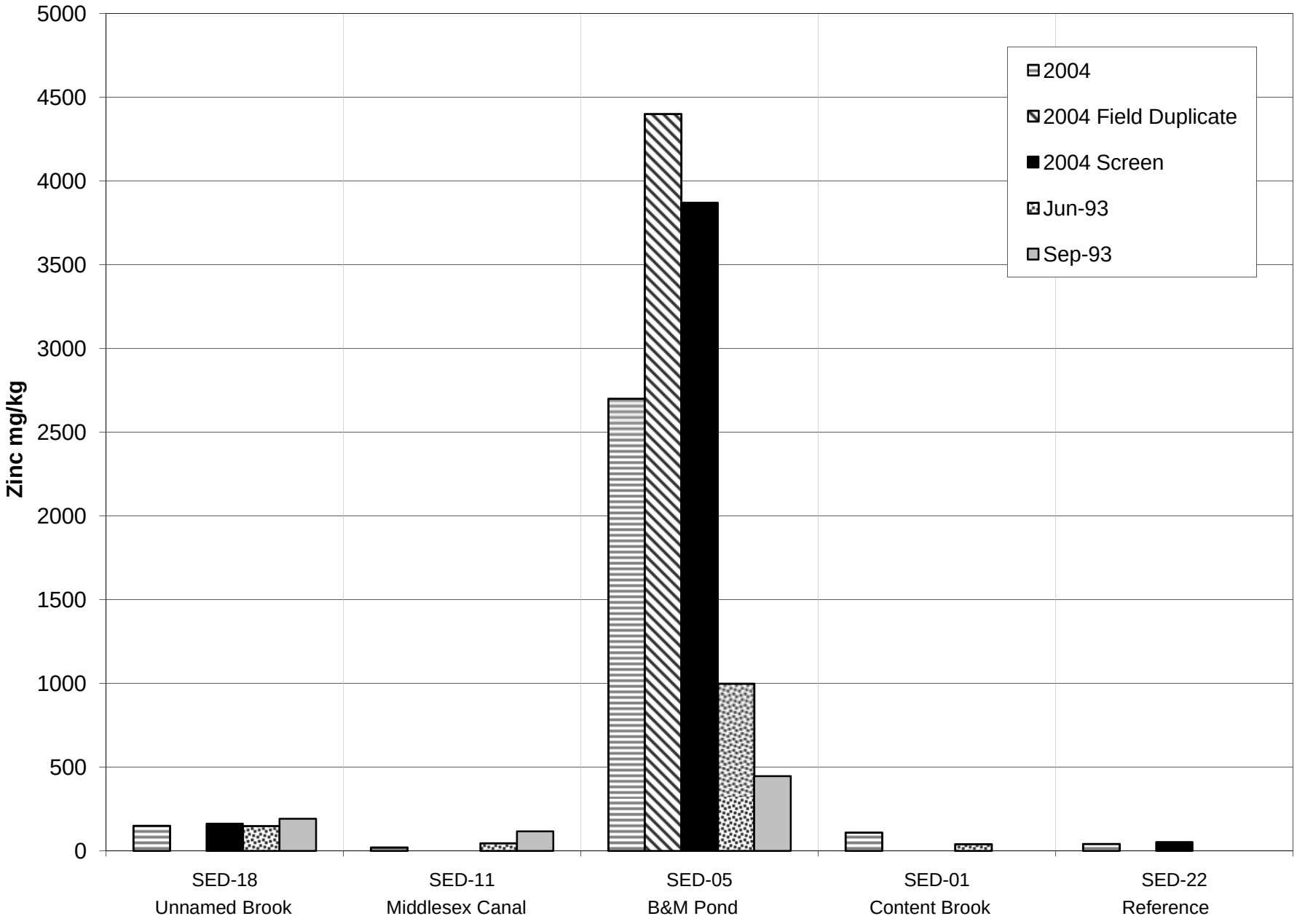
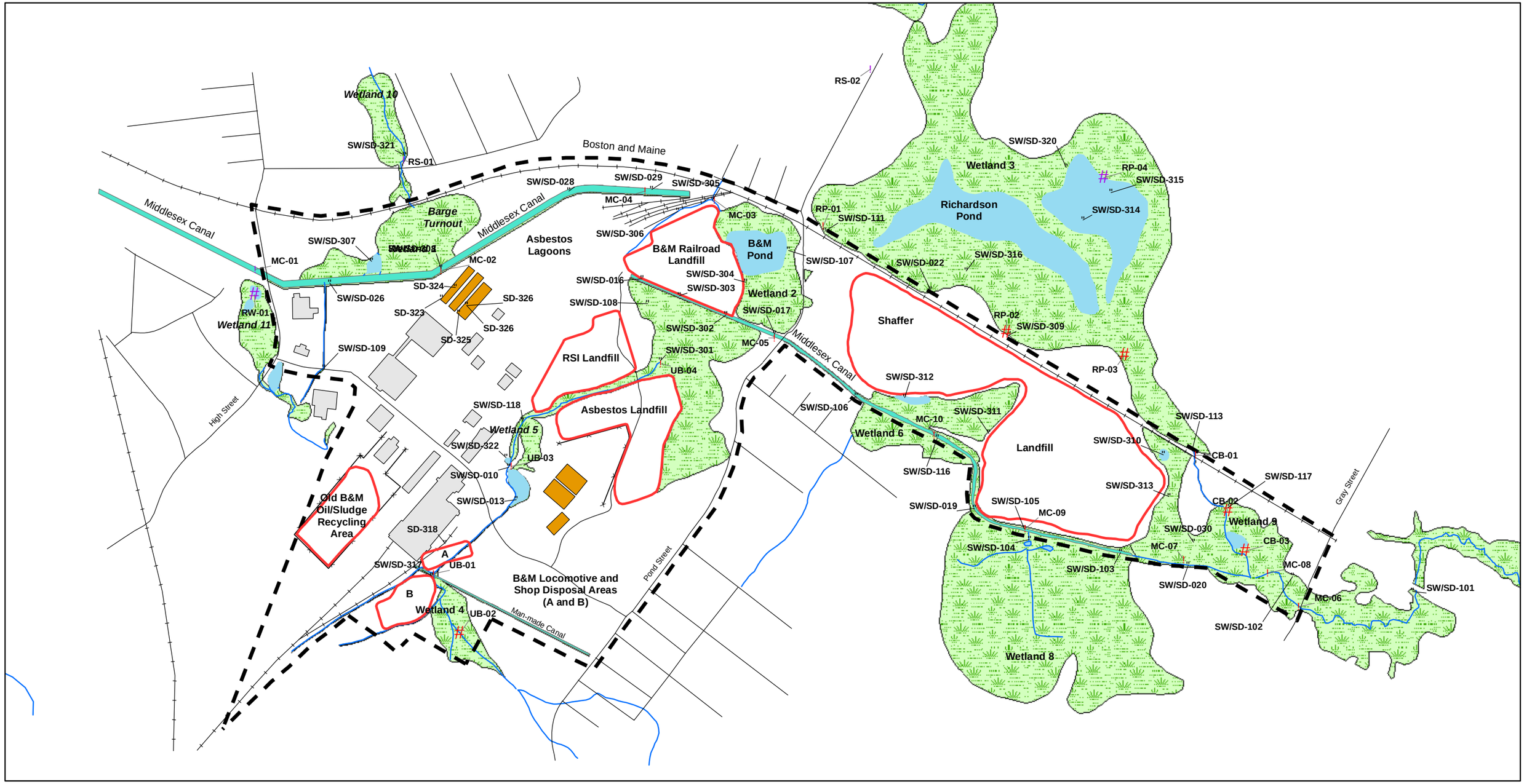


Figure 2-22. Comparions of Detected Zinc Concentrations in Selected Sediment Sampling Locations in 1993 and 2004



LEGEND

- Road
- Railroad
- Stream
- Fence
- Disposal Area boundary
- Iron Horse Site Boundary
- Surface Water
- Wetland
- Lagoon
- Building
- Canal
- " Surface Water/Sediment Station
- # Lentic Station
- # Lentic Reference Station
- ! Lotic Station
- ! Lotic Reference Station

N
W E
S

0 200 400 800 1,200 1,600
Feet

Locations for all features area approximate.
Extent of wetland and surface waters are limited to areas confirmed during wetlands reconnaissance on July 15, 1993 and November 8, 1994

Source: MassGIS, Commonwealth of Massachusetts
Executive Office of Environmental Affairs

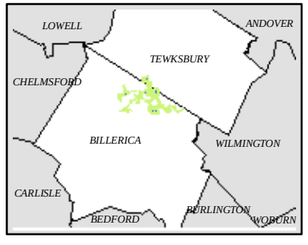


FIGURE 2-23.

1997 BERA BENTHIC INVERTEBRATE AND SEDIMENT SAMPLING LOCATIONS

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

G:\Projects\HAZWASTE\36800321IHP\Maps\ERA-WRIA_Figure2-23.mxd

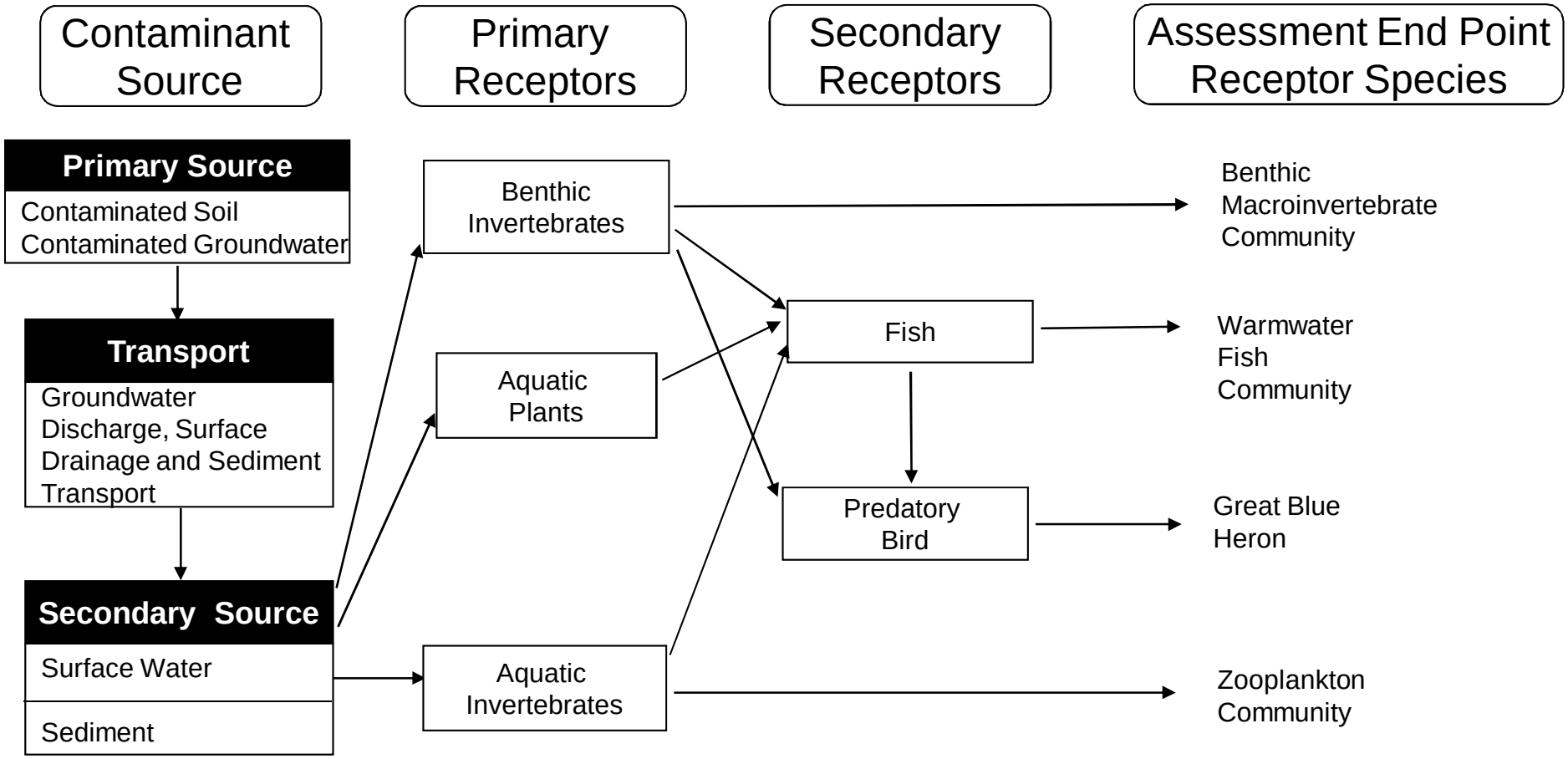


FIGURE 3-1.
SITE CONCEPTUAL MODEL
Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

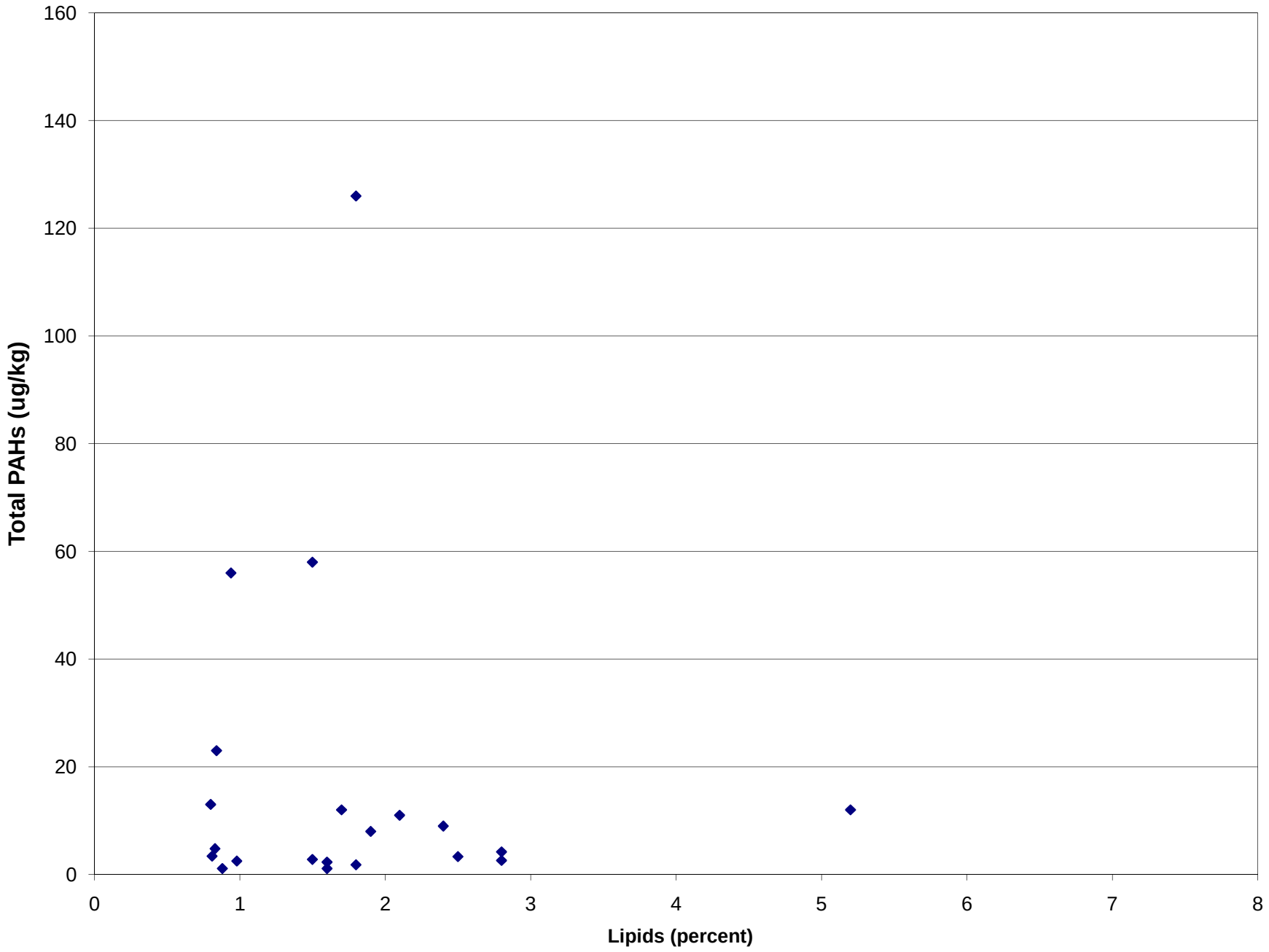


Figure 5-1. Comparison of Percent Lipids and Total PAHs in Site-Wide Fish Tissue

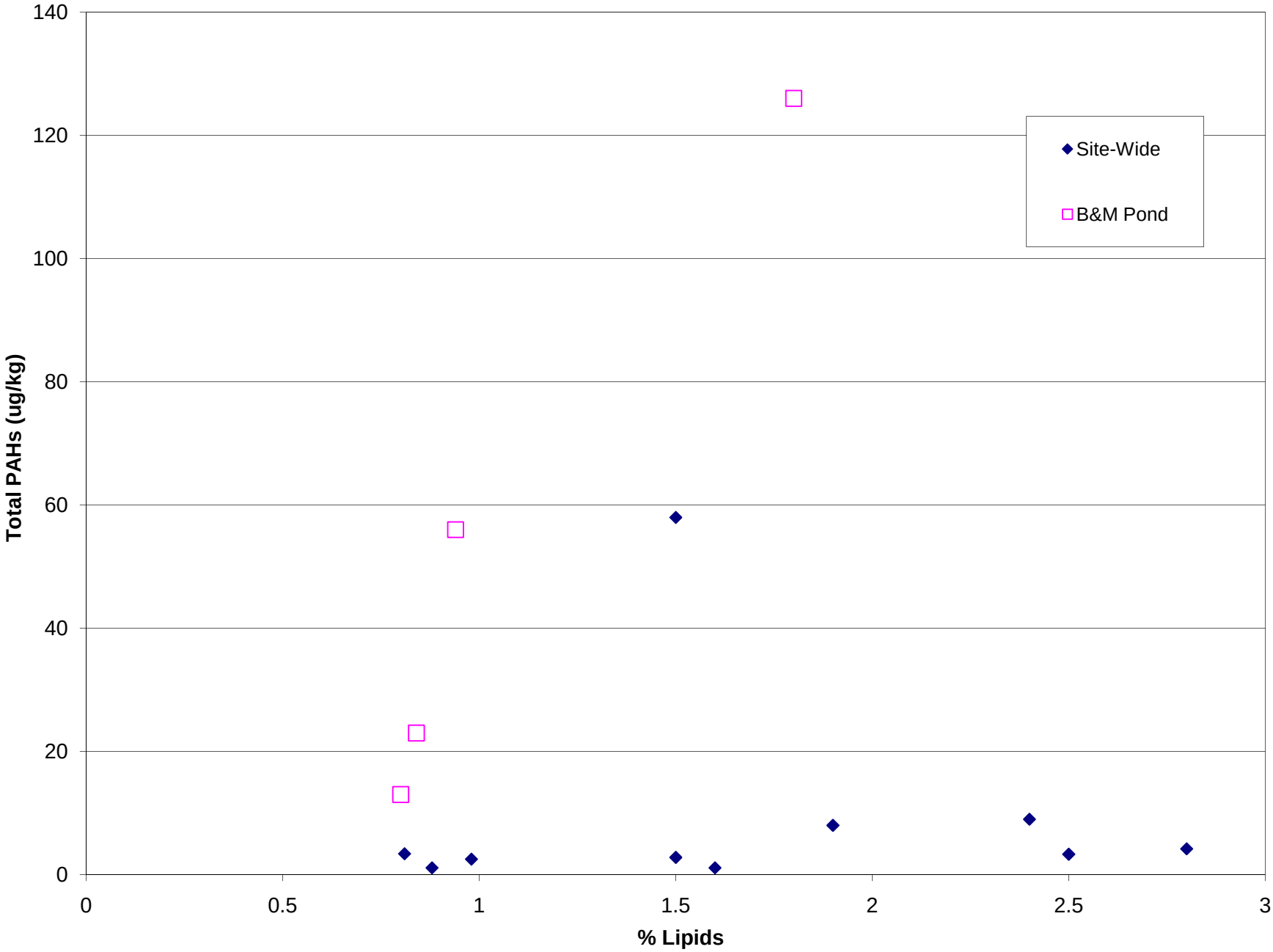


Figure 5-2. Comparison of Percent Lipids and Total PAHs in Bullhead Fish Tissue

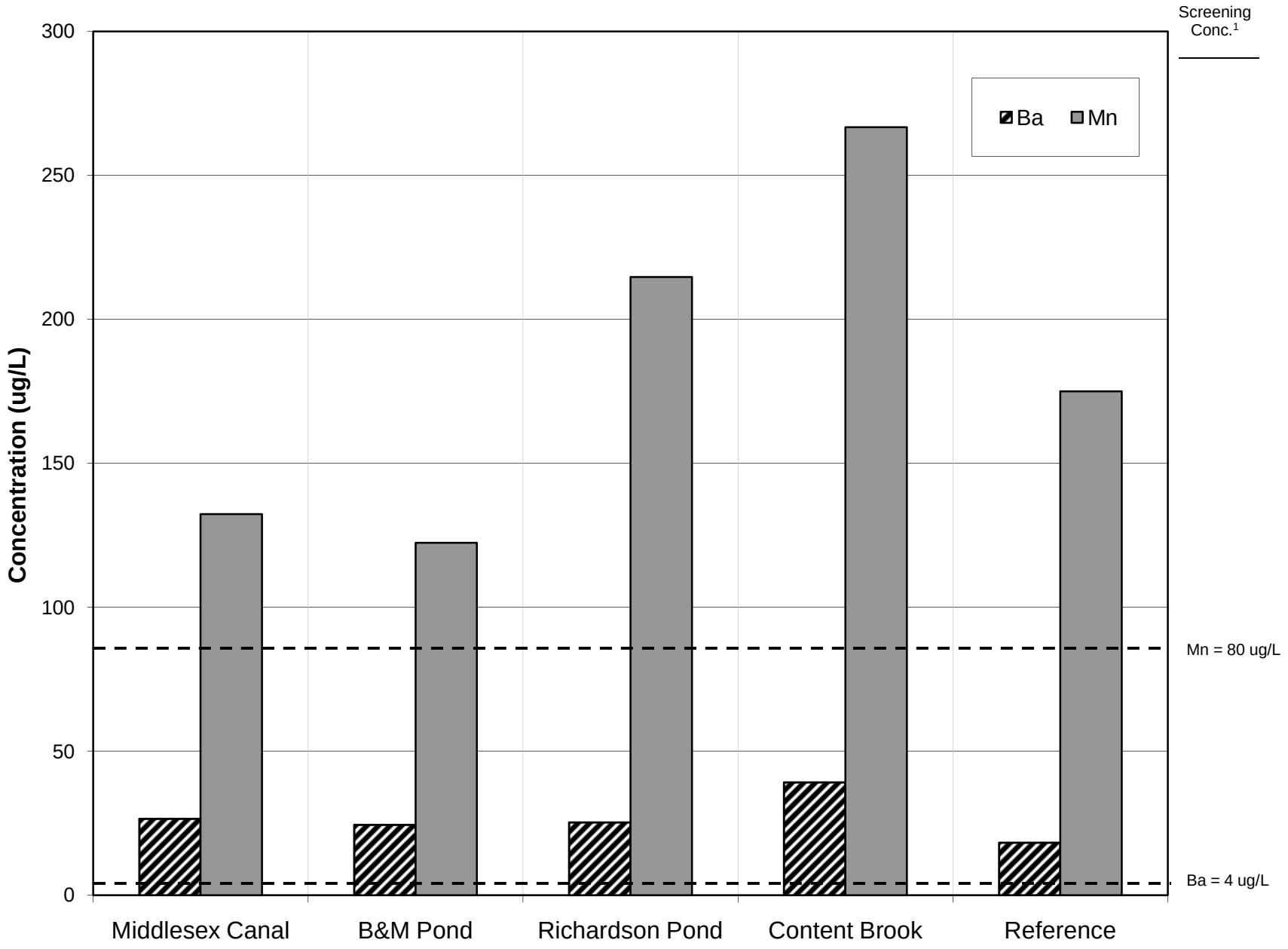


Figure 6-1. Dissolved Barium and Manganese in Surface Water

[1] Tier II surface water benchmark

Date: 10/11/2010

Figure 6-1 SW metals- Ba+Mn_0606.xls[Figure 6-1]

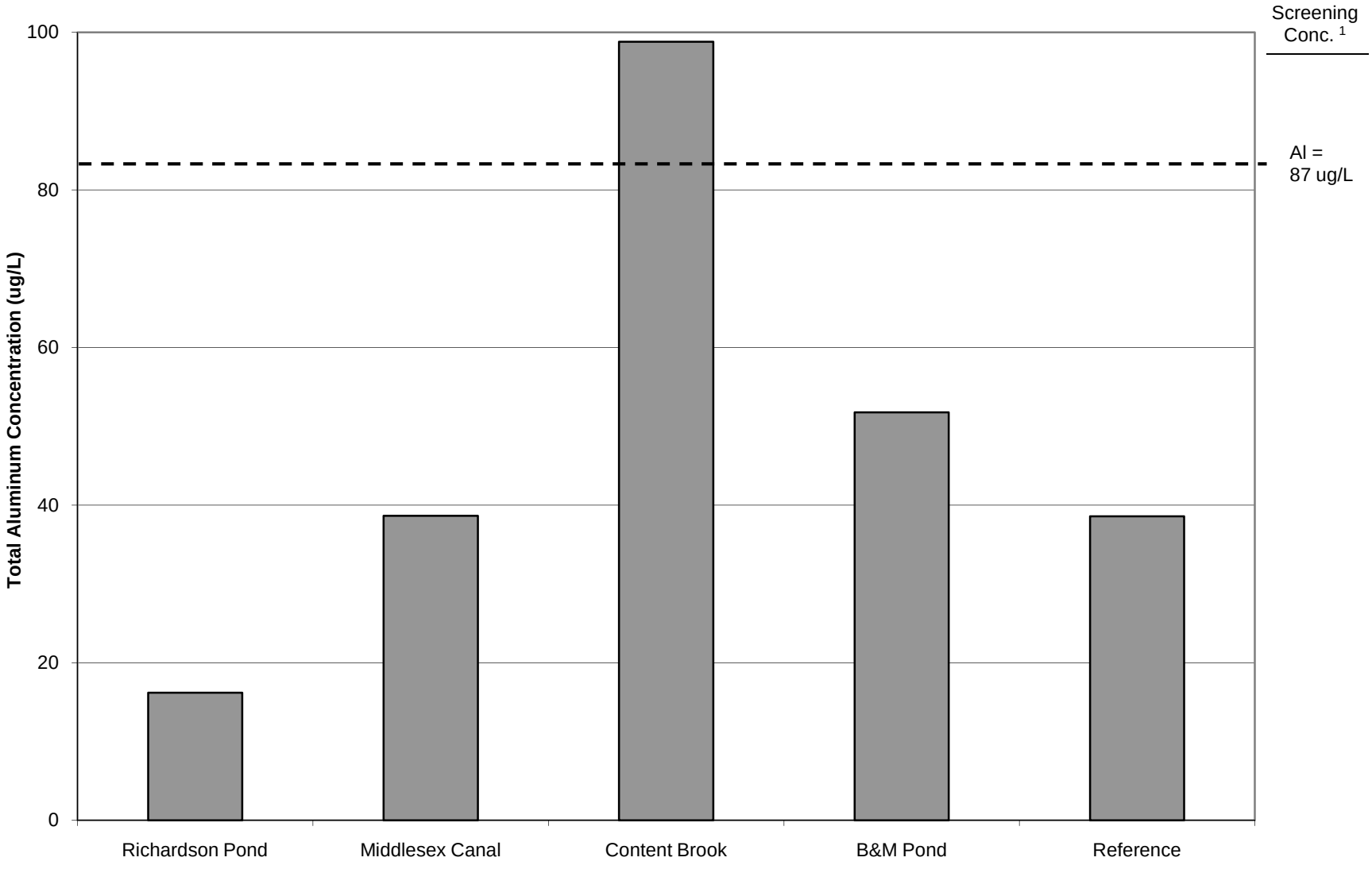


Figure 6-2. Total Aluminum in Surface Water

[1] Tier II surface water benchmark

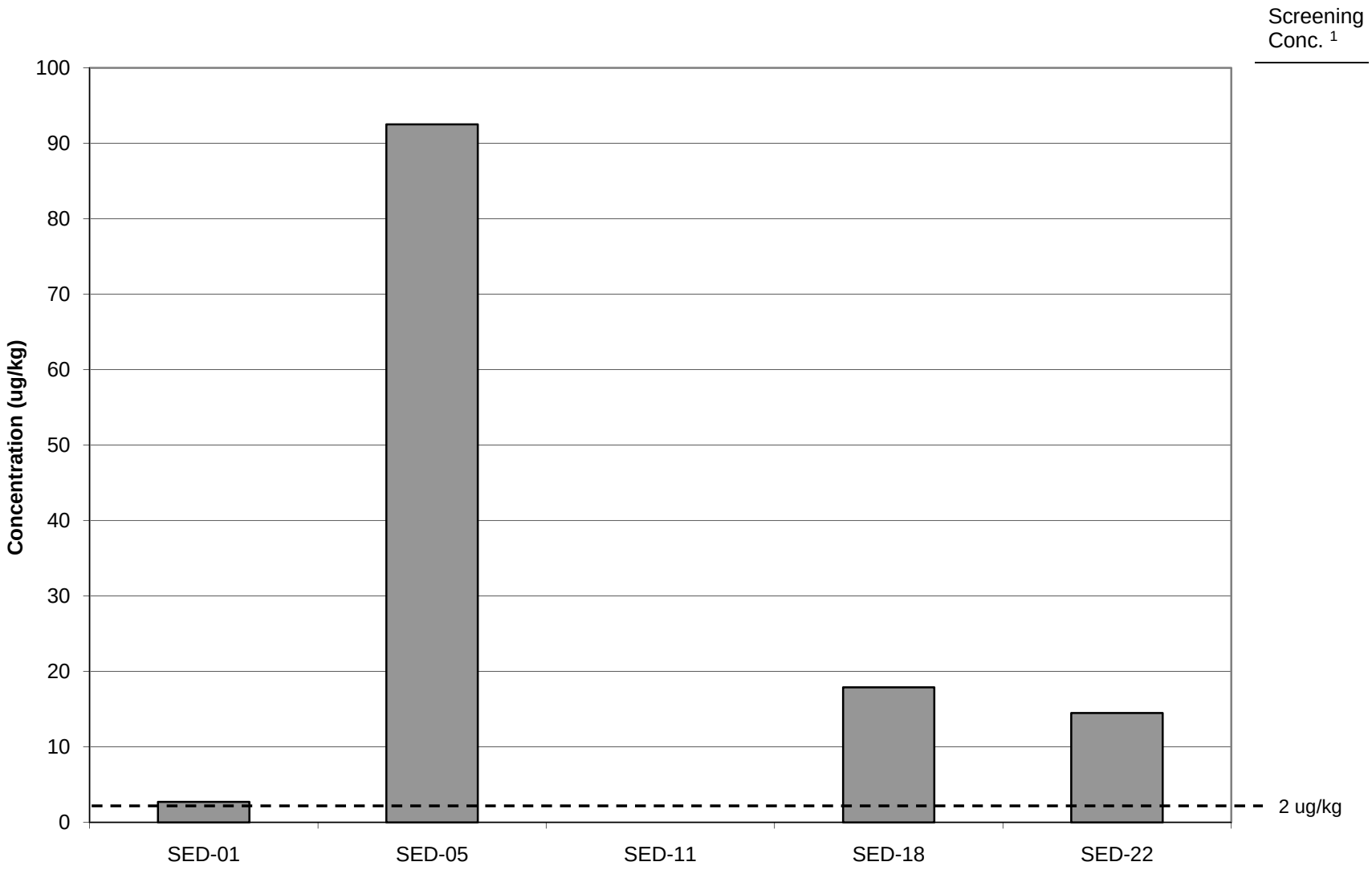


Figure 6-3. 4,4'-DDD Concentrations in Sediment

[1] Organic benchmarks based on 1% sediment organic carbon content

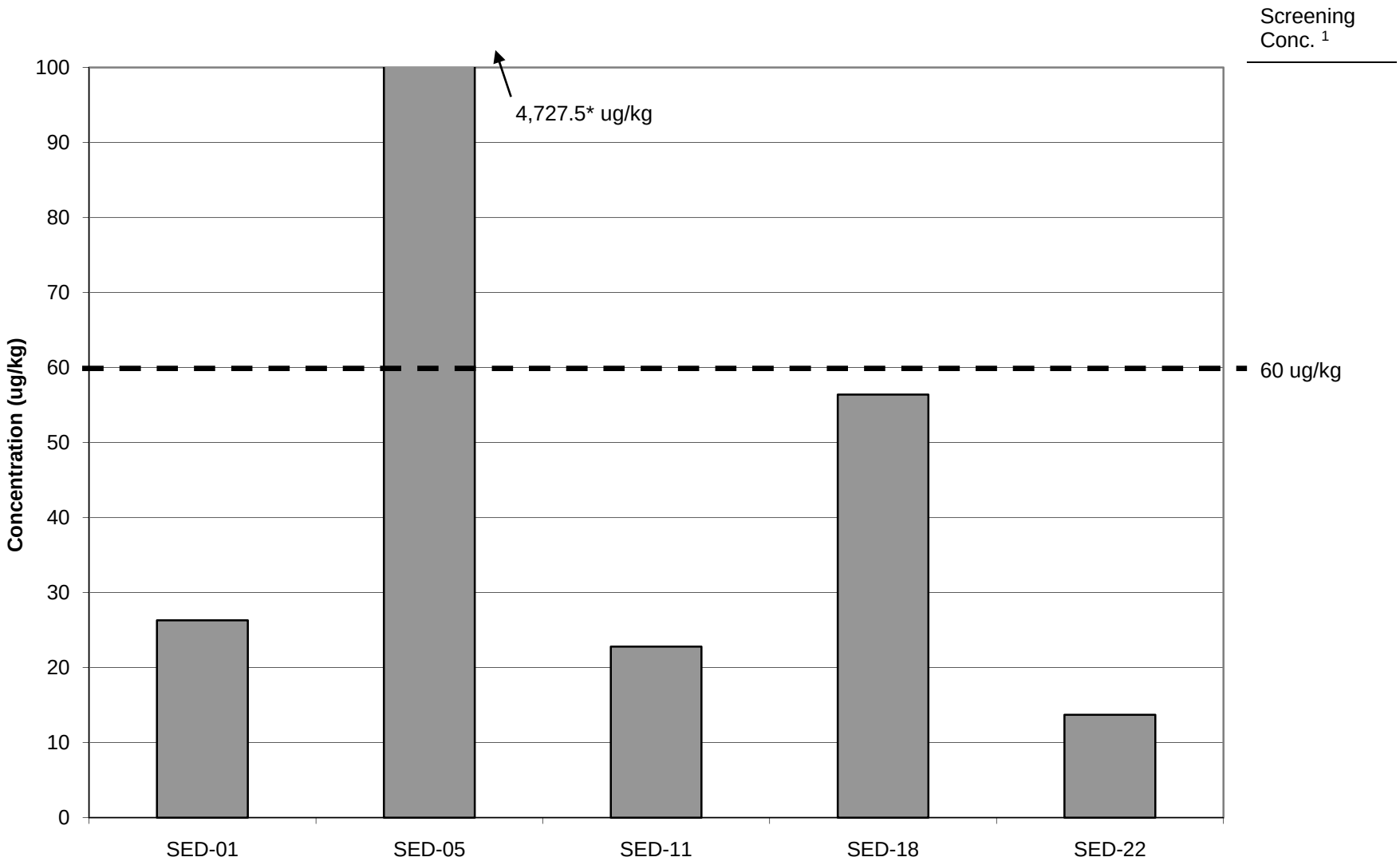


Figure 6-4. Total PCB Concentrations in Sediment

* High Concentrations, values out of graph range

[1] Organic benchmarks based on 1% sediment organic carbon content

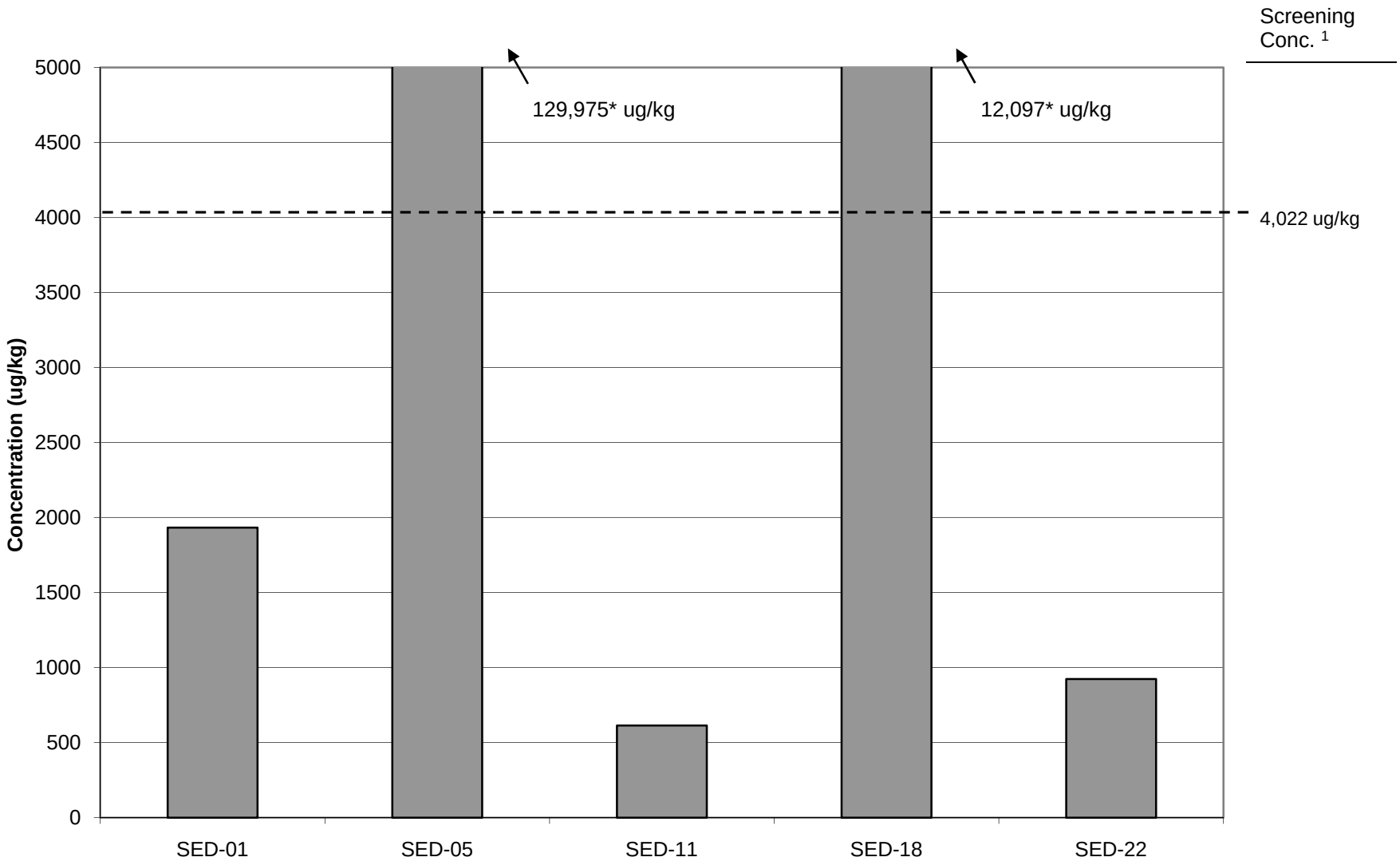


Figure 6-5. Total PAH Concentrations in Sediment

* High Concentrations, values out of graph range

[1] Organic benchmarks based on 1% sediment organic carbon content

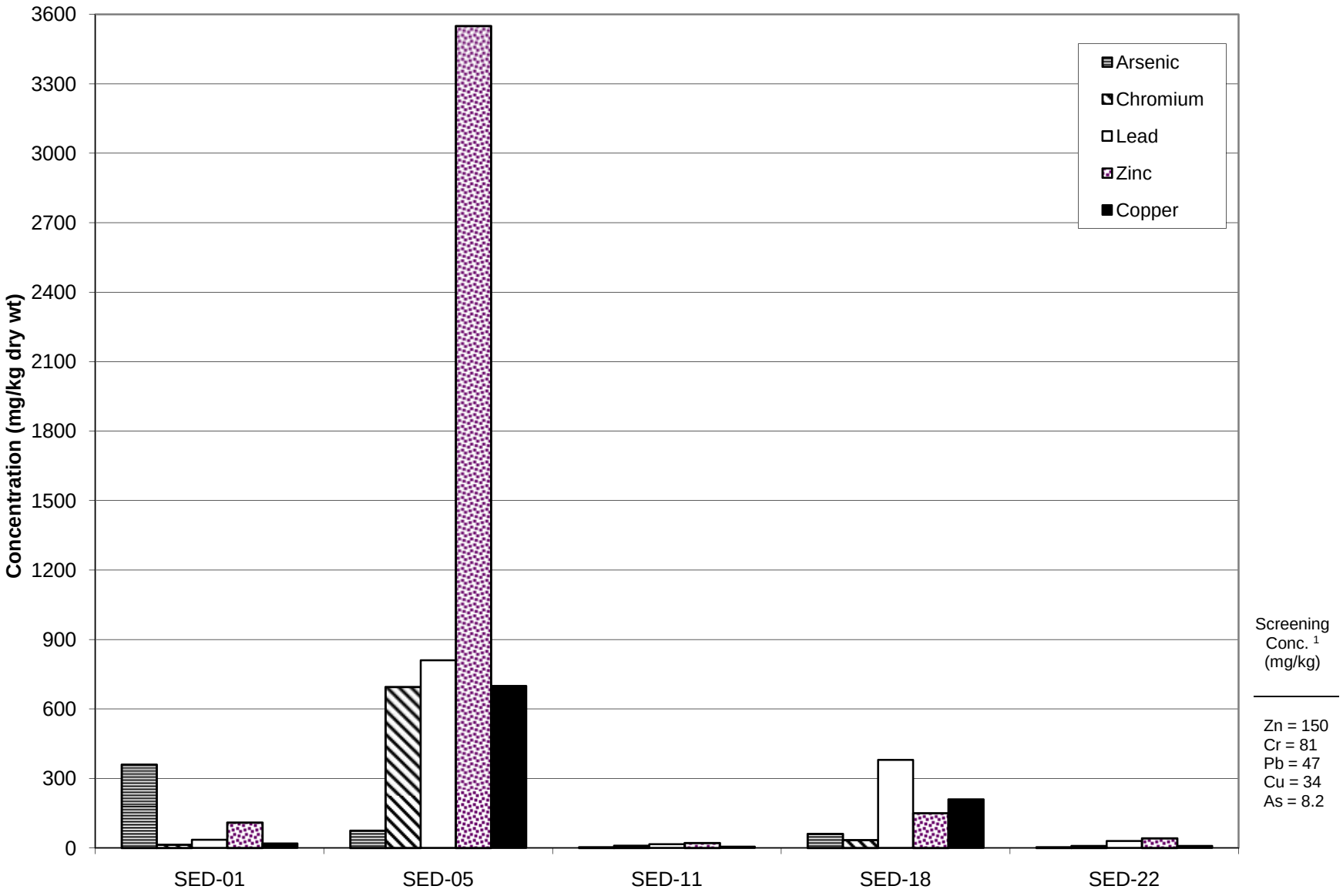


Figure 6-6. Arsenic, Chromium, Copper, Lead, and Zinc Concentrations in Sediment

[1] See Table 4-5

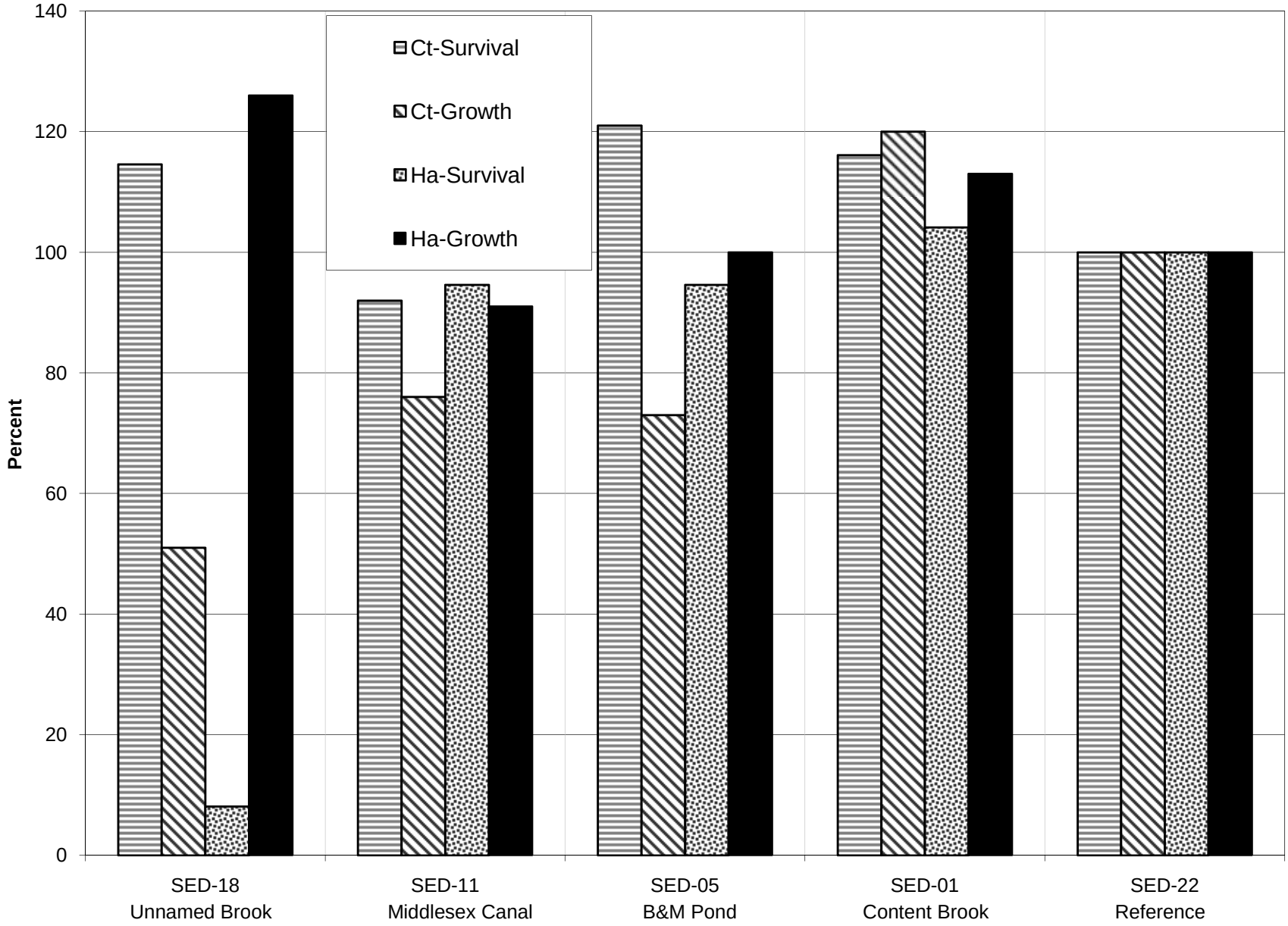
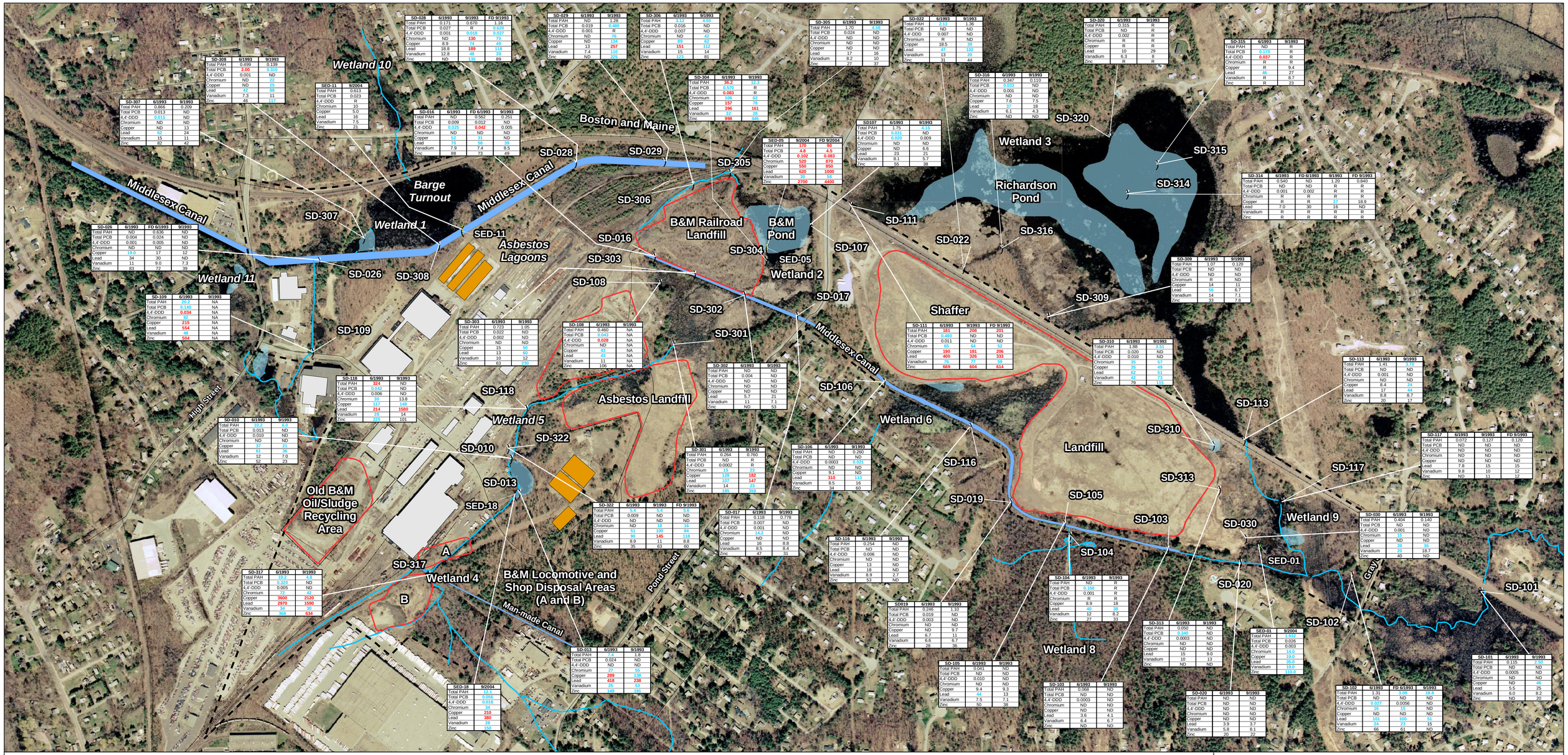


Figure 6-7. Comparison of Sediment Toxicity Testing Endpoints for *Hyalella azteca* (Ha) and *Chironomus tentans*(Ct). Percent survival and percent growth are normalized to results on reference sediments (SED-22).



SD-028	6/1993	9/1993	FD 9/1993
Total PAH	0.171	0.670	1.16
Total PCB	0.027	R	0.020
4,4'-DDD	0.001	0.018	0.027
Chromium	ND	130	70
Copper	8.9	74	49
Lead	18.8	189	118
Vanadium	12.8	48	39
Zinc	ND	135	89

SD-029	6/1993	9/1993
Total PAH	ND	1.28
Total PCB	0.019	0.480
4,4'-DDD	0.001	R
Chromium	ND	76
Copper	ND	134
Lead	13	257
Vanadium	7.4	110
Zinc	ND	225

SD-306	6/1993	9/1993
Total PAH	3.12	4.55
Total PCB	0.016	ND
4,4'-DDD	0.007	ND
Chromium	ND	62
Copper	89	62
Lead	151	112
Vanadium	15	14
Zinc	123	81

SD-305	6/1993	9/1993
Total PAH	1.70	4.58
Total PCB	0.024	ND
4,4'-DDD	ND	ND
Chromium	ND	ND
Copper	ND	ND
Lead	17	16
Vanadium	8.2	10
Zinc	27	37

SD-022	6/1993	9/1993
Total PAH	2.13	1.36
Total PCB	ND	ND
4,4'-DDD	0.007	ND
Chromium	R	ND
Copper	18.5	30
Lead	47	102
Vanadium	13	20
Zinc	31	44

SD-320	6/1993	9/1993
Total PAH	0.315	R
Total PCB	ND	R
4,4'-DDD	0.002	R
Chromium	R	R
Copper	R	R
Lead	10	29
Vanadium	6.3	8
Zinc	R	R

SD-315	6/1993	9/1993
Total PAH	ND	R
Total PCB	0.170	R
4,4'-DDD	0.037	R
Chromium	R	R
Copper	R	9.4
Lead	46	27
Vanadium	R	8.7
Zinc	R	23

SD-308	6/1993	9/1993
Total PAH	0.499	0.139
Total PCB	2.00	0.310
4,4'-DDD	0.003	ND
Chromium	ND	22
Copper	ND	25
Lead	42	88
Vanadium	7.3	11
Zinc	46	117

SD-307	6/1993	9/1993
Total PAH	0.866	0.209
Total PCB	0.013	ND
4,4'-DDD	0.019	ND
Chromium	ND	ND
Copper	ND	13
Lead	92	24
Vanadium	15	11
Zinc	82	42

SED-11	9/2004
Total PAH	0.613
Total PCB	0.023
4,4'-DDD	R
Chromium	10
Copper	5.0
Lead	16
Vanadium	7.5
Zinc	21

SD-016	6/1993	FD 6/1993	9/1993
Total PAH	ND	0.562	0.251
Total PCB	0.009	0.012	ND
4,4'-DDD	0.025	0.042	0.005
Chromium	ND	ND	ND
Copper	52	31	ND
Lead	70	58	39
Vanadium	7.9	7.4	8.5
Zinc	88	73	49

SD-304	6/1993	9/1993
Total PAH	36.2	14.3
Total PCB	0.570	R
4,4'-DDD	0.083	R
Chromium	106	62
Copper	157	76
Lead	396	161
Vanadium	37	28
Zinc	998	446

SD-316	6/1993	9/1993
Total PAH	0.347	0.110
Total PCB	0.033	ND
4,4'-DDD	0.001	ND
Chromium	ND	ND
Copper	7.6	7.5
Lead	37	18
Vanadium	6.1	4.3
Zinc	ND	ND

SED-05	9/2004	FD 9/2004
Total PAH	170	90
Total PCB	4.8	4.5
4,4'-DDD	0.102	0.083
Chromium	520	870
Copper	550	850
Lead	620	1000
Vanadium	30	58
Zinc	2700	4400

SD107	6/1993	9/1993
Total PAH	1.75	4.15
Total PCB	0.031	ND
4,4'-DDD	0.020	0.009
Chromium	ND	ND
Copper	ND	6.6
Lead	23	21
Vanadium	8.1	5.7
Zinc	55	38

SD-314	6/1993	FD 6/1993	9/1993	FD 9/1993
Total PAH	0.540	ND	1.20	0.840
Total PCB	ND	ND	R	R
4,4'-DDD	0.001	0.002	R	R
Chromium	R	R	R	R
Copper	R	R	37	18.9
Lead	7.0	30	16	ND
Vanadium	R	R	R	R
Zinc	R	R	R	R

SD-026	6/1993	FD 6/1993	9/1993
Total PAH	ND	0.635	ND
Total PCB	0.004	0.024	ND
4,4'-DDD	0.001	0.005	ND
Chromium	ND	ND	ND
Copper	19.0	17	12
Lead	34	30	ND
Vanadium	11	9.0	7.3
Zinc	83	72	39

SD-309	6/1993	9/1993
Total PAH	1.07	0.120
Total PCB	ND	ND
4,4'-DDD	ND	ND
Chromium	R	ND
Copper	14	11
Lead	56	6.7
Vanadium	14	7.1
Zinc	33	7.8

SD-109	6/1993	9/1993
Total PAH	20.7	NA
Total PCB	0.140	NA
4,4'-DDD	0.034	NA
Chromium	92	NA
Copper	215	NA
Lead	554	NA
Vanadium	48	NA
Zinc	504	NA

SD-303	6/1993	9/1993
Total PAH	0.723	1.05
Total PCB	0.022	ND
4,4'-DDD	0.002	ND
Chromium	ND	ND
Copper	15	50
Lead	13	60
Vanadium	10	12
Zinc	63	230

SD-108	6/1993	9/1993
Total PAH	0.460	NA
Total PCB	0.043	NA
4,4'-DDD	0.028	NA
Chromium	ND	NA
Copper	43	NA
Lead	43	NA
Vanadium	11	NA
Zinc	106	NA

SD-111	6/1993	9/1993	FD 9/1993
Total PAH	181	208	201
Total PCB	0.488	ND	ND
4,4'-DDD	0.011	ND	ND
Chromium	55	46	55
Copper	190	181	206
Lead	400	326	333
Vanadium	76	72	68
Zinc	669	604	614

SD-310	6/1993	9/1993
Total PAH	1.88	3.51
Total PCB	0.020	ND
4,4'-DDD	0.010	ND
Chromium	35	57
Copper	35	49
Lead	62	51
Vanadium	42	73
Zinc	79	215

SD-113	6/1993	9/1993
Total PAH	1.41	3.70
Total PCB	ND	ND
4,4'-DDD	0.001	ND
Chromium	ND	ND
Copper	8.4	29
Lead	17	44
Vanadium	8.8	8.7
Zinc	20	17

SD-118	6/1993	9/1993
Total PAH	324	ND
Total PCB	0.042	ND
4,4'-DDD	0.006	ND
Chromium	30	13.8
Copper	117	148
Lead	214	1580
Vanadium	28	14
Zinc	225	101

SD-010	6/1993	9/1993
Total PAH	10.2	6.0
Total PCB	0.013	ND
4,4'-DDD	0.010	ND
Chromium	ND	ND
Copper	37	21
Lead	61	36
Vanadium	12	7.0
Zinc	52	23

SD-302	6/1993	9/1993
Total PAH	ND	ND
Total PCB	0.004	ND
4,4'-DDD	ND	ND
Chromium	ND	ND
Copper	ND	ND
Lead	5.7	21
Vanadium	11	7.1
Zinc	ND	53

SD-301	6/1993	9/1993
Total PAH	0.264	0.760
Total PCB	ND	R
4,4'-DDD	0.0002	R
Chromium	15	23
Copper	128	182
Lead	107	147
Vanadium	14	23
Zinc	186	359

SD-106	6/1993	9/1993
Total PAH	ND	0.260
Total PCB	ND	ND
4,4'-DDD	0.0003	0.021
Chromium	ND	ND
Copper	9.1	ND
Lead	310	113
Vanadium	8.5	16
Zinc	34	60

SD-117	6/1993	9/1993	FD 9/1993
Total PAH	0.072	0.127	0.120
Total PCB	ND	ND	ND
4,4'-DDD	ND	ND	ND
Chromium	ND	ND	ND
Copper	ND	ND	ND
Lead	7.8	15	15
Vanadium	9.8	10	12
Zinc	ND	11	12

SD-322	6/1993	9/1993	FD 9/1993
Total PAH	5.4	5.4	5.4
Total PCB	0.009	ND	ND
4,4'-DDD	ND	ND	ND
Chromium	ND	18	16
Copper	51	100	84
Lead	90	145	118
Vanadium	8.9	11	8.8
Zinc	35	63	60

SD-017	6/1993	9/1993
Total PAH	0.118	0.778
Total PCB	0.007	ND
4,4'-DDD	0.001	ND
Chromium	14.2	ND
Copper	ND	ND
Lead	16	8.8
Vanadium	8.5	8.4
Zinc	47	31

SD-116	6/1993	9/1993
Total PAH	0.254	ND
Total PCB	ND	ND
4,4'-DDD	0.006	ND
Chromium	ND	ND
Copper	13	ND
Lead	18	ND
Vanadium	8.9	2.7
Zinc	53	ND

SD-030	6/1993	9/1993
Total PAH	0.404	0.140
Total PCB	ND	ND
4,4'-DDD	0.001	ND
Chromium	15	ND
Copper	ND	ND
Lead	39	26
Vanadium	20	18.7
Zinc	40	ND

SD-317	6/1993	9/1993
Total PAH	10.2	4.4
Total PCB	0.200	ND
4,4'-DDD	0.005	ND
Chromium	22	42
Copper	3600	2120
Lead	2970	1590
Vanadium	34	35
Zinc	368	634

SD-104	6/1993	9/1993
Total PAH	ND	R
Total PCB	0.150	R
4,4'-DDD	0.001	R
Chromium	R	R
Copper	8.9	18
Lead	40	38
Vanadium	12	8.2
Zinc	27	33

SD019	6/1993	9/1993
Total PAH	0.246	1.10
Total PCB	0.019	ND
4,4'-DDD	0.003	ND
Chromium	ND	ND
Copper	ND	9.7
Lead	6.7	11
Vanadium	6.6	6.7
Zinc	28	36

SD-313	6/1993	9/1993
Total PAH	0.050	ND
Total PCB	0.300	ND
4,4'-DDD	0.0003	ND
Chromium	ND	ND
Copper	ND	ND
Lead	15	9.0
Vanadium	10	13
Zinc	ND	ND

SED-01	9/2004
Total PAH	1.928
Total PCB	0.026
4,4'-DDD	0.003
Chromium	14.0
Copper	19.0
Lead	35.0
Vanadium	19.0
Zinc	110.0

SD-101	6/1993	9/1993
Total PAH	0.115	2.50
Total PCB	ND	ND
4,4'-DDD	0.0005	ND
Chromium	ND	ND
Copper	ND	46
Lead	5.5	25
Vanadium	6.0	8.2
Zinc	ND	20

SD-013	6/1993	9/1993
Total PAH	7.4	1.8
Total PCB	0.024	ND
4,4'-DDD	ND	ND
Chromium	27	55
Copper	289	138
Lead	418	238
Vanadium	25	53
Zinc	149	191

SED-18	9/2004
Total PAH	12.1
Total PCB	0.056
4,4'-DDD	0.018
Chromium	34
Copper	210
Lead	380
Vanadium	28
Zinc	150

SD-105	6/1993	9/1993
Total PAH	0.041	ND
Total PCB	ND	ND
4,4'-DDD	0.010	ND
Chromium	ND	ND
Copper	9.4	9.3
Lead	44	13
Vanadium	7.5	7.1
Zinc	50	38

SD-103	6/1993	9/1993
Total PAH	0.068	ND
Total PCB	ND	ND
4,4'-DDD	0.0003	ND
Chromium	ND	ND
Copper	ND	ND
Lead	3.6	4.1
Vanadium	6.4	6.7
Zinc	ND	ND

SD-020	6/1993	9/1993
Total PAH	ND	ND
Total PCB	ND	ND
4,4'-DDD	ND	ND
Chromium	ND	ND
Copper	ND	ND
Lead	3.9	3.7
Vanadium	5.8	8.1
Zinc	20	22

SD-102	6/1993	FD 6/1993	9/1993
Total PAH	1.31	3.48	18.8
Total PCB	ND	ND	ND
4,4'-DDD	0.027	0.0056	ND
Chromium	16	15	ND
Copper	ND	ND	ND
Lead	101	100	51
Vanadium	24	23	15
Zinc	66	61	ND

LEGEND

- Road
- Railroad
- Stream
- Fence
- Disposal Area boundary
- Iron Horse Site Boundary
- Surface Water
- Lagoon
- Building
- Canal
- 1993 Sediment Sampling Location
- 2004 Sediment Sampling Location
- Negligible Toxicity to Benthic Invertebrates as Indicated by Laboratory Toxicity Tests
- Low Toxicity to Benthic Invertebrates as Indicated by Laboratory Toxicity Tests
- Moderate Toxicity to Benthic Invertebrates as Indicated by Laboratory Toxicity Tests

N
W E
S

0 200 400 800 1,200 1,600
Feet

*Red Concentration Values Indicate an Exceedance of the PEC
*Blue Concentration Values Indicate an Exceedance of the NOEC

ND - Not Detected
NA - Not Analyzed
Concentrations are in mg/kg.

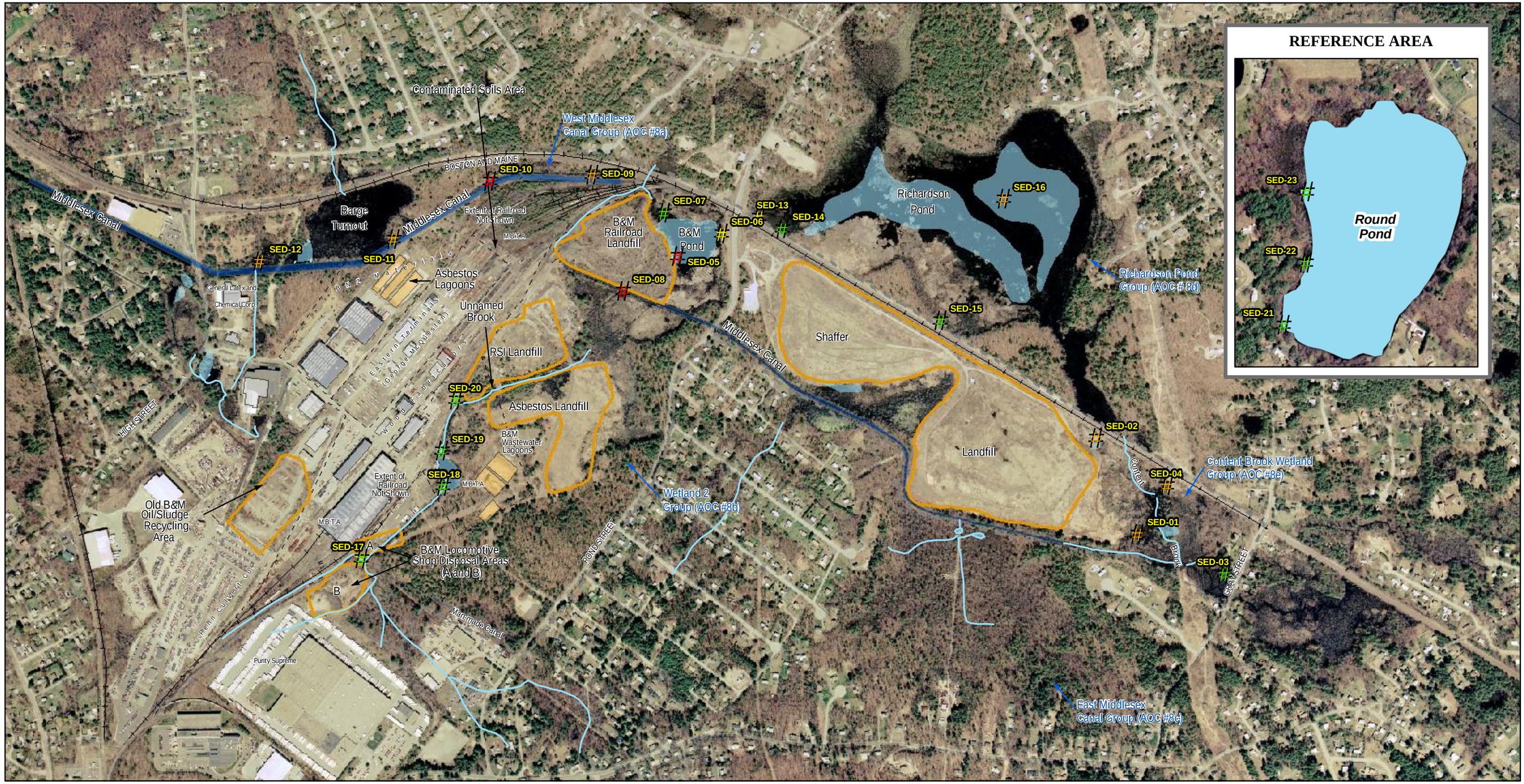
Locations for All Features Shown are Approximate. Extent of Wetland and Surface Waters are Limited to Areas Confirmed During Wetlands Reconnaissance on July 15, 1993 and November 8, 1994.

FIGURE 7-1.

COPC CONCENTRATIONS AT HISTORICAL AND CURRENT SITEWIDE SEDIMENT SAMPLING LOCATIONS

Iron Horse Park Superfund Site
North Billerica, MA

G:\Projects\HAZWASTE\3680021\HPMajor\ERA-WRA_Figure7-1.mxd



LEGEND

- Property Boundary
- Railroad
- Disposal Area Boundary
- Building
- Lagoon
- Surface Water
- Wetlands
- 2004 Sediment Sampling Location
- High Toxicity (≥ 50% Effect)
- Moderate Toxicity (<50% Effect, >25% Effect)
- Low Toxicity (<25% Effect, >10% Effect)
- Negligible Toxicity (<10% Effect)

N
W E
S

800 400 0 800
Feet

Locations for all features area approximate.
Extent of wetland and surface waters are limited to areas confirmed during wetlands reconnaissance on July 15, 1993 and November 8, 1994

Source: MassGIS, Commonwealth of Massachusetts
Executive Office of Environmental Affairs

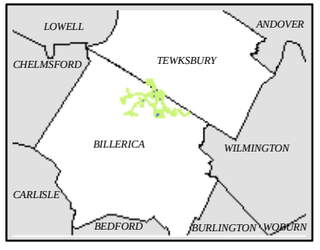


FIGURE 7-2.

SUMMARY OF MICROTOX® RESULTS FOR 2004 SEDIMENT SAMPLING LOCATIONS

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

G:\Projects\HAZWASTE\36800321IHP\Maps\ERA-WRIA_Figure7-2.mxd

APPENDIX A
1993 AND 2004 SURFACE WATER, SEDIMENT, AND FISH TISSUE ANALYTICAL DATA

Analytical Data - June 1993
Surface Water

LOCATION NAME:		SW-319	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319-0.0-0.5-NX-043	SW-321-0.0-0.5-NX-150	SW-107-0.0-0.5-NX-018	SW-304-0.0-0.5-NX-029
DATE SAMPLED:		06/09/93	06/21/93	06/09/93	06/11/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-319	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319-0.0-0.5-NX-043	SW-321-0.0-0.5-NX-150	SW-107-0.0-0.5-NX-018	SW-304-0.0-0.5-NX-029
DATE SAMPLED:		06/09/93	06/21/93	06/09/93	06/11/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	10 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-319	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319-0.0-0.5-NX-043	SW-321-0.0-0.5-NX-150	SW-107-0.0-0.5-NX-018	SW-304-0.0-0.5-NX-029
DATE SAMPLED:		06/09/93	06/21/93	06/09/93	06/11/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	0.7 J	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	0.8 J	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	0.6 J	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-319	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319-0.0-0.5-NX-043	SW-321-0.0-0.5-NX-150	SW-107-0.0-0.5-NX-018	SW-304-0.0-0.5-NX-029
DATE SAMPLED:		06/09/93	06/21/93	06/09/93	06/11/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	0.6 J	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	0.9 J	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 U
4,4'-DDE	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 U
4,4'-DDT	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 U
Aldrin	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 U
Dieldrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 U
Endosulfan I	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 U
Endosulfan II	0.005	0.0011 J	0.0050 UJ	0.0011 J	0.0050 U
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 U
Endrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 U
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 U
Endrin Ketone	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 U
Heptachlor	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 U
Heptachlor Epoxide	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 U
Methoxychlor	0.03	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.0250 U

LOCATION NAME:		SW-319	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319-0.0-0.5-NX-043	SW-321-0.0-0.5-NX-150	SW-107-0.0-0.5-NX-018	SW-304-0.0-0.5-NX-029
DATE SAMPLED:		06/09/93	06/21/93	06/09/93	06/11/93
REMARKS:					
Toxaphene	0.3	0.2500 UJ	0.2500 UJ	0.2500 UJ	0.2500 U
alpha-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0020 J
alpha-Chlordane	0.003	0.00075 J	0.0025 UJ	0.0025 UJ	0.0025 U
beta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 U
delta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 U
gamma-BHC(Lindane)	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0024 J
gamma-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 U
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 U
Aroclor-1221	0.10	0.1000 UJ	0.1000 UJ	0.1000 UJ	0.1000 U
Aroclor-1232	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 U
Aroclor-1242	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 U
Aroclor-1248	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 U
Aroclor-1254	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 U
Aroclor-1260	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 U
METALS	CRDL(ug/l)				
Aluminum	200	1580	6290	153 U	56.3 UJ
Antimony	60	18.6 U	17.9 U	18.6 U	17.9 U
Arsenic	10	2.7 U	18.1 J	5.7 U	1.7 U
Barium	200	33.1	155	27.7	27.4
Beryllium	5	0.44 U	1.1	0.3 U	0.5 U
Cadmium	5	1.4 U	1.7 U	1.4 U	1.7 U
Calcium	5000	11000	24800	12100	13300
Chromium	10	3.5	9.9	3.3 U	5.8 U
Cobalt	50	2.9 U	33.2	2.9 U	3.8 U
Copper	25	6.1 U	18.6 U	5.3 U	4.2 U

SURFACE WATER - JUNE 1993

IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:		SW-319	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319-0.0-0.5-NX-043	SW-321-0.0-0.5-NX-150	SW-107-0.0-0.5-NX-018	SW-304-0.0-0.5-NX-029
DATE SAMPLED:		06/09/93	06/21/93	06/09/93	06/11/93
REMARKS:					
Iron	100	2970	27000	1090	1250 J
Lead	3	22.3 J	40.9	5.1 U	2.4 UJ
Magnesium	5000	2530	4930	2390	2480
Manganese	15	350	5840	857	628 J
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	5.1	18.6	4.2 U	6.1 U
Potassium	5000	2190	3530	2460	2360
Selenium	5	3.3 UJ	3.7 UJ	3.3 U	2.3 U
Silver	10	3.3 U	3.8 U	3.3 U	3.8 U
Sodium	5000	26200	37200	25900	27400
Thallium	10	2.0 UJ	1.4 UJ	2.0 UJ	2.4 U
Vanadium	50	7.1 U	19.0	2.1 U	3.3 U
Zinc	20	27.8	158	11.1 U	6.7 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	30	41	32	31
Dissolved Oxygen	(mg/L)	2.9	NA	2.1	5.3
Hardness	(mg/L)	38	82	40	43
Specific Conductance	(umhos/cm)	200	200	220	230
Temperature	(C)	19.6	19.7	21.1	20.2
pH	--	6.6	7.0	6.4	NA

LOCATION NAME:		SW-319	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319-0.0-0.5-NX-043	SW-321-0.0-0.5-NX-150	SW-107-0.0-0.5-NX-018	SW-304-0.0-0.5-NX-029
DATE SAMPLED:		06/09/93	06/21/93	06/09/93	06/11/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	18	11 J	15	17

LOCATION NAME:		SW-030	SW-101	SW-102	SW-102
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-0.5-NX-011	SW-101-0.0-0.5-NX-012	SW-102-0.0-0.5-FD-114	SW-102-0.0-0.5-NX-013
DATE SAMPLED:		06/15/93	06/16/93	06/15/93	06/15/93
REMARKS:				Field Duplicate	
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-030	SW-101	SW-102	SW-102
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-0.5-NX-011	SW-101-0.0-0.5-NX-012	SW-102-0.0-0.5-FD-114	SW-102-0.0-0.5-NX-013
DATE SAMPLED:		06/15/93	06/16/93	06/15/93	06/15/93
REMARKS:				Field Duplicate	
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-030	SW-101	SW-102	SW-102
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-0.5-NX-011	SW-101-0.0-0.5-NX-012	SW-102-0.0-0.5-FD-114	SW-102-0.0-0.5-NX-013
DATE SAMPLED:		06/15/93	06/16/93	06/15/93	06/15/93
REMARKS:				Field Duplicate	
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	440	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-030	SW-101	SW-102	SW-102
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-0.5-NX-011	SW-101-0.0-0.5-NX-012	SW-102-0.0-0.5-FD-114	SW-102-0.0-0.5-NX-013
DATE SAMPLED:		06/15/93	06/16/93	06/15/93	06/15/93
REMARKS:				Field Duplicate	
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	2 J	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	96 J	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDE	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDT	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Aldrin	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Dieldrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan I	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Endosulfan II	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin	0.005	0.0043 J	0.0050 UJ	0.0017 J	0.0050 UJ
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin Ketone	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Heptachlor	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Methoxychlor	0.03	0.0250 UJ	-- R	-- R	-- R

LOCATION NAME:		SW-030	SW-101	SW-102	SW-102
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-0.5-NX-011	SW-101-0.0-0.5-NX-012	SW-102-0.0-0.5-FD-114	SW-102-0.0-0.5-NX-013
DATE SAMPLED:		06/15/93	06/16/93	06/15/93	06/15/93
REMARKS:				Field Duplicate	
Toxaphene	0.3	0.2500 UJ	0.2500 UJ	0.2500 UJ	0.2500 UJ
alpha-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
alpha-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
beta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
delta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0190 J	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1221	0.10	0.1000 UJ	0.1000 UJ	0.1000 UJ	0.1000 UJ
Aroclor-1232	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1242	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1248	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1254	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1260	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	18900 J	67.5 U	437 J	62.1 UJ
Antimony	60	20.2	18.6 U	17.9 U	17.9 U
Arsenic	10	13000	2.8 U	16.6	5.2
Barium	200	10300	24.2	73.2	51.8
Beryllium	5	1.6 U	0.35 U	0.5 U	0.5 U
Cadmium	5	1.7 U	1.4 U	1.7 U	1.7 U
Calcium	5000	226000	15000	22700	22200
Chromium	10	51.6	3.3 U	5.8 U	5.8 U
Cobalt	50	51.6	2.9 U	3.8 U	3.8 U
Copper	25	4.2 U	2.7 U	4.2 U	4.2 U

LOCATION NAME:		SW-030	SW-101	SW-102	SW-102
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-0.5-NX-011	SW-101-0.0-0.5-NX-012	SW-102-0.0-0.5-FD-114	SW-102-0.0-0.5-NX-013
DATE SAMPLED:		06/15/93	06/16/93	06/15/93	06/15/93
REMARKS:				Field Duplicate	
Iron	100	1290000 J	653	12700 J	2770 J
Lead	3	64.3	1.9 U	6.7 UJ	1.1 UJ
Magnesium	5000	47000	3380	5530	5470
Manganese	15	13500 J	633 J	2140 J	1500 J
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	57.0	4.2 U	6.1 U	6.1 U
Potassium	5000	93000	2860	5740	5840
Selenium	5	27.6	2.4 UJ	2.3 U	2.3 U
Silver	10	54.0	3.3 U	3.8 U	3.8 U
Sodium	5000	299000	39100	64700	65100
Thallium	10	23.8	2.0 UJ	3.4 U	2.6 U
Vanadium	50	125 J	2.1 U	3.3 U	3.3 U
Zinc	20	292	4.8 U	27.4	3.4 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	820	45	84	101
Dissolved Oxygen	(mg/L)	0.6	5.5	NA	7.5
Hardness	(mg/L)	758	51	79	78
Specific Conductance	(umhos/cm)	2500	25	NA	510
Temperature	(C)	20.7	25.0	NA	23.7
pH	--	6.6	7.0	NA	6.5

LOCATION NAME:		SW-030	SW-101	SW-102	SW-102
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-0.5-NX-011	SW-101-0.0-0.5-NX-012	SW-102-0.0-0.5-FD-114	SW-102-0.0-0.5-NX-013
DATE SAMPLED:		06/15/93	06/16/93	06/15/93	06/15/93
REMARKS:				Field Duplicate	
Total Organic Carbon	0.5 mg/l	341	13	30	26

LOCATION NAME:		SW-113	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-113-0.0-0.5-NX-022	SW-117-0.0-0.5-NX-024	SW-305-0.0-0.5-NX-030	SW-306-0.0-0.5-NX-031
DATE SAMPLED:		06/16/93	06/16/93	06/11/93	06/11/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-113	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-113-0.0-0.5-NX-022	SW-117-0.0-0.5-NX-024	SW-305-0.0-0.5-NX-030	SW-306-0.0-0.5-NX-031
DATE SAMPLED:		06/16/93	06/16/93	06/11/93	06/11/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-113	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-113-0.0-0.5-NX-022	SW-117-0.0-0.5-NX-024	SW-305-0.0-0.5-NX-030	SW-306-0.0-0.5-NX-031
DATE SAMPLED:		06/16/93	06/16/93	06/11/93	06/11/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	0.5 J
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-113	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-113-0.0-0.5-NX-022	SW-117-0.0-0.5-NX-024	SW-305-0.0-0.5-NX-030	SW-306-0.0-0.5-NX-031
DATE SAMPLED:		06/16/93	06/16/93	06/11/93	06/11/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	0.6 J	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDE	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDT	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Aldrin	0.003	0.0025 UJ	0.0140 J	0.0025 UJ	0.0025 UJ
Dieldrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan I	0.003	0.0011 J	0.0025 UJ	0.0025 UJ	0.0025 UJ
Endosulfan II	0.005	0.0017 J	0.0050 UJ	0.0011 J	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin	0.005	0.0024 J	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin Ketone	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Heptachlor	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Methoxychlor	0.03	0.0250 UJ	-- R	0.0250 UJ	0.0250 UJ

LOCATION NAME:		SW-113	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-113-0.0-0.5-NX-022	SW-117-0.0-0.5-NX-024	SW-305-0.0-0.5-NX-030	SW-306-0.0-0.5-NX-031
DATE SAMPLED:		06/16/93	06/16/93	06/11/93	06/11/93
REMARKS:					
Toxaphene	0.3	0.2500 UJ	0.2500 UJ	0.2500 UJ	0.2500 UJ
alpha-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
alpha-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
beta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
delta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0025 UJ	0.0120 J	0.0025 UJ	0.0025 UJ
gamma-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1221	0.10	0.1000 UJ	0.1000 UJ	0.1000 UJ	0.1000 UJ
Aroclor-1232	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1242	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1248	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1254	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1260	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	129	98.1 U	108 U	306 J
Antimony	60	18.6 U	18.6 U	18.6 U	17.9 U
Arsenic	10	6.1 J	13.5	4.5 U	1.8
Barium	200	34.8	60.1	28.7	71.7
Beryllium	5	0.53 U	0.35 U	0.3 U	0.88 U
Cadmium	5	1.4 U	1.4 U	1.4 U	1.7 U
Calcium	5000	13000	17000	13500	6160
Chromium	10	3.3 U	3.3 U	3.3 U	5.8 U
Cobalt	50	2.9 U	2.9 U	2.9 U	22.5
Copper	25	2.7 U	2.7 U	2.7 U	11.4 U

LOCATION NAME:		SW-113	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-113-0.0-0.5-NX-022	SW-117-0.0-0.5-NX-024	SW-305-0.0-0.5-NX-030	SW-306-0.0-0.5-NX-031
DATE SAMPLED:		06/16/93	06/16/93	06/11/93	06/11/93
REMARKS:					
Iron	100	3390	4950	1580	13400 J
Lead	3	2.6 U	4.0 U	4.4 UJ	17.9
Magnesium	5000	3290	6160	2500	1260
Manganese	15	1200 J	1570 J	600	4810 J
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	4.2 U	5.9	4.8	6.1 U
Potassium	5000	4140	10400	2700	1600
Selenium	5	2.4 UJ	2.4 UJ	3.3 U	2.4
Silver	10	3.3 U	3.3 U	3.3 U	3.8 U
Sodium	5000	35900	51200	28200	10100
Thallium	10	2.0 UJ	2.0 UJ	2.0 UJ	2.3 U
Vanadium	50	2.1 U	2.1 U	2.1 U	3.3 U
Zinc	20	6.8 U	4.8 U	13.1 U	45.4
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	32	110	30	21
Dissolved Oxygen	(mg/L)	2.1	4.4	5.6	2.8
Hardness	(mg/L)	46	68	44	21
Specific Conductance	(umhos/cm)	60	40	250	140
Temperature	(C)	25.0	NA	19.1	18.3
pH	--	6.7	6.3	6.9	6.3

LOCATION NAME:		SW-113	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-113-0.0-0.5-NX-022	SW-117-0.0-0.5-NX-024	SW-305-0.0-0.5-NX-030	SW-306-0.0-0.5-NX-031
DATE SAMPLED:		06/16/93	06/16/93	06/11/93	06/11/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	22	28	14	8.9

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-005	SW-020-0.0-0.5-NX-006	SW-103-0.0-0.5-NX-014	SW-104-0.0-0.5-NX-015
DATE SAMPLED:		06/17/93	06/15/93	06/17/93	06/17/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-005	SW-020-0.0-0.5-NX-006	SW-103-0.0-0.5-NX-014	SW-104-0.0-0.5-NX-015
DATE SAMPLED:		06/17/93	06/15/93	06/17/93	06/17/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-005	SW-020-0.0-0.5-NX-006	SW-103-0.0-0.5-NX-014	SW-104-0.0-0.5-NX-015
DATE SAMPLED:		06/17/93	06/15/93	06/17/93	06/17/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	0.7 J	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-005	SW-020-0.0-0.5-NX-006	SW-103-0.0-0.5-NX-014	SW-104-0.0-0.5-NX-015
DATE SAMPLED:		06/17/93	06/15/93	06/17/93	06/17/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 U	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDE	0.005	0.0050 U	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDT	0.005	0.0050 U	0.0050 UJ	0.0050 UJ	0.0050 UJ
Aldrin	0.003	0.0025 U	0.0025 UJ	0.0025 UJ	0.0025 UJ
Dieldrin	0.005	0.0050 U	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan I	0.003	0.0025 U	0.0025 UJ	0.0025 UJ	0.0025 UJ
Endosulfan II	0.005	0.0050 U	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 U	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin	0.005	0.0050 U	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin Aldehyde	0.005	0.0050 U	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin Ketone	0.005	0.0050 U	0.0050 UJ	0.0050 UJ	0.0050 UJ
Heptachlor	0.003	0.0025 U	0.0025 UJ	0.0025 UJ	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 U	0.0025 UJ	0.0025 UJ	0.0025 UJ
Methoxychlor	0.03	0.0250 U	0.0250 UJ	0.0250 UJ	0.0250 UJ

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-005	SW-020-0.0-0.5-NX-006	SW-103-0.0-0.5-NX-014	SW-104-0.0-0.5-NX-015
DATE SAMPLED:		06/17/93	06/15/93	06/17/93	06/17/93
REMARKS:					
Toxaphene	0.3	0.2500 U	0.2500 UJ	0.2500 UJ	0.2500 UJ
alpha-BHC	0.003	0.0025 U	0.0025 UJ	0.0025 UJ	0.0025 UJ
alpha-Chlordane	0.003	0.0025 U	0.0025 UJ	0.0025 UJ	0.0025 UJ
beta-BHC	0.003	0.0025 U	0.0025 UJ	0.0025 UJ	0.0025 UJ
delta-BHC	0.003	0.0025 U	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0021 J	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-Chlordane	0.003	0.0025 U	0.0025 UJ	0.0025 UJ	0.0025 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 U	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1221	0.10	0.1000 U	0.1000 UJ	0.1000 UJ	0.1000 UJ
Aroclor-1232	0.05	0.0500 U	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1242	0.05	0.0500 U	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1248	0.05	0.0500 U	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1254	0.05	0.0500 U	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1260	0.05	0.0500 U	0.0500 UJ	0.0500 UJ	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	46.1 U	57.9 UJ	82.8 U	299
Antimony	60	18.6 U	17.9 U	18.6 U	18.6 U
Arsenic	10	3.0 J	2.0	3.1 J	2.8 U
Barium	200	43.4	38.1	38.1	9.3
Beryllium	5	0.35 U	0.5 U	0.3 U	0.44 U
Cadmium	5	1.4 U	1.7 U	1.4 U	1.4 U
Calcium	5000	21300	20300	19300	3330
Chromium	10	3.3 U	5.8 U	3.3 U	3.3 U
Cobalt	50	2.9 U	3.8 U	2.9 U	2.9 U
Copper	25	2.7 U	4.2 U	2.7 U	2.7 U

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-005	SW-020-0.0-0.5-NX-006	SW-103-0.0-0.5-NX-014	SW-104-0.0-0.5-NX-015
DATE SAMPLED:		06/17/93	06/15/93	06/17/93	06/17/93
REMARKS:					
Iron	100	2050	1580 J	1870	1050
Lead	3	2.9 U	1.7 UJ	3.8 U	8.5 U
Magnesium	5000	3990	4000	3680	942
Manganese	15	1830 J	1340 J	1400 J	18.2 UJ
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	4.2 U	6.1 U	4.2 U	4.2 U
Potassium	5000	3070	3360	2820	996
Selenium	5	2.4 UJ	2.3 U	2.4 UJ	2.4 UJ
Silver	10	3.3 U	3.8 U	3.3 U	3.3 U
Sodium	5000	61900	58200	55100	18600
Thallium	10	2.0 UJ	2.1 U	2.0 UJ	2.0 UJ
Vanadium	50	2.1 U	3.3 U	2.1 U	2.1 U
Zinc	20	4.8 U	3.4 U	5.2 U	4.8 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	66	59	57	1.0 U
Dissolved Oxygen	(mg/L)	8.4	6.7	1.5	1.8
Hardness	(mg/L)	70	67	63	12
Specific Conductance	(umhos/cm)	490	440	470	220
Temperature	(C)	17.7	18.4	18.0	16.8
pH	--	NA	6.3	6.7	6.0

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-005	SW-020-0.0-0.5-NX-006	SW-103-0.0-0.5-NX-014	SW-104-0.0-0.5-NX-015
DATE SAMPLED:		06/17/93	06/15/93	06/17/93	06/17/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	13	20	13	21

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-016	SW-106-0.0-0.5-NX-017	SW-116-0.0-0.5-NX-023	SW-317-0.0-0.5-NX-042
DATE SAMPLED:		06/17/93	06/21/93	06/21/93	06/09/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-016	SW-106-0.0-0.5-NX-017	SW-116-0.0-0.5-NX-023	SW-317-0.0-0.5-NX-042
DATE SAMPLED:		06/17/93	06/21/93	06/21/93	06/09/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-016	SW-106-0.0-0.5-NX-017	SW-116-0.0-0.5-NX-023	SW-317-0.0-0.5-NX-042
DATE SAMPLED:		06/17/93	06/21/93	06/21/93	06/09/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-016	SW-106-0.0-0.5-NX-017	SW-116-0.0-0.5-NX-023	SW-317-0.0-0.5-NX-042
DATE SAMPLED:		06/17/93	06/21/93	06/21/93	06/09/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 UJ	0.0050 UJ	0.0050 U	0.0053 J
4,4'-DDE	0.005	0.0050 UJ	0.0050 UJ	0.0050 U	0.0050 UJ
4,4'-DDT	0.005	0.0050 UJ	0.0050 UJ	0.0050 U	0.0020 J
Aldrin	0.003	0.0025 UJ	0.0025 UJ	0.0025 U	0.00069 J
Dieldrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 U	0.0050 UJ
Endosulfan I	0.003	0.0025 UJ	0.0025 UJ	0.0025 U	0.0025 UJ
Endosulfan II	0.005	0.0050 UJ	0.0050 UJ	0.0050 U	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 UJ	0.0050 U	0.0050 UJ
Endrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 U	0.0120 J
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 UJ	0.0050 U	0.0050 UJ
Endrin Ketone	0.005	0.0050 UJ	0.0050 UJ	0.0050 U	0.0050 UJ
Heptachlor	0.003	0.0025 UJ	0.0025 UJ	0.0025 U	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 UJ	0.0025 UJ	0.0025 U	0.0025 UJ
Methoxychlor	0.03	0.0250 UJ	0.0250 J	0.0250 U	0.0250 UJ

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-016	SW-106-0.0-0.5-NX-017	SW-116-0.0-0.5-NX-023	SW-317-0.0-0.5-NX-042
DATE SAMPLED:		06/17/93	06/21/93	06/21/93	06/09/93
REMARKS:					
Toxaphene	0.3	0.2500 UJ	0.2500 UJ	0.2500 U	0.2500 UJ
alpha-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 U	0.0025 UJ
alpha-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 U	0.0025 UJ
beta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 U	0.0025 UJ
delta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 U	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0016 J	0.0025 UJ	0.0025 U	0.0025 UJ
gamma-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 U	0.0025 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 UJ	0.0500 UJ	0.0500 U	0.0500 UJ
Aroclor-1221	0.10	0.1000 UJ	0.1000 UJ	0.1000 U	0.1000 UJ
Aroclor-1232	0.05	0.0500 UJ	0.0500 UJ	0.0500 U	0.0500 UJ
Aroclor-1242	0.05	0.0500 UJ	0.0500 UJ	0.0500 U	0.0500 UJ
Aroclor-1248	0.05	0.0500 UJ	0.0500 UJ	0.0500 U	0.0500 UJ
Aroclor-1254	0.05	0.0500 UJ	0.0500 UJ	0.0500 U	0.0500 UJ
Aroclor-1260	0.05	0.0500 UJ	0.0500 UJ	0.0500 U	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	69.6 U	54.4 U	100 U	301
Antimony	60	18.6 U	17.9 U	17.9 U	18.6 U
Arsenic	10	5.5 J	3.9 J	2.7 J	2.3 U
Barium	200	41.5	54.5	50.8	41.1
Beryllium	5	0.44 U	0.5 U	0.5 U	0.3 U
Cadmium	5	1.4 U	1.7 U	1.7 U	1.4 U
Calcium	5000	20500	21900	20800	13200
Chromium	10	3.3 U	5.8 U	5.8 U	3.3 U
Cobalt	50	2.9 U	3.8 U	3.8 U	2.9 U
Copper	25	2.7 U	4.2 U	4.2 U	32.2 U

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-016	SW-106-0.0-0.5-NX-017	SW-116-0.0-0.5-NX-023	SW-317-0.0-0.5-NX-042
DATE SAMPLED:		06/17/93	06/21/93	06/21/93	06/09/93
REMARKS:					
Iron	100	1900	2030	1790	993
Lead	3	5.0 U	1.7 U	4.1 U	30.9 J
Magnesium	5000	3840	3800	3750	3130
Manganese	15	1640 J	2250	2010	348
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	4.2 U	6.1 U	6.1 U	6.7
Potassium	5000	2910	2560	2660	2780
Selenium	5	2.4 UJ	3.7 UJ	3.7 UJ	3.3 UJ
Silver	10	3.3 U	3.8 U	3.8 U	3.3 U
Sodium	5000	59100	67100	65100	48200
Thallium	10	2.0 UJ	7.0 UJ	7.0 UJ	2.0 UJ
Vanadium	50	2.1 U	3.3 U	3.3 U	2.9 U
Zinc	20	4.8 U	3.4 UJ	13.4 UJ	36.4
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	62	65	54	25
Dissolved Oxygen	(mg/L)	5.4	4.0	5.0	4.5
Hardness	(mg/L)	67	70	67	46
Specific Conductance	(umhos/cm)	170	450	450	480
Temperature	(C)	17.4	18.6	17.8	16.0
pH	--	6.6	6.4	6.4	6.9

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-016	SW-106-0.0-0.5-NX-017	SW-116-0.0-0.5-NX-023	SW-317-0.0-0.5-NX-042
DATE SAMPLED:		06/17/93	06/21/93	06/21/93	06/09/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	17	12	13	12

LOCATION NAME:		SW-109	SW-022	SW-111	SW-309
SITE LOCATION:		NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-109-0.0-0.5-NX-020	SW-22-0.0-0.5-NX-007	SW-111-0.0-0.5-NX-021	SW-309-0.0-0.5-NX-034
DATE SAMPLED:		06/09/93	06/16/93	06/16/93	06/16/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	17 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-109	SW-022	SW-111	SW-309
SITE LOCATION:		NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-109-0.0-0.5-NX-020	SW-22-0.0-0.5-NX-007	SW-111-0.0-0.5-NX-021	SW-309-0.0-0.5-NX-034
DATE SAMPLED:		06/09/93	06/16/93	06/16/93	06/16/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-109	SW-022	SW-111	SW-309
SITE LOCATION:		NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-109-0.0-0.5-NX-020	SW-22-0.0-0.5-NX-007	SW-111-0.0-0.5-NX-021	SW-309-0.0-0.5-NX-034
DATE SAMPLED:		06/09/93	06/16/93	06/16/93	06/16/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	0.9 J	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	0.4 J	0.6 J	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-109	SW-022	SW-111	SW-309
SITE LOCATION:		NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-109-0.0-0.5-NX-020	SW-22-0.0-0.5-NX-007	SW-111-0.0-0.5-NX-021	SW-309-0.0-0.5-NX-034
DATE SAMPLED:		06/09/93	06/16/93	06/16/93	06/16/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	0.4 J	0.6 J	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	0.4 J	0.6 J	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	0.6 J	1 J	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDE	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDT	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Aldrin	0.003	0.00064 J	0.0025 UJ	0.0025 UJ	0.0025 UJ
Dieldrin	0.005	0.0022 J	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan I	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Endosulfan II	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin	0.005	0.0050 UJ	0.0050 UJ	0.0120 J	0.0050 UJ
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin Ketone	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Heptachlor	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Methoxychlor	0.03	0.0029 J	-- R	-- R	0.0250 UJ

LOCATION NAME:		SW-109	SW-022	SW-111	SW-309
SITE LOCATION:		NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-109-0.0-0.5-NX-020	SW-22-0.0-0.5-NX-007	SW-111-0.0-0.5-NX-021	SW-309-0.0-0.5-NX-034
DATE SAMPLED:		06/09/93	06/16/93	06/16/93	06/16/93
REMARKS:					
Toxaphene	0.3	0.2500 UJ	0.2500 UJ	0.2500 UJ	0.2500 UJ
alpha-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
alpha-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
beta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
delta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0025 UJ	0.0025 UJ	-- R	0.0025 UJ
gamma-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1221	0.10	0.1000 UJ	0.1000 UJ	0.1000 UJ	0.1000 UJ
Aroclor-1232	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1242	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1248	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1254	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1260	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	469	2990	1660	295
Antimony	60	18.6 U	18.6 U	18.6 U	18.6 U
Arsenic	10	2.3 U	55.6	5.5	13.5
Barium	200	21.9	228	414	50.8
Beryllium	5	0.52 U	0.73 U	0.3 U	0.44 U
Cadmium	5	1.4 U	1.4 U	1.4 U	1.4 U
Calcium	5000	14600	34600	38200	16600
Chromium	10	3.3 U	7.0	4.3	3.3 U
Cobalt	50	2.9 U	6.6	2.9 U	2.9 U
Copper	25	17.0 U	45.0 U	9.7 U	2.7 U

LOCATION NAME:		SW-109	SW-022	SW-111	SW-309
SITE LOCATION:		NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-109-0.0-0.5-NX-020	SW-22-0.0-0.5-NX-007	SW-111-0.0-0.5-NX-021	SW-309-0.0-0.5-NX-034
DATE SAMPLED:		06/09/93	06/16/93	06/16/93	06/16/93
REMARKS:					
Iron	100	2000	137000	39100	15900
Lead	3	11.2 U	138	24.5	5.7 U
Magnesium	5000	2890	11100	5080	4530
Manganese	15	492	3750 J	453 J	343 J
Mercury	0.2	0.1 U	0.16	0.1 U	0.1 U
Nickel	40	4.3	7.3	4.5	5.6
Potassium	5000	12000	29400	4510	10700
Selenium	5	3.3 U	2.4 UJ	2.4 UJ	2.4 UJ
Silver	10	3.3 U	14.2	3.3 U	3.3 U
Sodium	5000	26100	41600	33200	32100
Thallium	10	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
Vanadium	50	2.1 U	14.4 J	2.8	3.0
Zinc	20	17.9 U	37.7 U	193	12.1 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	37	245	132	70
Dissolved Oxygen	(mg/L)	5.9	1.9	1.4	2.5
Hardness	(mg/L)	48	132	116	60
Specific Conductance	(umhos/cm)	250	660	300	25
Temperature	(C)	19.9	18.9	17.5	20.0
pH	--	6.7	6.6	6.3	6.8

LOCATION NAME:		SW-109	SW-022	SW-111	SW-309
SITE LOCATION:		NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-109-0.0-0.5-NX-020	SW-22-0.0-0.5-NX-007	SW-111-0.0-0.5-NX-021	SW-309-0.0-0.5-NX-034
DATE SAMPLED:		06/09/93	06/16/93	06/16/93	06/16/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	12	48	50	45

LOCATION NAME:		SW-314	SW-314	SW-315	SW-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-FD-111	SW-314-0.0-0.5-NX-039	SW-315-0.0-0.5-NX-040	SW-316-0.0-0.5-NX-041
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/16/93
REMARKS:		Field Duplicate			
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-314	SW-314	SW-315	SW-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-FD-111	SW-314-0.0-0.5-NX-039	SW-315-0.0-0.5-NX-040	SW-316-0.0-0.5-NX-041
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/16/93
REMARKS:		Field Duplicate			
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	13
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-314	SW-314	SW-315	SW-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-FD-111	SW-314-0.0-0.5-NX-039	SW-315-0.0-0.5-NX-040	SW-316-0.0-0.5-NX-041
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/16/93
REMARKS:		Field Duplicate			
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-314	SW-314	SW-315	SW-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-FD-111	SW-314-0.0-0.5-NX-039	SW-315-0.0-0.5-NX-040	SW-316-0.0-0.5-NX-041
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/16/93
REMARKS:		Field Duplicate			
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	1 J
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 UJ
4,4'-DDE	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 UJ
4,4'-DDT	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 UJ
Aldrin	0.003	0.0025 U	0.0025 U	0.0025 U	0.0025 UJ
Dieldrin	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 UJ
Endosulfan I	0.003	0.0013 J	0.0025 U	0.0014 J	0.0025 UJ
Endosulfan II	0.005	0.0050 U	0.0022 J	0.0019 J	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 UJ
Endrin	0.005	0.0050 U	0.0027 J	0.0021 J	0.0050 UJ
Endrin Aldehyde	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 UJ
Endrin Ketone	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 UJ
Heptachlor	0.003	0.0025 U	0.0025 U	0.0025 U	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 U	0.0025 U	0.0025 U	0.0025 UJ
Methoxychlor	0.03	0.0250 U	0.0250 U	0.0250 U	-- R

LOCATION NAME:		SW-314	SW-314	SW-315	SW-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-FD-111	SW-314-0.0-0.5-NX-039	SW-315-0.0-0.5-NX-040	SW-316-0.0-0.5-NX-041
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/16/93
REMARKS:		Field Duplicate			
Toxaphene	0.3	0.2500 U	0.2500 U	0.2500 U	0.2500 UJ
alpha-BHC	0.003	0.0025 U	0.0025 U	0.0025 U	0.0025 UJ
alpha-Chlordane	0.003	0.0025 U	0.0025 U	0.0025 U	0.0025 UJ
beta-BHC	0.003	0.0025 U	0.0025 U	0.0025 U	0.0025 UJ
delta-BHC	0.003	0.0025 U	0.0025 U	0.0025 U	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0025 U	0.0025 U	0.0025 U	0.0025 UJ
gamma-Chlordane	0.003	0.0025 UJ	0.0032 J	0.0025 U	0.0025 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 U	0.0500 U	0.0500 U	0.0500 UJ
Aroclor-1221	0.10	0.1000 U	0.1000 U	0.1000 U	0.1000 UJ
Aroclor-1232	0.05	0.0500 U	0.0500 U	0.0500 U	0.0500 UJ
Aroclor-1242	0.05	0.0500 U	0.0500 U	0.0500 U	0.0500 UJ
Aroclor-1248	0.05	0.0500 U	0.0500 U	0.0500 U	0.0500 UJ
Aroclor-1254	0.05	0.0500 U	0.0500 U	0.0500 U	0.0500 UJ
Aroclor-1260	0.05	0.0500 U	0.0500 U	0.0500 U	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	33.3 U	41.6 U	97.7 U	131
Antimony	60	18.6 U	18.6 U	18.6 U	18.6 U
Arsenic	10	4.3 J	4.6 J	2.9 J	59.8
Barium	200	19.2	18.8	18.6	42.0
Beryllium	5	0.3 U	0.3 U	0.44 U	0.35 U
Cadmium	5	1.4 U	1.4 U	1.4 U	1.4 U
Calcium	5000	13800	13900	13300	17400
Chromium	10	3.3 U	3.3 U	3.3 U	3.3 U
Cobalt	50	2.9 U	2.9 U	2.9 U	2.9 U
Copper	25	2.7 U	2.7 U	2.7 U	2.7 U

LOCATION NAME:		SW-314	SW-314	SW-315	SW-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-FD-111	SW-314-0.0-0.5-NX-039	SW-315-0.0-0.5-NX-040	SW-316-0.0-0.5-NX-041
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/16/93
REMARKS:		Field Duplicate			
Iron	100	2460	2490	1600	9410
Lead	3	2.5 U	3.4 U	4.0 U	4.1 U
Magnesium	5000	3350	3360	3200	4450
Manganese	15	186 J	156 J	150 J	681 J
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	4.2 U	4.2 U	4.2 U	4.2 U
Potassium	5000	3420	3430	3330	5720
Selenium	5	2.4 UJ	2.4 UJ	2.4 UJ	2.4 UJ
Silver	10	3.3 U	3.3 U	3.3 U	3.3 U
Sodium	5000	42200	42200	42900	39200
Thallium	10	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
Vanadium	50	2.1 U	2.1 U	2.1 U	2.1 U
Zinc	20	4.8 U	4.8 U	4.8 U	4.8 U
CYANIDE	CRDL (ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	25	31	24	63
Dissolved Oxygen	(mg/L)	NA	4.2	2.9	1.2
Hardness	(mg/L)	48	49	46	62
Specific Conductance	(umhos/cm)	NA	360	350	360
Temperature	(C)	NA	24.8	23.3	20.1
pH	--	NA	6.6	6.5	6.0

LOCATION NAME:		SW-314	SW-314	SW-315	SW-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-FD-111	SW-314-0.0-0.5-NX-039	SW-315-0.0-0.5-NX-040	SW-316-0.0-0.5-NX-041
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/16/93
REMARKS:		Field Duplicate			
Total Organic Carbon	0.5 mg/l	14 J	0.5 UJ	16	30

LOCATION NAME:		SW-320	SW-016	SW-016	SW-108
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-320-0.0-0.5-NX-044	SW-016-0.0-0.5-FD-109	SW-016-0.0-0.5-NX-003	SW-108-0.0-0.5-NX-019
DATE SAMPLED:		06/17/93	06/14/93	06/14/93	06/14/93
REMARKS:			Field Duplicate		
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-320	SW-016	SW-016	SW-108
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-320-0.0-0.5-NX-044	SW-016-0.0-0.5-FD-109	SW-016-0.0-0.5-NX-003	SW-108-0.0-0.5-NX-019
DATE SAMPLED:		06/17/93	06/14/93	06/14/93	06/14/93
REMARKS:			Field Duplicate		
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-320	SW-016	SW-016	SW-108
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-320-0.0-0.5-NX-044	SW-016-0.0-0.5-FD-109	SW-016-0.0-0.5-NX-003	SW-108-0.0-0.5-NX-019
DATE SAMPLED:		06/17/93	06/14/93	06/14/93	06/14/93
REMARKS:			Field Duplicate		
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-320	SW-016	SW-016	SW-108
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-320-0.0-0.5-NX-044	SW-016-0.0-0.5-FD-109	SW-016-0.0-0.5-NX-003	SW-108-0.0-0.5-NX-019
DATE SAMPLED:		06/17/93	06/14/93	06/14/93	06/14/93
REMARKS:			Field Duplicate		
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 U	0.0050 UJ	0.0050 U	0.0050 U
4,4'-DDE	0.005	0.0050 U	0.0050 UJ	0.0050 U	0.0050 U
4,4'-DDT	0.005	0.0050 U	0.0050 UJ	0.0050 U	0.0050 U
Aldrin	0.003	0.0025 U	0.0025 UJ	0.0025 U	0.0025 U
Dieldrin	0.005	0.0050 U	0.0050 UJ	0.0050 U	0.0050 U
Endosulfan I	0.003	0.0025 U	0.0025 UJ	0.0025 U	0.0025 U
Endosulfan II	0.005	0.0022 J	0.0050 UJ	0.0050 U	0.0050 U
Endosulfan Sulfate	0.005	0.0050 U	0.0050 UJ	0.0050 U	0.0050 U
Endrin	0.005	0.0017 J	0.0050 UJ	0.0033 J	0.0050 U
Endrin Aldehyde	0.005	0.0050 U	0.0050 UJ	0.0050 U	0.0050 U
Endrin Ketone	0.005	0.0050 U	0.0050 UJ	0.0050 U	0.0050 U
Heptachlor	0.003	0.0025 U	0.0025 UJ	0.0025 U	0.0025 U
Heptachlor Epoxide	0.003	0.0025 U	0.0025 UJ	0.0025 U	0.0025 U
Methoxychlor	0.03	0.0250 U	-- R	0.0250 U	-- R

LOCATION NAME:		SW-320	SW-016	SW-016	SW-108
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-320-0.0-0.5-NX-044	SW-016-0.0-0.5-FD-109	SW-016-0.0-0.5-NX-003	SW-108-0.0-0.5-NX-019
DATE SAMPLED:		06/17/93	06/14/93	06/14/93	06/14/93
REMARKS:			Field Duplicate		
Toxaphene	0.3	0.2500 U	0.2500 UJ	0.2500 U	0.2500 U
alpha-BHC	0.003	0.0025 U	0.0025 UJ	0.0025 U	0.0025 U
alpha-Chlordane	0.003	0.0025 U	0.0025 UJ	0.0025 U	0.0025 U
beta-BHC	0.003	0.0025 U	0.0025 UJ	0.0025 U	0.0025 U
delta-BHC	0.003	0.0025 U	0.0025 UJ	0.0025 U	0.0025 U
gamma-BHC(Lindane)	0.003	0.0025 U	0.0025 UJ	0.0025 U	0.0025 U
gamma-Chlordane	0.003	0.0043 J	0.0025 UJ	0.0025 U	0.0025 U
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 U	0.0500 UJ	0.0500 U	0.0500 U
Aroclor-1221	0.10	0.1000 U	0.1000 UJ	0.1000 U	0.1000 U
Aroclor-1232	0.05	0.0500 U	0.0500 UJ	0.0500 U	0.0500 U
Aroclor-1242	0.05	0.0500 U	0.0500 UJ	0.0500 U	0.0500 U
Aroclor-1248	0.05	0.0500 U	0.0500 UJ	0.0500 U	0.0500 U
Aroclor-1254	0.05	0.0500 U	0.0500 UJ	0.0500 U	0.0500 U
Aroclor-1260	0.05	0.0500 U	0.0500 UJ	0.0500 U	0.0500 U
METALS	CRDL(ug/l)				
Aluminum	200	43.9 U	74.6 UJ	128 UJ	2060 J
Antimony	60	18.6 U	17.9 U	17.9 U	17.9 U
Arsenic	10	2.8 U	4.8	7.1	16.3
Barium	200	17.1	25.9	24.4	156
Beryllium	5	0.3 U	0.5 U	0.89 U	0.5 U
Cadmium	5	1.4 U	1.7 U	1.7 U	1.7 U
Calcium	5000	11700	19500	19600	26200
Chromium	10	3.3 U	5.8 U	5.8 U	5.8 U
Cobalt	50	2.9 U	3.8 U	3.8 U	3.8 U
Copper	25	2.7 U	5.2 U	5.4 U	11.8 U

LOCATION NAME:		SW-320	SW-016	SW-016	SW-108
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-320-0.0-0.5-NX-044	SW-016-0.0-0.5-FD-109	SW-016-0.0-0.5-NX-003	SW-108-0.0-0.5-NX-019
DATE SAMPLED:		06/17/93	06/14/93	06/14/93	06/14/93
REMARKS:			Field Duplicate		
Iron	100	1200	5930 J	7680 J	34700 J
Lead	3	2.1 U	6.1 UJ	8.4 UJ	17.4
Magnesium	5000	3040	3730	3730	4470
Manganese	15	149 J	617 J	698 J	3710 J
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	4.2 U	6.1 U	6.1 U	8.2
Potassium	5000	3620	3910	3980	2190
Selenium	5	2.4 UJ	2.3 U	2.3 U	3.6
Silver	10	3.3 U	3.8 U	3.8 U	3.8 U
Sodium	5000	42400	11500	11200	78200
Thallium	10	2.0 UJ	1.7 U	1.8 U	2.1 U
Vanadium	50	2.1 U	3.3 U	3.3 U	5.0
Zinc	20	4.8 U	16.3 U	26.3	45.8
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	22	67	66	86
Dissolved Oxygen	(mg/L)	3.1	NA	2.8	0.9
Hardness	(mg/L)	42	64	64	84
Specific Conductance	(umhos/cm)	340	NA	190	610
Temperature	(C)	25.4	NA	14.0	20.2
pH	--	6.4	NA	6.0	6.2

LOCATION NAME:		SW-320	SW-016	SW-016	SW-108
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-320-0.0-0.5-NX-044	SW-016-0.0-0.5-FD-109	SW-016-0.0-0.5-NX-003	SW-108-0.0-0.5-NX-019
DATE SAMPLED:		06/17/93	06/14/93	06/14/93	06/14/93
REMARKS:			Field Duplicate		
Total Organic Carbon	0.5 mg/l	16	21 J	14 J	46

LOCATION NAME:		SW-301	SW-302	SW-303	SW-310
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-301-0.0-0.5-NX-026	SW-302-0.0-0.5-NX-027	SW-303-0.0-0.5-NX-028	SW-310-0.0-0.5-NX-035
DATE SAMPLED:		06/14/93	06/11/93	06/11/93	06/15/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-301	SW-302	SW-303	SW-310
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-301-0.0-0.5-NX-026	SW-302-0.0-0.5-NX-027	SW-303-0.0-0.5-NX-028	SW-310-0.0-0.5-NX-035
DATE SAMPLED:		06/14/93	06/11/93	06/11/93	06/15/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	18
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-301	SW-302	SW-303	SW-310
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-301-0.0-0.5-NX-026	SW-302-0.0-0.5-NX-027	SW-303-0.0-0.5-NX-028	SW-310-0.0-0.5-NX-035
DATE SAMPLED:		06/14/93	06/11/93	06/11/93	06/15/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	43
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	0.5 J	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	1 J
Benzo(a)pyrene	10	10 U	10 U	10 U	10 UJ
Benzo(b)fluoranthene	10	10 U	10 U	10 U	2 J
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 UJ
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 UJ
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	1 J
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 UJ
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 UJ
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	1 J
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-301	SW-302	SW-303	SW-310
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-301-0.0-0.5-NX-026	SW-302-0.0-0.5-NX-027	SW-303-0.0-0.5-NX-028	SW-310-0.0-0.5-NX-035
DATE SAMPLED:		06/14/93	06/11/93	06/11/93	06/15/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 UJ
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	2 J
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	1 J
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	1 J
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0057 J
4,4'-DDE	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
4,4'-DDT	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
Aldrin	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
Dieldrin	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
Endosulfan I	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
Endosulfan II	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
Endrin	0.005	0.0082 J	0.0050 U	0.0027 J	0.0046 J
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
Endrin Ketone	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
Heptachlor	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
Methoxychlor	0.03	-- R	0.0250 U	0.0250 UJ	-- R

LOCATION NAME:		SW-301	SW-302	SW-303	SW-310
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-301-0.0-0.5-NX-026	SW-302-0.0-0.5-NX-027	SW-303-0.0-0.5-NX-028	SW-310-0.0-0.5-NX-035
DATE SAMPLED:		06/14/93	06/11/93	06/11/93	06/15/93
REMARKS:					
Toxaphene	0.3	0.2500 UJ	0.2500 U	0.2500 UJ	0.2500 UJ
alpha-BHC	0.003	0.0025 UJ	0.0025 U	0.0010 J	0.0015 J
alpha-Chlordane	0.003	0.0025 UJ	0.0025 U	0.0012 J	0.0025 UJ
beta-BHC	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
delta-BHC	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0025 UJ	0.0025 U	0.0074 J	0.0660 J
gamma-Chlordane	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0049 J
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1221	0.10	0.1000 UJ	0.1000 U	0.1000 UJ	0.1000 UJ
Aroclor-1232	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1242	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1248	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1254	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1260	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	1890 J	47.7 UJ	319 J	65000 J
Antimony	60	17.9 U	17.9 U	17.9 U	30.2
Arsenic	10	15.0	3.1	71.0	1860
Barium	200	80.8	45.7	136	5170
Beryllium	5	0.5 U	0.5 U	0.5 U	3.2 U
Cadmium	5	1.7 U	1.7 U	1.7 U	1.7 U
Calcium	5000	27400	24100	31800	219000
Chromium	10	6.9	5.8 U	5.8 U	133
Cobalt	50	5.5	3.8 U	6.5	51.6
Copper	25	29.8	5.3 U	10.9 U	120

LOCATION NAME:		SW-301	SW-302	SW-303	SW-310
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-301-0.0-0.5-NX-026	SW-302-0.0-0.5-NX-027	SW-303-0.0-0.5-NX-028	SW-310-0.0-0.5-NX-035
DATE SAMPLED:		06/14/93	06/11/93	06/11/93	06/15/93
REMARKS:					
Iron	100	7510 J	662 J	53300 J	1120000 J
Lead	3	59.1	3.1 UJ	10.9 UJ	211
Magnesium	5000	4690	4080	5530	75300
Manganese	15	1640 J	849 J	1440 J	4000 J
Mercury	0.2	0.15	0.18	0.1 U	0.1 U
Nickel	40	6.1 U	6.1 U	6.1 U	118
Potassium	5000	3430	2330	4410	113000
Selenium	5	3.6	2.3 U	2.3 U	22.6
Silver	10	3.8 U	3.8 U	4.7 U	44.7
Sodium	5000	132000	113000	24300	333000
Thallium	10	2.5 U	2.7 U	3.1 U	1.1 U
Vanadium	50	5.1	3.3 U	3.3 U	211 J
Zinc	20	83.8	7.0 U	76.3	530
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	32.1 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	66	63	99	1,530
Dissolved Oxygen	(mg/L)	6.4	4.9	1.6	2.5
Hardness	(mg/L)	88	77	102	857
Specific Conductance	(umhos/cm)	870	660	360	3400
Temperature	(C)	19.2	19.5	19.1	21.5
pH	--	6.4	6.5	6.4	6.8

LOCATION NAME:		SW-301	SW-302	SW-303	SW-310
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-301-0.0-0.5-NX-026	SW-302-0.0-0.5-NX-027	SW-303-0.0-0.5-NX-028	SW-310-0.0-0.5-NX-035
DATE SAMPLED:		06/14/93	06/11/93	06/11/93	06/15/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	9.4	21	45	250

LOCATION NAME:		SW-311	SW-311	SW-312	SW-313
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-311-0.0-0.5-FD-110	SW-311-0.0-0.5-NX-036	SW-312-0.0-0.5-NX-037	SW-313-0.0-0.5-NX-038
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/15/93
REMARKS:		Field Duplicate			
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	42
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-311	SW-311	SW-312	SW-313
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-311-0.0-0.5-FD-110	SW-311-0.0-0.5-NX-036	SW-312-0.0-0.5-NX-037	SW-313-0.0-0.5-NX-038
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/15/93
REMARKS:		Field Duplicate			
Toluene	10	26	22	10 U	8 J
Total Xylenes	10	12	9 J	10 U	120
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	0.6 J	2 J
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	7 J
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	2 J	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-311	SW-311	SW-312	SW-313
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-311-0.0-0.5-FD-110	SW-311-0.0-0.5-NX-036	SW-312-0.0-0.5-NX-037	SW-313-0.0-0.5-NX-038
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/15/93
REMARKS:		Field Duplicate			
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	0.7 J	0.7 J	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	0.9 J	1 J	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	1 J	370 J	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	1 J	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-311	SW-311	SW-312	SW-313
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-311-0.0-0.5-FD-110	SW-311-0.0-0.5-NX-036	SW-312-0.0-0.5-NX-037	SW-313-0.0-0.5-NX-038
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/15/93
REMARKS:		Field Duplicate			
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	4 J
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	0.9 J	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	1 J	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0023 J	0.0050 U	0.0050 UJ	0.0050 UJ
4,4'-DDE	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
4,4'-DDT	0.005	0.0050 UJ	0.0050 U	0.0041 J	0.0038 J
Aldrin	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
Dieldrin	0.005	0.0092 UJ	0.0050 UJ	0.0082 J	0.0071 UJ
Endosulfan I	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
Endosulfan II	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
Endrin	0.005	0.0100 J	0.0110 J	0.0052 J	0.0028 J
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 U	0.0050 UJ	0.0050 UJ
Endrin Ketone	0.005	0.0050 UJ	-- R	0.0050 UJ	0.0050 UJ
Heptachlor	0.003	0.0025 UJ	0.0025 U	0.0086 J	0.0025 UJ
Heptachlor Epoxide	0.003	0.0026 J	0.0018 J	-- R	0.0025 UJ
Methoxychlor	0.03	0.0250 UJ	0.0250 UJ	0.0250 UJ	-- R

LOCATION NAME:		SW-311	SW-311	SW-312	SW-313
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-311-0.0-0.5-FD-110	SW-311-0.0-0.5-NX-036	SW-312-0.0-0.5-NX-037	SW-313-0.0-0.5-NX-038
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/15/93
REMARKS:		Field Duplicate			
Toxaphene	0.3	0.2500 UJ	0.2500 U	0.2500 UJ	0.2500 UJ
alpha-BHC	0.003	0.0082 J	0.0025 UJ	0.0025 UJ	0.0025 UJ
alpha-Chlordane	0.003	0.0014 J	0.0025 UJ	0.0025 UJ	0.0025 UJ
beta-BHC	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
delta-BHC	0.003	0.0025 UJ	0.0025 U	0.0079 J	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0025 UJ	0.0025 U	0.0025 UJ	0.0025 UJ
gamma-Chlordane	0.003	0.0025 UJ	0.0025 U	0.0072 J	0.0025 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1221	0.10	0.1000 UJ	0.1000 U	0.1000 UJ	0.1000 UJ
Aroclor-1232	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1242	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1248	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1254	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
Aroclor-1260	0.05	0.0500 UJ	0.0500 U	0.0500 UJ	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	61300	54700	508	613 J
Antimony	60	26.6	18.9	18.6 U	17.9 U
Arsenic	10	104	80.1	3.6	1380
Barium	200	895	876	881	259
Beryllium	5	4.4	4.2	0.3 U	0.5 U
Cadmium	5	1.4 U	1.4 U	1.4 U	1.7 U
Calcium	5000	75700	78300	80700	116000
Chromium	10	102	91.2	5.8	9.7
Cobalt	50	58.3	57.6	6.2	3.8 U
Copper	25	176	155	2.7 U	4.2 U

LOCATION NAME:		SW-311	SW-311	SW-312	SW-313
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-311-0.0-0.5-FD-110	SW-311-0.0-0.5-NX-036	SW-312-0.0-0.5-NX-037	SW-313-0.0-0.5-NX-038
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/15/93
REMARKS:		Field Duplicate			
Iron	100	189000	175000	11600	73200 J
Lead	3	608	656	14.3 U	4.2 UJ
Magnesium	5000	24400	23500	45000	43000
Manganese	15	3470 J	3540 J	129 J	1640 J
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	134	134	35.1	36.3
Potassium	5000	23000	22100	85200	79900
Selenium	5	12.0 UJ	12.0 UJ	2.4 UJ	2.5
Silver	10	16.9	13.8	3.3 U	3.8 U
Sodium	5000	10600	10200	222000	260000
Thallium	10	2.0 UJ	2.0 UJ	10.0 UJ	3.6 U
Vanadium	50	179	157	2.1 U	7.3
Zinc	20	1080	1240	15.4 U	20.0
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	126	129	845	844
Dissolved Oxygen	(mg/L)	NA	2.3	6.2	2.1
Hardness	(mg/L)	290	292	387	467
Specific Conductance	(umhos/cm)	NA	6000	7800	2700
Temperature	(C)	NA	20.1	27.2	21.5
pH	--	NA	6.4	7.4	6.3

LOCATION NAME:		SW-311	SW-311	SW-312	SW-313
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-311-0.0-0.5-FD-110	SW-311-0.0-0.5-NX-036	SW-312-0.0-0.5-NX-037	SW-313-0.0-0.5-NX-038
DATE SAMPLED:		06/17/93	06/17/93	06/17/93	06/15/93
REMARKS:		Field Duplicate			
Total Organic Carbon	0.5 mg/l	97	76	154	126

LOCATION NAME:		SW-010	SW-013	SW-118	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-010-0.0-0.5-NX-001	SW-013-0.0-0.5-NX-002	SW-118-0.0-0.5-NX-025	SW-322-0.0-0.5-NX-091
DATE SAMPLED:		06/09/93	06/09/93	06/09/93	06/09/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	20
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	11
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	16

LOCATION NAME:		SW-010	SW-013	SW-118	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-010-0.0-0.5-NX-001	SW-013-0.0-0.5-NX-002	SW-118-0.0-0.5-NX-025	SW-322-0.0-0.5-NX-091
DATE SAMPLED:		06/09/93	06/09/93	06/09/93	06/09/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	8 J
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-010	SW-013	SW-118	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-010-0.0-0.5-NX-001	SW-013-0.0-0.5-NX-002	SW-118-0.0-0.5-NX-025	SW-322-0.0-0.5-NX-091
DATE SAMPLED:		06/09/93	06/09/93	06/09/93	06/09/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	1 J	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	1 J	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	0.7 J	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-010	SW-013	SW-118	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-010-0.0-0.5-NX-001	SW-013-0.0-0.5-NX-002	SW-118-0.0-0.5-NX-025	SW-322-0.0-0.5-NX-091
DATE SAMPLED:		06/09/93	06/09/93	06/09/93	06/09/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	0.8 J	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	1 J	1 J	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDE	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDT	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Aldrin	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Dieldrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan I	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Endosulfan II	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0210 J
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 UJ	0.0026 J	0.0050 J
Endrin Ketone	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Heptachlor	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Methoxychlor	0.03	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.0250 UJ

LOCATION NAME:		SW-010	SW-013	SW-118	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-010-0.0-0.5-NX-001	SW-013-0.0-0.5-NX-002	SW-118-0.0-0.5-NX-025	SW-322-0.0-0.5-NX-091
DATE SAMPLED:		06/09/93	06/09/93	06/09/93	06/09/93
REMARKS:					
Toxaphene	0.3	0.2500 UJ	0.2500 UJ	0.2500 UJ	0.2500 UJ
alpha-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
alpha-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
beta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
delta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1221	0.10	0.1000 UJ	0.1000 UJ	0.1000 UJ	0.1000 UJ
Aroclor-1232	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1242	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1248	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1254	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1260	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	76.9 U	342	565	102 U
Antimony	60	18.6 U	18.6 U	18.6 U	18.6 U
Arsenic	10	2.3 U	2.3 U	5.8 U	7.7 U
Barium	200	34.1	50.0	53.8	40.7
Beryllium	5	0.3 U	0.3 U	0.3 U	0.3 U
Cadmium	5	1.4 U	1.4 U	1.4 U	1.4 U
Calcium	5000	18200	25600	20800	28500
Chromium	10	3.3 U	3.3 U	3.3 U	3.3 U
Cobalt	50	2.9 U	4.0 U	5.0 U	3.6 U
Copper	25	4.8 U	11.8 U	11.3 U	3.0 U

LOCATION NAME:		SW-010	SW-013	SW-118	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-010-0.0-0.5-NX-001	SW-013-0.0-0.5-NX-002	SW-118-0.0-0.5-NX-025	SW-322-0.0-0.5-NX-091
DATE SAMPLED:		06/09/93	06/09/93	06/09/93	06/09/93
REMARKS:					
Iron	100	729	1120	3750	4460
Lead	3	3.7 UJ	11.6 U	28.1 J	16.6 J
Magnesium	5000	3420	4600	3600	3180
Manganese	15	330	364	982	838
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	6.2	7.5	7.3	4.2 U
Potassium	5000	2430	2790	2880	4340
Selenium	5	3.3 U	3.3 U	3.3 UJ	3.3 UJ
Silver	10	3.3 U	3.3 U	3.3 U	3.3 U
Sodium	5000	85600	112000	105000	205000
Thallium	10	2.0 UJ	10.0 UJ	10.0 UJ	10.0 UJ
Vanadium	50	2.1 U	2.1 U	2.8 U	2.1 U
Zinc	20	14.0 U	21.9 U	31.4	7.7 U
CYANIDE	CRDL (ug/l)				
Cyanide	10	10.0 U	10.0 U	22.7 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	41	56	52	92
Dissolved Oxygen	(mg/L)	8.5	4.6	7.9	3.6
Hardness	(mg/L)	60	83	67	84
Specific Conductance	(umhos/cm)	540	24000	1000	20000
Temperature	(C)	15.8	15.4	19.0	18.4
pH	--	6.8	6.9	6.8	6.8

LOCATION NAME:		SW-010	SW-013	SW-118	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-010-0.0-0.5-NX-001	SW-013-0.0-0.5-NX-002	SW-118-0.0-0.5-NX-025	SW-322-0.0-0.5-NX-091
DATE SAMPLED:		06/09/93	06/09/93	06/09/93	06/09/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	13	17	18	34

LOCATION NAME:		SW-017	SW-026	SW-026	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-0.5-NX-004	SW-026-0.0-0.5-FD-108	SW-026-0.0-0.5-NX-008	SW-028-0.0-0.5-NX-009
DATE SAMPLED:		06/14/93	06/10/93	06/10/93	06/10/93
REMARKS:			Field Duplicate		
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-017	SW-026	SW-026	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-0.5-NX-004	SW-026-0.0-0.5-FD-108	SW-026-0.0-0.5-NX-008	SW-028-0.0-0.5-NX-009
DATE SAMPLED:		06/14/93	06/10/93	06/10/93	06/10/93
REMARKS:			Field Duplicate		
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-017	SW-026	SW-026	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-0.5-NX-004	SW-026-0.0-0.5-FD-108	SW-026-0.0-0.5-NX-008	SW-028-0.0-0.5-NX-009
DATE SAMPLED:		06/14/93	06/10/93	06/10/93	06/10/93
REMARKS:			Field Duplicate		
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-017	SW-026	SW-026	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-0.5-NX-004	SW-026-0.0-0.5-FD-108	SW-026-0.0-0.5-NX-008	SW-028-0.0-0.5-NX-009
DATE SAMPLED:		06/14/93	06/10/93	06/10/93	06/10/93
REMARKS:			Field Duplicate		
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDE	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDT	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Aldrin	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Dieldrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan I	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Endosulfan II	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin	0.005	0.0026 J	0.0032 J	0.0032 J	0.0050 UJ
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin Ketone	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ
Heptachlor	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 UJ	0.0020 J	0.0018 J	0.0015 J
Methoxychlor	0.03	-- R	0.0250 UJ	0.0250 UJ	0.0250 UJ

LOCATION NAME:		SW-017	SW-026	SW-026	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-0.5-NX-004	SW-026-0.0-0.5-FD-108	SW-026-0.0-0.5-NX-008	SW-028-0.0-0.5-NX-009
DATE SAMPLED:		06/14/93	06/10/93	06/10/93	06/10/93
REMARKS:			Field Duplicate		
Toxaphene	0.3	0.2500 UJ	0.2500 UJ	0.2500 UJ	0.2500 UJ
alpha-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
alpha-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.00063 J
beta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
delta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0025 UJ	0.0025 UJ	0.00097 J	0.0025 UJ
gamma-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ	0.0025 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1221	0.10	0.1000 UJ	0.1000 UJ	0.1000 UJ	0.1000 UJ
Aroclor-1232	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1242	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1248	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1254	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1260	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ	0.0500 UJ
METALS	CRDL(ug/l)				
Aluminum	200	2460 J	1340	1200	781
Antimony	60	17.9 U	18.6 U	18.6 U	18.6 U
Arsenic	10	24.5	9.2 U	8.3 U	12.3 U
Barium	200	101	56.5	54.8	32.1
Beryllium	5	0.5 U	0.52 U	0.43 U	0.3 U
Cadmium	5	1.7 U	1.4 U	1.4 U	1.4 U
Calcium	5000	20500	13700	13800	14200
Chromium	10	11.5	7.1	7.1	3.3 U
Cobalt	50	6.0	3.0 U	3.3 U	2.9 U
Copper	25	26.5	13.8 U	14.1 U	6.2 U

LOCATION NAME:		SW-017	SW-026	SW-026	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-0.5-NX-004	SW-026-0.0-0.5-FD-108	SW-026-0.0-0.5-NX-008	SW-028-0.0-0.5-NX-009
DATE SAMPLED:		06/14/93	06/10/93	06/10/93	06/10/93
REMARKS:			Field Duplicate		
Iron	100	21200 J	12700	12200	4950
Lead	3	50.8	25.6 J	17.9 J	7.3 U
Magnesium	5000	3830	2960	2950	2770
Manganese	15	3120 J	965	923	695
Mercury	0.2	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	40	9.4	6.5	5.9	4.8
Potassium	5000	2340	3500	3590	2840
Selenium	5	2.5	3.3 UJ	3.3 U	3.3 U
Silver	10	3.8 U	3.3 U	3.3 U	3.3 U
Sodium	5000	55300	29300	29900	31600
Thallium	10	1.8 U	2.0 UJ	2.0 UJ	10.0 UJ
Vanadium	50	8.5	4.3 U	2.7 U	2.8 U
Zinc	20	165	56.0	42.6	15.6 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	11.3 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	59	27	21	35
Dissolved Oxygen	(mg/L)	4.2	NA	6.3	3.5
Hardness	(mg/L)	67	46	47	47
Specific Conductance	(umhos/cm)	420	NA	250	500
Temperature	(C)	20.6	NA	21.7	18.6
pH	--	6.1	NA	5.9	6.7

LOCATION NAME:		SW-017	SW-026	SW-026	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-0.5-NX-004	SW-026-0.0-0.5-FD-108	SW-026-0.0-0.5-NX-008	SW-028-0.0-0.5-NX-009
DATE SAMPLED:		06/14/93	06/10/93	06/10/93	06/10/93
REMARKS:			Field Duplicate		
Total Organic Carbon	0.5 mg/l	13	21	13	19

LOCATION NAME:	SW-029	SW-307	SW-308
SITE LOCATION:	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SW-029-0.0-0.5-NX-010	SW-307-0.0-0.5-NX-032	SW-308-0.0-0.5-NX-033
DATE SAMPLED:	06/10/93	06/10/93	06/10/93
REMARKS:			

VOLATILE ORGANICS	CRQL(ug/l)			
1,1,1-Trichloroethane	10	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-029-0.0-0.5-NX-010	SW-307-0.0-0.5-NX-032	SW-308-0.0-0.5-NX-033
DATE SAMPLED:		06/10/93	06/10/93	06/10/93
REMARKS:				
Toluene	10	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)			
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-029-0.0-0.5-NX-010	SW-307-0.0-0.5-NX-032	SW-308-0.0-0.5-NX-033
DATE SAMPLED:		06/10/93	06/10/93	06/10/93
REMARKS:				
4-Bromophenyl-phenylether	10	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-029-0.0-0.5-NX-010	SW-307-0.0-0.5-NX-032	SW-308-0.0-0.5-NX-033
DATE SAMPLED:		06/10/93	06/10/93	06/10/93
REMARKS:				
Hexachlorobutadiene	10	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)			
4,4'-DDD	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDE	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ
4,4'-DDT	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ
Aldrin	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ
Dieldrin	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan I	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ
Endosulfan II	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endosulfan Sulfate	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin	0.005	0.0051 J	0.0050 UJ	0.0050 UJ
Endrin Aldehyde	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ
Endrin Ketone	0.005	0.0050 UJ	0.0050 UJ	0.0050 UJ
Heptachlor	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ
Heptachlor Epoxide	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ
Methoxychlor	0.03	0.0250 UJ	0.0250 UJ	0.0250 UJ

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-029-0.0-0.5-NX-010	SW-307-0.0-0.5-NX-032	SW-308-0.0-0.5-NX-033
DATE SAMPLED:		06/10/93	06/10/93	06/10/93
REMARKS:				
Toxaphene	0.3	0.2500 UJ	0.2500 UJ	0.2500 UJ
alpha-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ
alpha-Chlordane	0.003	0.00098 J	0.0025 UJ	0.0025 UJ
beta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ
delta-BHC	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-BHC(Lindane)	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ
gamma-Chlordane	0.003	0.0025 UJ	0.0025 UJ	0.0025 UJ
PCBs	CRQL(ug/l)			
Aroclor-1016	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1221	0.10	0.1000 UJ	0.1000 UJ	0.1000 UJ
Aroclor-1232	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1242	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1248	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1254	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ
Aroclor-1260	0.05	0.0500 UJ	0.0500 UJ	0.0500 UJ
METALS	CRDL(ug/l)			
Aluminum	200	1610	111 U	83.9 U
Antimony	60	18.6 U	18.6 U	18.6 U
Arsenic	10	22.1	3.5 U	3.5 U
Barium	200	39.5	33.1	32.9
Beryllium	5	0.35 U	0.3 U	0.3 U
Cadmium	5	1.4 U	1.4 U	1.4 U
Calcium	5000	14500	13000	12900
Chromium	10	3.3 U	3.3 U	3.3 U
Cobalt	50	3.6 U	2.9 U	2.9 U
Copper	25	6.7 U	4.2 U	3.8 U

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-029-0.0-0.5-NX-010	SW-307-0.0-0.5-NX-032	SW-308-0.0-0.5-NX-033
DATE SAMPLED:		06/10/93	06/10/93	06/10/93
REMARKS:				
Iron	100	10200	1430	1430
Lead	3	21.9 J	5.1 UJ	2.8 UJ
Magnesium	5000	3040	2710	2630
Manganese	15	1160	628	568
Mercury	0.2	0.1 U	0.1 U	0.1 U
Nickel	40	5.9	6.7	6.7
Potassium	5000	2870	2910	2980
Selenium	5	3.3 U	3.3 U	3.3 U
Silver	10	3.3 U	3.3 U	3.3 U
Sodium	5000	28300	29500	28700
Thallium	10	2.0 UJ	2.0 UJ	2.0 UJ
Vanadium	50	6.2 U	2.1 U	2.1 U
Zinc	20	30.8	9.7 U	7.2 U
CYANIDE	CRDL(ug/l)			
Cyanide	10	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS				
Alkalinity (as CaCO3)	1.0 mg/L	30	28	26
Dissolved Oxygen	(mg/L)	3.1	6.6	5.8
Hardness	(mg/L)	49	44	43
Specific Conductance	(umhos/cm)	370	240	240
Temperature	(C)	19.1	22.1	21.1
pH	--	6.7	6.0	6.0

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-029-0.0-0.5-NX-010	SW-307-0.0-0.5-NX-032	SW-308-0.0-0.5-NX-033
DATE SAMPLED:		06/10/93	06/10/93	06/10/93
REMARKS:				
Total Organic Carbon	0.5 mg/l	17	20	17

Analytical Data - September 1993
Surface Water

SURFACE WATER - SEPTEMBER 1993
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:		SW-319A	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319A-0.0-0.5-NX-842	SW-321-0.0-0.5-NX-844	SW-107-0.0-1.0-NX-817	SW-304-0.0-1.0-NX-802
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	-- R	10 U	-- R
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 UJ	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	32 U	14 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-319A	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319A-0.0-0.5-NX-842	SW-321-0.0-0.5-NX-844	SW-107-0.0-1.0-NX-817	SW-304-0.0-1.0-NX-802
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 UJ	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-319A	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319A-0.0-0.5-NX-842	SW-321-0.0-0.5-NX-844	SW-107-0.0-1.0-NX-817	SW-304-0.0-1.0-NX-802
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 UJ	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 UJ	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 UJ	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 UJ	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 UJ	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 UJ	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 UJ	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	1 J	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-319A	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319A-0.0-0.5-NX-842	SW-321-0.0-0.5-NX-844	SW-107-0.0-1.0-NX-817	SW-304-0.0-1.0-NX-802
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 UJ	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	1 J	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.005 UJ	-- R
4,4'-DDE	0.005	0.005 UJ	0.006 J	0.005 UJ	-- R
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.005 UJ	-- R
Aldrin	0.003	-- R	-- R	0.003 UJ	-- R
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	-- R
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ	-- R
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ	-- R
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ	-- R
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	-- R
Endrin Aldehyde	0.005	0.006 J	0.005 UJ	0.005 UJ	-- R
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ	-- R
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ	-- R
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ	-- R
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ	-- R

LOCATION NAME:		SW-319A	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319A-0.0-0.5-NX-842	SW-321-0.0-0.5-NX-844	SW-107-0.0-1.0-NX-817	SW-304-0.0-1.0-NX-802
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ	-- R
alpha-BHC	0.003	0.003 UJ	0.002 J	0.003 UJ	-- R
alpha-Chlordane	0.003	0.003 UJ	0.009 J	0.003 UJ	-- R
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	-- R
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	-- R
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ	-- R
gamma-Chlordane	0.003	0.003 UJ	0.011 J	0.003 UJ	-- R
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ	-- R
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ	-- R
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ	-- R
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ	-- R
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.05 UJ	-- R
Aroclor-1254	0.05	0.05 UJ	-- R	0.05 UJ	-- R
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ	-- R
METALS	CRDL(ug/l)				
Aluminum	200	888	18500 J	729	364 J
Antimony	60	9.2 U	12.9 U	17.9 U	12.9 U
Arsenic	10	3.6 U	39.8 J	12.2	8.4 UJ
Barium	200	37.7	285	64.7	40.2
Beryllium	5	0.2 U	2.8	0.4 U	0.27 U
Cadmium	5	1.0 U	2.6 U	1.5 U	1.3 U
Calcium	5000	9980	27900	13800	14500
Chromium	10	4.1 UJ	25.9	1.8 U	2.6 U
Cobalt	50	3.0 U	72.5	1.9 U	2.6 U
Copper	25	7.8	50.8 U	3.6 U	5.0 U

LOCATION NAME:		SW-319A	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319A-0.0-0.5-NX-842	SW-321-0.0-0.5-NX-844	SW-107-0.0-1.0-NX-817	SW-304-0.0-1.0-NX-802
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
Iron	100	2830	71200 J	4150	3410 J
Lead	3	32.4	122 J	15.6	10.0 UJ
Magnesium	5000	2120	6570	2320	2370
Manganese	15	315	6740	1680	1100
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	3.9 UJ	48.2	5.1 U	3.4 U
Potassium	5000	2480	4500	2980	3020
Selenium	5	2.8 U	2.8 U	2.3 U	2.8 U
Silver	10	3.7 U	2.6 U	3.4 U	2.6 U
Sodium	5000	23100 J	23000	26200	28300
Thallium	10	1.6 U	2.9	2.2 U	1.6 U
Vanadium	50	8.8 U	49.1	3.4	5.5 U
Zinc	20	66.6	505	53.5	45.6 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	12	34	34	38
Dissolved Oxygen	(mg/L)	6.0	6.5	2.5	3.0
Hardness	(mg/L)	34	97	44	46
Specific Conductance	(umhos/cm)	200	280	200	190
Temperature	(C)	14.0	15.0	18.3	18.9
pH	--	8.7	7.2	6.5	6.4

LOCATION NAME:		SW-319A	SW-321	SW-107	SW-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-319A-0.0-0.5-NX-842	SW-321-0.0-0.5-NX-844	SW-107-0.0-1.0-NX-817	SW-304-0.0-1.0-NX-802
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	18	8	15 J	6.4

LOCATION NAME:		SW-030	SW-101	SW-102	SW-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-1.0-NX-810	SW-101-0.0-0.5-NX-811	SW-102-0.0-1.0-NX-812	SW-113-0.0-0.5-NX-821
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	-- R	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 UJ	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	22 U	10 UJ	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	1 J	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-030	SW-101	SW-102	SW-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-1.0-NX-810	SW-101-0.0-0.5-NX-811	SW-102-0.0-1.0-NX-812	SW-113-0.0-0.5-NX-821
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	1 J	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 UJ
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-030	SW-101	SW-102	SW-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-1.0-NX-810	SW-101-0.0-0.5-NX-811	SW-102-0.0-1.0-NX-812	SW-113-0.0-0.5-NX-821
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 UJ	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 UJ	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 UJ	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 UJ	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 UJ	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	23 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 UJ	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 UJ	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-030	SW-101	SW-102	SW-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-1.0-NX-810	SW-101-0.0-0.5-NX-811	SW-102-0.0-1.0-NX-812	SW-113-0.0-0.5-NX-821
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 UJ	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Aldrin	0.003	0.003 UJ	-- R	0.003 UJ	-- R
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ

LOCATION NAME:		SW-030	SW-101	SW-102	SW-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-1.0-NX-810	SW-101-0.0-0.5-NX-811	SW-102-0.0-1.0-NX-812	SW-113-0.0-0.5-NX-821
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ	0.3 UJ
alpha-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
METALS	CRDL(ug/l)				
Aluminum	200	1000	60.6 U	372	85.9 U
Antimony	60	9.2 U	12.9 U	9.2 U	12.9 U
Arsenic	10	676	4.4 UJ	7.4	2.1 UJ
Barium	200	595	62.8	55.4	24.5
Beryllium	5	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	5	1.0 U	1.3 U	1.0 U	1.3 U
Calcium	5000	56800	22800	22700	14200
Chromium	10	5.6 J	2.1 U	4.1 UJ	2.1 U
Cobalt	50	5.3	2.6 U	3.0 U	2.6 U
Copper	25	2.9 U	3.5 U	2.9 U	5.4 U

LOCATION NAME:		SW-030	SW-101	SW-102	SW-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-1.0-NX-810	SW-101-0.0-0.5-NX-811	SW-102-0.0-1.0-NX-812	SW-113-0.0-0.5-NX-821
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
Iron	100	55300	3570 J	3120	1500 J
Lead	3	6.5 U	7.0 UJ	8.3 U	3.1 UJ
Magnesium	5000	23400	5590	5500	3550
Manganese	15	1440	2580 J	854	417 J
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	28.4	3.4 U	5.2 U	3.4 U
Potassium	5000	54300	7770	6870	2530
Selenium	5	2.8 U	2.8 UJ	2.8 U	2.8 UJ
Silver	10	4.7 U	2.6 U	3.7 U	2.6 U
Sodium	5000	197000	72200	71900	40500
Thallium	10	3.7 U	1.6 U	1.6 U	1.6 U
Vanadium	50	6.8	5.5 U	2.6 U	5.5 U
Zinc	20	40.8 U	23.0 U	30.8 U	19.7 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	430	100	89	40
Dissolved Oxygen	(mg/L)	1.4	6.0	4.7	4.5
Hardness	(mg/L)	238	80	79	50
Specific Conductance	(umhos/cm)	7600	580	490	320
Temperature	(C)	15.6	13.0	18.3	15.0
pH	--	7.2	7.4	6.8	7.1

LOCATION NAME:		SW-030	SW-101	SW-102	SW-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-30-0.0-1.0-NX-810	SW-101-0.0-0.5-NX-811	SW-102-0.0-1.0-NX-812	SW-113-0.0-0.5-NX-821
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	33	12	9	16

LOCATION NAME:		SW-117	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-117-0.0-0.5-FD-921	SW-117-0.0-0.5-NX-813	SW-305-0.0-1.0-NX-829	SW-306-0.0-1.0-NX-830
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	-- R	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 UJ	10 U	37 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-117	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-117-0.0-0.5-FD-921	SW-117-0.0-0.5-NX-813	SW-305-0.0-1.0-NX-829	SW-306-0.0-1.0-NX-830
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
Toluene	10	2 J	8 J	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 UJ
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-117	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-117-0.0-0.5-FD-921	SW-117-0.0-0.5-NX-813	SW-305-0.0-1.0-NX-829	SW-306-0.0-1.0-NX-830
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 UJ	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 UJ
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-117	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-117-0.0-0.5-FD-921	SW-117-0.0-0.5-NX-813	SW-305-0.0-1.0-NX-829	SW-306-0.0-1.0-NX-830
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Aldrin	0.003	-- R	-- R	0.003 UJ	0.003 UJ
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ

LOCATION NAME:		SW-117	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-117-0.0-0.5-FD-921	SW-117-0.0-0.5-NX-813	SW-305-0.0-1.0-NX-829	SW-306-0.0-1.0-NX-830
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ	0.3 UJ
alpha-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
METALS	CRDL(ug/l)				
Aluminum	200	85.3 U	147	108 J	158 U
Antimony	60	12.9 U	12.9 U	12.9 U	17.9 U
Arsenic	10	26.2	31.7	7.5 UJ	4.0 U
Barium	200	86.8	92.2	27.9	26.0
Beryllium	5	0.2 U	0.2 U	0.27 U	0.4 U
Cadmium	5	1.3 U	1.3 U	1.3 U	1.5 U
Calcium	5000	21500	21900	13700	12700
Chromium	10	2.1 U	2.1 U	2.1 U	1.8 U
Cobalt	50	2.6 U	2.6 U	2.6 U	1.9 U
Copper	25	35.5 U	2.5 U	2.5 U	8.4 U

LOCATION NAME:		SW-117	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-117-0.0-0.5-FD-921	SW-117-0.0-0.5-NX-813	SW-305-0.0-1.0-NX-829	SW-306-0.0-1.0-NX-830
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
Iron	100	4900	6200	2030 J	2220
Lead	3	1100 J	3.5 UJ	2.9 UJ	11.8 U
Magnesium	5000	9420	9630	2170	2180
Manganese	15	746	758	595	145
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	7.1 U	6.6 U	3.4 U	3.7 U
Potassium	5000	18100	18400	3060	2750
Selenium	5	2.8 UJ	2.8 UJ	2.8 U	2.3 U
Silver	10	2.6 U	2.6 U	2.6 U	3.4 U
Sodium	5000	73600	74900	29200	26300
Thallium	10	1.6 U	1.6 U	2.9	2.2 U
Vanadium	50	5.5 U	5.5 U	5.5 U	2.3 U
Zinc	20	17.2 U	15.9 U	10.3 U	22.7 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	190	200	41	34
Dissolved Oxygen	(mg/L)	NA	4.0	4.9	3.2
Hardness	(mg/L)	92	94	43	41
Specific Conductance	(umhos/cm)	NA	760	200	180
Temperature	(C)	NA	14.0	17.8	18.3
pH	--	NA	7.3	6.6	6.7

LOCATION NAME:		SW-117	SW-117	SW-305	SW-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-117-0.0-0.5-FD-921	SW-117-0.0-0.5-NX-813	SW-305-0.0-1.0-NX-829	SW-306-0.0-1.0-NX-830
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
Total Organic Carbon	0.5 mg/l	16	14	5.4	5

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-804	SW-020-0.0-1.0-NX-805	SW-103-0.0-0.5-NX-823	SW-104-0.0-0.5-NX-814
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 UJ	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	14 U	10 U	10 UJ
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-804	SW-020-0.0-1.0-NX-805	SW-103-0.0-0.5-NX-823	SW-104-0.0-0.5-NX-814
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-804	SW-020-0.0-1.0-NX-805	SW-103-0.0-0.5-NX-823	SW-104-0.0-0.5-NX-814
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-804	SW-020-0.0-1.0-NX-805	SW-103-0.0-0.5-NX-823	SW-104-0.0-0.5-NX-814
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	-- R	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	-- R	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	-- R	0.005 UJ
Aldrin	0.003	-- R	0.003 UJ	-- R	-- R
Dieldrin	0.005	0.005 UJ	0.005 UJ	-- R	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 UJ	-- R	0.003 UJ
Endosulfan II	0.005	0.005 UJ	0.005 UJ	-- R	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	-- R	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	-- R	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	-- R	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	-- R	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 UJ	-- R	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	-- R	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	-- R	0.030 UJ

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-804	SW-020-0.0-1.0-NX-805	SW-103-0.0-0.5-NX-823	SW-104-0.0-0.5-NX-814
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
Toxaphene	0.3	0.3 UJ	0.3 UJ	-- R	0.3 UJ
alpha-BHC	0.003	0.003 UJ	0.003 UJ	-- R	0.003 UJ
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	-- R	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 UJ	-- R	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 UJ	-- R	0.003 UJ
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	-- R	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	-- R	0.003 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	-- R	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	-- R	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	-- R	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	-- R	0.05 UJ
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	-- R	0.05 UJ
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	-- R	0.05 UJ
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	-- R	0.05 UJ
METALS	CRDL(ug/l)				
Aluminum	200	17.4	98.2 U	55.7 U	188
Antimony	60	9.2 U	9.2 U	9.2 U	9.2 U
Arsenic	10	2.6 U	2.5	2.1 U	8.8 U
Barium	200	40.2	44.3	46.7	16.3 U
Beryllium	5	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	5	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	5000	19400	20600	20600	11400
Chromium	10	4.1 UJ	4.1 UJ	4.1 UJ	4.1 UJ
Cobalt	50	3.0 U	3.0 U	3.0 U	3.0 U
Copper	25	2.9 U	5.3 U	2.9 U	3.7

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-804	SW-020-0.0-1.0-NX-805	SW-103-0.0-0.5-NX-823	SW-104-0.0-0.5-NX-814
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
Iron	100	983	1420	1420	329
Lead	3	2.9 U	4.8 U	2.9 U	4.7 U
Magnesium	5000	3540	3770	3680	4090
Manganese	15	629	880	1010	93.7
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	3.9 UJ	3.9 U	3.9 U	3.9 UJ
Potassium	5000	3490	3960	3690	1520
Selenium	5	2.8 U	2.8 U	2.8 U	2.8 U
Silver	10	3.7 U	3.7 U	3.7 U	3.7 U
Sodium	5000	70200 J	64800	64600	28500 J
Thallium	10	2.9 U	2.5 U	1.6 U	1.6 U
Vanadium	50	2.6 U	2.6 U	2.6 U	2.8 U
Zinc	20	8.5 U	48.4 U	16.3 U	12.9
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	62	60	60	2
Dissolved Oxygen	(mg/L)	8.2	6.4	5.2	7.5
Hardness	(mg/L)	63	67	67	45
Specific Conductance	(umhos/cm)	550	420	440	320
Temperature	(C)	13.7	18.9	22.5	14.0
pH	--	6.5	7.1	7.6	4.7

LOCATION NAME:		SW-019	SW-020	SW-103	SW-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-019-0.0-0.5-NX-804	SW-020-0.0-1.0-NX-805	SW-103-0.0-0.5-NX-823	SW-104-0.0-0.5-NX-814
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	5.3	6.2	5.7	22

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-815	SW-106-0.0-1.0-NX-816	SW-116-0.0-0.5-NX-822	SW-317-0.0-1.0-NX-841
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	-- R	-- R	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 UJ	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 UJ	10 U	10 UJ	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	5 J
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-815	SW-106-0.0-1.0-NX-816	SW-116-0.0-0.5-NX-822	SW-317-0.0-1.0-NX-841
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 UJ
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-815	SW-106-0.0-1.0-NX-816	SW-116-0.0-0.5-NX-822	SW-317-0.0-1.0-NX-841
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 UJ	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 UJ	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-815	SW-106-0.0-1.0-NX-816	SW-116-0.0-0.5-NX-822	SW-317-0.0-1.0-NX-841
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Aldrin	0.003	-- R	-- R	-- R	0.003 UJ
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-815	SW-106-0.0-1.0-NX-816	SW-116-0.0-0.5-NX-822	SW-317-0.0-1.0-NX-841
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ	0.3 UJ
alpha-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
METALS	CRDL(ug/l)				
Aluminum	200	15.5 U	82.7 U	83.0 U	149 U
Antimony	60	9.2 U	12.9 U	14.4	17.9 U
Arsenic	10	2.1 U	2.1 UJ	2.1 UJ	2.5 U
Barium	200	42.7	53.2	50.7	24.5
Beryllium	5	0.2 U	0.28 U	0.2 U	0.4 U
Cadmium	5	1.0 U	1.3 U	1.3 U	1.5 U
Calcium	5000	19400	20900	19500	7280
Chromium	10	4.1 UJ	2.2 U	2.1 U	1.8 U
Cobalt	50	3.0 U	2.6 U	2.6 U	4.7 U
Copper	25	2.9 U	2.5 U	2.5 U	8.6 U

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-815	SW-106-0.0-1.0-NX-816	SW-116-0.0-0.5-NX-822	SW-317-0.0-1.0-NX-841
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
Iron	100	884	1850 J	1630 J	1630
Lead	3	2.9 U	3.0 UJ	3.3 UJ	8.9 U
Magnesium	5000	3530	3530	3410	1610
Manganese	15	648	1380	1080	691
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	3.9 UJ	3.4 U	3.4 U	6.3 U
Potassium	5000	3470	3360	3310	2430
Selenium	5	2.8 U	2.8 U	2.8 U	2.3 U
Silver	10	3.7 U	2.6 U	2.6 U	3.4 U
Sodium	5000	70300 J	67800	69000	21400
Thallium	10	4.8 U	1.6 U	1.6 U	2.2 U
Vanadium	50	2.6 U	5.5 U	5.5 U	2.3 U
Zinc	20	8.5 U	15.1 U	10.7 U	37.7
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	60	66	122	13
Dissolved Oxygen	(mg/L)	8.2	5.0	6.0	6.5
Hardness	(mg/L)	63	67	63	25
Specific Conductance	(umhos/cm)	520	420	500	120
Temperature	(C)	13.8	17.0	15.0	24.4
pH	--	6.4	7.1	7.4	6.5

LOCATION NAME:		SW-105	SW-106	SW-116	SW-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-105-0.0-0.5-NX-815	SW-106-0.0-1.0-NX-816	SW-116-0.0-0.5-NX-822	SW-317-0.0-1.0-NX-841
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	5.3	5.3	6.3	11

LOCATION NAME:		SW-111	SW-111	SW-309	SW-314
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-111-0.0-0.5-FD-922	SW-111-0.0-0.5-NX-820	SW-309-0.0-0.5-NX-833	SW-314-0.0-0.5-FD-928
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/20/93
REMARKS:		Field Duplicate			Field Duplicate
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 UJ
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 UJ	20 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	3 J	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-111	SW-111	SW-309	SW-314
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-111-0.0-0.5-FD-922	SW-111-0.0-0.5-NX-820	SW-309-0.0-0.5-NX-833	SW-314-0.0-0.5-FD-928
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/20/93
REMARKS:		Field Duplicate			Field Duplicate
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-111	SW-111	SW-309	SW-314
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-111-0.0-0.5-FD-922	SW-111-0.0-0.5-NX-820	SW-309-0.0-0.5-NX-833	SW-314-0.0-0.5-FD-928
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/20/93
REMARKS:		Field Duplicate			Field Duplicate
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 UJ	10 UJ	10 UJ	10 UJ
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	16 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	1 J	1 J	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	2 J	2 J	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-111	SW-111	SW-309	SW-314
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-111-0.0-0.5-FD-922	SW-111-0.0-0.5-NX-820	SW-309-0.0-0.5-NX-833	SW-314-0.0-0.5-FD-928
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/20/93
REMARKS:		Field Duplicate			Field Duplicate
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	1 J	1 J	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	2 J	2 J	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.019	0.030	0.005 UJ	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 U	0.005 UJ	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.008	0.005 UJ	0.005 UJ
Aldrin	0.003	-- R	-- R	-- R	-- R
Dieldrin	0.005	0.005 UJ	0.005 U	0.005 UJ	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 U	0.003 UJ	0.003 UJ
Endosulfan II	0.005	0.004 J	0.005	0.005 UJ	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 U	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 U	0.005 UJ	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.013	0.005 UJ	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 U	0.005 UJ	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 U	0.003 UJ	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 U	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 U	0.030 UJ	0.030 UJ

LOCATION NAME:		SW-111	SW-111	SW-309	SW-314
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-111-0.0-0.5-FD-922	SW-111-0.0-0.5-NX-820	SW-309-0.0-0.5-NX-833	SW-314-0.0-0.5-FD-928
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/20/93
REMARKS:		Field Duplicate			Field Duplicate
Toxaphene	0.3	0.3 UJ	0.3 U	0.3 UJ	0.3 UJ
alpha-BHC	0.003	0.003 UJ	0.003 U	0.003 UJ	0.003 UJ
alpha-Chlordane	0.003	0.007 J	0.003 U	0.003 UJ	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 U	0.003 UJ	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 U	0.003 UJ	0.003 UJ
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 U	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.008 J	0.003 U	0.003 UJ	0.003 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Aroclor-1248	0.05	-- R	-- R	0.05 UJ	0.05 UJ
Aroclor-1254	0.05	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Aroclor-1260	0.05	0.17 J	0.31	0.05 UJ	0.05 UJ
METALS	CRDL(ug/l)				
Aluminum	200	29200 J	54200 J	2760 J	11.5 U
Antimony	60	14.7	13.2	12.9 U	12.9 U
Arsenic	10	39.6 J	75.0 J	34.6 J	2.1 U
Barium	200	608	995	164	24.1
Beryllium	5	1.2 U	2.6	0.36 U	0.2 U
Cadmium	5	1.3 U	1.7 U	1.3 U	1.3 U
Calcium	5000	38600	45000	22600	17200
Chromium	10	65.6 J	119 J	6.7 U	2.1 U
Cobalt	50	18.4	32.7	4.3	2.6 U
Copper	25	203 J	395 J	18.3 U	2.5 U

LOCATION NAME:		SW-111	SW-111	SW-309	SW-314
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-111-0.0-0.5-FD-922	SW-111-0.0-0.5-NX-820	SW-309-0.0-0.5-NX-833	SW-314-0.0-0.5-FD-928
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/20/93
REMARKS:		Field Duplicate			Field Duplicate
Iron	100	80300 J	152000 J	73900 J	933
Lead	3	356 J	677 J	60.9 J	2.9 U
Magnesium	5000	13400	21100	5930	4060
Manganese	15	743 J	1160 J	917 J	123
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	45.5 U	86.0 U	10.2 U	3.4 U
Potassium	5000	9000	12500	12000	2030
Selenium	5	4.1 J	8.1 J	4.0 J	2.8 UJ
Silver	10	6.4	11.9	5.1	2.6 U
Sodium	5000	31800	32200	28100	41000
Thallium	10	1.6 U	1.6 UJ	1.6 U	1.6 U
Vanadium	50	70.4	134	14.0	5.5 U
Zinc	20	1730 J	3830 J	58.7 J	6.7 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	120	132	100	44
Dissolved Oxygen	(mg/L)	NA	3.0	1.0	NA
Hardness	(mg/L)	152	199	81	60
Specific Conductance	(umhos/cm)	NA	400	390	NA
Temperature	(C)	NA	12.8	NA	NA
pH	--	NA	5.3	5.1	NA

LOCATION NAME:		SW-111	SW-111	SW-309	SW-314
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-111-0.0-0.5-FD-922	SW-111-0.0-0.5-NX-820	SW-309-0.0-0.5-NX-833	SW-314-0.0-0.5-FD-928
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/20/93
REMARKS:		Field Duplicate			Field Duplicate
Total Organic Carbon	0.5 mg/l	9.1	8.7	24	11

LOCATION NAME:		SW-314	SW-315	SW-316	SW-320
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-NX-818	SW-315-0.0-0.5-NX-839	SW-316-0.0-0.5-NX-840	SW-320-0.0-0.5-NX-838
DATE SAMPLED:		09/20/93	09/20/93	09/21/93	09/20/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 UJ	10 UJ	10 U	10 UJ
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 UJ	10 U
Benzene	10	10 U	10 U	10 U	1 J
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-314	SW-315	SW-316	SW-320
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-NX-818	SW-315-0.0-0.5-NX-839	SW-316-0.0-0.5-NX-840	SW-320-0.0-0.5-NX-838
DATE SAMPLED:		09/20/93	09/20/93	09/21/93	09/20/93
REMARKS:					
Toluene	10	10 U	10 U	10	1 J
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 UJ	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-314	SW-315	SW-316	SW-320
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-NX-818	SW-315-0.0-0.5-NX-839	SW-316-0.0-0.5-NX-840	SW-320-0.0-0.5-NX-838
DATE SAMPLED:		09/20/93	09/20/93	09/21/93	09/20/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 UJ	10 U	10 UJ	10 UJ
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 UJ	10 U	10 U
Benzo(a)pyrene	10	10 U	10 UJ	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 UJ	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 UJ	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 UJ	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 UJ	10 U	10 U
Butylbenzylphthalate	10	10 U	10 UJ	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 UJ	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 UJ	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 UJ	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-314	SW-315	SW-316	SW-320
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-NX-818	SW-315-0.0-0.5-NX-839	SW-316-0.0-0.5-NX-840	SW-320-0.0-0.5-NX-838
DATE SAMPLED:		09/20/93	09/20/93	09/21/93	09/20/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 UJ	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 UJ	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Aldrin	0.003	-- R	-- R	-- R	-- R
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ

LOCATION NAME:		SW-314	SW-315	SW-316	SW-320
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-NX-818	SW-315-0.0-0.5-NX-839	SW-316-0.0-0.5-NX-840	SW-320-0.0-0.5-NX-838
DATE SAMPLED:		09/20/93	09/20/93	09/21/93	09/20/93
REMARKS:					
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ	0.3 UJ
alpha-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
METALS	CRDL(ug/l)				
Aluminum	200	30.5 U	37.2 U	3240 J	30.8 U
Antimony	60	12.9 U	12.9 U	12.9 U	12.9 U
Arsenic	10	2.1 U	2.1 UJ	61.3 J	2.1 UJ
Barium	200	22.6	17.2	86.4	20.7
Beryllium	5	0.2 U	0.2 U	0.29 U	0.2 U
Cadmium	5	1.3 U	1.3 U	1.3 U	1.3 U
Calcium	5000	15800	14800	23800	14000
Chromium	10	2.1 U	2.1 U	4.2 U	2.1 U
Cobalt	50	2.6 U	2.6 U	4.9	2.6 U
Copper	25	2.6 U	2.5 U	28.1 U	3.5 U

LOCATION NAME:		SW-314	SW-315	SW-316	SW-320
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-NX-818	SW-315-0.0-0.5-NX-839	SW-316-0.0-0.5-NX-840	SW-320-0.0-0.5-NX-838
DATE SAMPLED:		09/20/93	09/20/93	09/21/93	09/20/93
REMARKS:					
Iron	100	936	679 J	25800 J	1150 J
Lead	3	2.9 U	2.9 UJ	67.2 J	2.9 UJ
Magnesium	5000	3750	3270	5390	3120
Manganese	15	101	153 J	1130 J	282 J
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	3.4 U	3.4 U	5.7 U	3.4 U
Potassium	5000	1870	1160	7440	1770
Selenium	5	2.8 UJ	2.8 UJ	2.8 UJ	2.8 UJ
Silver	10	2.6 U	2.6 U	2.6 U	2.6 U
Sodium	5000	37900	40500	38800	39900
Thallium	10	1.6 U	1.6 U	1.6 U	1.6 U
Vanadium	50	5.5 U	5.5 U	11.2	5.5 U
Zinc	20	10.7 U	8.4 U	51.2 U	10.9 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	46	25	66	30
Dissolved Oxygen	(mg/L)	4.8	5.5	2.0	3.0
Hardness	(mg/L)	55	50	82	48
Specific Conductance	(umhos/cm)	370	370	390	360
Temperature	(C)	15.6	12.8	NA	13.3
pH	--	6.2	6.2	5.3	6.2

LOCATION NAME:		SW-314	SW-315	SW-316	SW-320
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-314-0.0-0.5-NX-818	SW-315-0.0-0.5-NX-839	SW-316-0.0-0.5-NX-840	SW-320-0.0-0.5-NX-838
DATE SAMPLED:		09/20/93	09/20/93	09/21/93	09/20/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	11	11	22	12

LOCATION NAME:		SW-016	SW-301	SW-302	SW-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-016-0.0-1.0-NX-828	SW-301-0.0-1.0-NX-825	SW-302-0.0-1.0-NX-826	SW-303-0.0-0.5-NX-827
DATE SAMPLED:		09/16/93	09/16/93	09/16/93	09/22/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	2 J	1 J	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	-- R	-- R	-- R	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 UJ	10 UJ	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	17 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-016	SW-301	SW-302	SW-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-016-0.0-1.0-NX-828	SW-301-0.0-1.0-NX-825	SW-302-0.0-1.0-NX-826	SW-303-0.0-0.5-NX-827
DATE SAMPLED:		09/16/93	09/16/93	09/16/93	09/22/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 UJ
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-016	SW-301	SW-302	SW-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-016-0.0-1.0-NX-828	SW-301-0.0-1.0-NX-825	SW-302-0.0-1.0-NX-826	SW-303-0.0-0.5-NX-827
DATE SAMPLED:		09/16/93	09/16/93	09/16/93	09/22/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 UJ
Benzo(a)pyrene	10	10 U	10 U	10 U	10 UJ
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 UJ
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 UJ
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 UJ
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 UJ
Butylbenzylphthalate	10	10 U	10 U	10 U	10 UJ
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 UJ
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 UJ
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 UJ
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-016	SW-301	SW-302	SW-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-016-0.0-1.0-NX-828	SW-301-0.0-1.0-NX-825	SW-302-0.0-1.0-NX-826	SW-303-0.0-0.5-NX-827
DATE SAMPLED:		09/16/93	09/16/93	09/16/93	09/22/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 UJ
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 UJ
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Aldrin	0.003	-- R	-- R	-- R	-- R
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 U
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 J
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 U
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U

LOCATION NAME:		SW-016	SW-301	SW-302	SW-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-016-0.0-1.0-NX-828	SW-301-0.0-1.0-NX-825	SW-302-0.0-1.0-NX-826	SW-303-0.0-0.5-NX-827
DATE SAMPLED:		09/16/93	09/16/93	09/16/93	09/22/93
REMARKS:					
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ	0.3 U
alpha-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 U
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 U
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 U
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 U
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 U
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ	-- R
METALS	CRDL(ug/l)				
Aluminum	200	68.4 U	308 J	147 J	6200
Antimony	60	12.9 U	12.9 U	12.9 U	14.4 U
Arsenic	10	2.1 UJ	2.8 UJ	2.1 UJ	155
Barium	200	20.1	44.2	48.2	842
Beryllium	5	0.37 U	0.2 U	0.28 U	0.2 U
Cadmium	5	1.3 U	1.3 U	1.3 U	28.2
Calcium	5000	19200	24100	23800	56300
Chromium	10	2.1 U	2.1 U	2.1 U	36.9
Cobalt	50	2.6 U	2.6 U	2.6 U	27.7
Copper	25	2.5 U	15.3 U	3.6 U	636

LOCATION NAME:		SW-016	SW-301	SW-302	SW-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-016-0.0-1.0-NX-828	SW-301-0.0-1.0-NX-825	SW-302-0.0-1.0-NX-826	SW-303-0.0-0.5-NX-827
DATE SAMPLED:		09/16/93	09/16/93	09/16/93	09/22/93
REMARKS:					
Iron	100	3090 J	1430 J	698 J	90500
Lead	3	3.2 UJ	13.9 UJ	5.3 UJ	630
Magnesium	5000	3700	3400	3720	11700
Manganese	15	282	304	776	1660
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	3.4 U	3.4 U	3.4 U	324 J
Potassium	5000	3780	3410	3350	7570
Selenium	5	2.8 U	2.8 U	2.8 U	6.1 U
Silver	10	2.6 U	2.6 U	2.6 U	6.5
Sodium	5000	12600	133000	116000	31400 J
Thallium	10	2.3	1.6 U	1.6 U	3.8 U
Vanadium	50	5.5 U	5.5 U	5.5 U	38.9
Zinc	20	22.0 U	31.6 U	20.9 U	5100
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.6 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	65	68	77	190
Dissolved Oxygen	(mg/L)	2.5	6.5	5.0	5.0
Hardness	(mg/L)	63	74	75	189
Specific Conductance	(umhos/cm)	160	760	680	480
Temperature	(C)	12.2	17.0	16.0	12.5
pH	--	6.7	7.6	7.5	6.9

LOCATION NAME:		SW-016	SW-301	SW-302	SW-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-016-0.0-1.0-NX-828	SW-301-0.0-1.0-NX-825	SW-302-0.0-1.0-NX-826	SW-303-0.0-0.5-NX-827
DATE SAMPLED:		09/16/93	09/16/93	09/16/93	09/22/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	4.5	3.7	5.8	23

LOCATION NAME:		SW-310	SW-312	SW-313	SW-010
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-310-0.0-0.5-NX-834	SW-312-0.0-0.5-NX-836	SW-313-0.0-0.5-NX-837	SW-010-0.0-1.0-NX-800
DATE SAMPLED:		09/15/93	09/15/93	09/15/93	09/14/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 UJ	10 U	10 UJ	10 UJ
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	33 U	12 U	31 U	10 U
Benzene	10	1 J	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	1 J	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 J
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-310	SW-312	SW-313	SW-010
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-310-0.0-0.5-NX-834	SW-312-0.0-0.5-NX-836	SW-313-0.0-0.5-NX-837	SW-010-0.0-1.0-NX-800
DATE SAMPLED:		09/15/93	09/15/93	09/15/93	09/14/93
REMARKS:					
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	4 J	4 J	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-310	SW-312	SW-313	SW-010
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-310-0.0-0.5-NX-834	SW-312-0.0-0.5-NX-836	SW-313-0.0-0.5-NX-837	SW-010-0.0-1.0-NX-800
DATE SAMPLED:		09/15/93	09/15/93	09/15/93	09/14/93
REMARKS:					
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-310	SW-312	SW-313	SW-010
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-310-0.0-0.5-NX-834	SW-312-0.0-0.5-NX-836	SW-313-0.0-0.5-NX-837	SW-010-0.0-1.0-NX-800
DATE SAMPLED:		09/15/93	09/15/93	09/15/93	09/14/93
REMARKS:					
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.004 J	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.007 J	0.005 UJ
Aldrin	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ

LOCATION NAME:		SW-310	SW-312	SW-313	SW-010
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-310-0.0-0.5-NX-834	SW-312-0.0-0.5-NX-836	SW-313-0.0-0.5-NX-837	SW-010-0.0-1.0-NX-800
DATE SAMPLED:		09/15/93	09/15/93	09/15/93	09/14/93
REMARKS:					
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ	0.3 UJ
alpha-BHC	0.003	0.006 J	0.003 UJ	0.003 J	0.003 UJ
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	0.005 J	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
METALS	CRDL(ug/l)				
Aluminum	200	12500	945	2800	96.6 U
Antimony	60	9.2 U	9.2 U	9.2 U	17.9 U
Arsenic	10	74.5	9.4	476	3.7 U
Barium	200	438	732	353	45.8
Beryllium	5	0.2 U	0.2 U	0.40	0.4 U
Cadmium	5	1.0 U	1.0 U	1.0 U	1.5 U
Calcium	5000	92900	41200	98800	22600
Chromium	10	23.4 J	4.1 UJ	10.7 J	1.8 U
Cobalt	50	9.3	4.4	7.5	2.5 U
Copper	25	31.8	7.2 U	11.9 U	10.3 U

LOCATION NAME:		SW-310	SW-312	SW-313	SW-010
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-310-0.0-0.5-NX-834	SW-312-0.0-0.5-NX-836	SW-313-0.0-0.5-NX-837	SW-010-0.0-1.0-NX-800
DATE SAMPLED:		09/15/93	09/15/93	09/15/93	09/14/93
REMARKS:					
Iron	100	77200	15200	43500	803
Lead	3	44.5	23.5	18.6	4.8 U
Magnesium	5000	44300	29900	50200	3300
Manganese	15	1860	59.4	1510	267
Mercury	0.2	0.2 U	0.27	0.2 U	0.2 U
Nickel	40	49.8	37.7	63.6	4.3 U
Potassium	5000	76600	87400	130000	3040
Selenium	5	2.8 U	2.8 U	2.8 U	2.3 U
Silver	10	3.7 U	3.7 U	3.7 U	3.4 U
Sodium	5000	253000	673000	444000	109000
Thallium	10	1.6 U	2.8 U	1.6 U	2.2 U
Vanadium	50	29.3	3.5	12.3	2.3 U
Zinc	20	116	29.9 U	39.4 U	20.3 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	16.9 U	11.7 U	16.9 U	11.4 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	670	560	900	40
Dissolved Oxygen	(mg/L)	2.3	6.0	5.3	4.2
Hardness	(mg/L)	414	226	453	70
Specific Conductance	(umhos/cm)	1700	190	2400	660
Temperature	(C)	21.5	22.5	25.0	25.0
pH	--	6.7	7.4	7.8	5.9

LOCATION NAME:		SW-310	SW-312	SW-313	SW-010
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-310-0.0-0.5-NX-834	SW-312-0.0-0.5-NX-836	SW-313-0.0-0.5-NX-837	SW-010-0.0-1.0-NX-800
DATE SAMPLED:		09/15/93	09/15/93	09/15/93	09/14/93
REMARKS:					
Total Organic Carbon	0.5 mg/l	65	58	67 J	4.4

LOCATION NAME:		SW-013	SW-118	SW-322	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-013-0.0-0.5-NX-801	SW-118-0.0-1.0-NX-824	SW-322-0.0-1.0-FD-914	SW-322-0.0-1.0-NX-845
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:				Field Duplicate	
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	10 U	3 J	18	16
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	2 J	11	10
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	12	11
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 UJ	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	25 U	15 U
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	2 J	2 J
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	2 J	10 U	13	11

LOCATION NAME:		SW-013	SW-118	SW-322	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-013-0.0-0.5-NX-801	SW-118-0.0-1.0-NX-824	SW-322-0.0-1.0-FD-914	SW-322-0.0-1.0-NX-845
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:				Field Duplicate	
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	9 J	8 J
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 UJ	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 UJ	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 UJ	25 U	25 UJ	25 UJ
2,4-Dinitrotoluene	10	10 U	10 U	10 UJ	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 UJ	10 U
2-Chloronaphthalene	10	10 U	10 U	10 UJ	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 UJ	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 UJ	25 U
4,6-Dinitro-2-methylphenol	25	25 UJ	25 U	25 U	25 U

LOCATION NAME:		SW-013	SW-118	SW-322	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-013-0.0-0.5-NX-801	SW-118-0.0-1.0-NX-824	SW-322-0.0-1.0-FD-914	SW-322-0.0-1.0-NX-845
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:				Field Duplicate	
4-Bromophenyl-phenylether	10	10 UJ	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 UJ	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 UJ	25 U
4-Nitrophenol	25	25 U	25 U	25 UJ	25 U
Acenaphthene	10	10 U	10 U	10 UJ	10 U
Acenaphthylene	10	10 U	10 U	10 UJ	10 U
Anthracene	10	10 UJ	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	-- R	10 U
Benzo(b)fluoranthene	10	10 U	10 U	-- R	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	-- R	10 U
Benzo(k)fluoranthene	10	10 U	10 U	-- R	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	15 U	10 U	27 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 UJ	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 UJ	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	-- R	10 U
Dibenz(a,h)anthracene	10	10 U	10 U	-- R	10 U
Dibenzofuran	10	10 U	10 U	10 UJ	10 U
Diethylphthalate	10	10 U	10 U	10 UJ	10 U
Dimethylphthalate	10	10 U	10 U	10 UJ	10 U
Fluoranthene	10	10 UJ	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 UJ	10 U
Hexachlorobenzene	10	10 UJ	10 U	10 U	10 U

LOCATION NAME:		SW-013	SW-118	SW-322	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-013-0.0-0.5-NX-801	SW-118-0.0-1.0-NX-824	SW-322-0.0-1.0-FD-914	SW-322-0.0-1.0-NX-845
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:				Field Duplicate	
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 UJ	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	-- R	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 UJ	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 UJ	25 U	25 U	25 U
Phenanthrene	10	10 UJ	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	1 J
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Aldrin	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ

LOCATION NAME:		SW-013	SW-118	SW-322	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-013-0.0-0.5-NX-801	SW-118-0.0-1.0-NX-824	SW-322-0.0-1.0-FD-914	SW-322-0.0-1.0-NX-845
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:				Field Duplicate	
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ	0.3 UJ
alpha-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
METALS	CRDL(ug/l)				
Aluminum	200	191	282	397	274
Antimony	60	17.9 U	17.9 U	17.9 U	17.9 U
Arsenic	10	3.5 U	3.0 U	12.5	11.9
Barium	200	55.3	50.0	47.7	45.1
Beryllium	5	0.4 U	0.4 U	0.4 U	0.4 U
Cadmium	5	1.5 U	1.5 U	1.5 U	1.5 U
Calcium	5000	24800	23700	27000	26200
Chromium	10	1.8 U	3.4	23.5	20.3
Cobalt	50	1.6 U	4.4 U	1.6 U	1.6 U
Copper	25	14.2 U	14.8 U	40.1 U	32.0 U

LOCATION NAME:		SW-013	SW-118	SW-322	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-013-0.0-0.5-NX-801	SW-118-0.0-1.0-NX-824	SW-322-0.0-1.0-FD-914	SW-322-0.0-1.0-NX-845
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:				Field Duplicate	
Iron	100	528	1590	6040	5310
Lead	3	6.7 U	15.1	68.4	54.0
Magnesium	5000	3630	3400	3020	2920
Manganese	15	441	399	778	752
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	5.6 U	6.1 U	3.7 U	3.8 U
Potassium	5000	3280	3560	4460	4280
Selenium	5	2.3 U	2.3 U	2.3 U	2.3 U
Silver	10	3.4 U	3.4 U	3.4 U	3.4 U
Sodium	5000	147000	114000	155000	152000
Thallium	10	2.2 U	2.2 U	2.2 U	2.2 U
Vanadium	50	2.3 U	2.3 U	2.3 U	2.3 U
Zinc	20	21.8 U	25.7 U	50.0	43.4
CYANIDE	CRDL(ug/l)				
Cyanide	10	20.2 U	10.0 U	11.5 U	12.9 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	65	68	97	98
Dissolved Oxygen	(mg/L)	7.0	6.2	NA	4.5
Hardness	(mg/L)	77	73	80	77
Specific Conductance	(umhos/cm)	440	530	NA	500
Temperature	(C)	18.3	17.2	NA	24.4
pH	--	6.8	5.9	NA	6.7

LOCATION NAME:		SW-013	SW-118	SW-322	SW-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-013-0.0-0.5-NX-801	SW-118-0.0-1.0-NX-824	SW-322-0.0-1.0-FD-914	SW-322-0.0-1.0-NX-845
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:				Field Duplicate	
Total Organic Carbon	0.5 mg/l	4.6	4.5	8.7	8.9

LOCATION NAME:		SW-017	SW-026	SW-028	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-1.0-NX-803	SW-026-0.0-0.5-NX-807	SW-029-0.0-0.5-FD-915	SW-029-0.0-0.5-NX-809
DATE SAMPLED:		09/15/93	09/17/93	09/17/93	09/17/93
REMARKS:				Field Duplicate	
VOLATILE ORGANICS	CRQL(ug/l)				
1,1,1-Trichloroethane	10	1 J	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	-- R	-- R	-- R	-- R
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
2-Hexanone	10	10 UJ	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 UJ	10 UJ	10 UJ
Benzene	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-017	SW-026	SW-028	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-1.0-NX-803	SW-026-0.0-0.5-NX-807	SW-029-0.0-0.5-FD-915	SW-029-0.0-0.5-NX-809
DATE SAMPLED:		09/15/93	09/17/93	09/17/93	09/17/93
REMARKS:				Field Duplicate	
Toluene	10	10 U	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)				
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U

LOCATION NAME:		SW-017	SW-026	SW-028	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-1.0-NX-803	SW-026-0.0-0.5-NX-807	SW-029-0.0-0.5-FD-915	SW-029-0.0-0.5-NX-809
DATE SAMPLED:		09/15/93	09/17/93	09/17/93	09/17/93
REMARKS:				Field Duplicate	
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 UJ
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	-- R	10 U	10 U
Benzo(b)fluoranthene	10	10 U	-- R	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	-- R	10 U	10 U
Benzo(k)fluoranthene	10	10 U	-- R	10 U	10 U
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	-- R	10 U	10 U
Dibenz(a,h)anthracene	10	10 U	-- R	10 U	10 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U

LOCATION NAME:		SW-017	SW-026	SW-028	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-1.0-NX-803	SW-026-0.0-0.5-NX-807	SW-029-0.0-0.5-FD-915	SW-029-0.0-0.5-NX-809
DATE SAMPLED:		09/15/93	09/17/93	09/17/93	09/17/93
REMARKS:				Field Duplicate	
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	-- R	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
PESTICIDES	CRQL(ug/l)				
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Aldrin	0.003	0.003 UJ	-- R	-- R	-- R
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ

LOCATION NAME:		SW-017	SW-026	SW-028	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-1.0-NX-803	SW-026-0.0-0.5-NX-807	SW-029-0.0-0.5-FD-915	SW-029-0.0-0.5-NX-809
DATE SAMPLED:		09/15/93	09/17/93	09/17/93	09/17/93
REMARKS:				Field Duplicate	
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ	0.3 UJ
alpha-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
PCBs	CRQL(ug/l)				
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
METALS	CRDL(ug/l)				
Aluminum	200	335	53.3 U	1770 J	1000 J
Antimony	60	9.2 U	12.9 U	12.9 U	12.9 U
Arsenic	10	9.0	2.1 UJ	55.2 J	22.4 J
Barium	200	52.9	37.8	40.8	34.5
Beryllium	5	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	5	1.0 U	1.3 U	1.3 U	1.3 U
Calcium	5000	20600	11800	14200	13900
Chromium	10	4.9 J	2.1 U	2.1 U	2.5 U
Cobalt	50	3.0 U	2.6 U	2.6 U	2.6 U
Copper	25	3.1 U	2.5 U	5.2 U	5.9 U

LOCATION NAME:		SW-017	SW-026	SW-028	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-1.0-NX-803	SW-026-0.0-0.5-NX-807	SW-029-0.0-0.5-FD-915	SW-029-0.0-0.5-NX-809
DATE SAMPLED:		09/15/93	09/17/93	09/17/93	09/17/93
REMARKS:				Field Duplicate	
Iron	100	6510	1690 J	16800 J	7160 J
Lead	3	7.4 U	3.3 UJ	17.2 J	9.2 UJ
Magnesium	5000	3380	2410	2600	2390
Manganese	15	1160	349	722	684
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	40	4.8 U	3.4 U	3.4 U	4.1 U
Potassium	5000	3060	3160	3150	3090
Selenium	5	2.8 U	2.8 U	2.8 U	2.8 U
Silver	10	3.7 U	2.6 U	2.6 U	2.6 U
Sodium	5000	65600	31300	29300	29000
Thallium	10	1.6 U	1.6 U	1.6 U	3.3
Vanadium	50	2.6 U	5.5 U	5.5 U	5.5 U
Zinc	20	33.2 U	16.4 U	39.4 U	29.7 U
CYANIDE	CRDL(ug/l)				
Cyanide	10	10.0 U	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS					
Alkalinity (as CaCO3)	1.0 mg/L	64	26	39	41
Dissolved Oxygen	(mg/L)	3.2	5.5	NA	4.0
Hardness	(mg/L)	65	39	46	45
Specific Conductance	(umhos/cm)	420	240	NA	180
Temperature	(C)	18.9	15.2	NA	19.4
pH	--	6.8	6.4	NA	7.0

LOCATION NAME:		SW-017	SW-026	SW-028	SW-028
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-017-0.0-1.0-NX-803	SW-026-0.0-0.5-NX-807	SW-029-0.0-0.5-FD-915	SW-029-0.0-0.5-NX-809
DATE SAMPLED:		09/15/93	09/17/93	09/17/93	09/17/93
REMARKS:				Field Duplicate	
Total Organic Carbon	0.5 mg/l	7.6	6.1	6.8	6.8

LOCATION NAME:	SW-029	SW-307	SW-308
SITE LOCATION:	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SW-028-0.0-0.5-NX-808	SW-307-0.0-0.5-NX-831	SW-308-0.0-1.0-NX-832
DATE SAMPLED:	09/14/93	09/17/93	09/14/93
REMARKS:			

VOLATILE ORGANICS	CRQL(ug/l)			
1,1,1-Trichloroethane	10	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	-- R	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U
1,2-Dichloroethene(total)	10	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U
4-Methyl-2-pentanone	10	10 U	10 U	10 U
Acetone	10	14 U	10 UJ	14 U
Benzene	10	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-028-0.0-0.5-NX-808	SW-307-0.0-0.5-NX-831	SW-308-0.0-1.0-NX-832
DATE SAMPLED:		09/14/93	09/17/93	09/14/93
REMARKS:				
Toluene	10	10 U	10 U	10 U
Total Xylenes	10	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U
SEMIVOLATILE ORGANICS	CRQL(ug/l)			
1,2,4-Trichlorobenzene	10	10 U	10 U	10 UJ
1,2-Dichlorobenzene	10	10 U	10 U	10 UJ
1,3-Dichlorobenzene	10	10 U	10 U	10 UJ
1,4-Dichlorobenzene	10	10 U	10 U	10 UJ
2,2'-Oxybis(1-chloropropane)	10	10 U	10 U	10 UJ
2,4,5-Trichlorophenol	25	25 U	25 U	25 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U
2,4-Dinitrophenol	25	25 UJ	25 U	25 U
2,4-Dinitrotoluene	10	10 U	10 U	10 UJ
2,6-Dinitrotoluene	10	10 U	10 U	10 UJ
2-Chloronaphthalene	10	10 U	10 U	10 UJ
2-Chlorophenol	10	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 UJ
2-Methylphenol	10	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 UJ
2-Nitrophenol	10	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	-- R	10 U	-- R
3-Nitroaniline	25	25 U	25 U	25 UJ
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-028-0.0-0.5-NX-808	SW-307-0.0-0.5-NX-831	SW-308-0.0-1.0-NX-832
DATE SAMPLED:		09/14/93	09/17/93	09/14/93
REMARKS:				
4-Bromophenyl-phenylether	10	10 U	10 U	10 UJ
4-Chloro-3-methylphenol	10	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 UJ
4-Chlorophenyl-phenylether	10	10 U	10 U	10 UJ
4-Methylphenol	10	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 UJ
4-Nitrophenol	25	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 UJ
Acenaphthylene	10	10 U	10 U	10 UJ
Anthracene	10	10 U	10 U	10 UJ
Benzo(a)anthracene	10	-- R	10 U	-- R
Benzo(a)pyrene	10	-- R	10 U	-- R
Benzo(b)fluoranthene	10	-- R	10 U	-- R
Benzo(g,h,i)perylene	10	-- R	10 U	-- R
Benzo(k)fluoranthene	10	-- R	10 U	-- R
Bis(2-chloroethoxy)methane	10	10 U	10 U	10 UJ
Bis(2-chloroethyl)ether	10	10 U	10 U	10 UJ
Bis(2-ethylhexyl)phthalate	10	-- R	10 U	-- R
Butylbenzylphthalate	10	-- R	10 U	-- R
Carbazole	10	10 U	10 U	10 UJ
Chrysene	10	-- R	10 U	-- R
Di-n-butylphthalate	10	10 U	10 U	10 UJ
Di-n-octylphthalate	10	-- R	10 U	-- R
Dibenz(a,h)anthracene	10	-- R	10 U	-- R
Dibenzofuran	10	10 U	10 U	10 UJ
Diethylphthalate	10	10 U	10 U	10 UJ
Dimethylphthalate	10	10 U	10 U	10 UJ
Fluoranthene	10	10 U	10 U	10 UJ
Fluorene	10	10 U	10 U	10 UJ
Hexachlorobenzene	10	10 U	10 U	10 UJ

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-028-0.0-0.5-NX-808	SW-307-0.0-0.5-NX-831	SW-308-0.0-1.0-NX-832
DATE SAMPLED:		09/14/93	09/17/93	09/14/93
REMARKS:				
Hexachlorobutadiene	10	10 U	10 U	10 UJ
Hexachlorocyclopentadiene	10	10 U	10 U	10 UJ
Hexachloroethane	10	10 U	10 U	10 UJ
Indeno(1,2,3-cd)pyrene	10	-- R	10 U	-- R
Isophorone	10	10 U	10 U	10 UJ
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 UJ
N-Nitrosodiphenylamine	10	10 U	10 U	10 UJ
Naphthalene	10	10 U	10 U	10 UJ
Nitrobenzene	10	10 U	10 U	10 UJ
Pentachlorophenol	25	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 UJ
Phenol	10	10 U	10 U	10 U
Pyrene	10	-- R	10 U	-- R
PESTICIDES	CRQL(ug/l)			
4,4'-DDD	0.005	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDE	0.005	0.005 UJ	0.005 UJ	0.005 UJ
4,4'-DDT	0.005	0.005 UJ	0.005 UJ	0.005 UJ
Aldrin	0.003	0.003 UJ	-- R	0.003 UJ
Dieldrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan I	0.003	0.003 UJ	0.003 UJ	0.003 UJ
Endosulfan II	0.005	0.005 UJ	0.005 UJ	0.005 UJ
Endosulfan Sulfate	0.005	0.005 UJ	0.005 UJ	0.005 UJ
Endrin	0.005	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Aldehyde	0.005	0.005 UJ	0.005 UJ	0.005 UJ
Endrin Ketone	0.005	0.005 UJ	0.005 UJ	0.005 UJ
Heptachlor	0.003	0.003 UJ	0.003 UJ	0.003 UJ
Heptachlor Epoxide	0.003	0.003 UJ	0.003 UJ	0.003 UJ
Methoxychlor	0.03	0.030 UJ	0.030 UJ	0.030 UJ

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-028-0.0-0.5-NX-808	SW-307-0.0-0.5-NX-831	SW-308-0.0-1.0-NX-832
DATE SAMPLED:		09/14/93	09/17/93	09/14/93
REMARKS:				
Toxaphene	0.3	0.3 UJ	0.3 UJ	0.3 UJ
alpha-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ
alpha-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ
beta-BHC	0.003	0.003 UJ	0.003 UJ	0.003 UJ
delta-BHC	0.003	0.003 UJ	0.003 UJ	0.016 J
gamma-BHC(Lindane)	0.003	0.003 UJ	0.003 UJ	0.003 UJ
gamma-Chlordane	0.003	0.003 UJ	0.003 UJ	0.003 UJ
PCBs	CRQL(ug/l)			
Aroclor-1016	0.05	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1221	0.10	0.10 UJ	0.10 UJ	0.10 UJ
Aroclor-1232	0.05	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1242	0.05	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1248	0.05	0.05 UJ	0.05 UJ	0.17
Aroclor-1254	0.05	0.05 UJ	0.05 UJ	0.05 UJ
Aroclor-1260	0.05	0.05 UJ	0.05 UJ	0.05 UJ
METALS	CRDL(ug/l)			
Aluminum	200	193	685 J	1730
Antimony	60	17.9 U	12.9 U	17.9 U
Arsenic	10	8.3 U	6.6 UJ	43.3
Barium	200	31.1	55.4	99.8
Beryllium	5	0.4 U	0.2 U	0.4 U
Cadmium	5	1.5 U	1.3 U	1.5 U
Calcium	5000	14000	13200	12800
Chromium	10	1.8 U	2.1 U	4.8
Cobalt	50	1.5 U	2.6 U	3.8 U
Copper	25	2.2 U	7.1 U	15.5 U

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-028-0.0-0.5-NX-808	SW-307-0.0-0.5-NX-831	SW-308-0.0-1.0-NX-832
DATE SAMPLED:		09/14/93	09/17/93	09/14/93
REMARKS:				
Iron	100	2100	2290 J	15500
Lead	3	3.1 U	10.9 UJ	27.8
Magnesium	5000	2270	2400	2350
Manganese	15	698	1040	3530
Mercury	0.2	0.2 U	0.2 U	0.2 U
Nickel	40	3.7 U	3.4 U	5.3 U
Potassium	5000	2950	3590	3210
Selenium	5	2.3 U	2.8 U	2.3 U
Silver	10	3.4 U	2.6 U	3.4 U
Sodium	5000	28000	28600	25500
Thallium	10	2.2 U	1.6 U	2.2 U
Vanadium	50	2.3 U	5.5 U	4.5
Zinc	20	10.1 U	46.2 U	109
CYANIDE	CRDL(ug/l)			
Cyanide	10	10.0 U	10.0 U	10.0 U
WATER QUALITY PARAMETERS				
Alkalinity (as CaCO3)	1.0 mg/L	38	30	27
Dissolved Oxygen	(mg/L)	8.0	2.8	2.0
Hardness	(mg/L)	44	43	42
Specific Conductance	(umhos/cm)	280	210	180
Temperature	(C)	14.0	16.0	18.9
pH	--	7.6	6.4	6.6

LOCATION NAME:		SW-029	SW-307	SW-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SW-028-0.0-0.5-NX-808	SW-307-0.0-0.5-NX-831	SW-308-0.0-1.0-NX-832
DATE SAMPLED:		09/14/93	09/17/93	09/14/93
REMARKS:				
Total Organic Carbon	0.5 mg/l	5.7	5.2	8.3

Analytical Data - June 1993
Sediment

LOCATION NAME:	SD-323	SD-323	SD-324	SD-325
SITE LOCATION:	ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-323-0.0-0.5-FD-129	SD-323-0.0-0.5-NX-125	SD-324-0.0-0.5-NX-126	SD-325-0.0-0.5-NX-127
DATE SAMPLED:	06/22/93	06/22/93	06/22/93	06/22/93
REMARKS:	Field Duplicate			

VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	19 U	20 U	22 U	17 U
1,1,2,2-Tetrachloroethane	10	19 U	20 U	22 U	17 U
1,1,2-Trichloroethane	10	19 U	20 U	22 U	17 U
1,1-Dichloroethane	10	19 U	20 U	22 U	17 U
1,1-Dichloroethene	10	19 U	20 U	22 U	17 U
1,2-Dichloroethane	10	19 U	20 U	22 U	17 U
1,2-Dichloroethene(total)	10	19 U	20 U	22 U	17 U
1,2-Dichloropropane	10	19 U	20 U	22 U	17 U
2-Butanone	10	19 U	20 U	22 U	17 U
2-Hexanone	10	19 U	20 U	22 U	17 U
4-Methyl-2-pentanone	10	19 U	20 U	22 U	17 U
Acetone	10	19 U	20 U	22 U	17 U
Benzene	10	19 U	20 U	22 U	17 U
Bromodichloromethane	10	19 U	20 U	22 U	17 U
Bromoform	10	19 U	20 U	22 U	17 U
Bromomethane	10	19 U	20 U	22 U	17 U
Carbon Disulfide	10	19 U	20 U	22 U	17 U
Carbon Tetrachloride	10	19 U	20 U	22 U	17 U
Chlorobenzene	10	19 U	20 U	22 U	17 U
Chloroethane	10	19 U	20 U	22 U	17 U
Chloroform	10	19 U	20 U	22 U	17 U
Chloromethane	10	19 U	20 U	22 U	17 U
Dibromochloromethane	10	19 U	20 U	22 U	17 U
Ethylbenzene	10	19 U	20 U	22 U	17 U
Methylene Chloride	10	19 U	20 U	22 U	17 U
Styrene	10	19 U	20 U	22 U	17 U
Tetrachloroethene	10	19 U	20 U	22 U	17 U

LOCATION NAME:		SD-323	SD-323	SD-324	SD-325
SITE LOCATION:		ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-323-0.0-0.5-FD-129	SD-323-0.0-0.5-NX-125	SD-324-0.0-0.5-NX-126	SD-325-0.0-0.5-NX-127
DATE SAMPLED:		06/22/93	06/22/93	06/22/93	06/22/93
REMARKS:		Field Duplicate			
Toluene	10	19 U	20 U	22 U	17 U
Total Xylenes	10	19 U	20 U	120	17 U
Trichloroethene	10	19 U	20 U	22 U	17 U
Vinyl Chloride	10	19 U	20 U	22 U	17 U
cis-1,3-Dichloropropene	10	19 U	20 U	22 U	17 U
trans-1,3-Dichloropropene	10	19 U	20 U	22 U	17 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	19000 U	20000 U	22000 U	17000 U
1,2-Dichlorobenzene	330	19000 U	20000 U	22000 U	17000 U
1,3-Dichlorobenzene	330	19000 U	20000 U	22000 U	17000 U
1,4-Dichlorobenzene	330	19000 U	20000 U	22000 U	17000 U
2,2'-Oxybis(1-chloropropane)	330	19000 U	20000 U	22000 U	17000 U
2,4,5-Trichlorophenol	800	48000 U	49000 U	56000 U	42000 U
2,4,6-Trichlorophenol	330	19000 U	20000 U	22000 U	17000 U
2,4-Dichlorophenol	330	19000 U	20000 U	22000 U	17000 U
2,4-Dimethylphenol	330	19000 U	20000 U	22000 U	17000 U
2,4-Dinitrophenol	800	48000 U	49000 U	56000 U	42000 U
2,4-Dinitrotoluene	330	19000 U	20000 U	22000 U	17000 U
2,6-Dinitrotoluene	330	19000 U	20000 U	22000 U	17000 U
2-Chloronaphthalene	330	19000 U	20000 U	22000 U	17000 U
2-Chlorophenol	330	19000 U	20000 U	22000 U	17000 U
2-Methylnaphthalene	330	19000 U	20000 U	22000 U	17000 U
2-Methylphenol	330	19000 U	20000 U	22000 U	17000 U
2-Nitroaniline	800	48000 U	49000 U	56000 U	42000 U
2-Nitrophenol	330	19000 U	20000 U	22000 U	17000 U
3,3'-Dichlorobenzidine	330	19000 U	20000 U	22000 U	17000 U
3-Nitroaniline	800	48000 U	49000 U	56000 U	42000 U
4,6-Dinitro-2-methylphenol	800	48000 U	49000 U	56000 U	42000 U

LOCATION NAME:		SD-323	SD-323	SD-324	SD-325
SITE LOCATION:		ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-323-0.0-0.5-FD-129	SD-323-0.0-0.5-NX-125	SD-324-0.0-0.5-NX-126	SD-325-0.0-0.5-NX-127
DATE SAMPLED:		06/22/93	06/22/93	06/22/93	06/22/93
REMARKS:		Field Duplicate			
4-Bromophenyl-phenylether	330	19000 U	20000 U	22000 U	17000 U
4-Chloro-3-methylphenol	330	19000 U	20000 U	22000 U	17000 U
4-Chloroaniline	330	19000 U	20000 U	22000 U	17000 U
4-Chlorophenyl-phenylether	330	19000 U	20000 U	22000 U	17000 U
4-Methylphenol	330	19000 U	20000 U	22000 U	17000 U
4-Nitroaniline	800	48000 U	49000 U	56000 U	42000 U
4-Nitrophenol	800	48000 U	49000 U	56000 U	42000 U
Acenaphthene	330	19000 U	20000 U	22000 U	17000 U
Acenaphthylene	330	19000 U	20000 U	22000 U	17000 U
Anthracene	330	19000 U	20000 U	22000 U	17000 U
Benzo(a)anthracene	330	19000 U	20000 U	22000 U	17000 U
Benzo(a)pyrene	330	19000 U	20000 U	22000 U	17000 U
Benzo(b)fluoranthene	330	19000 U	20000 U	22000 U	17000 U
Benzo(g,h,i)perylene	330	19000 U	20000 U	22000 U	17000 U
Benzo(k)fluoranthene	330	19000 U	20000 U	22000 U	17000 U
Bis(2-chloroethoxy)methane	330	19000 U	20000 U	22000 U	17000 U
Bis(2-chloroethyl)ether	330	19000 U	20000 U	22000 U	17000 U
Bis(2-ethylhexyl)phthalate	330	19000 U	20000 U	3200 J	17000 U
Butylbenzylphthalate	330	19000 U	20000 U	22000 U	17000 U
Carbazole	330	19000 U	20000 U	22000 U	17000 U
Chrysene	330	19000 U	20000 U	22000 U	17000 U
Di-n-butylphthalate	330	19000 U	20000 U	22000 U	17000 U
Di-n-octylphthalate	330	19000 U	20000 U	22000 U	17000 U
Dibenz(a,h)anthracene	330	19000 U	20000 U	22000 U	17000 U
Dibenzofuran	330	19000 U	20000 U	22000 U	17000 U
Diethylphthalate	330	19000 U	20000 U	22000 U	17000 U
Dimethylphthalate	330	19000 U	20000 U	22000 U	17000 U
Fluoranthene	330	19000 U	20000 U	22000 U	17000 U
Fluorene	330	19000 U	20000 U	22000 U	17000 U
Hexachlorobenzene	330	19000 U	20000 U	22000 U	17000 U

LOCATION NAME:		SD-323	SD-323	SD-324	SD-325
SITE LOCATION:		ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-323-0.0-0.5-FD-129	SD-323-0.0-0.5-NX-125	SD-324-0.0-0.5-NX-126	SD-325-0.0-0.5-NX-127
DATE SAMPLED:		06/22/93	06/22/93	06/22/93	06/22/93
REMARKS:		Field Duplicate			
Hexachlorobutadiene	330	19000 U	20000 U	22000 U	17000 U
Hexachlorocyclopentadiene	330	19000 U	20000 U	22000 U	17000 U
Hexachloroethane	330	19000 U	20000 U	22000 U	17000 U
Indeno(1,2,3-cd)pyrene	330	19000 U	20000 U	22000 U	17000 U
Isophorone	330	19000 U	20000 U	22000 U	17000 U
N-Nitroso-di-n-propylamine	330	19000 U	20000 U	22000 U	17000 U
N-Nitrosodiphenylamine	330	19000 U	20000 U	22000 U	17000 U
Naphthalene	330	19000 U	20000 U	22000 U	17000 U
Nitrobenzene	330	19000 U	20000 U	22000 U	17000 U
Pentachlorophenol	800	48000 U	49000 U	56000 U	42000 U
Phenanthrene	330	19000 U	20000 U	22000 U	17000 U
Phenol	330	19000 U	20000 U	22000 U	17000 U
Pyrene	330	19000 U	20000 U	22000 U	17000 U
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	6.3 UJ	6.5 UJ	7.3 UJ	5.5 UJ
4,4'-DDE	3.3	6.3 UJ	6.5 UJ	0.14 J	1.1 J
4,4'-DDT	3.3	6.3 UJ	6.5 UJ	7.3 UJ	5.5 UJ
Aldrin	1.7	3.3 UJ	3.3 UJ	3.8 UJ	2.8 UJ
Dieldrin	3.3	0.29 J	0.36 J	0.38 J	5.5 UJ
Endosulfan I	1.7	0.23 J	0.26 J	3.8 UJ	0.52 J
Endosulfan II	3.3	1.2 J	6.5 UJ	7.3 UJ	5.5 UJ
Endosulfan Sulfate	3.3	6.3 UJ	6.5 UJ	7.3 UJ	5.5 UJ
Endrin	3.3	4.7 J	5.7 J	3.8 UJ	5.5 UJ
Endrin Aldehyde	3.3	6.3 UJ	6.5 UJ	7.3 UJ	5.5 UJ
Endrin Ketone	3.3	6.3 UJ	6.5 UJ	7.3 UJ	5.5 UJ
Heptachlor	1.7	3.3 UJ	3.3 UJ	3.8 UJ	2.8 UJ
Heptachlor Epoxide	1.7	3.3 UJ	3.4 J	3.1 J	2.8 UJ
Methoxychlor	17.0	5.5 J	6.3 J	7.6 J	3.8 J

LOCATION NAME:		SD-323	SD-323	SD-324	SD-325
SITE LOCATION:		ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-323-0.0-0.5-FD-129	SD-323-0.0-0.5-NX-125	SD-324-0.0-0.5-NX-126	SD-325-0.0-0.5-NX-127
DATE SAMPLED:		06/22/93	06/22/93	06/22/93	06/22/93
REMARKS:		Field Duplicate			
Toxaphene	170.0	330 UJ	330 UJ	380 UJ	280 UJ
alpha-BHC	1.7	3.3 UJ	3.3 UJ	3.8 UJ	0.40 J
alpha-Chlordane	1.7	3.3 UJ	3.3 UJ	3.8 UJ	2.8 UJ
beta-BHC	1.7	3.3 UJ	3.3 UJ	3.8 UJ	2.8 UJ
delta-BHC	1.7	0.32 J	3.3 UJ	3.8 UJ	2.8 UJ
gamma-BHC(Lindane)	1.7	3.3 UJ	3.3 UJ	3.8 UJ	2.8 UJ
gamma-Chlordane	1.7	3.3 UJ	3.3 UJ	3.8 UJ	2.8 UJ
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	63 UJ	65 UJ	73 UJ	55 UJ
Aroclor-1221	67.0	130 UJ	130 UJ	150 UJ	110 UJ
Aroclor-1232	33.0	63 UJ	65 UJ	73 UJ	55 UJ
Aroclor-1242	33.0	63 UJ	65 UJ	73 UJ	55 UJ
Aroclor-1248	33.0	63 UJ	65 UJ	73 UJ	55 UJ
Aroclor-1254	33.0	63 UJ	65 UJ	73 UJ	55 UJ
Aroclor-1260	33.0	63 UJ	65 UJ	73 UJ	55 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	2480	2560	3620	6470
Antimony	60	6.1 UJ	6.3 UJ	8.0 UJ	5.2 UJ
Arsenic	10	1.2 J	1.9 J	2.1 J	4.5 J
Barium	200	64.8	37.5	50.3	38.2
Beryllium	5	0.5 U	0.5 U	0.6 U	0.4 U
Cadmium	5	0.58 UJ	0.60 UJ	0.76 UJ	0.50 UJ
Calcium	5000	209000	198000	202000	215000
Chromium	10	19.5 J	9.1 UJ	9.2 UJ	18.4 J
Cobalt	50	3.4 J	4.1 J	4.2 J	3.4 J
Copper	25	19.0	11.2	12.0	9.3

LOCATION NAME:		SD-323	SD-323	SD-324	SD-325
SITE LOCATION:		ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-323-0.0-0.5-FD-129	SD-323-0.0-0.5-NX-125	SD-324-0.0-0.5-NX-126	SD-325-0.0-0.5-NX-127
DATE SAMPLED:		06/22/93	06/22/93	06/22/93	06/22/93
REMARKS:		Field Duplicate			
Iron	100	4670	3670	3860	9110
Lead	3	10.7	10.9	21.0	12.4
Magnesium	5000	2930	2260	2880	5440
Manganese	15	699	443	372	554
Mercury	0.2	0.10 U	0.10 U	0.12 U	0.09 U
Nickel	40	12.5 UJ	9.6 UJ	9.5 UJ	8.4 UJ
Potassium	5000	728	599	1060	602
Selenium	5	1.5 UJ	1.5 UJ	2.0 UJ	5.6 UJ
Silver	10	1.9 UJ	2.0 UJ	2.5 UJ	1.7 UJ
Sodium	5000	114 U	117 U	181 U	163 U
Thallium	10	0.79 UJ	0.78 UJ	1.1 UJ	0.61 UJ
Vanadium	50	18.8	20.2	22.1	18.1
Zinc	20	200 J	46.5 J	72.3 J	53.6 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	1.0 U	1.0 U	1.3 U	0.8 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	NA	NA	NA	NA

LOCATION NAME:		SD-326	SD-319	SD-321	SD-107
SITE LOCATION:		ASBESTOS LAGOONS	BACKGROUND	BACKGROUND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-326-0.0-0.5-NX-128	SD-319-0.0-0.5-NX-088	SD-321-0.0-0.5-NX-151	SD-107-0.0-0.5-NX-062
DATE SAMPLED:		06/22/93	06/09/93	06/21/93	06/09/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	26 U	23 U	16 U	21 U
1,1,2,2-Tetrachloroethane	10	26 U	23 U	16 U	21 U
1,1,2-Trichloroethane	10	26 U	23 U	16 U	21 U
1,1-Dichloroethane	10	26 U	23 U	16 U	21 U
1,1-Dichloroethene	10	26 U	23 U	16 U	21 U
1,2-Dichloroethane	10	26 U	23 U	16 U	21 U
1,2-Dichloroethene(total)	10	26 U	23 UJ	16 U	21 UJ
1,2-Dichloropropane	10	26 U	23 U	16 U	21 U
2-Butanone	10	26 U	23 U	16 U	21 U
2-Hexanone	10	26 U	23 U	16 U	21 U
4-Methyl-2-pentanone	10	26 U	23 U	16 U	21 U
Acetone	10	26 U	23 U	16 U	21 U
Benzene	10	26 U	23 U	16 U	21 U
Bromodichloromethane	10	26 U	23 U	16 U	21 U
Bromoform	10	26 U	23 U	16 U	21 U
Bromomethane	10	26 U	23 U	16 U	21 U
Carbon Disulfide	10	26 U	23 U	16 U	21 U
Carbon Tetrachloride	10	26 U	23 U	16 U	21 U
Chlorobenzene	10	26 U	23 U	16 U	21 U
Chloroethane	10	26 U	23 U	16 U	21 U
Chloroform	10	26 U	23 U	16 U	21 U
Chloromethane	10	26 U	23 U	16 U	21 U
Dibromochloromethane	10	26 U	23 U	16 U	21 U
Ethylbenzene	10	26 U	23 U	16 U	21 U
Methylene Chloride	10	26 U	23 U	16 U	21 U
Styrene	10	26 U	23 U	16 U	21 U
Tetrachloroethene	10	26 U	23 U	16 U	21 U

LOCATION NAME:		SD-326	SD-319	SD-321	SD-107
SITE LOCATION:		ASBESTOS LAGOONS	BACKGROUND	BACKGROUND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-326-0.0-0.5-NX-128	SD-319-0.0-0.5-NX-088	SD-321-0.0-0.5-NX-151	SD-107-0.0-0.5-NX-062
DATE SAMPLED:		06/22/93	06/09/93	06/21/93	06/09/93
REMARKS:					
Toluene	10	18 J	23 U	16 U	21 U
Total Xylenes	10	26 U	23 U	16 U	21 U
Trichloroethene	10	26 U	23 U	16 U	21 U
Vinyl Chloride	10	26 U	23 U	16 U	21 U
cis-1,3-Dichloropropene	10	26 U	23 U	16 U	21 U
trans-1,3-Dichloropropene	10	26 U	23 U	16 U	21 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	26000 U	770 U	540 U	690 U
1,2-Dichlorobenzene	330	26000 U	770 U	540 U	690 U
1,3-Dichlorobenzene	330	26000 U	770 U	540 U	690 U
1,4-Dichlorobenzene	330	26000 U	770 U	540 U	690 U
2,2'-Oxybis(1-chloropropane)	330	26000 U	770 U	540 U	690 U
2,4,5-Trichlorophenol	800	64000 U	1900 U	1300 U	1700 U
2,4,6-Trichlorophenol	330	26000 U	770 U	540 U	690 U
2,4-Dichlorophenol	330	26000 U	770 U	540 U	690 U
2,4-Dimethylphenol	330	26000 U	770 U	540 U	690 U
2,4-Dinitrophenol	800	64000 U	1900 UJ	1300 U	1700 U
2,4-Dinitrotoluene	330	26000 U	770 U	540 U	690 U
2,6-Dinitrotoluene	330	26000 U	770 U	540 U	690 U
2-Chloronaphthalene	330	26000 U	770 U	540 U	690 U
2-Chlorophenol	330	26000 U	770 U	540 U	690 U
2-Methylnaphthalene	330	1500 J	770 U	540 U	690 U
2-Methylphenol	330	26000 U	770 U	540 U	690 U
2-Nitroaniline	800	64000 U	1900 U	1300 U	1700 U
2-Nitrophenol	330	26000 U	770 U	540 U	690 U
3,3'-Dichlorobenzidine	330	26000 U	770 U	540 U	690 U
3-Nitroaniline	800	64000 U	1900 U	1300 U	1700 U
4,6-Dinitro-2-methylphenol	800	64000 U	1900 U	1300 U	1700 U

LOCATION NAME:		SD-326	SD-319	SD-321	SD-107
SITE LOCATION:		ASBESTOS LAGOONS	BACKGROUND	BACKGROUND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-326-0.0-0.5-NX-128	SD-319-0.0-0.5-NX-088	SD-321-0.0-0.5-NX-151	SD-107-0.0-0.5-NX-062
DATE SAMPLED:		06/22/93	06/09/93	06/21/93	06/09/93
REMARKS:					
4-Bromophenyl-phenylether	330	26000 U	770 U	540 U	690 U
4-Chloro-3-methylphenol	330	26000 U	770 U	540 U	690 U
4-Chloroaniline	330	26000 U	770 U	540 U	690 U
4-Chlorophenyl-phenylether	330	26000 U	770 U	540 U	690 U
4-Methylphenol	330	26000 U	770 U	540 U	240 J
4-Nitroaniline	800	64000 U	1900 U	1300 U	1700 U
4-Nitrophenol	800	64000 U	1900 U	1300 U	1700 U
Acenaphthene	330	26000 U	770 U	540 U	28 J
Acenaphthylene	330	26000 U	770 U	540 U	690 U
Anthracene	330	26000 U	770 U	540 U	49 J
Benzo(a)anthracene	330	26000 U	770 U	42 J	150 J
Benzo(a)pyrene	330	26000 U	770 U	34 J	100 J
Benzo(b)fluoranthene	330	26000 U	72 J	110 J	180 J
Benzo(g,h,i)perylene	330	26000 U	770 U	48 J	690 U
Benzo(k)fluoranthene	330	26000 U	770 U	540 U	120 J
Bis(2-chloroethoxy)methane	330	26000 U	770 U	540 U	690 U
Bis(2-chloroethyl)ether	330	26000 U	770 U	540 U	690 U
Bis(2-ethylhexyl)phthalate	330	26000 U	770 U	140 J	690 U
Butylbenzylphthalate	330	26000 U	770 U	540 U	690 U
Carbazole	330	26000 U	770 U	540 U	690 U
Chrysene	330	26000 U	58 J	39 J	110 J
Di-n-butylphthalate	330	26000 U	770 U	540 U	690 U
Di-n-octylphthalate	330	26000 U	770 U	540 U	690 U
Dibenz(a,h)anthracene	330	26000 U	770 U	540 U	690 U
Dibenzofuran	330	26000 U	770 U	540 U	690 U
Diethylphthalate	330	26000 U	770 U	540 U	690 U
Dimethylphthalate	330	26000 U	770 U	540 U	690 U
Fluoranthene	330	26000 U	85 J	67 J	300 J
Fluorene	330	26000 U	770 U	540 U	61 J
Hexachlorobenzene	330	26000 U	770 U	540 U	690 U

LOCATION NAME:		SD-326	SD-319	SD-321	SD-107
SITE LOCATION:		ASBESTOS LAGOONS	BACKGROUND	BACKGROUND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-326-0.0-0.5-NX-128	SD-319-0.0-0.5-NX-088	SD-321-0.0-0.5-NX-151	SD-107-0.0-0.5-NX-062
DATE SAMPLED:		06/22/93	06/09/93	06/21/93	06/09/93
REMARKS:					
Hexachlorobutadiene	330	26000 U	770 U	540 U	690 U
Hexachlorocyclopentadiene	330	26000 U	770 U	540 U	690 U
Hexachloroethane	330	26000 U	770 U	540 U	690 U
Indeno(1,2,3-cd)pyrene	330	26000 U	770 U	40 J	690 U
Isophorone	330	26000 U	770 U	540 U	690 U
N-Nitroso-di-n-propylamine	330	26000 U	770 U	540 U	690 U
N-Nitrosodiphenylamine	330	26000 U	770 U	540 U	690 U
Naphthalene	330	26000 U	770 U	540 U	33 J
Nitrobenzene	330	26000 U	770 U	540 U	690 U
Pentachlorophenol	800	64000 U	1900 U	1300 U	1700 U
Phenanthrene	330	26000 U	65 J	46 J	250 J
Phenol	330	26000 U	770 U	540 U	690 U
Pyrene	330	26000 U	110 J	91 J	370 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	8.5 UJ	12	11	20
4,4'-DDE	3.3	8.5 UJ	10	3.2 J	11 J
4,4'-DDT	3.3	8.5 UJ	7.8 U	0.64 J	6.9 U
Aldrin	1.7	4.4 UJ	3.9 U	2.8 U	3.5 U
Dieldrin	3.3	8.5 UJ	0.87 J	0.11 J	2.3 J
Endosulfan I	1.7	0.21 J	3.9 U	1.1 J	3.5 U
Endosulfan II	3.3	8.5 UJ	7.8 U	5.4 U	6.9 U
Endosulfan Sulfate	3.3	8.5 UJ	7.8 U	5.4 U	6.9 U
Endrin	3.3	5.3 J	7.8 U	5.4 U	6.9 U
Endrin Aldehyde	3.3	8.5 UJ	7.8 U	5.4 U	6.9 U
Endrin Ketone	3.3	8.5 UJ	7.8 U	5.4 U	6.9 U
Heptachlor	1.7	4.4 UJ	3.9 U	2.8 U	3.5 U
Heptachlor Epoxide	1.7	1.0 J	3.9 U	2.8 U	3.5 U
Methoxychlor	17.0	3.3 J	39 U	28 U	35 U

LOCATION NAME:		SD-326	SD-319	SD-321	SD-107
SITE LOCATION:		ASBESTOS LAGOONS	BACKGROUND	BACKGROUND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-326-0.0-0.5-NX-128	SD-319-0.0-0.5-NX-088	SD-321-0.0-0.5-NX-151	SD-107-0.0-0.5-NX-062
DATE SAMPLED:		06/22/93	06/09/93	06/21/93	06/09/93
REMARKS:					
Toxaphene	170.0	440 UJ	390 U	280 U	350 U
alpha-BHC	1.7	0.46 J	3.9 U	2.8 U	3.5 U
alpha-Chlordane	1.7	4.4 UJ	1.6 J	2.8 U	3.5 U
beta-BHC	1.7	4.4 UJ	0.48 J	2.8 U	3.5 U
delta-BHC	1.7	4.4 UJ	0.24 J	0.19 J	3.5 U
gamma-BHC(Lindane)	1.7	4.4 UJ	3.9 U	2.8 U	3.5 U
gamma-Chlordane	1.7	4.4 UJ	1.8 J	2.8 U	3.5 U
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	85 UJ	9.6 J	54 U	69 U
Aroclor-1221	67.0	170 UJ	160 U	110 U	140 U
Aroclor-1232	33.0	85 UJ	78 U	54 U	69 U
Aroclor-1242	33.0	85 UJ	78 U	54 U	69 U
Aroclor-1248	33.0	85 UJ	78 U	36 J	31
Aroclor-1254	33.0	85 UJ	78 U	54 U	69 U
Aroclor-1260	33.0	85 UJ	78 U	54 U	69 U
METALS	CRDL(mg/kg)				
Aluminum	200	5730	5300	14800 J	3860
Antimony	60	7.2 UJ	8.1 U	-- R	6.1 U
Arsenic	10	4.8 J	5.2	5.0 J	6.0
Barium	200	49.5	26.1	59.1 J	20.5
Beryllium	5	0.6 U	0.82 U	2.7 J	0.46 U
Cadmium	5	0.69 UJ	0.8 U	-- R	0.6 U
Calcium	5000	186000	1490	6070	901
Chromium	10	15.4 J	10.2 U	14.2 J	8.5 U
Cobalt	50	2.6 UJ	3.8 U	6.2 J	5.2 U
Copper	25	8.1	9.7 U	16.9 J	10.3 U

LOCATION NAME:		SD-326	SD-319	SD-321	SD-107
SITE LOCATION:		ASBESTOS LAGOONS	BACKGROUND	BACKGROUND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-326-0.0-0.5-NX-128	SD-319-0.0-0.5-NX-088	SD-321-0.0-0.5-NX-151	SD-107-0.0-0.5-NX-062
DATE SAMPLED:		06/22/93	06/09/93	06/21/93	06/09/93
REMARKS:					
Iron	100	4490	6590	6260 J	6480
Lead	3	10.6	43.0	19.8 J	22.8
Magnesium	5000	4410	1760	1120 J	1260
Manganese	15	311	98.7	469 J	112
Mercury	0.2	0.11 U	0.11 U	0.29 J	0.09 U
Nickel	40	7.8 UJ	8.3 U	-- R	8.8 U
Potassium	5000	770	1040	323 J	366 U
Selenium	5	1.7 UJ	1.3 UJ	-- R	0.96 UJ
Silver	10	2.3 UJ	1.7 U	-- R	1.3 U
Sodium	5000	170 U	305 U	-- R	228 U
Thallium	10	0.94 UJ	1.4 U	-- R	1.0 U
Vanadium	50	19.5	14.4	11.3 J	8.1
Zinc	20	64.8 J	46.4	38.1 J	55.2
CYANIDE	CRDL(mg/kg)				
Cyanide	20	1.2 U	1.2 U	-- R	0.9 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	NA	26 U	43 UJ	33

LOCATION NAME:		SD-304	SD-030	SD-101	SD-102
SITE LOCATION:		B&M POND	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-304-0.0-0.5-NX-073	SD-30-0.0-0.5-NX-056	SD-101-0.0-0.5-NX-057	SD-102-0.0-0.5-FD-122
DATE SAMPLED:		06/11/93	06/15/93	06/16/93	06/15/93
REMARKS:					Field Duplicate
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	83 U	31 U	21 U	32 U
1,1,2,2-Tetrachloroethane	10	83 U	31 U	21 U	32 U
1,1,2-Trichloroethane	10	83 U	31 U	21 U	32 U
1,1-Dichloroethane	10	83 U	31 U	21 U	32 U
1,1-Dichloroethene	10	83 U	31 U	21 U	32 U
1,2-Dichloroethane	10	83 U	31 U	21 U	32 U
1,2-Dichloroethene(total)	10	83 UJ	31 U	21 U	32 U
1,2-Dichloropropane	10	83 U	31 U	21 U	32 U
2-Butanone	10	110	31 U	21 U	38
2-Hexanone	10	83 U	31 U	21 U	32 U
4-Methyl-2-pentanone	10	83 U	31 U	21 U	32 U
Acetone	10	310 U	51	26	130
Benzene	10	83 U	22 J	21 U	16 J
Bromodichloromethane	10	83 U	31 U	21 U	32 U
Bromoform	10	83 U	31 U	21 U	32 U
Bromomethane	10	83 U	31 U	21 U	32 U
Carbon Disulfide	10	83 U	31 U	21 U	32 U
Carbon Tetrachloride	10	83 U	31 U	21 U	32 U
Chlorobenzene	10	83 U	39	21 U	32 U
Chloroethane	10	83 U	31 U	21 U	32 U
Chloroform	10	83 U	31 U	21 U	32 U
Chloromethane	10	83 U	31 U	21 U	32 U
Dibromochloromethane	10	83 U	31 U	21 U	32 U
Ethylbenzene	10	83 U	31 U	21 U	32 U
Methylene Chloride	10	83 U	31 U	21 U	18 J
Styrene	10	83 U	31 U	21 U	32 U
Tetrachloroethene	10	83 U	31 U	21 U	32 U

LOCATION NAME:		SD-304	SD-030	SD-101	SD-102
SITE LOCATION:		B&M POND	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-304-0.0-0.5-NX-073	SD-30-0.0-0.5-NX-056	SD-101-0.0-0.5-NX-057	SD-102-0.0-0.5-FD-122
DATE SAMPLED:		06/11/93	06/15/93	06/16/93	06/15/93
REMARKS:					Field Duplicate
Toluene	10	83 U	31 U	21 U	32 U
Total Xylenes	10	83 U	110	21 U	32 U
Trichloroethene	10	83 U	31 U	21 U	32 U
Vinyl Chloride	10	83 U	31 U	21 U	32 U
cis-1,3-Dichloropropene	10	83 U	31 U	21 U	32 U
trans-1,3-Dichloropropene	10	83 U	31 U	21 U	32 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	2800 U	1000 U	690 U	1100 U
1,2-Dichlorobenzene	330	2800 U	1000 U	690 U	1100 U
1,3-Dichlorobenzene	330	2800 U	1000 U	690 U	1100 U
1,4-Dichlorobenzene	330	2800 U	1000 U	690 U	1100 U
2,2'-Oxybis(1-chloropropane)	330	2800 U	1000 U	690 U	1100 U
2,4,5-Trichlorophenol	800	6700 U	2500 U	1700 U	2600 U
2,4,6-Trichlorophenol	330	2800 U	1000 U	690 U	1100 U
2,4-Dichlorophenol	330	2800 U	1000 U	690 U	1100 U
2,4-Dimethylphenol	330	2800 U	1000 U	690 U	1100 U
2,4-Dinitrophenol	800	6700 U	2500 U	1700 U	2600 U
2,4-Dinitrotoluene	330	2800 U	1000 U	690 U	1100 U
2,6-Dinitrotoluene	330	2800 U	1000 U	690 U	1100 U
2-Chloronaphthalene	330	2800 U	1000 U	690 U	1100 U
2-Chlorophenol	330	2800 U	1000 U	690 U	1100 U
2-Methylnaphthalene	330	390 J	1000 U	40 J	1100 U
2-Methylphenol	330	2800 U	1000 U	690 U	1100 U
2-Nitroaniline	800	6700 U	2500 U	1700 U	2600 U
2-Nitrophenol	330	2800 U	1000 U	690 U	1100 U
3,3'-Dichlorobenzidine	330	2800 U	1000 U	690 U	1100 U
3-Nitroaniline	800	6700 U	2500 U	1700 U	2600 U
4,6-Dinitro-2-methylphenol	800	6700 U	2500 U	1700 U	2600 U

LOCATION NAME:		SD-304	SD-030	SD-101	SD-102
SITE LOCATION:		B&M POND	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-304-0.0-0.5-NX-073	SD-30-0.0-0.5-NX-056	SD-101-0.0-0.5-NX-057	SD-102-0.0-0.5-FD-122
DATE SAMPLED:		06/11/93	06/15/93	06/16/93	06/15/93
REMARKS:					Field Duplicate
4-Bromophenyl-phenylether	330	2800 U	1000 U	690 U	1100 U
4-Chloro-3-methylphenol	330	2800 U	1000 U	690 U	1100 U
4-Chloroaniline	330	2800 U	1000 U	690 U	1100 U
4-Chlorophenyl-phenylether	330	2800 U	1000 U	690 U	1100 U
4-Methylphenol	330	250 J	1000 U	690 U	1100 U
4-Nitroaniline	800	6700 U	2500 U	1700 U	2600 U
4-Nitrophenol	800	6700 U	2500 U	1700 U	2600 U
Acenaphthene	330	1300 J	1000 U	690 U	1100 U
Acenaphthylene	330	220 J	1000 U	690 U	1100 U
Anthracene	330	770 J	1000 U	690 U	42 J
Benzo(a)anthracene	330	2900	1000 U	690 U	260 J
Benzo(a)pyrene	330	1600 J	1000 U	690 U	190 J
Benzo(b)fluoranthene	330	3300 J	60 J	690 U	540 J
Benzo(g,h,i)perylene	330	2800 UJ	1000 U	690 U	1100 U
Benzo(k)fluoranthene	330	2500 J	1000 U	690 U	1100 U
Bis(2-chloroethoxy)methane	330	2800 U	1000 U	690 U	1100 U
Bis(2-chloroethyl)ether	330	2800 U	1000 U	690 U	1100 U
Bis(2-ethylhexyl)phthalate	330	6500	87 J	690 U	1100 U
Butylbenzylphthalate	330	1800 J	1000 U	690 U	1100 U
Carbazole	330	370 J	1000 U	690 U	1100 U
Chrysene	330	2700 J	1000 U	690 U	320 J
Di-n-butylphthalate	330	2800 U	1000 U	690 U	1100 U
Di-n-octylphthalate	330	2800 UJ	1000 U	690 U	1100 U
Dibenz(a,h)anthracene	330	2800 UJ	1000 U	690 U	1100 U
Dibenzofuran	330	560 J	1000 U	690 U	1100 U
Diethylphthalate	330	2800 U	1000 U	690 U	1100 U
Dimethylphthalate	330	2800 U	1000 U	690 U	1100 U
Fluoranthene	330	6800	61 J	690 U	490 J
Fluorene	330	1100 J	1000 U	690 U	59 J
Hexachlorobenzene	330	2800 U	1000 U	690 U	1100 U

LOCATION NAME:		SD-304	SD-030	SD-101	SD-102
SITE LOCATION:		B&M POND	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-304-0.0-0.5-NX-073	SD-30-0.0-0.5-NX-056	SD-101-0.0-0.5-NX-057	SD-102-0.0-0.5-FD-122
DATE SAMPLED:		06/11/93	06/15/93	06/16/93	06/15/93
REMARKS:					Field Duplicate
Hexachlorobutadiene	330	2800 U	1000 U	690 U	1100 U
Hexachlorocyclopentadiene	330	2800 U	1000 U	690 U	1100 U
Hexachloroethane	330	2800 U	1000 U	690 U	1100 U
Indeno(1,2,3-cd)pyrene	330	950 J	1000 U	690 U	140 J
Isophorone	330	2800 U	1000 U	690 U	1100 U
N-Nitroso-di-n-propylamine	330	2800 U	1000 U	690 U	1100 U
N-Nitrosodiphenylamine	330	270 J	1000 U	690 U	1100 U
Naphthalene	330	810 J	190 J	40 J	52 J
Nitrobenzene	330	2800 U	1000 U	690 U	1100 U
Pentachlorophenol	800	6700 U	2500 U	1700 U	2600 U
Phenanthrene	330	4200	45 J	35 J	460 J
Phenol	330	2800 U	1000 U	690 U	1100 U
Pyrene	330	6700	48 J	690 U	530 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	83 J	1.2 J	0.46 J	5.6 J
4,4'-DDE	3.3	47 J	6.2 J	0.16 J	1.3 UJ
4,4'-DDT	3.3	28 U	10 U	6.9 U	11 UJ
Aldrin	1.7	14 U	0.31 J	3.5 U	5.5 UJ
Dieldrin	3.3	2.7 J	1.4 J	6.9 U	0.17 UJ
Endosulfan I	1.7	14 U	5.3 U	3.5 U	5.5 UJ
Endosulfan II	3.3	8.0 J	10 U	6.9 U	0.34 J
Endosulfan Sulfate	3.3	1.5 J	10 U	6.9 U	11 UJ
Endrin	3.3	5.5 J	10 U	6.9 U	11 UJ
Endrin Aldehyde	3.3	190 J	10 U	6.9 U	11 UJ
Endrin Ketone	3.3	28 U	10 U	6.9 U	11 UJ
Heptachlor	1.7	14 U	0.54 J	3.5 U	5.5 UJ
Heptachlor Epoxide	1.7	14 U	0.33 J	0.32 J	0.24 J
Methoxychlor	17.0	140 U	53 U	0.98 J	55 UJ

LOCATION NAME:		SD-304	SD-030	SD-101	SD-102
SITE LOCATION:		B&M POND	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-304-0.0-0.5-NX-073	SD-30-0.0-0.5-NX-056	SD-101-0.0-0.5-NX-057	SD-102-0.0-0.5-FD-122
DATE SAMPLED:		06/11/93	06/15/93	06/16/93	06/15/93
REMARKS:					Field Duplicate
Toxaphene	170.0	1400 U	530 U	350 U	550 UJ
alpha-BHC	1.7	14 U	5.3 U	3.5 U	5.5 UJ
alpha-Chlordane	1.7	14 U	5.3 U	3.5 U	5.5 UJ
beta-BHC	1.7	14 U	5.3 U	3.5 U	5.5 UJ
delta-BHC	1.7	3.3 J	5.3 U	3.5 U	5.5 UJ
gamma-BHC(Lindane)	1.7	8.3 J	5.3 U	3.5 U	5.5 UJ
gamma-Chlordane	1.7	14 U	0.29 J	0.18 J	5.5 UJ
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	280 U	100 U	69 U	110 UJ
Aroclor-1221	67.0	560 U	210 U	140 U	220 UJ
Aroclor-1232	33.0	280 U	100 U	69 U	110 UJ
Aroclor-1242	33.0	280 U	100 U	69 U	110 UJ
Aroclor-1248	33.0	570	100 U	69 U	110 UJ
Aroclor-1254	33.0	280 U	100 U	69 U	110 UJ
Aroclor-1260	33.0	280 U	100 U	69 U	110 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	6180 J	7490	2640	7880
Antimony	60	-- R	11.8 U	7.3 UJ	12.0 U
Arsenic	10	40.8 J	256	2.7 J	20.8
Barium	200	197 J	253	20.6	45.6
Beryllium	5	1.7 U	0.78 U	0.45 U	0.86 U
Cadmium	5	3.4 J	0.9 UJ	0.7 U	0.9 U
Calcium	5000	6150 J	13800	1440	3430
Chromium	10	106 J	14.7	4.6 U	14.7
Cobalt	50	24.0 J	17.7	2.7 U	2.5 U
Copper	25	157 J	15.4 U	3.5 U	17.5 U

LOCATION NAME:		SD-304	SD-030	SD-101	SD-102
SITE LOCATION:		B&M POND	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-304-0.0-0.5-NX-073	SD-30-0.0-0.5-NX-056	SD-101-0.0-0.5-NX-057	SD-102-0.0-0.5-FD-122
DATE SAMPLED:		06/11/93	06/15/93	06/16/93	06/15/93
REMARKS:					Field Duplicate
Iron	100	32400 J	76300	3810	11100
Lead	3	396 J	39.3	5.5 J	100
Magnesium	5000	1270 J	2350	557	1580
Manganese	15	745 J	2080	182	203
Mercury	0.2	0.95 J	0.16	0.11 U	0.26
Nickel	40	41.2 U	9.9 U	2.6 U	6.2 U
Potassium	5000	700 J	1070	169 U	336
Selenium	5	4.7 J	2.5	1.5 UJ	2.4
Silver	10	-- R	6.7	1.5 U	2.1 U
Sodium	5000	894 U	1770 J	188 U	420 U
Thallium	10	-- R	0.9 U	0.6 U	0.9 U
Vanadium	50	32.1 J	19.5	6.0	22.7
Zinc	20	998 J	40.3	11.7 UJ	61.3
CYANIDE	CRDL(mg/kg)				
Cyanide	20	-- R	1.7 U	1.0 U	1.5 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	110	32 U	20 U	46 J

LOCATION NAME:		SD-102	SD-113	SD-117	SD-305
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-102-0.0-0.5-NX-058	SD-113-0.0-0.5-NX-066	SD-117-0.0-0.5-NX-068	SD-305-0.0-0.5-NX-074
DATE SAMPLED:		06/15/93	06/16/93	06/16/93	06/11/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	33 U	16 U	14 U	15 U
1,1,2,2-Tetrachloroethane	10	33 U	16 U	14 U	15 U
1,1,2-Trichloroethane	10	33 U	16 U	14 U	15 U
1,1-Dichloroethane	10	33 U	16 U	14 U	15 U
1,1-Dichloroethene	10	33 U	16 U	14 U	15 U
1,2-Dichloroethane	10	33 U	16 U	14 U	15 U
1,2-Dichloroethene(total)	10	33 U	16 U	14 U	15 UJ
1,2-Dichloropropane	10	33 U	16 U	14 U	15 U
2-Butanone	10	28 J	16 U	14 U	15 U
2-Hexanone	10	33 U	16 U	14 U	15 U
4-Methyl-2-pentanone	10	33 U	16 U	14 U	15 U
Acetone	10	93	16 U	7 J	16 U
Benzene	10	17 J	16 U	14 U	15 U
Bromodichloromethane	10	33 U	16 U	14 U	15 U
Bromoform	10	33 U	16 U	14 U	15 U
Bromomethane	10	33 U	16 U	14 U	15 U
Carbon Disulfide	10	33 U	16 U	14 U	15 U
Carbon Tetrachloride	10	33 U	16 U	14 U	15 U
Chlorobenzene	10	33 U	16 U	14 U	15 U
Chloroethane	10	33 U	16 U	14 U	15 U
Chloroform	10	33 U	16 U	14 U	15 U
Chloromethane	10	33 U	16 U	14 U	15 U
Dibromochloromethane	10	33 U	16 U	14 U	15 U
Ethylbenzene	10	33 U	16 U	14 U	15 U
Methylene Chloride	10	33 U	16 U	14 U	15 U
Styrene	10	33 U	16 U	14 U	15 U
Tetrachloroethene	10	33 U	16 U	14 U	15 U

LOCATION NAME:		SD-102	SD-113	SD-117	SD-305
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-102-0.0-0.5-NX-058	SD-113-0.0-0.5-NX-066	SD-117-0.0-0.5-NX-068	SD-305-0.0-0.5-NX-074
DATE SAMPLED:		06/15/93	06/16/93	06/16/93	06/11/93
REMARKS:					
Toluene	10	33 U	16 U	14 U	15 U
Total Xylenes	10	33 U	16 U	14 U	15 U
Trichloroethene	10	33 U	16 U	14 U	15 U
Vinyl Chloride	10	33 U	16 U	14 U	15 U
cis-1,3-Dichloropropene	10	33 U	16 U	14 U	15 U
trans-1,3-Dichloropropene	10	33 U	16 U	14 U	15 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	1100 U	520 U	450 U	490 U
1,2-Dichlorobenzene	330	1100 U	520 U	450 U	490 U
1,3-Dichlorobenzene	330	1100 U	520 U	450 U	490 U
1,4-Dichlorobenzene	330	1100 U	520 U	450 U	490 U
2,2'-Oxybis(1-chloropropane)	330	1100 U	520 U	450 U	490 U
2,4,5-Trichlorophenol	800	2700 U	1300 U	1100 U	1200 U
2,4,6-Trichlorophenol	330	1100 U	520 U	450 U	490 U
2,4-Dichlorophenol	330	1100 U	520 U	450 U	490 U
2,4-Dimethylphenol	330	1100 U	520 U	450 U	490 U
2,4-Dinitrophenol	800	2700 U	1300 U	1100 U	1200 U
2,4-Dinitrotoluene	330	1100 U	520 U	450 U	490 U
2,6-Dinitrotoluene	330	1100 U	520 U	450 U	490 U
2-Chloronaphthalene	330	1100 U	520 U	450 U	490 U
2-Chlorophenol	330	1100 U	520 U	450 U	490 U
2-Methylnaphthalene	330	1100 U	100 J	450 U	21 J
2-Methylphenol	330	1100 U	520 U	450 U	490 U
2-Nitroaniline	800	2700 U	1300 U	1100 U	1200 U
2-Nitrophenol	330	1100 U	520 U	450 U	490 U
3,3'-Dichlorobenzidine	330	1100 U	520 U	450 U	490 U
3-Nitroaniline	800	2700 U	1300 U	1100 U	1200 U
4,6-Dinitro-2-methylphenol	800	2700 U	1300 U	1100 U	1200 U

LOCATION NAME:		SD-102	SD-113	SD-117	SD-305
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-102-0.0-0.5-NX-058	SD-113-0.0-0.5-NX-066	SD-117-0.0-0.5-NX-068	SD-305-0.0-0.5-NX-074
DATE SAMPLED:		06/15/93	06/16/93	06/16/93	06/11/93
REMARKS:					
4-Bromophenyl-phenylether	330	1100 U	520 U	450 U	490 U
4-Chloro-3-methylphenol	330	1100 U	520 U	450 U	490 U
4-Chloroaniline	330	1100 U	520 U	450 U	490 U
4-Chlorophenyl-phenylether	330	1100 U	520 U	450 U	490 U
4-Methylphenol	330	1100 U	51 J	450 U	490 U
4-Nitroaniline	800	2700 U	1300 U	1100 U	1200 U
4-Nitrophenol	800	2700 U	1300 U	1100 U	1200 U
Acenaphthene	330	1100 U	520 U	450 U	53 J
Acenaphthylene	330	1100 U	520 U	450 U	490 U
Anthracene	330	1100 U	25 J	450 U	37 J
Benzo(a)anthracene	330	150 J	110 J	450 U	160 J
Benzo(a)pyrene	330	120 J	61 J	450 U	490 U
Benzo(b)fluoranthene	330	350 J	190 J	450 U	240 J
Benzo(g,h,i)perylene	330	1100 U	520 U	450 U	490 U
Benzo(k)fluoranthene	330	1100 U	520 U	450 U	490 U
Bis(2-chloroethoxy)methane	330	1100 U	520 U	450 U	490 U
Bis(2-chloroethyl)ether	330	1100 U	520 U	450 U	490 U
Bis(2-ethylhexyl)phthalate	330	1100 U	520 U	450 U	89 J
Butylbenzylphthalate	330	1100 U	520 U	450 U	490 U
Carbazole	330	1100 U	520 U	450 U	490 U
Chrysene	330	190 J	160 J	450 U	130 J
Di-n-butylphthalate	330	1100 U	520 U	450 U	490 U
Di-n-octylphthalate	330	1100 U	520 U	450 U	490 U
Dibenz(a,h)anthracene	330	1100 U	520 U	450 U	490 U
Dibenzofuran	330	1100 U	61 J	450 U	35 J
Diethylphthalate	330	1100 U	520 U	450 U	490 U
Dimethylphthalate	330	1100 U	520 U	450 U	490 U
Fluoranthene	330	93 J	160 J	23 J	440 J
Fluorene	330	1100 U	39 J	450 U	51 J
Hexachlorobenzene	330	1100 U	520 U	450 U	490 U

LOCATION NAME:		SD-102	SD-113	SD-117	SD-305
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-102-0.0-0.5-NX-058	SD-113-0.0-0.5-NX-066	SD-117-0.0-0.5-NX-068	SD-305-0.0-0.5-NX-074
DATE SAMPLED:		06/15/93	06/16/93	06/16/93	06/11/93
REMARKS:					
Hexachlorobutadiene	330	1100 U	520 U	450 U	490 U
Hexachlorocyclopentadiene	330	1100 U	520 U	450 U	490 U
Hexachloroethane	330	1100 U	520 U	450 U	490 U
Indeno(1,2,3-cd)pyrene	330	1100 U	38 J	450 U	490 U
Isophorone	330	1100 U	520 U	450 U	490 U
N-Nitroso-di-n-propylamine	330	1100 U	520 U	450 U	490 U
N-Nitrosodiphenylamine	330	1100 U	520 U	450 U	490 U
Naphthalene	330	58 J	180 J	19 J	35 J
Nitrobenzene	330	1100 U	520 U	450 U	490 U
Pentachlorophenol	800	2700 U	1300 U	1100 U	1200 U
Phenanthrene	330	270 J	170 J	450 U	170 J
Phenol	330	1100 U	520 U	450 U	490 U
Pyrene	330	76 J	180 J	30 J	410 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	27	1.0 J	4.5 U	4.9 U
4,4'-DDE	3.3	5.9 J	3.1 J	0.24 J	1.4 J
4,4'-DDT	3.3	11 U	5.2 U	4.5 U	4.9 U
Aldrin	1.7	5.7 U	2.7 U	2.3 U	2.5 U
Dieldrin	3.3	1.0 J	2.4 J	4.5 U	0.72 J
Endosulfan I	1.7	0.39 J	2.7 U	2.3 U	2.5 U
Endosulfan II	3.3	11 U	5.2 U	4.5 U	4.9 U
Endosulfan Sulfate	3.3	11 U	5.2 U	4.5 U	4.9 U
Endrin	3.3	11 U	5.2 U	4.5 U	4.9 U
Endrin Aldehyde	3.3	11 U	5.2 U	4.5 U	4.9 U
Endrin Ketone	3.3	11 U	2.3 J	0.16 J	4.9 U
Heptachlor	1.7	5.7 U	2.7 U	2.3 U	2.5 U
Heptachlor Epoxide	1.7	0.22 J	0.74 J	2.3 U	2.5 U
Methoxychlor	17.0	1.9 J	27 U	0.48 J	25 U

LOCATION NAME:		SD-102	SD-113	SD-117	SD-305
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-102-0.0-0.5-NX-058	SD-113-0.0-0.5-NX-066	SD-117-0.0-0.5-NX-068	SD-305-0.0-0.5-NX-074
DATE SAMPLED:		06/15/93	06/16/93	06/16/93	06/11/93
REMARKS:					
Toxaphene	170.0	570 U	270 U	230 U	250 U
alpha-BHC	1.7	5.7 U	2.7 U	2.3 U	2.5 U
alpha-Chlordane	1.7	5.7 U	2.7 U	2.3 U	2.5 U
beta-BHC	1.7	5.7 U	2.7 U	2.3 U	0.19 J
delta-BHC	1.7	5.7 U	2.7 U	2.3 U	2.5 U
gamma-BHC(Lindane)	1.7	5.7 U	2.7 U	2.3 U	2.5 U
gamma-Chlordane	1.7	0.29 J	0.13 J	2.3 U	2.5 U
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	110 U	52 U	45 U	49 U
Aroclor-1221	67.0	220 U	110 U	91 U	98 U
Aroclor-1232	33.0	110 U	52 U	45 U	49 U
Aroclor-1242	33.0	110 U	52 U	45 U	49 U
Aroclor-1248	33.0	110 U	52 U	45 U	24
Aroclor-1254	33.0	110 U	52 U	45 U	49 U
Aroclor-1260	33.0	110 U	52 U	45 U	49 U
METALS	CRDL(mg/kg)				
Aluminum	200	7840	3620	3160	6380
Antimony	60	12.7 U	4.8 UJ	4.8 UJ	5.3 U
Arsenic	10	21.2	4.4 J	4.6 J	11.3
Barium	200	47.6	30.8	21.9	18.6
Beryllium	5	0.85 U	0.32 U	0.42 U	0.40 U
Cadmium	5	1.0 U	0.5 U	0.5 U	0.5 U
Calcium	5000	3390	619	410	663
Chromium	10	16.1	9.6 U	7.7 U	7.7 U
Cobalt	50	3.4	3.4	1.6 U	3.0 U
Copper	25	18.4 U	8.4	2.0 U	7.2 U

LOCATION NAME:		SD-102	SD-113	SD-117	SD-305
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-102-0.0-0.5-NX-058	SD-113-0.0-0.5-NX-066	SD-117-0.0-0.5-NX-068	SD-305-0.0-0.5-NX-074
DATE SAMPLED:		06/15/93	06/16/93	06/16/93	06/11/93
REMARKS:					
Iron	100	13000	5510	4710	6970
Lead	3	101	17.3 J	7.8 J	16.7
Magnesium	5000	1720	1660	1200	1080
Manganese	15	230	67.2	79.2	264
Mercury	0.2	0.24	0.07 U	0.06 U	0.07 U
Nickel	40	7.8 U	8.8 U	3.8 U	5.4 U
Potassium	5000	348	303	604	364
Selenium	5	1.6 U	0.93 UJ	1.4 J	0.92 J
Silver	10	2.3 U	1.0 U	1.0 U	1.1 U
Sodium	5000	407 U	113 U	124 U	184 U
Thallium	10	1.0 U	0.4 U	0.4 U	0.9 U
Vanadium	50	24.4	8.8	9.8	8.2
Zinc	20	65.5	20.2	10.0 UJ	26.6
CYANIDE	CRDL(mg/kg)				
Cyanide	20	1.7 U	0.6 U	0.7 U	0.7 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	32 UJ	18 U	16 U	49

LOCATION NAME:		SD-306	SD-019	SD-020	SD-103
SITE LOCATION:		DRAINAGE DITCH	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-306-0.0-0.5-NX-075	SD-019-0.0-0.5-NX-050	SD-020-0.0-0.5-NX-051	SD-103-0.0-0.5-NX-059
DATE SAMPLED:		06/11/93	06/17/93	06/15/93	06/17/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	14 U	15 U	12 U	16 U
1,1,2,2-Tetrachloroethane	10	14 U	15 U	12 U	16 U
1,1,2-Trichloroethane	10	14 U	15 U	12 U	16 U
1,1-Dichloroethane	10	14 U	15 U	12 U	16 U
1,1-Dichloroethene	10	14 U	15 U	12 U	16 U
1,2-Dichloroethane	10	14 U	15 U	12 U	16 U
1,2-Dichloroethene(total)	10	14 UJ	15 U	12 U	16 U
1,2-Dichloropropane	10	14 U	15 U	12 U	16 U
2-Butanone	10	14 U	15 U	12 U	16 U
2-Hexanone	10	14 U	15 U	12 U	16 U
4-Methyl-2-pentanone	10	14 U	15 U	12 U	16 U
Acetone	10	14 U	8 J	12 U	20 J
Benzene	10	14 U	15 U	7 J	16 U
Bromodichloromethane	10	14 U	15 U	12 U	16 U
Bromoform	10	14 U	15 U	12 U	16 U
Bromomethane	10	14 U	15 U	12 U	16 U
Carbon Disulfide	10	14 U	15 U	12 U	16 U
Carbon Tetrachloride	10	14 U	15 U	12 U	16 U
Chlorobenzene	10	14 U	15 U	12 U	16 U
Chloroethane	10	14 U	15 U	12 U	16 U
Chloroform	10	14 U	15 U	12 U	16 U
Chloromethane	10	14 U	15 U	12 U	16 U
Dibromochloromethane	10	14 U	15 U	12 U	16 U
Ethylbenzene	10	14 U	15 U	12 U	16 U
Methylene Chloride	10	14 U	15 U	12 U	16 U
Styrene	10	14 U	15 U	12 U	16 U
Tetrachloroethene	10	14 U	15 U	12 U	16 U

LOCATION NAME:		SD-306	SD-019	SD-020	SD-103
SITE LOCATION:		DRAINAGE DITCH	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-306-0.0-0.5-NX-075	SD-019-0.0-0.5-NX-050	SD-020-0.0-0.5-NX-051	SD-103-0.0-0.5-NX-059
DATE SAMPLED:		06/11/93	06/17/93	06/15/93	06/17/93
REMARKS:					
Toluene	10	14 U	25	12 U	24
Total Xylenes	10	14 U	15 U	12 U	9 J
Trichloroethene	10	14 U	15 U	12 U	16 U
Vinyl Chloride	10	14 U	15 U	12 U	16 U
cis-1,3-Dichloropropene	10	14 U	15 U	12 U	16 U
trans-1,3-Dichloropropene	10	14 U	15 U	12 U	16 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	470 U	510 U	400 U	520 U
1,2-Dichlorobenzene	330	470 U	510 U	400 U	520 U
1,3-Dichlorobenzene	330	470 U	510 U	400 U	520 U
1,4-Dichlorobenzene	330	470 U	510 U	400 U	520 U
2,2'-Oxybis(1-chloropropane)	330	470 U	510 U	400 U	520 U
2,4,5-Trichlorophenol	800	1100 U	1200 U	980 U	1300 U
2,4,6-Trichlorophenol	330	470 U	510 U	400 U	520 U
2,4-Dichlorophenol	330	470 U	510 U	400 U	520 U
2,4-Dimethylphenol	330	470 U	510 U	400 U	520 U
2,4-Dinitrophenol	800	1100 U	1200 U	980 U	1300 U
2,4-Dinitrotoluene	330	470 U	510 U	400 U	520 U
2,6-Dinitrotoluene	330	470 U	510 U	400 U	520 U
2-Chloronaphthalene	330	470 U	510 U	400 U	520 U
2-Chlorophenol	330	470 U	510 U	400 U	520 U
2-Methylnaphthalene	330	90 J	510 U	400 U	520 U
2-Methylphenol	330	470 U	510 U	400 U	520 U
2-Nitroaniline	800	1100 U	1200 U	980 U	1300 U
2-Nitrophenol	330	470 U	510 U	400 U	520 U
3,3'-Dichlorobenzidine	330	470 U	510 U	400 U	520 U
3-Nitroaniline	800	1100 U	1200 U	980 U	1300 U
4,6-Dinitro-2-methylphenol	800	1100 U	1200 U	980 U	1300 U

LOCATION NAME:		SD-306	SD-019	SD-020	SD-103
SITE LOCATION:		DRAINAGE DITCH	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-306-0.0-0.5-NX-075	SD-019-0.0-0.5-NX-050	SD-020-0.0-0.5-NX-051	SD-103-0.0-0.5-NX-059
DATE SAMPLED:		06/11/93	06/17/93	06/15/93	06/17/93
REMARKS:					
4-Bromophenyl-phenylether	330	470 U	510 U	400 U	520 U
4-Chloro-3-methylphenol	330	470 U	510 U	400 U	520 U
4-Chloroaniline	330	470 U	510 U	400 U	520 U
4-Chlorophenyl-phenylether	330	470 U	510 U	400 U	520 U
4-Methylphenol	330	230 J	50 J	400 U	520 U
4-Nitroaniline	800	1100 U	1200 U	980 U	1300 U
4-Nitrophenol	800	1100 U	1200 U	980 U	1300 U
Acenaphthene	330	32 J	510 U	400 U	520 U
Acenaphthylene	330	53 J	510 U	400 U	520 U
Anthracene	330	62 J	510 U	400 U	520 U
Benzo(a)anthracene	330	280 J	510 U	400 U	520 U
Benzo(a)pyrene	330	130 J	43 J	400 U	520 U
Benzo(b)fluoranthene	330	450 J	42 J	400 U	520 U
Benzo(g,h,i)perylene	330	56 J	510 U	400 U	520 U
Benzo(k)fluoranthene	330	230 J	510 U	400 U	520 U
Bis(2-chloroethoxy)methane	330	470 U	510 U	400 U	520 U
Bis(2-chloroethyl)ether	330	470 U	510 U	400 U	520 U
Bis(2-ethylhexyl)phthalate	330	62 J	68 J	240 J	520 U
Butylbenzylphthalate	330	470 U	510 U	400 U	520 U
Carbazole	330	31 J	510 U	400 U	520 U
Chrysene	330	260 J	27 J	400 U	520 U
Di-n-butylphthalate	330	470 U	510 U	400 U	520 U
Di-n-octylphthalate	330	470 U	510 U	400 U	520 U
Dibenz(a,h)anthracene	330	470 U	510 U	400 U	520 U
Dibenzofuran	330	88 J	510 U	400 U	520 U
Diethylphthalate	330	530 U	510 U	400 U	520 U
Dimethylphthalate	330	470 U	510 U	400 U	520 U
Fluoranthene	330	530	51 J	400 U	520 U
Fluorene	330	470 U	510 U	400 U	520 U
Hexachlorobenzene	330	470 U	510 U	400 U	520 U

LOCATION NAME:		SD-306	SD-019	SD-020	SD-103
SITE LOCATION:		DRAINAGE DITCH	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-306-0.0-0.5-NX-075	SD-019-0.0-0.5-NX-050	SD-020-0.0-0.5-NX-051	SD-103-0.0-0.5-NX-059
DATE SAMPLED:		06/11/93	06/17/93	06/15/93	06/17/93
REMARKS:					
Hexachlorobutadiene	330	470 U	510 U	400 U	520 U
Hexachlorocyclopentadiene	330	470 U	510 U	400 U	520 U
Hexachloroethane	330	470 U	510 U	400 U	520 U
Indeno(1,2,3-cd)pyrene	330	96 J	510 U	400 U	520 U
Isophorone	330	470 U	510 U	400 U	520 U
N-Nitroso-di-n-propylamine	330	470 U	510 U	400 U	520 U
N-Nitrosodiphenylamine	330	470 U	510 U	400 U	520 U
Naphthalene	330	91 J	510 U	400 U	68 J
Nitrobenzene	330	470 U	510 U	400 U	520 U
Pentachlorophenol	800	1100 U	1200 U	980 U	1300 U
Phenanthrene	330	240 J	35 J	400 U	520 U
Phenol	330	470 U	510 U	400 U	520 U
Pyrene	330	520	48 J	400 U	520 U
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	7.3 J	3.0 J	4.0 U	0.26 J
4,4'-DDE	3.3	3.3 J	1.9 J	0.27 J	0.64 J
4,4'-DDT	3.3	4.8 U	5.1 U	4.0 U	5.2 U
Aldrin	1.7	0.08 J	2.6 U	2.1 U	2.7 U
Dieldrin	3.3	1.7 J	0.30 J	4.0 U	5.2 U
Endosulfan I	1.7	2.4 U	0.24 J	2.1 U	2.7 U
Endosulfan II	3.3	0.90 J	5.1 U	4.0 U	5.2 U
Endosulfan Sulfate	3.3	4.8 U	5.1 U	4.0 U	5.2 U
Endrin	3.3	0.20 J	5.1 U	4.0 U	0.16 J
Endrin Aldehyde	3.3	8.2 J	5.1 U	4.0 U	5.2 U
Endrin Ketone	3.3	4.8 U	5.1 U	4.0 U	5.2 U
Heptachlor	1.7	2.4 U	2.6 U	2.1 U	2.7 U
Heptachlor Epoxide	1.7	2.4 U	2.6 U	2.1 U	2.7 U
Methoxychlor	17.0	24 U	0.22 J	21 U	27 U

LOCATION NAME:		SD-306	SD-019	SD-020	SD-103
SITE LOCATION:		DRAINAGE DITCH	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-306-0.0-0.5-NX-075	SD-019-0.0-0.5-NX-050	SD-020-0.0-0.5-NX-051	SD-103-0.0-0.5-NX-059
DATE SAMPLED:		06/11/93	06/17/93	06/15/93	06/17/93
REMARKS:					
Toxaphene	170.0	240 U	260 U	210 U	270 U
alpha-BHC	1.7	2.4 U	2.6 U	2.1 U	2.7 U
alpha-Chlordane	1.7	2.4 U	2.6 U	2.1 U	2.7 U
beta-BHC	1.7	2.4 U	2.6 U	2.1 U	2.7 U
delta-BHC	1.7	2.4 U	0.13 J	2.1 U	2.7 U
gamma-BHC(Lindane)	1.7	0.23 J	2.6 U	2.1 U	2.7 U
gamma-Chlordane	1.7	2.4 U	0.14 J	2.1 U	2.7 U
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	48 U	51 U	40 U	52 U
Aroclor-1221	67.0	95 U	100 U	82 U	110 U
Aroclor-1232	33.0	48 U	51 U	40 U	52 U
Aroclor-1242	33.0	48 U	19 J	40 U	52 U
Aroclor-1248	33.0	16 J	51 U	40 U	52 U
Aroclor-1254	33.0	48 U	51 U	40 U	52 U
Aroclor-1260	33.0	48 U	51 U	40 U	52 U
METALS	CRDL(mg/kg)				
Aluminum	200	6310	3010	3050	3370
Antimony	60	6.1 U	5.0 UJ	4.5 U	5.6 UJ
Arsenic	10	10.7	5.5 J	8.9	2.7 J
Barium	200	31.6	39.7	20.1	29.6
Beryllium	5	0.48 U	0.32 U	0.14 U	0.35 U
Cadmium	5	0.6 U	0.5 U	0.3 U	0.5 U
Calcium	5000	596	678	506	951
Chromium	10	16.8 U	6.5 U	6.4 U	6.0 U
Cobalt	50	4.5 U	4.6	2.5 U	3.7
Copper	25	89.1	4.5 U	5.0 UJ	4.2 U

LOCATION NAME:		SD-306	SD-019	SD-020	SD-103
SITE LOCATION:		DRAINAGE DITCH	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-306-0.0-0.5-NX-075	SD-019-0.0-0.5-NX-050	SD-020-0.0-0.5-NX-051	SD-103-0.0-0.5-NX-059
DATE SAMPLED:		06/11/93	06/17/93	06/15/93	06/17/93
REMARKS:					
Iron	100	10900	4900	6300	4450
Lead	3	151	6.7 J	3.9	3.6 J
Magnesium	5000	2200	860	1180	1080
Manganese	15	113	601	189	89.6
Mercury	0.2	0.15 J	0.07 U	0.06 U	0.08 U
Nickel	40	16.8 U	5.7 U	4.5 U	6.5 U
Potassium	5000	669	363	509	440
Selenium	5	1.1 J	1.0 UJ	0.6 U	1.1 UJ
Silver	10	1.3 U	1.1 U	0.8 U	1.2 U
Sodium	5000	188 U	106 U	138 U	187 U
Thallium	10	1.0 UJ	0.4 U	0.3 U	0.4 U
Vanadium	50	14.8	6.6	5.8	6.4
Zinc	20	123	27.7	20.4	14.2 U
CYANIDE	CRDL(mg/kg)				
Cyanide	20	0.9 U	0.7 U	0.6 U	0.8 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	92	23 U	15 U	17 U

LOCATION NAME:		SD-104	SD-105	SD-106	SD-116
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-104-0.0-0.5-NX-060	SD-105-0.0-0.5-NX-061	SD-106-0.0-0.5-NX-049	SD-116-0.0-0.5-NX-067
DATE SAMPLED:		06/17/93	06/17/93	06/21/93	06/21/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	67 U	24 U	42 U	19 U
1,1,2,2-Tetrachloroethane	10	67 U	24 U	42 U	19 U
1,1,2-Trichloroethane	10	67 U	24 U	42 U	19 U
1,1-Dichloroethane	10	67 U	24 U	42 U	19 U
1,1-Dichloroethene	10	67 U	24 U	42 U	19 U
1,2-Dichloroethane	10	67 U	24 U	42 U	19 U
1,2-Dichloroethene(total)	10	67 U	24 U	42 U	19 U
1,2-Dichloropropane	10	67 U	24 U	42 U	19 U
2-Butanone	10	35 J	24 U	31 J	19 U
2-Hexanone	10	67 U	24 U	42 U	19 U
4-Methyl-2-pentanone	10	67 U	24 U	42 U	19 U
Acetone	10	120 J	31 J	96 J	14 J
Benzene	10	67 U	24 U	42 U	19 U
Bromodichloromethane	10	67 U	24 U	42 U	19 U
Bromoform	10	67 U	24 U	42 U	19 U
Bromomethane	10	67 U	24 U	42 U	19 U
Carbon Disulfide	10	67 U	24 U	42 U	19 U
Carbon Tetrachloride	10	67 U	24 U	42 U	19 U
Chlorobenzene	10	67 U	24 U	42 U	19 U
Chloroethane	10	67 U	24 U	42 U	19 U
Chloroform	10	67 U	24 U	42 U	19 U
Chloromethane	10	67 U	24 U	42 U	19 U
Dibromochloromethane	10	67 U	24 U	42 U	19 U
Ethylbenzene	10	67 U	24 U	42 U	19 U
Methylene Chloride	10	67 U	24 U	42 U	19 U
Styrene	10	67 U	24 U	42 U	19 U
Tetrachloroethene	10	67 U	24 U	42 U	19 U

LOCATION NAME:		SD-104	SD-105	SD-106	SD-116
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-104-0.0-0.5-NX-060	SD-105-0.0-0.5-NX-061	SD-106-0.0-0.5-NX-049	SD-116-0.0-0.5-NX-067
DATE SAMPLED:		06/17/93	06/17/93	06/21/93	06/21/93
REMARKS:					
Toluene	10	110	36	42 U	19 U
Total Xylenes	10	67 U	24 U	42 U	19 U
Trichloroethene	10	67 U	24 U	42 U	19 U
Vinyl Chloride	10	67 U	24 U	42 U	19 U
cis-1,3-Dichloropropene	10	67 U	24 U	42 U	19 U
trans-1,3-Dichloropropene	10	67 U	24 U	42 U	19 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	67000 UJ	800 U	42000 U	630 U
1,2-Dichlorobenzene	330	67000 UJ	800 U	42000 U	630 U
1,3-Dichlorobenzene	330	67000 UJ	800 U	42000 U	630 U
1,4-Dichlorobenzene	330	67000 UJ	800 U	42000 U	630 U
2,2'-Oxybis(1-chloropropane)	330	67000 UJ	800 U	42000 U	630 U
2,4,5-Trichlorophenol	800	170000 UJ	2000 U	100000 U	1500 U
2,4,6-Trichlorophenol	330	67000 UJ	800 U	42000 U	630 U
2,4-Dichlorophenol	330	67000 UJ	800 U	42000 U	630 U
2,4-Dimethylphenol	330	67000 UJ	800 U	42000 U	630 U
2,4-Dinitrophenol	800	170000 UJ	2000 U	100000 U	1500 U
2,4-Dinitrotoluene	330	67000 UJ	800 U	42000 U	630 U
2,6-Dinitrotoluene	330	67000 UJ	800 U	42000 U	630 U
2-Chloronaphthalene	330	67000 UJ	800 U	42000 U	630 U
2-Chlorophenol	330	67000 UJ	800 U	42000 U	630 U
2-Methylnaphthalene	330	67000 UJ	800 U	42000 U	630 U
2-Methylphenol	330	67000 UJ	800 U	42000 U	630 U
2-Nitroaniline	800	170000 UJ	2000 U	100000 U	1500 U
2-Nitrophenol	330	67000 UJ	800 U	42000 U	630 U
3,3'-Dichlorobenzidine	330	67000 UJ	800 U	42000 U	630 U
3-Nitroaniline	800	170000 UJ	2000 U	100000 U	1500 U
4,6-Dinitro-2-methylphenol	800	170000 UJ	2000 U	100000 U	1500 U

LOCATION NAME:		SD-104	SD-105	SD-106	SD-116
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-104-0.0-0.5-NX-060	SD-105-0.0-0.5-NX-061	SD-106-0.0-0.5-NX-049	SD-116-0.0-0.5-NX-067
DATE SAMPLED:		06/17/93	06/17/93	06/21/93	06/21/93
REMARKS:					
4-Bromophenyl-phenylether	330	67000 UJ	800 U	42000 U	630 U
4-Chloro-3-methylphenol	330	67000 UJ	800 U	42000 U	630 U
4-Chloroaniline	330	67000 UJ	800 U	42000 U	630 U
4-Chlorophenyl-phenylether	330	67000 UJ	800 U	42000 U	630 U
4-Methylphenol	330	67000 UJ	800 U	42000 U	630 U
4-Nitroaniline	800	170000 UJ	2000 U	100000 U	1500 U
4-Nitrophenol	800	170000 UJ	2000 U	100000 U	1500 U
Acenaphthene	330	67000 UJ	800 U	42000 U	630 U
Acenaphthylene	330	67000 UJ	800 U	42000 U	630 U
Anthracene	330	67000 UJ	800 U	42000 U	630 U
Benzo(a)anthracene	330	67000 UJ	800 U	42000 U	630 U
Benzo(a)pyrene	330	67000 UJ	800 U	42000 U	36 J
Benzo(b)fluoranthene	330	67000 UJ	800 U	42000 U	58 J
Benzo(g,h,i)perylene	330	67000 UJ	800 U	42000 U	630 U
Benzo(k)fluoranthene	330	67000 UJ	800 U	42000 U	630 U
Bis(2-chloroethoxy)methane	330	67000 UJ	800 U	42000 U	630 U
Bis(2-chloroethyl)ether	330	67000 UJ	800 U	42000 U	630 U
Bis(2-ethylhexyl)phthalate	330	67000 UJ	800 U	42000 U	67 J
Butylbenzylphthalate	330	67000 UJ	800 U	42000 U	630 U
Carbazole	330	67000 UJ	800 U	42000 U	630 U
Chrysene	330	67000 UJ	800 U	42000 U	30 J
Di-n-butylphthalate	330	67000 UJ	800 U	42000 U	630 U
Di-n-octylphthalate	330	67000 UJ	800 U	42000 U	630 U
Dibenz(a,h)anthracene	330	67000 UJ	800 U	42000 U	630 U
Dibenzofuran	330	67000 UJ	800 U	42000 U	630 U
Diethylphthalate	330	67000 UJ	800 U	42000 U	630 U
Dimethylphthalate	330	67000 UJ	800 U	42000 U	630 U
Fluoranthene	330	67000 UJ	800 U	42000 U	49 J
Fluorene	330	67000 UJ	800 U	42000 U	630 U
Hexachlorobenzene	330	67000 UJ	800 U	42000 U	630 U

LOCATION NAME:		SD-104	SD-105	SD-106	SD-116
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-104-0.0-0.5-NX-060	SD-105-0.0-0.5-NX-061	SD-106-0.0-0.5-NX-049	SD-116-0.0-0.5-NX-067
DATE SAMPLED:		06/17/93	06/17/93	06/21/93	06/21/93
REMARKS:					
Hexachlorobutadiene	330	67000 UJ	800 U	42000 U	630 U
Hexachlorocyclopentadiene	330	67000 UJ	800 U	42000 U	630 U
Hexachloroethane	330	67000 UJ	800 U	42000 U	630 U
Indeno(1,2,3-cd)pyrene	330	67000 UJ	800 U	42000 U	630 U
Isophorone	330	67000 UJ	800 U	42000 U	630 U
N-Nitroso-di-n-propylamine	330	67000 UJ	800 U	42000 U	630 U
N-Nitrosodiphenylamine	330	67000 UJ	800 U	42000 U	630 U
Naphthalene	330	67000 UJ	800 U	42000 U	630 U
Nitrobenzene	330	67000 UJ	800 U	42000 U	630 U
Pentachlorophenol	800	170000 UJ	2000 U	100000 U	1500 U
Phenanthrene	330	67000 UJ	800 U	42000 U	26 J
Phenol	330	67000 UJ	800 U	42000 U	630 U
Pyrene	330	67000 UJ	41 J	42000 U	55 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	1.2 J	10	0.28 J	6.4
4,4'-DDE	3.3	7.2 J	1.7 J	1.7 J	2.1 J
4,4'-DDT	3.3	22 UJ	8.0 U	0.28 J	0.31 J
Aldrin	1.7	11 UJ	4.1 U	7.1 U	3.3 U
Dieldrin	3.3	0.36 J	1.0 J	14 U	6.3 U
Endosulfan I	1.7	1.2 J	4.1 U	7.1 U	3.3 U
Endosulfan II	3.3	22 UJ	8.0 U	14 U	6.3 U
Endosulfan Sulfate	3.3	0.44 J	8.0 U	14 U	6.3 U
Endrin	3.3	22 UJ	8.0 U	14 U	6.3 U
Endrin Aldehyde	3.3	22 UJ	8.0 U	14 U	6.3 U
Endrin Ketone	3.3	22 UJ	8.0 U	14 U	6.3 U
Heptachlor	1.7	11 UJ	4.1 U	7.1 U	3.3 U
Heptachlor Epoxide	1.7	11 UJ	4.1 U	7.1 U	3.3 U
Methoxychlor	17.0	110 UJ	0.42 J	71 U	33 U

LOCATION NAME:		SD-104	SD-105	SD-106	SD-116
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-104-0.0-0.5-NX-060	SD-105-0.0-0.5-NX-061	SD-106-0.0-0.5-NX-049	SD-116-0.0-0.5-NX-067
DATE SAMPLED:		06/17/93	06/17/93	06/21/93	06/21/93
REMARKS:					
Toxaphene	170.0	1100 UJ	410 U	710 U	330 U
alpha-BHC	1.7	11 UJ	4.1 U	7.1 U	3.3 U
alpha-Chlordane	1.7	0.21 J	4.1 U	1.3 J	3.3 U
beta-BHC	1.7	0.33 J	4.1 U	7.1 U	3.3 U
delta-BHC	1.7	0.39 J	4.1 U	7.1 U	3.3 U
gamma-BHC(Lindane)	1.7	11 UJ	4.1 U	7.1 U	3.3 U
gamma-Chlordane	1.7	0.41 J	0.34 J	7.1 U	3.3 U
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	220 UJ	80 U	140 U	63 U
Aroclor-1221	67.0	450 UJ	160 U	280 U	130 U
Aroclor-1232	33.0	150 J	80 U	140 U	63 U
Aroclor-1242	33.0	220 UJ	80 U	140 U	63 U
Aroclor-1248	33.0	220 UJ	80 U	140 U	63 U
Aroclor-1254	33.0	220 UJ	80 U	140 U	63 U
Aroclor-1260	33.0	220 UJ	80 U	140 U	63 U
METALS	CRDL(mg/kg)				
Aluminum	200	2080 J	2770	3330	3380
Antimony	60	-- R	5.8 UJ	4.6 UJ	6.2 UJ
Arsenic	10	-- R	8.8 J	2.8 J	8.8 J
Barium	200	49.6 J	100	33.7	59.8
Beryllium	5	1.7 J	0.49 U	0.4 U	0.5 U
Cadmium	5	-- R	0.6 U	0.44 UJ	0.60 UJ
Calcium	5000	7600 J	1070	751	1510
Chromium	10	-- R	8.7 U	7.2 UJ	6.0 UJ
Cobalt	50	-- R	8.7	5.1 J	10.0 J
Copper	25	8.9 J	9.4	9.1	13.0

LOCATION NAME:		SD-104	SD-105	SD-106	SD-116
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-104-0.0-0.5-NX-060	SD-105-0.0-0.5-NX-061	SD-106-0.0-0.5-NX-049	SD-116-0.0-0.5-NX-067
DATE SAMPLED:		06/17/93	06/17/93	06/21/93	06/21/93
REMARKS:					
Iron	100	1670 J	5630	5850	8810
Lead	3	40.3 J	43.8 J	310	18.3
Magnesium	5000	1020 J	937	1110	962
Manganese	15	26.1 J	2700	452	612
Mercury	0.2	0.65 J	0.14	0.08 U	0.10 U
Nickel	40	-- R	10.7 U	6.7 UJ	7.1 UJ
Potassium	5000	-- R	381	461	412
Selenium	5	-- R	1.2 UJ	1.1 UJ	1.4 UJ
Silver	10	-- R	1.2 U	1.5 UJ	2.0 UJ
Sodium	5000	-- R	140 U	107 U	105 U
Thallium	10	-- R	0.5 U	0.61 UJ	0.74 UJ
Vanadium	50	11.6 J	7.5	8.5	8.9
Zinc	20	26.5 J	49.5	34.1 J	53.2 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	-- R	0.9 U	0.8 U	1.0 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	62 UJ	24	20 U	26

LOCATION NAME:		SD-317	SD-109	SD-022	SD-111
SITE LOCATION:		B&M LSDA	NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-317-0.0-0.5-NX-086	SD-109-0.0-0.5-NX-064	SD-22-0.0-0.5-NX-052	SD-111-0.0-0.5-NX-065
DATE SAMPLED:		06/09/93	06/09/93	06/16/93	06/16/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	36 U	25 U	71 U	20 U
1,1,2,2-Tetrachloroethane	10	36 U	25 U	80	20 U
1,1,2-Trichloroethane	10	36 U	25 U	71 U	20 U
1,1-Dichloroethane	10	36 U	25 U	71 U	20 U
1,1-Dichloroethene	10	36 U	25 U	71 U	20 U
1,2-Dichloroethane	10	36 U	25 U	71 U	20 U
1,2-Dichloroethene(total)	10	36 UJ	25 UJ	71 U	20 U
1,2-Dichloropropane	10	36 U	25 U	71 U	20 U
2-Butanone	10	36 U	25 U	50 J	20 U
2-Hexanone	10	36 U	25 U	71 U	20 U
4-Methyl-2-pentanone	10	36 U	25 U	71 U	20 U
Acetone	10	44 U	25 U	150	27
Benzene	10	36 U	25 U	54 J	20 U
Bromodichloromethane	10	36 U	25 U	71 U	20 U
Bromoform	10	36 U	25 U	71 U	20 U
Bromomethane	10	36 U	25 U	71 U	20 U
Carbon Disulfide	10	36 U	25 U	71 U	20 U
Carbon Tetrachloride	10	36 U	25 U	71 U	20 U
Chlorobenzene	10	36 U	25 U	71 U	20 U
Chloroethane	10	36 U	25 U	71 U	20 U
Chloroform	10	36 U	25 U	71 U	20 U
Chloromethane	10	36 U	25 U	71 U	20 U
Dibromochloromethane	10	36 U	25 U	71 U	20 U
Ethylbenzene	10	36 U	25 U	71 U	20 U
Methylene Chloride	10	36 U	25 U	71 U	20 U
Styrene	10	36 U	25 U	71 U	20 U
Tetrachloroethene	10	36 U	25 U	71 U	20 U

LOCATION NAME:		SD-317	SD-109	SD-022	SD-111
SITE LOCATION:		B&M LSDA	NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-317-0.0-0.5-NX-086	SD-109-0.0-0.5-NX-064	SD-22-0.0-0.5-NX-052	SD-111-0.0-0.5-NX-065
DATE SAMPLED:		06/09/93	06/09/93	06/16/93	06/16/93
REMARKS:					
Toluene	10	36 U	25 U	49 J	20 U
Total Xylenes	10	36 U	25 U	990	20 U
Trichloroethene	10	36 U	25 U	71 U	20 U
Vinyl Chloride	10	36 U	25 U	71 U	20 U
cis-1,3-Dichloropropene	10	36 U	25 U	71 U	20 U
trans-1,3-Dichloropropene	10	36 U	25 U	71 U	20 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	1200 U	25000 UJ	2400 U	20000 UJ
1,2-Dichlorobenzene	330	1200 U	25000 UJ	2400 U	20000 UJ
1,3-Dichlorobenzene	330	1200 U	25000 UJ	2400 U	20000 UJ
1,4-Dichlorobenzene	330	1200 U	25000 UJ	2400 U	20000 UJ
2,2'-Oxybis(1-chloropropane)	330	1200 U	25000 UJ	2400 U	20000 UJ
2,4,5-Trichlorophenol	800	2800 U	60000 UJ	5700 U	49000 UJ
2,4,6-Trichlorophenol	330	1200 U	25000 UJ	2400 U	20000 UJ
2,4-Dichlorophenol	330	1200 U	25000 UJ	2400 U	20000 UJ
2,4-Dimethylphenol	330	1200 U	25000 UJ	2400 U	20000 UJ
2,4-Dinitrophenol	800	2800 U	25000 UJ	5700 U	49000 UJ
2,4-Dinitrotoluene	330	1200 U	25000 UJ	2400 U	20000 UJ
2,6-Dinitrotoluene	330	1200 U	25000 UJ	2400 U	20000 UJ
2-Chloronaphthalene	330	1200 U	25000 UJ	2400 U	20000 UJ
2-Chlorophenol	330	1200 U	25000 UJ	2400 U	20000 UJ
2-Methylnaphthalene	330	1200 U	25000 UJ	120 J	20000 UJ
2-Methylphenol	330	1200 U	25000 UJ	2400 U	20000 UJ
2-Nitroaniline	800	2800 U	60000 UJ	5700 U	49000 UJ
2-Nitrophenol	330	1200 U	25000 UJ	2400 U	20000 UJ
3,3'-Dichlorobenzidine	330	1200 U	25000 UJ	2400 U	20000 UJ
3-Nitroaniline	800	2800 U	60000 UJ	5700 U	49000 UJ
4,6-Dinitro-2-methylphenol	800	2800 U	60000 UJ	5700 U	49000 UJ

LOCATION NAME:		SD-317	SD-109	SD-022	SD-111
SITE LOCATION:		B&M LSDA	NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-317-0.0-0.5-NX-086	SD-109-0.0-0.5-NX-064	SD-22-0.0-0.5-NX-052	SD-111-0.0-0.5-NX-065
DATE SAMPLED:		06/09/93	06/09/93	06/16/93	06/16/93
REMARKS:					
4-Bromophenyl-phenylether	330	1200 U	25000 UJ	2400 U	20000 UJ
4-Chloro-3-methylphenol	330	1200 U	25000 UJ	2400 U	20000 UJ
4-Chloroaniline	330	1200 U	25000 UJ	2400 U	20000 UJ
4-Chlorophenyl-phenylether	330	1200 U	25000 UJ	2400 U	20000 UJ
4-Methylphenol	330	1200 U	25000 UJ	2400 U	20000 UJ
4-Nitroaniline	800	2800 U	60000 UJ	5700 U	49000 UJ
4-Nitrophenol	800	2800 U	25000 UJ	5700 U	49000 UJ
Acenaphthene	330	1200 U	60000 UJ	2400 U	4600 J
Acenaphthylene	330	1200 U	25000 UJ	2400 U	20000 UJ
Anthracene	330	370 J	25000 UJ	2400 U	4100 J
Benzo(a)anthracene	330	1800	2600 J	150 J	21000 J
Benzo(a)pyrene	330	1100 J	25000 UJ	2400 U	11000 J
Benzo(b)fluoranthene	330	2500 J	3600 J	240 J	19000 J
Benzo(g,h,i)perylene	330	740 J	25000 UJ	2400 U	6200 J
Benzo(k)fluoranthene	330	1400 J	3000 J	2400 U	20000 UJ
Bis(2-chloroethoxy)methane	330	1200 U	25000 UJ	2400 U	20000 UJ
Bis(2-chloroethyl)ether	330	1200 U	25000 UJ	2400 U	20000 UJ
Bis(2-ethylhexyl)phthalate	330	400 J	7400 J	2400 U	2800 J
Butylbenzylphthalate	330	1200 U	25000 UJ	2400 U	20000 UJ
Carbazole	330	180 J	25000 UJ	2400 U	20000 UJ
Chrysene	330	1400	3600 J	140 J	11000 J
Di-n-butylphthalate	330	1200 U	25000 UJ	2400 U	20000 UJ
Di-n-octylphthalate	330	1200 UJ	25000 UJ	2400 U	20000 UJ
Dibenz(a,h)anthracene	330	1200 UJ	25000 UJ	2400 U	1400 J
Dibenzofuran	330	1200 U	25000 UJ	2400 U	1100 J
Diethylphthalate	330	1200 U	25000 UJ	2400 U	20000 UJ
Dimethylphthalate	330	1200 U	25000 UJ	2400 U	20000 UJ
Fluoranthene	330	2900	5400 J	190 J	24000 J
Fluorene	330	1200 U	25000 UJ	2400 U	3700 J
Hexachlorobenzene	330	1200 U	25000 UJ	2400 U	20000 UJ

LOCATION NAME:		SD-317	SD-109	SD-022	SD-111
SITE LOCATION:		B&M LSDA	NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-317-0.0-0.5-NX-086	SD-109-0.0-0.5-NX-064	SD-22-0.0-0.5-NX-052	SD-111-0.0-0.5-NX-065
DATE SAMPLED:		06/09/93	06/09/93	06/16/93	06/16/93
REMARKS:					
Hexachlorobutadiene	330	1200 U	25000 UJ	2400 U	20000 UJ
Hexachlorocyclopentadiene	330	1200 U	25000 UJ	2400 U	20000 UJ
Hexachloroethane	330	1200 U	25000 UJ	2400 U	20000 UJ
Indeno(1,2,3-cd)pyrene	330	950 J	25000 UJ	2400 U	4500 J
Isophorone	330	1200 U	25000 UJ	2400 U	20000 UJ
N-Nitroso-di-n-propylamine	330	1200 U	25000 UJ	2400 U	20000 UJ
N-Nitrosodiphenylamine	330	1200 U	25000 UJ	2400 U	20000 UJ
Naphthalene	330	230 J	25000 UJ	650 J	20000 UJ
Nitrobenzene	330	1200 U	25000 UJ	2400 U	20000 UJ
Pentachlorophenol	800	2800 U	60000 UJ	5700 U	49000 UJ
Phenanthrene	330	1600	2000 J	380 J	24000 J
Phenol	330	1200 U	25000 UJ	2400 U	20000 UJ
Pyrene	330	4200	25000 UJ	260 J	46000 J
PESTICIDES	CRQL (ug/kg)				
4,4'-DDD	3.3	5.3 J	34 J	6.7 J	11 J
4,4'-DDE	3.3	18	9.2 J	14 J	12
4,4'-DDT	3.3	12 U	8.3 UJ	24 U	6.5 U
Aldrin	1.7	6.0 U	4.2 UJ	12 U	3.3 U
Dieldrin	3.3	12 U	1.8 J	24 U	6.5 U
Endosulfan I	1.7	6.0 U	4.2 UJ	1.7 J	3.3 U
Endosulfan II	3.3	12 U	2.0 J	24 U	6.5 U
Endosulfan Sulfate	3.3	12 U	0.74 UJ	24 U	1.8 J
Endrin	3.3	12 U	8.3 UJ	6.4 J	14 J
Endrin Aldehyde	3.3	12 U	8.3 UJ	24 U	6.5 U
Endrin Ketone	3.3	12 U	8.3 UJ	24 U	6.5 U
Heptachlor	1.7	6.0 U	4.2 UJ	12 U	3.3 U
Heptachlor Epoxide	1.7	6.0 U	4.2 UJ	0.43 J	0.30 J
Methoxychlor	17.0	60 U	42 UJ	120 U	33 U

LOCATION NAME:		SD-317	SD-109	SD-022	SD-111
SITE LOCATION:		B&M LSDA	NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-317-0.0-0.5-NX-086	SD-109-0.0-0.5-NX-064	SD-22-0.0-0.5-NX-052	SD-111-0.0-0.5-NX-065
DATE SAMPLED:		06/09/93	06/09/93	06/16/93	06/16/93
REMARKS:					
Toxaphene	170.0	600 U	420 UJ	1200 U	330 U
alpha-BHC	1.7	6.0 U	4.2 UJ	12 U	3.3 U
alpha-Chlordane	1.7	6.0 U	18 J	12 U	1.9 J
beta-BHC	1.7	6.0 U	4.2 UJ	12 U	3.3 U
delta-BHC	1.7	6.0 U	4.2 UJ	12 U	2.3 J
gamma-BHC(Lindane)	1.7	6.0 U	4.2 UJ	12 U	3.3 U
gamma-Chlordane	1.7	6.0 U	18 J	1.1 J	2.8 J
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	120 U	83 UJ	240 U	65 U
Aroclor-1221	67.0	240 U	170 UJ	480 U	130 U
Aroclor-1232	33.0	120 U	83 UJ	240 U	65 U
Aroclor-1242	33.0	120 U	83 UJ	240 U	220
Aroclor-1248	33.0	120 U	140 J	240 U	65 U
Aroclor-1254	33.0	320	83 UJ	240 U	65 U
Aroclor-1260	33.0	120 U	83 UJ	240 U	260
METALS	CRDL(mg/kg)				
Aluminum	200	9410 J	13300	11200 J	26300
Antimony	60	26.3 J	9.7 U	-- R	6.6 UJ
Arsenic	10	31.1 J	15.3	6.7 J	21.7 J
Barium	200	124 J	81.2	96.0 J	287
Beryllium	5	1.8 J	0.3 U	3.2 J	0.99
Cadmium	5	-- R	1.3	-- R	1.3
Calcium	5000	6550 J	5170	6550 J	4920
Chromium	10	72.0 J	91.8	-- R	64.6
Cobalt	50	18.8 J	16.8	8.4 J	19.9
Copper	25	3600 J	215	18.5 J	190

LOCATION NAME:		SD-317	SD-109	SD-022	SD-111
SITE LOCATION:		B&M LSDA	NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-317-0.0-0.5-NX-086	SD-109-0.0-0.5-NX-064	SD-22-0.0-0.5-NX-052	SD-111-0.0-0.5-NX-065
DATE SAMPLED:		06/09/93	06/09/93	06/16/93	06/16/93
REMARKS:					
Iron	100	47700 J	21100	9540 J	49500
Lead	3	2970 J	554	47.1 J	400 J
Magnesium	5000	2750 J	4790	1940 J	9700
Manganese	15	291 J	611	1160 J	534
Mercury	0.2	0.19 J	0.48 J	-- R	0.99
Nickel	40	29.6 U	132	-- R	46.7
Potassium	5000	1050 J	1780	788 J	4600
Selenium	5	10.2 J	1.9 J	-- R	1.4 UJ
Silver	10	2.9 J	2.1 U	-- R	2.3
Sodium	5000	548 U	514 U	-- R	376 U
Thallium	10	-- R	1.6 U	-- R	0.5 U
Vanadium	50	33.8 J	47.6	13.4 J	76.4
Zinc	20	368 J	504	30.8 J	669
CYANIDE	CRDL(mg/kg)				
Cyanide	20	-- R	1.3 U	-- R	1.0 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	740	3400	47 UJ	600

LOCATION NAME:		SD-309	SD-314	SD-314	SD-315
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-309-0.0-0.5-NX-078	SD-314-0.0-0.5-FD-118	SD-314-0.0-0.5-NX-083	SD-315-0.0-0.5-NX-084
DATE SAMPLED:		06/16/93	06/18/93	06/18/93	06/18/93
REMARKS:			Field Duplicate		
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	42 U	100 U	100 U	91 U
1,1,2,2-Tetrachloroethane	10	42 U	100 U	100 U	91 U
1,1,2-Trichloroethane	10	42 U	100 U	100 U	91 U
1,1-Dichloroethane	10	42 U	100 U	100 U	91 U
1,1-Dichloroethene	10	42 U	100 U	100 U	91 U
1,2-Dichloroethane	10	42 U	100 U	100 U	91 U
1,2-Dichloroethene(total)	10	70	100 U	100 U	91 U
1,2-Dichloropropane	10	42 U	100 U	100 U	91 U
2-Butanone	10	42 U	100 U	56 J	91 U
2-Hexanone	10	42 U	100 U	100 U	91 U
4-Methyl-2-pentanone	10	42 U	100 U	100 U	91 U
Acetone	10	56	79 J	250 J	200 J
Benzene	10	42 U	100 U	100 U	91 U
Bromodichloromethane	10	42 U	100 U	100 U	91 U
Bromoform	10	42 U	100 U	100 U	91 U
Bromomethane	10	42 U	100 U	100 U	91 U
Carbon Disulfide	10	42 U	100 U	100 U	91 U
Carbon Tetrachloride	10	42 U	100 U	100 U	91 U
Chlorobenzene	10	42 U	100 U	100 U	91 U
Chloroethane	10	42 U	100 U	100 U	91 U
Chloroform	10	42 U	100 U	100 U	91 U
Chloromethane	10	42 U	100 U	100 U	91 U
Dibromochloromethane	10	42 U	100 U	100 U	91 U
Ethylbenzene	10	42 U	100 U	100 U	91 U
Methylene Chloride	10	42 U	100 U	100 U	91 U
Styrene	10	42 U	100 U	100 U	91 U
Tetrachloroethene	10	42 U	100 U	100 U	91 U

LOCATION NAME:		SD-309	SD-314	SD-314	SD-315
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-309-0.0-0.5-NX-078	SD-314-0.0-0.5-FD-118	SD-314-0.0-0.5-NX-083	SD-315-0.0-0.5-NX-084
DATE SAMPLED:		06/16/93	06/18/93	06/18/93	06/18/93
REMARKS:			Field Duplicate		
Toluene	10	200	100 U	100 U	91 U
Total Xylenes	10	42 U	100 U	100 U	91 U
Trichloroethene	10	42 U	100 U	100 U	91 U
Vinyl Chloride	10	42 U	100 U	100 U	91 U
cis-1,3-Dichloropropene	10	42 U	100 U	100 U	91 U
trans-1,3-Dichloropropene	10	42 U	100 U	100 U	91 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	1400 U	100000 UJ	3300 U	91000 UJ
1,2-Dichlorobenzene	330	1400 U	100000 UJ	3300 U	91000 UJ
1,3-Dichlorobenzene	330	1400 U	100000 UJ	3300 U	91000 UJ
1,4-Dichlorobenzene	330	1400 U	100000 UJ	3300 U	91000 UJ
2,2'-Oxybis(1-chloropropane)	330	1400 U	100000 UJ	3300 U	91000 UJ
2,4,5-Trichlorophenol	800	3300 U	250000 UJ	8000 U	230000 UJ
2,4,6-Trichlorophenol	330	1400 U	100000 UJ	3300 U	91000 UJ
2,4-Dichlorophenol	330	1400 U	100000 UJ	3300 U	91000 UJ
2,4-Dimethylphenol	330	1400 U	100000 UJ	3300 U	91000 UJ
2,4-Dinitrophenol	800	3300 U	250000 UJ	8000 U	230000 UJ
2,4-Dinitrotoluene	330	1400 U	100000 UJ	3300 U	91000 UJ
2,6-Dinitrotoluene	330	1400 U	100000 UJ	3300 U	91000 UJ
2-Chloronaphthalene	330	1400 U	100000 UJ	3300 U	91000 UJ
2-Chlorophenol	330	1400 U	100000 UJ	3300 U	91000 UJ
2-Methylnaphthalene	330	1400 U	100000 UJ	3300 U	91000 UJ
2-Methylphenol	330	1400 U	100000 UJ	3300 U	91000 UJ
2-Nitroaniline	800	3300 U	250000 UJ	8000 U	230000 UJ
2-Nitrophenol	330	1400 U	100000 UJ	3300 U	91000 UJ
3,3'-Dichlorobenzidine	330	1400 U	100000 UJ	3300 U	91000 UJ
3-Nitroaniline	800	3300 U	250000 UJ	8000 U	230000 UJ
4,6-Dinitro-2-methylphenol	800	3300 U	250000 UJ	8000 U	230000 UJ

LOCATION NAME:		SD-309	SD-314	SD-314	SD-315
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-309-0.0-0.5-NX-078	SD-314-0.0-0.5-FD-118	SD-314-0.0-0.5-NX-083	SD-315-0.0-0.5-NX-084
DATE SAMPLED:		06/16/93	06/18/93	06/18/93	06/18/93
REMARKS:			Field Duplicate		
4-Bromophenyl-phenylether	330	1400 U	100000 UJ	3300 U	91000 UJ
4-Chloro-3-methylphenol	330	1400 U	100000 UJ	3300 U	91000 UJ
4-Chloroaniline	330	1400 U	100000 UJ	3300 U	91000 UJ
4-Chlorophenyl-phenylether	330	1400 U	100000 UJ	3300 U	91000 UJ
4-Methylphenol	330	720 J	100000 UJ	3300 U	91000 UJ
4-Nitroaniline	800	3300 U	250000 UJ	8000 U	230000 UJ
4-Nitrophenol	800	3300 U	250000 UJ	8000 U	230000 UJ
Acenaphthene	330	1400 U	100000 UJ	3300 U	91000 UJ
Acenaphthylene	330	1400 U	100000 UJ	3300 U	91000 UJ
Anthracene	330	1400 U	100000 UJ	3300 U	91000 UJ
Benzo(a)anthracene	330	99 J	100000 UJ	3300 U	91000 UJ
Benzo(a)pyrene	330	1400 U	100000 UJ	540 J	91000 UJ
Benzo(b)fluoranthene	330	390 J	100000 UJ	3300 U	91000 UJ
Benzo(g,h,i)perylene	330	1400 U	100000 UJ	3300 U	91000 UJ
Benzo(k)fluoranthene	330	1400 U	100000 UJ	3300 U	91000 UJ
Bis(2-chloroethoxy)methane	330	1400 U	100000 UJ	3300 U	91000 UJ
Bis(2-chloroethyl)ether	330	1400 U	100000 UJ	3300 U	91000 UJ
Bis(2-ethylhexyl)phthalate	330	1400 U	100000 UJ	3300 U	91000 UJ
Butylbenzylphthalate	330	1400 U	100000 UJ	3300 U	91000 UJ
Carbazole	330	1400 U	100000 UJ	3300 U	91000 UJ
Chrysene	330	82 J	100000 UJ	3300 U	91000 UJ
Di-n-butylphthalate	330	1400 U	100000 UJ	3300 U	91000 UJ
Di-n-octylphthalate	330	1400 U	100000 UJ	3300 U	91000 UJ
Dibenz(a,h)anthracene	330	1400 U	100000 UJ	3300 U	91000 UJ
Dibenzofuran	330	1400 U	100000 UJ	3300 U	91000 UJ
Diethylphthalate	330	1400 U	100000 UJ	3300 U	91000 UJ
Dimethylphthalate	330	1400 U	100000 UJ	3300 U	91000 UJ
Fluoranthene	330	120 J	100000 UJ	3300 U	91000 UJ
Fluorene	330	1400 U	100000 UJ	3300 U	91000 UJ
Hexachlorobenzene	330	1400 U	100000 UJ	3300 U	91000 UJ

LOCATION NAME:		SD-309	SD-314	SD-314	SD-315
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-309-0.0-0.5-NX-078	SD-314-0.0-0.5-FD-118	SD-314-0.0-0.5-NX-083	SD-315-0.0-0.5-NX-084
DATE SAMPLED:		06/16/93	06/18/93	06/18/93	06/18/93
REMARKS:			Field Duplicate		
Hexachlorobutadiene	330	1400 U	100000 UJ	3300 U	91000 UJ
Hexachlorocyclopentadiene	330	1400 U	100000 UJ	3300 U	91000 UJ
Hexachloroethane	330	1400 U	100000 UJ	3300 U	91000 UJ
Indeno(1,2,3-cd)pyrene	330	1400 U	100000 UJ	3300 U	91000 UJ
Isophorone	330	1400 U	100000 UJ	3300 U	91000 UJ
N-Nitroso-di-n-propylamine	330	1400 U	100000 UJ	3300 U	91000 UJ
N-Nitrosodiphenylamine	330	1400 U	100000 UJ	3300 U	91000 UJ
Naphthalene	330	58 J	100000 UJ	3300 U	91000 UJ
Nitrobenzene	330	1400 U	100000 UJ	3300 U	91000 UJ
Pentachlorophenol	800	3300 U	250000 UJ	8000 U	230000 UJ
Phenanthrene	330	160 J	100000 UJ	3300 U	91000 UJ
Phenol	330	1400 U	100000 UJ	3300 U	91000 UJ
Pyrene	330	160 J	100000 UJ	3300 U	91000 UJ
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	14 U	2.0 J	1.2 J	37
4,4'-DDE	3.3	5.4 J	1.0 J	0.56 J	20 J
4,4'-DDT	3.3	14 U	1.6 J	33 UJ	0.66 J
Aldrin	1.7	7.1 U	17 U	17 UJ	15 U
Dieldrin	3.3	0.30 J	33 U	33 UJ	4.7 J
Endosulfan I	1.7	3.4 J	17 U	17 UJ	0.47 J
Endosulfan II	3.3	14 U	0.50 J	33 UJ	30 U
Endosulfan Sulfate	3.3	14 U	33 U	33 UJ	30 U
Endrin	3.3	14 U	33 U	33 UJ	30 U
Endrin Aldehyde	3.3	14 U	33 U	33 UJ	30 U
Endrin Ketone	3.3	14 U	0.57 J	33 UJ	30 U
Heptachlor	1.7	7.1 U	17 U	17 UJ	15 U
Heptachlor Epoxide	1.7	0.69 J	0.41 J	17 UJ	15 U
Methoxychlor	17.0	0.92 J	0.98 J	170 UJ	150 U

LOCATION NAME:		SD-309	SD-314	SD-314	SD-315
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-309-0.0-0.5-NX-078	SD-314-0.0-0.5-FD-118	SD-314-0.0-0.5-NX-083	SD-315-0.0-0.5-NX-084
DATE SAMPLED:		06/16/93	06/18/93	06/18/93	06/18/93
REMARKS:			Field Duplicate		
Toxaphene	170.0	710 U	1700 U	1700 UJ	1500 U
alpha-BHC	1.7	7.1 U	17 U	17 UJ	15 U
alpha-Chlordane	1.7	7.1 U	17 U	0.96 J	15 U
beta-BHC	1.7	7.1 U	17 U	17 UJ	0.22 J
delta-BHC	1.7	7.1 U	1.2 J	17 UJ	15 U
gamma-BHC(Lindane)	1.7	7.1 U	17 U	17 UJ	15 U
gamma-Chlordane	1.7	0.44 J	0.44 J	0.27 J	1.4 J
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	140 U	330 U	330 UJ	330 U
Aroclor-1221	67.0	280 U	670 U	670 UJ	610 U
Aroclor-1232	33.0	140 U	330 U	330 UJ	170 J
Aroclor-1242	33.0	140 U	330 U	330 UJ	300 U
Aroclor-1248	33.0	140 U	330 U	330 UJ	300 U
Aroclor-1254	33.0	140 U	330 U	330 UJ	300 U
Aroclor-1260	33.0	140 U	330 U	330 UJ	300 U
METALS	CRDL(mg/kg)				
Aluminum	200	5250 J	1270 J	1020 J	1250 J
Antimony	60	-- R	-- R	-- R	-- R
Arsenic	10	4.7 J	-- R	-- R	4.3 J
Barium	200	77.0 J	30.2 J	32.5 J	26.9 J
Beryllium	5	0.97 J	-- R	-- R	-- R
Cadmium	5	-- R	-- R	-- R	-- R
Calcium	5000	3920 J	7810 J	7210 J	5280 J
Chromium	10	-- R	-- R	-- R	-- R
Cobalt	50	4.6 J	-- R	-- R	-- R
Copper	25	13.9 J	-- R	-- R	-- R

LOCATION NAME:		SD-309	SD-314	SD-314	SD-315
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-309-0.0-0.5-NX-078	SD-314-0.0-0.5-FD-118	SD-314-0.0-0.5-NX-083	SD-315-0.0-0.5-NX-084
DATE SAMPLED:		06/16/93	06/18/93	06/18/93	06/18/93
REMARKS:			Field Duplicate		
Iron	100	6490 J	3410 J	3170 J	2470 J
Lead	3	55.9 J	29.7 J	7.0 J	46.3 J
Magnesium	5000	2030 J	878 J	863 J	607 J
Manganese	15	185 J	240 J	153 J	37.5 J
Mercury	0.2	-- R	0.57 J	0.55 J	0.68 J
Nickel	40	20.1 J	-- R	-- R	-- R
Potassium	5000	342 J	-- R	366 J	-- R
Selenium	5	-- R	-- R	-- R	-- R
Silver	10	-- R	-- R	-- R	-- R
Sodium	5000	-- R	-- R	-- R	-- R
Thallium	10	-- R	-- R	-- R	-- R
Vanadium	50	13.9 J	-- R	-- R	-- R
Zinc	20	32.5 J	-- R	-- R	-- R
CYANIDE	CRDL(mg/kg)				
Cyanide	20	-- R	-- R	-- R	-- R
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	44 UJ	96 UJ	110 J	83 UJ

LOCATION NAME:		SD-316	SD-320	SD-016	SD-016
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-316-0.0-0.5-NX-085	SD-320-0.0-0.5-NX-089	SD-016-0.0-0.5-FD-116	SD-016-0.0-0.5-NX-047
DATE SAMPLED:		06/16/93	06/18/93	06/14/93	06/14/93
REMARKS:				Field Duplicate	
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	20 U	48 U	22 U	16 U
1,1,2,2-Tetrachloroethane	10	20 U	48 U	22 U	16 U
1,1,2-Trichloroethane	10	20 U	48 U	22 U	16 U
1,1-Dichloroethane	10	20 U	48 U	22 U	16 U
1,1-Dichloroethene	10	20 U	48 U	22 U	16 U
1,2-Dichloroethane	10	20 U	48 U	22 U	16 U
1,2-Dichloroethene(total)	10	20 U	48 U	22 U	16 U
1,2-Dichloropropane	10	20 U	48 U	22 U	16 U
2-Butanone	10	15 J	35 J	22 U	16 U
2-Hexanone	10	20 U	48 U	22 U	16 U
4-Methyl-2-pentanone	10	20 U	48 U	22 U	16 U
Acetone	10	35	93 J	15 J	15 J
Benzene	10	20 U	48 U	22 U	16 U
Bromodichloromethane	10	20 U	48 U	22 U	16 U
Bromoform	10	20 U	48 U	22 U	16 U
Bromomethane	10	20 U	48 U	22 U	16 U
Carbon Disulfide	10	20 U	48 U	22 U	16 U
Carbon Tetrachloride	10	20 U	48 U	22 U	16 U
Chlorobenzene	10	20 U	48 U	22 U	16 U
Chloroethane	10	20 U	48 U	22 U	16 U
Chloroform	10	20 U	48 U	22 U	16 U
Chloromethane	10	20 U	48 U	22 U	16 U
Dibromochloromethane	10	20 U	48 U	22 U	16 U
Ethylbenzene	10	20 U	48 U	22 U	16 U
Methylene Chloride	10	20 U	48 U	22 U	16 U
Styrene	10	20 U	48 U	22 U	16 U
Tetrachloroethene	10	20 U	48 U	22 U	16 U

LOCATION NAME:		SD-316	SD-320	SD-016	SD-016
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-316-0.0-0.5-NX-085	SD-320-0.0-0.5-NX-089	SD-016-0.0-0.5-FD-116	SD-016-0.0-0.5-NX-047
DATE SAMPLED:		06/16/93	06/18/93	06/14/93	06/14/93
REMARKS:				Field Duplicate	
Toluene	10	110	48 U	22 U	16 U
Total Xylenes	10	20 U	48 U	22 U	16 U
Trichloroethene	10	20 U	48 U	22 U	16 U
Vinyl Chloride	10	20 U	48 U	22 U	16 U
cis-1,3-Dichloropropene	10	20 U	48 U	22 U	16 U
trans-1,3-Dichloropropene	10	20 U	48 U	22 U	16 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	670 U	1600 U	720 U	16000 UJ
1,2-Dichlorobenzene	330	670 U	1600 U	720 U	16000 UJ
1,3-Dichlorobenzene	330	670 U	1600 U	720 U	16000 UJ
1,4-Dichlorobenzene	330	670 U	1600 U	720 U	16000 UJ
2,2'-Oxybis(1-chloropropane)	330	670 U	1600 U	720 U	16000 UJ
2,4,5-Trichlorophenol	800	1600 U	3800 U	1700 U	41000 UJ
2,4,6-Trichlorophenol	330	670 U	1600 U	720 U	16000 UJ
2,4-Dichlorophenol	330	670 U	1600 U	720 U	16000 UJ
2,4-Dimethylphenol	330	670 U	1600 U	720 U	16000 UJ
2,4-Dinitrophenol	800	1600 U	3800 U	1700 U	41000 UJ
2,4-Dinitrotoluene	330	670 U	1600 U	720 U	16000 UJ
2,6-Dinitrotoluene	330	670 U	1600 U	720 U	16000 UJ
2-Chloronaphthalene	330	670 U	1600 U	720 U	16000 UJ
2-Chlorophenol	330	670 U	1600 U	720 U	16000 UJ
2-Methylnaphthalene	330	670 U	1600 U	720 U	16000 UJ
2-Methylphenol	330	670 U	1600 U	720 U	16000 UJ
2-Nitroaniline	800	1600 U	3800 U	1700 U	41000 UJ
2-Nitrophenol	330	670 U	1600 U	720 U	16000 UJ
3,3'-Dichlorobenzidine	330	670 U	1600 U	720 U	16000 UJ
3-Nitroaniline	800	1600 U	3800 U	1700 U	41000 UJ
4,6-Dinitro-2-methylphenol	800	1600 U	3800 U	1700 U	41000 UJ

LOCATION NAME:		SD-316	SD-320	SD-016	SD-016
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-316-0.0-0.5-NX-085	SD-320-0.0-0.5-NX-089	SD-016-0.0-0.5-FD-116	SD-016-0.0-0.5-NX-047
DATE SAMPLED:		06/16/93	06/18/93	06/14/93	06/14/93
REMARKS:				Field Duplicate	
4-Bromophenyl-phenylether	330	670 U	1600 U	720 U	16000 UJ
4-Chloro-3-methylphenol	330	670 U	1600 U	720 U	16000 UJ
4-Chloroaniline	330	670 U	1600 U	720 U	16000 UJ
4-Chlorophenyl-phenylether	330	670 U	1600 U	720 U	16000 UJ
4-Methylphenol	330	670 U	150 J	720 U	16000 UJ
4-Nitroaniline	800	1600 U	3800 U	1700 U	41000 UJ
4-Nitrophenol	800	1600 U	3800 U	1700 U	41000 UJ
Acenaphthene	330	670 U	1600 U	720 U	16000 UJ
Acenaphthylene	330	670 U	1600 U	720 U	16000 UJ
Anthracene	330	670 U	1600 U	720 U	16000 UJ
Benzo(a)anthracene	330	38 J	1600 U	720 U	16000 UJ
Benzo(a)pyrene	330	670 U	1600 U	720 U	16000 UJ
Benzo(b)fluoranthene	330	75 J	89 J	720 U	16000 UJ
Benzo(g,h,i)perylene	330	670 U	1600 U	720 U	16000 UJ
Benzo(k)fluoranthene	330	670 U	1600 U	720 U	16000 UJ
Bis(2-chloroethoxy)methane	330	670 U	1600 U	720 U	16000 UJ
Bis(2-chloroethyl)ether	330	670 U	1600 U	720 U	16000 UJ
Bis(2-ethylhexyl)phthalate	330	670 U	1600 U	140 J	16000 UJ
Butylbenzylphthalate	330	670 U	1600 U	720 U	16000 UJ
Carbazole	330	670 U	1600 U	720 U	16000 UJ
Chrysene	330	36 J	1600 U	61 J	16000 UJ
Di-n-butylphthalate	330	670 U	1600 U	720 U	16000 UJ
Di-n-octylphthalate	330	670 U	1600 U	720 U	16000 UJ
Dibenz(a,h)anthracene	330	670 U	1600 U	720 U	16000 UJ
Dibenzofuran	330	670 U	1600 U	720 U	16000 UJ
Diethylphthalate	330	670 U	1600 U	720 U	16000 UJ
Dimethylphthalate	330	670 U	1600 U	720 U	16000 UJ
Fluoranthene	330	62 J	69 J	160 J	16000 UJ
Fluorene	330	670 U	1600 U	720 U	16000 UJ
Hexachlorobenzene	330	670 U	1600 U	720 U	16000 UJ

LOCATION NAME:		SD-316	SD-320	SD-016	SD-016
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-316-0.0-0.5-NX-085	SD-320-0.0-0.5-NX-089	SD-016-0.0-0.5-FD-116	SD-016-0.0-0.5-NX-047
DATE SAMPLED:		06/16/93	06/18/93	06/14/93	06/14/93
REMARKS:				Field Duplicate	
Hexachlorobutadiene	330	670 U	1600 U	720 U	16000 UJ
Hexachlorocyclopentadiene	330	670 U	1600 U	720 U	16000 UJ
Hexachloroethane	330	670 U	1600 U	720 U	16000 UJ
Indeno(1,2,3-cd)pyrene	330	670 U	1600 U	720 U	16000 UJ
Isophorone	330	670 U	1600 U	720 U	16000 UJ
N-Nitroso-di-n-propylamine	330	670 U	1600 U	720 U	16000 UJ
N-Nitrosodiphenylamine	330	670 U	1600 U	720 U	16000 UJ
Naphthalene	330	670 U	89 J	31 J	16000 UJ
Nitrobenzene	330	670 U	1600 U	720 U	16000 UJ
Pentachlorophenol	800	1600 U	3800 U	1700 U	41000 UJ
Phenanthrene	330	77 J	68 J	110 J	16000 UJ
Phenol	330	670 U	1600 U	720 U	16000 UJ
Pyrene	330	59 J	1600 U	200 J	16000 UJ
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	1.2 J	2.2 J	42	25
4,4'-DDE	3.3	3.4 J	1.3 J	14	7.9
4,4'-DDT	3.3	6.7 U	16 U	7.2 U	5.4 U
Aldrin	1.7	3.5 U	2.4 J	0.18 J	0.13 J
Dieldrin	3.3	6.7 U	16 U	2.5 J	2.0 J
Endosulfan I	1.7	0.45 J	0.38 J	3.7 U	2.8 U
Endosulfan II	3.3	0.38 J	16 U	0.26 J	0.22 J
Endosulfan Sulfate	3.3	0.35 J	16 U	7.2 U	5.4 U
Endrin	3.3	0.12 J	16 U	0.23 J	0.24 J
Endrin Aldehyde	3.3	6.7 U	16 U	7.2 U	5.4 U
Endrin Ketone	3.3	0.94 J	16 U	7.2 U	5.4 U
Heptachlor	1.7	3.5 U	8.1 U	3.7 U	2.8 U
Heptachlor Epoxide	1.7	0.32 J	8.1 U	3.7 U	2.8 U
Methoxychlor	17.0	35 U	12 J	37 U	28 U

LOCATION NAME:		SD-316	SD-320	SD-016	SD-016
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-316-0.0-0.5-NX-085	SD-320-0.0-0.5-NX-089	SD-016-0.0-0.5-FD-116	SD-016-0.0-0.5-NX-047
DATE SAMPLED:		06/16/93	06/18/93	06/14/93	06/14/93
REMARKS:				Field Duplicate	
Toxaphene	170.0	350 U	810 U	370 U	280 U
alpha-BHC	1.7	3.5 U	8.1 U	3.7 U	2.8 U
alpha-Chlordane	1.7	3.5 U	8.1 U	0.17 J	2.8 U
beta-BHC	1.7	3.5 U	8.1 U	3.7 U	2.8 U
delta-BHC	1.7	3.5 U	8.1 U	3.7 U	2.8 U
gamma-BHC(Lindane)	1.7	3.5 U	8.1 U	3.7 U	2.8 U
gamma-Chlordane	1.7	0.27 J	8.1 U	0.74 J	0.52 J
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	67 U	160 U	72 U	54 U
Aroclor-1221	67.0	140 U	320 U	150 U	110 U
Aroclor-1232	33.0	67 U	160 U	72 U	54 U
Aroclor-1242	33.0	33 J	160 U	12 J	9.1 J
Aroclor-1248	33.0	67 U	160 U	72 U	54 U
Aroclor-1254	33.0	67 U	160 U	72 U	54 U
Aroclor-1260	33.0	67 U	160 U	72 U	54 U
METALS	CRDL(mg/kg)				
Aluminum	200	6830	5200 J	2940	3160
Antimony	60	8.4 UJ	-- R	5.0 U	6.7 U
Arsenic	10	3.5 J	-- R	22.1	29.7
Barium	200	16.6	33.8 J	10.7	13.0
Beryllium	5	0.69 U	1.2 J	0.31 U	0.44 U
Cadmium	5	0.8 U	-- R	0.4 U	0.5 U
Calcium	5000	740	2600 J	788	1090
Chromium	10	7.9 U	-- R	7.1 U	8.9 U
Cobalt	50	2.1 U	-- R	3.9	4.8
Copper	25	7.6	-- R	31.3	51.9

LOCATION NAME:		SD-316	SD-320	SD-016	SD-016
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-316-0.0-0.5-NX-085	SD-320-0.0-0.5-NX-089	SD-016-0.0-0.5-FD-116	SD-016-0.0-0.5-NX-047
DATE SAMPLED:		06/16/93	06/18/93	06/14/93	06/14/93
REMARKS:				Field Duplicate	
Iron	100	3460	2140 J	10700	13200
Lead	3	37.1 J	10.1 J	58.1	69.6
Magnesium	5000	453	307 J	1040	1100
Manganese	15	37.4	24.4 J	46.5	51.4
Mercury	0.2	0.13 U	0.29 J	0.08	0.14
Nickel	40	4.6 U	-- R	5.9 U	8.2 U
Potassium	5000	181 U	-- R	488	388
Selenium	5	1.8 J	-- R	0.6 U	0.91
Silver	10	1.8 U	-- R	0.9 U	1.2 U
Sodium	5000	227 U	-- R	81.0 U	101 U
Thallium	10	0.7 U	-- R	0.4 U	0.5 U
Vanadium	50	6.1	6.3 J	7.4	7.9
Zinc	20	9.0 UJ	-- R	72.7	88.3
CYANIDE	CRDL (mg/kg)				
Cyanide	20	1.2 U	-- R	0.8 U	0.9 U
TOTAL PETROLEUM HYDROCARBONS	QL (mg/kg)				
Total Petroleum Hydrocarbons	10	25	39 UJ	60 J	43 J

LOCATION NAME:		SD-108	SD-301	SD-302	SD-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-108-0.0-0.5-NX-063	SD-301-0.0-0.5-NX-070	SD-302-0.0-0.5-NX-071	SD-303-0.0-0.5-NX-072
DATE SAMPLED:		06/14/93	06/14/93	06/11/93	06/11/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	110 U	28 U	13 U	18 U
1,1,2,2-Tetrachloroethane	10	110 U	28 U	13 U	18 U
1,1,2-Trichloroethane	10	110 U	28 U	13 U	18 U
1,1-Dichloroethane	10	110 U	28 U	13 U	18 U
1,1-Dichloroethene	10	110 U	28 U	13 U	18 U
1,2-Dichloroethane	10	110 U	28 U	13 U	18 U
1,2-Dichloroethene(total)	10	110 U	28 U	13 UJ	18 UJ
1,2-Dichloropropane	10	110 U	28 U	13 U	18 U
2-Butanone	10	110 U	28 U	13 U	18 U
2-Hexanone	10	110 U	28 U	13 U	18 U
4-Methyl-2-pentanone	10	110 U	28 U	13 U	18 U
Acetone	10	110 U	52	13 U	21 U
Benzene	10	110 U	28 U	13 U	18 U
Bromodichloromethane	10	110 U	28 U	13 U	18 U
Bromoform	10	110 U	28 U	13 U	18 U
Bromomethane	10	110 U	28 U	13 U	18 U
Carbon Disulfide	10	110 U	28 U	13 U	18 U
Carbon Tetrachloride	10	110 U	28 U	13 U	18 U
Chlorobenzene	10	110 U	28 U	13 U	18 U
Chloroethane	10	110 U	28 U	13 U	18 U
Chloroform	10	110 U	28 U	13 U	18 U
Chloromethane	10	110 U	28 U	13 U	18 U
Dibromochloromethane	10	110 U	28 U	13 U	18 U
Ethylbenzene	10	110 U	28 U	13 U	18 U
Methylene Chloride	10	110 U	28 U	13 U	18 U
Styrene	10	110 U	28 U	13 U	18 U
Tetrachloroethene	10	110 U	28 U	13 U	18 U

LOCATION NAME:		SD-108	SD-301	SD-302	SD-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-108-0.0-0.5-NX-063	SD-301-0.0-0.5-NX-070	SD-302-0.0-0.5-NX-071	SD-303-0.0-0.5-NX-072
DATE SAMPLED:		06/14/93	06/14/93	06/11/93	06/11/93
REMARKS:					
Toluene	10	110 U	28 U	13 U	18 U
Total Xylenes	10	110 U	28 U	13 U	18 U
Trichloroethene	10	110 U	28 U	13 U	18 U
Vinyl Chloride	10	110 U	28 U	13 U	18 U
cis-1,3-Dichloropropene	10	110 U	28 U	13 U	18 U
trans-1,3-Dichloropropene	10	110 U	28 U	13 U	18 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	3700 U	920 U	420 U	590 U
1,2-Dichlorobenzene	330	3700 U	920 U	420 U	590 U
1,3-Dichlorobenzene	330	3700 U	920 U	420 U	590 U
1,4-Dichlorobenzene	330	3700 U	920 U	420 U	590 U
2,2'-Oxybis(1-chloropropane)	330	3700 U	920 U	420 U	590 U
2,4,5-Trichlorophenol	800	8900 U	2200 U	1000 U	1400 U
2,4,6-Trichlorophenol	330	3700 U	920 U	420 U	590 U
2,4-Dichlorophenol	330	3700 U	920 U	420 U	590 U
2,4-Dimethylphenol	330	3700 U	920 U	420 U	590 U
2,4-Dinitrophenol	800	8900 U	2200 U	1000 U	1400 U
2,4-Dinitrotoluene	330	3700 U	920 U	420 U	590 U
2,6-Dinitrotoluene	330	3700 U	920 U	420 U	590 U
2-Chloronaphthalene	330	3700 U	920 U	420 U	590 U
2-Chlorophenol	330	3700 U	920 U	420 U	590 U
2-Methylnaphthalene	330	3700 U	920 U	420 U	590 U
2-Methylphenol	330	3700 U	920 U	420 U	590 U
2-Nitroaniline	800	8900 U	2200 U	1000 U	1400 U
2-Nitrophenol	330	3700 U	920 U	420 U	590 U
3,3'-Dichlorobenzidine	330	3700 U	920 U	420 U	590 U
3-Nitroaniline	800	8900 U	2200 U	1000 U	1400 U
4,6-Dinitro-2-methylphenol	800	8900 U	2200 U	1000 U	1400 U

LOCATION NAME:		SD-108	SD-301	SD-302	SD-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-108-0.0-0.5-NX-063	SD-301-0.0-0.5-NX-070	SD-302-0.0-0.5-NX-071	SD-303-0.0-0.5-NX-072
DATE SAMPLED:		06/14/93	06/14/93	06/11/93	06/11/93
REMARKS:					
4-Bromophenyl-phenylether	330	3700 U	920 U	420 U	590 U
4-Chloro-3-methylphenol	330	3700 U	920 U	420 U	590 U
4-Chloroaniline	330	3700 U	920 U	420 U	590 U
4-Chlorophenyl-phenylether	330	3700 U	920 U	420 U	590 U
4-Methylphenol	330	3700 U	920 U	420 U	590 U
4-Nitroaniline	800	8900 U	2200 U	1000 U	1400 U
4-Nitrophenol	800	8900 U	2200 U	1000 U	1400 U
Acenaphthene	330	3700 U	920 U	420 U	130 J
Acenaphthylene	330	3700 U	920 U	420 U	590 U
Anthracene	330	3700 U	920 U	420 U	38 J
Benzo(a)anthracene	330	3700 U	920 U	420 U	590 U
Benzo(a)pyrene	330	3700 U	920 U	420 U	590 UJ
Benzo(b)fluoranthene	330	3700 U	920 U	420 U	590 UJ
Benzo(g,h,i)perylene	330	3700 U	920 U	420 U	590 UJ
Benzo(k)fluoranthene	330	3700 U	920 U	420 U	590 UJ
Bis(2-chloroethoxy)methane	330	3700 U	920 U	420 U	590 U
Bis(2-chloroethyl)ether	330	3700 U	920 U	420 U	590 U
Bis(2-ethylhexyl)phthalate	330	650 J	210 J	420 U	110 J
Butylbenzylphthalate	330	3700 U	920 U	420 U	590 U
Carbazole	330	3700 U	920 U	420 U	590 U
Chrysene	330	3700 U	920 U	420 U	65 J
Di-n-butylphthalate	330	3700 U	920 U	420 U	590 U
Di-n-octylphthalate	330	3700 U	920 U	420 U	590 UJ
Dibenz(a,h)anthracene	330	3700 U	920 U	420 U	590 UJ
Dibenzofuran	330	3700 U	920 U	420 U	52 J
Diethylphthalate	330	3700 U	920 U	420 U	590 U
Dimethylphthalate	330	3700 U	920 U	420 U	590 U
Fluoranthene	330	180 J	83 J	420 U	220 J
Fluorene	330	3700 U	920 U	420 U	120 J
Hexachlorobenzene	330	3700 U	920 U	420 U	590 U

LOCATION NAME:		SD-108	SD-301	SD-302	SD-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-108-0.0-0.5-NX-063	SD-301-0.0-0.5-NX-070	SD-302-0.0-0.5-NX-071	SD-303-0.0-0.5-NX-072
DATE SAMPLED:		06/14/93	06/14/93	06/11/93	06/11/93
REMARKS:					
Hexachlorobutadiene	330	3700 U	920 U	420 U	590 U
Hexachlorocyclopentadiene	330	3700 U	920 U	420 U	590 U
Hexachloroethane	330	3700 U	920 U	420 U	590 U
Indeno(1,2,3-cd)pyrene	330	3700 U	920 U	420 U	590 UJ
Isophorone	330	3700 U	920 U	420 U	590 U
N-Nitroso-di-n-propylamine	330	3700 U	920 U	420 U	590 U
N-Nitrosodiphenylamine	330	3700 U	920 U	420 U	590 U
Naphthalene	330	3700 U	920 U	420 U	590 U
Nitrobenzene	330	3700 U	920 U	420 U	590 U
Pentachlorophenol	800	8900 U	2200 U	1000 U	1400 U
Phenanthrene	330	3700 U	41 J	420 U	160 J
Phenol	330	3700 U	920 U	420 U	590 U
Pyrene	330	280 J	140 J	420 U	240 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	28 J	0.23 J	4.3 U	1.7 J
4,4'-DDE	3.3	3.8 J	0.29 J	4.3 U	2.4 J
4,4'-DDT	3.3	37 U	9.2 U	4.3 U	6.0 U
Aldrin	1.7	19 U	4.7 U	2.1 U	3.0 U
Dieldrin	3.3	37 U	9.2 U	4.3 U	1.8 J
Endosulfan I	1.7	19 U	4.7 U	2.1 U	3.0 U
Endosulfan II	3.3	0.66 J	9.2 U	4.3 U	6.0 U
Endosulfan Sulfate	3.3	37 U	9.2 U	4.3 U	6.0 U
Endrin	3.3	37 U	9.2 U	4.3 U	0.26 J
Endrin Aldehyde	3.3	37 U	9.2 U	4.3 U	16 J
Endrin Ketone	3.3	37 U	9.2 U	4.3 U	6 U
Heptachlor	1.7	19 U	4.7 U	2.1 U	3.0 U
Heptachlor Epoxide	1.7	0.46 J	4.7 U	2.1 U	0.91 J
Methoxychlor	17.0	26 J	47 U	21 U	30 U

LOCATION NAME:		SD-108	SD-301	SD-302	SD-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-108-0.0-0.5-NX-063	SD-301-0.0-0.5-NX-070	SD-302-0.0-0.5-NX-071	SD-303-0.0-0.5-NX-072
DATE SAMPLED:		06/14/93	06/14/93	06/11/93	06/11/93
REMARKS:					
Toxaphene	170.0	1900 U	470 U	210 U	300 U
alpha-BHC	1.7	19 U	4.7 U	2.1 U	3.0 U
alpha-Chlordane	1.7	0.68 J	4.7 U	2.1 U	3.0 U
beta-BHC	1.7	19 U	4.7 U	2.1 U	3.0 U
delta-BHC	1.7	19 U	4.7 U	2.1 U	3.0 U
gamma-BHC(Lindane)	1.7	19 U	4.7 U	2.1 U	3.0 U
gamma-Chlordane	1.7	1.7 J	4.7 U	2.1 U	0.52 J
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	370 U	92 U	43 U	60 U
Aroclor-1221	67.0	740 U	190 U	85 U	120 U
Aroclor-1232	33.0	370 U	92 U	3.8	60 U
Aroclor-1242	33.0	43 J	92 U	43 U	60 U
Aroclor-1248	33.0	370 U	92 U	43 U	22 J
Aroclor-1254	33.0	370 U	92 U	43 U	60 U
Aroclor-1260	33.0	370 U	92 U	43 U	60 U
METALS	CRDL(mg/kg)				
Aluminum	200	8490	9560	4470	4620
Antimony	60	34.1 U	15.5 U	4.3 U	5.9 U
Arsenic	10	13.1	24.0	2.6	4.6
Barium	200	71.7	103	20.0	30.8
Beryllium	5	3.7	1.0 U	0.34 U	0.45 U
Cadmium	5	2.6 U	1.2 U	0.4 U	0.6 U
Calcium	5000	9460	8050	730	1560
Chromium	10	12.7 U	14.9	10.7 U	9.7 U
Cobalt	50	5.3 U	10.0	3.5 U	5.9
Copper	25	43.1	128	6.1 U	15.0

LOCATION NAME:		SD-108	SD-301	SD-302	SD-303
SITE LOCATION:		RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-108-0.0-0.5-NX-063	SD-301-0.0-0.5-NX-070	SD-302-0.0-0.5-NX-071	SD-303-0.0-0.5-NX-072
DATE SAMPLED:		06/14/93	06/14/93	06/11/93	06/11/93
REMARKS:					
Iron	100	6340	13700	6320	6930
Lead	3	43.2	107	5.7	13.3
Magnesium	5000	1890	2070	2240	1430
Manganese	15	535	1230	109	131
Mercury	0.2	0.49	0.37	0.05 U	0.09 U
Nickel	40	12.0 U	13.0 U	8.3 U	6.9 U
Potassium	5000	777	811	1160	682
Selenium	5	5.8	3.9	0.70 UJ	1.0 J
Silver	10	6.0 U	2.7 U	0.9 U	1.3 U
Sodium	5000	1700	841 U	198 U	242 U
Thallium	10	2.6 U	1.2 U	0.72 UJ	1.0 U
Vanadium	50	11.1	13.7	11.1	10.3
Zinc	20	106	185	19.5 U	62.7
CYANIDE	CRDL(mg/kg)				
Cyanide	20	4.4 U	2.2 U	0.6 U	0.8 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	NA	1200 J	44	28

LOCATION NAME:		SD-310	SD-311	SD-311	SD-312
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-310-0.0-0.5-NX-079	SD-311-0.0-0.5-FD-117	SD-311-0.0-0.5-NX-080	SD-312-0.0-0.5-NX-081
DATE SAMPLED:		06/15/93	06/17/93	06/17/93	06/17/93
REMARKS:			Field Duplicate		
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	26 U	83 U	56 U	17 U
1,1,2,2-Tetrachloroethane	10	80	83 U	56 U	17 U
1,1,2-Trichloroethane	10	26 U	83 U	56 U	17 U
1,1-Dichloroethane	10	26 U	83 U	56 U	17 U
1,1-Dichloroethene	10	26 U	83 U	56 U	17 U
1,2-Dichloroethane	10	26 U	83 U	56 U	17 U
1,2-Dichloroethene(total)	10	26 U	83 U	56 U	17 U
1,2-Dichloropropane	10	26 U	83 U	56 U	17 U
2-Butanone	10	26 U	56 J	56 U	17 U
2-Hexanone	10	26 U	83 U	56 U	17 U
4-Methyl-2-pentanone	10	26 U	83 U	56 U	17 U
Acetone	10	27 U	210 J	69 J	16 J
Benzene	10	33	53 J	30 J	17 U
Bromodichloromethane	10	26 U	83 U	56 U	17 U
Bromoform	10	26 U	83 U	56 U	17 U
Bromomethane	10	26 U	83 U	56 U	17 U
Carbon Disulfide	10	26 U	83 U	56 U	17 U
Carbon Tetrachloride	10	26 U	83 U	56 U	17 U
Chlorobenzene	10	26 U	83 U	56 U	17 U
Chloroethane	10	26 U	83 U	56 U	17 U
Chloroform	10	26 U	83 U	56 U	17 U
Chloromethane	10	26 U	83 U	56 U	17 U
Dibromochloromethane	10	26 U	83 U	56 U	17 U
Ethylbenzene	10	440	41 J	56 U	17 U
Methylene Chloride	10	26 U	83 U	56 U	17 U
Styrene	10	26 U	83 U	56 U	17 U
Tetrachloroethene	10	26 U	83 U	56 U	17 U

LOCATION NAME:		SD-310	SD-311	SD-311	SD-312
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-310-0.0-0.5-NX-079	SD-311-0.0-0.5-FD-117	SD-311-0.0-0.5-NX-080	SD-312-0.0-0.5-NX-081
DATE SAMPLED:		06/15/93	06/17/93	06/17/93	06/17/93
REMARKS:			Field Duplicate		
Toluene	10	20 J	42 J	56 U	13 J
Total Xylenes	10	26 U	190 J	33 J	18
Trichloroethene	10	26 U	83 U	56 U	17 U
Vinyl Chloride	10	26 U	83 U	56 U	17 U
cis-1,3-Dichloropropene	10	26 U	83 U	56 U	17 U
trans-1,3-Dichloropropene	10	26 U	83 U	56 U	17 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	850 U	2800 U	56000 UJ	570 U
1,2-Dichlorobenzene	330	850 U	2800 U	56000 UJ	570 U
1,3-Dichlorobenzene	330	850 U	2800 U	56000 UJ	570 U
1,4-Dichlorobenzene	330	850 U	2800 U	56000 UJ	570 U
2,2'-Oxybis(1-chloropropane)	330	850 U	2800 U	56000 UJ	570 U
2,4,5-Trichlorophenol	800	2100 U	6700 U	140000 UJ	1400 U
2,4,6-Trichlorophenol	330	850 U	2800 U	56000 UJ	570 U
2,4-Dichlorophenol	330	850 U	2800 U	56000 UJ	570 U
2,4-Dimethylphenol	330	850 U	2800 U	56000 UJ	570 U
2,4-Dinitrophenol	800	2100 U	6700 U	140000 UJ	1400 U
2,4-Dinitrotoluene	330	850 U	2800 U	56000 UJ	570 U
2,6-Dinitrotoluene	330	850 U	2800 U	56000 UJ	570 U
2-Chloronaphthalene	330	850 U	2800 U	56000 UJ	570 U
2-Chlorophenol	330	850 U	2800 U	56000 UJ	570 U
2-Methylnaphthalene	330	850 U	2800 U	56000 UJ	37 J
2-Methylphenol	330	850 U	2800 U	56000 UJ	570 U
2-Nitroaniline	800	2100 U	6700 U	140000 UJ	1400 U
2-Nitrophenol	330	850 U	2800 U	56000 UJ	570 U
3,3'-Dichlorobenzidine	330	850 U	2800 U	56000 UJ	570 U
3-Nitroaniline	800	2100 U	6700 U	140000 UJ	1400 U
4,6-Dinitro-2-methylphenol	800	2100 U	6700 U	140000 UJ	1400 U

LOCATION NAME:		SD-310	SD-311	SD-311	SD-312
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-310-0.0-0.5-NX-079	SD-311-0.0-0.5-FD-117	SD-311-0.0-0.5-NX-080	SD-312-0.0-0.5-NX-081
DATE SAMPLED:		06/15/93	06/17/93	06/17/93	06/17/93
REMARKS:			Field Duplicate		
4-Bromophenyl-phenylether	330	850 U	2800 U	56000 UJ	570 U
4-Chloro-3-methylphenol	330	850 U	2800 U	56000 UJ	570 U
4-Chloroaniline	330	850 U	2800 U	56000 UJ	570 U
4-Chlorophenyl-phenylether	330	850 U	2800 U	56000 UJ	570 U
4-Methylphenol	330	850 U	2800 U	56000 UJ	570 U
4-Nitroaniline	800	2100 U	6700 U	140000 UJ	1400 U
4-Nitrophenol	800	2100 U	6700 U	140000 UJ	1400 U
Acenaphthene	330	850 U	2800 U	56000 UJ	60 J
Acenaphthylene	330	850 U	2800 U	56000 UJ	49 J
Anthracene	330	850 U	2800 U	56000 UJ	160 J
Benzo(a)anthracene	330	180 J	210 J	56000 UJ	850
Benzo(a)pyrene	330	160 J	2800 U	56000 UJ	660
Benzo(b)fluoranthene	330	340 J	300 J	56000 UJ	1300
Benzo(g,h,i)perylene	330	850 U	2800 U	56000 UJ	410 J
Benzo(k)fluoranthene	330	850 U	2800 U	56000 UJ	570 U
Bis(2-chloroethoxy)methane	330	850 U	2800 U	56000 UJ	570 U
Bis(2-chloroethyl)ether	330	850 U	2800 U	56000 UJ	570 U
Bis(2-ethylhexyl)phthalate	330	220 J	1100 J	56000 UJ	2000
Butylbenzylphthalate	330	850 U	2800 U	56000 UJ	570 U
Carbazole	330	850 U	2800 U	56000 UJ	570 U
Chrysene	330	140 J	2800 U	56000 UJ	600
Di-n-butylphthalate	330	850 U	2800 U	56000 UJ	570 U
Di-n-octylphthalate	330	850 U	2800 U	56000 UJ	570 U
Dibenz(a,h)anthracene	330	850 U	2800 U	56000 UJ	220 J
Dibenzofuran	330	850 U	2800 U	56000 UJ	51 J
Diethylphthalate	330	850 U	2800 U	56000 UJ	570 U
Dimethylphthalate	330	850 U	2800 U	56000 UJ	570 U
Fluoranthene	330	240 J	220 J	56000 UJ	1100
Fluorene	330	850 U	2800 U	56000 UJ	94 J
Hexachlorobenzene	330	850 U	2800 U	56000 UJ	570 U

LOCATION NAME:		SD-310	SD-311	SD-311	SD-312
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-310-0.0-0.5-NX-079	SD-311-0.0-0.5-FD-117	SD-311-0.0-0.5-NX-080	SD-312-0.0-0.5-NX-081
DATE SAMPLED:		06/15/93	06/17/93	06/17/93	06/17/93
REMARKS:			Field Duplicate		
Hexachlorobutadiene	330	850 U	2800 U	56000 UJ	570 U
Hexachlorocyclopentadiene	330	850 U	2800 U	56000 UJ	570 U
Hexachloroethane	330	850 U	2800 U	56000 UJ	570 U
Indeno(1,2,3-cd)pyrene	330	82 J	2800 U	56000 UJ	420 J
Isophorone	330	850 U	2800 U	56000 UJ	570 U
N-Nitroso-di-n-propylamine	330	850 U	2800 U	56000 UJ	570 U
N-Nitrosodiphenylamine	330	850 U	2800 U	56000 UJ	570 U
Naphthalene	330	440 J	2800 U	56000 UJ	180 J
Nitrobenzene	330	850 U	2800 U	56000 UJ	570 U
Pentachlorophenol	800	2100 U	6700 U	140000 UJ	1400 U
Phenanthrene	330	180 J	310 J	56000 UJ	770
Phenol	330	850 U	2800 U	56000 UJ	570 U
Pyrene	330	260 J	310 J	56000 UJ	1100
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	10 J	2.4 J	2.6 J	2.0 J
4,4'-DDE	3.3	6.4 J	7.3 J	5.3 J	2.5 J
4,4'-DDT	3.3	8.5 U	28 U	18 U	0.79 J
Aldrin	1.7	4.4 U	14 U	9.4 U	2.9 UJ
Dieldrin	3.3	2.7 J	4.8 J	18 U	4.0 J
Endosulfan I	1.7	4.4 U	1.2 J	0.30 J	0.44 J
Endosulfan II	3.3	8.5 U	28 U	18 U	0.14 J
Endosulfan Sulfate	3.3	0.30 J	0.86 J	18 U	5.7 UJ
Endrin	3.3	0.42 J	28 U	18 U	0.14 J
Endrin Aldehyde	3.3	8.5 U	28 U	18 U	5.7 UJ
Endrin Ketone	3.3	0.79 J	28 U	18 U	0.63 J
Heptachlor	1.7	4.4 U	14 U	9.4 U	2.9 UJ
Heptachlor Epoxide	1.7	0.19 J	1.9 J	2.6 J	0.11 J
Methoxychlor	17.0	44 U	7.1 J	4.4 J	29 UJ

LOCATION NAME:		SD-310	SD-311	SD-311	SD-312
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-310-0.0-0.5-NX-079	SD-311-0.0-0.5-FD-117	SD-311-0.0-0.5-NX-080	SD-312-0.0-0.5-NX-081
DATE SAMPLED:		06/15/93	06/17/93	06/17/93	06/17/93
REMARKS:			Field Duplicate		
Toxaphene	170.0	440 U	1400 U	940 U	290 UJ
alpha-BHC	1.7	4.4 U	14 U	9.4 U	2.9 UJ
alpha-Chlordane	1.7	0.43 J	14 U	9.4 U	0.41 J
beta-BHC	1.7	4.4 U	1.4 J	9.4 U	2.9 UJ
delta-BHC	1.7	4.4 U	14 U	9.4 U	2.9 UJ
gamma-BHC(Lindane)	1.7	4.4 U	14 U	9.4 U	2.9 UJ
gamma-Chlordane	1.7	0.87 J	1.1 J	0.73 J	0.50 J
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	85 U	280 U	180 U	57 UJ
Aroclor-1221	67.0	170 U	560 U	370 U	120 UJ
Aroclor-1232	33.0	85 U	280 U	180 U	57 UJ
Aroclor-1242	33.0	85 U	140 J	180 U	57 UJ
Aroclor-1248	33.0	85 U	280 U	180 U	57 UJ
Aroclor-1254	33.0	20 J	280 U	27 J	57 UJ
Aroclor-1260	33.0	85 U	280 U	180 U	57 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	18200	5940 J	6050 J	18400
Antimony	60	8.6 U	-- R	-- R	5.6 UJ
Arsenic	10	19.0	5.4 J	7.8 J	16.5 J
Barium	200	101	79.2 J	82.9 J	144
Beryllium	5	0.91 U	2.0 J	-- R	0.80
Cadmium	5	0.6 U	-- R	-- R	0.5 U
Calcium	5000	6510	7670 J	8250 J	4000
Chromium	10	35.3	16.4 J	-- R	38.8
Cobalt	50	15.0	7.3 J	5.5 J	14.9
Copper	25	35.1	21.4 J	20.0 J	48.2

LOCATION NAME:		SD-310	SD-311	SD-311	SD-312
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-310-0.0-0.5-NX-079	SD-311-0.0-0.5-FD-117	SD-311-0.0-0.5-NX-080	SD-312-0.0-0.5-NX-081
DATE SAMPLED:		06/15/93	06/17/93	06/17/93	06/17/93
REMARKS:			Field Duplicate		
Iron	100	32100	12900 J	12400 J	31300
Lead	3	61.8	58.0 J	59.0 J	230 J
Magnesium	5000	6590	1940 J	2020 J	7190
Manganese	15	468	303 J	301 J	376
Mercury	0.2	0.23	-- R	-- R	0.47
Nickel	40	24.0	14.7 J	11.5 J	28.4
Potassium	5000	4460	1240 J	1210 J	4410
Selenium	5	1.1 U	-- R	-- R	1.1 UJ
Silver	10	1.8	-- R	-- R	1.2 U
Sodium	5000	1810	-- R	-- R	398 U
Thallium	10	0.6 U	-- R	-- R	0.4 U
Vanadium	50	41.9	18.0 J	18.3 J	49.0
Zinc	20	78.5	58.2 J	57.9 J	141
CYANIDE	CRDL(mg/kg)				
Cyanide	20	1.2 U	-- R	-- R	0.7 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	35	76 J	68 UJ	54

LOCATION NAME:		SD-313	SD-318	SD-010	SD-013
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	NEAR FORMER SALT/SAND PILE	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-313-0.0-0.5-NX-082	SD-318-0.0-0.08-NX-087	SD-010-0.0-0.5-NX-045	SD-013-0.0-0.5-NX-046
DATE SAMPLED:		06/15/93	06/09/93	06/09/93	06/09/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	12 U	11 U	18 U	38 U
1,1,2,2-Tetrachloroethane	10	12 U	11 U	18 U	38 U
1,1,2-Trichloroethane	10	12 U	11 U	18 U	38 U
1,1-Dichloroethane	10	12 U	11 U	18 U	38 U
1,1-Dichloroethene	10	12 U	11 U	18 U	38 U
1,2-Dichloroethane	10	12 U	11 U	18 U	38 U
1,2-Dichloroethene(total)	10	12 U	11 UJ	18 UJ	38 UJ
1,2-Dichloropropane	10	12 U	11 U	18 U	38 U
2-Butanone	10	12 U	11 U	18 U	38 U
2-Hexanone	10	12 U	11 U	18 U	38 U
4-Methyl-2-pentanone	10	12 U	11 U	18 U	38 U
Acetone	10	12 U	11 U	18 U	48 U
Benzene	10	12 U	11 U	18 U	38 U
Bromodichloromethane	10	12 U	11 U	18 U	38 U
Bromoform	10	12 U	11 U	18 U	38 U
Bromomethane	10	12 U	11 U	18 U	38 U
Carbon Disulfide	10	12 U	11 U	18 U	38 U
Carbon Tetrachloride	10	12 U	11 U	18 U	38 U
Chlorobenzene	10	12 U	11 U	18 U	38 U
Chloroethane	10	12 U	11 U	18 U	38 U
Chloroform	10	12 U	11 U	18 U	38 U
Chloromethane	10	12 U	11 U	18 U	38 U
Dibromochloromethane	10	12 U	11 U	18 U	38 U
Ethylbenzene	10	28	11 U	18 U	38 U
Methylene Chloride	10	12 U	11 U	18 U	38 U
Styrene	10	12 U	11 U	18 U	38 U
Tetrachloroethene	10	12 U	11 U	18 U	38 U

LOCATION NAME:		SD-313	SD-318	SD-010	SD-013
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	NEAR FORMER SALT/SAND PILE	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-313-0.0-0.5-NX-082	SD-318-0.0-0.08-NX-087	SD-010-0.0-0.5-NX-045	SD-013-0.0-0.5-NX-046
DATE SAMPLED:		06/15/93	06/09/93	06/09/93	06/09/93
REMARKS:					
Toluene	10	12 U	11 U	18 U	38 U
Total Xylenes	10	34	11 U	18 U	38 U
Trichloroethene	10	12 U	11 U	18 U	38 U
Vinyl Chloride	10	12 U	11 U	18 U	38 U
cis-1,3-Dichloropropene	10	12 U	11 U	18 U	38 U
trans-1,3-Dichloropropene	10	12 U	11 U	18 U	38 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	390 U	380 U	18000 UJ	1300 U
1,2-Dichlorobenzene	330	390 U	380 U	18000 UJ	750 J
1,3-Dichlorobenzene	330	390 U	380 U	18000 UJ	1300 U
1,4-Dichlorobenzene	330	390 U	380 U	18000 UJ	230 J
2,2'-Oxybis(1-chloropropane)	330	390 U	380 U	18000 UJ	1300 U
2,4,5-Trichlorophenol	800	940 U	920 U	44000 UJ	3100 U
2,4,6-Trichlorophenol	330	390 U	380 U	18000 UJ	1300 U
2,4-Dichlorophenol	330	390 U	380 U	18000 UJ	1300 U
2,4-Dimethylphenol	330	390 U	380 U	18000 UJ	1300 U
2,4-Dinitrophenol	800	940 U	920 U	44000 UJ	3100 U
2,4-Dinitrotoluene	330	390 U	380 U	18000 UJ	1300 U
2,6-Dinitrotoluene	330	390 U	380 U	18000 UJ	1300 U
2-Chloronaphthalene	330	390 U	380 U	18000 UJ	1300 U
2-Chlorophenol	330	390 U	380 U	18000 UJ	1300 U
2-Methylnaphthalene	330	390 U	380 U	18000 UJ	480 J
2-Methylphenol	330	390 U	380 U	18000 UJ	1300 U
2-Nitroaniline	800	940 U	920 U	18000 UJ	3100 U
2-Nitrophenol	330	390 U	380 U	18000 UJ	1300 U
3,3'-Dichlorobenzidine	330	390 U	380 U	18000 UJ	1300 U
3-Nitroaniline	800	940 U	920 U	44000 UJ	3100 U
4,6-Dinitro-2-methylphenol	800	940 U	920 U	44000 UJ	3100 U

LOCATION NAME:		SD-313	SD-318	SD-010	SD-013
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	NEAR FORMER SALT/SAND PILE	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-313-0.0-0.5-NX-082	SD-318-0.0-0.08-NX-087	SD-010-0.0-0.5-NX-045	SD-013-0.0-0.5-NX-046
DATE SAMPLED:		06/15/93	06/09/93	06/09/93	06/09/93
REMARKS:					
4-Bromophenyl-phenylether	330	390 U	380 U	18000 UJ	1300 U
4-Chloro-3-methylphenol	330	390 U	380 U	18000 UJ	1300 U
4-Chloroaniline	330	390 U	380 U	18000 UJ	1300 U
4-Chlorophenyl-phenylether	330	390 U	380 U	18000 UJ	1300 U
4-Methylphenol	330	390 U	380 U	18000 UJ	130 J
4-Nitroaniline	800	940 U	920 U	44000 UJ	3100 U
4-Nitrophenol	800	940 U	920 U	44000 UJ	3100 U
Acenaphthene	330	390 U	380 U	18000 UJ	230 J
Acenaphthylene	330	390 U	20 J	18000 UJ	1300 U
Anthracene	330	390 U	25 J	18000 UJ	190 J
Benzo(a)anthracene	330	390 U	140 J	18000 UJ	490 J
Benzo(a)pyrene	330	390 U	65 J	18000 UJ	320 J
Benzo(b)fluoranthene	330	390 U	140 J	18000 UJ	500 J
Benzo(g,h,i)perylene	330	390 U	380 U	18000 UJ	1300 UJ
Benzo(k)fluoranthene	330	390 U	110 J	18000 UJ	460 J
Bis(2-chloroethoxy)methane	330	390 U	380 U	18000 UJ	1300 U
Bis(2-chloroethyl)ether	330	390 U	380 U	18000 UJ	550 J
Bis(2-ethylhexyl)phthalate	330	58 J	120 J	18000 UJ	1300 U
Butylbenzylphthalate	330	390 U	380 U	18000 UJ	1300 U
Carbazole	330	390 U	380 U	18000 UJ	1300 U
Chrysene	330	390 U	150 J	18000 UJ	500 J
Di-n-butylphthalate	330	390 U	380 U	18000 UJ	1300 U
Di-n-octylphthalate	330	390 U	380 U	18000 UJ	1300 UJ
Dibenz(a,h)anthracene	330	390 U	380 U	18000 UJ	1300 UJ
Dibenzofuran	330	390 U	380 U	18000 UJ	220 J
Diethylphthalate	330	390 U	380 U	18000 UJ	1300 U
Dimethylphthalate	330	390 U	380 U	18000 UJ	1300 U
Fluoranthene	330	390 U	310 J	4500 J	1300
Fluorene	330	390 U	380 U	970 J	290 J
Hexachlorobenzene	330	390 U	380 U	18000 UJ	1300 U

LOCATION NAME:		SD-313	SD-318	SD-010	SD-013
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	NEAR FORMER SALT/SAND PILE	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-313-0.0-0.5-NX-082	SD-318-0.0-0.08-NX-087	SD-010-0.0-0.5-NX-045	SD-013-0.0-0.5-NX-046
DATE SAMPLED:		06/15/93	06/09/93	06/09/93	06/09/93
REMARKS:					
Hexachlorobutadiene	330	390 U	380 U	18000 UJ	1300 U
Hexachlorocyclopentadiene	330	390 U	380 U	18000 UJ	1300 U
Hexachloroethane	330	390 U	380 U	18000 UJ	1300 U
Indeno(1,2,3-cd)pyrene	330	390 U	380 U	18000 UJ	1300 UJ
Isophorone	330	390 U	380 U	18000 UJ	1300 U
N-Nitroso-di-n-propylamine	330	390 U	380 U	18000 UJ	1300 U
N-Nitrosodiphenylamine	330	390 U	380 U	18000 UJ	1300 U
Naphthalene	330	33 J	380 U	18000 UJ	360 J
Nitrobenzene	330	390 U	380 U	18000 UJ	1300 U
Pentachlorophenol	800	940 U	920 U	44000 UJ	3100 U
Phenanthrene	330	390 U	160 J	2200 J	930 J
Phenol	330	390 U	380 U	18000 UJ	1300 U
Pyrene	330	17 J	260 J	2500 J	1300
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	0.34 J	3.8 U	9.8 J	13 U
4,4'-DDE	3.3	1.2 J	3.8 U	2.2 J	1.9 J
4,4'-DDT	3.3	3.9 U	3.8 U	5.8 U	13 U
Aldrin	1.7	2.0 U	1.9 U	2.9 U	6.4 U
Dieldrin	3.3	3.9 U	3.8 U	5.8 U	13 U
Endosulfan I	1.7	2.0 U	1.9 U	2.9 U	6.4 U
Endosulfan II	3.3	9.4	3.8 U	0.52 J	13 U
Endosulfan Sulfate	3.3	3.9 U	3.8 U	5.8 U	13 U
Endrin	3.3	3.9 U	0.20 J	5.8 U	12 J
Endrin Aldehyde	3.3	3.9 U	3.8 U	5.8 U	13 U
Endrin Ketone	3.3	3.9 U	3.8 U	5.8 U	3.7 J
Heptachlor	1.7	2.0 U	1.9 U	2.9 U	6.4 U
Heptachlor Epoxide	1.7	2.0 U	1.9 U	2.9 U	0.93 J
Methoxychlor	17.0	20 U	19 U	29 U	64 U

LOCATION NAME:		SD-313	SD-318	SD-010	SD-013
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	NEAR FORMER SALT/SAND PILE	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-313-0.0-0.5-NX-082	SD-318-0.0-0.08-NX-087	SD-010-0.0-0.5-NX-045	SD-013-0.0-0.5-NX-046
DATE SAMPLED:		06/15/93	06/09/93	06/09/93	06/09/93
REMARKS:					
Toxaphene	170.0	200 U	190 U	290 U	640 U
alpha-BHC	1.7	2.0 U	1.9 U	0.25 J	6.4 U
alpha-Chlordane	1.7	2.0 U	1.9 U	2.9 U	0.42 J
beta-BHC	1.7	2.0 U	1.9 U	2.9 U	6.4 U
delta-BHC	1.7	0.16 J	1.9 U	2.9 U	6.4 U
gamma-BHC(Lindane)	1.7	2.0 U	1.9 U	2.9 U	6.4 U
gamma-Chlordane	1.7	0.66 J	1.9 U	2.9 U	6.4 U
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	39 U	2.2 J	58 U	130 U
Aroclor-1221	67.0	79 U	77 U	120 U	260 U
Aroclor-1232	33.0	39 U	38 U	58 U	130 U
Aroclor-1242	33.0	39 U	38 U	58 U	130 U
Aroclor-1248	33.0	39 U	38 U	13	24 J
Aroclor-1254	33.0	39 U	38 U	58 U	130 U
Aroclor-1260	33.0	340	38 U	58 U	130 U
METALS	CRDL(mg/kg)				
Aluminum	200	3990	7660	6740	11100 J
Antimony	60	4.4 U	4.1	5.5	20.6 J
Arsenic	10	37.3	9.7	6.5	28.3 J
Barium	200	22.2	32.0	36.3	105 J
Beryllium	5	0.28 U	0.32 U	0.52 U	2.1 J
Cadmium	5	0.3 U	0.4 U	0.5 U	-- R
Calcium	5000	2480	2220	1260	7750 J
Chromium	10	10.2 U	21.2	13.4 U	27.2 J
Cobalt	50	2.3 U	5.4	6.1	14.2 J
Copper	25	9.9 UJ	12.7	36.9	289 J

LOCATION NAME:		SD-313	SD-318	SD-010	SD-013
SITE LOCATION:		SCHAFFER LANDFILL WETLANDS	NEAR FORMER SALT/SAND PILE	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-313-0.0-0.5-NX-082	SD-318-0.0-0.08-NX-087	SD-010-0.0-0.5-NX-045	SD-013-0.0-0.5-NX-046
DATE SAMPLED:		06/15/93	06/09/93	06/09/93	06/09/93
REMARKS:					
Iron	100	13200	10900	7520	14000 J
Lead	3	15.4	13.2	60.8	418 J
Magnesium	5000	1770	3760	1480	2500 J
Manganese	15	196	164	150	1010 J
Mercury	0.2	0.06	0.05 U	0.06 U	0.21 J
Nickel	40	6.6 U	13.3 U	11.2 U	24.8 U
Potassium	5000	826	1660	795	990 J
Selenium	5	0.5 U	0.65 UJ	1.1 J	7.3 J
Silver	10	0.8 U	0.8 U	1.1 U	-- R
Sodium	5000	156 U	13000	284 U	1170 U
Thallium	10	0.3 U	0.68 UJ	0.8 U	-- R
Vanadium	50	10.0	17.9	11.9	25.2 J
Zinc	20	17.2 U	28.1	51.8	149 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	0.6 U	0.89	0.7 U	-- R
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	14	190	2500	1100

LOCATION NAME:		SD-118	SD-322	SD-017	SD-026
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-118-0.0-0.5-NX-069	SD-322-0.0-0.5-NX-090	SD-017-0.0-0.5-NX-048	SD-026-0.0-0.5-FD-115
DATE SAMPLED:		06/09/93	06/09/93	06/14/93	06/10/93
REMARKS:					Field Duplicate
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	31 U	13 U	13 U	16 U
1,1,2,2-Tetrachloroethane	10	31 U	13 U	13 U	16 U
1,1,2-Trichloroethane	10	31 U	13 U	13 U	16 U
1,1-Dichloroethane	10	31 U	13 U	13 U	16 U
1,1-Dichloroethene	10	31 U	13 U	13 U	16 U
1,2-Dichloroethane	10	31 U	13 U	13 U	16 U
1,2-Dichloroethene(total)	10	31 UJ	13 UJ	13 U	16 UJ
1,2-Dichloropropane	10	31 U	13 U	13 U	16 U
2-Butanone	10	31 U	13 U	13 U	16 U
2-Hexanone	10	31 U	13 U	13 U	16 U
4-Methyl-2-pentanone	10	31 U	13 U	13 U	16 U
Acetone	10	31 U	13 U	21	32 U
Benzene	10	31 U	13 U	13 U	16 U
Bromodichloromethane	10	31 U	13 U	13 U	16 U
Bromoform	10	31 U	13 U	13 U	16 U
Bromomethane	10	31 U	13 U	13 U	16 U
Carbon Disulfide	10	31 U	13 U	13 U	16 U
Carbon Tetrachloride	10	31 U	13 U	13 U	16 U
Chlorobenzene	10	31 U	13 U	13 U	16 U
Chloroethane	10	31 U	13 U	13 U	16 U
Chloroform	10	31 U	13 U	13 U	16 U
Chloromethane	10	31 U	13 U	13 U	16 U
Dibromochloromethane	10	31 U	13 U	13 U	16 U
Ethylbenzene	10	31 U	13 U	13 U	16 U
Methylene Chloride	10	31 U	13 U	13 U	16 U
Styrene	10	31 U	13 U	13 U	16 U
Tetrachloroethene	10	31 U	13 U	13 U	16 U

LOCATION NAME:		SD-118	SD-322	SD-017	SD-026
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-118-0.0-0.5-NX-069	SD-322-0.0-0.5-NX-090	SD-017-0.0-0.5-NX-048	SD-026-0.0-0.5-FD-115
DATE SAMPLED:		06/09/93	06/09/93	06/14/93	06/10/93
REMARKS:					Field Duplicate
Toluene	10	31 U	13 U	13 U	16 U
Total Xylenes	10	31 U	13 U	13 U	16 U
Trichloroethene	10	31 U	13 U	13 U	16 U
Vinyl Chloride	10	31 U	13 U	13 U	16 U
cis-1,3-Dichloropropene	10	31 U	13 U	13 U	16 U
trans-1,3-Dichloropropene	10	31 U	13 U	13 U	16 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	31000 UJ	440 U	430 U	530 U
1,2-Dichlorobenzene	330	31000 UJ	440 U	430 U	530 U
1,3-Dichlorobenzene	330	31000 UJ	440 U	430 U	530 U
1,4-Dichlorobenzene	330	31000 UJ	440 U	430 U	530 U
2,2'-Oxybis(1-chloropropane)	330	31000 UJ	440 U	430 U	530 U
2,4,5-Trichlorophenol	800	78000 UJ	1100 U	1100 U	1300 U
2,4,6-Trichlorophenol	330	31000 UJ	440 U	430 U	530 U
2,4-Dichlorophenol	330	31000 UJ	440 U	430 U	530 U
2,4-Dimethylphenol	330	31000 UJ	440 U	430 U	530 U
2,4-Dinitrophenol	800	78000 UJ	1100 U	1100 U	1300 U
2,4-Dinitrotoluene	330	31000 UJ	440 U	430 U	530 U
2,6-Dinitrotoluene	330	31000 UJ	440 U	430 U	530 U
2-Chloronaphthalene	330	31000 UJ	440 U	430 U	530 U
2-Chlorophenol	330	31000 UJ	440 U	430 U	530 U
2-Methylnaphthalene	330	1500 J	140 J	430 U	530 U
2-Methylphenol	330	31000 UJ	440 U	430 U	530 U
2-Nitroaniline	800	78000 UJ	1100 U	1100 U	1300 U
2-Nitrophenol	330	31000 UJ	440 U	430 U	530 U
3,3'-Dichlorobenzidine	330	31000 UJ	440 U	430 U	530 U
3-Nitroaniline	800	78000 UJ	1100 U	1100 U	1300 U
4,6-Dinitro-2-methylphenol	800	78000 UJ	1100 U	1100 U	1300 U

LOCATION NAME:		SD-118	SD-322	SD-017	SD-026
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-118-0.0-0.5-NX-069	SD-322-0.0-0.5-NX-090	SD-017-0.0-0.5-NX-048	SD-026-0.0-0.5-FD-115
DATE SAMPLED:		06/09/93	06/09/93	06/14/93	06/10/93
REMARKS:					Field Duplicate
4-Bromophenyl-phenylether	330	31000 UJ	440 U	430 U	530 U
4-Chloro-3-methylphenol	330	31000 UJ	440 U	430 U	530 U
4-Chloroaniline	330	31000 UJ	440 U	430 U	530 U
4-Chlorophenyl-phenylether	330	31000 UJ	440 U	430 U	530 U
4-Methylphenol	330	2900 J	440 U	430 U	530 U
4-Nitroaniline	800	78000 UJ	1100 U	1100 U	1300 U
4-Nitrophenol	800	78000 UJ	1100 U	1100 U	1300 U
Acenaphthene	330	2600 J	82 J	430 U	530 U
Acenaphthylene	330	2200 J	440 U	430 U	530 U
Anthracene	330	5200 J	140 J	430 U	530 U
Benzo(a)anthracene	330	40000 J	500	430 U	74 J
Benzo(a)pyrene	330	18000 J	270 J	430 U	530 U
Benzo(b)fluoranthene	330	60000 J	540 J	430 U	160 J
Benzo(g,h,i)perylene	330	31000 UJ	140 J	430 U	530 U
Benzo(k)fluoranthene	330	31000 UJ	340 J	430 U	530 U
Bis(2-chloroethoxy)methane	330	31000 UJ	440 U	430 U	530 U
Bis(2-chloroethyl)ether	330	31000 UJ	440 U	430 U	530 U
Bis(2-ethylhexyl)phthalate	330	17000 J	100 J	530	690
Butylbenzylphthalate	330	31000 UJ	440 U	41 J	530 U
Carbazole	330	2300 J	51 J	430 U	530 U
Chrysene	330	25000 J	440	19 J	66 J
Di-n-butylphthalate	330	31000 U	440 U	430 U	530 U
Di-n-octylphthalate	330	31000 UJ	440 UJ	430 U	530 U
Dibenz(a,h)anthracene	330	31000 UJ	440 UJ	430 U	530 U
Dibenzofuran	330	1600 J	93 J	430 U	530 U
Diethylphthalate	330	31000 UJ	440 U	430 U	530 U
Dimethylphthalate	330	31000 UJ	440 U	430 U	530 U
Fluoranthene	330	48000 J	800	36 J	130 J
Fluorene	330	3300 J	130 J	430 U	530 U
Hexachlorobenzene	330	31000 UJ	440 U	430 U	530 U

LOCATION NAME:		SD-118	SD-322	SD-017	SD-026
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-118-0.0-0.5-NX-069	SD-322-0.0-0.5-NX-090	SD-017-0.0-0.5-NX-048	SD-026-0.0-0.5-FD-115
DATE SAMPLED:		06/09/93	06/09/93	06/14/93	06/10/93
REMARKS:					Field Duplicate
Hexachlorobutadiene	330	31000 UJ	440 U	430 U	530 U
Hexachlorocyclopentadiene	330	31000 UJ	440 U	430 U	530 U
Hexachloroethane	330	31000 UJ	440 U	430 U	530 U
Indeno(1,2,3-cd)pyrene	330	18000 J	180 J	430 U	530 U
Isophorone	330	31000 UJ	440 U	430 U	530 U
N-Nitroso-di-n-propylamine	330	31000 UJ	440 U	430 U	530 U
N-Nitrosodiphenylamine	330	31000 UJ	440 U	430 U	530 U
Naphthalene	330	2300 J	76 J	430 U	530 U
Nitrobenzene	330	31000 UJ	440 U	430 U	530 U
Pentachlorophenol	800	78000 UJ	1100 U	1100 U	1300 U
Phenanthrene	330	36000 J	610	19 J	56 J
Phenol	330	31000 UJ	440 U	430 U	530 U
Pyrene	330	62000 J	970	44 J	150 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	6.3 J	4.4 U	0.91 J	4.6 J
4,4'-DDE	3.3	3.6 J	0.34 J	2.3 J	2.6 J
4,4'-DDT	3.3	10 UJ	4.4 U	4.3 U	5.4 U
Aldrin	1.7	5.3 UJ	2.2 U	2.2 U	2.7 U
Dieldrin	3.3	10 UJ	4.4 U	0.14 J	1.2 J
Endosulfan I	1.7	5.3 UJ	2.2 U	2.2 U	2.7 U
Endosulfan II	3.3	1.4 J	4.4 U	4.3 U	0.63 J
Endosulfan Sulfate	3.3	10 UJ	4.4 U	4.3 U	5.4 U
Endrin	3.3	10 UJ	4.4 U	0.16 J	0.30 J
Endrin Aldehyde	3.3	10 UJ	4.4 U	4.3 U	5.4 U
Endrin Ketone	3.3	10 UJ	4.4 U	4.3 U	5.4 U
Heptachlor	1.7	5.3 UJ	2.2 U	2.2 U	2.7 U
Heptachlor Epoxide	1.7	0.26 J	0.12 J	2.2 U	2.7 U
Methoxychlor	17.0	52 UJ	22 U	22 U	27 U

LOCATION NAME:		SD-118	SD-322	SD-017	SD-026
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-118-0.0-0.5-NX-069	SD-322-0.0-0.5-NX-090	SD-017-0.0-0.5-NX-048	SD-026-0.0-0.5-FD-115
DATE SAMPLED:		06/09/93	06/09/93	06/14/93	06/10/93
REMARKS:					Field Duplicate
Toxaphene	170.0	520 UJ	220 U	220 U	270 U
alpha-BHC	1.7	5.3 UJ	2.2 U	2.2 U	2.7 U
alpha-Chlordane	1.7	5.3 UJ	2.2 U	2.2 U	1.6 J
beta-BHC	1.7	5.3 UJ	2.2 U	2.2 U	2.7 U
delta-BHC	1.7	0.62 J	2.2 U	2.2 U	2.7 U
gamma-BHC(Lindane)	1.7	5.3 UJ	2.2 U	2.2 U	2.7 U
gamma-Chlordane	1.7	0.40 J	2.2 U	2.2 U	1.9 J
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	100 UJ	44 U	43 U	54 U
Aroclor-1221	67.0	210 UJ	89 U	88 U	110 U
Aroclor-1232	33.0	100 UJ	44 U	43 U	54 U
Aroclor-1242	33.0	100 UJ	44 U	6.8 J	54 U
Aroclor-1248	33.0	42 J	9.1	43 U	54 U
Aroclor-1254	33.0	100 UJ	44 U	43 U	24
Aroclor-1260	33.0	100 UJ	44 U	43 U	54 U
METALS	CRDL(mg/kg)				
Aluminum	200	13100	3880	3860	3870
Antimony	60	7.4	5.3	4.5 U	4.8 U
Arsenic	10	20.2	4.8	6.1	8.5
Barium	200	109	20.5	20.9	22.5
Beryllium	5	1.0	0.34 U	0.26 U	0.37 U
Cadmium	5	0.6 U	0.4 U	0.3 U	0.5 U
Calcium	5000	1860	518	635	942
Chromium	10	29.8	8.3 U	14.2	13.1 U
Cobalt	50	12.2	2.9 U	4.8	3.2 U
Copper	25	117	50.6	18.9 U	17.2

LOCATION NAME:		SD-118	SD-322	SD-017	SD-026
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-118-0.0-0.5-NX-069	SD-322-0.0-0.5-NX-090	SD-017-0.0-0.5-NX-048	SD-026-0.0-0.5-FD-115
DATE SAMPLED:		06/09/93	06/09/93	06/14/93	06/10/93
REMARKS:					Field Duplicate
Iron	100	18700	6440	7370	6480
Lead	3	214	89.9 J	16.0	29.7
Magnesium	5000	3540	1440	1940	1230
Manganese	15	527	61.0	121	112
Mercury	0.2	0.22 J	0.06 U	0.06 U	0.07 U
Nickel	40	24.2 U	7.9 U	10.0 U	7.5 U
Potassium	5000	2210	481	532	624
Selenium	5	1.5 J	0.75 J	0.93	0.81 UJ
Silver	10	1.4 U	0.9 U	0.83	1.0 U
Sodium	5000	474 U	235 U	99.8 U	180 U
Thallium	10	1.1 U	0.7 U	0.3 U	0.8 U
Vanadium	50	28.0	8.9	8.5	9.0
Zinc	20	225	35.3	47.2	72.4
CYANIDE	CRDL(mg/kg)				
Cyanide	20	1.2	0.6 U	0.7 U	0.7 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	1500	510	16 UJ	94

LOCATION NAME:		SD-026	SD-028	SD-029	SD-307
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-026-0.0-0.5-NX-053	SD-028-0.0-0.5-NX-054	SD-029-0.0-0.5-NX-055	SD-307-0.0-0.5-NX-076
DATE SAMPLED:		06/10/93	06/10/93	06/10/93	06/10/93
REMARKS:					
VOLATILE ORGANICS	CRQL (ug/kg)				
1,1,1-Trichloroethane	10	21 U	14 U	14 U	30 U
1,1,2,2-Tetrachloroethane	10	21 U	14 U	14 U	30 U
1,1,2-Trichloroethane	10	21 U	14 U	14 U	30 U
1,1-Dichloroethane	10	21 U	14 U	14 U	30 U
1,1-Dichloroethene	10	21 U	14 U	14 U	30 U
1,2-Dichloroethane	10	21 U	14 U	14 U	30 U
1,2-Dichloroethene (total)	10	21 UJ	14 UJ	14 UJ	30 UJ
1,2-Dichloropropane	10	21 U	14 U	14 U	30 U
2-Butanone	10	21 U	14 U	14 U	30 U
2-Hexanone	10	21 U	14 U	14 U	30 U
4-Methyl-2-pentanone	10	21 U	14 U	14 U	30 U
Acetone	10	49 U	14 U	14 U	42 U
Benzene	10	21 U	14 U	14 U	30 U
Bromodichloromethane	10	21 U	14 U	14 U	30 U
Bromoform	10	21 U	14 U	14 U	30 U
Bromomethane	10	21 U	14 U	14 U	30 U
Carbon Disulfide	10	21 U	14 U	14 U	30 U
Carbon Tetrachloride	10	21 U	14 U	14 U	30 U
Chlorobenzene	10	21 U	14 U	14 U	30 U
Chloroethane	10	21 U	14 U	14 U	30 U
Chloroform	10	21 U	14 U	14 U	30 U
Chloromethane	10	21 U	14 U	14 U	30 U
Dibromochloromethane	10	21 U	14 U	14 U	30 U
Ethylbenzene	10	21 U	14 U	14 U	30 U
Methylene Chloride	10	21 U	14 U	14 U	30 U
Styrene	10	21 U	14 U	14 U	30 U
Tetrachloroethene	10	21 U	14 U	14 U	30 U

LOCATION NAME:		SD-026	SD-028	SD-029	SD-307
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-026-0.0-0.5-NX-053	SD-028-0.0-0.5-NX-054	SD-029-0.0-0.5-NX-055	SD-307-0.0-0.5-NX-076
DATE SAMPLED:		06/10/93	06/10/93	06/10/93	06/10/93
REMARKS:					
Toluene	10	21 U	14 U	14 U	30 U
Total Xylenes	10	21 U	14 U	14 U	30 U
Trichloroethene	10	21 U	14 U	14 U	30 U
Vinyl Chloride	10	21 U	14 U	14 U	30 U
cis-1,3-Dichloropropene	10	21 U	14 U	14 U	30 U
trans-1,3-Dichloropropene	10	21 U	14 U	14 U	30 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	21000 UJ	450 U	14000 UJ	1000 U
1,2-Dichlorobenzene	330	21000 UJ	450 U	14000 UJ	1000 U
1,3-Dichlorobenzene	330	21000 UJ	450 U	14000 UJ	1000 U
1,4-Dichlorobenzene	330	21000 UJ	450 U	14000 UJ	1000 U
2,2'-Oxybis(1-chloropropane)	330	21000 UJ	450 U	14000 UJ	1000 U
2,4,5-Trichlorophenol	800	52000 UJ	1100 U	34000 UJ	2400 U
2,4,6-Trichlorophenol	330	21000 UJ	450 U	14000 UJ	1000 U
2,4-Dichlorophenol	330	21000 UJ	450 U	14000 UJ	1000 U
2,4-Dimethylphenol	330	21000 UJ	450 U	14000 UJ	1000 U
2,4-Dinitrophenol	800	52000 UJ	1100 U	34000 UJ	2400 U
2,4-Dinitrotoluene	330	21000 UJ	450 U	14000 UJ	1000 U
2,6-Dinitrotoluene	330	21000 UJ	450 U	14000 UJ	1000 U
2-Chloronaphthalene	330	21000 UJ	450 U	14000 UJ	1000 U
2-Chlorophenol	330	21000 UJ	450 U	14000 UJ	1000 U
2-Methylnaphthalene	330	21000 UJ	450 U	14000 UJ	1000 U
2-Methylphenol	330	21000 UJ	450 U	14000 UJ	1000 U
2-Nitroaniline	800	52000 UJ	1100 U	34000 UJ	2400 U
2-Nitrophenol	330	21000 UJ	450 U	14000 UJ	1000 U
3,3'-Dichlorobenzidine	330	21000 UJ	450 U	14000 UJ	1000 U
3-Nitroaniline	800	52000 UJ	1100 U	34000 UJ	2400 U
4,6-Dinitro-2-methylphenol	800	52000 UJ	1100 U	34000 UJ	2400 U

LOCATION NAME:		SD-026	SD-028	SD-029	SD-307
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-026-0.0-0.5-NX-053	SD-028-0.0-0.5-NX-054	SD-029-0.0-0.5-NX-055	SD-307-0.0-0.5-NX-076
DATE SAMPLED:		06/10/93	06/10/93	06/10/93	06/10/93
REMARKS:					
4-Bromophenyl-phenylether	330	21000 UJ	450 U	14000 UJ	1000 U
4-Chloro-3-methylphenol	330	21000 UJ	450 U	14000 UJ	1000 U
4-Chloroaniline	330	21000 UJ	450 U	14000 UJ	1000 U
4-Chlorophenyl-phenylether	330	21000 UJ	450 U	14000 UJ	1000 U
4-Methylphenol	330	21000 UJ	450 U	14000 UJ	1000 U
4-Nitroaniline	800	52000 UJ	1100 U	34000 UJ	2400 U
4-Nitrophenol	800	52000 UJ	1100 U	34000 UJ	2400 U
Acenaphthene	330	21000 UJ	450 U	14000 UJ	1000 U
Acenaphthylene	330	21000 UJ	450 U	14000 UJ	1000 U
Anthracene	330	21000 UJ	450 U	14000 UJ	1000 U
Benzo(a)anthracene	330	21000 UJ	450 U	14000 UJ	93 J
Benzo(a)pyrene	330	21000 UJ	450 U	14000 UJ	1000 U
Benzo(b)fluoranthene	330	21000 UJ	35 J	14000 UJ	130 J
Benzo(g,h,i)perylene	330	21000 UJ	450 U	14000 UJ	1000 U
Benzo(k)fluoranthene	330	21000 UJ	450 U	14000 UJ	1000 U
Bis(2-chloroethoxy)methane	330	21000 UJ	450 U	14000 UJ	1000 U
Bis(2-chloroethyl)ether	330	21000 UJ	450 U	14000 UJ	1000 U
Bis(2-ethylhexyl)phthalate	330	1800 J	62 J	14000 UJ	1000 U
Butylbenzylphthalate	330	21000 UJ	450 U	14000 UJ	1000 U
Carbazole	330	21000 UJ	450 U	14000 UJ	1000 U
Chrysene	330	21000 UJ	23 J	14000 UJ	83 J
Di-n-butylphthalate	330	21000 UJ	450 U	14000 UJ	1000 U
Di-n-octylphthalate	330	21000 UJ	450 U	14000 UJ	1000 U
Dibenz(a,h)anthracene	330	21000 UJ	450 U	14000 UJ	1000 U
Dibenzofuran	330	21000 UJ	450 U	14000 UJ	1000 U
Diethylphthalate	330	21000 UJ	450 U	14000 UJ	1000 U
Dimethylphthalate	330	21000 UJ	450 U	14000 UJ	1000 U
Fluoranthene	330	21000 UJ	41 J	14000 UJ	190 J
Fluorene	330	21000 UJ	450 U	14000 UJ	1000 U
Hexachlorobenzene	330	21000 UJ	450 U	14000 UJ	1000 U

LOCATION NAME:		SD-026	SD-028	SD-029	SD-307
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-026-0.0-0.5-NX-053	SD-028-0.0-0.5-NX-054	SD-029-0.0-0.5-NX-055	SD-307-0.0-0.5-NX-076
DATE SAMPLED:		06/10/93	06/10/93	06/10/93	06/10/93
REMARKS:					
Hexachlorobutadiene	330	21000 UJ	450 U	14000 UJ	1000 U
Hexachlorocyclopentadiene	330	21000 UJ	450 U	14000 UJ	1000 U
Hexachloroethane	330	21000 UJ	450 U	14000 UJ	1000 U
Indeno(1,2,3-cd)pyrene	330	21000 UJ	450 U	14000 UJ	1000 U
Isophorone	330	21000 UJ	450 U	14000 UJ	1000 U
N-Nitroso-di-n-propylamine	330	21000 UJ	450 U	14000 UJ	1000 U
N-Nitrosodiphenylamine	330	21000 UJ	450 U	14000 UJ	1000 U
Naphthalene	330	21000 UJ	450 U	14000 UJ	1000 U
Nitrobenzene	330	21000 UJ	450 U	14000 UJ	1000 U
Pentachlorophenol	800	52000 UJ	1100 U	34000 UJ	2400 U
Phenanthrene	330	21000 UJ	25 J	14000 UJ	110 J
Phenol	330	21000 UJ	450 U	14000 UJ	1000 U
Pyrene	330	21000 UJ	47 J	14000 UJ	260 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	1.3 J	0.85 J	0.64 J	15 J
4,4'-DDE	3.3	1.6 J	0.09 J	0.89 J	5.7 J
4,4'-DDT	3.3	6.9 UJ	4.6 U	4.5 U	10 U
Aldrin	1.7	3.5 UJ	2.3 U	2.3 U	5.1 U
Dieldrin	3.3	0.51 J	0.94 J	0.14 J	10 J
Endosulfan I	1.7	3.5 UJ	0.21 J	2.3 U	5.1 U
Endosulfan II	3.3	0.80 J	4.6 U	4.5 U	10 U
Endosulfan Sulfate	3.3	6.9 UJ	4.6 U	4.5 U	10 U
Endrin	3.3	0.22 J	4.6 U	0.97 J	1.6 J
Endrin Aldehyde	3.3	6.9 UJ	4.6 U	4.5 U	10 U
Endrin Ketone	3.3	6.9 UJ	4.6 U	4.5 U	10 U
Heptachlor	1.7	3.5 UJ	2.3 U	2.3 U	5.1 U
Heptachlor Epoxide	1.7	3.5 UJ	2.3 U	2.3 U	5.1 U
Methoxychlor	17.0	35 UJ	23 U	23 U	51 U

LOCATION NAME:		SD-026	SD-028	SD-029	SD-307
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-026-0.0-0.5-NX-053	SD-028-0.0-0.5-NX-054	SD-029-0.0-0.5-NX-055	SD-307-0.0-0.5-NX-076
DATE SAMPLED:		06/10/93	06/10/93	06/10/93	06/10/93
REMARKS:					
Toxaphene	170.0	350 UJ	230 U	230 U	510 U
alpha-BHC	1.7	3.5 UJ	2.3 U	2.3 U	5.1 U
alpha-Chlordane	1.7	0.77 J	2.3 U	2.3 U	5.1 U
beta-BHC	1.7	3.5 UJ	2.3 U	2.3 U	5.1 U
delta-BHC	1.7	3.5 UJ	2.3 U	2.3 U	5.1 U
gamma-BHC(Lindane)	1.7	3.5 UJ	2.3 U	2.3 U	5.1 U
gamma-Chlordane	1.7	0.86 J	2.3 U	2.3 U	5.1 U
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	4.4 J	46 U	45 U	100 U
Aroclor-1221	67.0	140 UJ	91 U	90 U	200 U
Aroclor-1232	33.0	69 UJ	46 U	45 U	100 U
Aroclor-1242	33.0	69 UJ	46 U	45 U	13 J
Aroclor-1248	33.0	69 UJ	27	19	100 U
Aroclor-1254	33.0	69 UJ	46 U	45 U	100 U
Aroclor-1260	33.0	69 UJ	46 U	45 U	100 U
METALS	CRDL(mg/kg)				
Aluminum	200	4590	5160	4040	7220 J
Antimony	60	5.0 U	4.3 U	4.4 U	-- R
Arsenic	10	9.5	17.1	5.0	8.1 J
Barium	200	24.5	17.7	14.1	49.1 J
Beryllium	5	0.38 U	0.34 U	0.34 U	0.94 U
Cadmium	5	0.5 U	0.4 U	0.4 U	-- R
Calcium	5000	1070	643	491 U	2720 J
Chromium	10	16.6 U	13.1 U	9.8 U	11.6 U
Cobalt	50	3.8 U	4.6	2.3 U	8.9 U
Copper	25	19.0	8.9	6.4 U	20.4 U

LOCATION NAME:		SD-026	SD-028	SD-029	SD-307
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-026-0.0-0.5-NX-053	SD-028-0.0-0.5-NX-054	SD-029-0.0-0.5-NX-055	SD-307-0.0-0.5-NX-076
DATE SAMPLED:		06/10/93	06/10/93	06/10/93	06/10/93
REMARKS:					
Iron	100	7440	10500	5640	7370 J
Lead	3	34.0	18.8	12.7	61.5 J
Magnesium	5000	1570	2170	1490	1030 J
Manganese	15	126	401	54.4	73.8 J
Mercury	0.2	0.07 U	0.06 U	0.06 U	-- R
Nickel	40	8.6 U	9.4 U	7.5 U	15.8 U
Potassium	5000	734	776	550	361 U
Selenium	5	0.82 UJ	0.75 UJ	0.81 J	2.4 J
Silver	10	1.1 U	0.9 U	0.9 U	-- R
Sodium	5000	195 U	193 U	140 U	394 U
Thallium	10	0.8 U	0.7 U	0.7 U	-- R
Vanadium	50	10.8	12.8	7.4	14.5 J
Zinc	20	83.1	20.2 U	11.7 U	82.2 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	0.8 U	0.6 U	0.6 U	-- R
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	95	93	14	74 UJ

LOCATION NAME:	SD-308
SITE LOCATION:	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5
M&E SAMPLE ID:	SD-308-0.0-0.5-NX-077
DATE SAMPLED:	06/10/93
REMARKS:	

VOLATILE ORGANICS	CRQL (ug/kg)	
1,1,1-Trichloroethane	10	20 U
1,1,2,2-Tetrachloroethane	10	20 U
1,1,2-Trichloroethane	10	20 U
1,1-Dichloroethane	10	20 U
1,1-Dichloroethene	10	20 U
1,2-Dichloroethane	10	20 U
1,2-Dichloroethene (total)	10	20 UJ
1,2-Dichloropropane	10	20 U
2-Butanone	10	20 U
2-Hexanone	10	20 U
4-Methyl-2-pentanone	10	20 U
Acetone	10	26 U
Benzene	10	20 U
Bromodichloromethane	10	20 U
Bromoform	10	20 U
Bromomethane	10	20 U
Carbon Disulfide	10	20 U
Carbon Tetrachloride	10	20 U
Chlorobenzene	10	20 U
Chloroethane	10	20 U
Chloroform	10	20 U
Chloromethane	10	20 U
Dibromochloromethane	10	20 U
Ethylbenzene	10	20 U
Methylene Chloride	10	20 U
Styrene	10	20 U
Tetrachloroethene	10	20 U

LOCATION NAME:	SD-308
SITE LOCATION:	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5
M&E SAMPLE ID:	SD-308-0.0-0.5-NX-077
DATE SAMPLED:	06/10/93
REMARKS:	

Toluene	10	20 U
Total Xylenes	10	20 U
Trichloroethene	10	20 U
Vinyl Chloride	10	20 U
cis-1,3-Dichloropropene	10	20 U
trans-1,3-Dichloropropene	10	20 U

SEMIVOLATILE ORGANICS	CRQL(ug/kg)	
1,2,4-Trichlorobenzene	330	650 U
1,2-Dichlorobenzene	330	650 U
1,3-Dichlorobenzene	330	650 U
1,4-Dichlorobenzene	330	650 U
2,2'-Oxybis(1-chloropropane)	330	650 U
2,4,5-Trichlorophenol	800	1600 U
2,4,6-Trichlorophenol	330	650 U
2,4-Dichlorophenol	330	650 U
2,4-Dimethylphenol	330	650 U
2,4-Dinitrophenol	800	1600 U
2,4-Dinitrotoluene	330	650 U
2,6-Dinitrotoluene	330	650 U
2-Chloronaphthalene	330	650 U
2-Chlorophenol	330	650 U
2-Methylnaphthalene	330	650 U
2-Methylphenol	330	650 U
2-Nitroaniline	800	1600 U
2-Nitrophenol	330	650 U
3,3'-Dichlorobenzidine	330	650 U
3-Nitroaniline	800	1600 U
4,6-Dinitro-2-methylphenol	800	1600 U

LOCATION NAME: SD-308
SITE LOCATION: MIDDLESEX CANAL
SAMPLE DEPTH (FT): 0.0-0.5
M&E SAMPLE ID: SD-308-0.0-0.5-NX-077
DATE SAMPLED: 06/10/93
REMARKS:

4-Bromophenyl-phenylether	330	650 U
4-Chloro-3-methylphenol	330	650 U
4-Chloroaniline	330	650 U
4-Chlorophenyl-phenylether	330	650 U
4-Methylphenol	330	650 U
4-Nitroaniline	800	1600 U
4-Nitrophenol	800	1600 U
Acenaphthene	330	650 U
Acenaphthylene	330	650 U
Anthracene	330	650 U
Benzo(a)anthracene	330	66 J
Benzo(a)pyrene	330	650 U
Benzo(b)fluoranthene	330	140 J
Benzo(g,h,i)perylene	330	650 U
Benzo(k)fluoranthene	330	650 U
Bis(2-chloroethoxy)methane	330	650 U
Bis(2-chloroethyl)ether	330	650 U
Bis(2-ethylhexyl)phthalate	330	280 J
Butylbenzylphthalate	330	650 U
Carbazole	330	650 U
Chrysene	330	41 J
Di-n-butylphthalate	330	650 U
Di-n-octylphthalate	330	650 U
Dibenz(a,h)anthracene	330	650 U
Dibenzofuran	330	650 U
Diethylphthalate	330	650 U
Dimethylphthalate	330	650 U
Fluoranthene	330	83 J
Fluorene	330	650 U
Hexachlorobenzene	330	650 U

LOCATION NAME:	SD-308
SITE LOCATION:	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5
M&E SAMPLE ID:	SD-308-0.0-0.5-NX-077
DATE SAMPLED:	06/10/93
REMARKS:	

Hexachlorobutadiene	330	650 U
Hexachlorocyclopentadiene	330	650 U
Hexachloroethane	330	650 U
Indeno(1,2,3-cd)pyrene	330	650 U
Isophorone	330	650 U
N-Nitroso-di-n-propylamine	330	650 U
N-Nitrosodiphenylamine	330	650 U
Naphthalene	330	650 U
Nitrobenzene	330	650 U
Pentachlorophenol	800	1600 U
Phenanthrene	330	49 J
Phenol	330	650 U
Pyrene	330	120 J

PESTICIDES	CRQL(ug/kg)	
4,4'-DDD	3.3	1.2 J
4,4'-DDE	3.3	18 J
4,4'-DDT	3.3	6.5 U
Aldrin	1.7	3.3 U
Dieldrin	3.3	6.5 U
Endosulfan I	1.7	2.0 J
Endosulfan II	3.3	6.5 U
Endosulfan Sulfate	3.3	6.5 U
Endrin	3.3	6.5 U
Endrin Aldehyde	3.3	6.5 U
Endrin Ketone	3.3	6.5 U
Heptachlor	1.7	3.3 U
Heptachlor Epoxide	1.7	3.3 U
Methoxychlor	17.0	33 U

LOCATION NAME:	SD-308
SITE LOCATION:	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5
M&E SAMPLE ID:	SD-308-0.0-0.5-NX-077
DATE SAMPLED:	06/10/93
REMARKS:	

Toxaphene	170.0	330 U
alpha-BHC	1.7	3.3 U
alpha-Chlordane	1.7	3.3 U
beta-BHC	1.7	3.3 U
delta-BHC	1.7	3.3 U
gamma-BHC(Lindane)	1.7	3.3 U
gamma-Chlordane	1.7	3.3 U
PCBs	CRQL(ug/kg)	
Aroclor-1016	33.0	65 U
Aroclor-1221	67.0	130 U
Aroclor-1232	33.0	65 U
Aroclor-1242	33.0	65 U
Aroclor-1248	33.0	2000
Aroclor-1254	33.0	65 U
Aroclor-1260	33.0	65 U
METALS	CRDL(mg/kg)	
Aluminum	200	5590
Antimony	60	7.7 U
Arsenic	10	5.2
Barium	200	36.1
Beryllium	5	0.57 U
Cadmium	5	0.7 U
Calcium	5000	2040
Chromium	10	13.5 U
Cobalt	50	3.2 U
Copper	25	10.7 U

LOCATION NAME:	SD-308
SITE LOCATION:	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5
M&E SAMPLE ID:	SD-308-0.0-0.5-NX-077
DATE SAMPLED:	06/10/93
REMARKS:	

Iron	100	4000
Lead	3	41.7
Magnesium	5000	915
Manganese	15	203
Mercury	0.2	0.09 U
Nickel	40	4.1 U
Potassium	5000	368 U
Selenium	5	1.7 J
Silver	10	1.6 U
Sodium	5000	262 U
Thallium	10	1.3 U
Vanadium	50	7.3
Zinc	20	45.8

CYANIDE	CRDL(mg/kg)	
Cyanide	20	1.0 U

TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)	
Total Petroleum Hydrocarbons	10	51

Analytical Data - September 1993
Sediment

LOCATION NAME:		SD-319A	SD-321	SD-107	SD-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-319A-0.0-1.0-NX-888	SD-321-0.0-1.0-NX-900	SD-107-0.0-1.0-NX-863	SD-304-0.0-1.0-NX-874
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	-- R	-- R	15 U	-- R
1,1,2,2-Tetrachloroethane	10	-- R	-- R	15 U	-- R
1,1,2-Trichloroethane	10	-- R	-- R	15 U	-- R
1,1-Dichloroethane	10	-- R	-- R	15 U	-- R
1,1-Dichloroethene	10	-- R	-- R	15 U	-- R
1,2-Dichloroethane	10	-- R	-- R	15 U	-- R
1,2-Dichloroethene(total)	10	-- R	-- R	15 U	-- R
1,2-Dichloropropane	10	-- R	-- R	15 U	-- R
2-Butanone	10	-- R	120 J	15 U	300 J
2-Hexanone	10	-- R	31 J	15 U	-- R
4-Methyl-2-pentanone	10	-- R	-- R	15 U	-- R
Acetone	10	-- R	-- R	15 U	-- R
Benzene	10	-- R	-- R	15 U	-- R
Bromodichloromethane	10	-- R	-- R	15 U	-- R
Bromoform	10	-- R	-- R	15 U	-- R
Bromomethane	10	-- R	-- R	15 U	-- R
Carbon Disulfide	10	-- R	-- R	15 U	-- R
Carbon Tetrachloride	10	-- R	-- R	15 U	-- R
Chlorobenzene	10	-- R	-- R	15 U	-- R
Chloroethane	10	-- R	-- R	15 U	-- R
Chloroform	10	-- R	-- R	15 U	-- R
Chloromethane	10	-- R	-- R	15 U	-- R
Dibromochloromethane	10	-- R	-- R	15 U	-- R
Ethylbenzene	10	-- R	-- R	15 U	-- R
Methylene Chloride	10	-- R	-- R	15 U	-- R
Styrene	10	-- R	-- R	15 U	-- R
Tetrachloroethene	10	-- R	-- R	15 U	-- R

LOCATION NAME:		SD-319A	SD-321	SD-107	SD-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-319A-0.0-1.0-NX-888	SD-321-0.0-1.0-NX-900	SD-107-0.0-1.0-NX-863	SD-304-0.0-1.0-NX-874
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
Toluene	10	-- R	-- R	15 U	-- R
Total Xylenes	10	-- R	-- R	15 U	-- R
Trichloroethene	10	-- R	-- R	15 U	-- R
Vinyl Chloride	10	-- R	-- R	15 U	-- R
cis-1,3-Dichloropropene	10	-- R	-- R	15 U	-- R
trans-1,3-Dichloropropene	10	-- R	-- R	15 U	-- R
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	-- R	1100 U	480 UJ	-- R
1,2-Dichlorobenzene	330	-- R	1100 U	480 UJ	-- R
1,3-Dichlorobenzene	330	-- R	1100 U	480 UJ	-- R
1,4-Dichlorobenzene	330	-- R	1100 U	480 UJ	-- R
2,2'-Oxybis(1-chloropropane)	330	-- R	1100 U	480 UJ	-- R
2,4,5-Trichlorophenol	800	-- R	2600 U	1200 UJ	-- R
2,4,6-Trichlorophenol	330	-- R	1100 U	480 UJ	-- R
2,4-Dichlorophenol	330	-- R	1100 U	480 UJ	-- R
2,4-Dimethylphenol	330	-- R	1100 U	480 UJ	-- R
2,4-Dinitrophenol	800	-- R	2600 U	1200 UJ	-- R
2,4-Dinitrotoluene	330	-- R	1100 U	480 UJ	-- R
2,6-Dinitrotoluene	330	-- R	1100 U	480 UJ	-- R
2-Chloronaphthalene	330	-- R	1100 U	480 UJ	-- R
2-Chlorophenol	330	-- R	1100 U	480 UJ	-- R
2-Methylnaphthalene	330	-- R	1100 U	110 J	-- R
2-Methylphenol	330	-- R	1100 U	480 UJ	-- R
2-Nitroaniline	800	-- R	2600 U	1200 UJ	-- R
2-Nitrophenol	330	-- R	1100 U	480 UJ	-- R
3,3'-Dichlorobenzidine	330	-- R	1100 U	480 UJ	-- R
3-Nitroaniline	800	-- R	2600 U	1200 UJ	-- R
4,6-Dinitro-2-methylphenol	800	-- R	2600 U	1200 UJ	-- R

LOCATION NAME:		SD-319A	SD-321	SD-107	SD-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-319A-0.0-1.0-NX-888	SD-321-0.0-1.0-NX-900	SD-107-0.0-1.0-NX-863	SD-304-0.0-1.0-NX-874
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
4-Bromophenyl-phenylether	330	-- R	1100 U	480 UJ	-- R
4-Chloro-3-methylphenol	330	-- R	1100 U	480 UJ	-- R
4-Chloroaniline	330	-- R	1100 U	480 UJ	-- R
4-Chlorophenyl-phenylether	330	-- R	1100 U	480 UJ	-- R
4-Methylphenol	330	-- R	1100 U	480 UJ	-- R
4-Nitroaniline	800	-- R	2600 U	1200 UJ	-- R
4-Nitrophenol	800	-- R	2600 U	1200 UJ	-- R
Acenaphthene	330	-- R	1100 U	77 J	720 J
Acenaphthylene	330	-- R	1100 U	480 UJ	-- R
Anthracene	330	-- R	1100 U	130 J	390 J
Benzo(a)anthracene	330	-- R	1100 U	210 J	550 J
Benzo(a)pyrene	330	290 J	1100 U	200 J	610 J
Benzo(b)fluoranthene	330	-- R	1100 U	270 J	440 J
Benzo(g,h,i)perylene	330	-- R	1100 U	98 J	-- R
Benzo(k)fluoranthene	330	-- R	1100 U	140 J	800 J
Bis(2-chloroethoxy)methane	330	-- R	1100 U	480 UJ	-- R
Bis(2-chloroethyl)ether	330	-- R	1100 U	480 UJ	-- R
Bis(2-ethylhexyl)phthalate	330	-- R	1100 U	480 UJ	-- R
Butylbenzylphthalate	330	-- R	1100 U	480 UJ	260 J
Carbazole	330	-- R	1100 U	480 UJ	-- R
Chrysene	330	-- R	1100 U	270 J	790 J
Di-n-butylphthalate	330	-- R	1100 U	480 UJ	-- R
Di-n-octylphthalate	330	-- R	1100 UJ	480 UJ	-- R
Dibenz(a,h)anthracene	330	-- R	1100 U	480 UJ	-- R
Dibenzofuran	330	-- R	1100 U	480 UJ	260 J
Diethylphthalate	330	-- R	1100 U	480 UJ	-- R
Dimethylphthalate	330	-- R	1100 U	480 UJ	-- R
Fluoranthene	330	-- R	1100 U	660 J	2200 J
Fluorene	330	-- R	1100 U	240 J	830 J
Hexachlorobenzene	330	-- R	1100 U	480 UJ	-- R

LOCATION NAME:		SD-319A	SD-321	SD-107	SD-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-319A-0.0-1.0-NX-888	SD-321-0.0-1.0-NX-900	SD-107-0.0-1.0-NX-863	SD-304-0.0-1.0-NX-874
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
Hexachlorobutadiene	330	-- R	1100 U	480 UJ	-- R
Hexachlorocyclopentadiene	330	-- R	1100 U	480 UJ	-- R
Hexachloroethane	330	-- R	1100 U	480 UJ	-- R
Indeno(1,2,3-cd)pyrene	330	-- R	1100 U	91 J	-- R
Isophorone	330	-- R	1100 U	480 UJ	-- R
N-Nitroso-di-n-propylamine	330	-- R	1100 U	480 UJ	-- R
N-Nitrosodiphenylamine	330	-- R	1100 U	480 UJ	-- R
Naphthalene	330	-- R	1100 U	110 J	-- R
Nitrobenzene	330	-- R	1100 U	480 UJ	-- R
Pentachlorophenol	800	-- R	2600 U	1200 UJ	-- R
Phenanthrene	330	-- R	1100 U	770 J	2700 J
Phenol	330	-- R	1100 U	480 UJ	-- R
Pyrene	330	-- R	130 J	780 J	2300 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	-- R	10 U	9.4 J	-- R
4,4'-DDE	3.3	-- R	10 U	7.7 J	-- R
4,4'-DDT	3.3	-- R	10 U	4.9 UJ	-- R
Aldrin	1.7	-- R	5.4 U	2.5 UJ	-- R
Dieldrin	3.3	-- R	10 U	4.9 UJ	-- R
Endosulfan I	1.7	-- R	5.4 U	2.5 UJ	-- R
Endosulfan II	3.3	-- R	10 U	4.9 UJ	-- R
Endosulfan Sulfate	3.3	-- R	10 U	4.9 UJ	-- R
Endrin	3.3	-- R	10 U	4.9 UJ	-- R
Endrin Aldehyde	3.3	-- R	10 U	4.9 UJ	-- R
Endrin Ketone	3.3	-- R	10 U	4.9 UJ	-- R
Heptachlor	1.7	-- R	5.4 U	2.5 UJ	-- R
Heptachlor Epoxide	1.7	-- R	5.4 U	2.5 UJ	-- R
Methoxychlor	17.0	-- R	54 U	25 UJ	-- R

LOCATION NAME:		SD-319A	SD-321	SD-107	SD-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-319A-0.0-1.0-NX-888	SD-321-0.0-1.0-NX-900	SD-107-0.0-1.0-NX-863	SD-304-0.0-1.0-NX-874
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
Toxaphene	170.0	-- R	540 U	250 UJ	-- R
alpha-BHC	1.7	-- R	5.4 U	2.5 UJ	-- R
alpha-Chlordane	1.7	-- R	5.4 U	2.5 UJ	-- R
beta-BHC	1.7	-- R	5.4 U	2.5 UJ	-- R
delta-BHC	1.7	-- R	5.4 U	2.5 UJ	-- R
gamma-BHC(Lindane)	1.7	-- R	5.4 U	2.5 UJ	-- R
gamma-Chlordane	1.7	-- R	5.4 U	2.5 UJ	-- R
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	-- R	100 U	49 UJ	-- R
Aroclor-1221	67.0	-- R	210 U	99 UJ	-- R
Aroclor-1232	33.0	-- R	100 U	49 UJ	-- R
Aroclor-1242	33.0	-- R	100 U	49 UJ	-- R
Aroclor-1248	33.0	-- R	100 U	49 UJ	-- R
Aroclor-1254	33.0	-- R	100 U	49 UJ	-- R
Aroclor-1260	33.0	-- R	100 U	49 UJ	-- R
METALS	CRDL(mg/kg)				
Aluminum	200	2130	10300	3160	5720 J
Antimony	60	-- R	5.2 U	4.7 UJ	-- R
Arsenic	10	-- R	3.6 U	4.3	39.0 J
Barium	200	30.7 J	39.1	14.5	143 J
Beryllium	5	-- R	1.3	0.4 U	-- R
Cadmium	5	-- R	0.6 U	0.5 U	-- R
Calcium	5000	3340 J	4050	716	11100 J
Chromium	10	-- R	16.4 J	5.3 U	61.5 J
Cobalt	50	-- R	4.8	4.5	21.0 J
Copper	25	20.6 J	12.8	6.6 J	77.8 J

LOCATION NAME:		SD-319A	SD-321	SD-107	SD-304
SITE LOCATION:		BACKGROUND	BACKGROUND	B&M POND	B&M POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-319A-0.0-1.0-NX-888	SD-321-0.0-1.0-NX-900	SD-107-0.0-1.0-NX-863	SD-304-0.0-1.0-NX-874
DATE SAMPLED:		09/22/93	09/17/93	09/14/93	09/16/93
REMARKS:					
Iron	100	1340 J	5080	5140 J	20300 J
Lead	3	18.8 J	17.4	20.8 J	161 J
Magnesium	5000	500 J	1520	936	1830 J
Manganese	15	32.7 J	388	80.8 J	643 J
Mercury	0.2	-- R	0.16	0.07 U	0.47 J
Nickel	40	-- R	6.8 U	7.4 U	28.8 J
Potassium	5000	-- R	374	277	568 J
Selenium	5	-- R	1.6 U	0.69 UJ	-- R
Silver	10	-- R	2.1 U	1.5 U	-- R
Sodium	5000	-- R	634 U	113 U	-- R
Thallium	10	-- R	0.90 U	0.7 U	-- R
Vanadium	50	7.2 J	9.5	5.7	27.5 J
Zinc	20	28.6 J	26.3	38.1 J	446 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	-- R	1.5 U	0.8 U	-- R
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	75 J	36 UJ	34 UJ	62 UJ

LOCATION NAME:		SD-030	SD-101	SD-102	SD-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-30-0.0-1.0-NX-857	SD-101-0.0-1.0-NX-858	SD-102-0.0-1.0-NX-859	SD-113-0.0-1.0-NX-867
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	29 U	14 U	-- R	18 U
1,1,2,2-Tetrachloroethane	10	29 U	14 U	-- R	18 U
1,1,2-Trichloroethane	10	29 U	14 U	-- R	18 U
1,1-Dichloroethane	10	29 U	14 U	-- R	18 U
1,1-Dichloroethene	10	29 U	14 U	-- R	18 U
1,2-Dichloroethane	10	29 U	14 U	-- R	18 U
1,2-Dichloroethene(total)	10	29 U	14 U	-- R	18 U
1,2-Dichloropropane	10	29 U	14 U	-- R	18 U
2-Butanone	10	29 U	14 U	79 J	18 U
2-Hexanone	10	29 U	14 U	-- R	18 U
4-Methyl-2-pentanone	10	29 U	14 U	-- R	18 U
Acetone	10	46 U	40 U	-- R	18 U
Benzene	10	3 J	14 U	-- R	18 U
Bromodichloromethane	10	29 U	14 U	-- R	18 U
Bromoform	10	29 U	14 U	-- R	18 U
Bromomethane	10	29 U	14 U	-- R	18 U
Carbon Disulfide	10	29 U	14 U	-- R	18 U
Carbon Tetrachloride	10	29 U	14 U	-- R	18 U
Chlorobenzene	10	29 U	14 U	-- R	18 U
Chloroethane	10	29 U	14 U	-- R	18 U
Chloroform	10	29 U	14 U	-- R	18 U
Chloromethane	10	29 U	14 U	-- R	18 U
Dibromochloromethane	10	29 U	14 U	-- R	18 U
Ethylbenzene	10	29 U	14 U	-- R	18 U
Methylene Chloride	10	29 U	14 U	-- R	18 U
Styrene	10	29 U	14 U	-- R	18 U
Tetrachloroethene	10	29 U	14 U	-- R	18 U

LOCATION NAME:		SD-030	SD-101	SD-102	SD-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-30-0.0-1.0-NX-857	SD-101-0.0-1.0-NX-858	SD-102-0.0-1.0-NX-859	SD-113-0.0-1.0-NX-867
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
Toluene	10	29 U	14 U	41 J	18 U
Total Xylenes	10	33	14 U	-- R	18 U
Trichloroethene	10	29 U	14 U	-- R	18 U
Vinyl Chloride	10	29 U	14 U	-- R	18 U
cis-1,3-Dichloropropene	10	29 U	14 U	-- R	18 U
trans-1,3-Dichloropropene	10	29 U	14 U	-- R	18 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	1000 U	460 U	800 U	460 U
1,2-Dichlorobenzene	330	1000 U	460 U	800 U	460 U
1,3-Dichlorobenzene	330	1000 U	460 U	800 U	460 U
1,4-Dichlorobenzene	330	1000 U	460 U	800 U	460 U
2,2'-Oxybis(1-chloropropane)	330	1000 U	460 U	800 U	460 U
2,4,5-Trichlorophenol	800	2500 U	1100 U	1900 U	1100 U
2,4,6-Trichlorophenol	330	1000 U	460 U	800 U	460 U
2,4-Dichlorophenol	330	1000 U	460 U	800 U	460 U
2,4-Dimethylphenol	330	1000 U	460 U	800 U	460 U
2,4-Dinitrophenol	800	2500 U	1100 U	1900 U	1100 U
2,4-Dinitrotoluene	330	1000 U	460 U	800 U	460 U
2,6-Dinitrotoluene	330	1000 U	460 U	800 U	460 U
2-Chloronaphthalene	330	1000 U	460 U	800 U	460 U
2-Chlorophenol	330	1000 U	460 U	800 U	460 U
2-Methylnaphthalene	330	1000 U	130 J	120 J	190 J
2-Methylphenol	330	1000 U	460 U	800 U	460 U
2-Nitroaniline	800	2500 U	1100 U	1900 U	1100 U
2-Nitrophenol	330	1000 U	460 U	800 U	460 U
3,3'-Dichlorobenzidine	330	1000 U	460 U	800 U	460 U
3-Nitroaniline	800	2500 U	1100 U	1900 U	1100 U
4,6-Dinitro-2-methylphenol	800	2500 U	1100 U	1900 U	1100 U

LOCATION NAME:		SD-030	SD-101	SD-102	SD-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-30-0.0-1.0-NX-857	SD-101-0.0-1.0-NX-858	SD-102-0.0-1.0-NX-859	SD-113-0.0-1.0-NX-867
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
4-Bromophenyl-phenylether	330	1000 U	460 U	800 U	460 U
4-Chloro-3-methylphenol	330	1000 U	460 U	800 U	460 U
4-Chloroaniline	330	1000 U	460 U	800 U	460 U
4-Chlorophenyl-phenylether	330	1000 U	460 U	800 U	460 U
4-Methylphenol	330	1000 U	460 U	800 U	460 U
4-Nitroaniline	800	2500 U	1100 U	1900 U	1100 U
4-Nitrophenol	800	2500 U	1100 U	1900 U	1100 U
Acenaphthene	330	1000 U	460 U	160 J	460 U
Acenaphthylene	330	1000 U	460 U	180 J	460 U
Anthracene	330	1000 U	460 U	370 J	460 U
Benzo(a)anthracene	330	1000 U	150 J	1300	230 J
Benzo(a)pyrene	330	1000 U	130 J	1100	240 J
Benzo(b)fluoranthene	330	1000 U	140 J	1400	220 J
Benzo(g,h,i)perylene	330	1000 U	130 J	470 J	190 J
Benzo(k)fluoranthene	330	1000 U	220 J	1300 J	270 J
Bis(2-chloroethoxy)methane	330	1000 U	460 U	800 U	460 U
Bis(2-chloroethyl)ether	330	1000 U	460 U	800 U	460 U
Bis(2-ethylhexyl)phthalate	330	1000 U	460 U	800 U	460 U
Butylbenzylphthalate	330	1000 U	460 U	800 U	460 U
Carbazole	330	1000 U	460 U	270 J	460 U
Chrysene	330	1000 U	260 J	1500	390 J
Di-n-butylphthalate	330	1000 U	460 U	800 U	460 U
Di-n-octylphthalate	330	1000 U	460 UJ	800 U	-- R
Dibenz(a,h)anthracene	330	1000 U	460 UJ	310 J	100 J
Dibenzofuran	330	1000 U	50 J	290 J	89 J
Diethylphthalate	330	1000 U	460 U	800 U	460 U
Dimethylphthalate	330	1000 U	460 U	800 U	460 U
Fluoranthene	330	1000 U	310 J	3300	380 J
Fluorene	330	1000 U	460 U	770 J	87 J
Hexachlorobenzene	330	1000 U	460 U	800 U	460 U

LOCATION NAME:		SD-030	SD-101	SD-102	SD-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-30-0.0-1.0-NX-857	SD-101-0.0-1.0-NX-858	SD-102-0.0-1.0-NX-859	SD-113-0.0-1.0-NX-867
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
Hexachlorobutadiene	330	1000 U	460 U	800 U	460 U
Hexachlorocyclopentadiene	330	1000 U	460 U	800 U	460 U
Hexachloroethane	330	1000 U	460 U	800 U	460 U
Indeno(1,2,3-cd)pyrene	330	1000 U	120 J	590 J	140 J
Isophorone	330	1000 U	460 U	800 U	460 U
N-Nitroso-di-n-propylamine	330	1000 U	460 U	800 U	460 U
N-Nitrosodiphenylamine	330	1000 U	460 U	800 U	460 U
Naphthalene	330	140 J	110 J	97 J	210 J
Nitrobenzene	330	1000 U	460 U	800 U	460 U
Pentachlorophenol	800	2500 U	1100 U	1900 U	1100 U
Phenanthrene	330	1000 U	240 J	2700	340 J
Phenol	330	1000 U	460 U	800 U	460 U
Pyrene	330	1000 U	560	3100	710
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	10 U	4.6 U	8.0 U	4.6 U
4,4'-DDE	3.3	10 U	4.8	8.0 U	4.6 U
4,4'-DDT	3.3	10 U	4.6 U	8.0 U	4.6 U
Aldrin	1.7	5.2 U	2.4 U	4.1 U	2.4 U
Dieldrin	3.3	10 U	4.6 U	8.0 U	4.6 U
Endosulfan I	1.7	5.2 U	2.4 U	4.1 U	2.4 U
Endosulfan II	3.3	10 U	4.6 U	8.0 U	4.6 U
Endosulfan Sulfate	3.3	10 U	4.6 U	8.0 U	4.6 U
Endrin	3.3	10 U	4.6 U	8.0 U	4.6 U
Endrin Aldehyde	3.3	10 U	4.6 U	8.0 U	4.6 U
Endrin Ketone	3.3	10 U	4.6 U	8.0 U	4.6 U
Heptachlor	1.7	5.2 U	2.4 U	4.1 U	2.4 U
Heptachlor Epoxide	1.7	5.2 U	2.4 U	4.1 U	2.4 U
Methoxychlor	17.0	52 U	24 U	14 J	24 U

LOCATION NAME:		SD-030	SD-101	SD-102	SD-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-30-0.0-1.0-NX-857	SD-101-0.0-1.0-NX-858	SD-102-0.0-1.0-NX-859	SD-113-0.0-1.0-NX-867
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
Toxaphene	170.0	520 U	240 U	410 U	240 U
alpha-BHC	1.7	5.2 U	2.4 U	4.1 U	2.4 U
alpha-Chlordane	1.7	5.2 U	2.4 U	4.1 U	2.4 U
beta-BHC	1.7	5.2 U	2.4 U	4.1 U	2.4 U
delta-BHC	1.7	5.2 U	2.4 U	4.1 U	2.4 U
gamma-BHC(Lindane)	1.7	5.2 U	2.4 U	4.1 U	2.4 U
gamma-Chlordane	1.7	5.2 U	2.4 U	4.1 U	2.4 U
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	100 U	46 U	80 U	46 U
Aroclor-1221	67.0	210 U	94 U	160 U	94 U
Aroclor-1232	33.0	100 U	46 U	80 U	46 U
Aroclor-1242	33.0	100 U	46 U	80 U	46 U
Aroclor-1248	33.0	100 U	46 U	80 U	46 U
Aroclor-1254	33.0	100 U	46 U	80 U	46 U
Aroclor-1260	33.0	100 U	46 U	80 U	46 U
METALS	CRDL(mg/kg)				
Aluminum	200	6600	3120	5690	4020
Antimony	60	5.1 U	2.9 U	4.3 U	3.3 U
Arsenic	10	142	6.0 J	8.0	3.8 J
Barium	200	107	25.4	30.8	28.1
Beryllium	5	0.10 U	0.1 U	0.10 U	0.1 U
Cadmium	5	0.6 U	0.3 U	0.5 U	0.4 U
Calcium	5000	8460	740	1900	813 U
Chromium	10	11.9 UJ	7.4 U	11.5 UJ	8.3 U
Cobalt	50	14.1	1.9 U	2.7 U	2.0 U
Copper	25	13.6 U	45.6	11.1 U	23.9

LOCATION NAME:		SD-030	SD-101	SD-102	SD-113
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-30-0.0-1.0-NX-857	SD-101-0.0-1.0-NX-858	SD-102-0.0-1.0-NX-859	SD-113-0.0-1.0-NX-867
DATE SAMPLED:		09/15/93	09/21/93	09/15/93	09/21/93
REMARKS:					
Iron	100	27300	4560	4950	4690
Lead	3	35.8 J	24.8	50.6 J	43.9
Magnesium	5000	2170	927	1350	1090
Manganese	15	897	109	99.2	91.1
Mercury	0.2	0.25	0.08 U	0.13	0.10
Nickel	40	10.6 U	6.5 U	6.3 U	6.0 U
Potassium	5000	991	453	373	431
Selenium	5	2.3 J	0.9 UJ	1.3 U	1.0 UJ
Silver	10	2.0 U	1.2 U	1.7 U	1.3 U
Sodium	5000	1880 U	162 U	526 U	182 U
Thallium	10	0.9 U	0.5 UJ	0.8 U	0.6 UJ
Vanadium	50	18.7	8.2	14.6	8.7
Zinc	20	38.5 U	20.2 J	34.2 U	17.1 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	1.5 U	0.81 UJ	1.1 U	0.85 UJ
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	15 U	23 J	18 U	38 J

LOCATION NAME:		SD-117	SD-117	SD-305	SD-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-117-0.0-1.0-FD-929	SD-117-0.0-1.0-NX-860	SD-305-0.0-1.0-NX-875	SD-306-0.0-1.0-NX-876
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	13 U	12 U	14 U	13 U
1,1,2,2-Tetrachloroethane	10	13 U	12 U	14 U	13 U
1,1,2-Trichloroethane	10	13 U	12 U	14 U	13 U
1,1-Dichloroethane	10	13 U	12 U	14 U	13 U
1,1-Dichloroethene	10	13 U	12 U	14 U	13 U
1,2-Dichloroethane	10	13 U	12 U	14 U	13 U
1,2-Dichloroethene(total)	10	13 U	12 U	14 U	13 U
1,2-Dichloropropane	10	13 U	12 U	14 U	13 U
2-Butanone	10	13 U	12 U	33 J	13 U
2-Hexanone	10	13 U	12 U	14 U	13 U
4-Methyl-2-pentanone	10	13 U	12 U	14 U	13 U
Acetone	10	21 U	22 U	160 U	13 U
Benzene	10	13 U	12 U	14 U	13 U
Bromodichloromethane	10	13 U	12 U	14 U	13 U
Bromoform	10	13 U	12 U	14 U	13 U
Bromomethane	10	13 U	12 U	14 U	13 U
Carbon Disulfide	10	13 U	12 U	14 U	13 U
Carbon Tetrachloride	10	13 U	12 U	14 U	13 U
Chlorobenzene	10	13 U	12 U	14 U	13 U
Chloroethane	10	13 U	12 U	14 U	13 U
Chloroform	10	13 U	12 U	14 U	13 U
Chloromethane	10	13 U	12 U	14 U	13 U
Dibromochloromethane	10	13 U	12 U	14 U	13 U
Ethylbenzene	10	13 U	12 U	14 U	13 U
Methylene Chloride	10	13 U	12 U	14 U	13 U
Styrene	10	13 U	12 U	14 U	13 U
Tetrachloroethene	10	13 U	12 U	14 U	13 U

LOCATION NAME:		SD-117	SD-117	SD-305	SD-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-117-0.0-1.0-FD-929	SD-117-0.0-1.0-NX-860	SD-305-0.0-1.0-NX-875	SD-306-0.0-1.0-NX-876
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
Toluene	10	13 U	12 U	14 U	13 U
Total Xylenes	10	13 U	12 U	14 U	13 U
Trichloroethene	10	13 U	12 U	14 U	13 U
Vinyl Chloride	10	13 U	12 U	14 U	13 U
cis-1,3-Dichloropropene	10	13 U	12 U	14 U	13 U
trans-1,3-Dichloropropene	10	13 U	12 U	14 U	13 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	410 U	500 U	430 UJ	390 UJ
1,2-Dichlorobenzene	330	410 U	500 U	430 UJ	390 UJ
1,3-Dichlorobenzene	330	410 U	500 U	430 UJ	390 UJ
1,4-Dichlorobenzene	330	410 U	500 U	430 UJ	390 UJ
2,2'-Oxybis(1-chloropropane)	330	410 U	500 U	430 UJ	390 UJ
2,4,5-Trichlorophenol	800	1000 U	1200 U	1000 UJ	940 UJ
2,4,6-Trichlorophenol	330	410 U	500 U	430 UJ	390 UJ
2,4-Dichlorophenol	330	410 U	500 U	430 UJ	390 UJ
2,4-Dimethylphenol	330	410 U	500 U	430 UJ	390 UJ
2,4-Dinitrophenol	800	1000 U	1200 U	1000 UJ	940 UJ
2,4-Dinitrotoluene	330	410 U	500 U	430 UJ	390 UJ
2,6-Dinitrotoluene	330	410 U	500 U	430 UJ	390 UJ
2-Chloronaphthalene	330	410 U	500 U	430 UJ	390 UJ
2-Chlorophenol	330	410 U	500 U	430 UJ	390 UJ
2-Methylnaphthalene	330	410 U	500 U	430 UJ	160 J
2-Methylphenol	330	410 U	500 U	430 UJ	390 UJ
2-Nitroaniline	800	1000 U	1200 U	1000 UJ	940 UJ
2-Nitrophenol	330	410 U	500 U	430 UJ	390 UJ
3,3'-Dichlorobenzidine	330	410 UJ	500 U	430 UJ	390 UJ
3-Nitroaniline	800	1000 U	1200 U	1000 UJ	940 UJ
4,6-Dinitro-2-methylphenol	800	1000 U	1200 U	1000 UJ	940 UJ

LOCATION NAME:		SD-117	SD-117	SD-305	SD-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-117-0.0-1.0-FD-929	SD-117-0.0-1.0-NX-860	SD-305-0.0-1.0-NX-875	SD-306-0.0-1.0-NX-876
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
4-Bromophenyl-phenylether	330	410 U	500 U	430 UJ	390 UJ
4-Chloro-3-methylphenol	330	410 U	500 U	430 UJ	390 UJ
4-Chloroaniline	330	410 U	500 U	430 UJ	390 UJ
4-Chlorophenyl-phenylether	330	410 U	500 U	430 UJ	390 UJ
4-Methylphenol	330	410 U	500 U	430 UJ	390 UJ
4-Nitroaniline	800	1000 U	1200 U	1000 UJ	940 UJ
4-Nitrophenol	800	1000 UJ	1200 UJ	1000 UJ	940 UJ
Acenaphthene	330	410 U	500 U	130 J	44 J
Acenaphthylene	330	410 U	500 U	430 UJ	390 UJ
Anthracene	330	410 U	500 U	110 J	78 J
Benzo(a)anthracene	330	410 UJ	500 U	320 J	310 J
Benzo(a)pyrene	330	410 UJ	500 U	140 J	270 J
Benzo(b)fluoranthene	330	410 UJ	500 U	150 J	490 J
Benzo(g,h,i)perylene	330	410 UJ	500 U	44 J	150 J
Benzo(k)fluoranthene	330	410 UJ	500 U	290 J	360 J
Bis(2-chloroethoxy)methane	330	410 U	500 U	430 UJ	390 UJ
Bis(2-chloroethyl)ether	330	410 U	500 U	430 UJ	390 UJ
Bis(2-ethylhexyl)phthalate	330	410 UJ	500 U	430 UJ	390 UJ
Butylbenzylphthalate	330	410 UJ	500 U	430 UJ	390 UJ
Carbazole	330	410 U	500 U	430 UJ	45 J
Chrysene	330	410 UJ	500 U	310 J	430 J
Di-n-butylphthalate	330	410 U	500 U	430 UJ	390 UJ
Di-n-octylphthalate	330	410 UJ	500 U	430 UJ	390 UJ
Dibenz(a,h)anthracene	330	410 UJ	500 U	430 UJ	84 J
Dibenzofuran	330	410 U	500 U	55 J	150 J
Diethylphthalate	330	410 U	500 U	430 UJ	390 UJ
Dimethylphthalate	330	410 U	500 U	430 UJ	390 UJ
Fluoranthene	330	46 J	66 J	1500 J	720 J
Fluorene	330	410 U	500 U	180 J	140 J
Hexachlorobenzene	330	410 U	500 U	430 UJ	390 UJ

LOCATION NAME:		SD-117	SD-117	SD-305	SD-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-117-0.0-1.0-FD-929	SD-117-0.0-1.0-NX-860	SD-305-0.0-1.0-NX-875	SD-306-0.0-1.0-NX-876
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
Hexachlorobutadiene	330	410 U	500 U	430 UJ	390 UJ
Hexachlorocyclopentadiene	330	410 U	500 U	430 UJ	390 UJ
Hexachloroethane	330	410 U	500 U	430 UJ	390 UJ
Indeno(1,2,3-cd)pyrene	330	410 UJ	500 U	54 J	160 J
Isophorone	330	410 U	500 U	430 UJ	390 UJ
N-Nitroso-di-n-propylamine	330	410 U	500 U	430 UJ	390 UJ
N-Nitrosodiphenylamine	330	410 U	500 U	430 UJ	390 UJ
Naphthalene	330	410 U	500 U	69 J	160 J
Nitrobenzene	330	410 U	500 U	430 UJ	390 UJ
Pentachlorophenol	800	1000 U	1200 U	1000 UJ	940 UJ
Phenanthrene	330	410 U	500 U	180 J	360 J
Phenol	330	410 U	500 U	430 UJ	390 UJ
Pyrene	330	74 J	61 J	1100 J	630 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	4.1 U	5.0 U	4.3 UJ	3.9 UJ
4,4'-DDE	3.3	4.1 U	5.0 U	4.3 UJ	3.9 UJ
4,4'-DDT	3.3	4.1 U	5.0 U	4.3 UJ	3.9 UJ
Aldrin	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
Dieldrin	3.3	4.1 U	5.0 U	4.3 UJ	3.9 UJ
Endosulfan I	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
Endosulfan II	3.3	4.1 U	5.0 U	4.3 UJ	3.9 UJ
Endosulfan Sulfate	3.3	4.1 U	5.0 U	4.3 UJ	3.9 UJ
Endrin	3.3	4.1 U	5.0 U	4.3 UJ	3.9 UJ
Endrin Aldehyde	3.3	4.1 U	5.0 U	4.3 UJ	3.9 UJ
Endrin Ketone	3.3	4.1 U	5.0 U	4.3 UJ	3.9 UJ
Heptachlor	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
Heptachlor Epoxide	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
Methoxychlor	17.0	21 U	26 U	22 UJ	20 UJ

LOCATION NAME:		SD-117	SD-117	SD-305	SD-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-117-0.0-1.0-FD-929	SD-117-0.0-1.0-NX-860	SD-305-0.0-1.0-NX-875	SD-306-0.0-1.0-NX-876
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
Toxaphene	170.0	210 U	260 U	220 UJ	200 UJ
alpha-BHC	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
alpha-Chlordane	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
beta-BHC	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
delta-BHC	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
gamma-BHC(Lindane)	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
gamma-Chlordane	1.7	2.1 U	2.6 U	2.2 UJ	2.0 UJ
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	41 U	50 U	43 UJ	39 UJ
Aroclor-1221	67.0	83 U	100 U	88 UJ	79 UJ
Aroclor-1232	33.0	41 U	50 U	43 UJ	39 UJ
Aroclor-1242	33.0	41 U	50 U	43 UJ	39 UJ
Aroclor-1248	33.0	41 U	50 U	43 UJ	39 UJ
Aroclor-1254	33.0	41 U	50 U	43 UJ	39 UJ
Aroclor-1260	33.0	41 U	50 U	43 UJ	39 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	4410	3570	6000	6060
Antimony	60	2.7 U	2.9 U	2.6 U	4.0 UJ
Arsenic	10	7.1 J	4.6 J	9.5	9.1
Barium	200	20.2	16.9	19.2	26.6
Beryllium	5	0.1 U	0.1 U	0.10 U	0.3 U
Cadmium	5	0.3 U	0.3 U	0.3 U	0.4 U
Calcium	5000	661 U	675 U	800 U	567
Chromium	10	8.6 U	7.8 U	9.2 UJ	41.6
Cobalt	50	1.9 U	1.9 U	3.3 U	4.2
Copper	25	4.7 U	4.2 U	10.4 U	61.9 J

LOCATION NAME:		SD-117	SD-117	SD-305	SD-306
SITE LOCATION:		CONTENT BROOK	CONTENT BROOK	DRAINAGE DITCH	DRAINAGE DITCH
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-117-0.0-1.0-FD-929	SD-117-0.0-1.0-NX-860	SD-305-0.0-1.0-NX-875	SD-306-0.0-1.0-NX-876
DATE SAMPLED:		09/21/93	09/21/93	09/16/93	09/14/93
REMARKS:		Field Duplicate			
Iron	100	6380	4740	7230	9290 J
Lead	3	15.2	14.6	15.6 J	112 J
Magnesium	5000	1710	1330	1520	2940
Manganese	15	149	103	225	101 J
Mercury	0.2	0.07 U	0.08 U	0.07	0.06 U
Nickel	40	4.7 U	2.9 U	8.1 U	29.9
Potassium	5000	531	523	507	877
Selenium	5	0.9 UJ	0.9 UJ	0.8 U	0.59 UJ
Silver	10	1.1 U	1.2 U	1.0 U	1.3 U
Sodium	5000	172 U	178 U	289 U	113 U
Thallium	10	0.5 UJ	0.5 UJ	0.5 U	0.6 U
Vanadium	50	11.5	10.0	10.3	13.7
Zinc	20	11.6 J	10.7 J	37.1	80.5 J
CYANIDE	CRDL (mg/kg)				
Cyanide	20	0.81 UJ	0.76 UJ	0.7 U	0.6 U
TOTAL PETROLEUM HYDROCARBONS	QL (mg/kg)				
Total Petroleum Hydrocarbons	10	18 UJ	20 J	13 UJ	110

LOCATION NAME:		SD-019	SD-020	SD-103	SD-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-019-0.0-1.0-NX-851	SD-020-0.0-1.0-NX-852	SD-103-0.0-1.0-NX-869	SD-104-0.0-1.0-NX-861
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	14 U	14 U	16 U	10 J
1,1,2,2-Tetrachloroethane	10	14 U	14 U	16 U	-- R
1,1,2-Trichloroethane	10	14 U	14 U	16 U	-- R
1,1-Dichloroethane	10	14 U	14 U	16 U	-- R
1,1-Dichloroethene	10	14 U	14 U	16 U	-- R
1,2-Dichloroethane	10	14 U	14 U	16 U	-- R
1,2-Dichloroethene(total)	10	14 U	14 U	16 U	-- R
1,2-Dichloropropane	10	14 U	14 U	16 U	-- R
2-Butanone	10	14 U	14 U	16 U	-- R
2-Hexanone	10	14 U	14 U	16 U	-- R
4-Methyl-2-pentanone	10	14 U	14 U	16 U	-- R
Acetone	10	18 U	14 U	18 U	-- R
Benzene	10	14 U	14 U	16 U	-- R
Bromodichloromethane	10	14 U	14 U	16 U	-- R
Bromoform	10	14 U	14 U	16 U	-- R
Bromomethane	10	14 U	14 U	44	-- R
Carbon Disulfide	10	14 U	14 U	16 U	-- R
Carbon Tetrachloride	10	14 U	14 U	16 U	-- R
Chlorobenzene	10	14 U	14 U	16 U	-- R
Chloroethane	10	14 U	14 U	16 U	-- R
Chloroform	10	14 U	14 U	16 U	-- R
Chloromethane	10	14 U	14 U	14 J	-- R
Dibromochloromethane	10	14 U	14 U	16 U	-- R
Ethylbenzene	10	14 U	14 U	16 U	-- R
Methylene Chloride	10	14 U	14 U	16 U	-- R
Styrene	10	14 U	14 U	16 U	-- R
Tetrachloroethene	10	14 U	14 U	16 U	-- R

LOCATION NAME:		SD-019	SD-020	SD-103	SD-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-019-0.0-1.0-NX-851	SD-020-0.0-1.0-NX-852	SD-103-0.0-1.0-NX-869	SD-104-0.0-1.0-NX-861
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
Toluene	10	14 U	14 U	16 U	-- R
Total Xylenes	10	14 U	14 U	16 U	-- R
Trichloroethene	10	14 U	14 U	16 U	-- R
Vinyl Chloride	10	14 U	14 U	16 U	-- R
cis-1,3-Dichloropropene	10	14 U	14 U	16 U	-- R
trans-1,3-Dichloropropene	10	14 U	14 U	16 U	-- R
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	540 U	400 U	440 UJ	-- R
1,2-Dichlorobenzene	330	540 U	400 U	440 UJ	-- R
1,3-Dichlorobenzene	330	540 U	400 U	440 UJ	-- R
1,4-Dichlorobenzene	330	540 U	400 U	440 UJ	-- R
2,2'-Oxybis(1-chloropropane)	330	540 U	400 U	440 UJ	-- R
2,4,5-Trichlorophenol	800	1300 U	970 U	1100 UJ	-- R
2,4,6-Trichlorophenol	330	540 U	400 U	440 UJ	-- R
2,4-Dichlorophenol	330	540 U	400 U	440 UJ	-- R
2,4-Dimethylphenol	330	540 U	400 U	440 UJ	-- R
2,4-Dinitrophenol	800	1300 U	970 U	1100 UJ	-- R
2,4-Dinitrotoluene	330	540 U	400 U	440 UJ	-- R
2,6-Dinitrotoluene	330	540 U	400 U	440 UJ	-- R
2-Chloronaphthalene	330	540 U	400 U	440 UJ	-- R
2-Chlorophenol	330	540 U	400 U	440 UJ	-- R
2-Methylnaphthalene	330	540 U	400 U	440 UJ	-- R
2-Methylphenol	330	540 U	400 U	440 UJ	-- R
2-Nitroaniline	800	1300 U	970 U	1100 UJ	-- R
2-Nitrophenol	330	540 U	400 U	440 UJ	-- R
3,3'-Dichlorobenzidine	330	540 U	400 U	440 U	-- R
3-Nitroaniline	800	1300 U	970 U	1100 UJ	-- R
4,6-Dinitro-2-methylphenol	800	1300 U	970 U	1100 UJ	-- R

LOCATION NAME:		SD-019	SD-020	SD-103	SD-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-019-0.0-1.0-NX-851	SD-020-0.0-1.0-NX-852	SD-103-0.0-1.0-NX-869	SD-104-0.0-1.0-NX-861
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
4-Bromophenyl-phenylether	330	540 U	400 U	440 UJ	-- R
4-Chloro-3-methylphenol	330	540 U	400 U	440 UJ	-- R
4-Chloroaniline	330	540 U	400 U	440 UJ	-- R
4-Chlorophenyl-phenylether	330	540 U	400 U	440 UJ	-- R
4-Methylphenol	330	540 U	400 U	440 UJ	-- R
4-Nitroaniline	800	1300 U	970 U	1100 UJ	-- R
4-Nitrophenol	800	1300 U	970 U	1100 UJ	-- R
Acenaphthene	330	540 U	400 U	440 UJ	-- R
Acenaphthylene	330	540 U	400 U	440 UJ	-- R
Anthracene	330	540 U	400 U	440 UJ	-- R
Benzo(a)anthracene	330	94 J	400 U	440 U	-- R
Benzo(a)pyrene	330	62 J	-- R	440 U	-- R
Benzo(b)fluoranthene	330	120 J	-- R	440 U	-- R
Benzo(g,h,i)perylene	330	540 UJ	-- R	440 U	-- R
Benzo(k)fluoranthene	330	73 J	-- R	440 U	-- R
Bis(2-chloroethoxy)methane	330	540 U	400 U	440 UJ	-- R
Bis(2-chloroethyl)ether	330	540 U	400 U	440 UJ	-- R
Bis(2-ethylhexyl)phthalate	330	540 U	400 U	440 U	-- R
Butylbenzylphthalate	330	540 U	400 U	440 U	-- R
Carbazole	330	540 U	400 U	440 UJ	-- R
Chrysene	330	120 J	400 U	440 U	-- R
Di-n-butylphthalate	330	540 U	400 U	440 UJ	-- R
Di-n-octylphthalate	330	540 UJ	-- R	440 UJ	-- R
Dibenz(a,h)anthracene	330	540 UJ	-- R	440 U	-- R
Dibenzofuran	330	540 U	400 U	440 UJ	-- R
Diethylphthalate	330	540 U	400 U	440 UJ	-- R
Dimethylphthalate	330	540 U	400 U	440 UJ	-- R
Fluoranthene	330	260 J	400 U	440 UJ	-- R
Fluorene	330	540 U	400 U	440 UJ	-- R
Hexachlorobenzene	330	540 U	400 U	440 UJ	-- R

LOCATION NAME:		SD-019	SD-020	SD-103	SD-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-019-0.0-1.0-NX-851	SD-020-0.0-1.0-NX-852	SD-103-0.0-1.0-NX-869	SD-104-0.0-1.0-NX-861
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
Hexachlorobutadiene	330	540 U	400 U	440 UJ	-- R
Hexachlorocyclopentadiene	330	540 U	400 U	440 UJ	-- R
Hexachloroethane	330	540 U	400 U	440 UJ	-- R
Indeno(1,2,3-cd)pyrene	330	540 UJ	-- R	440 U	-- R
Isophorone	330	540 U	400 U	440 UJ	-- R
N-Nitroso-di-n-propylamine	330	540 U	400 U	440 UJ	-- R
N-Nitrosodiphenylamine	330	540 U	400 U	440 UJ	-- R
Naphthalene	330	540 U	400 U	440 UJ	-- R
Nitrobenzene	330	540 U	400 U	440 UJ	-- R
Pentachlorophenol	800	1300 U	970 U	1100 UJ	-- R
Phenanthrene	330	540 U	400 U	440 UJ	-- R
Phenol	330	540 U	400 U	440 UJ	-- R
Pyrene	330	370 J	400 U	440 UJ	-- R
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	5.4 U	4.0 U	4.4 U	-- R
4,4'-DDE	3.3	5.4 U	4.0 U	4.4 U	-- R
4,4'-DDT	3.3	5.4 U	4.0 U	4.4 U	-- R
Aldrin	1.7	2.8 U	2.1 U	2.3 U	-- R
Dieldrin	3.3	5.4 U	4.0 U	4.4 U	-- R
Endosulfan I	1.7	2.8 U	2.1 U	2.3 U	-- R
Endosulfan II	3.3	5.4 U	4.0 U	4.4 U	-- R
Endosulfan Sulfate	3.3	5.4 U	4.0 U	4.4 U	-- R
Endrin	3.3	5.4 U	4.0 U	4.4 U	-- R
Endrin Aldehyde	3.3	5.4 U	4.0 U	4.4 U	-- R
Endrin Ketone	3.3	5.4 U	4.0 U	4.4 U	-- R
Heptachlor	1.7	2.8 U	2.1 U	2.3 U	-- R
Heptachlor Epoxide	1.7	2.8 U	2.1 U	2.3 U	-- R
Methoxychlor	17.0	28 U	21 U	23 U	-- R

LOCATION NAME:		SD-019	SD-020	SD-103	SD-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-019-0.0-1.0-NX-851	SD-020-0.0-1.0-NX-852	SD-103-0.0-1.0-NX-869	SD-104-0.0-1.0-NX-861
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
Toxaphene	170.0	280 U	210 U	230 U	-- R
alpha-BHC	1.7	2.8 U	2.1 U	2.3 U	-- R
alpha-Chlordane	1.7	2.8 U	2.1 U	2.3 U	-- R
beta-BHC	1.7	2.8 U	2.1 U	2.3 U	-- R
delta-BHC	1.7	2.8 U	2.1 U	2.3 U	-- R
gamma-BHC(Lindane)	1.7	2.8 U	2.1 U	2.3 U	-- R
gamma-Chlordane	1.7	2.8 U	2.1 U	2.3 U	-- R
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	54 U	40 U	44 U	-- R
Aroclor-1221	67.0	110 U	81 U	89 U	-- R
Aroclor-1232	33.0	54 U	40 U	44 U	-- R
Aroclor-1242	33.0	54 U	40 U	44 U	-- R
Aroclor-1248	33.0	54 U	40 U	44 U	-- R
Aroclor-1254	33.0	54 U	40 U	44 U	-- R
Aroclor-1260	33.0	54 U	40 U	44 U	-- R
METALS	CRDL(mg/kg)				
Aluminum	200	3470	3450	3460	2410 J
Antimony	60	3.1 U	2.1 U	2.5 U	-- R
Arsenic	10	5.3 J	7.0	2.8	-- R
Barium	200	29.1	21.8	23.6	67.5 J
Beryllium	5	0.1 U	0.04 U	0.10 U	-- R
Cadmium	5	0.3 U	0.2 U	0.3 U	-- R
Calcium	5000	890	621 U	887	10300 J
Chromium	10	7.3 U	7.8 UJ	8.4 UJ	-- R
Cobalt	50	5.2 U	3.2 U	4.1	-- R
Copper	25	9.7	5.3 U	4.7 U	17.7 J

LOCATION NAME:		SD-019	SD-020	SD-103	SD-104
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-019-0.0-1.0-NX-851	SD-020-0.0-1.0-NX-852	SD-103-0.0-1.0-NX-869	SD-104-0.0-1.0-NX-861
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/22/93
REMARKS:					
Iron	100	5230	5870	4250	2300 J
Lead	3	10.8 J	3.7 J	4.1 J	37.6 J
Magnesium	5000	1010	1520	1160	1270 J
Manganese	15	386	238	196	34.8 J
Mercury	0.2	0.08 U	0.06 U	0.12	-- R
Nickel	40	7.8 U	6.6 U	6.7 U	-- R
Potassium	5000	312 U	632	410	-- R
Selenium	5	1.0 UJ	0.6 U	0.7 U	-- R
Silver	10	1.3 U	0.8 U	1.0 U	-- R
Sodium	5000	130 U	277 U	256 U	-- R
Thallium	10	0.6 UJ	0.4 U	0.4 U	-- R
Vanadium	50	6.7	8.1	6.7	8.2 J
Zinc	20	36.1 J	22.4	15.6 U	32.8 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	0.88 UJ	0.6 U	0.6 U	-- R
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	17 J	58 UJ	41 UJ	68 J

LOCATION NAME:		SD-105	SD-106	SD-116	SD-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-105-0.0-1.0-NX-862	SD-106-0.0-1.0-NX-850	SD-116-0.0-1.0-NX-868	SD-317-0.0-1.0-NX-887
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	16 U	26 U	13 U	20 U
1,1,2,2-Tetrachloroethane	10	16 U	26 U	13 U	20 U
1,1,2-Trichloroethane	10	16 U	26 U	13 U	20 U
1,1-Dichloroethane	10	16 U	26 U	13 U	20 U
1,1-Dichloroethene	10	16 U	26 U	13 U	20 U
1,2-Dichloroethane	10	16 U	26 U	13 U	20 U
1,2-Dichloroethene(total)	10	16 U	26 U	13 U	20 U
1,2-Dichloropropane	10	16 U	26 U	13 U	20 U
2-Butanone	10	16 U	26 U	13 U	16 J
2-Hexanone	10	16 U	26 U	13 U	20 U
4-Methyl-2-pentanone	10	16 U	26 U	13 U	20 U
Acetone	10	22 U	26 U	13 U	46 U
Benzene	10	16 U	26 U	13 U	20 U
Bromodichloromethane	10	16 U	26 U	13 U	20 U
Bromoform	10	16 U	26 U	13 U	20 U
Bromomethane	10	16 U	26 U	13 U	20 U
Carbon Disulfide	10	16 U	26 U	13 U	20 U
Carbon Tetrachloride	10	16 U	26 U	13 U	20 U
Chlorobenzene	10	16 U	26 U	13 U	20 U
Chloroethane	10	16 U	26 U	13 U	20 U
Chloroform	10	16 U	26 U	13 U	20 U
Chloromethane	10	16 U	26 U	13 U	20 U
Dibromochloromethane	10	16 U	26 U	13 U	20 U
Ethylbenzene	10	16 U	26 U	13 U	20 U
Methylene Chloride	10	16 U	26 U	13 U	20 U
Styrene	10	16 U	26 U	13 U	20 U
Tetrachloroethene	10	16 U	26 U	13 U	20 U

LOCATION NAME:		SD-105	SD-106	SD-116	SD-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-105-0.0-1.0-NX-862	SD-106-0.0-1.0-NX-850	SD-116-0.0-1.0-NX-868	SD-317-0.0-1.0-NX-887
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
Toluene	10	16 U	26 U	13 U	20 U
Total Xylenes	10	16 U	26 U	13 U	20 U
Trichloroethene	10	16 U	26 U	13 U	20 U
Vinyl Chloride	10	16 U	26 U	13 U	20 U
cis-1,3-Dichloropropene	10	16 U	26 U	13 U	20 U
trans-1,3-Dichloropropene	10	16 U	26 U	13 U	20 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	690 U	840 UJ	410 U	630 UJ
1,2-Dichlorobenzene	330	690 U	840 UJ	410 U	630 UJ
1,3-Dichlorobenzene	330	690 U	840 UJ	410 U	630 UJ
1,4-Dichlorobenzene	330	690 U	840 UJ	410 U	630 UJ
2,2'-Oxybis(1-chloropropane)	330	690 U	840 UJ	410 U	630 UJ
2,4,5-Trichlorophenol	800	1700 U	2000 UJ	1000 U	1500 UJ
2,4,6-Trichlorophenol	330	690 U	840 UJ	410 U	630 UJ
2,4-Dichlorophenol	330	690 U	840 UJ	410 U	630 UJ
2,4-Dimethylphenol	330	690 U	840 UJ	410 U	630 UJ
2,4-Dinitrophenol	800	1700 U	2000 UJ	1000 U	1500 UJ
2,4-Dinitrotoluene	330	690 U	840 UJ	410 U	630 UJ
2,6-Dinitrotoluene	330	690 U	840 UJ	410 U	630 UJ
2-Chloronaphthalene	330	690 U	840 UJ	410 U	630 UJ
2-Chlorophenol	330	690 U	840 UJ	410 U	630 UJ
2-Methylnaphthalene	330	690 U	840 UJ	410 U	240 J
2-Methylphenol	330	690 U	840 UJ	410 U	630 UJ
2-Nitroaniline	800	1700 U	2000 UJ	1000 U	1500 UJ
2-Nitrophenol	330	690 U	840 UJ	410 U	630 UJ
3,3'-Dichlorobenzidine	330	690 U	840 UJ	410 UJ	630 UJ
3-Nitroaniline	800	1700 U	2000 UJ	1000 U	1500 UJ
4,6-Dinitro-2-methylphenol	800	1700 U	2000 UJ	1000 U	1500 UJ

LOCATION NAME:		SD-105	SD-106	SD-116	SD-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-105-0.0-1.0-NX-862	SD-106-0.0-1.0-NX-850	SD-116-0.0-1.0-NX-868	SD-317-0.0-1.0-NX-887
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
4-Bromophenyl-phenylether	330	690 U	840 UJ	410 U	630 UJ
4-Chloro-3-methylphenol	330	690 U	840 UJ	410 U	630 UJ
4-Chloroaniline	330	690 U	840 UJ	410 U	630 UJ
4-Chlorophenyl-phenylether	330	690 U	840 UJ	410 U	630 UJ
4-Methylphenol	330	690 U	840 UJ	410 U	630 UJ
4-Nitroaniline	800	1700 U	2000 UJ	1000 U	1500 UJ
4-Nitrophenol	800	1700 U	2000 UJ	1000 U	1500 UJ
Acenaphthene	330	690 U	840 UJ	410 U	630 UJ
Acenaphthylene	330	690 U	840 UJ	410 U	630 UJ
Anthracene	330	690 U	840 UJ	410 U	630 UJ
Benzo(a)anthracene	330	690 U	840 UJ	410 U	350 J
Benzo(a)pyrene	330	690 UJ	840 UJ	410 U	280 J
Benzo(b)fluoranthene	330	690 UJ	840 UJ	410 U	410 J
Benzo(g,h,i)perylene	330	690 UJ	840 UJ	410 U	230 J
Benzo(k)fluoranthene	330	690 UJ	840 UJ	410 U	280 J
Bis(2-chloroethoxy)methane	330	690 U	840 UJ	410 U	630 UJ
Bis(2-chloroethyl)ether	330	690 U	840 UJ	410 U	630 UJ
Bis(2-ethylhexyl)phthalate	330	690 U	840 UJ	410 U	630 UJ
Butylbenzylphthalate	330	690 U	840 UJ	410 U	630 UJ
Carbazole	330	690 U	840 UJ	410 U	630 UJ
Chrysene	330	690 U	840 UJ	410 U	430 J
Di-n-butylphthalate	330	690 U	840 UJ	410 U	630 UJ
Di-n-octylphthalate	330	690 UJ	840 UJ	410 U	630 UJ
Dibenz(a,h)anthracene	330	690 UJ	840 UJ	410 U	140 J
Dibenzofuran	330	690 U	840 UJ	410 U	86 J
Diethylphthalate	330	690 U	840 UJ	410 U	630 UJ
Dimethylphthalate	330	690 U	840 UJ	410 U	630 UJ
Fluoranthene	330	690 U	110 J	410 U	750 J
Fluorene	330	690 U	840 UJ	410 U	630 UJ
Hexachlorobenzene	330	690 U	840 UJ	410 U	630 UJ

LOCATION NAME:		SD-105	SD-106	SD-116	SD-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-105-0.0-1.0-NX-862	SD-106-0.0-1.0-NX-850	SD-116-0.0-1.0-NX-868	SD-317-0.0-1.0-NX-887
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
Hexachlorobutadiene	330	690 U	840 UJ	410 U	630 UJ
Hexachlorocyclopentadiene	330	690 U	840 UJ	410 U	630 UJ
Hexachloroethane	330	690 U	840 UJ	410 U	630 UJ
Indeno(1,2,3-cd)pyrene	330	690 UJ	840 UJ	410 U	230 J
Isophorone	330	690 U	840 UJ	410 U	630 UJ
N-Nitroso-di-n-propylamine	330	690 U	840 UJ	410 U	630 UJ
N-Nitrosodiphenylamine	330	690 U	840 UJ	410 U	630 UJ
Naphthalene	330	690 U	840 UJ	410 U	160 J
Nitrobenzene	330	690 U	840 UJ	410 U	630 UJ
Pentachlorophenol	800	1700 U	2000 UJ	1000 U	1500 UJ
Phenanthrene	330	690 U	840 UJ	410 U	470 J
Phenol	330	690 U	840 UJ	410 U	630 UJ
Pyrene	330	690 U	150 J	410 U	870 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	7.0 U	21 J	4.1 U	6.3 UJ
4,4'-DDE	3.3	7.0 U	8.4 UJ	4.1 U	6.3 UJ
4,4'-DDT	3.3	7.0 U	8.4 UJ	4.1 U	6.3 UJ
Aldrin	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
Dieldrin	3.3	7.0 U	8.4 UJ	4.1 U	12 J
Endosulfan I	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
Endosulfan II	3.3	7.0 U	8.4 UJ	4.1 U	6.3 UJ
Endosulfan Sulfate	3.3	7.0 U	8.4 UJ	4.1 U	6.3 UJ
Endrin	3.3	7.0 U	8.4 UJ	4.1 U	6.3 UJ
Endrin Aldehyde	3.3	7.0 U	8.4 UJ	4.1 U	6.3 UJ
Endrin Ketone	3.3	7.0 U	8.4 UJ	4.1 U	6.3 UJ
Heptachlor	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
Heptachlor Epoxide	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
Methoxychlor	17.0	36 U	43 UJ	21 U	33 UJ

LOCATION NAME:		SD-105	SD-106	SD-116	SD-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-105-0.0-1.0-NX-862	SD-106-0.0-1.0-NX-850	SD-116-0.0-1.0-NX-868	SD-317-0.0-1.0-NX-887
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
Toxaphene	170.0	360 U	430 UJ	210 U	330 UJ
alpha-BHC	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
alpha-Chlordane	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
beta-BHC	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
delta-BHC	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
gamma-BHC(Lindane)	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
gamma-Chlordane	1.7	3.6 U	4.3 UJ	2.1 U	3.3 UJ
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	70 U	84 UJ	41 U	63 UJ
Aroclor-1221	67.0	140 U	170 UJ	84 U	130 UJ
Aroclor-1232	33.0	70 U	84 UJ	41 U	63 UJ
Aroclor-1242	33.0	70 U	84 UJ	41 U	63 UJ
Aroclor-1248	33.0	70 U	84 UJ	41 U	63 UJ
Aroclor-1254	33.0	70 U	84 UJ	41 U	63 UJ
Aroclor-1260	33.0	70 U	84 UJ	41 U	63 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	3190	5190	1260	7740
Antimony	60	3.2 U	4.8 U	2.3 U	24.9 J
Arsenic	10	3.0 UJ	10.1	2.0 U	20.1
Barium	200	50.3	44.5	11.4	175
Beryllium	5	0.1 U	0.10 U	0.05 U	1.3
Cadmium	5	0.4 U	0.5 U	0.2 U	0.8 U
Calcium	5000	1320	1500	388 U	8910
Chromium	10	7.9 U	11.1 UJ	1.7 UJ	42.0
Cobalt	50	5.3 U	6.2 U	2.1 U	16.4
Copper	25	9.3	26.0 U	4.5 U	2120 J

LOCATION NAME:		SD-105	SD-106	SD-116	SD-317
SITE LOCATION:		MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	B&M LSDA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-105-0.0-1.0-NX-862	SD-106-0.0-1.0-NX-850	SD-116-0.0-1.0-NX-868	SD-317-0.0-1.0-NX-887
DATE SAMPLED:		09/22/93	09/16/93	09/17/93	09/14/93
REMARKS:					
Iron	100	3820	8570	2030	50200 J
Lead	3	12.5 J	113 J	5.3 U	1590 J
Magnesium	5000	965	1620	414	3640
Manganese	15	1130	230	136	363 J
Mercury	0.2	0.09 U	0.20	0.06 U	0.24
Nickel	40	6.8 U	11.1 U	2.6 U	32.3 J
Potassium	5000	345 U	646	185 U	923
Selenium	5	1.0 UJ	2.1 J	0.70 U	6.4 J
Silver	10	1.3 U	1.9 U	0.9 U	2.8 U
Sodium	5000	147 U	581 U	256 U	437 U
Thallium	10	0.6 UJ	0.8 U	0.40 U	1.2 U
Vanadium	50	7.1	15.9	2.7	29.6
Zinc	20	37.6 J	60.1	15.5 U	634 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	0.88 UJ	1.3 U	0.6 U	1.4 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	46 J	28 J	14 J	60

LOCATION NAME:		SD-022	SD-111	SD-111	SD-309
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-22-0.0-1.0-NX-853	SD-111-0.0-1.0-FD-930	SD-111-0.0-1.0-NX-866	SD-309-0.0-1.0-NX-879
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/21/93
REMARKS:			Field Duplicate		
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	26 U	19 U	48 U	-- R
1,1,2,2-Tetrachloroethane	10	26 U	19 U	48 U	-- R
1,1,2-Trichloroethane	10	26 U	19 U	48 U	-- R
1,1-Dichloroethane	10	26 U	19 U	48 U	-- R
1,1-Dichloroethene	10	26 U	19 U	48 U	-- R
1,2-Dichloroethane	10	26 U	19 U	48 U	-- R
1,2-Dichloroethene(total)	10	26 U	19 U	48 U	-- R
1,2-Dichloropropane	10	26 U	19 U	48 U	-- R
2-Butanone	10	26 U	31 J	180 J	39 J
2-Hexanone	10	26 U	19 U	48 U	-- R
4-Methyl-2-pentanone	10	26 U	19 U	48 U	-- R
Acetone	10	79 U	130 UJ	940 J	-- R
Benzene	10	3 J	19 U	48 U	-- R
Bromodichloromethane	10	26 U	19 U	48 U	-- R
Bromoform	10	26 U	19 U	48 U	-- R
Bromomethane	10	26 U	19 U	48 U	-- R
Carbon Disulfide	10	26 U	19 U	48 U	-- R
Carbon Tetrachloride	10	26 U	19 U	48 U	-- R
Chlorobenzene	10	26 U	19 U	48 U	-- R
Chloroethane	10	26 U	19 U	48 U	-- R
Chloroform	10	26 U	19 U	48 U	-- R
Chloromethane	10	26 U	19 U	48 U	-- R
Dibromochloromethane	10	26 U	19 U	48 U	-- R
Ethylbenzene	10	26 U	19 U	48 U	-- R
Methylene Chloride	10	26 U	19 U	48 U	-- R
Styrene	10	26 U	19 U	48 U	-- R
Tetrachloroethene	10	26 U	19 U	48 U	-- R

LOCATION NAME:		SD-022	SD-111	SD-111	SD-309
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-22-0.0-1.0-NX-853	SD-111-0.0-1.0-FD-930	SD-111-0.0-1.0-NX-866	SD-309-0.0-1.0-NX-879
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/21/93
REMARKS:			Field Duplicate		
Toluene	10	4 J	19 U	48 U	-- R
Total Xylenes	10	49	19 U	48 U	-- R
Trichloroethene	10	26 U	19 U	48 U	-- R
Vinyl Chloride	10	26 U	19 U	48 U	-- R
cis-1,3-Dichloropropene	10	26 U	19 U	48 U	-- R
trans-1,3-Dichloropropene	10	26 U	19 U	48 U	-- R
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	610 U	13000 U	12000 U	860 U
1,2-Dichlorobenzene	330	610 U	13000 U	12000 U	860 U
1,3-Dichlorobenzene	330	610 U	13000 U	12000 U	860 U
1,4-Dichlorobenzene	330	610 U	13000 U	12000 U	860 U
2,2'-Oxybis(1-chloropropane)	330	610 U	13000 U	12000 U	860 U
2,4,5-Trichlorophenol	800	1500 U	31000 U	30000 U	2100 U
2,4,6-Trichlorophenol	330	610 U	13000 U	12000 U	860 U
2,4-Dichlorophenol	330	610 U	13000 U	12000 U	860 U
2,4-Dimethylphenol	330	610 U	13000 U	12000 U	860 U
2,4-Dinitrophenol	800	1500 U	31000 U	30000 U	2100 U
2,4-Dinitrotoluene	330	610 U	13000 U	12000 U	860 U
2,6-Dinitrotoluene	330	610 U	13000 U	12000 U	860 U
2-Chloronaphthalene	330	610 U	13000 U	12000 U	860 U
2-Chlorophenol	330	610 U	13000 U	12000 U	860 U
2-Methylnaphthalene	330	93 J	13000 U	12000 U	860 U
2-Methylphenol	330	610 U	13000 U	12000 U	860 U
2-Nitroaniline	800	1500 U	31000 U	30000 U	2100 U
2-Nitrophenol	330	610 U	13000 U	12000 U	860 U
3,3'-Dichlorobenzidine	330	610 U	13000 U	12000 U	860 U
3-Nitroaniline	800	1500 U	31000 U	30000 U	2100 U
4,6-Dinitro-2-methylphenol	800	1500 U	31000 U	30000 U	2100 U

LOCATION NAME:		SD-022	SD-111	SD-111	SD-309
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-22-0.0-1.0-NX-853	SD-111-0.0-1.0-FD-930	SD-111-0.0-1.0-NX-866	SD-309-0.0-1.0-NX-879
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/21/93
REMARKS:			Field Duplicate		
4-Bromophenyl-phenylether	330	610 U	13000 U	12000 U	860 U
4-Chloro-3-methylphenol	330	610 U	13000 U	12000 U	860 U
4-Chloroaniline	330	610 U	13000 U	12000 U	860 U
4-Chlorophenyl-phenylether	330	610 U	13000 U	12000 U	860 U
4-Methylphenol	330	610 U	13000 U	12000 U	250 J
4-Nitroaniline	800	1500 U	31000 U	30000 U	2100 U
4-Nitrophenol	800	1500 U	31000 U	30000 U	2100 U
Acenaphthene	330	610 U	6000 J	7100 J	860 U
Acenaphthylene	330	610 U	13000 U	12000 U	860 U
Anthracene	330	610 U	5700 J	7000 J	860 U
Benzo(a)anthracene	330	86 J	17000	19000	860 U
Benzo(a)pyrene	330	610 UJ	14000	16000	120 J
Benzo(b)fluoranthene	330	81 J	10000 J	11000 J	860 UJ
Benzo(g,h,i)perylene	330	610 UJ	9000 J	8900 J	860 UJ
Benzo(k)fluoranthene	330	120 J	11000 J	14000 J	860 UJ
Bis(2-chloroethoxy)methane	330	610 U	13000 U	12000 U	860 U
Bis(2-chloroethyl)ether	330	610 U	13000 U	12000 U	860 U
Bis(2-ethylhexyl)phthalate	330	610 U	13000 U	13000 U	860 U
Butylbenzylphthalate	330	610 U	13000 U	12000 U	860 U
Carbazole	330	610 U	13000 U	12000 U	860 U
Chrysene	330	150 J	19000	21000	860 U
Di-n-butylphthalate	330	610 U	13000 U	12000 U	860 U
Di-n-octylphthalate	330	610 UJ	13000 UJ	12000 UJ	860 UJ
Dibenz(a,h)anthracene	330	610 UJ	3300 J	2600 J	860 UJ
Dibenzofuran	330	610 U	13000 U	1300 J	860 U
Diethylphthalate	330	610 U	13000 U	12000 U	860 U
Dimethylphthalate	330	610 U	13000 U	12000 U	860 U
Fluoranthene	330	200 J	31000	34000	860 U
Fluorene	330	610 U	6100 J	7100 J	860 U
Hexachlorobenzene	330	610 U	13000 U	12000 U	860 U

LOCATION NAME:		SD-022	SD-111	SD-111	SD-309
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-22-0.0-1.0-NX-853	SD-111-0.0-1.0-FD-930	SD-111-0.0-1.0-NX-866	SD-309-0.0-1.0-NX-879
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/21/93
REMARKS:			Field Duplicate		
Hexachlorobutadiene	330	610 U	13000 U	12000 U	860 U
Hexachlorocyclopentadiene	330	610 U	13000 U	12000 U	860 U
Hexachloroethane	330	610 U	13000 U	12000 U	860 U
Indeno(1,2,3-cd)pyrene	330	610 UJ	7900 J	7500 J	860 UJ
Isophorone	330	610 U	13000 U	12000 U	860 U
N-Nitroso-di-n-propylamine	330	610 U	13000 U	12000 U	860 U
N-Nitrosodiphenylamine	330	610 U	13000 U	12000 U	860 U
Naphthalene	330	99 J	13000 U	12000 U	860 U
Nitrobenzene	330	610 U	13000 U	12000 U	860 U
Pentachlorophenol	800	1500 U	31000 U	30000 U	2100 U
Phenanthrene	330	170 J	29000	34000	860 U
Phenol	330	610 U	13000 U	12000 U	860 U
Pyrene	330	360 J	43000 J	53000 J	860 U
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	6.2 U	64 UJ	62 UJ	8.7 UJ
4,4'-DDE	3.3	12.0 J	64 UJ	62 UJ	8.7 UJ
4,4'-DDT	3.3	9.6 J	64 UJ	62 UJ	8.7 UJ
Aldrin	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
Dieldrin	3.3	10.0 J	64 UJ	62 UJ	8.7 UJ
Endosulfan I	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
Endosulfan II	3.3	6.2 U	64 UJ	62 UJ	8.7 UJ
Endosulfan Sulfate	3.3	6.2 U	64 UJ	62 UJ	8.7 UJ
Endrin	3.3	6.2 U	64 UJ	62 UJ	8.7 UJ
Endrin Aldehyde	3.3	6.2 U	64 UJ	62 UJ	8.7 UJ
Endrin Ketone	3.3	6.2 U	64 UJ	62 UJ	8.7 UJ
Heptachlor	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
Heptachlor Epoxide	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
Methoxychlor	17.0	32 U	330 UJ	320 UJ	45 UJ

LOCATION NAME:		SD-022	SD-111	SD-111	SD-309
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-22-0.0-1.0-NX-853	SD-111-0.0-1.0-FD-930	SD-111-0.0-1.0-NX-866	SD-309-0.0-1.0-NX-879
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/21/93
REMARKS:			Field Duplicate		
Toxaphene	170.0	320 U	3300 UJ	3200 UJ	450 UJ
alpha-BHC	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
alpha-Chlordane	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
beta-BHC	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
delta-BHC	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
gamma-BHC(Lindane)	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
gamma-Chlordane	1.7	3.2 U	33 UJ	32 UJ	4.5 UJ
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	62 U	640 UJ	620 UJ	87 UJ
Aroclor-1221	67.0	130 U	1300 UJ	1300 UJ	180 UJ
Aroclor-1232	33.0	62 U	640 UJ	620 UJ	87 UJ
Aroclor-1242	33.0	62 U	640 UJ	620 UJ	87 UJ
Aroclor-1248	33.0	62 U	640 UJ	620 UJ	87 UJ
Aroclor-1254	33.0	62 U	640 UJ	620 UJ	87 UJ
Aroclor-1260	33.0	62 U	640 UJ	620 UJ	87 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	7430 J	20100	26900	4010
Antimony	60	-- R	3.0 U	3.9 U	5.1 U
Arsenic	10	12.9 J	28.7	24.2	1.2 UJ
Barium	200	86.9 J	253	286	18.4
Beryllium	5	-- R	0.91	1.2	0.1 U
Cadmium	5	-- R	0.33	0.62	0.6 U
Calcium	5000	4090 J	4570	6130	1590
Chromium	10	15.8 U	51.7	63.7	13.6 U
Cobalt	50	3.8 U	13.7	19.3	1.7 U
Copper	25	39.2 J	206	181	11.4

LOCATION NAME:		SD-022	SD-111	SD-111	SD-309
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-22-0.0-1.0-NX-853	SD-111-0.0-1.0-FD-930	SD-111-0.0-1.0-NX-866	SD-309-0.0-1.0-NX-879
DATE SAMPLED:		09/21/93	09/21/93	09/21/93	09/21/93
REMARKS:			Field Duplicate		
Iron	100	14300 J	42200	44700	4060
Lead	3	102 J	333	326	6.7 J
Magnesium	5000	1790 J	7120	9680	1660
Manganese	15	458 J	416	549	93.9
Mercury	0.2	0.21 J	1.2	1.4	0.12 U
Nickel	40	-- R	39.0	46.8	8.0 U
Potassium	5000	593 U	3490	4760	228 U
Selenium	5	-- R	0.9 UJ	1.9 UJ	1.5 UJ
Silver	10	-- R	3.8 U	1.8 U	2.0 U
Sodium	5000	-- R	316 U	427 U	153 U
Thallium	10	-- R	0.96 UJ	0.7 UJ	0.9 UJ
Vanadium	50	20.2 J	58.8	76.5	7.1
Zinc	20	43.7 J	614 J	604 J	7.8 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	-- R	0.83 UJ	1.1 UJ	1.4 UJ
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	31 UJ	88 J	350 J	47 J

LOCATION NAME:		SD-314	SD-314	SD-315	SD-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-314-0.0-1.0-FD-865	SD-314-0.0-1.0-NX-864	SD-315-0.0-1.0-NX-885	SD-306-0.0-1.0-NX-886
DATE SAMPLED:		09/20/93	09/20/93	09/20/93	09/21/93
REMARKS:		Field Duplicate			
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	-- R	-- R	-- R	17 U
1,1,2,2-Tetrachloroethane	10	-- R	-- R	-- R	17 U
1,1,2-Trichloroethane	10	-- R	-- R	-- R	17 U
1,1-Dichloroethane	10	-- R	-- R	-- R	17 U
1,1-Dichloroethene	10	-- R	-- R	-- R	17 U
1,2-Dichloroethane	10	-- R	-- R	-- R	17 U
1,2-Dichloroethene(total)	10	-- R	-- R	-- R	17 U
1,2-Dichloropropane	10	-- R	-- R	-- R	17 U
2-Butanone	10	-- R	210 J	170 J	17 U
2-Hexanone	10	-- R	-- R	-- R	17 U
4-Methyl-2-pentanone	10	-- R	-- R	-- R	17 U
Acetone	10	-- R	-- R	-- R	57 U
Benzene	10	-- R	-- R	-- R	17 U
Bromodichloromethane	10	-- R	-- R	-- R	17 U
Bromoform	10	-- R	-- R	-- R	17 U
Bromomethane	10	-- R	-- R	-- R	17 U
Carbon Disulfide	10	-- R	-- R	-- R	17 U
Carbon Tetrachloride	10	-- R	-- R	-- R	17 U
Chlorobenzene	10	-- R	-- R	-- R	17 U
Chloroethane	10	-- R	-- R	-- R	17 U
Chloroform	10	-- R	-- R	-- R	17 U
Chloromethane	10	-- R	-- R	-- R	17 U
Dibromochloromethane	10	-- R	-- R	-- R	17 U
Ethylbenzene	10	-- R	-- R	-- R	17 U
Methylene Chloride	10	-- R	-- R	-- R	17 U
Styrene	10	-- R	-- R	-- R	17 U
Tetrachloroethene	10	-- R	-- R	-- R	17 U

LOCATION NAME:		SD-314	SD-314	SD-315	SD-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-314-0.0-1.0-FD-865	SD-314-0.0-1.0-NX-864	SD-315-0.0-1.0-NX-885	SD-306-0.0-1.0-NX-886
DATE SAMPLED:		09/20/93	09/20/93	09/20/93	09/21/93
REMARKS:		Field Duplicate			
Toluene	10	-- R	-- R	-- R	28
Total Xylenes	10	-- R	-- R	-- R	17 U
Trichloroethene	10	-- R	-- R	-- R	17 U
Vinyl Chloride	10	-- R	-- R	-- R	17 U
cis-1,3-Dichloropropene	10	-- R	-- R	-- R	17 U
trans-1,3-Dichloropropene	10	-- R	-- R	-- R	17 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	-- R	-- R	-- R	550 U
1,2-Dichlorobenzene	330	-- R	-- R	-- R	550 U
1,3-Dichlorobenzene	330	-- R	-- R	-- R	550 U
1,4-Dichlorobenzene	330	-- R	-- R	-- R	550 U
2,2'-Oxybis(1-chloropropane)	330	-- R	-- R	-- R	550 U
2,4,5-Trichlorophenol	800	-- R	-- R	-- R	1300 U
2,4,6-Trichlorophenol	330	-- R	-- R	-- R	550 U
2,4-Dichlorophenol	330	-- R	-- R	-- R	550 U
2,4-Dimethylphenol	330	-- R	-- R	-- R	550 U
2,4-Dinitrophenol	800	-- R	-- R	-- R	1300 U
2,4-Dinitrotoluene	330	-- R	-- R	-- R	550 U
2,6-Dinitrotoluene	330	-- R	-- R	-- R	550 U
2-Chloronaphthalene	330	-- R	-- R	-- R	550 U
2-Chlorophenol	330	-- R	-- R	-- R	550 U
2-Methylnaphthalene	330	-- R	-- R	-- R	550 U
2-Methylphenol	330	-- R	-- R	-- R	550 U
2-Nitroaniline	800	-- R	-- R	-- R	1300 U
2-Nitrophenol	330	-- R	-- R	-- R	550 U
3,3'-Dichlorobenzidine	330	-- R	-- R	-- R	550 U
3-Nitroaniline	800	-- R	-- R	-- R	1300 U
4,6-Dinitro-2-methylphenol	800	-- R	-- R	-- R	1300 U

LOCATION NAME:		SD-314	SD-314	SD-315	SD-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-314-0.0-1.0-FD-865	SD-314-0.0-1.0-NX-864	SD-315-0.0-1.0-NX-885	SD-306-0.0-1.0-NX-886
DATE SAMPLED:		09/20/93	09/20/93	09/20/93	09/21/93
REMARKS:		Field Duplicate			
4-Bromophenyl-phenylether	330	-- R	-- R	-- R	550 U
4-Chloro-3-methylphenol	330	-- R	-- R	-- R	550 U
4-Chloroaniline	330	-- R	-- R	-- R	550 U
4-Chlorophenyl-phenylether	330	-- R	-- R	-- R	550 U
4-Methylphenol	330	460 J	340 J	-- R	170 J
4-Nitroaniline	800	-- R	-- R	-- R	1300 U
4-Nitrophenol	800	-- R	-- R	-- R	1300 U
Acenaphthene	330	-- R	-- R	-- R	550 U
Acenaphthylene	330	-- R	-- R	-- R	550 U
Anthracene	330	-- R	-- R	-- R	550 U
Benzo(a)anthracene	330	-- R	-- R	-- R	550 U
Benzo(a)pyrene	330	840 J	1200 J	-- R	550 U
Benzo(b)fluoranthene	330	-- R	-- R	-- R	550 U
Benzo(g,h,i)perylene	330	-- R	-- R	-- R	550 U
Benzo(k)fluoranthene	330	-- R	-- R	-- R	550 U
Bis(2-chloroethoxy)methane	330	-- R	-- R	-- R	550 U
Bis(2-chloroethyl)ether	330	-- R	-- R	-- R	550 U
Bis(2-ethylhexyl)phthalate	330	-- R	-- R	-- R	550 U
Butylbenzylphthalate	330	-- R	-- R	910 J	550 U
Carbazole	330	-- R	-- R	-- R	550 U
Chrysene	330	-- R	-- R	-- R	550 U
Di-n-butylphthalate	330	-- R	-- R	-- R	550 U
Di-n-octylphthalate	330	-- R	-- R	-- R	550 UJ
Dibenz(a,h)anthracene	330	-- R	-- R	-- R	550 U
Dibenzofuran	330	-- R	-- R	-- R	550 U
Diethylphthalate	330	-- R	-- R	-- R	550 U
Dimethylphthalate	330	-- R	-- R	-- R	550 U
Fluoranthene	330	-- R	-- R	-- R	550 U
Fluorene	330	-- R	-- R	-- R	550 U
Hexachlorobenzene	330	-- R	-- R	-- R	550 U

LOCATION NAME:		SD-314	SD-314	SD-315	SD-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-314-0.0-1.0-FD-865	SD-314-0.0-1.0-NX-864	SD-315-0.0-1.0-NX-885	SD-306-0.0-1.0-NX-886
DATE SAMPLED:		09/20/93	09/20/93	09/20/93	09/21/93
REMARKS:		Field Duplicate			
Hexachlorobutadiene	330	-- R	-- R	-- R	550 U
Hexachlorocyclopentadiene	330	-- R	-- R	-- R	550 U
Hexachloroethane	330	-- R	-- R	-- R	550 U
Indeno(1,2,3-cd)pyrene	330	-- R	-- R	-- R	550 U
Isophorone	330	-- R	-- R	-- R	550 U
N-Nitroso-di-n-propylamine	330	-- R	-- R	-- R	550 U
N-Nitrosodiphenylamine	330	-- R	-- R	-- R	550 U
Naphthalene	330	-- R	-- R	-- R	550 U
Nitrobenzene	330	-- R	-- R	-- R	550 U
Pentachlorophenol	800	-- R	-- R	-- R	1300 U
Phenanthrene	330	-- R	-- R	-- R	550 U
Phenol	330	-- R	-- R	-- R	550 U
Pyrene	330	-- R	-- R	-- R	110 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	-- R	-- R	-- R	5.4 UJ
4,4'-DDE	3.3	-- R	-- R	-- R	5.4 UJ
4,4'-DDT	3.3	-- R	-- R	-- R	5.4 UJ
Aldrin	1.7	-- R	-- R	-- R	2.8 UJ
Dieldrin	3.3	-- R	-- R	-- R	5.8 J
Endosulfan I	1.7	-- R	-- R	-- R	2.8 UJ
Endosulfan II	3.3	-- R	-- R	-- R	5.4 UJ
Endosulfan Sulfate	3.3	-- R	-- R	-- R	5.4 UJ
Endrin	3.3	-- R	-- R	-- R	5.4 UJ
Endrin Aldehyde	3.3	-- R	-- R	-- R	5.4 UJ
Endrin Ketone	3.3	-- R	-- R	-- R	5.4 UJ
Heptachlor	1.7	-- R	-- R	-- R	2.8 UJ
Heptachlor Epoxide	1.7	-- R	-- R	-- R	2.8 UJ
Methoxychlor	17.0	-- R	-- R	-- R	28 UJ

LOCATION NAME:		SD-314	SD-314	SD-315	SD-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-314-0.0-1.0-FD-865	SD-314-0.0-1.0-NX-864	SD-315-0.0-1.0-NX-885	SD-306-0.0-1.0-NX-886
DATE SAMPLED:		09/20/93	09/20/93	09/20/93	09/21/93
REMARKS:		Field Duplicate			
Toxaphene	170.0	-- R	-- R	-- R	280 UJ
alpha-BHC	1.7	-- R	-- R	-- R	2.8 UJ
alpha-Chlordane	1.7	-- R	-- R	-- R	2.8 UJ
beta-BHC	1.7	-- R	-- R	-- R	2.8 UJ
delta-BHC	1.7	-- R	-- R	-- R	2.8 UJ
gamma-BHC(Lindane)	1.7	-- R	-- R	-- R	2.8 UJ
gamma-Chlordane	1.7	-- R	-- R	-- R	2.8 UJ
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	-- R	-- R	-- R	54 UJ
Aroclor-1221	67.0	-- R	-- R	-- R	110 UJ
Aroclor-1232	33.0	-- R	-- R	-- R	54 UJ
Aroclor-1242	33.0	-- R	-- R	-- R	54 UJ
Aroclor-1248	33.0	-- R	-- R	-- R	54 UJ
Aroclor-1254	33.0	-- R	-- R	-- R	54 UJ
Aroclor-1260	33.0	-- R	-- R	-- R	54 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	1230 J	1080 J	1910 J	6620
Antimony	60	-- R	-- R	-- R	4.9 U
Arsenic	10	-- R	4.0 U	3.2 U	2.6 UJ
Barium	200	21.8 J	21.0 J	24.9 J	8.2
Beryllium	5	-- R	-- R	-- R	0.1 U
Cadmium	5	-- R	-- R	-- R	0.5 U
Calcium	5000	8050 J	7770 J	6270 J	402 U
Chromium	10	-- R	-- R	-- R	10.5 U
Cobalt	50	-- R	-- R	-- R	1.6 U
Copper	25	18.9 J	37.3 J	9.4 J	7.5

LOCATION NAME:		SD-314	SD-314	SD-315	SD-316
SITE LOCATION:		RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-314-0.0-1.0-FD-865	SD-314-0.0-1.0-NX-864	SD-315-0.0-1.0-NX-885	SD-306-0.0-1.0-NX-886
DATE SAMPLED:		09/20/93	09/20/93	09/20/93	09/21/93
REMARKS:		Field Duplicate			
Iron	100	2900 J	2870 J	2510 J	1720
Lead	3	12.7 U	16.3 J	27.4 J	17.8
Magnesium	5000	952 J	999 J	753 J	173
Manganese	15	235 J	175 J	49.2 J	18.3
Mercury	0.2	-- R	-- R	-- R	0.13 U
Nickel	40	-- R	-- R	-- R	2.9 U
Potassium	5000	410 J	371 J	407 J	126 U
Selenium	5	-- R	-- R	-- R	1.5 UJ
Silver	10	-- R	-- R	-- R	2.0 U
Sodium	5000	2210 J	2160 J	1830 J	208 U
Thallium	10	-- R	-- R	-- R	0.8 UJ
Vanadium	50	-- R	-- R	8.7 J	4.3
Zinc	20	-- R	-- R	23.3 J	4.5 U
CYANIDE	CRDL(mg/kg)				
Cyanide	20	-- R	-- R	-- R	1.2 UJ
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	110 J	180 J	100 J	19 UJ

LOCATION NAME:		SD-320	SD-016	SD-301	SD-302
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-320-0.0-1.0-NX-884	SD-016-0.0-1.0-NX-848	SD-301-0.0-1.0-NX-871	SD-302-0.0-1.0-NX-872
DATE SAMPLED:		09/20/93	09/16/93	09/16/93	09/16/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	-- R	16 U	-- R	13 U
1,1,2,2-Tetrachloroethane	10	-- R	16 U	-- R	13 U
1,1,2-Trichloroethane	10	-- R	16 U	-- R	13 U
1,1-Dichloroethane	10	-- R	16 U	-- R	13 U
1,1-Dichloroethene	10	-- R	16 U	-- R	13 U
1,2-Dichloroethane	10	-- R	16 U	-- R	13 U
1,2-Dichloroethene(total)	10	-- R	16 U	-- R	13 U
1,2-Dichloropropane	10	-- R	16 U	-- R	13 U
2-Butanone	10	51 J	16 U	-- R	13 U
2-Hexanone	10	-- R	16 U	-- R	13 U
4-Methyl-2-pentanone	10	-- R	16 U	-- R	13 U
Acetone	10	-- R	45 U	-- R	51 U
Benzene	10	-- R	16 U	-- R	13 U
Bromodichloromethane	10	-- R	16 U	-- R	13 U
Bromoform	10	-- R	16 U	-- R	13 U
Bromomethane	10	-- R	16 U	-- R	13 U
Carbon Disulfide	10	-- R	16 U	-- R	13 U
Carbon Tetrachloride	10	-- R	16 U	-- R	13 U
Chlorobenzene	10	-- R	16 U	9 J	13 U
Chloroethane	10	-- R	16 U	-- R	13 U
Chloroform	10	-- R	16 U	-- R	13 U
Chloromethane	10	-- R	16 U	-- R	13 U
Dibromochloromethane	10	-- R	16 U	-- R	13 U
Ethylbenzene	10	-- R	16 U	-- R	13 U
Methylene Chloride	10	-- R	16 U	-- R	13 U
Styrene	10	-- R	16 U	-- R	13 U
Tetrachloroethene	10	-- R	16 U	-- R	13 U

LOCATION NAME:		SD-320	SD-016	SD-301	SD-302
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-320-0.0-1.0-NX-884	SD-016-0.0-1.0-NX-848	SD-301-0.0-1.0-NX-871	SD-302-0.0-1.0-NX-872
DATE SAMPLED:		09/20/93	09/16/93	09/16/93	09/16/93
REMARKS:					
Toluene	10	-- R	16 U	-- R	13 U
Total Xylenes	10	-- R	16 U	-- R	13 U
Trichloroethene	10	-- R	16 U	-- R	13 U
Vinyl Chloride	10	-- R	16 U	-- R	13 U
cis-1,3-Dichloropropene	10	-- R	16 U	-- R	13 U
trans-1,3-Dichloropropene	10	-- R	16 U	-- R	13 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	-- R	420 UJ	-- R	570 UJ
1,2-Dichlorobenzene	330	-- R	420 UJ	-- R	570 UJ
1,3-Dichlorobenzene	330	-- R	420 UJ	-- R	570 UJ
1,4-Dichlorobenzene	330	-- R	420 UJ	-- R	570 UJ
2,2'-Oxybis(1-chloropropane)	330	-- R	420 UJ	-- R	570 UJ
2,4,5-Trichlorophenol	800	-- R	1000 UJ	-- R	1400 UJ
2,4,6-Trichlorophenol	330	-- R	420 UJ	-- R	570 UJ
2,4-Dichlorophenol	330	-- R	420 UJ	-- R	570 UJ
2,4-Dimethylphenol	330	-- R	420 UJ	-- R	570 UJ
2,4-Dinitrophenol	800	-- R	1000 UJ	-- R	1400 UJ
2,4-Dinitrotoluene	330	-- R	420 UJ	-- R	570 UJ
2,6-Dinitrotoluene	330	-- R	420 UJ	-- R	570 UJ
2-Chloronaphthalene	330	-- R	420 UJ	-- R	570 UJ
2-Chlorophenol	330	-- R	420 UJ	-- R	570 UJ
2-Methylnaphthalene	330	-- R	420 UJ	-- R	570 UJ
2-Methylphenol	330	-- R	420 UJ	-- R	570 UJ
2-Nitroaniline	800	-- R	1000 UJ	-- R	1400 UJ
2-Nitrophenol	330	-- R	420 UJ	-- R	570 UJ
3,3'-Dichlorobenzidine	330	-- R	420 UJ	-- R	570 UJ
3-Nitroaniline	800	-- R	1000 UJ	-- R	1400 UJ
4,6-Dinitro-2-methylphenol	800	-- R	1000 UJ	-- R	1400 UJ

LOCATION NAME:		SD-320	SD-016	SD-301	SD-302
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-320-0.0-1.0-NX-884	SD-016-0.0-1.0-NX-848	SD-301-0.0-1.0-NX-871	SD-302-0.0-1.0-NX-872
DATE SAMPLED:		09/20/93	09/16/93	09/16/93	09/16/93
REMARKS:					
4-Bromophenyl-phenylether	330	-- R	420 UJ	-- R	570 UJ
4-Chloro-3-methylphenol	330	-- R	420 UJ	-- R	570 UJ
4-Chloroaniline	330	-- R	420 UJ	-- R	570 UJ
4-Chlorophenyl-phenylether	330	-- R	420 UJ	-- R	570 UJ
4-Methylphenol	330	-- R	420 UJ	-- R	570 UJ
4-Nitroaniline	800	-- R	1000 UJ	-- R	1400 UJ
4-Nitrophenol	800	-- R	1000 UJ	-- R	1400 UJ
Acenaphthene	330	-- R	420 UJ	-- R	570 UJ
Acenaphthylene	330	-- R	420 UJ	-- R	570 UJ
Anthracene	330	-- R	420 UJ	-- R	570 UJ
Benzo(a)anthracene	330	-- R	420 UJ	-- R	570 UJ
Benzo(a)pyrene	330	-- R	420 UJ	-- R	570 UJ
Benzo(b)fluoranthene	330	-- R	420 UJ	160 J	570 UJ
Benzo(g,h,i)perylene	330	-- R	420 UJ	-- R	570 UJ
Benzo(k)fluoranthene	330	-- R	420 UJ	-- R	570 UJ
Bis(2-chloroethoxy)methane	330	-- R	420 UJ	-- R	570 UJ
Bis(2-chloroethyl)ether	330	-- R	420 UJ	-- R	570 UJ
Bis(2-ethylhexyl)phthalate	330	-- R	420 UJ	-- R	570 UJ
Butylbenzylphthalate	330	-- R	420 UJ	-- R	570 UJ
Carbazole	330	-- R	420 UJ	-- R	570 UJ
Chrysene	330	-- R	420 UJ	120 J	570 UJ
Di-n-butylphthalate	330	-- R	420 UJ	-- R	570 UJ
Di-n-octylphthalate	330	-- R	420 UJ	-- R	570 UJ
Dibenz(a,h)anthracene	330	-- R	420 UJ	-- R	570 UJ
Dibenzofuran	330	-- R	420 UJ	-- R	570 UJ
Diethylphthalate	330	-- R	420 UJ	-- R	570 UJ
Dimethylphthalate	330	-- R	420 UJ	-- R	570 UJ
Fluoranthene	330	-- R	87 J	240 J	570 UJ
Fluorene	330	-- R	420 UJ	-- R	570 UJ
Hexachlorobenzene	330	-- R	420 UJ	-- R	570 UJ

LOCATION NAME:		SD-320	SD-016	SD-301	SD-302
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-320-0.0-1.0-NX-884	SD-016-0.0-1.0-NX-848	SD-301-0.0-1.0-NX-871	SD-302-0.0-1.0-NX-872
DATE SAMPLED:		09/20/93	09/16/93	09/16/93	09/16/93
REMARKS:					
Hexachlorobutadiene	330	-- R	420 UJ	-- R	570 UJ
Hexachlorocyclopentadiene	330	-- R	420 UJ	-- R	570 UJ
Hexachloroethane	330	-- R	420 UJ	-- R	570 UJ
Indeno(1,2,3-cd)pyrene	330	-- R	420 UJ	-- R	570 UJ
Isophorone	330	-- R	420 UJ	-- R	570 UJ
N-Nitroso-di-n-propylamine	330	-- R	420 UJ	-- R	570 UJ
N-Nitrosodiphenylamine	330	-- R	420 UJ	-- R	570 UJ
Naphthalene	330	-- R	420 UJ	-- R	570 UJ
Nitrobenzene	330	-- R	420 UJ	-- R	570 UJ
Pentachlorophenol	800	-- R	1000 UJ	-- R	1400 UJ
Phenanthrene	330	-- R	44 J	-- R	570 UJ
Phenol	330	-- R	420 UJ	-- R	570 UJ
Pyrene	330	-- R	120 J	240 J	570 UJ
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	-- R	4.6 J	-- R	5.7 UJ
4,4'-DDE	3.3	-- R	4.2 UJ	-- R	5.7 UJ
4,4'-DDT	3.3	-- R	4.2 UJ	-- R	5.7 UJ
Aldrin	1.7	-- R	2.2 UJ	-- R	3.0 UJ
Dieldrin	3.3	-- R	4.2 UJ	-- R	7.4 J
Endosulfan I	1.7	-- R	2.2 UJ	-- R	3.0 UJ
Endosulfan II	3.3	-- R	4.2 UJ	-- R	5.7 UJ
Endosulfan Sulfate	3.3	-- R	4.2 UJ	-- R	5.7 UJ
Endrin	3.3	-- R	4.2 UJ	-- R	5.7 UJ
Endrin Aldehyde	3.3	-- R	4.2 UJ	-- R	5.7 UJ
Endrin Ketone	3.3	-- R	4.2 UJ	-- R	5.7 UJ
Heptachlor	1.7	-- R	2.2 UJ	-- R	3.0 UJ
Heptachlor Epoxide	1.7	-- R	2.2 UJ	-- R	3.0 UJ
Methoxychlor	17.0	-- R	22 UJ	-- R	30 UJ

LOCATION NAME:		SD-320	SD-016	SD-301	SD-302
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-320-0.0-1.0-NX-884	SD-016-0.0-1.0-NX-848	SD-301-0.0-1.0-NX-871	SD-302-0.0-1.0-NX-872
DATE SAMPLED:		09/20/93	09/16/93	09/16/93	09/16/93
REMARKS:					
Toxaphene	170.0	-- R	220 UJ	-- R	300 UJ
alpha-BHC	1.7	-- R	2.2 UJ	-- R	3.0 UJ
alpha-Chlordane	1.7	-- R	2.2 UJ	-- R	3.0 UJ
beta-BHC	1.7	-- R	2.2 UJ	-- R	3.0 UJ
delta-BHC	1.7	-- R	2.2 UJ	-- R	3.0 UJ
gamma-BHC(Lindane)	1.7	-- R	2.2 UJ	-- R	3.0 UJ
gamma-Chlordane	1.7	-- R	2.2 UJ	-- R	3.0 UJ
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	-- R	42 UJ	-- R	57 UJ
Aroclor-1221	67.0	-- R	86 UJ	-- R	120 UJ
Aroclor-1232	33.0	-- R	42 UJ	-- R	57 UJ
Aroclor-1242	33.0	-- R	42 UJ	-- R	57 UJ
Aroclor-1248	33.0	-- R	42 UJ	-- R	57 UJ
Aroclor-1254	33.0	-- R	42 UJ	-- R	57 UJ
Aroclor-1260	33.0	-- R	42 UJ	-- R	57 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	4510 J	3310	11900 J	3520
Antimony	60	-- R	2.5 U	-- R	3.1 U
Arsenic	10	4.4 U	12.6	28.4 J	5.0
Barium	200	23.6 J	12.2	92.3 J	29.2
Beryllium	5	-- R	0.10 U	-- R	0.10 U
Cadmium	5	-- R	0.3 U	-- R	0.3 U
Calcium	5000	2740 J	703 U	5020 J	1360
Chromium	10	-- R	10.3 UJ	23.2 J	7.3 UJ
Cobalt	50	-- R	6.1	13.3 J	4.6 U
Copper	25	-- R	25.6 U	182 J	22.7 U

LOCATION NAME:		SD-320	SD-016	SD-301	SD-302
SITE LOCATION:		RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-320-0.0-1.0-NX-884	SD-016-0.0-1.0-NX-848	SD-301-0.0-1.0-NX-871	SD-302-0.0-1.0-NX-872
DATE SAMPLED:		09/20/93	09/16/93	09/16/93	09/16/93
REMARKS:					
Iron	100	1580 J	9230	15800 J	4870
Lead	3	29.3 J	38.9 J	147 J	21.1 J
Magnesium	5000	380 J	1210	2650 J	1230
Manganese	15	30.3 J	59.3	877 J	261
Mercury	0.2	-- R	0.07 U	0.23 J	0.09 U
Nickel	40	-- R	11.4 U	22.8 J	6.6 U
Potassium	5000	-- R	715	1160 J	443
Selenium	5	-- R	0.8 U	2.8 J	1.0 U
Silver	10	-- R	1.0 U	-- R	1.3 U
Sodium	5000	-- R	243 U	-- R	444 U
Thallium	10	-- R	0.4 U	-- R	0.5 U
Vanadium	50	8.0 J	8.5	22.7 J	7.1
Zinc	20	-- R	49.3	359 J	52.8
CYANIDE	CRDL(mg/kg)				
Cyanide	20	-- R	0.7 U	-- R	0.8 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	47 J	13 UJ	94 J	13 UJ

LOCATION NAME:		SD-303	SD-310	SD-312	SD-313
SITE LOCATION:		RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-303-0.0-1.0-NX-873	SD-310-0.0-1.0-NX-880	SD-312-0.0-1.0-NX-882	SD-313-0.0-1.0-NX-883
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/15/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	-- R	19 U	17 U	65 U
1,1,2,2-Tetrachloroethane	10	-- R	19 U	17 U	65 U
1,1,2-Trichloroethane	10	-- R	19 U	17 U	65 U
1,1-Dichloroethane	10	-- R	19 U	17 U	65 U
1,1-Dichloroethene	10	-- R	19 U	17 U	65 U
1,2-Dichloroethane	10	-- R	19 U	17 U	65 U
1,2-Dichloroethene(total)	10	-- R	19 U	17 U	65 U
1,2-Dichloropropane	10	-- R	19 U	17 U	65 U
2-Butanone	10	-- R	27	17 U	65 U
2-Hexanone	10	-- R	19 U	17 U	65 U
4-Methyl-2-pentanone	10	-- R	19 U	17 U	65 U
Acetone	10	-- R	100 U	160 U	65 U
Benzene	10	-- R	19 J	17 U	65 U
Bromodichloromethane	10	-- R	19 U	17 U	65 U
Bromoform	10	-- R	19 U	17 U	65 U
Bromomethane	10	-- R	19 U	17 U	65 U
Carbon Disulfide	10	-- R	19 U	17 U	65 U
Carbon Tetrachloride	10	-- R	19 U	17 U	65 U
Chlorobenzene	10	-- R	7 J	4 J	65 U
Chloroethane	10	-- R	19 U	17 U	65 U
Chloroform	10	-- R	19 U	17 U	65 U
Chloromethane	10	-- R	19 U	17 U	65 U
Dibromochloromethane	10	-- R	19 U	17 U	65 U
Ethylbenzene	10	-- R	30	17 U	14 J
Methylene Chloride	10	-- R	19 U	17 U	65 U
Styrene	10	-- R	19 U	17 U	65 U
Tetrachloroethene	10	-- R	19 U	17 U	65 U

LOCATION NAME:		SD-303	SD-310	SD-312	SD-313
SITE LOCATION:		RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-303-0.0-1.0-NX-873	SD-310-0.0-1.0-NX-880	SD-312-0.0-1.0-NX-882	SD-313-0.0-1.0-NX-883
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/15/93
REMARKS:					
Toluene	10	-- R	11 J	17 U	65 U
Total Xylenes	10	-- R	410	9 J	65 U
Trichloroethene	10	-- R	19 U	17 U	65 U
Vinyl Chloride	10	-- R	19 U	17 U	65 U
cis-1,3-Dichloropropene	10	-- R	19 U	17 U	65 U
trans-1,3-Dichloropropene	10	-- R	19 U	17 U	65 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	690 U	610 U	520 U	380 U
1,2-Dichlorobenzene	330	690 U	610 U	520 U	380 U
1,3-Dichlorobenzene	330	690 U	610 U	520 U	380 U
1,4-Dichlorobenzene	330	690 U	610 U	77 J	380 U
2,2'-Oxybis(1-chloropropane)	330	690 U	610 U	520 U	380 U
2,4,5-Trichlorophenol	800	1700 U	1500 U	1300 U	920 U
2,4,6-Trichlorophenol	330	690 U	610 U	520 U	380 U
2,4-Dichlorophenol	330	690 U	610 U	520 U	380 U
2,4-Dimethylphenol	330	690 U	610 U	520 U	380 U
2,4-Dinitrophenol	800	1700 U	1500 U	1300 U	920 U
2,4-Dinitrotoluene	330	690 U	610 U	520 U	380 U
2,6-Dinitrotoluene	330	690 U	610 U	520 U	380 U
2-Chloronaphthalene	330	690 U	610 U	520 U	380 U
2-Chlorophenol	330	690 U	610 U	520 U	380 U
2-Methylnaphthalene	330	690 U	610 U	520 U	380 U
2-Methylphenol	330	690 U	610 U	520 U	380 U
2-Nitroaniline	800	1700 U	1500 U	1300 U	920 U
2-Nitrophenol	330	690 U	610 U	520 U	380 U
3,3'-Dichlorobenzidine	330	690 U	610 U	520 U	380 U
3-Nitroaniline	800	1700 U	1500 U	1300 U	920 U
4,6-Dinitro-2-methylphenol	800	1700 U	1500 U	1300 UJ	920 U

LOCATION NAME:		SD-303	SD-310	SD-312	SD-313
SITE LOCATION:		RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-303-0.0-1.0-NX-873	SD-310-0.0-1.0-NX-880	SD-312-0.0-1.0-NX-882	SD-313-0.0-1.0-NX-883
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/15/93
REMARKS:					
4-Bromophenyl-phenylether	330	690 U	610 U	520 UJ	380 U
4-Chloro-3-methylphenol	330	690 U	610 U	520 U	380 U
4-Chloroaniline	330	690 U	610 U	520 U	380 U
4-Chlorophenyl-phenylether	330	690 U	610 U	520 U	380 U
4-Methylphenol	330	690 U	610 U	520 U	380 U
4-Nitroaniline	800	1700 U	1500 U	1300 U	920 U
4-Nitrophenol	800	1700 U	1500 U	1300 U	920 U
Acenaphthene	330	110 J	610 U	63 J	380 U
Acenaphthylene	330	690 U	610 U	520 U	380 U
Anthracene	330	690 U	610 U	130 J	380 U
Benzo(a)anthracene	330	690 U	250 J	590	380 U
Benzo(a)pyrene	330	73 J	210 J	500 J	380 U
Benzo(b)fluoranthene	330	690 U	300 J	340 J	380 U
Benzo(g,h,i)perylene	330	690 UJ	160 J	300 J	380 U
Benzo(k)fluoranthene	330	82 J	240 J	630 J	380 U
Bis(2-chloroethoxy)methane	330	690 U	610 U	520 U	380 U
Bis(2-chloroethyl)ether	330	690 U	610 U	520 U	380 U
Bis(2-ethylhexyl)phthalate	330	1200 U	610 U	2600	380 U
Butylbenzylphthalate	330	730	610 U	520 U	380 U
Carbazole	330	690 U	610 U	79 J	380 U
Chrysene	330	110 J	300 J	570	380 U
Di-n-butylphthalate	330	690 U	610 U	520 UJ	380 U
Di-n-octylphthalate	330	690 U	610 U	520 U	380 U
Dibenz(a,h)anthracene	330	690 UJ	90 J	190 J	380 U
Dibenzofuran	330	690 U	610 U	56 J	380 U
Diethylphthalate	330	690 U	610 U	520 U	380 U
Dimethylphthalate	330	690 U	610 U	520 U	380 U
Fluoranthene	330	210 J	540 J	980 J	380 U
Fluorene	330	100 J	610 U	110 J	380 U
Hexachlorobenzene	330	690 U	610 U	520 UJ	380 U

LOCATION NAME:		SD-303	SD-310	SD-312	SD-313
SITE LOCATION:		RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-303-0.0-1.0-NX-873	SD-310-0.0-1.0-NX-880	SD-312-0.0-1.0-NX-882	SD-313-0.0-1.0-NX-883
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/15/93
REMARKS:					
Hexachlorobutadiene	330	690 U	610 U	520 U	380 U
Hexachlorocyclopentadiene	330	690 U	610 U	520 U	380 U
Hexachloroethane	330	690 U	610 U	520 U	380 U
Indeno(1,2,3-cd)pyrene	330	690 UJ	160 J	270 J	380 U
Isophorone	330	690 U	610 U	520 U	380 U
N-Nitroso-di-n-propylamine	330	690 U	610 U	520 U	380 U
N-Nitrosodiphenylamine	330	690 U	610 U	520 UJ	380 U
Naphthalene	330	690 U	450 J	260 J	380 U
Nitrobenzene	330	690 U	610 U	520 U	380 U
Pentachlorophenol	800	1700 U	1500 U	1300 UJ	920 U
Phenanthrene	330	150 J	260 J	600 J	380 U
Phenol	330	690 U	610 U	520 U	380 U
Pyrene	330	320 J	550 J	1400	380 U
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	6.9 UJ	6.0 U	5.2 UJ	3.8 U
4,4'-DDE	3.3	6.9 UJ	6.0 U	5.2 UJ	3.8 U
4,4'-DDT	3.3	6.9 UJ	6.0 U	5.2 UJ	3.8 U
Aldrin	1.7	3.5 UJ	3.1 U	2.7 UJ	2.0 U
Dieldrin	3.3	6.9 UJ	6.0 U	5.2 UJ	3.8 U
Endosulfan I	1.7	3.5 UJ	3.1 U	2.7 UJ	2.0 U
Endosulfan II	3.3	6.9 UJ	6.0 U	5.2 UJ	3.8 U
Endosulfan Sulfate	3.3	6.9 UJ	6.0 U	5.2 UJ	3.8 U
Endrin	3.3	15 J	6.0 U	5.2 UJ	3.8 U
Endrin Aldehyde	3.3	6.9 UJ	6.0 U	5.2 UJ	3.8 U
Endrin Ketone	3.3	6.9 UJ	6.0 U	5.2 UJ	3.8 U
Heptachlor	1.7	3.5 UJ	3.1 U	2.7 UJ	2.0 U
Heptachlor Epoxide	1.7	3.5 UJ	3.1 U	2.7 UJ	2.0 U
Methoxychlor	17.0	35 UJ	31 U	27 UJ	20 U

LOCATION NAME:		SD-303	SD-310	SD-312	SD-313
SITE LOCATION:		RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-303-0.0-1.0-NX-873	SD-310-0.0-1.0-NX-880	SD-312-0.0-1.0-NX-882	SD-313-0.0-1.0-NX-883
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/15/93
REMARKS:					
Toxaphene	170.0	350 UJ	310 U	270 UJ	200 U
alpha-BHC	1.7	3.5 UJ	3.1 U	2.7 UJ	2.0 U
alpha-Chlordane	1.7	3.4 J	3.1 U	2.7 UJ	2.0 U
beta-BHC	1.7	3.5 UJ	3.1 U	2.7 UJ	2.0 U
delta-BHC	1.7	3.5 UJ	3.1 U	2.7 UJ	2.0 U
gamma-BHC(Lindane)	1.7	3.5 UJ	3.1 U	2.7 UJ	2.0 U
gamma-Chlordane	1.7	3.5 UJ	3.1 U	2.7 UJ	2.0 U
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	69 UJ	60 U	52 UJ	38 U
Aroclor-1221	67.0	140 UJ	120 U	110 UJ	77 U
Aroclor-1232	33.0	69 UJ	60 U	52 UJ	38 U
Aroclor-1242	33.0	69 UJ	60 U	52 UJ	38 U
Aroclor-1248	33.0	69 UJ	60 U	52 UJ	38 U
Aroclor-1254	33.0	69 UJ	60 U	52 UJ	38 U
Aroclor-1260	33.0	69 UJ	60 U	52 UJ	38 U
METALS	CRDL(mg/kg)				
Aluminum	200	4810	32300	12400	4150
Antimony	60	4.6 U	3.3 U	2.7 U	2.2 U
Arsenic	10	8.5 J	18.6	8.2	62.9
Barium	200	51.4	155	134	35.5
Beryllium	5	0.1 U	1.4	0.53	0.05 U
Cadmium	5	1.2	0.4 U	0.3 U	0.2 U
Calcium	5000	2420	7050	4200	4440
Chromium	10	12.9 U	56.5	26.4	9.1 UJ
Cobalt	50	6.5	17.4	8.8	2.7 U
Copper	25	49.6	49.3	33.5	6.7 U

LOCATION NAME:		SD-303	SD-310	SD-312	SD-313
SITE LOCATION:		RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-303-0.0-1.0-NX-873	SD-310-0.0-1.0-NX-880	SD-312-0.0-1.0-NX-882	SD-313-0.0-1.0-NX-883
DATE SAMPLED:		09/22/93	09/15/93	09/15/93	09/15/93
REMARKS:					
Iron	100	10500	42200	24800	17300
Lead	3	60.1	50.9 J	129 J	9.0 J
Magnesium	5000	1520	10500	4600	1820
Manganese	15	138	663	242	293
Mercury	0.2	0.17	0.20	0.28	0.06 U
Nickel	40	18.3	39.2	19.6	6.0 U
Potassium	5000	711	7400	2540	1090
Selenium	5	1.4 UJ	1.0 J	0.8 U	0.7 U
Silver	10	1.9 U	1.3 U	1.1 U	0.9 U
Sodium	5000	206 U	1520 U	532 U	418 U
Thallium	10	0.8 UJ	0.57 UJ	0.46 UJ	0.4 U
Vanadium	50	12.2	73.4	32.7	12.6
Zinc	20	230 J	115	100	15.9 U
CYANIDE	CRDL(mg/kg)				
Cyanide	20	1.2 UJ	1.0 U	0.7 U	0.6 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	170 J	22 U	29 U	59 UJ

LOCATION NAME:		SD-010	SD-013	SD-118	SD-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-010-0.0-1.0-NX-846	SD-013-0.0-1.0-NX-847	SD-118-0.0-1.0-NX-870	SD-322-0.0-1.0-FD-926
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:					Field Duplicate
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	15 U	120 U	83 U	77 U
1,1,2,2-Tetrachloroethane	10	15 U	120 U	83 U	77 U
1,1,2-Trichloroethane	10	15 U	120 U	83 U	77 U
1,1-Dichloroethane	10	15 U	120 U	83 U	77 U
1,1-Dichloroethene	10	15 U	120 U	83 U	77 U
1,2-Dichloroethane	10	15 U	120 U	83 U	77 U
1,2-Dichloroethene(total)	10	15 U	120 U	83 U	77 U
1,2-Dichloropropane	10	15 U	120 U	83 U	77 U
2-Butanone	10	15 U	120 U	83 U	73 J
2-Hexanone	10	15 U	120 U	83 U	77 U
4-Methyl-2-pentanone	10	15 U	120 U	83 U	77 U
Acetone	10	15 U	1100 U	270 U	290 U
Benzene	10	15 U	120 U	83 U	77 U
Bromodichloromethane	10	15 U	120 U	83 U	77 U
Bromoform	10	15 U	120 U	83 U	77 U
Bromomethane	10	15 U	120 U	83 U	77 U
Carbon Disulfide	10	15 U	120 U	83 U	77 U
Carbon Tetrachloride	10	15 U	120 U	83 U	77 U
Chlorobenzene	10	15 U	120 U	83 U	77 U
Chloroethane	10	15 U	120 U	83 U	77 U
Chloroform	10	15 U	120 U	83 U	77 U
Chloromethane	10	15 U	120 U	83 U	77 U
Dibromochloromethane	10	15 U	120 U	83 U	77 U
Ethylbenzene	10	15 U	120 U	83 U	77 U
Methylene Chloride	10	15 U	120 U	83 U	77 U
Styrene	10	15 U	120 U	83 U	77 U
Tetrachloroethene	10	15 U	120 U	83 U	77 U

LOCATION NAME:		SD-010	SD-013	SD-118	SD-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-010-0.0-1.0-NX-846	SD-013-0.0-1.0-NX-847	SD-118-0.0-1.0-NX-870	SD-322-0.0-1.0-FD-926
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:					Field Duplicate
Toluene	10	15 U	120 U	83 U	77 U
Total Xylenes	10	15 U	120 U	83 U	77 U
Trichloroethene	10	15 U	120 U	83 U	77 U
Vinyl Chloride	10	15 U	120 U	83 U	77 U
cis-1,3-Dichloropropene	10	15 U	120 U	83 U	77 U
trans-1,3-Dichloropropene	10	15 U	120 U	83 U	77 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	430 UJ	710 UJ	12000 UJ	410 UJ
1,2-Dichlorobenzene	330	430 UJ	710 UJ	12000 UJ	410 UJ
1,3-Dichlorobenzene	330	430 UJ	710 UJ	12000 UJ	410 UJ
1,4-Dichlorobenzene	330	430 UJ	710 UJ	12000 UJ	410 UJ
2,2'-Oxybis(1-chloropropane)	330	430 UJ	710 UJ	12000 UJ	410 UJ
2,4,5-Trichlorophenol	800	1000 UJ	1700 UJ	31000 UJ	1000 UJ
2,4,6-Trichlorophenol	330	430 UJ	710 UJ	12000 UJ	410 UJ
2,4-Dichlorophenol	330	430 UJ	710 UJ	12000 UJ	410 UJ
2,4-Dimethylphenol	330	430 UJ	710 UJ	12000 UJ	410 UJ
2,4-Dinitrophenol	800	1000 UJ	1700 UJ	31000 UJ	1000 UJ
2,4-Dinitrotoluene	330	430 UJ	710 UJ	12000 UJ	410 UJ
2,6-Dinitrotoluene	330	430 UJ	710 UJ	12000 UJ	410 UJ
2-Chloronaphthalene	330	430 UJ	710 UJ	12000 UJ	410 UJ
2-Chlorophenol	330	430 UJ	710 UJ	12000 UJ	410 UJ
2-Methylnaphthalene	330	430 UJ	710 UJ	12000 UJ	160 J
2-Methylphenol	330	430 UJ	710 UJ	12000 UJ	410 UJ
2-Nitroaniline	800	1000 UJ	1700 UJ	31000 UJ	1000 UJ
2-Nitrophenol	330	430 UJ	710 UJ	12000 UJ	410 UJ
3,3'-Dichlorobenzidine	330	430 UJ	710 UJ	12000 UJ	410 UJ
3-Nitroaniline	800	1000 UJ	1700 UJ	31000 UJ	1000 UJ
4,6-Dinitro-2-methylphenol	800	1000 UJ	1700 UJ	31000 UJ	1000 UJ

LOCATION NAME:		SD-010	SD-013	SD-118	SD-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-010-0.0-1.0-NX-846	SD-013-0.0-1.0-NX-847	SD-118-0.0-1.0-NX-870	SD-322-0.0-1.0-FD-926
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:					Field Duplicate
4-Bromophenyl-phenylether	330	430 UJ	710 UJ	12000 UJ	410 UJ
4-Chloro-3-methylphenol	330	430 UJ	710 UJ	12000 UJ	410 UJ
4-Chloroaniline	330	430 UJ	710 UJ	12000 UJ	410 UJ
4-Chlorophenyl-phenylether	330	430 UJ	710 UJ	12000 UJ	410 UJ
4-Methylphenol	330	430 UJ	76 J	12000 UJ	410 UJ
4-Nitroaniline	800	1000 UJ	1700 UJ	31000 UJ	1000 UJ
4-Nitrophenol	800	1000 UJ	1700 UJ	31000 UJ	1000 UJ
Acenaphthene	330	430 UJ	710 UJ	12000 UJ	170 J
Acenaphthylene	330	430 UJ	710 UJ	12000 UJ	410 UJ
Anthracene	330	150 J	710 UJ	12000 UJ	99 J
Benzo(a)anthracene	330	360 J	160 J	12000 UJ	370 J
Benzo(a)pyrene	330	170 J	110 J	12000 UJ	260 J
Benzo(b)fluoranthene	330	340 J	150 J	12000 UJ	340 J
Benzo(g,h,i)perylene	330	54 J	710 UJ	12000 UJ	170 J
Benzo(k)fluoranthene	330	260 J	150 J	12000 UJ	350 J
Bis(2-chloroethoxy)methane	330	430 UJ	710 UJ	12000 UJ	410 UJ
Bis(2-chloroethyl)ether	330	430 UJ	710 UJ	12000 UJ	410 UJ
Bis(2-ethylhexyl)phthalate	330	430 UJ	950 UJ	12000 UJ	410 UJ
Butylbenzylphthalate	330	430 UJ	710 UJ	12000 UJ	410 UJ
Carbazole	330	430 UJ	710 UJ	12000 UJ	84 J
Chrysene	330	490 J	170 J	12000 UJ	400 J
Di-n-butylphthalate	330	430 UJ	710 UJ	12000 UJ	410 UJ
Di-n-octylphthalate	330	430 UJ	710 UJ	12000 UJ	410 UJ
Dibenz(a,h)anthracene	330	430 UJ	710 UJ	12000 UJ	120 J
Dibenzofuran	330	430 UJ	710 UJ	12000 UJ	81 J
Diethylphthalate	330	430 UJ	710 UJ	12000 UJ	410 UJ
Dimethylphthalate	330	430 UJ	710 UJ	12000 UJ	410 UJ
Fluoranthene	330	2300 J	440 J	12000 UJ	1100 J
Fluorene	330	230 J	710 UJ	12000 UJ	170 J
Hexachlorobenzene	330	430 UJ	710 UJ	12000 UJ	410 UJ

LOCATION NAME:		SD-010	SD-013	SD-118	SD-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-010-0.0-1.0-NX-846	SD-013-0.0-1.0-NX-847	SD-118-0.0-1.0-NX-870	SD-322-0.0-1.0-FD-926
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:					Field Duplicate
Hexachlorobutadiene	330	430 UJ	710 UJ	12000 UJ	410 UJ
Hexachlorocyclopentadiene	330	430 UJ	710 UJ	12000 UJ	410 UJ
Hexachloroethane	330	430 UJ	710 UJ	12000 UJ	410 UJ
Indeno(1,2,3-cd)pyrene	330	81 J	710 UJ	12000 UJ	160 J
Isophorone	330	430 UJ	710 UJ	12000 UJ	410 UJ
N-Nitroso-di-n-propylamine	330	430 UJ	710 UJ	12000 UJ	410 UJ
N-Nitrosodiphenylamine	330	300 J	100 J	12000 UJ	200 J
Naphthalene	330	430 UJ	710 UJ	12000 UJ	59 J
Nitrobenzene	330	430 UJ	710 UJ	12000 UJ	410 UJ
Pentachlorophenol	800	1000 UJ	1700 UJ	31000 UJ	1000 UJ
Phenanthrene	330	390 J	180 J	12000 UJ	750 J
Phenol	330	430 UJ	710 UJ	12000 UJ	410 UJ
Pyrene	330	1200 J	470 J	12000 UJ	950 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	4.3 UJ	7.1 UJ	4.8 UJ	4.1 UJ
4,4'-DDE	3.3	4.3 UJ	7.1 UJ	4.8 UJ	4.1 UJ
4,4'-DDT	3.3	4.3 UJ	7.1 UJ	4.8 UJ	4.1 UJ
Aldrin	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
Dieldrin	3.3	17 J	7.1 UJ	4.8 UJ	4.1 UJ
Endosulfan I	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
Endosulfan II	3.3	4.3 UJ	7.1 UJ	4.8 UJ	4.1 UJ
Endosulfan Sulfate	3.3	4.3 UJ	7.1 UJ	4.8 UJ	4.1 UJ
Endrin	3.3	4.3 UJ	7.1 J	4.8 UJ	4.1 UJ
Endrin Aldehyde	3.3	4.3 UJ	7.1 UJ	4.8 UJ	4.1 UJ
Endrin Ketone	3.3	4.3 UJ	7.1 UJ	4.8 UJ	4.1 UJ
Heptachlor	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
Heptachlor Epoxide	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
Methoxychlor	17.0	22 UJ	36 UJ	25 UJ	21 UJ

LOCATION NAME:		SD-010	SD-013	SD-118	SD-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-010-0.0-1.0-NX-846	SD-013-0.0-1.0-NX-847	SD-118-0.0-1.0-NX-870	SD-322-0.0-1.0-FD-926
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:					Field Duplicate
Toxaphene	170.0	220 UJ	360 UJ	250 UJ	210 UJ
alpha-BHC	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
alpha-Chlordane	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
beta-BHC	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
delta-BHC	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
gamma-BHC(Lindane)	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
gamma-Chlordane	1.7	2.2 UJ	3.6 UJ	2.5 UJ	2.1 UJ
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	43 UJ	71 UJ	48 UJ	41 UJ
Aroclor-1221	67.0	88 UJ	140 UJ	97 UJ	83 UJ
Aroclor-1232	33.0	43 UJ	71 UJ	48 UJ	41 UJ
Aroclor-1242	33.0	43 UJ	71 UJ	48 UJ	41 UJ
Aroclor-1248	33.0	43 UJ	71 UJ	48 UJ	41 UJ
Aroclor-1254	33.0	43 UJ	71 UJ	48 UJ	41 UJ
Aroclor-1260	33.0	43 UJ	71 UJ	48 UJ	41 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	3750	30200	6080	4360
Antimony	60	4.2 UJ	9.1 UJ	158 J	3.9 UJ
Arsenic	10	4.6	28.1	14.8	5.5
Barium	200	15.8	181	63.6	21.1
Beryllium	5	0.3 U	2.3	0.51	0.3 U
Cadmium	5	0.4 U	0.9 U	0.5 U	0.4 U
Calcium	5000	532	6070	1310	824
Chromium	10	7.8 U	55.0	13.8	16.2
Cobalt	50	3.2	24.7	7.5	3.2
Copper	25	20.7 J	138 J	148 J	83.6 J

LOCATION NAME:		SD-010	SD-013	SD-118	SD-322
SITE LOCATION:		UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-010-0.0-1.0-NX-846	SD-013-0.0-1.0-NX-847	SD-118-0.0-1.0-NX-870	SD-322-0.0-1.0-FD-926
DATE SAMPLED:		09/14/93	09/14/93	09/14/93	09/14/93
REMARKS:					Field Duplicate
Iron	100	4680 J	27600 J	11400 J	7460 J
Lead	3	36.2 J	238 J	1580 J	118 J
Magnesium	5000	1300	7400	1690	1750
Manganese	15	89.9 J	697 J	178 J	67.4 J
Mercury	0.2	0.07 U	0.17	0.10	0.06 U
Nickel	40	7.9 U	45.3	14.6	10.8 U
Potassium	5000	462	4630	849	361
Selenium	5	0.62 UJ	2.4 J	0.97 J	0.57 UJ
Silver	10	1.3 U	2.9 U	1.6 U	1.2 U
Sodium	5000	128 U	844 U	274 U	142 U
Thallium	10	0.6 U	1.3 U	0.7 U	0.5 U
Vanadium	50	7.0	52.5	14.0	8.8
Zinc	20	23.2 J	191 J	101 J	59.7 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	0.6 U	1.4 U	0.8 U	0.6 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	880	230	620	2700

LOCATION NAME:		SD-322	SD-017	SD-026	SD-028
SITE LOCATION:		UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-322-0.0-1.0-NX-901	SD-017-0.0-1.0-NX-849	SD-026-0.0-1.0-NX-854	SD-029-0.0-1.0-FD-927
DATE SAMPLED:		09/14/93	09/15/93	09/17/93	09/17/93
REMARKS:					Field Duplicate
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	68 U	14 U	13 U	-- R
1,1,2,2-Tetrachloroethane	10	68 U	14 U	13 U	-- R
1,1,2-Trichloroethane	10	68 U	14 U	13 U	-- R
1,1-Dichloroethane	10	68 U	14 U	13 U	-- R
1,1-Dichloroethene	10	68 U	14 U	13 U	-- R
1,2-Dichloroethane	10	68 U	14 U	13 U	-- R
1,2-Dichloroethene(total)	10	68 U	14 U	13 U	-- R
1,2-Dichloropropane	10	68 U	14 U	13 U	-- R
2-Butanone	10	68 U	20	13 U	-- R
2-Hexanone	10	68 U	14 U	13 U	-- R
4-Methyl-2-pentanone	10	68 U	14 U	13 U	-- R
Acetone	10	120 U	73 U	27 U	-- R
Benzene	10	68 U	14 U	13 U	-- R
Bromodichloromethane	10	68 U	14 U	13 U	-- R
Bromoform	10	68 U	14 U	13 U	-- R
Bromomethane	10	68 U	14 U	13 U	-- R
Carbon Disulfide	10	68 U	14 U	13 U	-- R
Carbon Tetrachloride	10	68 U	14 U	13 U	-- R
Chlorobenzene	10	68 U	14 U	13 U	-- R
Chloroethane	10	68 U	14 U	13 U	-- R
Chloroform	10	68 U	14 U	13 U	-- R
Chloromethane	10	68 U	14 U	13 U	-- R
Dibromochloromethane	10	68 U	14 U	13 U	-- R
Ethylbenzene	10	68 U	14 U	13 U	-- R
Methylene Chloride	10	68 U	14 U	13 U	-- R
Styrene	10	68 U	14 U	13 U	-- R
Tetrachloroethene	10	68 U	14 U	13 U	-- R

LOCATION NAME:		SD-322	SD-017	SD-026	SD-028
SITE LOCATION:		UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-322-0.0-1.0-NX-901	SD-017-0.0-1.0-NX-849	SD-026-0.0-1.0-NX-854	SD-029-0.0-1.0-FD-927
DATE SAMPLED:		09/14/93	09/15/93	09/17/93	09/17/93
REMARKS:					Field Duplicate
Toluene	10	68 U	14 U	13 U	-- R
Total Xylenes	10	68 U	14 U	13 U	-- R
Trichloroethene	10	68 U	14 U	13 U	-- R
Vinyl Chloride	10	68 U	14 U	13 U	-- R
cis-1,3-Dichloropropene	10	68 U	14 U	13 U	-- R
trans-1,3-Dichloropropene	10	68 U	14 U	13 U	-- R
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	400 UJ	430 U	460 U	-- R
1,2-Dichlorobenzene	330	400 UJ	430 U	460 U	-- R
1,3-Dichlorobenzene	330	400 UJ	430 U	460 U	-- R
1,4-Dichlorobenzene	330	400 UJ	430 U	460 U	-- R
2,2'-Oxybis(1-chloropropane)	330	400 UJ	430 U	460 U	-- R
2,4,5-Trichlorophenol	800	960 UJ	1000 U	1100 U	-- R
2,4,6-Trichlorophenol	330	400 UJ	430 U	460 U	-- R
2,4-Dichlorophenol	330	400 UJ	430 U	460 U	-- R
2,4-Dimethylphenol	330	400 UJ	430 U	460 U	-- R
2,4-Dinitrophenol	800	960 UJ	1000 U	1100 U	-- R
2,4-Dinitrotoluene	330	400 UJ	430 U	460 U	-- R
2,6-Dinitrotoluene	330	400 UJ	430 U	460 U	-- R
2-Chloronaphthalene	330	400 UJ	430 U	460 U	-- R
2-Chlorophenol	330	400 UJ	430 U	460 U	-- R
2-Methylnaphthalene	330	180 J	59 J	460 U	-- R
2-Methylphenol	330	400 UJ	430 U	460 U	-- R
2-Nitroaniline	800	960 UJ	1000 U	1100 U	-- R
2-Nitrophenol	330	400 UJ	430 U	460 U	-- R
3,3'-Dichlorobenzidine	330	400 UJ	430 U	460 U	-- R
3-Nitroaniline	800	960 UJ	1000 U	1100 U	-- R
4,6-Dinitro-2-methylphenol	800	960 UJ	1000 U	1100 U	-- R

LOCATION NAME:		SD-322	SD-017	SD-026	SD-028
SITE LOCATION:		UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-322-0.0-1.0-NX-901	SD-017-0.0-1.0-NX-849	SD-026-0.0-1.0-NX-854	SD-029-0.0-1.0-FD-927
DATE SAMPLED:		09/14/93	09/15/93	09/17/93	09/17/93
REMARKS:					Field Duplicate
4-Bromophenyl-phenylether	330	400 UJ	430 U	460 U	-- R
4-Chloro-3-methylphenol	330	400 UJ	430 U	460 U	-- R
4-Chloroaniline	330	400 UJ	430 U	460 U	-- R
4-Chlorophenyl-phenylether	330	400 UJ	430 U	460 U	-- R
4-Methylphenol	330	400 UJ	430 U	460 U	-- R
4-Nitroaniline	800	960 UJ	1000 U	1100 U	-- R
4-Nitrophenol	800	960 UJ	1000 U	1100 U	-- R
Acenaphthene	330	140 J	99 J	460 U	-- R
Acenaphthylene	330	400 UJ	430 U	460 U	-- R
Anthracene	330	69 J	430 U	460 U	-- R
Benzo(a)anthracene	330	350 J	430 U	460 U	-- R
Benzo(a)pyrene	330	230 J	430 U	460 U	-- R
Benzo(b)fluoranthene	330	500 J	430 U	460 U	190 J
Benzo(g,h,i)perylene	330	200 J	430 U	460 U	-- R
Benzo(k)fluoranthene	330	170 J	430 U	460 U	-- R
Bis(2-chloroethoxy)methane	330	400 UJ	430 U	460 U	-- R
Bis(2-chloroethyl)ether	330	400 UJ	430 U	460 U	-- R
Bis(2-ethylhexyl)phthalate	330	400 UJ	430 U	2200	-- R
Butylbenzylphthalate	330	400 UJ	430 U	460 U	-- R
Carbazole	330	62 J	430 U	460 U	-- R
Chrysene	330	390 J	430 U	460 U	180 J
Di-n-butylphthalate	330	400 UJ	430 U	460 U	-- R
Di-n-octylphthalate	330	400 UJ	430 U	460 UJ	-- R
Dibenz(a,h)anthracene	330	100 J	430 U	460 U	-- R
Dibenzofuran	330	120 J	430 U	460 U	-- R
Diethylphthalate	330	400 UJ	430 U	460 U	-- R
Dimethylphthalate	330	400 UJ	430 U	460 U	-- R
Fluoranthene	330	1100 J	120 J	460 U	350 J
Fluorene	330	200 J	140 J	460 U	-- R
Hexachlorobenzene	330	400 UJ	430 U	460 U	-- R

LOCATION NAME:		SD-322	SD-017	SD-026	SD-028
SITE LOCATION:		UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-322-0.0-1.0-NX-901	SD-017-0.0-1.0-NX-849	SD-026-0.0-1.0-NX-854	SD-029-0.0-1.0-FD-927
DATE SAMPLED:		09/14/93	09/15/93	09/17/93	09/17/93
REMARKS:					Field Duplicate
Hexachlorobutadiene	330	400 UJ	430 U	460 U	-- R
Hexachlorocyclopentadiene	330	400 UJ	430 U	460 U	-- R
Hexachloroethane	330	400 UJ	430 U	460 U	-- R
Indeno(1,2,3-cd)pyrene	330	200 J	430 U	460 U	-- R
Isophorone	330	400 UJ	430 U	460 U	-- R
N-Nitroso-di-n-propylamine	330	400 UJ	430 U	460 U	-- R
N-Nitrosodiphenylamine	330	92 J	430 U	460 U	-- R
Naphthalene	330	63 J	430 U	460 U	-- R
Nitrobenzene	330	400 UJ	430 U	460 U	-- R
Pentachlorophenol	800	960 UJ	1000 U	1100 U	-- R
Phenanthrene	330	630 J	250 J	460 U	-- R
Phenol	330	400 UJ	430 U	460 U	-- R
Pyrene	330	850 J	110 J	460 U	440 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	4.0 UJ	4.3 UJ	4.5 U	27 J
4,4'-DDE	3.3	4.0 UJ	4.3 UJ	4.5 U	-- R
4,4'-DDT	3.3	4.0 UJ	4.3 UJ	4.5 U	-- R
Aldrin	1.7	2.1 UJ	2.2 UJ	2.3 U	-- R
Dieldrin	3.3	4.0 UJ	4.3 UJ	4.5 U	-- R
Endosulfan I	1.7	2.1 UJ	2.2 UJ	2.3 U	-- R
Endosulfan II	3.3	4.0 UJ	4.3 UJ	4.5 U	-- R
Endosulfan Sulfate	3.3	4.0 UJ	4.3 UJ	4.5 U	-- R
Endrin	3.3	4.0 UJ	4.3 UJ	4.5 U	-- R
Endrin Aldehyde	3.3	4.0 UJ	4.3 UJ	4.5 U	-- R
Endrin Ketone	3.3	4.0 UJ	4.3 UJ	4.5 U	-- R
Heptachlor	1.7	2.1 UJ	2.2 UJ	2.3 U	-- R
Heptachlor Epoxide	1.7	2.1 UJ	2.2 UJ	2.3 U	-- R
Methoxychlor	17.0	21 UJ	22 UJ	23 U	-- R

LOCATION NAME:		SD-322	SD-017	SD-026	SD-028
SITE LOCATION:		UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-322-0.0-1.0-NX-901	SD-017-0.0-1.0-NX-849	SD-026-0.0-1.0-NX-854	SD-029-0.0-1.0-FD-927
DATE SAMPLED:		09/14/93	09/15/93	09/17/93	09/17/93
REMARKS:					Field Duplicate
Toxaphene	170.0	210 UJ	220 UJ	230 U	-- R
alpha-BHC	1.7	2.1 UJ	2.2 UJ	2.3 U	-- R
alpha-Chlordane	1.7	2.1 UJ	2.2 UJ	2.3 U	13 J
beta-BHC	1.7	2.1 UJ	2.2 UJ	2.3 U	-- R
delta-BHC	1.7	2.1 UJ	2.2 UJ	2.3 U	-- R
gamma-BHC(Lindane)	1.7	2.1 UJ	2.2 UJ	2.3 U	-- R
gamma-Chlordane	1.7	2.1 UJ	2.2 UJ	2.3 U	-- R
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	40 UJ	43 UJ	45 U	-- R
Aroclor-1221	67.0	81 UJ	87 UJ	92 U	-- R
Aroclor-1232	33.0	40 UJ	43 UJ	45 U	-- R
Aroclor-1242	33.0	40 UJ	43 UJ	45 U	-- R
Aroclor-1248	33.0	40 UJ	43 UJ	45 U	620 J
Aroclor-1254	33.0	40 UJ	43 UJ	45 U	-- R
Aroclor-1260	33.0	40 UJ	43 UJ	45 U	-- R
METALS	CRDL(mg/kg)				
Aluminum	200	4420	3860	3390	15700 J
Antimony	60	4.4 J	2.3 U	2.2 U	-- R
Arsenic	10	5.7	5.1	6.0 U	58.9 J
Barium	200	29.2	19.5	16.9	60.9 J
Beryllium	5	0.3 U	0.10 U	0.05 U	1.3 J
Cadmium	5	0.4 U	0.3 U	0.2 U	-- R
Calcium	5000	937	629 U	748	2270 J
Chromium	10	18.4	8.9 UJ	9.8 UJ	70.4 J
Cobalt	50	3.2	3.7 U	2.5 U	17.4 J
Copper	25	100 J	11.1 U	11.5	49.0 J

LOCATION NAME:		SD-322	SD-017	SD-026	SD-028
SITE LOCATION:		UNNAMED BROOK	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-322-0.0-1.0-NX-901	SD-017-0.0-1.0-NX-849	SD-026-0.0-1.0-NX-854	SD-029-0.0-1.0-FD-927
DATE SAMPLED:		09/14/93	09/15/93	09/17/93	09/17/93
REMARKS:					Field Duplicate
Iron	100	8780 J	6150	4800	29900 J
Lead	3	145 J	8.8 J	10.5 U	118 J
Magnesium	5000	1780	1540	1250	3010 J
Manganese	15	85.6 J	105	74.7	2170 J
Mercury	0.2	0.06 U	0.07 U	0.06 U	-- R
Nickel	40	11.3 U	8.3 U	6.4 U	18.4 J
Potassium	5000	598	614	585	1010 J
Selenium	5	0.59 UJ	0.7 U	0.67 U	-- R
Silver	10	1.3 U	0.9 U	0.9 U	-- R
Sodium	5000	147 U	241 U	237 U	-- R
Thallium	10	0.6 U	0.4 U	0.38 U	-- R
Vanadium	50	10.5	8.4	7.3	39.2 J
Zinc	20	63.3 J	30.8	39.4	89.0 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	0.6 U	0.6 U	0.6 U	-- R
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	2200	46 UJ	91 J	160 J

LOCATION NAME:		SD-028	SD-029	SD-307	SD-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-029-0.0-1.0-NX-856	SD-028-0.0-1.0-NX-855	SD-307-0.0-1.0-NX-877	SD-308-0.0-1.0-NX-878
DATE SAMPLED:		09/17/93	09/14/93	09/17/93	09/14/93
REMARKS:					
VOLATILE ORGANICS	CRQL(ug/kg)				
1,1,1-Trichloroethane	10	-- R	-- R	19 U	19 U
1,1,2,2-Tetrachloroethane	10	-- R	-- R	19 U	19 U
1,1,2-Trichloroethane	10	-- R	-- R	19 U	19 U
1,1-Dichloroethane	10	-- R	-- R	19 U	19 U
1,1-Dichloroethene	10	-- R	-- R	19 U	19 U
1,2-Dichloroethane	10	-- R	-- R	19 U	19 U
1,2-Dichloroethene(total)	10	-- R	-- R	19 U	19 U
1,2-Dichloropropane	10	-- R	-- R	19 U	19 U
2-Butanone	10	-- R	-- R	19 U	22
2-Hexanone	10	-- R	-- R	19 U	19 U
4-Methyl-2-pentanone	10	-- R	-- R	19 U	19 U
Acetone	10	-- R	-- R	25 U	86 U
Benzene	10	-- R	-- R	19 U	19 U
Bromodichloromethane	10	-- R	-- R	19 U	19 U
Bromoform	10	-- R	-- R	19 U	19 U
Bromomethane	10	-- R	-- R	19 U	19 U
Carbon Disulfide	10	-- R	-- R	19 U	19 U
Carbon Tetrachloride	10	-- R	-- R	19 U	19 U
Chlorobenzene	10	-- R	-- R	19 U	19 U
Chloroethane	10	-- R	-- R	19 U	19 U
Chloroform	10	-- R	-- R	19 U	19 U
Chloromethane	10	-- R	-- R	19 U	19 U
Dibromochloromethane	10	-- R	-- R	19 U	19 U
Ethylbenzene	10	-- R	-- R	19 U	19 U
Methylene Chloride	10	-- R	-- R	19 U	19 U
Styrene	10	-- R	-- R	19 U	19 U
Tetrachloroethene	10	-- R	-- R	19 U	19 U

LOCATION NAME:		SD-028	SD-029	SD-307	SD-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-029-0.0-1.0-NX-856	SD-028-0.0-1.0-NX-855	SD-307-0.0-1.0-NX-877	SD-308-0.0-1.0-NX-878
DATE SAMPLED:		09/17/93	09/14/93	09/17/93	09/14/93
REMARKS:					
Toluene	10	-- R	-- R	19 U	19 U
Total Xylenes	10	-- R	-- R	19 U	19 U
Trichloroethene	10	-- R	-- R	19 U	19 U
Vinyl Chloride	10	-- R	-- R	19 U	19 U
cis-1,3-Dichloropropene	10	-- R	-- R	19 U	19 U
trans-1,3-Dichloropropene	10	-- R	-- R	19 U	19 U
SEMIVOLATILE ORGANICS	CRQL(ug/kg)				
1,2,4-Trichlorobenzene	330	-- R	-- R	790 U	620 UJ
1,2-Dichlorobenzene	330	-- R	-- R	790 U	620 UJ
1,3-Dichlorobenzene	330	-- R	-- R	790 U	620 UJ
1,4-Dichlorobenzene	330	-- R	-- R	790 U	620 UJ
2,2'-Oxybis(1-chloropropane)	330	-- R	-- R	790 U	620 UJ
2,4,5-Trichlorophenol	800	-- R	-- R	1900 U	1500 UJ
2,4,6-Trichlorophenol	330	-- R	-- R	790 U	620 UJ
2,4-Dichlorophenol	330	-- R	-- R	790 U	620 UJ
2,4-Dimethylphenol	330	-- R	-- R	790 U	620 UJ
2,4-Dinitrophenol	800	-- R	-- R	1900 U	1500 UJ
2,4-Dinitrotoluene	330	-- R	-- R	790 U	620 UJ
2,6-Dinitrotoluene	330	-- R	-- R	790 U	620 UJ
2-Chloronaphthalene	330	-- R	-- R	790 U	620 UJ
2-Chlorophenol	330	-- R	-- R	790 U	620 UJ
2-Methylnaphthalene	330	-- R	-- R	790 U	620 UJ
2-Methylphenol	330	-- R	-- R	790 U	620 UJ
2-Nitroaniline	800	-- R	-- R	1900 U	1500 UJ
2-Nitrophenol	330	-- R	-- R	790 U	620 UJ
3,3'-Dichlorobenzidine	330	-- R	-- R	790 U	620 UJ
3-Nitroaniline	800	-- R	-- R	1900 U	1500 UJ
4,6-Dinitro-2-methylphenol	800	-- R	-- R	1900 U	1500 UJ

LOCATION NAME:		SD-028	SD-029	SD-307	SD-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-029-0.0-1.0-NX-856	SD-028-0.0-1.0-NX-855	SD-307-0.0-1.0-NX-877	SD-308-0.0-1.0-NX-878
DATE SAMPLED:		09/17/93	09/14/93	09/17/93	09/14/93
REMARKS:					
4-Bromophenyl-phenylether	330	-- R	-- R	790 U	620 UJ
4-Chloro-3-methylphenol	330	-- R	-- R	790 U	620 UJ
4-Chloroaniline	330	-- R	-- R	790 U	620 UJ
4-Chlorophenyl-phenylether	330	-- R	-- R	790 U	620 UJ
4-Methylphenol	330	-- R	-- R	790 U	620 UJ
4-Nitroaniline	800	-- R	-- R	1900 U	1500 UJ
4-Nitrophenol	800	-- R	-- R	1900 UJ	1500 UJ
Acenaphthene	330	-- R	-- R	790 U	620 UJ
Acenaphthylene	330	-- R	-- R	790 U	620 UJ
Anthracene	330	-- R	-- R	790 U	620 UJ
Benzo(a)anthracene	330	-- R	-- R	790 U	620 UJ
Benzo(a)pyrene	330	-- R	-- R	790 UJ	70 J
Benzo(b)fluoranthene	330	120 J	-- R	790 UJ	620 UJ
Benzo(g,h,i)perylene	330	-- R	-- R	790 UJ	620 UJ
Benzo(k)fluoranthene	330	-- R	-- R	790 UJ	620 UJ
Bis(2-chloroethoxy)methane	330	-- R	-- R	790 U	620 UJ
Bis(2-chloroethyl)ether	330	-- R	-- R	790 U	620 UJ
Bis(2-ethylhexyl)phthalate	330	-- R	-- R	790 U	620 UJ
Butylbenzylphthalate	330	350 J	-- R	790 U	620 UJ
Carbazole	330	-- R	-- R	790 U	620 UJ
Chrysene	330	-- R	280 J	790 U	620 UJ
Di-n-butylphthalate	330	-- R	-- R	790 U	620 UJ
Di-n-octylphthalate	330	-- R	-- R	790 UJ	620 UJ
Dibenz(a,h)anthracene	330	-- R	-- R	790 UJ	620 UJ
Dibenzofuran	330	-- R	-- R	790 U	620 UJ
Diethylphthalate	330	-- R	-- R	790 U	620 UJ
Dimethylphthalate	330	-- R	-- R	790 U	620 UJ
Fluoranthene	330	210 J	380 J	99 J	620 UJ
Fluorene	330	-- R	-- R	790 U	620 UJ
Hexachlorobenzene	330	-- R	-- R	790 U	620 UJ

LOCATION NAME:		SD-028	SD-029	SD-307	SD-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-029-0.0-1.0-NX-856	SD-028-0.0-1.0-NX-855	SD-307-0.0-1.0-NX-877	SD-308-0.0-1.0-NX-878
DATE SAMPLED:		09/17/93	09/14/93	09/17/93	09/14/93
REMARKS:					
Hexachlorobutadiene	330	-- R	-- R	790 U	620 UJ
Hexachlorocyclopentadiene	330	-- R	-- R	790 U	620 UJ
Hexachloroethane	330	-- R	-- R	790 U	620 UJ
Indeno(1,2,3-cd)pyrene	330	-- R	-- R	790 UJ	620 UJ
Isophorone	330	-- R	-- R	790 U	620 UJ
N-Nitroso-di-n-propylamine	330	-- R	-- R	790 U	620 UJ
N-Nitrosodiphenylamine	330	-- R	-- R	790 U	620 UJ
Naphthalene	330	-- R	-- R	790 U	620 UJ
Nitrobenzene	330	-- R	-- R	790 U	620 UJ
Pentachlorophenol	800	-- R	-- R	1900 U	1500 UJ
Phenanthrene	330	120 J	-- R	790 U	620 UJ
Phenol	330	-- R	-- R	790 U	620 UJ
Pyrene	330	220 J	620 J	110 J	69 J
PESTICIDES	CRQL(ug/kg)				
4,4'-DDD	3.3	18 J	-- R	7.8 U	6.1 UJ
4,4'-DDE	3.3	-- R	-- R	7.8 U	6.1 UJ
4,4'-DDT	3.3	-- R	-- R	7.8 U	6.1 UJ
Aldrin	1.7	-- R	-- R	4.0 U	3.2 UJ
Dieldrin	3.3	-- R	-- R	7.8 U	6.1 UJ
Endosulfan I	1.7	-- R	-- R	4.0 U	3.2 UJ
Endosulfan II	3.3	-- R	-- R	7.8 U	6.1 UJ
Endosulfan Sulfate	3.3	-- R	-- R	7.8 U	6.1 UJ
Endrin	3.3	-- R	-- R	7.8 U	6.1 UJ
Endrin Aldehyde	3.3	-- R	-- R	7.8 U	6.1 UJ
Endrin Ketone	3.3	-- R	-- R	7.8 U	6.1 UJ
Heptachlor	1.7	-- R	-- R	4.0 U	3.2 UJ
Heptachlor Epoxide	1.7	-- R	-- R	4.0 U	3.2 UJ
Methoxychlor	17.0	-- R	-- R	40 U	32 UJ

LOCATION NAME:		SD-028	SD-029	SD-307	SD-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-029-0.0-1.0-NX-856	SD-028-0.0-1.0-NX-855	SD-307-0.0-1.0-NX-877	SD-308-0.0-1.0-NX-878
DATE SAMPLED:		09/17/93	09/14/93	09/17/93	09/14/93
REMARKS:					
Toxaphene	170.0	-- R	-- R	400 U	320 UJ
alpha-BHC	1.7	-- R	-- R	4.0 U	3.2 UJ
alpha-Chlordane	1.7	-- R	-- R	4.0 U	3.2 UJ
beta-BHC	1.7	-- R	-- R	4.0 U	3.2 UJ
delta-BHC	1.7	-- R	-- R	4.0 U	3.2 UJ
gamma-BHC(Lindane)	1.7	-- R	-- R	4.0 U	3.2 UJ
gamma-Chlordane	1.7	-- R	-- R	4.0 U	3.2 UJ
PCBs	CRQL(ug/kg)				
Aroclor-1016	33.0	-- R	-- R	78 U	61 UJ
Aroclor-1221	67.0	-- R	-- R	160 U	120 UJ
Aroclor-1232	33.0	-- R	-- R	78 U	61 UJ
Aroclor-1242	33.0	-- R	-- R	78 U	61 UJ
Aroclor-1248	33.0	-- R	480 J	78 U	310 J
Aroclor-1254	33.0	-- R	-- R	78 U	61 UJ
Aroclor-1260	33.0	-- R	-- R	78 U	61 UJ
METALS	CRDL(mg/kg)				
Aluminum	200	22700 J	29400 J	6640	5800
Antimony	60	-- R	-- R	4.6 U	6.5 UJ
Arsenic	10	57.0 J	101 J	3.9 U	9.6
Barium	200	103 J	111 J	24.9	44.2
Beryllium	5	2.5 J	3.8 J	0.1 U	0.5 U
Cadmium	5	-- R	5.4 J	0.5 U	0.71
Calcium	5000	5930 J	5600 J	2030	1540
Chromium	10	130 J	75.9 J	10.5 UJ	21.5
Cobalt	50	21.6 J	48.6 J	8.7	4.9
Copper	25	73.6 J	134 J	12.6	24.8 J

LOCATION NAME:		SD-028	SD-029	SD-307	SD-308
SITE LOCATION:		MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:		SD-029-0.0-1.0-NX-856	SD-028-0.0-1.0-NX-855	SD-307-0.0-1.0-NX-877	SD-308-0.0-1.0-NX-878
DATE SAMPLED:		09/17/93	09/14/93	09/17/93	09/14/93
REMARKS:					
Iron	100	37200 J	30600 J	5140	5980 J
Lead	3	189 J	257 J	24.0	88.1 J
Magnesium	5000	3190 J	3420 J	1490	1110
Manganese	15	3320 J	194 J	59.3	211 J
Mercury	0.2	0.31 J	-- R	0.12 U	0.11
Nickel	40	21.0 J	52.1 J	19.0	7.7 U
Potassium	5000	1120 J	1280 J	546	495
Selenium	5	3.2 U	7.2 J	1.4 U	0.96 UJ
Silver	10	-- R	-- R	1.9 U	2.1 U
Sodium	5000	1670 J	-- R	486 U	173 U
Thallium	10	-- R	-- R	0.80 U	0.9 U
Vanadium	50	47.7 J	110 J	10.6	10.9
Zinc	20	135 J	225 J	41.8	117 J
CYANIDE	CRDL(mg/kg)				
Cyanide	20	-- R	-- R	1.3 U	1.1 U
TOTAL PETROLEUM HYDROCARBONS	QL(mg/kg)				
Total Petroleum Hydrocarbons	10	100	45	22 UJ	30

Tentatively Identified Compounds - September 1993
Sediment

SEDIMENT - SEPTEMBER 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-319A	SD-321	SD-030	SD-101
SITE LOCATION:	BACKGROUND	BACKGROUND	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-319A-0.0-1.0-NX-888	SD-321-0.0-1.0-NX-900	SD-30-0.0-1.0-NX-857	SD-101-0.0-1.0-NX-858
DATE SAMPLED:	09/22/93	09/17/93	09/15/93	09/21/93
REMARKS:				

TENTATIVELY IDENTIFIED VOLATILE ORGANICS

No TICs Detected

TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS

D-Friedoolean-14-en-3-one	Hexadecanoic Acid	Benzenesulfonamide, N-ethyl-	.gamma.-Sisterol
		Ethanone, 1-phenyl-	

SEDIMENT - SEPTEMBER 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-117	SD-117	SD-020	SD-022
SITE LOCATION:	CONTENT BROOK	CONTENT BROOK	MIDDLESEX CANAL(E.OF POND ST)	RICHARDSON POND
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-117-0.0-1.0-FD-929	SD-117-0.0-1.0-NX-860	SD-020-0.0-1.0-NX-852	SD-22-0.0-1.0-NX-853
DATE SAMPLED:	09/21/93	09/21/93	09/15/93	09/21/93
REMARKS:	Field Duplicate			

TENTATIVELY IDENTIFIED VOLATILE ORGANICS

No TICs Detected

TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS

Hexadecanoic Acid	Hexadecanoic Acid	3-Penten-2-one, (E)-	Benzensulfonamide, N-ethyl-
Phenanthrene, 7-ethenyl-1,2,		Cyclopentasiloxane, decameth	Benzoic Acid
		Cyclotrisiloxane, hexamethyl	Dodecanoic Acid
			Tetradecanoic Acid

SEDIMENT - SEPTEMBER 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-113	SD-314	SD-314	SD-310
SITE LOCATION:	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-113-0.0-1.0-NX-867	SD-314-0.0-1.0-FD-865	SD-314-0.0-1.0-NX-864	SD-310-0.0-1.0-NX-880
DATE SAMPLED:	09/21/93	09/20/93	09/20/93	09/15/93
REMARKS:		Field Duplicate		

TENTATIVELY IDENTIFIED VOLATILE ORGANICS

No TICs Detected

TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS

	Hexadecanoic Acid	Hexadecanoic Acid	Hexadecanoic Acid	3-Penten-2-one, (E)-
				Hexadecanoic acid

SEDIMENT - SEPTEMBER 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-312	SD-313	SD-029	SD-029
SITE LOCATION:	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-312-0.0-1.0-NX-882	SD-313-0.0-1.0-NX-883	SD-029-0.0-1.0-FD-927	SD-029-0.0-1.0-NX-856
DATE SAMPLED:	09/15/93	09/15/93	09/17/93	09/17/93
REMARKS:			Field Duplicate	

TENTATIVELY IDENTIFIED VOLATILE ORGANICS

No TICs Detected

TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS

Benzenesulfonamide, N-ethyl-	3-Penten-2-one, (E)-	Hexadecanoic Acid	Cyclohexasiloxane,dodecamet.
	Hexadecanoic acid		

Tentatively Identified Compounds - June 1993
Sediment

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-323	SD-323	SD-324	SD-325
SITE LOCATION:	ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS	ASBESTOS LAGOONS
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-323-0.0-0.5-FD-129	SD-323-0.0-0.5-NX-125	SD-324-0.0-0.5-NX-126	SD-325-0.0-0.5-NX-127
DATE SAMPLED:	06/22/93	06/22/93	06/22/93	06/22/93
REMARKS:	Field Duplicate			
TENTATIVELY IDENTIFIED VOLATILE ORGANICS				
	Unknown RT=20-25	Unknown RT=20-25	Unknown RT=15.1-20	Unknown RT=20-25
	Unknown RT=25.1-30	Unknown RT=25.1-30	Unknown RT=20-25	Unknown RT=25.1-30
			Unknown RT=25.1-30	
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS				
	Unknown RT=10.1-15	Naphthalene, Trimethyl	Naphthalene, Trimethyl	Unknown RT=10.1-15
	Unknown RT=15.1-20	Unknown RT=10.1-15	Unknown RT=10.1-15	Unknown RT=15.1-20
	Unknown RT=20.1-25	Unknown RT=15.1-20	Unknown RT=15.1-20	Unknown RT=25.1-30
		Unknown RT=20.1-25	Unknown RT=20.1-25	Unknown RT=30.1-35
			Unknown RT=5.0-10	

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-326	SD-319	SD-321	SD-107
SITE LOCATION:	ASBESTOS LAGOONS	BACKGROUND	BACKGROUND	B&M POND
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-326-0.0-0.5-NX-128	SD-319-0.0-0.5-NX-088	SD-321-0.0-0.5-NX-151	SD-107-0.0-0.5-NX-062
DATE SAMPLED:	06/22/93	06/09/93	06/21/93	06/09/93
REMARKS:				
TENTATIVELY IDENTIFIED VOLATILE ORGANICS				
	Unknown RT=1-5			
	Unknown RT=20-25			
	Unknown RT=25.1-30			
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS				
	Unknown RT=10.1-15	PHYTOL	Hexandecanoic Acid	UNKNOWN RT=10.1-15
	Unknown RT=15.1-20	UNKNOWN RT=15.1-20	Unknown RT=15.1-20	UNKNOWN RT=15.1-20
	Unknown RT=20.1-25	UNKNOWN RT=20.1-25	Unknown RT=20.1-25	UNKNOWN RT=20.1-25
	Unknown RT=25.1-30	UNKNOWN RT=25.1-30	Unknown RT=25.1-30	UNKNOWN RT=25.1-30
		UNKNOWN RT=30.1-35	Unknown RT=30.1-35	UNKNOWN RT=30.1-35
		UNKNOWN RT=5-10	Unknown RT=5.0-10	UNKNOWN RT=5-10

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-030	SD-101	SD-102	SD-102
SITE LOCATION:	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK	CONTENT BROOK
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-30-0.0-0.5-NX-056	SD-101-0.0-0.5-NX-057	SD-102-0.0-0.5-FD-122	SD-102-0.0-0.5-NX-058
DATE SAMPLED:	06/15/93	06/16/93	06/15/93	06/15/93
REMARKS:			Field Duplicate	
TENTATIVELY IDENTIFIED VOLATILE ORGANICS				
	2-PROPANOL, 2-METHYL			TETRAHYDROFURAN
	TETRAHYDROFURAN			
	UNKNOWN RT 9-12			
	UNKNOWN RT=1-3			
	UNKNOWN RT=23-26			
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS				
	HEXANEDECANOIC ACID	PHENANTHRENE, TETRAMETHYL	HEXANEDECANOIC ACID	HEXANEDECANOIC ACID
	UNKNOWN RT=18.1-20	UNKNOWN RT=20.1-22	UNKNOWN RT=20.1-22	UNKNOWN RT=18.1-20
	UNKNOWN RT=20.1-22	UNKNOWN RT=22.1-24	UNKNOWN RT=24.1-26	UNKNOWN RT=20.1-22
	UNKNOWN RT=22.1-24	UNKNOWN RT=24.1-26	UNKNOWN RT=26.1-28	UNKNOWN RT=22.1-24
	UNKNOWN RT=24.1-26	UNKNOWN RT=28.1-30	UNKNOWN RT=28.1-30	UNKNOWN RT=24.1-26
	UNKNOWN RT=26.1-28	UNKNOWN RT=30.1-32	UNKNOWN RT=30.1-32	UNKNOWN RT=26.1-28
	UNKNOWN RT=28.1-30	UNKNOWN RT=34.1-36	UNKNOWN RT=34.1-36	UNKNOWN RT=28.1-30
	UNKNOWN RT=30.1-32	UNKNOWN RT=6-8	UNKNOWN RT=6-8	UNKNOWN RT=30.1-32
	UNKNOWN RT=32.1-34	UNKNOWN RT=8.1-10	UNKNOWN RT=8.1-10	UNKNOWN RT=32.1-34
	UNKNOWN RT=34.1-36			UNKNOWN RT=34.1-36
	UNKNOWN RT=6-8			UNKNOWN RT=6-8
	UNKNOWN RT=8.1-10			UNKNOWN RT=8.1-10

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-117	SD-019	SD-020	SD-103
SITE LOCATION:	CONTENT BROOK	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-117-0.0-0.5-NX-068	SD-019-0.0-0.5-NX-050	SD-020-0.0-0.5-NX-051	SD-103-0.0-0.5-NX-059
DATE SAMPLED:	06/16/93	06/17/93	06/15/93	06/17/93
REMARKS:				
TENTATIVELY IDENTIFIED VOLATILE ORGANICS				
	TETRAHYDROFURAN		TETRAHYDROFURAN	Tetrahydrofuran
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS				
	HEXANEDECANOIC ACID	Unknown RT=15.1-20	PHENANTHRENE, TETRAMETHYL	Unknown RT=15.1-20
	UNKNOWN RT=18.1-20	Unknown RT=20.1-25	UNKNOWN RT=12.1-14	Unknown RT=20.1-25
	UNKNOWN RT=20.1-22	Unknown RT=25.1-30	UNKNOWN RT=20.1-22	Unknown RT=25.1-30
	UNKNOWN RT=24.1-26	Unknown RT=30.1-35	UNKNOWN RT=24.1-26	Unknown RT=30.1-35
	UNKNOWN RT=26.1-28	Unknown RT=5.0-10	UNKNOWN RT=28.1-30	Unknown RT=5.0-10
	UNKNOWN RT=28.1-30		UNKNOWN RT=30.1-32	
	UNKNOWN RT=30.1-32		UNKNOWN RT=32.1-34	
	UNKNOWN RT=32.1-34		UNKNOWN RT=34.1-36	
	UNKNOWN RT=34.1-36		UNKNOWN RT=6-8	
	UNKNOWN RT=6-8		UNKNOWN RT=8.1-10	
	UNKNOWN RT=8.1-10			

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-104	SD-105	SD-106	SD-116
SITE LOCATION:	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)	MIDDLESEX CANAL(E.OF POND ST)
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-104-0.0-0.5-NX-060	SD-105-0.0-0.5-NX-061	SD-106-0.0-0.5-NX-049	SD-116-0.0-0.5-NX-067
DATE SAMPLED:	06/17/93	06/17/93	06/21/93	06/21/93
REMARKS:				
TENTATIVELY IDENTIFIED VOLATILE ORGANICS				
	Unknown RT=1-5	Unknown RT=1-5	2-Heptanone	
			Unknown RT=20-25	
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS				
	Unknown RT=25.1-30	Hexandecanoic Acid		Unknown RT=15.1-20
	Unknown RT=30.1-35	Unknown RT=15.1-20		Unknown RT=20.1-25
	Unknown RT=5.0-10	Unknown RT=20.1-25		Unknown RT=25.1-30
		Unknown RT=25.1-30		Unknown RT=30.1-35
		Unknown RT=30.1-35		Unknown RT=5.0-10
		Unknown RT=5.0-10		

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-317	SD-109	SD-022	SD-111
SITE LOCATION:	B&M LSDA	NORTH OF SPINCRAFT	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-317-0.0-0.5-NX-086	SD-109-0.0-0.5-NX-064	SD-22-0.0-0.5-NX-052	SD-111-0.0-0.5-NX-065
DATE SAMPLED:	06/09/93	06/09/93	06/16/93	06/16/93
REMARKS:				

TENTATIVELY IDENTIFIED VOLATILE ORGANICS

	unknown (RT 26.15 - 26.17)		UNKNOWN RT 9-12
	unknown (RT 26.40)		
	unknown (RT 27.80 - 27.83)		

TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS

	UNKNOWN RT=10.1-15	UNKNOWN RT=15.1-20	BENZENE DIMETHYL	ANTHRACENE, METHYL
	UNKNOWN RT=15.1-20	UNKNOWN RT=20.1-25	HEXANEDECANOIC ACID	BENZO[E]PYRENE
	UNKNOWN RT=20.1-25	UNKNOWN RT=25.1-30	UNKNOWN RT=18.1-20	METHYL PYRENE
	UNKNOWN RT=25.1-30	UNKNOWN RT=30.1-35	UNKNOWN RT=20.1-22	PHENANTHRENE, METHYL
	UNKNOWN RT=30.1-35	UNKNOWN RT=5-10	UNKNOWN RT=24.1-26	UNKNOWN RT=18.1-20
	UNKNOWN RT=5-10		UNKNOWN RT=26.1-28	UNKNOWN RT=20.1-22
			UNKNOWN RT=28.1-30	UNKNOWN RT=22.1-24
			UNKNOWN RT=30.1-32	UNKNOWN RT=26.1-28
			UNKNOWN RT=34.1-36	UNKNOWN RT=30.1-32
			UNKNOWN RT=6-8	UNKNOWN RT=6-8
			UNKNOWN RT=8.1-10	UNKNOWN RT=8.1-10

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-113	SD-314	SD-314	SD-315
SITE LOCATION:	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND	RICHARDSON POND
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-113-0.0-0.5-NX-066	SD-314-0.0-0.5-FD-118	SD-314-0.0-0.5-NX-083	SD-315-0.0-0.5-NX-084
DATE SAMPLED:	06/16/93	06/18/93	06/18/93	06/18/93
REMARKS:		Field Duplicate		
TENTATIVELY IDENTIFIED VOLATILE ORGANICS				
	UNKNOWN RT=1-3			
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS				
	BENZO[J]FLUROANTHENE	Unknown RT=25.1-30	Unknown RT=20.1-25	Unknown RT=25.1-30
	HEXANEDECANOIC ACID	Unknown RT=30.1-35	Unknown RT=25.1-30	Unknown RT=30.1-35
	UNKNOWN RT=16.1-18		Unknown RT=30.1-35	Unknown RT=5.0-10
	UNKNOWN RT=20.1-22		Unknown RT=5.0-10	
	UNKNOWN RT=22.1-24			
	UNKNOWN RT=24.1-26			
	UNKNOWN RT=26.1-28			
	UNKNOWN RT=28.1-30			
	UNKNOWN RT=30.1-32			
	UNKNOWN RT=32.1-34			
	UNKNOWN RT=34.1-36			
	UNKNOWN RT=6-8			
	UNKNOWN RT=8.1-10			

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-316	SD-320	SD-016	SD-016
SITE LOCATION:	RICHARDSON POND	RICHARDSON POND	RSI WETLAND AREA	RSI WETLAND AREA
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-316-0.0-0.5-NX-085	SD-320-0.0-0.5-NX-089	SD-016-0.0-0.5-FD-116	SD-016-0.0-0.5-NX-047
DATE SAMPLED:	06/16/93	06/18/93	06/14/93	06/14/93
REMARKS:			Field Duplicate	
TENTATIVELY IDENTIFIED VOLATILE ORGANICS				
	UNKNOWN RT=1-3			UNKNOWN RT=1-3
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS				
	HEXANEDECANOIC ACID	Dodecanoic Acid, Hexadecyl	HEPTACOSANE	UNKNOWN RT=24.1-26
	OCTADECANIOC ACID	Unknown RT=10.1-15	HEXANEDECANOIC ACID	UNKNOWN RT=26.1-28
	TETRADECANOIC ACID	Unknown RT=15.1-20	PENTACOSANE	UNKNOWN RT=28.1-30
	UNKNOWN RT=18.1-20	Unknown RT=20.1-25	UNKNOWN RT=18.1-20	UNKNOWN RT=30.1-32
	UNKNOWN RT=20.1-22	Unknown RT=25.1-30	UNKNOWN RT=24.1-26	UNKNOWN RT=32.1-34
	UNKNOWN RT=22.1-24	Unknown RT=30.1-35	UNKNOWN RT=26.1-28	
	UNKNOWN RT=26.1-28	Unknown RT=5.0-10	UNKNOWN RT=28.1-30	
	UNKNOWN RT=28.1-30		UNKNOWN RT=30.1-32	
	UNKNOWN RT=30.1-32		UNKNOWN RT=34.1-36	
	UNKNOWN RT=32.1-34		UNKNOWN RT=6-8	
	UNKNOWN RT=34.1-36		UNKNOWN RT=8.1-10	
	UNKNOWN RT=6-8			

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-108	SD-310	SD-311	SD-311
SITE LOCATION:	RSI WETLAND AREA	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-108-0.0-0.5-NX-063	SD-310-0.0-0.5-NX-079	SD-311-0.0-0.5-FD-117	SD-311-0.0-0.5-NX-080
DATE SAMPLED:	06/14/93	06/15/93	06/17/93	06/17/93
REMARKS:			Field Duplicate	
TENTATIVELY IDENTIFIED VOLATILE ORGANICS				
		2-PROPANOL, 2-METHYL	DIISOPROPYL ETHER	DIISOPROPYL ETHER
		TETRAHYDROFURAN	TETRAHYDROFURAN	TETRAHYDROFURAN
		UNKNOWN RT 9-12	UNKNOWN RT=14-16	
		UNKNOWN RT=1-3		
		UNKNOWN RT=4-6		
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS				
	AZULENE, 1,2,3,4,5,6,7,8-OCT	HEXANEDECANOIC ACID	HEXANEDECANOIC ACID	UNKNOWN RT=18.1-20
	CARYOPHYLLENE	UNKNOWN RT=12.1-14	PHENANTHRENE, TETRAMETHYL	
	HEXANEDECANOIC ACID	UNKNOWN RT=18.1-20	UNKNOWN RT=20.1-22	
	UNKNOWN RT=16.1-18	UNKNOWN RT=20.1-22	UNKNOWN RT=22.1-24	
	UNKNOWN RT=20.1-22	UNKNOWN RT=22.1-24	UNKNOWN RT=24.1-26	
	UNKNOWN RT=22.1-24	UNKNOWN RT=24.1-26	UNKNOWN RT=26.1-28	
	UNKNOWN RT=24.1-26	UNKNOWN RT=26.1-28	UNKNOWN RT=28.1-30	
	UNKNOWN RT=26.1-28	UNKNOWN RT=28.1-30	UNKNOWN RT=30.1-32	
	UNKNOWN RT=28.1-30	UNKNOWN RT=30.1-32	UNKNOWN RT=34.1-36	
	UNKNOWN RT=30.1-32	UNKNOWN RT=32.1-34	UNKNOWN RT=6-8	
	UNKNOWN RT=34.1-36	UNKNOWN RT=6-8	UNKNOWN RT=8.1-10	
	UNKNOWN RT=6-8	UNKNOWN RT=8.1-10		
	UNKNOWN RT=8.1-10			

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-312	SD-313	SD-318	SD-010
SITE LOCATION:	SCHAFFER LANDFILL WETLANDS	SCHAFFER LANDFILL WETLANDS	NEAR FORMER SALT/SAND PILE	UNNAMED BROOK
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-312-0.0-0.5-NX-081	SD-313-0.0-0.5-NX-082	SD-318-0.0-0.08-NX-087	SD-010-0.0-0.5-NX-045
DATE SAMPLED:	06/17/93	06/15/93	06/09/93	06/09/93
REMARKS:				
TENTATIVELY IDENTIFIED VOLATILE ORGANICS				
	Tetrahydrofuran	TETRAHYDROFURAN		methane, thiobis- (RT 4.30)
	Unknown RT=1-5	UNKNOWN RT 9-12		
	Unknown RT=5.1-10			
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS				
	Hexadecanoic Acid, Hexadecyl	HEPTADECANE	BENZO[E]PYRENE	DIBENZOTHIOPHENE, -METHYL
	Tetradecanoic Acid, Hexadecy	HEXANEDECANOIC ACID	HEXADECANE	NAPHTHALENE, TRIMETHYL
	Unknown RT=15.1-20	UNKNOWN RT=16.1-18	UNKNOWN RT=10.1-15	UNKNOWN RT=10.1-15
	Unknown RT=20.1-25	UNKNOWN RT=18.1-20	UNKNOWN RT=15.1-20	UNKNOWN RT=15.1-20
	Unknown RT=25.1-30	UNKNOWN RT=20.1-22	UNKNOWN RT=25.1-30	
	Unknown RT=30.1-35	UNKNOWN RT=26.1-28	UNKNOWN RT=30.1-35	
	Unknown RT=5.0-10	UNKNOWN RT=28.1-30	UNKNOWN RT=5-10	
		UNKNOWN RT=30.1-32		
		UNKNOWN RT=32.1-34		
		UNKNOWN RT=6-8		
		UNKNOWN RT=8.1-10		

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-013	SD-118	SD-322	SD-017
SITE LOCATION:	UNNAMED BROOK	UNNAMED BROOK	UNNAMED BROOK	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-013-0.0-0.5-NX-046	SD-118-0.0-0.5-NX-069	SD-322-0.0-0.5-NX-090	SD-017-0.0-0.5-NX-048
DATE SAMPLED:	06/09/93	06/09/93	06/09/93	06/14/93
REMARKS:				

TENTATIVELY IDENTIFIED VOLATILE ORGANICS

	unknown (RT 26.15 - 26.17)	unknown (RT 22.65)	UNKNOWN RT=1-3
	unknown (RT 26.63)	unknown (RT 24.73)	UNKNOWN RT=23-26
	unknown (RT 27.80 - 27.83)	unknown (RT 26.15 - 26.17)	
		unknown (RT 27.80 - 27.83)	

TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS

HEXADECANE	HEXANEDECANOIC ACID	PENTADECANE, 2,6,10,14-TETRA	HEPTACOSANE
PENTADECANE, 2,6,10,14-TETRA	UNKNOWN RT=10.1-15	TRIDECANE, 7-METHYL	HEXANEDECANOIC ACID
TRIDECANE, 7-METHYL	UNKNOWN RT=20.1-25	UNDECANE, DIMETHYL	UNKNOWN RT=18.1-20
UNKNOWN RT=10.1-15	UNKNOWN RT=25.1-30	UNKNOWN RT=10.1-15	UNKNOWN RT=20.1-22
UNKNOWN RT=15.1-20	UNKNOWN RT=5-10	UNKNOWN RT=15.1-20	UNKNOWN RT=22.1-24
UNKNOWN RT=20.1-25		UNKNOWN RT=30.1-35	UNKNOWN RT=24.1-26
UNKNOWN RT=25.1-30		UNKNOWN RT=5-10	UNKNOWN RT=26.1-28
UNKNOWN RT=30.1-35			UNKNOWN RT=28.1-30
UNKNOWN RT=5-10			UNKNOWN RT=30.1-32
			UNKNOWN RT=32.1-34
			UNKNOWN RT=34.1-36
			UNKNOWN RT=6-8
			UNKNOWN RT=8.1-10

SEDIMENT - JUNE 1993
TENTATIVELY IDENTIFIED ORGANIC COMPOUNDS
IRON HORSE PARK ANALYTICAL DATA

LOCATION NAME:	SD-026	SD-026	SD-028
SITE LOCATION:	MIDDLESEX CANAL	MIDDLESEX CANAL	MIDDLESEX CANAL
SAMPLE DEPTH (FT):	0.0-0.5	0.0-0.5	0.0-0.5
M&E SAMPLE ID:	SD-026-0.0-0.5-FD-115	SD-026-0.0-0.5-NX-053	SD-028-0.0-0.5-NX-054
DATE SAMPLED:	06/10/93	06/10/93	06/10/93
REMARKS:	Field Duplicate		

TENTATIVELY IDENTIFIED VOLATILE ORGANICS			
	unknown (RT 1.33 - 1.35)		unknown (RT 26.30)
TENTATIVELY IDENTIFIED SEMIVOLATILE ORGANICS			
	PHENOL, 4,4-BUTYLIDENEBIS[2	UNKNOWN RT=25.1-30	UNKNOWN RT=20.1-25
	PHENOL, 4-(TETRAMETHYLBUTYL)	UNKNOWN RT=30.1-35	UNKNOWN RT=25.1-30
	UNKNOWN RT=15.1-20		UNKNOWN RT=30.1-35
	UNKNOWN RT=20.1-25		UNKNOWN RT=5-10
	UNKNOWN RT=25.1-30		
	UNKNOWN RT=30.1-35		
	UNKNOWN RT=5-10		

Analytical Data - 2004
Surface Water

SIT[illegible] Horse Park
CASE NO.: 0243M
SDG NO.: D05245

DATA SU[illegible]Y TABLE
Total Metals (D-004.1)
Surface Water (ug/L)

Traffic Report Sample No.		D05235-T	D05236-T	D05237-T	D05238-T	D05239-T	D05240-T	D05241-T	D05242-T	D05243-T
M&E Sample ID		SW-RP-01	SW-RP-02	SW-RP-03	SW-MC-01	SW-MC-21	SW-MC-02	SW-MC-03	SW-CB-01	SW-CB-02
Lab Sample ID		252746	252747	252748	252749	252750	252751	252752	252753	252754
Date Sampled		09/22/04	09/22/04	09/22/04	09/23/04	09/23/04	09/23/04	09/23/04	09/23/04	09/23/04
Date Received		09/25/04	09/25/04	09/25/04	09/25/04	09/25/04	09/25/04	09/25/04	09/25/04	09/25/04
Comments					FD of D05239	FD of D05238				
Analyte	RL									
Aluminum	15.0	15.0	17.5 J	16.0 J	31.1	40.8	39.9	40.0	73.2	152
Arsenic	0.10	3.4 J	3.4 J	3.3 J	1.4 J	1.4 J	1.5 J	1.5 J	2.5 J	3.1 J
Barium	1.0	24.9	24.7	24.7	25.9	26.2	26.3	26.5	38.9	41.2
Calcium	25.0	13300	13200	13100	11800	11900	11900	11900	13100	13300
Chromium	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cobalt	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Copper	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Lead	0.10	0.25	0.27	0.25	0.66	0.69	0.75	0.80	1.0	1.7
Magnesium	25.0	3190	3160	3150	2040	2060	2060	2060	2500	2530
Manganese	0.50	219	218	216	140	146	154	164	282	330
Silver	0.25	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vanadium	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	6.7 J

SITE: Iron Horse Park
CASE NO.: 0243M
SDG NO.: D05245

DATA SUMMARY TABLE
Total Metals (D-004.1)
Surface Water (ug/L)

Traffic Report Sample No.		D05244-T	D05245-T	D05246-T	D05247-T	D05248-T	D05249-T	D05250-T
M&E Sample ID		SW-CB-03	SW-BM-01	SW-BM-02	SW-BM-03	SW-RF-01	SW-RF-02	SW-RF-03
Lab Sample ID		252755	252484	252485	252486	252756	252757	252758
Date Sampled		09/23/04	09/21/04	09/21/04	09/21/04	09/24/04	09/24/04	09/24/04
Date Received		09/25/04	09/22/04	09/22/04	09/22/04	09/25/04	09/25/04	09/25/04
Comments								
Analyte	RL							
Aluminum	15.0	71.2	52.2	52.0	51.1	42.5	37.0	36.2
Arsenic	0.10	2.4 J	2.6 J	2.5 J	2.6 J	1.1 J	1.1 J	1.1 J
Barium	1.0	38.7	24.3	24.2	23.9	18.8	18.2	18.1
Calcium	25.0	13100	10300	10200	10200	8970	8960	8960
Chromium	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cobalt	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Copper	1.0	1.0 U	1.1 J	1.1 J	1.4 J	1.0 U	1.0 U	1.0 U
Lead	0.10	0.96	1.6	1.6	1.6	0.58	0.44	0.41
Magnesium	25.0	2500	1760	1750	1730	1670	1680	1680
Manganese	0.50	280	136	137	123	253	230	200
Silver	0.25	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vanadium	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U

SIT[illegible] Horse Park
CASE NO.: 0243M
SDG NO.: D05245

DATA SU[illegible]RY TABLE
Total Metals (D-004.1)
Surface Water (ug/L)

	Traffic Report Sample No.	D05251-T
	M&E Sample ID	SW-EB-01
	Lab Sample ID	252759
	Date Sampled	09/23/04
	Date Received	09/25/04
	Comments	Equipment Blank
Analyte	RL	
Aluminum	15.0	15.0 U
Arsenic	0.10	0.10 UJ
Barium	1.0	1.0 U
Calcium	25.0	25.0 U
Chromium	2.5	2.5 U
Cobalt	1.0	1.0 U
Copper	1.0	1.0 U
Lead	0.10	0.10 U
Magnesium	25.0	25.0 U
Manganese	0.50	0.50 U
Silver	0.25	0.25 U
Vanadium	2.5	2.5 U
Zinc	5.0	5.0 U

SITE: Iron Horse Park
CASE NO.: 0243M
SDG NO.: D05245

DATA SUMMARY TABLE
Dissolved Metals (D-004.1)
Surface Water (ug/L)

Traffic Report Sample No.		D05235-D	D05236-D	D05237-D	D05238-D	D05239-D	D05240-D	D05241-D	D05242-D	D05243-D
M&E Sample ID		SW-RP-01	SW-RP-02	SW-RP-03	SW-MC-01	SW-MC-21	SW-MC-02	SW-MC-03	SW-CB-01	SW-CB-02
Lab Sample ID		252824	252825	252826	252827	252828	252829	252830	252831	252832
Date Sampled		09/22/04	09/22/04	09/22/04	09/23/04	09/23/04	09/23/04	09/23/04	09/23/04	09/23/04
Date Received		09/25/04	09/25/04	09/25/04	09/25/04	09/25/04	09/25/04	09/25/04	09/25/04	09/25/04
Comments					FD of D05239	FD of D05238				
Analyte	RL									
Aluminum	15.0	15.0 U	15.0 U	15.0 U	23.2 J	21.4 J	21.5 J	20.8 J	49.6	50.2
Arsenic	0.10	2.8 J	2.8 J	2.7 J	1.3 J	1.2 J	1.3 J	1.3 J	1.7 J	1.7 J
Barium	1.0	25.5	25.1	25.2	26.6	26.6	26.7	26.4	39.1	39.1
Calcium	25.0	13400	13300	13300	12000	12000	12000	12000	13200	13200
Chromium	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cobalt	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Copper	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Lead	0.10	0.19 J	0.16 J	0.13 J	0.41	0.31	0.39	0.34	0.34	0.37
Magnesium	25.0	3190	3170	3150	2040	2060	2050	2040	2500	2490
Manganese	0.50	216	214	214	135	133	132	131	263	263
Silver	0.25	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vanadium	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	5.0	5.0 U	5.0 U	5.0 U	9.5 J	5.0 U	5.0 U	5.0 U	5.5 J	6.0 J

SIT[illegible] Horse Park
CAS[illegible]O.: 0243M
SDG NO.: D05245

DATA SU[illegible]RY TABLE
Dissolved Metals (D-004.1)
Surface Water (ug/L)

Traffic Report Sample No.		D05244-D	D05245-D	D05246-D	D05247-D	D05248-D	D05249-D	D05250-D
M&E Sample ID		SW-CB-03	SW-BM-01	SW-BM-02	SW-BM-03	SW-RF-01	SW-RF-02	SW-RF-03
Lab Sample ID		252833	252200	252201	252202	252834	252835	252836
Date Sampled		09/23/04	09/21/04	09/21/04	09/21/04	09/24/04	09/24/04	09/24/04
Date Received		09/25/04	09/22/04	09/22/04	09/22/04	09/25/04	09/25/04	09/25/04
Comments								
Analyte	RL							
Aluminum	15.0	54.2	26.4 J	27.0 J	28.1 J	34.3	36.9	38.4
Arsenic	0.10	1.8 J	2.3 J	2.2 J	2.1 J	1.0 J	1.0 J	1.1 J
Barium	1.0	39.4	24.1	24.7	24.4	18.1	18.3	18.3
Calcium	25.0	13200	10300	10400	10300	8940	8970	8950
Chromium	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cobalt	1.0	1.1 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Copper	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Lead	0.10	0.45	0.83	0.70	0.61	0.41	0.31	0.32
Magnesium	25.0	2500	1740	1760	1740	1660	1670	1670
Manganese	0.50	274	128	127	112	177	175	173
Silver	0.25	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vanadium	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	5.0	12.6	6.2 J	5.0 U	5.0 U	8.2 J	5.0 U	5.0 U

SITE: Iron Horse Park
CASE NO.: 0243M
SDG NO.: D05245

DATA SUMMARY TABLE
Dissolved Metals (D-004.1)
Surface Water (ug/L)

	Traffic Report Sample No.	D05251-D
	M&E Sample ID	SW-EB-01
	Lab Sample ID	252837
	Date Sampled	09/23/04
	Date Received	09/25/04
	Comments	Equipment Blank
Analyte	RL	
Aluminum	15.0	15.0 U
Arsenic	0.10	0.10 UJ
Barium	1.0	1.0 U
Calcium	25.0	25.0 U
Chromium	2.5	2.5 U
Cobalt	1.0	1.0 U
Copper	1.0	1.0 U
Lead	0.10	0.10 U
Magnesium	25.0	25.0 U
Manganese	0.50	0.50 J
Silver	0.25	0.25 U
Vanadium	2.5	2.5 U
Zinc	5.0	5.0 U

DATA SUMMARY TABLE DEFINITIONS (Inorganics)

BB - As a qualifier for soil/sediment samples: Analyte is also detected in the bottle blank
CRQL - Contract Required Quantitation Limit
EB - As a qualifier for soil/sediment samples: Analyte is also detected in the equipment blank
FD - Field Duplicate
g - gram
MDL - Method Detection Limit
J - The concentration is an estimated quantity
mg/Kg - milligrams per Kilogram
mg/L - milligrams per Liter
R - The data are rejected as unusable
RL - Reporting Limit
U - Analyte was analyzed for but not detected
ug/Kg - micrograms per Kilogram
ug/L - micrograms per Liter
UJ - The sample quantitation limit is an estimated quantity
NA - Not Applicable

SIT[illegible] Horse Park
CASE NO.: 0243M
SDG NO.: D05235-IA

DATA SU[illegible]RY TABLE
INORGANIC ANALYSIS (D-033)
Surface Water (mg/L)

Traffic Report Sample No.		D05235			D05236			D05237			D05242		
M&E Sample ID		SW-RP-01			SW-RP-02			SW-RP-03			SW-CB-01		
Lab Sample ID		207645-001			207645-002			207645-003			207645-004		
Matrix		SW			SW			SW			SW		
Sample Type		NX			NX			NX			NX		
Date Sampled		09/22/04			09/22/04			09/22/04			09/23/04		
Date Received		09/24/04			09/24/04			09/24/04			09/24/04		
Date Extracted													
Date Analyzed		09/30/04			09/30/04			09/30/04			09/30/04		
Units		mg/L			mg/L			mg/L			mg/L		
% Solids													
Dilution Factor		1			1			1			1		
Mass/Volume of Sample													
Comments													
Analyte	RL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL
Alkalinity, Total as CaCO3		32.6	2	0.204	33.4	2	0.204	38.6	2	0.204	35.5	2	0.204

SITE: Iron Horse Park
CASE NO.: 0243M
SDG NO.: D05235-IA

DATA SUMMARY TABLE
INORGANIC ANALYSIS (D-033)
Surface Water (mg/L)

Traffic Report Sample No.		D05243			D05244			D05238			D05239		
M&E Sample ID		SW-CB-02			SW-CB-03			SW-MC-01			SW-MC-21		
Lab Sample ID		207645-005			207645-006			207645-007			207645-008		
Matrix		SW			SW			SW			SW		
Sample Type		NX			NX			FD			NX		
Date Sampled		09/23/04			09/23/04			09/23/04			09/23/04		
Date Received		09/24/04			09/24/04			09/24/04			09/24/04		
Date Extracted													
Date Analyzed		09/30/04			09/30/04			09/30/04			09/30/04		
Units		mg/L			mg/L			mg/L			mg/L		
% Solids													
Dilution Factor		1			1			1			1		
Mass/Volume of Sample													
Comments													
Analyte	RL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL
Alkalinity, Total as CaCO3		36.7	2	0.204	36.2	2	0.204	30.4	2	0.204	30.9	2	0.204

SITE: Horse Park
CASE NO.: 0243M
SDG NO.: D05235-IA

DATA SUMMARY TABLE
INORGANIC ANALYSIS (D-033)
Surface Water (mg/L)

Traffic Report Sample No.		D05240			D05241			D05245			D05246		
M&E Sample ID		SW-MC-02			SW-MC-03			SW-BM-01			SW-BM-02		
Lab Sample ID		207645-009			207645-010			207645-011			207645-012		
Matrix		SW			SW			SW			SW		
Sample Type		NX			NX			NX			NX		
Date Sampled		09/23/04			09/23/04			09/21/04			09/21/04		
Date Received		09/24/04			09/24/04			09/24/04			09/24/04		
Date Extracted													
Date Analyzed		09/30/04			09/30/04			09/30/04			09/30/04		
Units		mg/L			mg/L			mg/L			mg/L		
% Solids													
Dilution Factor		1			1			1			1		
Mass/Volume of Sample													
Comments													
Analyte	RL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL
Alkalinity, Total as CaCO3		33.4	2	0.204	31.5	2	0.204	27.2	2	0.204	23.7	2	0.204

SITE: Iron Horse Park
CASE NO.: 0243M
SDG NO.: D05235-IA

DATA SUMMARY TABLE
INORGANIC ANALYSIS (D-033)
Surface Water (mg/L)

Traffic Report Sample No.		D05247			D05248			D05249			D05250		
M&E Sample ID		SW-BM-03			SW-RF-01			SW-RF-02			SW-RF-03		
Lab Sample ID		207645-013			207645-014			207645-015			207645-016		
Matrix		SW			SW			SW			SW		
Sample Type		NX			NX			NX			NX		
Date Sampled		09/21/04			09/24/04			09/24/04			09/24/04		
Date Received		09/24/04			09/25/04			09/25/04			09/25/04		
Date Extracted													
Date Analyzed		09/30/04			09/30/04			09/30/04			09/30/04		
Units		mg/L			mg/L			mg/L			mg/L		
% Solids													
Dilution Factor		1			1			1			1		
Mass/Volume of Sample													
Comments													
Analyte	RL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL
Alkalinity, Total as CaCO3		27.7	2	0.204	20.7	2	0.204	21.8	2	0.204	13.9	2	0.204

DATA SUMMARY TABLE DEFINITIONS (Inorganics)

BB - As a qualifier for soil/sediment samples: Analyte is also detected in the bottle blank
CRQL - Contract Required Quantitation Limit
EB - As a qualifier for soil/sediment samples: Analyte is also detected in the equipment blank
FD - Field Duplicate
g - gram
MDL - Method Detection Limit
J - The concentration is an estimated quantity
mg/Kg - milligrams per Kilogram
mg/L - milligrams per Liter
R - The data are rejected as unusable
RL - Reporting Limit
U - Analyte was analyzed for but not detected
ug/Kg - micrograms per Kilogram
ug/L - micrograms per Liter
UJ - The sample quantitation limit is an estimated quantity
NA - Not Applicable

Analytical Data - 2004
Sediment

SITE: Horse Park
CASE NO.: 0243M
SDG NO.: D05203

DATA SUMMARY TABLE
Total Organic Carbon (D-005)
Sediment (mg/Kg)

Traffic Report Sample No.		D05203			D05204			D05210			D05217		
M&E Sample ID		SED-05			SED-25			SED-11			SED-18		
Lab Sample ID		207592-001			207592-002			207592-008			207592-011		
Matrix		SE			SE			SE			SE		
Sample Type		FD			NX			NX			NX		
Date Sampled		09/15/04			09/15/04			09/16/04			09/16/04		
Date Received		09/17/04			09/17/04			09/17/04			09/17/04		
Date Extracted													
Date Analyzed		10/19/04			10/19/04			10/19/04			10/19/04		
Units		mg/Kg			mg/Kg			mg/Kg			mg/Kg		
% Solids													
Dilution Factor		1			1			1			1		
Mass/Volume of Sample													
Comments													
Analyte	RL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL	Result	DL	MDL
% Solids		11.2	0.1	0.1	11.4	0.1	0.1	28.1	0.1	0.1	33.9	0.1	0.1
% Moisture		88.8	0.1	0.1	88.6	0.1	0.1	71.9	0.1	0.1	66.1	0.1	0.1
Organic Carbon, Tot. (TOC)		262000	893	214	2730000	877	210	160000	356	85.3	335000	295	70.7
Organic Carbon, Tot. (TOC2)		293000	893	214	2720000	877	210	161000	356	85.3	311000	295	70.7
TOC Average Duplicates		277000	893	214	2720000	877	210	161000	356	85.3	323000	295	70.7

SITE: Iron Horse Park
CASE NO.: 0243M
SDG NO.: D05203

DATA SUMMARY TABLE
Total Organic Carbon (D-005)
Sediment (mg/Kg)

Traffic Report Sample No.		D05199			D05221		
M&E Sample ID		SED-01			SED-22		
Lab Sample ID		207592-018			207592-019		
Matrix		SE			SE		
Sample Type		NX			NX		
Date Sampled		09/14/04			09/13/04		
Date Received		09/15/04			09/15/04		
Date Extracted							
Date Analyzed		10/19/04			10/19/04		
Units		mg/Kg			mg/Kg		
% Solids							
Dilution Factor		1			1		
Mass/Volume of Sample							
Comments							
Analyte	RL	Result	DL	MDL	Result	DL	MDL
% Solids		33.2	0.1	0.1	17.5	0.1	0.1
% Moisture		66.8	0.1	0.1	82.5	0.1	0.1
Organic Carbon, Tot. (TOC)		254000	301	72.2	816000	571	137
Organic Carbon, Tot. (TOC2)		252000	301	72.2	914000	571	137
TOC Average Duplicates		253000	301	72.2	865000	571	137

DATA SUMMARY TABLE DEFINITIONS (Inorganics)

BB - As a qualifier for soil/sediment samples: Analyte is also detected in the bottle blank
CRQL - Contract Required Quantitation Limit
EB - As a qualifier for soil/sediment samples: Analyte is also detected in the equipment blank
FD - Field Duplicate
g - gram
MDL - Method Detection Limit
J - The concentration is an estimated quantity
mg/Kg - milligrams per Kilogram
mg/L - milligrams per Liter
R - The data are rejected as unusable
RL - Reporting Limit
U - Analyte was analyzed for but not detected
ug/Kg - micrograms per Kilogram
ug/L - micrograms per Liter
UJ - The sample quantitation limit is an estimated quantity
NA - Not Applicable

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05221-IA

DATA SUMMARY TABLE
Inorganic Analysis (D-044.2)
Sediment (mg/Kg)

	Traffic Report Sample No.	D05221	D05199	D05203	D05204	D05210	D05217
	M&E Sample ID	SED-22	SED-01	SED-05	SED-25	SED-11	SED-18
	Lab Sample ID	0409051-02	0409051-06	0409051-10	0409051-11	0409051-17	0409051-20
	Date Sampled	09/13/04	09/14/04	09/15/04	09/15/04	09/16/04	09/16/04
	Date Extracted	12/01/04	12/01/04	12/01/04	12/01/04	12/01/04	12/01/04
	Date Analyzed	12/07/04	12/07/04	12/07/04	12/07/04	12/07/04	12/07/04
	% Solids	85.2	91.8	95.5	66.1	98.1	95.3
	Dilution Factor	10	100	100	100	20	50
	Comments	Freeze-dried	Freeze-dried	Freeze-dried FD of D05204	Freeze-dried FD of D05203	Freeze-dried	Freeze-dried
Analyte	RL						
Aluminum	4.0	4700	6500	9900	16000	4200	16000
Arsenic	0.2	3.1 J	360 J	60 J	90 J	2.9 J	61 J
Barium	2.0	27 EB	370 EB	250 EB	400 EB	28 EB	110 EB
Chromium	1.0	8.0 J	14 J	520 J	870 J	10 J	34 J
Cobalt	2.0	2.3 J	7.8 J	24 J	38 J	2.0 J	18 J
Copper	1.0	8.8 J	19 J	550 J	850 J	5.0 J	210 J
Lead	0.4	30 J	35 J	620 J	1000 J	16 J	380 J
Manganese	1.0	250 JEB	1600 JEB	380 JEB	830 JEB	220 JEB	490 JEB
Silver	0.01	0.069 J	0.27 J	0.57 J	0.86 J	0.033 J	0.17 J
Vanadium	0.5	13 J	19 J	30 J	58 J	7.5 J	28 J
Zinc	2.0	42 JEB	110 JEB	2700 JEB	4400 JEB	21 JEB	150 JEB

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05221-IA

DATA SUMMARY TABLE
Inorganic Analysis (D-044.2)
Aqueous QC (ug/L)

	Traffic Report Sample No.	D05223
	M&E Sample ID	SED-EB-01
	Lab Sample ID	0409051-21
	Date Sampled	09/15/04
	Date Extracted	01/07/05
	Date Analyzed	01/12/05
	Dilution Factor	2
	Comments	Equipment Blank
Analyte	RL	
Aluminum	4.0	31 UJ
Arsenic	0.2	0.13 UJ
Barium	2.0	0.53 J
Chromium	1.0	0.18 UJ
Cobalt	2.0	0.038 UJ
Copper	1.0	2.7 UJ
Lead	0.4	0.63 UJ
Manganese	1.0	4.4 J
Silver	0.01	0.12 U
Vanadium	0.5	1.7 U
Zinc	2.0	14 J

DATA SUMMARY TABLE
DEFINITIONS (Inorganics)

BB - As a qualifier for soil/sediment samples: Analyte is also detected in the bottle blank
CRQL - Contract Required Quantitation Limit
EB - As a qualifier for soil/sediment samples: Analyte is also detected in the equipment blank
FD - Field Duplicate
g - gram
MDL - Method Detection Limit
J - The concentration is an estimated quantity
mg/Kg - milligrams per Kilogram
mg/L - milligrams per Liter
R - The data are rejected as unusable
RL - Reporting Limit
U - Analyte was analyzed for but not detected
ug/Kg - micrograms per Kilogram
ug/L - micrograms per Liter
UJ - The sample quantitation limit is an estimated quantity
NA - Not Applicable

SIT[illegible] Horse Park
CASE NO.: 0243M
SDG NO.: D05199-OA

DATA SU[illegible]RY TABLE
4,4'-DDD Analysis (D-043.1)
Sediment (ug/Kg)

Traffic Report Sample No.		D05199	D05203	D05204	D05210	D05217	D05221
M&E Sample ID		SED-01	SED-05	SED-25	SED-11	SED-18	SED-22
Lab Sample ID		251781	251785	251786	251880	251883	251541
Date Sampled		09/14/04	09/15/04	09/15/04	09/16/04	09/16/04	09/13/04
Date Analyzed		11/03/04	11/03/04	11/04/04	11/04/04	11/04/04	11/03/04
% Solids		83%	94%	73%	81%	64%	87%
Dilution Factor		1	10	10	1	3	3
Mass/Volume of Sample		0.03698 kg	0.03277 kg	0.04149 kg	0.03731 kg	0.04726 kg	0.03470 kg
Comments			FD of D05204	FD of D05203			
Analyte	RL						
4,4'-DDD	0.70	2.69 J	102 J	83.0 J	-- R	17.9 J	14.5

SITE: Iron Horse Park
CASE NO.: 0243M
SDG NO.: D05199-OA

DATA SUMMARY TABLE
PCB Analysis (D-043.1)
Sediment (ug/Kg)

	Traffic Report Sample No.	D05199	D05203	D05204	D05210	D05217	D05221
	M&E Sample ID	SED-01	SED-05	SED-25	SED-11	SED-18	SED-22
	Lab Sample ID	251781	251785	251786	251880	251883	251541
	Date Sampled	09/14/04	09/15/04	09/15/04	09/16/04	09/16/04	09/13/04
	Date Analyzed	11/04/04	11/03/04	11/03/04	11/04/04	11/04/04	11/03/04
	% Solids	83%	94%	73%	81%	64%	87%
	Dilution Factor	1	10	10	1	1	1
	Mass/Volume of Sample	0.03698 kg	0.03277 kg	0.04149 kg	0.03731 kg	0.04726 kg	0.03470 kg
	Comments		FD of D05204	FD of D05203			
Analyte	RL						
Aroclor-1016	7.0	6.5 U	65.1 U	65.9 U	6.6 U	6.62 U	6.65 U
Aroclor-1221	14	13 U	130 U	132 U	13.2 U	13.2 U	13.3 U
Aroclor-1232	7.0	6.5 U	65.1 U	65.9 U	6.6 U	6.62 U	6.65 U
Aroclor-1242	7.0	6.5 U	65.1 U	65.9 U	22.8	6.62 U	6.65 U
Aroclor-1248	7.0	14.8	65.1 U	65.9 U	6.6 U	6.62 U	6.65 U
Aroclor-1254	7.0	6.5 U	2870 J	2520 J	6.6 U	36.3	6.65 U
Aroclor-1260	7.0	11.5 J	1910 J	1970 J	6.6 U	20.1 J	13.7 J

SITE: Iron Horse Park
CASE NO.: 0243M
SDG NO.: D05199-OA

DATA SUMMARY TABLE
4,4'-DDD Analysis (D-043.1)
Aqueous QC Sample (ug/L)

	Traffic Report Sample No.	D05223
	M&E Sample ID	SED-EB-01
	Lab Sample ID	251884
	Date Sampled	09/15/04
	Date Analyzed	11/02/04
	Dilution Factor	1
	Mass/Volume of Sample	0.99 L
	Comments	Equipment Blank
Analyte	RL	
4,4'-DDD	0.0200	0.0202 U

SITE: Iron Horse Park
CASE NO.: 0243M
SDG NO.: D05199-OA

DATA SUMMARY TABLE
PCB Analysis (D-043.1)
Aqueous QC Sample (ug/L)

	Traffic Report Sample No.	D05223
	M&E Sample ID	SED-EB-01
	Lab Sample ID	251884
	Date Sampled	09/15/04
	Date Analyzed	11/02/04
	Dilution Factor	1
	Mass/Volume of Sample	0.99 L
	Comments	Equipment Blank
Analyte	RL	
Aroclor-1016	0.200	0.202 U
Aroclor-1221	0.400	0.404 U
Aroclor-1232	0.200	0.202 U
Aroclor-1242	0.200	0.202 U
Aroclor-1248	0.200	0.202 U
Aroclor-1254	0.200	0.202 U
Aroclor-1260	0.200	0.202 U

DATA SUMMARY TABLE
DEFINITIONS (Organics)

BB - As a qualifier for soil/sediment samples: Compound is also detected in the bottle blank
CRQL - Contract Required Quantitation Limit
EB - As a qualifier for soil/sediment samples: Compound is also detected in the equipment blank
FD - Field Duplicate
g - gram
J - The concentration is an estimated quantity
kg - kilogram
L - Liter
mg/Kg - milligrams per kilogram
mg/L - milligrams per liter
mL - milliliter
R - The data are rejected and unusable
RL - Reporting Limit
U - Compound was analyzed for but not detected
ug/kg - micrograms per kilogram
UJ - The sample quantitation limit is an estimated quantity
ug/L - micrograms per liter

SITE: Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05221-OA

DATA SUMMARY TABLE
Semivolatile Organic Analysis (D-054.1)
Sediment (ug/Kg)

Traffic Report Sample No.		D05221	D05199	D05203	D05204	D05210	D05217
M&E Sample ID		SED-22	SED-01	SED-05	SED-25	SED-11	SED-18
Lab Sample ID		0409051-02	0409051-06	0409051-10	0409051-11	0409051-17	0409051-20
Date Sampled		09/13/04	09/14/04	09/15/04	09/15/04	09/16/04	09/16/04
Date Extracted		11/30/04	11/30/04	11/30/04	11/30/04	11/30/04	11/30/04
Date Analyzed		12/29/04	12/29/04	12/29/04	12/29/04	12/29/04	12/29/04
% Solids		85.2	91.8	95.5	66.1	98.1	95.3
Dilution Factor		1	1	20	5	1	2
Mass/Volume of Sample		10.42 g	10.39 g	10.45 g	10.48 g	10.45 g	10.29 g
Comments		Freeze Dried	Freeze Dried	Freeze Dried	Freeze Dried	Freeze Dried	Freeze Dried
Analyte	RL						
Naphthalene	1.0	18 EBJ	59 EBJ	2800 EBJ	1700 EBJ	52 EBJ	360 EBJ
2-Methylnaphthalene	1.0	10 J	21 J	3300 J	1800 J	20 J	410 J
1-Methylnaphthalene	1.0	9.6 EBJ	28 EBJ	2700 EBJ	1500 EBJ	67 EBJ	390 EBJ
Biphenyl	1.0	2.4 UJ	5.3 J	150 J	91 J	7.4 J	79 J
2,6-Dimethylnaphthalene	1.0	6.4 J	37 J	1300 J	730 J	24 J	360 J
Acenaphthylene	1.0	11 J	31 J	3800 J	2300 J	5.4 J	98 J
Acenaphthene	1.0	7.1 J	17 J	5300 J	3400 J	7.3 J	83 J
Dibenzofuran	1.0	7.2 J	17 J	3700 J	2200 J	6.7 J	240 J
Fluorene	1.0	12 J	21 J	6200 J	4000 J	11 J	260 J
2,3,5-Trimethylnaphthalene	1.0	2.1 J	3.9 J	310 J	190 J	3.8 J	220 J
Phenanthrene	1.0	84 EBJ	93 EBJ	13000 EBJ	7200 EBJ	29 EBJ	1100 EBJ
Anthracene	1.0	19 J	42 J	6700 J	4400 J	8.2 J	360 J
1-Methylphenanthrene	1.0	12 EBJ	12 EBJ	1100 EBJ	720 EBJ	1.8 EBJ	370 EBJ
Fluoranthene	1.0	150 EBJ	230 EBJ	24000 EBJ	11000 EBJ	70 EBJ	2000 EBJ
Pyrene	1.0	84 EBJ	160 EBJ	16000 EBJ	7300 EBJ	48 EBJ	1200 EBJ
Benzo[a]anthracene	1.0	43 J	91 J	14000 J	7700 J	24 J	640 J
Chrysene	1.0	69 J	140 J	14000 J	8100 J	36 J	770 J
Benzo[b]fluoranthene	1.0	59 EBJ	160 EBJ	11000 EBJ	6200 EBJ	36 EBJ	810 EBJ
Benzo[k]fluoranthene	1.0	120 J	300 J	10000 J	5300 J	32 J	700 J
Benzo[e]pyrene	1.0	43 J	120 J	7200 J	3800 J	24 J	430 J
Benzo[a]pyrene	1.0	49 J	130 J	11000 J	5300 J	27 J	560 J
Perylene	1.0	41 J	52 J	2700 J	1300 J	56 J	430 J
Indeno[1,2,3-cd]pyrene	1.0	32 J	80 J	6200 J	2700 J	13 J	240 J
Dibenz[a,h]anthracene	1.0	9.0 J	25 J	2200 J	1000 J	3.8 J	76 J
Benzo[g,h,i]perylene	1.0	33 J	79 J	5200 J	2300 J	14 J	230 J

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05221-OA

DATA SUMMARY TABLE
Semivolatile Organic Analysis (D-054.1)
Aqueous QC (ug/L)

	Traffic Report Sample No.	D05223
	M&E Sample ID	SED-EB-01
	Lab Sample ID	0409051-21
	Date Sampled	09/15/04
	Date Extracted	12/17/04
	Date Analyzed	12/29/04
	Dilution Factor	1
	Mass/Volume of Sample	950 ml
	Comments	Equipment Blank
Analyte	RL	
Naphthalene	5.0	27 J
2-Methylnaphthalene	5.0	6.6 UJ
1-Methylnaphthalene	5.0	7.4 J
Biphenyl	5.0	-- R
2,6-Dimethylnaphthalene	5.0	-- R
Acenaphthylene	5.0	-- R
Acenaphthene	5.0	-- R
Dibenzofuran	5.0	-- R
Fluorene	5.0	-- R
2,3,5-Trimethylnaphthalene	5.0	-- R
Phenanthrene	5.0	6.7 J
Anthracene	5.0	-- R
1-Methylphenanthrene	5.0	15 J
Fluoranthene	5.0	4.7 J
Pyrene	5.0	2.6 J
Benzo[a]anthracene	5.0	-- R
Chrysene	5.0	-- R
Benzo[b]fluoranthene	5.0	3.4 J
Benzo[k]fluoranthene	5.0	-- R
Benzo[e]pyrene	5.0	-- R
Benzo[a]pyrene	5.0	-- R
Perylene	5.0	-- R
Indeno[1,2,3-cd]pyrene	5.0	-- R
Dibenz[a,h]anthracene	5.0	-- R
Benzo[g,h,i]perylene	5.0	-- R

DATA SUMMARY TABLE DEFINITIONS (Organics)

BB - As a qualifier for soil/sediment samples: Compound is also detected in the bottle blank
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EB - As a qualifier for soil/sediment samples: Compound is also detected in the equipment blank
FD - Field Duplicate
g - gram
J - The concentration is an estimated quantity
kg - kilogram
L - Liter
mg/Kg - milligrams per kilogram
mg/L - milligrams per liter
ml - milliliter
R - The data are rejected and unusable
RL - Reporting Limit
U - Compound was analyzed for but not detected
ug/kg - micrograms per kilogram
UJ - The sample quantitation limit is an estimated quantity
ug/L - micrograms per liter

Analytical Data - 2004
Fish

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-IA

DATA SUMMARY TABLE
Inorganic Analysis (D-134)
Fish (mg/Kg, wet weight)

	Traffic Report Sample No.	D05301	D05302	D05303	D05304	D05305
	M&E Sample ID	BM-BH-1	BM-BH-2	BM-BH-3	BM-BH-4	CB-RP-1
	Lab Sample ID	0410017-01	0410017-02	0410017-03	0410017-04	0410017-05
	Date Sampled	09/21/04	09/21/04	09/21/04	09/21/04	09/23/04
	Date Extracted	12/09/04	12/09/04	12/09/04	12/09/04	12/09/04
	Date Analyzed	12/10/04	12/10/04	12/10/04	12/10/04	12/10/04
	Mass/Volume of Sample	0.97 g	1.1 g	0.98 g	0.97 g	1.02 g
	Comments					
Analyte	RL					
Aluminum	1.0	20 J	13	7.4	15	11
Arsenic	0.01	0.16 J	0.074 J	0.10 J	0.13 J	0.29 J
Barium	0.05	2.1 J	1.5 J	2.2 J	2.2 J	2.8 J
Chromium	0.01	0.85 J	1.7 J	1.0 J	0.83 J	1.2 J
Cobalt	0.01	0.046 J	0.062 J	0.093 J	0.053 J	0.057 J
Copper	0.01	3.4 J	4.8 J	4.2 J	2.9 J	3.4 J
Lead	0.01	0.27 J	0.26 J	0.30 J	0.32 J	0.31 J
Manganese	0.05	6.0 J	6.2 J	13 J	6.8 J	11 J
Silver	0.01	0.0032 U	0.0037 J	0.0032 U	0.0032 U	0.0030 U
Vanadium	0.01	0.050 J	0.041 J	0.053 J	0.044 J	0.053 J
Zinc	0.1	14 J	16 J	24 J	14 J	34 J

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-IA

DATA SUMMARY TABLE
Inorganic Analysis (D-134)
Fish (mg/Kg, wet weight)

Traffic Report Sample No.		D05306	D05307	D05308	D05309	D05310
M&E Sample ID		CB-BH-1	CB-BH-2	CB-BH-3	CB-BH-4	CB-AE-1
Lab Sample ID		0410017-06	0410017-07	0410017-08	0410017-09	0410017-10
Date Sampled		09/30/04	09/30/04	09/30/04	09/30/04	09/23/04
Date Extracted		12/09/04	12/09/04	12/09/04	12/09/04	12/09/04
Date Analyzed		12/10/04	12/10/04	12/10/04	12/10/04	12/10/04
Mass/Volume of Sample		0.99 g	1.05 g	1 g	1.04 g	0.96 g
Comments						
Analyte	RL					
Aluminum	1.0	1.4 J	12	11	11	12
Arsenic	0.01	0.047 J	0.078 J	0.059 J	0.062 J	0.10 J
Barium	0.05	0.69 J	0.50 J	0.27 J	1.7 J	1.8 J
Chromium	0.01	2.8 J	0.69 J	0.61 J	0.79 J	0.68 J
Cobalt	0.01	0.10 J	0.028 J	0.027 J	0.039 J	0.055 J
Copper	0.01	0.49 J	2.8 J	1.2 J	13 J	6.2 J
Lead	0.01	0.12 J	0.38 J	0.15 J	2.3 J	0.93 J
Manganese	0.05	6.0 J	3.6 J	1.9 J	7.8 J	7.9 J
Silver	0.01	0.0031 U	0.0030 U	0.0031 U	0.021 J	0.010 J
Vanadium	0.01	0.054 J	0.032 J	0.070 J	0.041 J	0.029 J
Zinc	0.1	17 J	16 J	14 J	17 J	21 J

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-IA

DATA SUMMARY TABLE
Inorganic Analysis (D-134)
Fish (mg/Kg, wet weight)

Traffic Report Sample No.		D05311	D05312	D05313	D05314	D05315
M&E Sample ID		CB-GS-1	RP-BH-1	RP-BH-2	RP-GS-1	RP-GS-2
Lab Sample ID		0410017-11	0410017-12	0410017-13	0410017-14	0410017-15
Date Sampled		09/30/04	09/22/04	09/22/04	09/22/04	09/22/04
Date Extracted		12/09/04	12/09/04	12/09/04	12/09/04	12/09/04
Date Analyzed		12/10/04	12/10/04	12/10/04	12/10/04	12/10/04
Mass/Volume of Sample		0.98 g	0.99 g	0.97 g	0.96 g	1 g
Comments						
Analyte	RL					
Aluminum	1.0	0.82 UJ	2.1 U	2.1 U	2.7	2.0 U
Arsenic	0.01	0.059 J	0.090 J	0.087 J	0.12 J	0.13 J
Barium	0.05	1.4 J	1.2 J	1.2 J	2.8 J	2.7 J
Chromium	0.01	0.29 J	0.47 J	0.31 J	0.37 J	0.26 J
Cobalt	0.01	0.057 J	0.016 J	0.019 J	0.022 J	0.021 J
Copper	0.01	0.46 J	0.61 J	0.73 J	0.49 J	0.46 J
Lead	0.01	0.028 J	0.043 J	0.049 J	0.038 J	0.047 J
Manganese	0.05	5.1 J	6.0 J	3.8 J	13 J	8.4 J
Silver	0.01	0.0032 U	0.0031 U	0.0032 U	0.0032 U	0.0031 U
Vanadium	0.01	0.026 J	0.031 J	0.019 J	0.012 J	-- R
Zinc	0.1	28 J	12 J	16 J	30 J	36 J

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-IA

DATA SUMMARY TABLE
Inorganic Analysis (D-134)
Fish (mg/Kg, wet weight)

	Traffic Report Sample No.	D05316	D05317	D05318	D05319	D05320
	M&E Sample ID	MC-BH-1	MC-BH-2	MC-BH-3	MC-AE-1	MC-LD-1
	Lab Sample ID	0410017-16	0410017-17	0410017-18	0410017-19	0410017-20
	Date Sampled	09/23/04	09/23/04	09/23/04	09/23/04	09/23/04
	Date Extracted	12/09/04	12/09/04	12/09/04	12/09/04	12/09/04
	Date Analyzed	12/10/04	12/10/04	12/10/04	12/10/04	12/10/04
	Mass/Volume of Sample	1.07 g	1.02 g	1.08 g	1.08 g	0.95 g
	Comments					
Analyte	RL					
Aluminum	1.0	3.2	10	23	6.8	10
Arsenic	0.01	0.015 J	0.13 J	0.075 J	0.041 J	0.21 J
Barium	0.05	0.98 J	1.2 J	0.99 J	0.56 J	3.8 J
Chromium	0.01	0.36 J	0.29 J	0.50 J	0.63 J	0.21 J
Cobalt	0.01	0.032 J	0.036 J	0.048 J	0.022 J	0.056 J
Copper	0.01	0.49 J	0.81 J	4.7 J	11 J	0.88 J
Lead	0.01	0.039 J	0.28 J	0.41 J	0.54 J	0.083 J
Manganese	0.05	21 J	3.5 J	3.4 J	4.1 J	14 J
Silver	0.01	0.0029 U	0.0030 U	0.0029 U	0.0031 J	0.0033 U
Vanadium	0.01	0.041 J	0.040 J	0.067 J	0.021 J	0.039 J
Zinc	0.1	13 J	9.6 J	12 J	22 J	36 J

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-IA

DATA SUMMARY TABLE
Inorganic Analysis (D-134)
Fish (mg/Kg, wet weight)

Traffic Report Sample No.		D05321	D05322	D05323	D05324	D05325
M&E Sample ID		RF-BH-1	RF-BH-2	RF-BH-3	RF-CP-1	RF-AE-1
Lab Sample ID		0410017-21	0410017-22	0410017-23	0410017-24	0410017-25
Date Sampled		10/01/04	10/01/04	10/01/04	09/24/04	09/24/04
Date Extracted		12/09/04	12/09/04	12/09/04	12/09/04	12/09/04
Date Analyzed		12/10/04	12/10/04	12/10/04	12/10/04	12/10/04
Mass/Volume of Sample		0.98 g	1.03 g	0.99 g	1.04 g	0.97 g
Comments						
Analyte	RL					
Aluminum	1.0	0.68 UJ	9.3	3.6	1.6 U	5.0
Arsenic	0.01	0.012 J	0.031 J	0.018 J	0.013 J	0.029 J
Barium	0.05	0.64 J	0.52 J	0.21 J	0.22 J	0.55 J
Chromium	0.01	0.55 J	0.47 J	0.40 J	0.18 J	0.27 J
Cobalt	0.01	0.023 J	0.026 J	0.015 J	0.0068 J	0.011 J
Copper	0.01	0.48 J	0.43 J	0.48 J	1.3 J	1.0 J
Lead	0.01	0.052 J	0.14 J	0.062 J	0.054 J	0.083 J
Manganese	0.05	4.5 J	1.8 J	0.55 J	6.6 J	8.5 J
Silver	0.01	0.0032 U	0.0030 U	0.0031 U	0.0030 U	0.0032 U
Vanadium	0.01	0.033 J	0.063 J	0.025 J	-- R	0.018 J
Zinc	0.1	13 J	8.2 J	6.9 J	34 J	24 J

DATA SUMMARY TABLE
DEFINITIONS (Inorganics)

BB - As a qualifier for soil/sediment samples: Analyte is also detected in the bottle blank
CRQL - Contract Required Quantitation Limit
EB - As a qualifier for soil/sediment samples: Analyte is also detected in the equipment blank
FD - Field Duplicate
g - gram
MDL - Method Detection Limit
J - The concentration is an estimated quantity
mg/Kg - milligrams per Kilogram
mg/L - milligrams per Liter
R - The data are rejected as unusable
RL - Reporting Limit
U - Analyte was analyzed for but not detected
ug/Kg - micrograms per Kilogram
ug/L - micrograms per Liter
UJ - The sample quantitation limit is an estimated quantity
NA - Not Applicable

SITE: Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-OA

DATA SUMMARY TABLE
Polynuclear Aromatic Hydrocarbons (D-052.1)
Tissue (ug/Kg)

Traffic Report Sample No.		D05301	D05302	D05303	D05304	D05305	D05306	D05307	D05308	D05309
M&E Sample ID		BM-BH-1	BM-BH-2	BM-BH-3	BM-BH-4	CB-RP-1	CB-BH-1	CB-BH-2	CB-BH-3	CB-BH-4
Lab Sample ID		0410017-01	0410017-02	0410017-03	0410017-04	0410017-05	0410017-06	0410017-07	0410017-08	0410017-09
Date Sampled		09/21/04	09/21/04	09/21/04	09/21/04	09/23/04	09/30/04	09/30/04	09/30/04	09/30/04
Date Extracted		10/19/04	10/19/04	10/19/04	10/19/04	10/19/04	10/19/04	10/19/04	10/19/04	10/19/04
Date Analyzed		11/27/04	11/27/04	11/23/04	11/23/04	11/23/04	11/27/04	11/27/04	11/27/04	11/27/04
Dilution Factor		1.11	1.11	1.11	1.12	1.11	1.11	1.11	1.11	1.10
Comments										
Analyte	RL									
Naphthalene	2.0	7.4 UJ	2.9 UJ	2.5 UJ	4.4 UJ	2.8 UJ	2.4 UJ	3.0 UJ	2.1 UJ	2.1 UJ
2-Methylnaphthalene	2.0	8.9 UJ	2.1 U	2.7 UJ	7.4 UJ	2.2 UJ	2.1 U	2.1 U	2.1 U	2.1 U
1-Methylnaphthalene	2.0	6.2 J	2.1 U	2.1 U	4.3 J	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Biphenyl	2.0	2.4 J	2.1 U	1.3 J	2.9 J	2.4 J	2.1 U	2.4 J	2.1 U	2.1 U
2,6-Dimethylnaphthalene	2.0	6.7 J	1.7 J	3.0 J	7.0 J	1.4 J	2.1 U	2.1 U	2.1 U	2.1 U
Acenaphthylene	2.0	2.0 U	2.1 U	3.2 UJ	2.1 U	2.1 UJ	2.1 U	2.1 U	2.1 U	2.1 U
Acenaphthene	2.0	30 J	9.4 J	7.2 J	11 J	3.6 UJ	7.2 J	2.9 UJ	2.1 UJ	2.1 U
Dibenzofuran	2.0	9.5	4.4	2.1 U	3.2	1.9 J	1.6 J	2.7 J	1.4 J	2.2 J
Fluorene	2.0	24 J	7.7 J	6.2 UJ	9.6 J	3.0 UJ	3.9 UJ	2.6 UJ	2.1 UJ	2.1 UJ
2,3,5-Trimethylnaphthalene	2.0	4.1 J	2.1 U	2.1 U	2.6 J	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Phenanthrene	2.0	29 J	9.2 UJ	8.5 UJ	15 J	3.1 UJ	5.2 UJ	3.5 UJ	3.5 UJ	2.7 UJ
Anthracene	2.0	7.1 J	2.1 J	1.6 J	3.6 J	1.6 J	2.1 J	1.6 J	2.1 U	2.1 U
1-Methylphenanthrene	2.0	1.2 J	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Fluoranthene	2.0	12 J	5.0 UJ	5.2 UJ	8.5 UJ	2.4 UJ	2.1 U	2.6 UJ	2.1 UJ	2.1 UJ
Pyrene	2.0	5.4 J	2.3 J	1.6 J	3.0 J	1.8 J	2.1 UJ	1.8 J	2.1 UJ	2.1 UJ
Benz[a]anthracene	2.0	2.1 UJ	2.1 UJ	2.1 U	2.1 U	3.2 UJ	2.1 UJ	2.8 UJ	2.1 UJ	2.1 U
Chrysene	2.0	2.3 UJ	2.1 UJ	2.1 U	2.1 U	2.6 UJ	2.1 UJ	2.3 UJ	2.1 UJ	2.1 U
Benzo[b]fluoranthene	2.0	2.2 UJ	2.1 UJ	2.1 U	2.1 UJ	3.6 UJ	2.1 UJ	2.5 UJ	2.1 U	2.1 U
Benzo[k]fluoranthene	2.0	2.0 UJ	2.1 UJ	2.1 U	2.1 UJ	3.4 UJ	2.1 UJ	2.2 UJ	2.1 UJ	2.1 U
Benzo[e]pyrene	2.0	2.0 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Benzo[a]pyrene	2.0	2.0 UJ	2.1 U	2.1 U	2.1 U	3.6 UJ	2.1 UJ	2.2 UJ	2.1 U	2.1 U
Perylene	2.0	2.0 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Indeno[1,2,3-cd]pyrene	2.0	2.0 UJ	2.1 UJ	2.1 U	2.1 U	4.1 UJ	2.1 UJ	2.6 UJ	2.1 U	2.1 U
Dibenz[a,h]anthracene	2.0	2.0 UJ	2.1 UJ	2.1 U	2.1 U	3.8 UJ	2.1 UJ	2.8 UJ	2.1 UJ	2.1 UJ
Benzo[g,h,i]perylene	2.0	2.0 UJ	2.1 UJ	2.1 U	2.1 U	4.7 UJ	2.1 UJ	3.0 UJ	2.1 U	2.1 U

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-OA

DATA SUMMARY TABLE
Polynuclear Aromatic Hydrocarbons (D-052.1)
Tissue (ug/Kg)

Traffic Report Sample No.		D05310	D05311	D05312	D05313	D05314	D05315	D05316	D05317	D05318
M&E Sample ID		CB-AE-1	CB-GS-1	RP-BH-1	RP-BH-2	RP-GS-1	RP-GS-2	MC-BH-1	MC-BH-2	MC-BH-3
Lab Sample ID		0410017-10	0410017-11	0410017-12	0410017-13	0410017-14	0410017-15	0410017-16	0410017-17	0410017-18
Date Sampled		09/23/04	09/30/04	09/22/04	09/22/04	09/22/04	09/22/04	09/23/04	09/23/04	09/23/04
Date Extracted		10/19/04	10/19/04	10/19/04	10/19/04	10/19/04	10/19/04	10/19/04	10/19/04	10/19/04
Date Analyzed		11/27/04	11/27/04	11/27/04	11/27/04	11/27/04	11/28/04	11/28/04	11/28/04	11/28/04
Dilution Factor		1.12	1.10	1.11	1.12	1.11	1.13	1.12	1.12	1.12
Comments										
Analyte	RL									
Naphthalene	2.0	2.8 UJ	2.6 UJ	3.7 UJ	5.2 UJ	3.0 UJ	6.4 UJ	2.5 UJ	4.0 UJ	3.2 UJ
2-Methylnaphthalene	2.0	2.7 UJ	2.1 U	2.1 U	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U
1-Methylnaphthalene	2.0	2.6 J	2.1 U	2.1 U	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U
Biphenyl	2.0	1.2 J	2.1 U	2.1 U	2.8 J	2.1 U	2.2 U	2.2 U	1.3 J	1.1 J
2,6-Dimethylnaphthalene	2.0	2.1 J	1.2 J	2.1 U	2.1 U	2.1 U	2.2 U	2.2 U	2.2 J	2.1 J
Acenaphthylene	2.0	2.1 U	2.1 U	2.1 UJ	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 UJ
Acenaphthene	2.0	4.8 UJ	2.4 UJ	3.0 UJ	5.5 UJ	3.7 UJ	4.5 UJ	3.5 UJ	2.1 U	5.8 UJ
Dibenzofuran	2.0	2.7 J	2.4 J	1.4 J	2.7 J	1.6 J	1.7 J	2.2 U	7.2	3.4
Fluorene	2.0	2.1 UJ	2.1 UJ	2.7 UJ	4.2 UJ	2.3 UJ	4.1 UJ	2.7 UJ	13 J	4.6 UJ
2,3,5-Trimethylnaphthalene	2.0	2.1 U	1.1 J	2.1 U	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U
Phenanthrene	2.0	3.8 UJ	3.2 UJ	4.4 UJ	7.7 UJ	4.5 UJ	5.1 UJ	7.7 UJ	13 J	11 UJ
Anthracene	2.0	2.6 J	2.1 U	1.4 J	1.6 J	2.1 U	1.5 J	1.4 J	6.0 J	2.2 J
1-Methylphenanthrene	2.0	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U
Fluoranthene	2.0	5.8 UJ	2.1 U	2.1 UJ	3.2 UJ	2.1 U	2.2 UJ	3.8 UJ	17 J	6.1 UJ
Pyrene	2.0	4.3 J	2.1 UJ	1.4 J	1.7 J	1.8 J	1.1 J	2.8 J	7.1 J	4.1 J
Benz[a]anthracene	2.0	2.6 UJ	2.1 U	2.1 U	2.1 U	2.1 U	2.2 U	2.2 UJ	2.1 UJ	2.2 UJ
Chrysene	2.0	2.1 UJ	2.1 U	2.1 U	2.1 UJ	2.1 U	2.2 U	2.2 UJ	2.1 UJ	2.5 UJ
Benzo[b]fluoranthene	2.0	2.1 UJ	2.1 U	2.1 UJ	2.1 UJ	2.1 U	2.2 UJ	2.2 UJ	2.1 UJ	2.2 UJ
Benzo[k]fluoranthene	2.0	2.1 UJ	2.1 U	2.1 UJ	2.1 UJ	2.1 U	2.2 UJ	2.2 UJ	2.1 U	2.2 UJ
Benzo[e]pyrene	2.0	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U
Benzo[a]pyrene	2.0	2.1 UJ	2.1 U	2.1 UJ	2.1 UJ	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U
Perylene	2.0	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U
Indeno[1,2,3-cd]pyrene	2.0	2.1 U	2.1 U	2.1 UJ	2.1 UJ	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U
Dibenz[a,h]anthracene	2.0	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.1 UJ	2.2 UJ
Benzo[g,h,i]perylene	2.0	2.1 UJ	2.1 U	2.1 UJ	2.1 UJ	2.1 U	2.2 UJ	2.2 U	2.1 U	2.2 U

SIT[illegible] Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-OA

DATA SU[illegible]Y TABLE
Polynuclear Aromatic Hydrocarbons (D-052.1)
Tissue (ug/Kg)

Traffic Report Sample No.		D05319	D05320	D05321	D05322	D05323	D05324	D05325
M&E Sample ID		MC-AE-1	MC-LD-1	RF-BH-1	RF-BH-2	RF-BH-3	RF-CP-1	RF-AE-1
Lab Sample ID		0410017-19	0410017-20	0410017-21	0410017-22	0410017-23	0410017-24	0410017-25
Date Sampled		09/23/04	09/23/04	10/01/04	10/01/04	10/01/04	09/24/04	09/24/04
Date Extracted		10/19/04	12/16/04	11/18/04	11/18/04	11/18/04	11/18/04	11/18/04
Date Analyzed		11/28/04	12/28/04	12/08/04	12/08/04	12/08/04	12/08/04	12/08/04
Dilution Factor		1.11	1.13	1.11	1.12	1.12	1.13	1.13
Comments								
Analyte	RL							
Naphthalene	2.0	3.9 UJ	2.8 U	2.4 UJ	2.1 UJ	2.2 UJ	2.3 UJ	3.4 UJ
2-Methylnaphthalene	2.0	2.1 U	2.9 UJ	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
1-Methylnaphthalene	2.0	2.1 U	3.0 J	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Biphenyl	2.0	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
2,6-Dimethylnaphthalene	2.0	2.0 J	3.6	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Acenaphthylene	2.0	2.1 U	7.0 UJ	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Acenaphthene	2.0	10 J	5.6 U	6.0 UJ	2.1 U	2.2 U	2.2 U	2.0 U
Dibenzofuran	2.0	2.1 U	3.8	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Fluorene	2.0	2.9 UJ	4.7 UJ	2.2 UJ	2.1 U	2.2 UJ	2.2 U	2.0 UJ
2,3,5-Trimethylnaphthalene	2.0	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Phenanthrene	2.0	4.9 UJ	6.5 U	3.6 UJ	3.7 UJ	5.4 UJ	2.8 UJ	3.2 UJ
Anthracene	2.0	2.1 U	3.1 J	2.1 U	1.1 J	2.2 U	2.2 U	2.0 U
1-Methylphenanthrene	2.0	2.1 U	2.2 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Fluoranthene	2.0	2.8 UJ	3.5 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Pyrene	2.0	2.1 UJ	1.6 J	1.2 J	2.1 UJ	1.1 J	2.2 UJ	2.0 UJ
Benz[a]anthracene	2.0	2.1 U	2.2 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Chrysene	2.0	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.0 U
Benzo[b]fluoranthene	2.0	2.1 U	2.2 UJ	2.1 UJ	2.1 U	2.2 U	2.2 U	2.0 U
Benzo[k]fluoranthene	2.0	2.1 U	2.2 U	2.1 UJ	2.1 U	2.2 U	2.2 U	2.0 U
Benzo[e]pyrene	2.0	2.1 U	2.2 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Benzo[a]pyrene	2.0	2.1 U	2.2 U	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Perylene	2.0	2.1 U	2.2 U	1.3 J	2.1 U	2.2 U	2.2 U	2.0 U
Indeno[1,2,3-cd]pyrene	2.0	2.1 U	2.2 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Dibenz[a,h]anthracene	2.0	2.1 UJ	2.2 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.2 UJ	2.0 UJ
Benzo[g,h,i]perylene	2.0	2.1 U	2.2 UJ	2.1 UJ	2.1 U	2.2 U	2.2 U	2.0 U

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-OA

DATA SUMMARY TABLE
Percent Lipids (D-058.1)
Tissue (%)

Traffic Report Sample No.		D05301	D05302	D05303	D05304	D05305	D05306	D05307	D05308	D05309
M&E Sample ID		BM-BH-1	BM-BH-2	BM-BH-3	BM-BH-4	CB-RP-1	CB-BH-1	CB-BH-2	CB-BH-3	CB-BH-4
Lab Sample ID		0410017-01	0410017-02	0410017-03	0410017-04	0410017-05	0410017-06	0410017-07	0410017-08	0410017-09
Date Sampled		09/21/04	09/21/04	09/21/04	09/21/04	09/23/04	09/23/04	09/23/04	09/23/04	09/23/04
Date Extracted		10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04
Date Analyzed		10/22/04	10/22/04	10/22/04	10/22/04	10/22/04	10/22/04	10/22/04	10/22/04	10/22/04
Dilution Factor		1	1	1	1	1	1	1	1	1
Comments										
Analyte	RL									
Percent Lipids	0.1	1.8	0.84	0.80	0.94	0.83	2.4	0.81	0.96	0.51

SIT[illegible] Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-OA

DATA SU[illegible]RY TABLE
Percent Lipids (D-058.1)
Tissue (%)

Traffic Report Sample No.		D05310	D05311	D05312	D05313	D05314	D05315	D05316	D05317	D05318
M&E Sample ID		CB-AE-1	CB-GS-1	RP-BH-1	RP-BH-2	RP-GS-1	RP-GS-2	MC-BH-1	MC-BH-2	MC-BH-3
Lab Sample ID		0410017-10	0410017-11	0410017-12	0410017-13	0410017-14	0410017-15	0410017-16	0410017-17	0410017-18
Date Sampled		09/23/04	09/30/04	09/22/04	09/30/04	09/22/04	09/22/04	09/23/04	09/23/04	09/23/04
Date Extracted		10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04
Date Analyzed		10/22/04	10/22/04	10/22/04	10/22/04	10/22/04	10/22/04	10/22/04	10/22/04	10/22/04
Dilution Factor		1	1	1	1	1	1	1	1	1
Comments										
Analyte	RL									
Percent Lipids	0.1	1.7	1.6	1.5	2.5	1.8	2.8	2.8	1.5	1.9

SITE: Iron Horse Park OU4
CASE NO.: 0243M
SDG NO.: D05301-OA

DATA SUMMARY TABLE
Percent Lipids (D-058.1)
Tissue (%)

	Traffic Report Sample No.	D05319	D05320	D05321	D05322	D05323	D05324	D05325
	M&E Sample ID	MC-AE-1	MC-LD-1	RF-BH-1	RF-BH-2	RF-BH-3	RF-CP-1	RF-AE-1
	Lab Sample ID	0410017-19	0410017-20	0410017-21	0410017-22	0410017-23	0410017-24	0410017-25
	Date Sampled	09/23/04	09/23/04	09/23/04	09/23/04	09/23/04	09/24/04	09/24/04
	Date Extracted	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04	10/21/04
	Date Analyzed	10/22/04	12/20/04	11/19/04	11/19/04	11/19/04	10/19/04	11/19/04
	Dilution Factor	1	1	1	1	1	1	1
	Comments							
Analyte	RL							
Percent Lipids	0.1	5.2	2.1	0.98	0.88	1.6	0.52	7.9

DATA SUMMARY TABLE DEFINITIONS (Organics)

BB - As a qualifier for soil/sediment samples: Compound is also detected in the bottle blank
CRQL - Contract Required Quantitation Limit
EB - As a qualifier for soil/sediment samples: Compound is also detected in the equipment blank
FD - Field Duplicate
g - gram
J - The concentration is an estimated quantity
kg - kilogram
L - Liter
mg/Kg - milligrams per kilogram
mg/L - milligrams per liter
ml - milliliter
R - The data are rejected and unusable
RL - Reporting Limit
U - Compound was analyzed for but not detected
ug/kg - micrograms per kilogram
UJ - The sample quantitation limit is an estimated quantity
ug/L - micrograms per liter

APPENDIX B
BENTHIC INVERTEBRATE COMMUNITY ANALYSIS

A Multivariate Analysis of Benthic Invertebrate Data from Iron Horse Park

Introduction

Metcalf & Eddy (1995) reported the results of a limited qualitative benthic invertebrate survey and habitat assessment at 24 locations, of which 19 were associated with Iron Horse Park Superfund Site and 5 associated with nearby reference locations. The results did not indicate any overt effects from site contaminants in on-site water bodies. To reduce the uncertainty concerning the conclusion of no overt effect due to site contaminants, a multivariate analysis of the benthic invertebrate data was conducted in conjunction with an analysis of (1) environmental variables measured during the survey and (2) sediment benchmark hazard indices of contaminant levels in sediment at the sampling stations. The hazard index of the sediments was calculated as the mean Probable Effect Concentration (PEC) quotient. The PEC values were from MacDonald et al (2000) and Ingersoll *et al* (2000). The PEC represents the concentration above which adverse effects on benthic organisms are likely, based on multiple observations of co-occurring contaminant and benthic effects data. In this analysis, the PEC quotient (concentration/PEC) was calculated for each chemical measured in a sample, and the arithmetic average of the individual PEC quotients was calculated to produce a mean PEC quotient. This was conducted for each sample. The multivariate analysis included invertebrate benthic taxa, habitat structure identifiers, water quality data (pH, dissolved oxygen, etc.), and mean PEC quotient.

Background

A multivariate ordination was used to analyze the invertebrate data collected at the Iron Horse Park (IHP) study sites to investigate if differences in the benthic invertebrate communities among sites could be attributed to levels of contamination. The foundation for using multivariate analysis is that there are many biological, chemical, and physical factors that make up the environment, and each factor has a degree of influence on the other factors and, consequently, on the overall ecosystem. In the context of using benthic invertebrates (a biological component of the ecosystem) in make ecological assessments of sites, there are physical factors (e.g., habitat) and chemical factors (e.g., contaminants) that are important in determining which organisms are capable of existing at a particular site. The advantage of using a

multivariate ordination as an analysis tool is that the procedure takes all taxa (e.g., species) into account and finds patterns among sites that are based on differences in the invertebrate community. The invertebrate community is defined by what taxa are living at a site (taxa richness) and the number of organisms that represent each taxon (abundance). Consequently, the community structure of a site may have many dimensions, because there are typically many taxa that contribute to the community structure of a site, and each of these dimensions is quantifiable by the use of a multivariate ordination.

The major advantage of using a multivariate ordination in detecting changes in the invertebrate community structure are based on how different taxa respond to a gradient of disturbance (e.g., increasing contamination, habitat improvement). A change in community structure is typically seen when certain species may be abundant at a low disturbance level, but become diminished as the disturbance level becomes somewhat higher. At the same time, however, other species that are more tolerant to the disturbance begin to appear and, as the disturbance continues to become greater, their numbers increase until an optimum is reached, beyond which they begin to diminish and yet other species become dominant. Therefore, the response of species over the disturbance gradient is unimodal rather then linear. The most important aspect of this process of community structure changing over a disturbance gradient is that each species has an optimum range – or niche breadth – at some position along the disturbance gradient. This means that the invertebrate community structure of a site is typically characterized by the presence and abundance of many species, and when the intensity of the disturbance changes, the response by the invertebrate community is that some species become excluded as new species are being included. A major consequence of the community structure responding in this manner, especially in the context of using benthic invertebrates as indicators of ecological health, is that many species often need to be taken into account when making a site assessment.

The multivariate ordination used to analyze the IHP invertebrate data for differences in community structure was a correspondence analysis (CA). This type of analysis is called indirect gradient analysis and it uses the invertebrate data exclusively to indicate difference among sites. What this means is that the CA uses only the invertebrate data to indicate the relations among sites on the basis of the variations in

taxa richness and relative abundances (i.e., the invertebrate community structure) among the sites. Additionally, the CA ordination provides several aspects – or dimensions – of the community structure, and these are expressed as ordination axes. An ordination axis represents an arrangement of all possible taxa along a gradient, and each site gets assigned a site score that places it along this gradient at a position relative to its association with the taxa positioned on the gradient. To help explain this concept, community structure can be considered as an N-dimensional space of taxa and site relations, and different ordination axes can be considered as passing through this space on different coordinates and representing different dimensions of the relations. By definition, the first axis in the ordination represents the strongest gradient of the community structure, and successive ordination axes represent successively weaker gradients of the community structure. The unit of the strength of an ordination axis is the eigenvalue, which is somewhat analogous to a correlation coefficient, and successive ordination axes will have lower eigenvalues.

It is important to understand that the aspects of invertebrate community structure are expressed in a CA as the ordination axes, and that sites along these axes are positioned such that their proximity to each other is dependant on their similarity with respect to invertebrate communities. Furthermore, site scores measure the position of the sites along the ordination axes, and the array of site scores for a particular ordination axis can be regressed with sets of environmental variables. The purpose of this procedure is to determine how the aspect of community structure (represented by the site scores on a particular ordination axis) is responding to measured environmental variables. This analysis was done for the IHP benthic invertebrate and environmental data using the data sets in Appendix A (invertebrate data) and Appendix B (environmental data).

Results

A biplot ordination of the invertebrate site scores indicated that the reference sites were not different as a group from the other sites (figure 1). The biplot shows the first two axes of the ordination, and the arrangement of sites on the plot can be considered to represent the first and second strongest dimensions of the invertebrate community structure. Had the references sites been different, they would have been expected to appear together on the biplot as either a separate cluster, or at the extremes of either Axis 1 (horizontal scale -- first strongest dimension of community

structure) or Axis 2 (vertical dimension -- second strongest dimension of community structure).

A comparison of the distribution of the site-scores for axes 1-4 of the CA ordination was done with box plots, along with a comparison of the eigenvalues for each axis (figure 2). The first and second box plots represent the same site-score distribution seen in the fist and second axes of the ordination biplot (figure 1). The third and fourth box plots represent two addition dimensions to the community structure. Each successive axis of the ordination defines somewhat weaker aspects to the community structure, and this is seen in the progressively lower eigenvalues of axes 1 through 4 (figure 2). Nevertheless, there were no discernible patterns within any of these ordination axes that indicated that community structure was different between reference sites as one group and sites with contamination as a second group.

The community site scores derived from the CA ordination were regressed against the environmental variables recorded at the sites (table 1). The variables that represented contamination and toxicity at the sites showed very weak correlations with community structure. The highest correlation coefficient was between Axis-1 (which represents the strongest aspect of community structure) and the bend ratio of the water body from which the sample was collected. Additionally, this relation was the most significant in terms of the probability value ($p= 0.020$), and was the only relation that had a p-value less than 0.05 (table 2). This result is not unexpected, because the bend ratio may represent sinuosity of a water body, which is important in creating habitat features in an aquatic environment. Consequently, additional habitat features increase the heterogeneity of an aquatic environment, and in turn will contribute to supporting different taxa, which increase the community structure.

References

Ingersoll, C. G., D. D. MacDonald, N. Wang, J. L. Crane, L. J. Field, P. S. Haverland, N. E. Kemble, T. A. Lindskoog, C. Severn, and D. E. Smorong. 2000. Prediction of sediment toxicity using consensus-based freshwater sediment quality guidelines. EPA 905/R-00-007 June 2000.

MacDonald, D. D., C. G. Ingersoll and T. A. Berger. 2000. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Arch. Environ. Contam. Toxicol. 39:20-31.

Metcalf & Eddy. 1995. Ecological Characterization for Remedial Investigation Iron Horse Park Superfund Site Operable Unit Billerica, Massachusetts. April 1995.

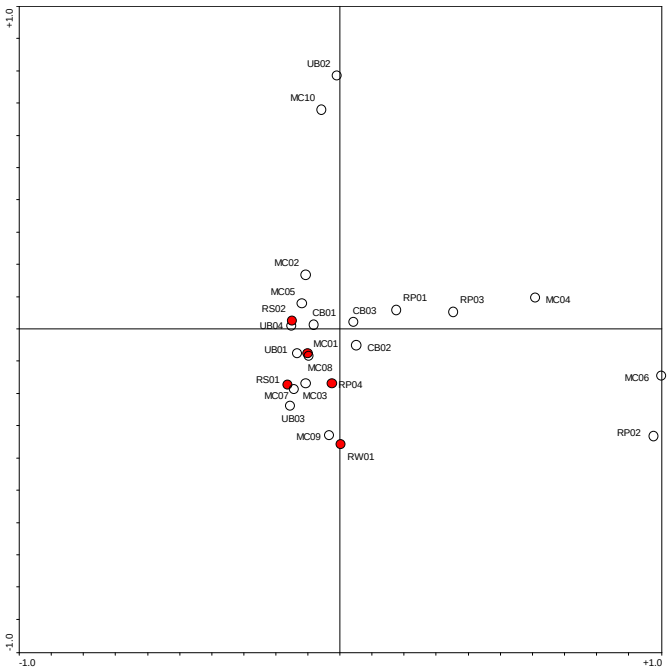

Figure 1. Ordination biplot of invertebrate data collected from waterways at Iron Horse Park. Reference sites are shown as filled circles. This figure shows that the reference sites do not stand alone (i.e., cluster) within the diagram as being different from the other sites sampled. A difference in the reference sites would be indicated if they appeared together on the biplot as either a separate cluster, or at the extremes of either Axis 1 (horizontal scale -- first strongest dimension of community structure) or Axis 2 (vertical dimension -- second strongest dimension of community structure).

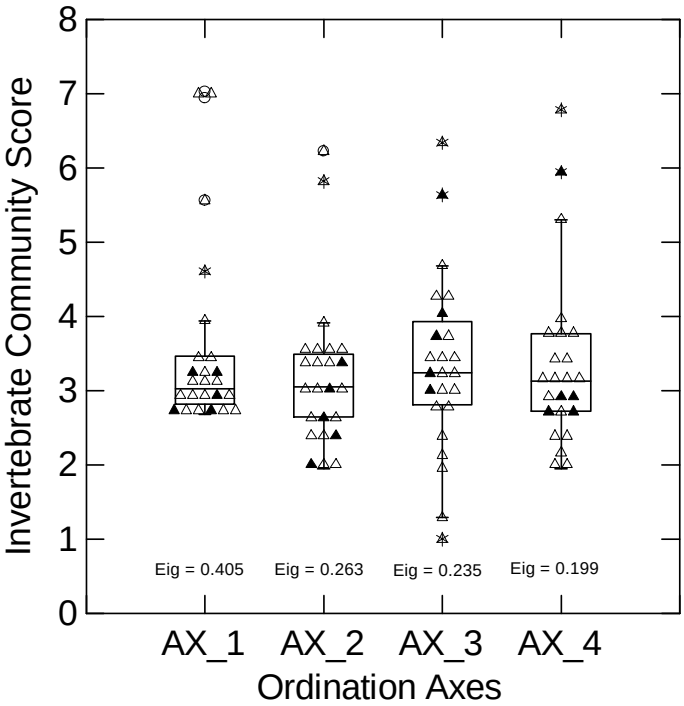

Figure 2. Box plots of axis scores from benthic invertebrate ordination, using the data from Iron Horse Park. Each of the four axes represents a different aspect of variance within the invertebrate community among all sites, and is expressed as the Invertebrate Community Score. These four measures of variances are based on the differences in taxa and their abundances among the sites. The reference

sites are shown as filled triangles in this figure; they do not appear as consistent outliers in the box plots, indicating that the reference sites are not collectively different from other sites.

	AX1	AX2	AX3	AX4
PEC1	0.123	0.237	-0.425	-0.297
PEC2	-0.022	0.301	-0.553	-0.186
MEANPEC	0.020	0.165	-0.523	-0.208
REF_SITE	0.230	0.274	-0.230	0.067
DEPTH	0.262	0.417	0.379	-0.027
COND	0.039	-0.014	-0.228	-0.084
TEMP	-0.535	-0.022	-0.112	-0.083
PH	-0.057	0.221	0.097	0.200
DO	-0.255	-0.146	-0.385	0.513
LOT_LENT	0.550	-0.073	0.576	0.417
BTM_SCRDEP	-0.476	0.056	-0.402	-0.391
BND_RATIO	**-0.670**	-0.029	-0.312	-0.256
BNK_STAB	-0.034	-0.051	0.187	-0.128
BNK_VSTAB	-0.043	-0.025	0.026	-0.163
STR_COVER	-0.450	0.030	-0.593	-0.245

Table 1. Correlation matrix of the Invertebrate Community Structure with Environmental Variables. The values in this table are the Spearman correlation coefficients between the four expressions of the Invertebrate Community Score (see figure 2, above) and the environmental (physical and chemical) variables collected at the sites. A strong correlation between the invertebrate community and an environmental variable results in a strong correlation coefficient. The values in this table indicate the relations were not strong between the invertebrate community and variables that represent contamination (i.e., PEC1, PEC2, MEANPEC, REF_SITE). Based on the data available, the strongest factor affecting the invertebrate community was the bend ratio (BND_RATIO) of the waterway from which the sample was collected.

	AX1	AX2	AX3	AX4
PEC1	1.000	1.000	0.996	1.000
PEC2	1.000	1.000	0.726	1.000
MEANPEC	1.000	1.000	0.852	1.000
REF_SITE	1.000	1.000	1.000	1.000
DEPTH	1.000	0.928	0.985	1.000
COND	1.000	1.000	1.000	1.000
TEMP	0.806	1.000	1.000	1.000
PH	1.000	1.000	1.000	1.000
DO	1.000	1.000	0.999	0.834
LOT_LENT	0.278	1.000	0.176	0.926
BTM_SCRDEP	0.678	1.000	0.957	0.973
BND_RATIO	**0.020**	1.000	1.000	1.000
BNK_STAB	1.000	1.000	1.000	1.000
BNK_VSTAB	1.000	1.000	1.000	1.000
STR_COVER	0.809	1.000	0.126	1.000

Table 2. The probability matrix for the above correlation coefficients (Dunn-Sidak corrected), which indicates the significance of the relations seen in Table 1, above. Assuming alpha at a level of 0.05, the bend ratio was determined to be a significant factor in defining the invertebrate community at Iron Horse Park. Factors that represent contamination did not appear to be significant in defining changes to the invertebrate community at Iron Horse Park.

	SITES																							
TAXA	MC01	MC02	MC03	MC04	MC05	MC06	MC07	MC08	MC09	MC10	RP01	RP02	RP03	RP04	RS01	RS02	CB01	CB02	CB03	UB01	UB02	UB03	UB04	RW01
ANNELIDA						1				1										1			2	
HIRUDINEA		2	3		3									2	2	2					3		2	
OLIGOCHAETA		1						1			1		1						3					
GASTROPODA	48	6	7	6	3	3	5	35			6		7	5	47	14	3		5	28	1	48	1	18
BIVALVIA	5	16	5		13		1	4		3	7				7	50	2					50	12	
ARANEAE			1											1										
AMPHIPODA				20		50					2	2	4											
GAMMARIDAE	3		50		3		36	25	19	8					42	50			4	50		50	5	
ISOPODA			3	7	4	2	2	7	7							5			25	1	11			1
DECAPODA										2														
ANISOPTERA	2					2	2						1	3	1			10	17		2	1		1
ZYGOPTERA		1	8			1	2							1		1		1	2	1		7		
HEMIPTERA	1		15	2	4		1	6		3	2	1	2	12	10	1	3	3	3		1	8		
CORIXIDAE																					6			
NOTONECTIDAE																					3			
COLEOPTERA																						1		
COCCINELLIDAE																								1
LEPIDOPTERA								1	1															1
SIALIDAE			2					2		1										3				
CORYDALIDAE			1						1			1	1											
DIPTERA	2	1		1	1		1	2		26			3		1	3				2	55		1	
TIPULIDAE							2																	
EMPIDIDAE															3									
SIMULIIDAE					1																			
TABANIDAE							1																	
CHIRONOMIDAE	2	6	4	1	6			1		1			3			12	13	5	15	6	2		1	
PTYCHOPTERIDAE		1		1						19	3					1			1					
STRATIOMYIDAE														1										
TRICHOPTERA	1						2								4					1			1	
HYDROPSYCHIDAE									3		1												4	

Attachment A. Invertebrate taxa matrix of benthic invertebrate data collected from waterways sites at Iron Horse Park.

SITE	PEC1	PEC2	MEANPEC	Ref_Site	DEPTH	COND	TEMP	pH	DO	Lot_Lent	Btm_scrdep	Bnd_ratio	Bnk_stab	Bnk_vstab	Str_cover
MC01	ND	ND	ND	1	13	218	6.2	6	3.6	1	2	2	3	4	4
MC02	0.48	0.29	0.385	2	18	180	18.9	6.6	2	1	3	3	4	4	4
MC03	0.12	0.12	0.12	2	23	200	17.8	6.6	4.9	1	3	3	3	3	2
MC04	1.01	0.6	0.805	2	25	280	14	7.6	8	1	2	2	3	3	3
MC05	0.12	0.09	0.105	2	18	415	18.9	6.8	3.2	1	1	2	2	2	3
MC06	0.29	0.23	0.26	2	20	490	18.3	6.8	4.7	1	2	1	3	3	3
MC07	0.09	0.08	0.085	2	10	420	18.9	7.1	6.4	1	2	3	3	3	4
MC08	ND	ND	ND	2	13	ND	ND	ND	ND	1	3	3	4	4	4
MC09	0.18	0.12	0.15	2	10	520	13.8	6.4	8.2	1	2	1	2	3	4
MC10	0.14	0.06	0.1	2	13	500	15	7.4	6	1	2	2	3	3	4
RP01	1.94	2.3	2.12	2	13	400	12.8	5.3	3	1	3	1	3	4	4
RP02	0.25	0.14	0.195	2	10	390	ND	5.1	1	2	0	0	2	2	0
RP03	ND	ND	ND	2	30	ND	ND	ND	ND	2	0	0	4	4	0
RP04	0.26	0.03	0.145	1	15	360	13.3	6.2	3	2	0	0	4	4	0
RS01	0.12	0.18	0.15	1	10	280	15	7.2	6.5	1	3	2	3	3	4
RS02	ND	ND	ND	1	13	ND	ND	ND	ND	1	3	1	3	4	2
CB01	ND	ND	ND	2	18	ND	ND	ND	ND	1	3	2	3	3	2
CB02	0.08	0.09	0.085	2	15	760	14	7.3	4	2	0	0	2	2	0
CB03	ND	ND	ND	2	25	ND	ND	ND	ND	2	0	0	3	3	0
UB01	5.27	3.05	4.16	2	25	120	24.4	6.5	6.5	1	3	3	4	4	4
UB02	ND	ND	ND	2	18	ND	ND	ND	ND	2	0	0	2	2	0
UB03	0.72	0.14	0.43	2	15	660	25	5.9	4.2	1	2	3	3	3	3
UB04	0.41	0.47	0.44	2	15	760	17	7.6	6.5	1	1	2	2	2	3
RW01	0.18	0.04	0.11	1	15	200	14	8.7	6	2	0	0	4	4	0

NOTES:
ND = No Data
PEC = Probable Effect Concentration
1PEC1/2ND = Round 1 PEC calculated with nondetects as 1/2 the detection limit
2PEC1/2ND = Round 2 PEC calculated with nondetects as 1/2 the detection limit
MEANPEC = Mean of Round 1 and Round 2
Ref_Site, 1 = reference site, 2 = IHP site
COND = Specific conductance
TEMP = Water temperature
Lot_Lent, 1 = Lotic flow, 2 = Lentic flow
Btm_scrdep = Bottom scouring and deposition category
Bnd_ration = Bend ratio category
Bnk_stab = Bank stability category
Bnk_vstab = Bank vegetative category
Str_cover = Streamside cover

Attachment B. Environmental data (chemistry and habitat) collected for Iron Horse Park invertebrate survey.

APPENDIX C
EXPOSURE CALCULATIONS FOR HERON MODEL

TABLE C-1

VALUES USED FOR DAILY INTAKE CALCULATIONS

IRONHORSE PARK OU-4 SUPERFUND SITE

Scenario Timeframe: Current/Future

Exposure Route	Receptor Population	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Intake Equation/ Model Name
Ingestion	Heron	Sitewide, Reference	C	Chemical Concentration	NA	mg/kg or ug/L	$Dose_{food}$ (mg/kg BW-day) =
			FIW	Food Intake Rate, wet	0.19	kg $food_{wet}$ / kg BW_{wet} * day	((FIW x Pe_{animal} x C_{animal}) + (FIW x Pe_{invert} x C_{invert})) x
			FID	Food Intake Rate, dry	0.0454	kg $food_{dry}$ / kg BW_{wet} * day	ASUF x TSUF
			Pe_{animal}	Fish Food Source Dietary Percentage	1	fraction on a wet weight basis	
			Pe_{invert}	Invertebrate Food Source Dietary Percentage	NA	fraction on a wet weight basis	$Dose_{soil/sed}$ (mg/kg BW-day) =
			$SI_{soil/sed}$	Inadvertent soil or sediment ingested	NA	fraction on a dry weight basis (kg sed_{dry} / kg $food_{dry}$)	$SI_{soil/sed}$ x FID x $C_{soil/sed}$ x ASUF x TSUF x SBAF
			SI_{water}	Surface Water Ingested	NA	L $_{water}$ / kg BW $_{wet}$ * day	
			ASUF	Areal Site Use Factor	1	--	$Dose_{water}$ (mg/kg BW-day) =
			TSUF	Temporal Site Use Factor	1	--	SI_{water} x C_{water} x CF x ASUF x TSUF
			SBF	Soil/Sed Bioavailability Factor	1	--	
			CF	Conversion Factor	0.001	mg/ug	

TABLE C-2. MAXIMUM EXPOSURE CALCULATIONS FOR HERON - SITEWIDE

Compound	C_{Fish} (mg/Kg)	TRV mg/Kg day	DOSE fish (mg/Kg BW day)	Total Dose (mg/Kg BW day)	HQ fish	*TOTAL HQ*	% HQ fish
Datasource:	Fish Max	NOAEL					
Semivolatile Organics							
Acenaphthene	0.03	NA	5.70E-03	5.70E-03	NA	*NA*	NA
Anthracene	0.01	NA	1.35E-03	1.35E-03	NA	*NA*	NA
Biphenyl	0.003	50	5.51E-04	5.51E-04	1E-05	*1E-05*	100%
Dibenzofuran	0.01	NA	1.81E-03	1.81E-03	NA	*NA*	NA
2,6-Dimethylnaphthalene	0.01	NA	1.33E-03	1.33E-03	NA	*NA*	NA
Fluoranthene	0.02	125	3.23E-03	3.23E-03	3E-05	*3E-05*	100%
Fluorene	0.02	NA	4.56E-03	4.56E-03	NA	*NA*	NA
1-Methylnaphthalene	0.01	144	1.18E-03	1.18E-03	8E-06	*8E-06*	100%
1-Methylphenanthrene	0.001	NA	2.28E-04	2.28E-04	NA	*NA*	NA
Phenanthrene	0.03	NA	5.51E-03	5.51E-03	NA	*NA*	NA
Pyrene	0.01	133	1.35E-03	1.35E-03	1E-05	*1E-05*	100%
2,3,5-Trimethylnaphthalene	0.004	NA	7.79E-04	7.79E-04	NA	*NA*	NA
Low Molecular Weight PAHs	0.09	40	1.71E-02	1.71E-02	4E-04	*4E-04*	100%
Metals							
Aluminum	23	110	4.37E+00	4.37E+00	4E-02	*4E-02*	100%
Arsenic	0.29	5.1	5.51E-02	5.51E-02	1E-02	*1E-02*	100%
Barium	3.8	208	7.22E-01	7.22E-01	3E-03	*3E-03*	100%
Chromium	2.8	1.0	5.32E-01	5.32E-01	5E-01	*5E-01*	100%
Cobalt	0.10	7.6	1.90E-02	1.90E-02	2E-03	*2E-03*	100%
Copper	13	47	2.47E+00	2.47E+00	5E-02	*5E-02*	100%
Lead	2.3	1.1	4.37E-01	4.37E-01	4E-01	*4E-01*	100%
Manganese	21	977	3.99E+00	3.99E+00	4E-03	*4E-03*	100%
Silver	0.02	181	3.99E-03	3.99E-03	2E-05	*2E-05*	100%
Vanadium	0.07	11	1.33E-02	1.33E-02	1E-03	*1E-03*	100%
Zinc	36	15	6.84E+00	6.84E+00	5E-01	*5E-01*	100%

NOTES:

HQ = Dose/TRV

An "X" in the left margin indicates that the total HQ for the compound exceeds 1

NA = Not applicable

Low Molecular Weight PAHs apply to acenaphthene, anthracene, fluorene, naphthalene, and phenanthrene.

TABLE C-3. MAXIMUM EXPOSURE CALCULATIONS FOR HERON - REFERENCE

Compound	C_{Fish} (mg/Kg)	TRV mg/Kg day	DOSE fish (mg/Kg BW day)	Total Dose (mg/Kg BW day)	HQ fish	*TOTAL HQ*	% HQ fish
Datasource:	Fish Max	NOAEL					
Semivolatile Organics							
Acenaphthene	ND	NA	ND	NA	NA	*NA*	NA
Anthracene	0.001	NA	2.09E-04	2.09E-04	NA	*NA*	NA
Biphenyl	ND	50	ND	NA	NA	*NA*	NA
Dibenzofuran	ND	NA	ND	NA	NA	*NA*	NA
2,6-Dimethylnaphthalene	ND	NA	ND	NA	NA	*NA*	NA
Fluoranthene	ND	125	ND	NA	NA	*NA*	NA
Fluorene	ND	NA	ND	NA	NA	*NA*	NA
1-Methylnaphthalene	ND	144	ND	NA	NA	*NA*	NA
1-Methylphenanthrene	ND	NA	ND	NA	NA	*NA*	NA
Phenanthrene	ND	NA	ND	NA	NA	*NA*	NA
Pyrene	0.001	133	2.28E-04	2.28E-04	2E-06	*2E-06*	100%
2,3,5-Trimethylnaphthalene	ND	NA	ND	NA	NA	*NA*	NA
Low Molecular Weight PAHs	0.001	40	2.09E-04	2.09E-04	5E-06	*5E-06*	100%
Metals							
Aluminum	9.300	110	1.77E+00	1.77E+00	2E-02	*2E-02*	100%
Arsenic	0.031	5.1	5.89E-03	5.89E-03	1E-03	*1E-03*	100%
Barium	0.640	208	1.22E-01	1.22E-01	6E-04	*6E-04*	100%
Chromium	0.550	1.00	1.05E-01	1.05E-01	1E-01	*1E-01*	100%
Cobalt	0.02600	7.6	4.94E-03	4.94E-03	6E-04	*6E-04*	100%
Copper	1.300	47	2.47E-01	2.47E-01	5E-03	*5E-03*	100%
Lead	0.140	1.1	2.66E-02	2.66E-02	2E-02	*2E-02*	100%
Manganese	8.500	977	1.62E+00	1.62E+00	2E-03	*2E-03*	100%
Silver	ND	181	ND	NA	NA	*NA*	NA
Vanadium	0.0630	11	1.20E-02	1.20E-02	1E-03	*1E-03*	100%
Zinc	34.000	15	6.46E+00	6.46E+00	4E-01	*4E-01*	100%

NOTES:

HQ = Dose/TRV

An "X" in the left margin indicates that the total HQ for the compound exceeds 1

NA = Not applicable

ND = Not detected

Low Molecular Weight PAHs apply to acenaphthene, anthracene, fluorene, naphthalene, and phenanthrene.

APPENDIX D
MNHESP RARE SPECIES LETTER

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Wayne F. MacCallum, *Director*

July 21, 2004

Antony M. Rodolakis
Metcalf & Eddy

Re: PH/WH 258/7095, Billerica & Tewksbury
NHESP File: 04-16188

Dear Mr. Rodolakis:

Thank you for contacting the Natural Heritage and Endangered Species Program ("NHESP") of the MA Division of Fisheries & Wildlife for information regarding state-protected rare species in the vicinity of the above referenced site. We have reviewed the site and would like to offer the following comments.

Our database indicates that the following protected rare species and communities occur within Estimated Habitat 7095 (WH 7095) and within Priority Habitat 258 (PH 258) as indicated in the 11th Edition of the Massachusetts Natural Heritage Atlas:

Scientific name	Common Name	Taxonomic Group	State Status
Ambystoma laterale	Blue-spotted Salamander	Amphibian	Special Concern

This species is protected under the Massachusetts Endangered Species Act (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.37 and 10.59). A fact sheet for this species can be found on our website http://www.state.ma.us/dfwele/dfw/nhesp/nhfact.htm.

This evaluation is based on the most recent information available in the NHESP database, which is constantly being expanded and updated through ongoing research and inventory. Should your site plans change, or new rare species information become available, this evaluation may be reconsidered.

If you have any questions regarding this review, please call our Environmental Review Assistant, at ext. 303.

Sincerely,

Thomas W. French

Thomas W. French, Ph.D.
Assistant Director