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September 1998

US Army Corps
of Engineers
Waterways Experiment
Station

Final Report: RCRA Facility Investigation, Phase II Soils Release Characterization, SWMU 09/05 Pest Control Area/R-150 Tank Site, Naval Surface Warfare Center Crane, Indiana

by *John Stephen Nohrstedt, Zanul Kidwai, Frank Yelverton, Phil Payonk, Al Bjorkquist, Wilmington District*

James H. May, WES

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Prepared for Department of the Navy, Southern Division

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Final report

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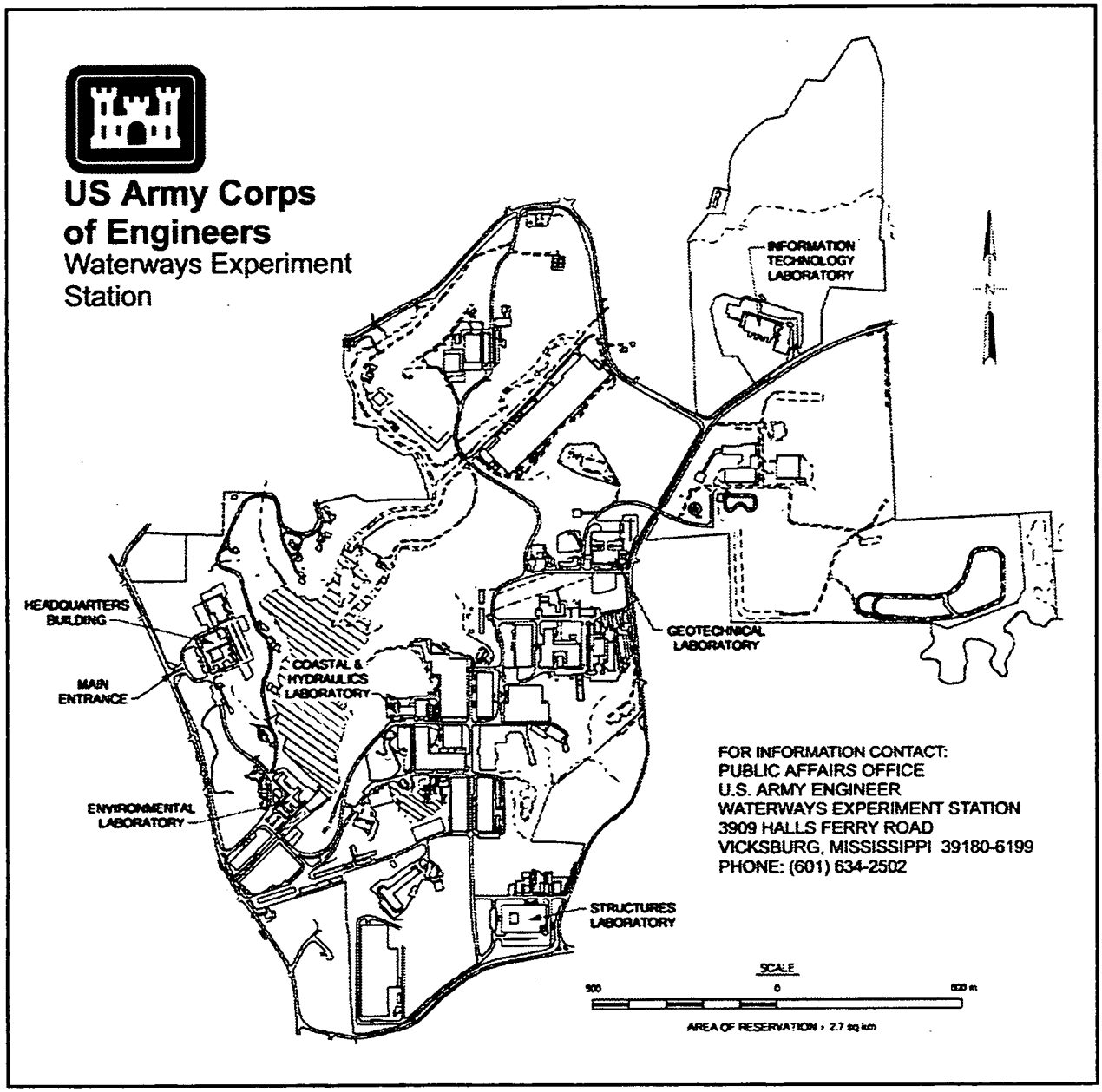

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Preface

A Resource Conservation and Recovery Act Facility Investigation Phase II Soils Study was conducted at Pest Control Area/R-150 Tank Site, Naval Surface Warfare Center Crane (NSWCC), Indiana, by personnel of the Geotechnical Laboratory (GL), U.S. Army Engineer Waterways Experiment Station (WES), and the U.S. Army Engineer District, Wilmington (CESAW). The field work was conducted in August 1992 to determine the presence and extent of soil contamination. The data analyses and report preparation were completed in July 1998.

The primary author of this report was Mr. John Stephen Nohrstedt, CESAW. Contributing authors were Ms. Zainul Kidwai, Messrs. Frank Yelverton, Phil Payonk, and Al Bjorkquist, CESAW; and Dr. James H. May, GL, WES. Also contributing to the final report were Mses. Benita Abraham and Evelyn Villanueva and Mr. Bennie Washington, GL, WES. Ms. Adrienne Wilson provided oversight for Naval Facilities Engineering Command, and Mr. James Hunsicker, Manager, Environmental Protection Department, NSWCC, and Mr. Tom Brent, NSWCC, managed the project. Mr. William Murphy, Engineering Geology Branch, was Principal Investigator, and Dr. May was Program Manager for WES.

At the time the study was conducted, English units were used to record data. A metric-English conversion table is provided.

This investigation was performed in the Geotechnical Laboratory, WES, under the supervision of Dr. A. G. Franklin, former Chief Earthquake Engineering and Geosciences Division (EEGD); Dr. Lillian Wakeley, acting Chief, EEGD; and Dr. W. F. Marcuson III, Director.

Director of WES at the time of publication of this report was Dr. Robert W. Whalin. The Commander was COL Robin R. Cababa, EN.

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Acronyms and Abbreviations

2,4-D	Dinitrotoluene
2,4,5-T	Herbicide
A-BHC	Alpha Berylium Nitrate
ALG	Analytical Laboratory Group
AMTDET	Amount Detected
BNA	base/neutral acid extractable compound
CAAA	Crane Army Ammunition Activity
CAP	Corrective Action Programs
CAR	Corrective Action Requirements
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CL	Lean Clay
CMS	Corrective Measure Study
CRDL	Contract Required Detection Limit
DL	Detection Limit
DQCR	daily quality control report
EPA	Environmental Protection Agency
HSWA	Hazardous and Solid Waste Amendments
IAS	Initial Assessment Study
IDEM	Indiana Department of Environmental Management

IDL	Instrument Detection Limit
IDW	Investigation-Derived Waste
IRP	Installation Restoration Program
ML	Silt
msl	mean sea level
NACIP	Navy Assessment and Control of Installation Pollutants
NAD	North American Datum
NCP	National Oil and Hazardous Substances Contingency Plan
NEESA	Naval Energy & Environmental Support Activity
NSWCC	Naval Surface Warfare Center Crane
PCB	Polychlorinated biphenyl
PEP	Pyrotechnics, Explosives, and Propellants
PCA	Pest Control Area
PCB-1254	Polychlorinated Biphenyl
PPDDD	para, para', Dichlorodiphenyl dichloroethane
PPDDE	para,para'DDE (a pesticide)
PPDDT	para,para'DDT (a pesticide)
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
RCRA/HSWA	Resource Conservation and Recovery Act/Hazardous and Solid Waste Amendments
RD/RA	Remedial Design/Remedial Action
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI/FS	Remedial Investigation/Feasibility Study
SARA	Superfund Amendments and Reauthorization Act

SC	Clayey sand
SP	Poorly sorted sand
SWMU	Solid Waste Management Unit
TCE	Trichloroethylene
TRPH	Total recoverable petroleum hydrocarbons
TSD	Treatment, Storage, or Disposal Facility
USACE	United States Army Corps of Engineers
USACESAW	United States Army Corps of Engineers Wilmington District
USACEWES	United States Army Corps of Engineers Waterways Experiment Station
USEPA	United States Environmental Protection Agency
USCS	Unified Soil Classification System
VOA	Volatile Organic Compound Analysis
WES	Waterways Experiment Station

Executive Summary

To fulfill the Corrective Action Requirements of its Resource Conservation and Recovery Act (RCRA) Storage Permit, the Naval Surface Warfare Center Crane (NSWCC) has conducted an RCRA Facility Investigation (RFI) Phase II Soils Study for the Pesticide Control/R-150 Tank Site (PCA/R-150 Tank Site). The facility is located in Martin County, Indiana, in the northwest one-fourth of section 23, T5N, R4W. Access to the site is by facility roads H-45 and H-349.

Three surface (grab) soil samples were collected and 15 soil borings were made in August 1992 to determine the source of previously found groundwater monitoring well contamination and to determine if soil contamination is present at additional locations. The soil samples were analyzed for contaminants of concern including volatile organics, semivolatile organics (base neutral/acid extractable, or BNAs), organochlorine pesticides and polychlorinated biphenyls (PCBs), herbicides, total recoverable petroleum hydrocarbons (TRPH), and metals. Contamination was principally limited to BNAs, pesticides, a PCB and TRPH.

Several BNAs found in Boring 6, Sample 1, appear to pose a potential health risk. These constituents exceeded detection limits and risk-based concentrations. While none of the pesticides or PCBs exceeded risk-based concentrations, two boring locations (8 and 9, sample number 1) had at least one constituent near the risk-based concentration.

TRPH contamination above the State of Indiana action level of 100 ppm was present at five boring depths in sample number 1. According to state law, these areas must be cleaned.

A Phase III Groundwater Investigation to characterize the aquifer and determine the horizontal and vertical extent of groundwater contamination was proposed in the PCA/R-150 Tank Site Work Plan but not conducted because of Department of Defense funding constraints. The most recent groundwater sampling event (September 1991 and July 1992) detected trichloroethylene (TCE) and trichloroethane above the method detection limits. A Phase III Groundwater Investigation is recommended when funding becomes available.

Conversion Factors, Non-SI to SI Units of Measurement

Non-SI units of measurement used in this report can be converted to SI units as follows:

Multiply	By	To Obtain
acres	4,046.873	square meters
feet	0.3048	meters
feet per mile	0.1893935	meters per kilometer
inches	2.54	centimeters
miles (U.S. statute)	1.609347	kilometers

1 Introduction

Objectives of the Investigation

RFI Phase II Investigations are release assessment studies. The purpose of the RFI is to collect data necessary to characterize the site. The objectives of this investigation are:

a. Describe the hazardous release if it exists.

b. Characterize the host medium (the soil).

c. Address the effects of the hazardous waste and constituents on the host medium.

Site Location and Description

The Naval Surface Warfare Center, Crane (NSWCC) is located in Indiana approximately 40 miles southwest of Bloomington and 74 miles south-southwest of Indianapolis (Figure 1). NSWCC covers approximately 62,463 acres or roughly 100 square miles in Davies, Greene, and Martin Counties. The PCA/R-150 Tank Site is located in the central portion of the facility in the northwest one-fourth of Section 23, T5N, R4W (Figures 1 and 2). The location includes the site of Building 55, the original Pesticide Control Building located approximately 5.0 miles northeast of the Burns City Gate No. 2 and reached using Crane Road H-45; the site of Building 2189, the previous Pesticide Control Building located approximately 5.5 miles northeast of the Burns City Gate No. 2 and reached using Crane Road H-45; and the R-150 Tank Site located approximately 5.5 miles northeast of the Burns City Gate No. 2 and reached using Crane Road H-45 and Crane Road H-349 (Figure 3). Building 2189 was razed in 1994. Only the foundation slab remains. Pest Control operations have been moved to a new site.

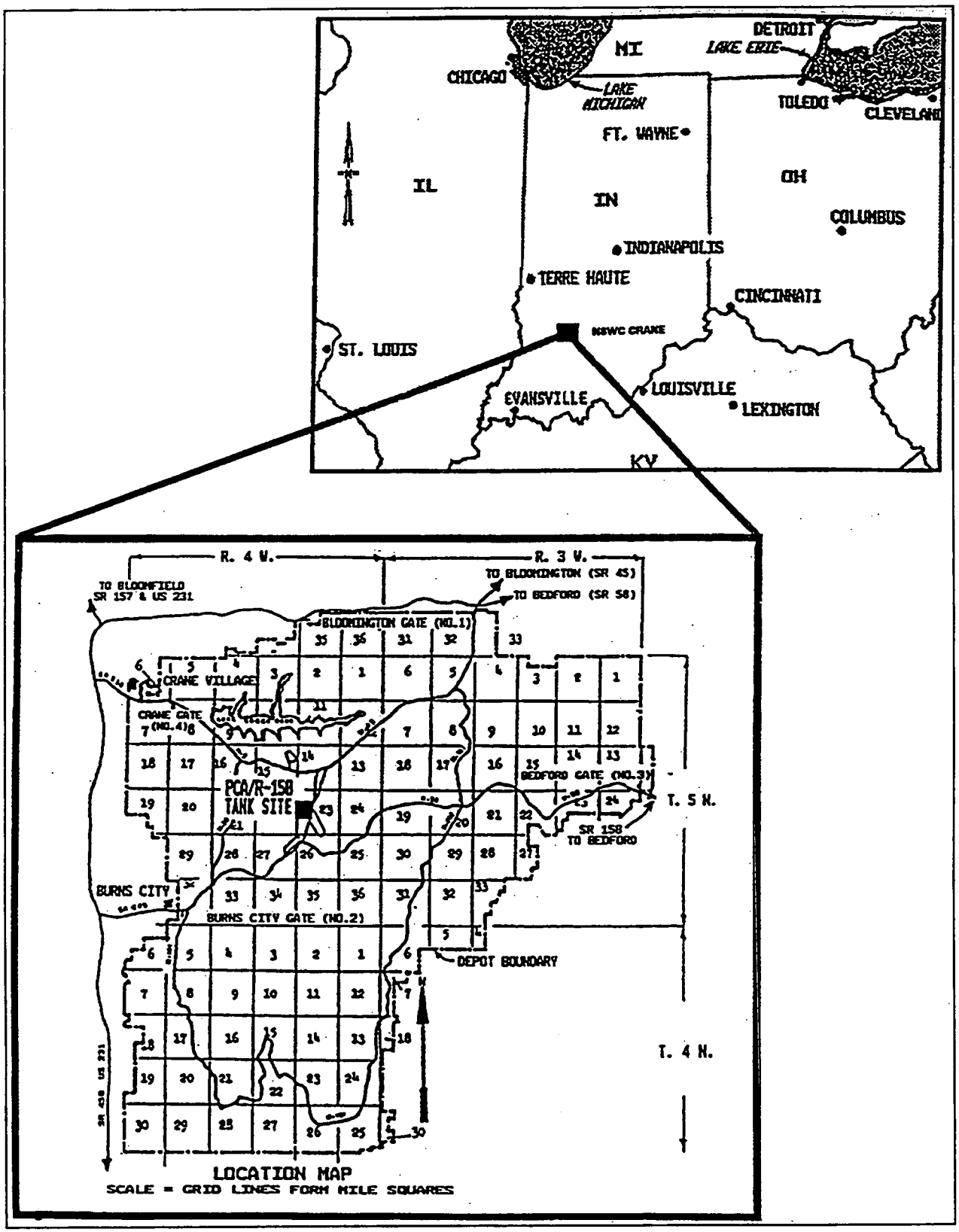

Figure 1. Map showing the location of NSWC Crane, Indiana and the PCA/R-150 Tank Site located in the central portion of NSWC Crane

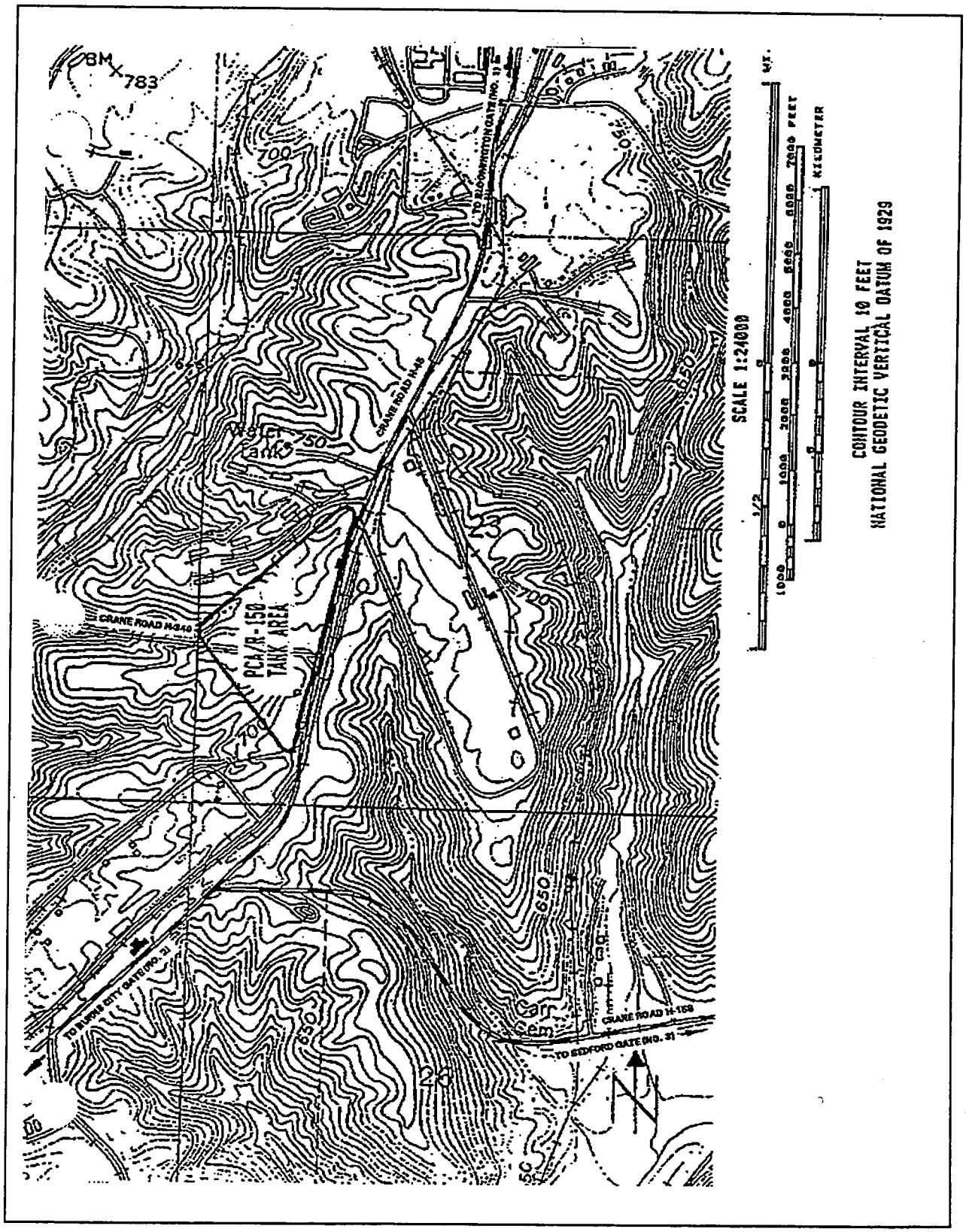

Figure 2. Site map showing the location of the PCA/R-150 Tank Site location in the central portion of NSWC Crane

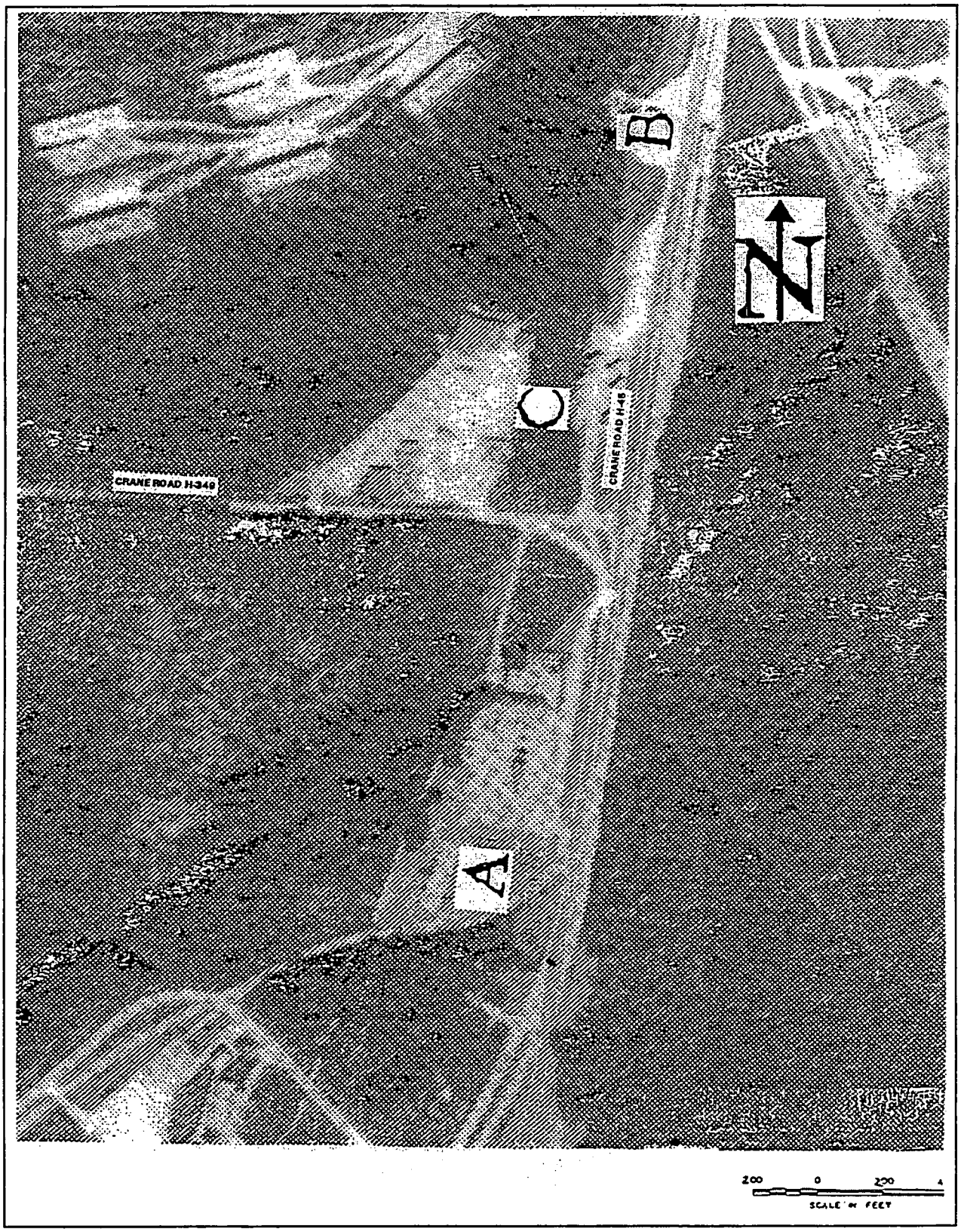

Figure 3. Areal photograph showing the location Building 55(A), 6 Building 2189 (B), and R-150 Tank Site (C)

Facility History

The facility, originally called Naval Ammunition Depot (NAD), Burns City, was opened in 1941 to serve as an inland ammunition production and storage center. The Depot's name was changed to NAD, Crane in 1943. The name was changed again in 1975 to Naval Weapons Support Center, Crane (NWSC Crane). The name was changed again in 1992 to Naval Surface Warfare Center, Crane. Today NSWC Crane's mission is to "Provide quality and responsive engineering, technical and material support to the Fleet for combat subsystems, equipment and components, microelectronics technology, microwave components, electronic warfare, acoustic sensor tests, engineering, pyrotechnics, small arms, electronic module test and systems command." Under the Single Service Management Program, a segment of the Center's mission is to provide support (including environmental protection) to the Crane Army Ammunition Activity (CAAA). The Army is tasked with the production and renovation of conventional ammunition and related items, the performance of manufacturing, engineering, and product quality assurance to support production; and the storage, shipment, demilitarization and disposal of conventional ammunition and related components. Because of the nature of the Army's operations, CAAA contributes significant financial support for the environmental program through an Interservice Support Agreement.

All environmental activities on the installation, including permitting activities, remain the responsibility of the Navy. The Navy applied to Region V of the United States Environmental Protection Agency (USEPA) for a Resource Conservation and Recovery Act (RCRA) storage permit which was issued in December 1989. The paragraph "Regulatory Status" in Chapter 2 of this report contains more information regarding the regulatory status of the site.

Site Setting

The following summary of the history of the PCA/R-150 Tank Site was written by Ron Bledsoe (NSWC Crane, Code 0953), Crane's chief pest controller.

Pesticide spray tanks and containers were most likely rinsed in the vicinity of Building 55, (Figure 3 Area "A") the original Pesticide Control Building. Chemicals used at this site from 1950 to 1974 included but were not limited to herbicides 2,4-D, 2,4,5-T, silvex (a mixture of 2,4-D and 2,4-T), fenac, monuron and ureabor. Insecticides include carbaryl, chlordane DDT, diazinon, dieldrin, lindane, malathion and pyrethrum. The Pest Control Building was moved from Building 55 to a different location, Building 2189 (Figure 3 Area "B"), around 1970. In addition to the chemicals stored and used out of Building 55, an inventory of chemicals was added which included herbicide krovar (a mixture of duron and bromac). Krovar was used on graveled storage areas and railroad right-of-ways at a rate of 5 to 20 lb per acre. During the last 5 years the herbicide Oust was used on right-of-ways of railroad and magazine drives between the bunkers and blast wall at the rate of 2 to 4 oz per acre.

Building 55 and Building 2189 have since been demolished and the sites are now concrete pads.

Around 1974, the herbicides 2,4,5-T and monuron stored at Building 2105 (located west of Building 2074 and used by railroad personnel on the railroad right-of-way, were taken to Building 2189 for storage.

Neither pesticide containers nor rinsates have been emptied in the vicinity of Building 2189 since approximately 1974. Containers are triple-rinsed and the rinsate used in the mixture. Large spraying equipment is flushed with water and the rinsate is used in the treatment area. When the sprayers are winterized at the end of the spraying season the rinse water is collected and used the following spring in the first spray mixture applied.

A R-150 Tank was installed in the early 1970's in the gravel parking lot adjacent to H-349 (Figure 3 Area "C"). The R-150 Tank was 11 ft wide by 35 ft long. The base of the tank was reportedly 15 ft deep. The tank was excavated and removed 27-28 September 1983 by NSWC Crane personnel. The excavated contaminated soil was removed for disposal in an offsite secure landfill in December 1983. Organic contaminants have been detected in the groundwater at the tank site (Dunbar 1984b).

2 Study History

Regulatory Status

Under the authority of RCRA as revised by the Hazardous and Solid Waste Amendments (HSWA), a hazardous waste treatment, storage, and disposal facility must be permitted by the United States Environmental Protection Agency (USEPA). In December 1989, NSWC Crane was issued a Storage Permit. A RCRA Facility Assessment (RFA) for NSWC Crane was completed. The PCA/R-150 Tank Site was designated a Solid Waste Management Unit (SWMU). Corrective Action Requirements (CAR) were negotiated between the Navy and the USEPA Region V. As part of the CAR the NSWC Crane is to conduct a RCRA Facility Investigation (RFI) at its SWMU and fulfill the Closure Requirements of RCRA for the R-150 Tank Site. An RFI is a three-part study, consisting of a Phase I, Environmental Monitoring Report; a Phase II, Release Assessment; and a Phase III, Release Characterization Study. An RFI Phase II Soils Study for the PCA/R-150 Tank Site Facility, SWMU 09/05, is described in this report.

Crane's USEPA Permit as of July 1995 stipulates the following: "The R-150 Tank, and the Waste Pile and Surface Impoundment Units at the Ammunition Burning Grounds are RCRA regulated units that are subject to 40 CFR Part 265, Subpart G closure requirements. Closure plans have been submitted to the State and some closure activities have been performed. It is apparent at these units that contamination in the area may not be distinguishable between the regulated units and the SWMU under or around them. Therefore, for the purposes of consistent remedial investigations, the Permittee shall perform one corrective action investigation at these units that will allow for compliance with both the closure and the Corrective Action Requirements (CAR). This will allow for one investigation for soil and ground water at these units, instead of two separate regulatory investigations for the same media. The RFI Work Plans have been submitted for these units, and the Permittee shall continue to define the rate and extent of contamination, perform a risk assessment, evaluate Corrective Measures, and provide Corrective Measures Implementation at these units... It is the intent of this permit to avoid duplication of effort at these units, and to have one monitoring and Corrective Action Program (CAP) to serve both State and Federal requirements of protection..."

Previous Studies

All previous investigations were performed in the vicinity of Building 2189 and the R-150 Tank Site. Previous investigations were not performed at or near Building 55 because at the time of study it was not known that Building 55 was the previous Pesticide Control Building.

In 1981 a team from USACEWES completed a groundwater and soils investigation at PCA/R-150 Tank Site. Between 1981 and 1983, 14 monitoring wells were installed at this site (Figure 4). The investigation was followed by a draft report (unpublished) "Definition of Contaminated Ground Water Plumes at Selected Waste Disposal Sites," Naval Weapons Support Center, Crane, IN (Dunbar 1984a).

The 1984 report stated that groundwater quality testing revealed organic contaminants. Trichloroethylene and trans-1,2-dichloroethylene were present in groundwater samples drawn from monitoring well 9-3-81 (Figure 4) located in the gravel parking lot adjacent to Highway 349. Water samples taken from an open boring near the R-150 Tank Site (Figure 4) identified concentrations of trichloroethylene (Dunbar 1984b). Although contamination was present in groundwater samples from the R-150 Tank Site, monitoring wells immediately down-gradient of the tank (wells WES 9-4-81, WES 9-5-81, and WES 9-8-81, Figure 4) were uncontaminated. Results of these and other groundwater sampling events are discussed further in a later chapter (Chapter 6 Groundwater).

Six additional wells (WT1P, WT2P, WT3P, WT4P, WT5P, and WT6P) were installed in 1986 and described in "Proposed Ground-Water Assessment Plan for R-150 Tank Storage Closure, Pest Control Area" (May and Murphy 1989). The locations of these wells are also shown in Figure 4.

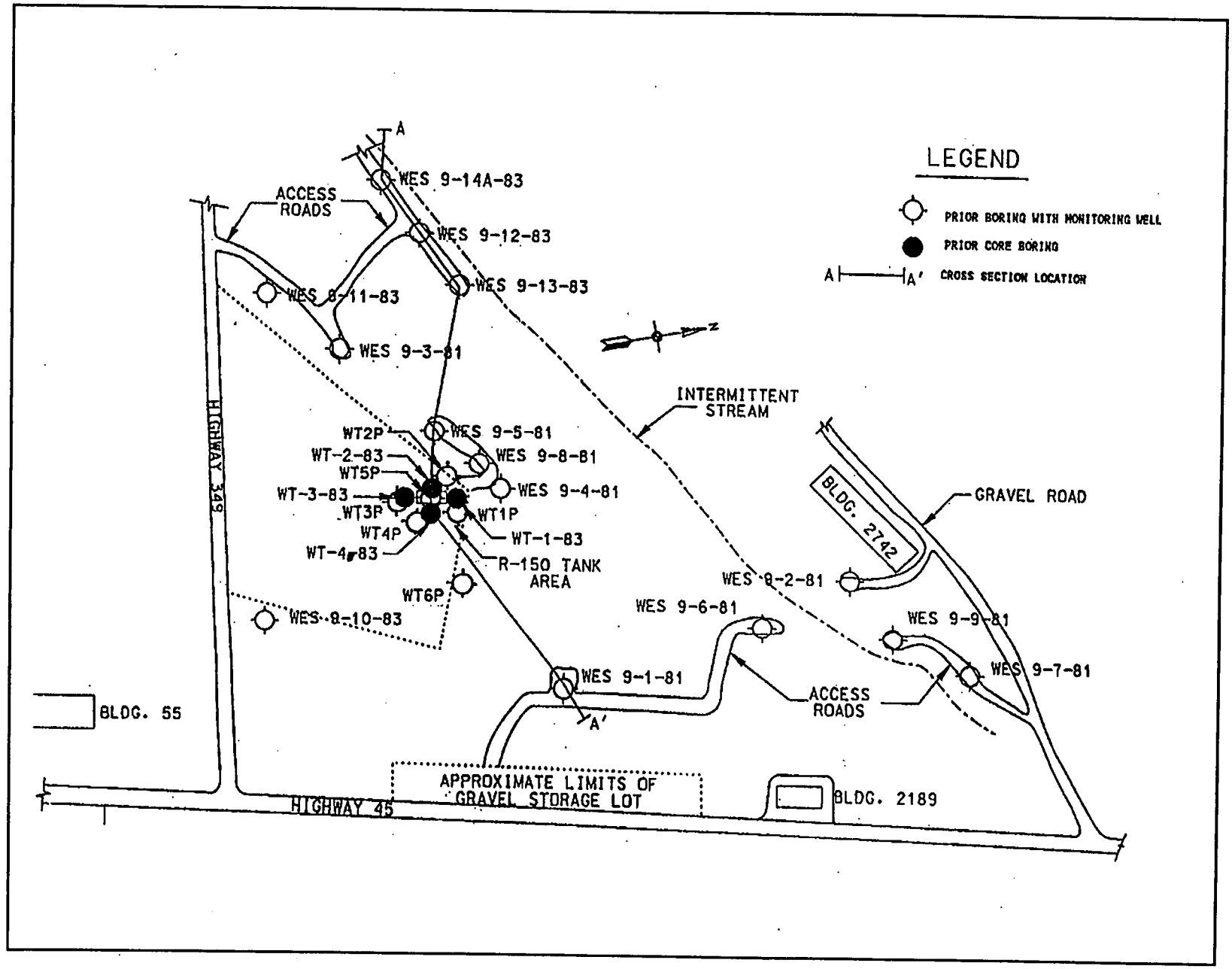

Figure 4. Previous well/boring locations

3 Physical Characteristics of the Study Area

Physiography

Much of the NSWCC is covered by forest. Its surface topography is a rugged plateau dissected by well-defined stream valleys. The surface elevations range from 470 ft, mean sea level (msl) in the valleys to 800 ft, msl on the ridges. The PCA/R-150 Tank Site lies along a northwesterly slope. At the foot of the slope is an intermittent stream. Surface drainage from the PCA/R-150 Tank Site is via the intermittent stream, which flows from the northeast to the southwest (Figure 4).

Geology

At the PCA/R-150 Tank Site, up to 10 ft of soil overburden is underlain by Pennsylvanian age sedimentary rocks of the Raccoon Creek Group, Mansfield Formation. Sedimentary rocks immediately underlying the PCA/R-150 Tank Site consist of interbedded sandstone, clay, shale, occasional limestone and coal. Sandstone and shale are the predominant rock types (Figure 5).

Soils

The soil consists of 2 to 10 ft of clay (USCS, CL) and clayey sand (USCS, SP-SC). The soil zones of the PCA/R-150 Tank Site are shown on the soils and geologic section (Figure 5).

Hydrogeology

Previous studies have indicated that groundwater flows through the soil or in the rock fractures with the static water level averaging 14 ft below ground

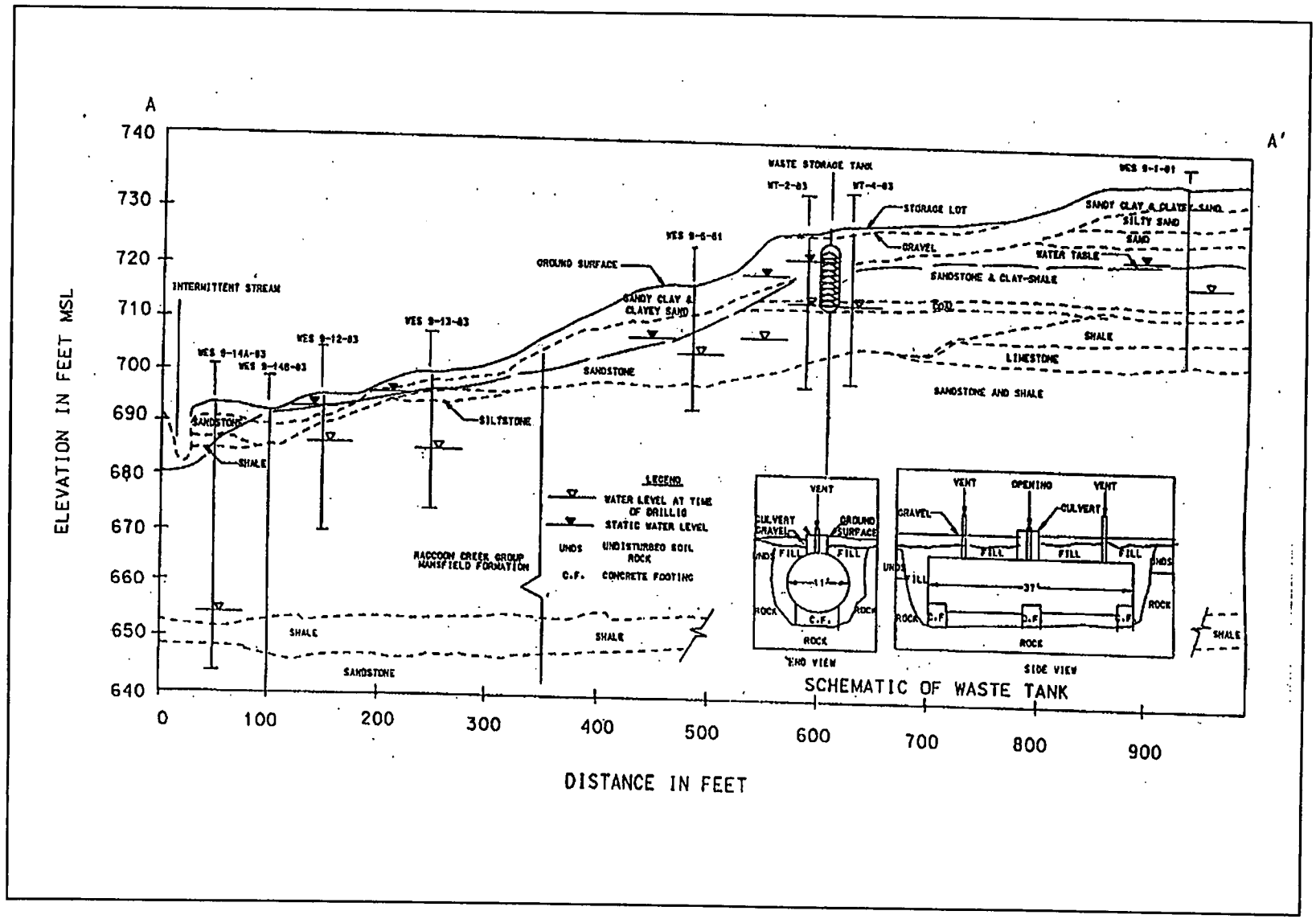

Figure 5. Soils and geologic cross section PCA/R-150 Tank Area

surface. Groundwater flow is to the west-northwest. Groundwater elevations measured in September 1983 and July 1992 ranged from about 720 ft msl near monitoring wells WES 9-1-81 and WES 9-10-83 to about 695 ft msl near monitoring wells WES 9-12-83 and WES 9-13-83 (Figures 6 and 7, respectively). The water table was approximately 7.5 ft below ground surface at the R-150 Tank with rapid decline in elevation down gradient from the R-150 Tank. Down-gradient from monitoring well WES 9-3-81, the water table is found within a few feet of the ground surface and is believed to drop below the stream bed as shown in Figure 5.

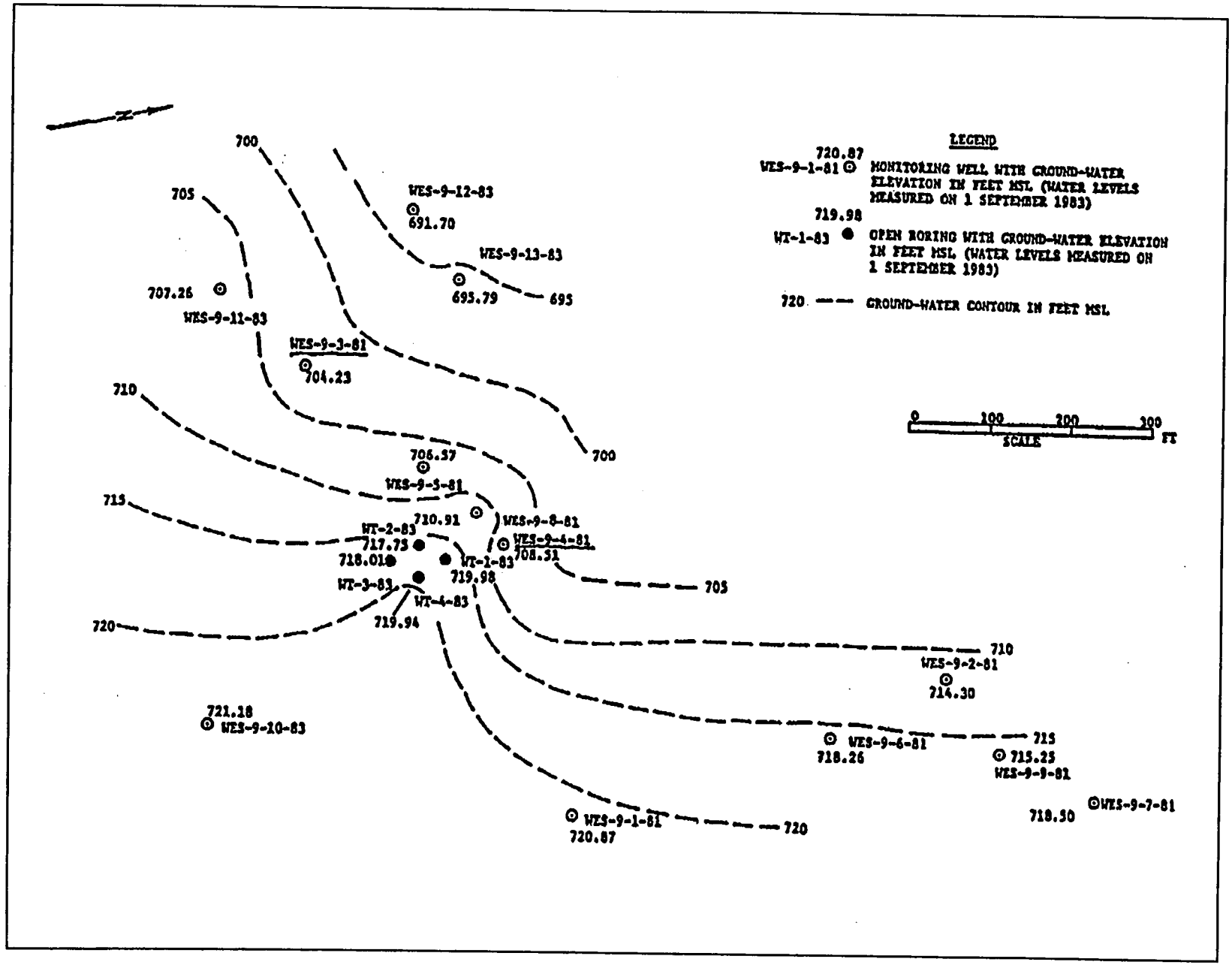

Figure 6. Groundwater contour map of PCA/R-150 Tank Site

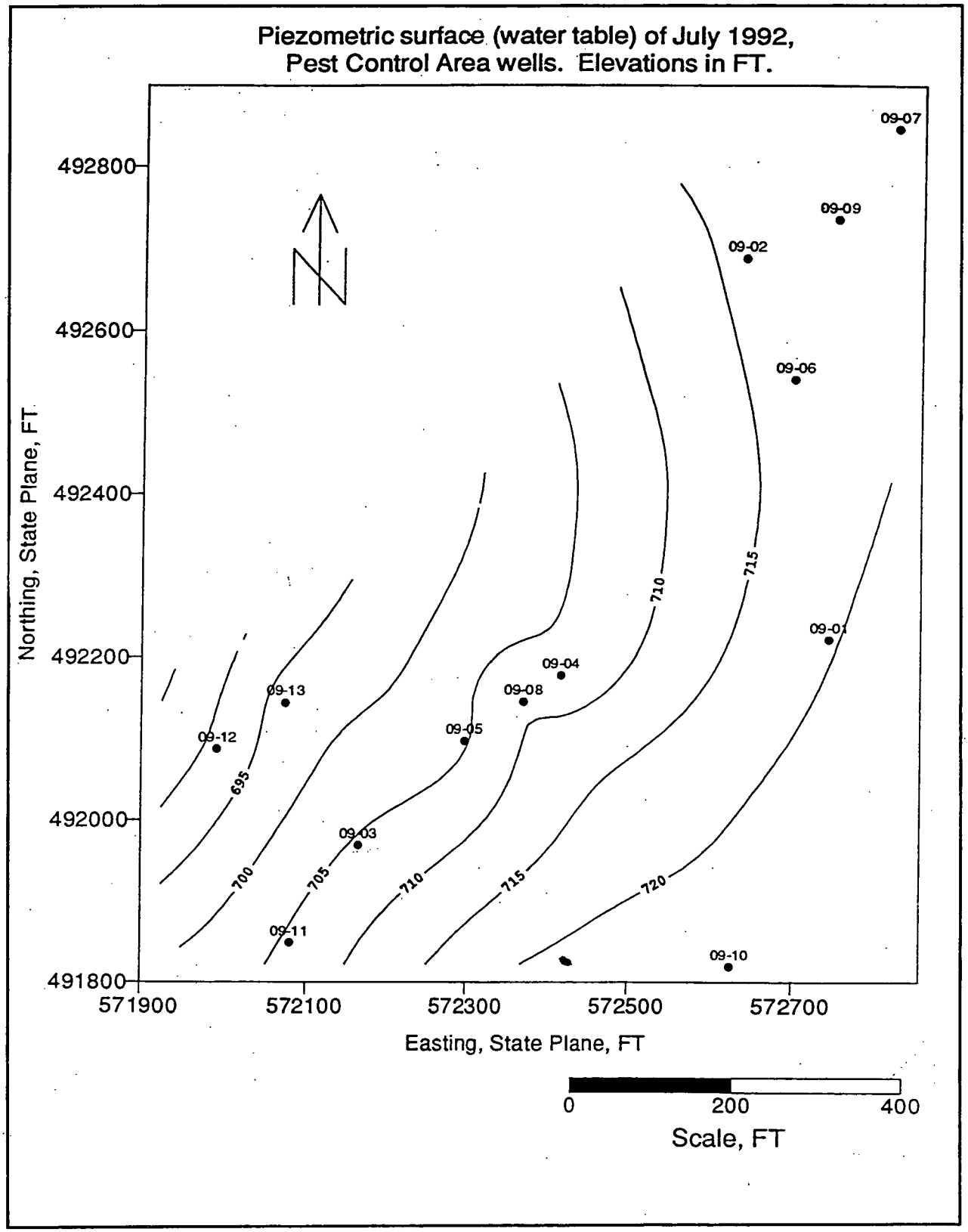

Figure 7. Groundwater contour map of PCA/R-150 Tank Site

4 Site Investigation

Field Work

Approach

The purpose of a Phase II soils investigation is to determine if a hazardous release to the soil has occurred, and to assess the hazardous release if it exists. Sampling locations were selected with a bias toward areas having the greatest probability of contamination. Previous investigations performed by USACEWES (Dunbar 1984b) and NSWC Crane detected high concentration levels for trichloroethylene at the R-150 Tank site. Investigation by USACEWES (Dunbar 1984b) detected concentrations of trichloroethylene and trans-1,2-dichloroethylene in monitoring well WES 9-3-81. Investigations by NSWC Crane detected levels of trichloroethane exceeding the 0.001 ppm detection limit. A concentration level of 0.179 ppm of trichloroethane was detected in well WES 9-3-81 and 0.003 ppm in WES 9-5-81. Because pesticide spray tanks and containers were likely rinsed in the parking lots of Buildings 55 and 2189, a possibility of contamination exists there.

A total of 15 soil borings were drilled to a depth ranging from 6 to 12 ft below ground surface and three surface soil samples were collected during this investigation.

Investigations were concentrated around the R-150 Tank Site and Buildings 55 and 2189. Previous investigations of monitoring well WES 9-3-81 detected contamination, but found no apparent reason for its presence. Three surface soil samples were taken (Figure 8) at well WES 9-3-81 to determine if contamination is from the surrounding soil. Area A (south of Building 2189) of Figure 8 was chosen as the location for the three background borings. Area A borings were to establish background levels of contamination, if any. Three borings were drilled in the vicinity of Building 2189 (Figure 8, Area B) to determine if there is any residue remaining from the pesticide tanks and containers. Six borings were drilled at Building 55 (Figure 8, Area C). Three borings were drilled at the R-150 Tank to confirm that all contaminated soil has been removed. The boring and surface sampling point locations are shown in Figure 8. Each sample point is numbered using elements which include: SWMU number, sample point, year of sampling, and sample number. Sample point numbers 1 through 15 were assigned to subsurface borings. Numbers 16

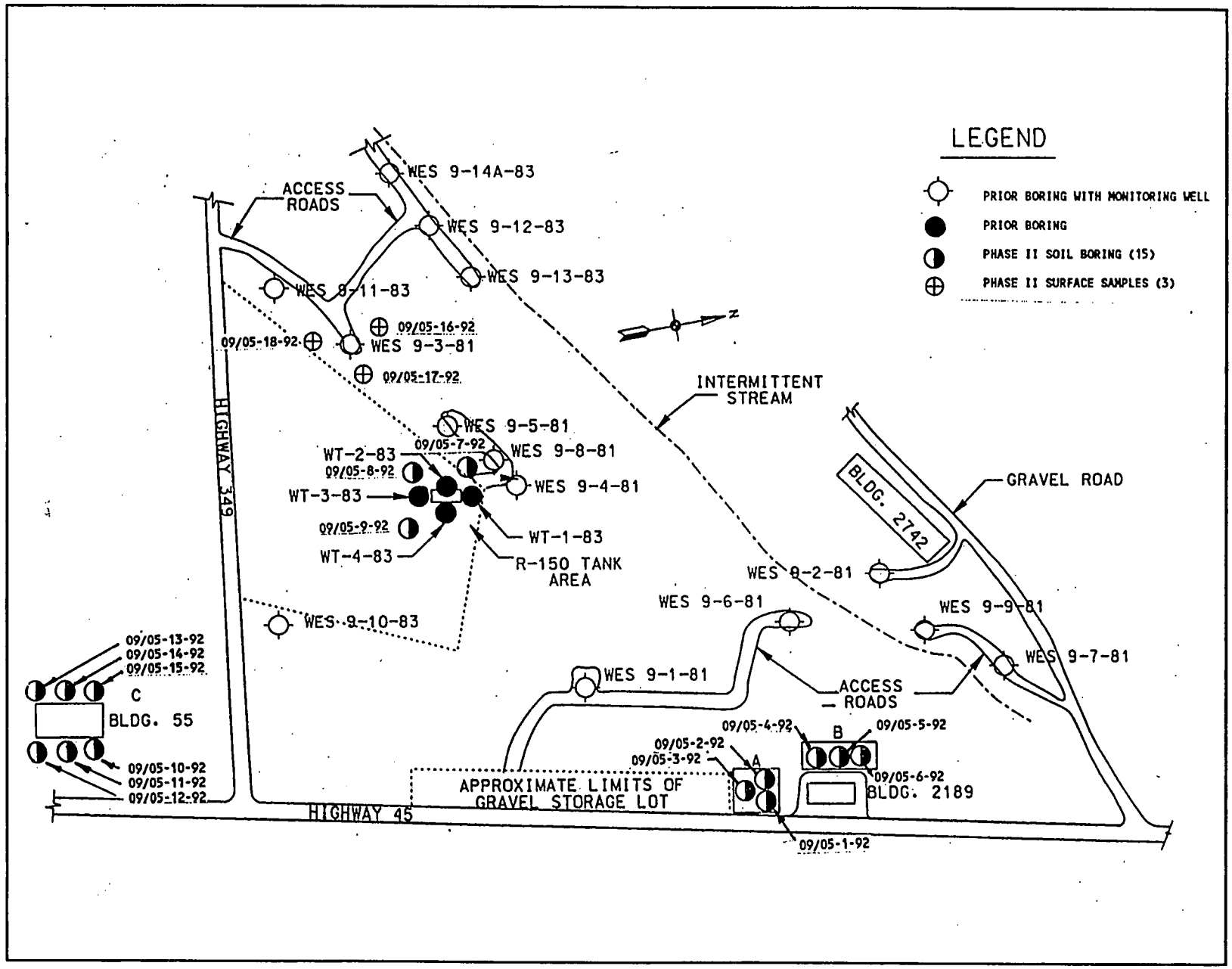

Figure 8. RFI Phase II soil boring and surface sampling location

through 18 were assigned to surface sample points. For example, the first boring in the Phase II investigation is SWMU 09/05-1-92 and the first surface sample is SWMU 09/05-16-92.

Survey

To make the sampling efforts as efficient as possible all sample locations were surveyed and marked with stakes and flags prior to the sampling.

Surface soil sampling

A total of three surface soil samples were collected. The locations of the three surface samples are shown in Figure 8. Sod and topsoil were removed to a depth of approximately 6 in. below the ground surface. A sample from the interval 6 to 18 in. was then taken. A precleaned stainless steel sampling trowel or scoop was used to take the sample and to place it into the sample jar. The sample jar was then sealed. Following collection, soil samples were placed in locked ice chests (coolers) for storage at a temperature of 4° Celsius (C). Chemical preservatives were not used. The coolers containing the samples with their accompanying Chain of Custody forms were transported to the analytical lab at WES for analysis. Transport was by air freight with an overnight carrier service. A seal was placed on each cooler to ensure that the samples had not been disturbed during transport to the laboratory.

Soil borings and subsurface soil sampling

The 15 soil borings were placed using a truck mounted drilling rig. The boring locations are shown in Figure 8. Samples were taken at several depths (6 to 12 in., 24 to 30 in., 42 to 48 in., and/or at refusal). A Shelby tube sampler was used to collect the soil samples. The sampler was advanced through a hollow stem auger. At the surface, the sample was extracted, peeled, and bottled. Peeling is the process that removes the portion of the sample which is in direct contact with the sampler. Ends of the sample were not used. Samples were extruded into wide-mouth glass jars with minimal disturbance. Stainless steel tools were used to place the peeled samples into the containers. The sample jars were then sealed. Samples were sealed and transported for analyses, as described above.

The holes were drilled to refusal. Following sample collection each hole was backfilled using a cement-bentonite mixture.

To ensure that the soil samples represented the site conditions, a quality assurance/quality control (QA/QC) program was enforced. Field blanks, trip blanks, equipment rinsates, and duplicates were collected. Drilling and sampling equipment was decontaminated between sampling locations. Sample documentation procedures as outlined in the work plan were enforced. They included completion of Daily Quality Control Report (DQCR), field log book, sample labels, and chain of custody forms.

Laboratory Analyses

Chemical analyses

Soil samples were analyzed for semivolatile and volatile organic compounds, organochlorine pesticides and PCBs, organophosphorus pesticides, chlorinated herbicides, total recoverable petroleum hydrocarbons (TRPH) and metals. A list of the target analytes and the methods of analysis are presented in Appendix A, Table A1. Selection of the chemical compounds for analysis in Appendix A, Table A1 was based on previous pesticide usage at the site and the results of previous testing.

Chemical data quality control

A quality control program was enforced to ensure that the soil samples and the resultant chemical data would be representative of the site conditions and comparable with known conditions, that sources of extraneous contamination were determined, and that decisions based on chemical data were meaningful and supported.

Validity of the data is dependent on the level of quality control needed for the study. For this work, a Naval Energy and Environmental Support Activity (NEESA) Level C, EPA Level 4 equivalent, Quality Control (QC) program was used. Other quality control parameters used were analytical method-dependent and are described in the EPA's SW-846 Methods manual, 3rd edition (USEPA 1986).

The data validation program began with the Work Plan. The Work Plan documented the objectives for the soils study and the procedures that would be used to meet those objectives. The data validation program continued in the field with chain of custody procedures and sample isolation and preservation. The tracking procedures were continued in the laboratory. A complete laboratory QA/QC plan was followed. Document management was started upon the receipt of the samples. Log books, bench sheets, and reports were kept. All data were checked by the analyst, the inorganic team-leader or the organic team-leader, and the laboratory Chief before the data were released. The data were checked for completeness. The completeness check was to ensure that: (1) all samples and analyses have been processed, (2) complete records including Chain of Custody for each analysis and associated QC samples were used, (3) procedures specified in project planning were followed, and (4) all required calibrations were performed. In addition to completeness, the following items were also checked:

a. Duplicate values for precision.

b. Recovery of spikes for accuracy.

c. Method blanks for contamination.

d. Surrogate recoveries for organic analyses.

e. Data for quality assurance check samples.

f. Reasonableness and trends.

If data fell outside of acceptable limits as described in the analytical method's procedures, the sample was rerun if the required amount of sample was available. If the rerun results continued to fall outside acceptable limits and the QA check sample data were good, then data were reported with qualifying explanations. Acceptable data were usually defined by the specific procedural method (i.e., SW-846).

The final data reports went through several review and approval levels. The data were finally checked for validity. The data were evaluated with respect to:

a. Detection limits.

b. Control limits for duplicates, matrix spikes, blanks, and surrogates.

c. Data control within control limits and corrective actions.

d. Flagging consistently out of control data.

A Chemical Data Quality Validation Report was prepared as a step in the data evaluation process and is contained in Appendix D.

5 Results of Soil Investigation

Physical Characteristics of Soils

The soil thickness at the PCA/150 Tank Site ranges from 6 to approximately 12 ft. The depth of soil samples collected during Phase II investigations ranged from 0.5 to 12.0 ft below ground surface (Figure 9). The borings were terminated at refusal. Boring logs are presented in Appendix A. Evaluation of the boring logs indicates that soils from 0 to 7 ft below grade are predominately inorganic sandy silts and clays (USCS ML-CL). The subsurface soils below seven ft are composed of yellowish brown, fine to medium grained sand and gravel (USCS, SP-GM) and yellowish brown, friable sandstone.

Chemical Analyses of Surface Soils

Introduction

Previous investigations of monitoring well WES 9-3-81 (Figure 10) detected volatiles contamination, but found no apparent reason for the contamination. Therefore three surface soil samples (1992/16, 1992/17, and 1992/18, Figure 10) were taken August 15, 1992 near well WES 9-3-81 to determine if contamination is from the surrounding soil. These samples were taken from an interval between 6 and 18 in. below the ground surface. No field duplicate samples were taken. Borings 1 through 3 were background borings within the unit boundary but apart from past operations (Figure 10).

Volatile organic analytes (VOAs)

The results of analyses of surface soils for volatile organic compound analysis (VOAs) using EPA Method 8240 (USEPA 1986) are given in Appendix A, Table A2, page 6 of 6. All values detected were less than 0.05 ppm. Methylene chloride and acetone were found in most surface soil samples taken. These constituents were also found in the associated method blanks (Appendix A, Table A3, blank 5 and 6). These results likely indicate sample contamination from the laboratory environment rather than from processes associated

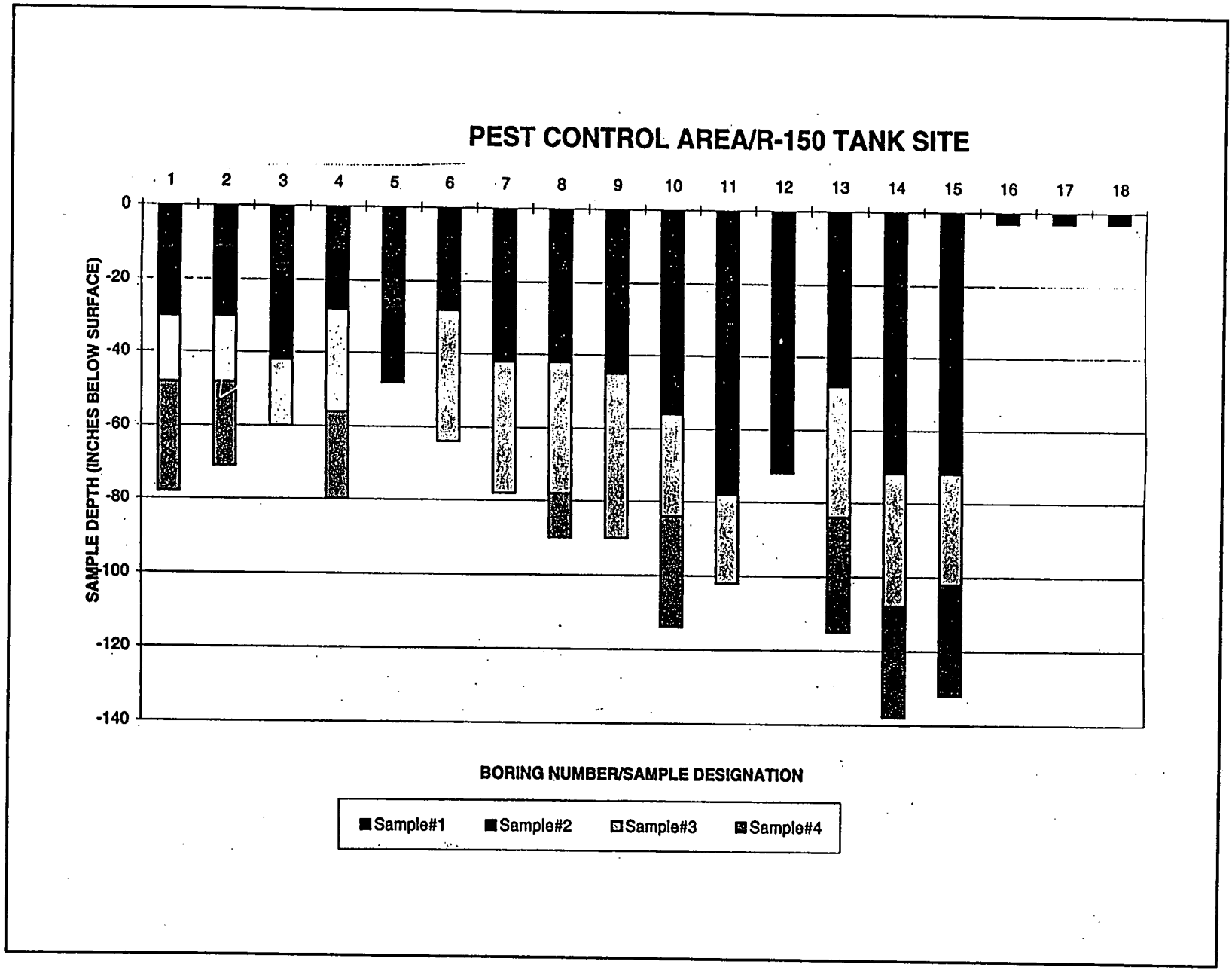

Figure 9. Depth of soil samples

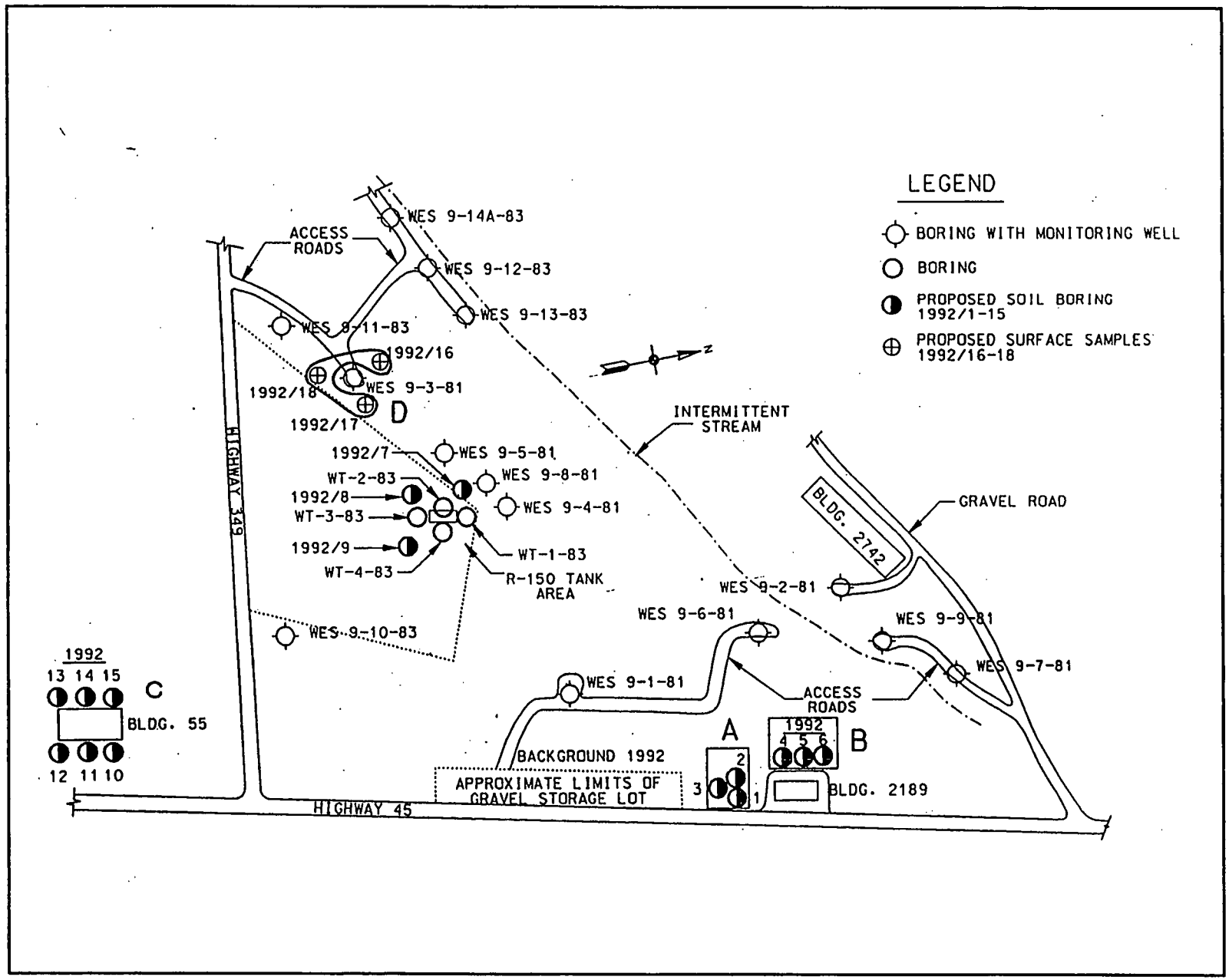

Figure 10. Schematic diagram showing Building 2189, Building 55, R-150 Tank Area "A" Background borings, Area "B" borings at Building 2189, Area "C" borings at Building 55, and Area "D" approximate surface sample locations

with the field conditions. VOAs that were not in the method blanks but in the soil samples were chloroform, 1,1,1-trichloroethane, bromodichloromethane, and dibromochloromethane. Except for 1,1,1-trichloroethane, these constituents were also found in the field blanks (Appendix A, Table A4) at greater concentrations than the maximum soil concentrations (Appendix A, Table A2, page 6 of 6), indicating that the latter concentrations may be sampling activity contaminants rather than soil contaminants. At station 17, 1,1,1-trichloroethane was detected at a concentration of 0.0006 ppm. This result was "J" qualified (Appendix A, Table A2, page 6 of 6), that is, detected by the analytical instrumentation but not in sufficient quantities to accurately quantify, but estimated.

To assess the magnitude and significance of VOA constituents found in the surface soils sampled, concentrations encountered were compared to "background" soils in the vicinity and risk-based concentrations (RBC) promulgated by EPA (EPA Region III 1994). The background soils were taken from soil borings 1, 2, and 3 (Figure 10 and Appendix A, Table A2) The risk-based concentrations are derived from toxicity constants from established sources and "standard" exposure scenarios corresponding to a fixed level of risk (i.e., a hazard quotient of 1, or a lifetime cancer risk of 10^{-4}, whichever occurs at a lower concentration). Importantly, the risk-based concentrations used are not regulation or guidance and should not be viewed as a substitute for a site-specific risk assessment.

All the VOA constituents detected in the surface samples were less than the detection limits or concentrations found in the background sample borings (1 through 3). Regarding risk-based concentrations, the maximum value of every constituent detected in the surface samples was at least four orders of magnitude less than the risk-based concentration (Appendix A, Table A2, page 6 of 6 and Appendix A, Table A5).

Method blanks. No constituents other than those mentioned in the previous paragraph were detected in the method blank.

Equipment rinses. Rinsates were collected but not analyzed for volatiles.

Trip blanks. With the exception of methylene chloride, no VOAs were detected in the trip blank (Appendix A, Table A4, trip blank 3). Methylene chloride was also found in the method blank associated with the analyses of the trip blank. These data indicate that cross-sample contamination did not occur within a sample shipment.

Semivolatile organics (BNAs)

The results of analyses are given in Appendix A, Table A6, page 6 of 6. Of the three stations sampled, only dibutylphthalate was detected. However it was "J" qualified with a maximum concentration of 0.35 ppm. This analyte was also found in the method blank (Appendix A, Table A7, blank 11) as well as the sample. These results indicate likely sample contamination from the

laboratory environment rather than from processes associated with the field conditions. Therefore, no risk-based analysis is necessary.

Method blanks. No constituents other than those mentioned in the previous paragraph were detected in the method blank associated with surface soils.

Equipment rinses. The result of the equipment rinses related to these surface samples are indicated in Appendix A, Table A9, rinse 3. All the constituents detected in the rinsates were about an order of magnitude less than the detection limit for the soil analytes indicating that the equipment was not causing cross contamination.

Metals

The results of analyses of surface soils for selected inorganic analytes are given in Appendix A, Table A10.

The maximum concentrations of specific metals in surface soils sampled were distributed among 3 sample locations. Location 16 had the maximum for barium and cadmium; location 17 the maximum for lead and selenium; and location 18 the maximum for arsenic and chromium. Silver and mercury were not detected in any of the samples.

All the tested metal analytes occur naturally in soils. With the exception of barium, cadmium and selenium, the concentrations of the metals in the three surface samples were less than the background concentrations (Borings 1 through 3). For selenium, the maximum surface soil concentration (0.32 ppm at Location 17) was essentially equal to the maximum background concentration (0.30 ppm Boring 1, Sample 1).

With the exception of lead and arsenic, the maximum concentrations of all metals are at least two orders of magnitude below the risk-based concentration (Appendix A, Table A11). There is no published risk-based concentration for lead, but a soil concentration of 400 ppm is generally considered to be safe (Smith 1995). All lead concentrations are less than 400 ppm. As shown in Appendix A, Table A10, arsenic does exceed the risk-based concentration (RBC) for two of the three surface samples (maximum of about two times the RBC) and for 4 of the 11 background boring samples (maximum of about three times the RBC).

Method blanks. The results of analysis of method blanks used in association with the metal analyses of surface soils are provided in Appendix A, Table A12. However, no metal constituents were found in the method blank associated with the surface borings.

Equipment rinses. No rinsates associated with these three surface samples were analyzed.

Organochlorine pesticides and PCBs

The results of analyses for surface soils are given in Appendix A, Table A13, page 6 of 6. All values detected were less than 0.1 ppm. Of the 13 constituents found in the three soil samples, six were also found in the method blank (Appendix A, Table A14, blank 4). However, 5 of these 6 were "J" qualified and had concentrations similar to the method blank. These results indicate likely sample contamination from the laboratory environment rather than processes associated with the field conditions. The sixth, dieldrin, was not "J" qualified but was also in the method blank. The dieldrin soil concentration was 3 to 5 times greater than the blank concentration and therefore is likely a soil contaminant.

The remaining seven constituents in the soil samples but not in the method blanks are phorate, PPDDT, endrin aldehyde, ethyl parathion, methyl parathion, disulfoton, and famphur. PPDDT, Endrin aldehyde and famphur in the surface soil samples were all "J" qualified, which is less than the detection limit. While phorate, ethyl parathion, methyl parathion and disulfoton were above the detection limits for the background soils, they were all less than four times the detection limits.

With the exception of dieldrin, endrin aldehyde, and famphur, all constituents found in the surface soils were at least three orders of magnitude less than the risk-based concentrations (Appendix A, Table A15). Dieldrin was at least two orders of magnitude less than the risk-based concentrations. Endrin aldehyde and famphur did not have risk-based concentrations.

Method blanks. No other constituents in the surface soils other than those mentioned in the previous paragraphs were detected in the method blank.

Equipment rinses. The results of the equipment rinses related to these surface samples are indicated in Appendix A, Table A16, rinses 1 and 2. Except for methyl parathion, all constituents in the rinses were in the method blanks and at similar concentrations. Methyl parathion detected in the rinsate was about two orders of magnitude below the soil concentration indicating that the equipment was not causing cross contamination that would affect interpretation of the results.

Herbicides

The results of analyses are given in Appendix A, Table A16. Only 2,4,5-T was found in the soil surface samples and only at location 16 (0.038 ppm). It was "J" qualified. This constituent was not found in the method blank or background soils. However, the concentration of 2,4,5-T was five orders of magnitude less than the risk-based concentration.

Method blanks. No constituents were detected in the method blank.

Equipment rinses. No rinsates were analyzed for these surface samples.

Total recoverable petroleum hydrocarbons (TRPH)

The results of analyses are given in Appendix A, Table A19. The detection limit for this constituent was 25 ppm. TRPH was detected in two of the three surface samples: 70 ppm at location 18 and 24 ppm at location 17. The 24 ppm concentration was "J" qualified. No TRPH was found in the method blank.

To assess the magnitude and significance of TRPH found in the surface soils sampled, comparison of the concentrations encountered were made with "background" soils in the vicinity and with the action level for TRPH in the State of Indiana.

The background concentrations ranged from 4 ppm ("J" qualified) to 94 ppm. The three surface samples ranged from 24 to 70 ppm which fell within this background range. The action level for TRPH in Indiana is 100 ppm, which is above the concentration found in the three surface samples.

Method blanks. No constituents were detected in the method blank.

Equipment rinses. No rinsates were taken associated with these surface samples.

Chemical Analyses of Subsurface Soils

Introduction

Fifteen soil borings were made in August 1992. Figure 10 shows the locations of the borings. Borings 1 through 3 were background borings within the unit boundary but apart from past operations. Borings 4 through 6 and Borings 10 through 15 were taken at the sites of Buildings 55 and 2189, respectively, because pesticide tanks and containers were likely rinsed there. Three borings (7, 8, and 9) were taken at the R-150 tank site to confirm that all contamination had been removed.

Soil samples for chemical analyses were taken from specified depths using a Shelby tube or split spoon. The depth from which each soil sample was taken is indicated in Figure 9.

Volatile organic analytes (VOAs)

The results of analyses of subsurface soils for VOAs using EPA Method 8240 (USEPA 1986) are given in Appendix A, Table A2. All values detected were less than 0.2 ppm. Methylene chloride and acetone were found in most subsurface soil samples taken. These constituents were also found in the associated method blanks (Appendix A, Table A3). Benzene, chlorobenzene, ethylbenzene, and styrene were also found in several samples but

generally found in the associated method blanks. These results likely indicate sample contamination from the laboratory environment rather than processes associated with the field conditions.

VOAs which were generally not in the method blanks but in the soil samples were chloroform, 1,1,1-trichloroethane, bromodichloromethane, dibromochloromethane, toluene, 2-butanone, t-xylene and carbondisulfide (Appendix A, Table A2). Chloroform, bromodichloromethane, dibromochloromethane, and t-xylene were also found in the field blanks (Appendix A, Table A4). The field blank concentrations for chloroform and bromodichloromethane were greater than the maximum soil concentrations indicating that these two compounds may be sampling activity contaminants rather than soil contaminants. The maximum detected dibromochloromethane (0.0025 ppm, "J" qualified) and t-xylene (0.012 ppm, Boring 10, Sample 1) concentrations were 2.8 and 120 times the maximum field blank concentrations, respectively and 1.25 and 12 times the maximum background concentrations, respectively.

The remaining constituents, 1,1,1-trichloroethane, toluene, 2-butanone, and carbondisulfide plus the other constituents discussed above were compared to the risk-based concentrations (Appendix A, Table A5). In every case, the maximum soil concentration detected was at least three orders of magnitude less than the risk-based concentration.

Method blanks. In addition to those constituents mentioned in the previous paragraphs, several constituents were in the method blanks that were not in the boring samples. These constituents are 2-hexanone, bromomethane and cis-1,3-dichloropropene.

Equipment rinses. Rinsates were collected but not analyzed for volatiles.

Trip blanks. With the exception of acetone and methylene chloride no VOAs were detected in the trip blank analyzed (Appendix A, Table A4). Methylene chloride was also found in the method blank associated with the analyses of the trip blank. Acetone was not found in the method blank but is a common laboratory contaminant. These data indicate that cross-sample contamination did not occur within a sample shipment.

Semivolatile organics (BNAs)

The results of analyses are given in Appendix A, Table A6. With the exception of depth 1 at Borings 5, 6, 8, and 9, only the following BNA constituents were detected in the remaining 11 borings: benzoic acid, dibutylphthalate, bis(2-ethylhexyl)phthalate, and di-n-octylphthalate. These constituents were generally "J" qualified, and dibutylphthalate and bis(2-ethylhexyl) phthalate were frequently found in the method blanks (Appendix A, Table A7). Therefore, the phthalates are generally considered to be from laboratory contaminants rather than from processes associated with the field conditions. Benzoic acid, while not found in the method blank, occurred only once, and was "J" qualified (0.02 ppm, < 1 percent of the detection limit, Boring 4, Sample 3).

At sample position number 1 for Borings 5, 8, and 9, all the BNA constituents detected were less than or equal to 1.3 ppm and were also "J" qualified. Diethyl phthalate also occurred in the method blank for Borings 5 and 9. Several constituents were present that were not in the background samples or method blanks. These constituents included (not all at any one location): phenol, 2-methylphenol, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, chrysene, benzo(a)anthracene, benzo(k)fluoranthene, benzo(b)fluoranthene, and 2-methylnaphthalene. For benzo(k)fluoranthene and benzo(b)fluoranthene the maximum soil concentration detected was at least one order of magnitude (Boring 5, Sample 1), chrysene at least two orders of magnitude and the rest at least three orders of magnitude less than the risk-based concentration (Appendix A, Table A8). There was no risk-based concentration for phenanthrene, benzo(a)anthracene, and 2-methylnaphthalene.

However for Sample 1, Boring 6 (near Building 2189, Figure 10), not only did all of the following constituents except one exceed detection limits (not "J" qualified), but four constituents exceeded risk-based concentrations. Also, all the following constituents had their maximum values in Boring 6, Sample 1:

Constituent	Boring 6, Sample 1 Conc. (ppm)	Risk-Based Conc. (ppm)
Phenanthrene	49	N/A
Fluoranthene	55	82,000 n
Pyrene	88	61,000 n
Chrysene	34	780 c
Benzo(a)anthracene	29[1]	7.8 c
Benzo(b)fluoranthene	29[1]	7.8 c
Benzo(k)fluoranthene	19	78 c
Benzo(a)pyrene	27[1]	0.78 c
Indeno(1,2,3-C,D)Pyrene	11 J[1]	7.8 c

[1] Exceeded risk-based concentration.
c Carcinogenic effects.
n Noncarcinogenic effects.

Method blanks. No other constituents other than those mentioned in the previous paragraphs were detected in the method blank.

Equipment rinses. The results of the equipment rinses related to these soil samples are indicated in Appendix A, Table A9. All the constituents detected in the rinsates were at least an order of magnitude less than the detection limit for the soil analytes indicating that the equipment was not causing cross contamination.

Metals

The results of analyses of subsurface soils for selected metal analytes are given in Appendix A, Table A10. The maximum concentrations of specific metal constituents in subsurface soils sampled were distributed among the 15 borings. No one boring had more than two maximums.

All of the tested metal analytes can occur naturally in soils. Silver and mercury were not detected in any of the background (Borings 1 through 3) or other borings (4 through 15). For the remaining metals, the concentrations in the background borings were all less than the other borings. The ratios of borings (4 through 15)/background (1 through 3) concentrations were generally around 2 or less (Appendix A, Table A20). The exception was cadmium with a ratio of 12.6 for the maximum concentrations. The maximum cadmium concentration of 0.63 ppm was in Boring 8, Sample 1.

With the exception of lead and arsenic, the maximum concentrations of all metals were at least two orders of magnitude below the risk-based concentrations (Appendix A, Table A11). There is no published risk-based concentration for lead, but a soil concentration of 400 ppm is generally considered to be safe (Smith 1995). All lead concentrations are less than 400 ppm. Arsenic does exceed the risk-based concentration for the several borings including the background borings. The maximum concentration of arsenic is about four times the risk based concentration in Boring 10, Sample 2.

Method blanks. The results of analysis of method blanks used in association with the metal analyses of subsurface soils are provided in Appendix A, Table A12. Cadmium was found in one method blank and chromium in three. The cadmium concentration in the blank was in the range of concentrations detected in the associated samples (Boring 5, Sample 2 and Boring 6, Samples 1 through 3). However, the concentration of chromium in the blanks was at least an order of magnitude less than the concentrations in the associated samples.

Equipment rinses. No rinsates were analyzed associated with these borings.

Organochlorine pesticides and PCBs

The results of analyses are given in Appendix A, Table A13. All values detected were less than 0.2 ppm. Of the 19 constituents found in the 15 borings, 11 were found in the method blanks (Appendix A, Table A14). Seven of the 11 (A-chlordane, aldrin, B-BHC, endrin, G-chlordane, methoxychlor, and PPDDD) constituents found in the borings that were also in the method blanks were generally "J" qualified, or the maximum concentrations were about one to three times the detection limits (DL). These results indicate that 7 of the 11 constituents that were found in the method blanks were likely sample contamination from the laboratory environment rather than processes associated with the field conditions.

The four exceptions were for PPDDE (0.02 ppm, 6 times DL, Boring 10, Sample 4), endrin aldehyde (0.098 ppm 5 times DL, Boring 9, Sample 1), dieldrin (0.041 ppm, 24 times DL, Boring 9, Sample 1) and for heptachlor (0.052 ppm, 22 times DL, Boring 14, Sample 1). PPDDE and heptachlor only had one other value each above the DL and each was less than two times the DL. Endrin aldehyde had no other values above the DL. Dieldrin had seven other values above the DL with three more than three times the DL (0.0066 ppm, four times DL, Boring 8, Sample 1; 0.0138 ppm, eight times DL, Boring 10, Sample 4; 0.0083 ppm, five times DL, Boring 13, Sample 3).

The remaining eight constituents in the soil samples but not in the method blanks are A-BHC, PPDDT, A-endosulfan, B-endosulfan, endosulfan sulfate, heptachlor epoxide, PCB-1254 and phorate.

Concentrations of A-BHC, A-endosulfan, endosulfan sulfate, and heptachlor epoxide in subsurface soil samples were all "J" qualified. B-endosulfan, PPDDT, PCB-1254 and phorate were above the detection limits for the background soils. PCB-1254 and phorate only had one value each above the detection limit and each was less than three times higher than the DL. B-endosulfan had one value above the DL (0.026 ppm, nine times, Boring 10, Sample 4). PPDDT had two values above the detection limit: one seven times (0.069 ppm, Boring 9, Sample 1) and the other less than two times.

For the eight constituents that had values above the DL for background soils (B-endosulfan, PPDDT, PCB-1254 and phorate in the previous paragraph and PPDDE, dieldrin, endrin aldehyde and heptachlor from the second paragraph of this section), the maximum concentrations of four of the constituents (B-endosulfan, PPDDT, phorate, and PPDDE) were at least two orders of magnitude less than the risk-based concentrations (Appendix A, Table A15). None of the four remaining constituents exceeded risk-based concentrations, but several of these constituents had concentrations greater than 1/100 of risk-based concentrations:

Borings/ Sample	Constituents Greater Than 1/100 of RBC	
	Constituent	Fraction of RBC
1/1	PCB-1254	1/44
2/3	PCB-1254	1/53
6/3	Dieldrin	1/88
8/1	Dieldrin	1/55
	PCB-1254	1/4
8/2	PCB-1254	1/28
8/3	PCB-1254	1/30
9/1	Dieldrin	1/9
10/4	Dieldrin	1/28
13/3	Dieldrin	1/44
13/4	Dieldrin	1/88
14/1	Aldrin	1/92
	Heptachlor	1/25

Borings/ Sample	Constituents Greater Than 1/100 of RBC	
	Constituent	Fraction of RBC
14/2	PCB-1254	1/46
14/3	PCB-1254	1/20
14/4	PCB-1254	1/26
15/2	PCB-1254	1/23
Endrin aldehyde did not have risk-based concentrations, but one value did exceed the detection limit in Boring 9, Sample 1.		

Method blanks. No other constituents other than ethyl parathion and those mentioned in the previous paragraphs were detected in the method blank.

Equipment rinses. The results of analysis of the equipment rinses related to these subsurface samples are indicated in Appendix A, Table A16. Except for methyl parathion, all constituents in the rinses were in the method blanks and were at similar concentrations. The constituents detected in the rinsates were at least an order of magnitude below the minimum soil concentration, indicating that the equipment was not causing cross contamination.

Herbicides

The results of analyses are given in Appendix A, Table A17. All values detected were less than 0.06 ppm.

Only 2,4-D and dinoseb were found in the soil subsurface samples and that was only in the background borings. Dinoseb was found only in Boring 3, Sample 3 (0.059 ppm, about twice detection limit), and 2,4-D only at Boring 2, Sample 2 (0.0018 ppm) and Boring 3, Sample 3 (0.006 ppm). Both of the 2,4-D values were "J" qualified.

Appendix A, Table A18 shows the risk-based criteria for the herbicides. The concentrations of 2,4-D and dinoseb detected were at least four orders of magnitude less than the risk-based concentration.

Method blanks. No constituents were detected in the method blank.

Equipment rinses. There were no detectable concentrations of herbicides in the rinsates or associated method blanks.

Total recoverable petroleum hydrocarbons (TRPH)

The results of analyses are given in Appendix A, Table A19.

The detection limit for this constituent was 25 ppm and TRPH was detected above this level at 7 of the 15 boring locations, including two background locations. These concentrations ranged from 40 ppm at Boring 2, Sample 1 to

6,500 ppm in Boring 8, Sample 1. All of these values were located in the Sample 1 position except for Boring 1.

To assess the magnitude and significance of TRPH found in the soils sampled, comparison of the concentrations encountered was made with the action level for TRPH in the State of Indiana.

The action level for TRPH in Indiana is 100 ppm. This concentration was exceeded at five locations, all at the Sample 1 position: Borings 5 (3000 ppm), 6 (1100 ppm), 8 (6500 ppm), 9 (440 ppm), and 10 (1900 ppm).

Method blanks. No constituents were detected in the method blanks.

Equipment rinses. For the one rinsate taken, the concentration of TRPH was 0.1 ppm and was "J" qualified. TRPH was not detected in the associated method blank.

Summary of Analytical Results

Volatile organic analytes (VOAs)

VOAs were detected in surface and subsurface soil samples. However, the maximum value of any constituent detected was less than 0.2 ppm. In every case, the maximum soil concentration detected was at least three orders of magnitude less than the risk-based concentration.

The purpose of surface Samples 16 through 18 was to determine if VOAs found in groundwater at well WES 9-3-81 (Figure 10) was due to surface contamination. Only one constituent that was found in this well was found in a surface sample. That constituent was 1,1,1-trichloroethane and it was only found at location 17 at very low concentration (0.0006 ppm "J" qualified with a detection limit of 0.005 ppm).

Borings 7 through 9 were taken at the R-150 Tank Area to determine if contamination had been removed. Of the previous VOAs detected here (1,1,1-trichloroethane and trichloroethene;), only 1,1,1-trichloroethane was found and only at one location (Boring 7, Sample 1). The concentration was 0.0026, "J" qualified with a detection limit of 0.0055 ppm.

No previous samples were collected at Buildings 2189 and 55 but VOA results under this Phase II study indicate releases, but at low concentrations. As indicated above, the maximum value of any constituent detected was less than 0.2 ppm, and in every case, the maximum soil concentration detected was at least three orders of magnitude less than the risk-based concentration.

Semivolatile organics (BNA's)

The only constituents appearing at levels of concern were in Boring 6, Sample 1. Boring 6 is at the Building 2189 site. Several constituents exceeded detection limits and four exceeded risk-based concentrations at this boring. However, releases were also obvious at Sample 5, Location 1, also at the Building 2189 site.

Metals

With the exception of lead and arsenic, the maximum concentrations of all metals are about two orders of magnitude below the risk-based concentrations. According to Smith 1995, there is no published risk-based concentration for lead, but a soil concentration of 400 ppm is generally considered to be safe. All lead concentrations are less than 400 ppm. Arsenic does exceed the risk-based concentration for the several borings, including the background borings.

Organochlorine pesticides and PCBs

None of these constituents exceeded 0.2 ppm and none exceeded the risk-based concentrations. However, in Boring 8, Sample 1 (R-150 Tank Area), both dieldrin and PCB-1254 were 1/55 and 1/4 of risk-based concentrations, respectively; and at Boring 9, Sample 1 (R-150 Tank Area), dieldrin was only 1/9 risk-based concentrations. While endrin aldehyde does not have a risk-based concentration, it did exceed the detection limit at Boring 9, Sample 1 (R-150 Tank Area). Obviously there has been a release of pesticides and PCBs at these sites.

Herbicides

None of the constituents exceeded 0.5 ppm and all constituents were at least four orders of magnitude less than the risk based concentrations. Nevertheless, the presence of these man-made constituents indicates a release. The only value above the detection limit (three constituents had "J" qualified values) was dinoseb in Boring 3, Sample 3, a background location.

Total recoverable petroleum hydrocarbons (TRPH)

TRPH was detected above its detection limit of 25 ppm in 7 of the 15 boring locations, including two background locations. These concentrations ranged from 40 ppm in Boring 2, Sample 1 to 6,500 ppm in Boring 8, Sample 1. All of these values were located in Sample 1 except for Boring 1. The action level for TRPH in Indiana is 100 ppm. Locations above the action level included the R-150 Tank Area (Boring 8, Sample 1, 6,500 ppm; Boring 9, Sample 1, 440 ppm), Building 55 (Boring 10, Sample 1, 1,900 ppm), and Building 2189 (Boring 5, Sample 1, 3,000 ppm; Boring 6, Sample 1, 1,100 ppm).

6 Groundwater

A Phase III groundwater investigation was not conducted at the PCA/R-150 Tank site because of Department of Defense funding constraints. The following summary of the groundwater conditions was extracted from reports of previous groundwater investigations conducted by USACEWES at the PCA/R-150 Tank site.

In 1981, nine monitoring wells (WES 9-1-81 through WES 9-9-81) were installed by USACEWES (Figure 11). Five monitoring wells (WES 9-10-83 to WES 9-14A-83) were also installed at the PCA/R-150 Tank Site in 1983 (Figure 11). The investigation was followed by a draft report "Definition of Contaminated Ground Water Plumes at the Selected Waste Disposal Sites," Naval Weapons Support Center, Crane, Indiana (Dunbar 1984a). This report indicated that groundwater analysis detected organic contamination. Results indicated trichloroethylene and trans-1,2-dichloroethylene were present in groundwater samples from monitoring well WES 9-3-81. WES 9-3-81 is located in the gravel parking lot adjacent to Highway 349. Water samples taken from an open boring around the R-150 Tank Site identified trichloroethylene. Although contamination was present in groundwater samples from around the R-150 Tank Site, three monitoring wells (WES 9-4-81, WES 9-5-81, and WES 9-8-81) immediately down gradient of the tank were uncontaminated.

In 1986, the six additional wells (WT1P through WT6P) were installed (Figure 11). Trichloroethylene was detected above the method detection limit (0.001 ppm) in monitoring wells WES 9-1-81, WES 9-3-81, WES 9-4-81, WES 9-5-81, WT1P, WT2P, WT3P, and WT4P (Table A21). Trichloroethane was detected in monitoring wells WES 9-3-81, WT2P, WT3P, and WT4P above the method detection limit (0.001 ppm) (Table A21). Results from the September 1991 sampling event are listed in Table A21.

The most recent groundwater analyses, from the July 1992 sampling event, are summarized in Appendix A, Table A22. Table A22 lists the well number, the date sampled, the parameter analyzed, a qualifier (VALUE_A), the amount detected (AMTDET_A) and the unit of measurement (inorganics are in mg/l, although the table does not indicate it). The qualifiers (VALUE_A column) indicate actual amount detected where blank, undetected where "<"; "B" (inorganics) = value is less than CRDT; "B" (organic) = constituent found in blank; "J" = estimated value below DL; N = not within control limits.

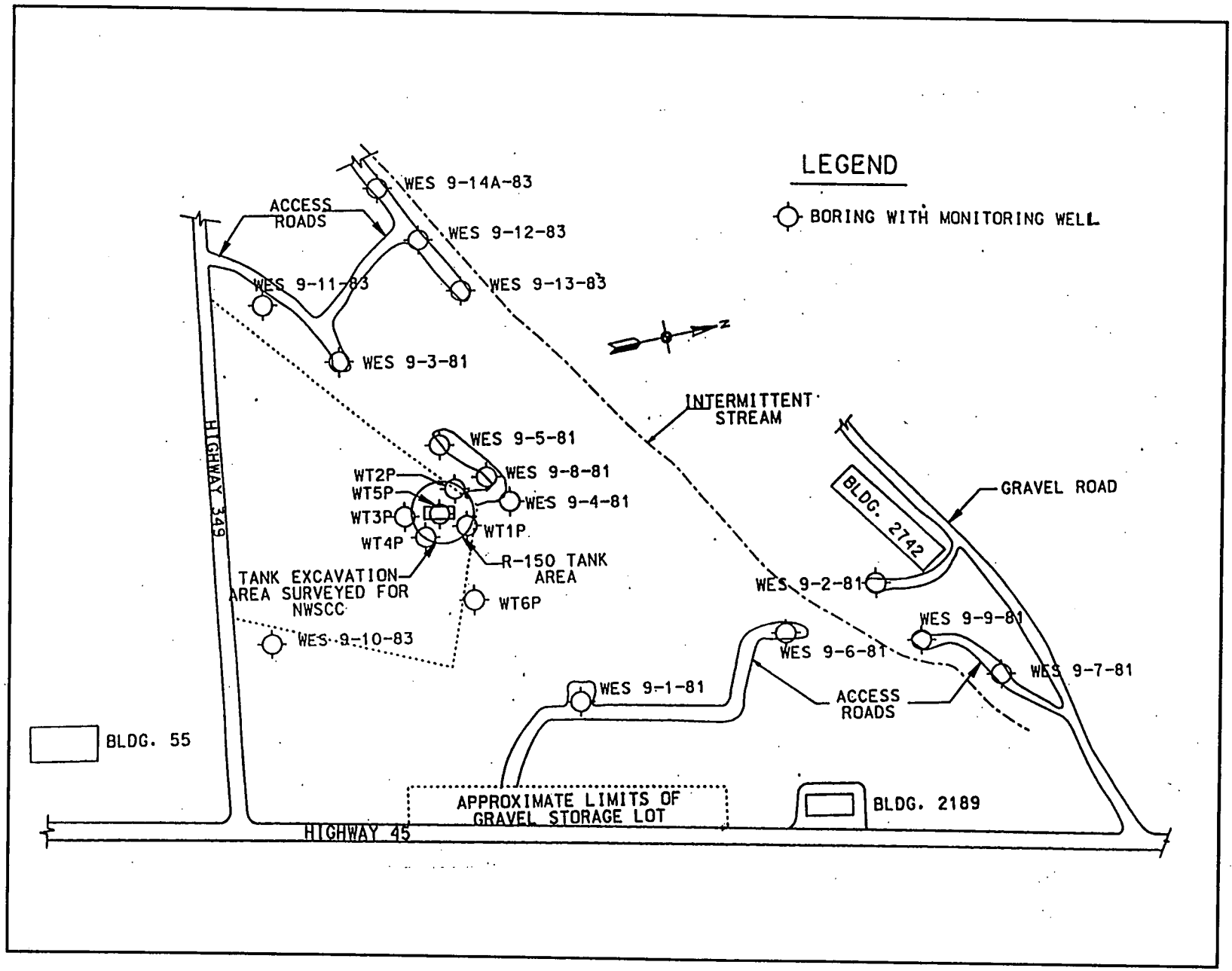

Figure 11. Location of monitoring wells installed in 1981, 1983, and 1986 at PCA/R-150 Tank Site

Preliminary results of the 1992 sampling and analysis event are that wells WES 09-03, WES 09-04, WES 09-05, and WES 09-08 may be contaminated with trichloroethylene, trichloroethane and perhaps one or two other VOAs. Wells WES 09-12 and WES 09-13 showed possible pesticide contamination. Well WES 09-03 is located in a topographic drainage depression that originates near the R-150 tank site. Well WES 09-03 contamination possibly reached the well via surface flow and infiltration through the drainage depression as well as through subsurface flow. All possibly contaminated wells are down-gradient of the R-150 tank site and the PCA.

7 Conclusions

Contamination has occurred at the site but there does not appear to be any risk posed by the concentrations of VOAs and herbicides found. Concentrations of several semivolatile organics appear to pose a potential risk in Boring 6, Sample 1, exceeding detection limits and risk-based concentrations. While none of the pesticides or PCBs exceeded risk-based concentrations, two boring locations (8 and 9, all at sample position one) had at least one constituent concentration near the risk-based concentration.

None of the metals were near risk-based concentrations except for arsenic, which exceeded the carcinogenic concentration in 38 of the 54 samples (including background). Since the occurrence of arsenic was widespread, the concentrations were probably the result of natural soil levels instead of a release.

TRPH contamination above the State of Indiana action level of 100 ppm was present at five boring locations in Sample 1 of each (the uppermost sample). This implies that by State law these areas would need to be cleaned-up.

A Phase III Groundwater Investigation was not conducted at the PCA/R-150 Tank site due to Department of Defense funding constraints. The most recent groundwater results (September 1991 and July 1992) indicated that trichloroethylene and trichloroethane were detected at levels above the method detection limits in some monitoring wells.

8 Recommendations

Since soil contamination and a potential health risk exist at several locations at the PCA/R-150 Tank Site, a Phase III Soils Investigation should be conducted to determine the horizontal and vertical extent of contamination. Locations recommended for further intensive investigation include Borings 6, 8, and 9. These sites should be tested for BNAs, organochlorine pesticides, and PCBs. The remaining locations where intensive investigation is needed to determine the horizontal and vertical extent of contamination from elevated concentrations of TRPH include Borings 5, 6, 8, 9, and 10.

A Phase III Groundwater Investigation should be conducted to characterize the aquifers and determine the horizontal and vertical extent of groundwater contamination.

References

Bledsoe, Ron, Code 0953. (1991). "Site history of PCA/R-150 tank site area," Naval Weapons Support Center, January.

Dunbar, Joseph B. (1982). "Hydrogeological investigation of waste disposal sites at the Naval Weapons Support Center Crane, Indiana," U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.

Dunbar, Joseph B. (1984a) "Definition of contaminated ground-water plumes at selected waste disposal sites, Naval Weapons Support Center, Crane Indiana," U.S. Army Corps of Engineers Waterway Experiment Station, Vicksburg, Mississippi.

Dunbar, Joseph B. (1984b) "Hydrogeological site characterization of the Ammunition Burning Ground for Hazardous Waste Disposal Facility, Naval Weapons Support Center Crane, Indiana," U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.

Hazardous Material Technical Center. (1986). "Navy assessment and control of installation pollutants confirmation study for sites 1, 3, 5, and 8 at the Naval Weapons Support Center Crane," HMTC, Rockville, Maryland, May.

May, James H., and Murphy. W. L. (1989). "Proposed ground-water assessment plan, tank storage closure, pesticide control area, Crane NWSC," Letter Report to James Hunsicker, April 18.

Naval Energy and Environmental Support Activity. (1983). "Initial assessment study of Naval Weapons Support Center Crane, Indiana," NEESA 13-003, Port Hueneme, California, May.

Naval Energy and Environmental Support Activity. (1988). "Sampling and chemical analysis quality assurance requirements for the Navy Installation Restoration Program," NEESA 20.2-047B, Port Hueneme, California, June.

Naval Weapons Support Center, Crane Indiana. (1989). "Proposed groundwater assessment plan for R-150 tank storage closure, pest control area," submitted to Indiana Department of Environmental Management.

Smith, R. L., Senior Toxicologist, Technical Support Section, EPA Region III. (1995). Personal Communication (FAX) to Frank Yelverton, Biologist, Wilmington District, Corps of Engineers regarding risk-based standard for lead.

U.S. Army Engineers Waterways Experiment Station. (1992). "RFI Phase II soils and Phase III groundwater workplan for pest control Area/R-150 tank site, SWMU #09/05 Naval Weapons Support Center, Crane, Indiana," Vicksburg, Mississippi, February.

U.S. Environmental Protection Agency. (1986). *Test methods for evaluating solid waste, physical/chemical methods, SW846*, Third Edition, November (with revisions).

U.S. Environmental Protection Agency, Region III. (1994). Risk-based concentration table, fourth quarter 1994. Roy L. Smith, Senior Toxicologist (3HW13), U.S. EPA Region III.

Appendix A
Tables

Table A1. Pest Control Area/R-150 Tank Site, SWMU #09/05. Target analytes and laboratory methods used for analyses of soils.

SOILS METHODS from SW-846 AND OTHER*			
	Technique	Sample Preparation	Analysis
ORGANIC ANALYSES			
Volatiles	GC/MS	8240	8240
Semi volatiles organics	GC/MS	8270	8270
Organochlorine Pesticides and PBC's	GC/MS	8080	8080
Organophosphorus pesticides	GC/MS	8140	8140
Chlorinated herbicides	GC/MS	8150	8150
Total recoverable petroleum hydrocarbons	IR	9071	418.1[a]
INORGANIC ANALYSES			
Arsenic	GF	3050	7060
Barium	DCP	3050	D4190-82[b]
Cadmiium	GF	3050	6010
Chromiun	DCP	3050	D4190-82
Lead	DCP	3050	D4190-82
Mercury	CV	7471	7471
Selenium	CF	3050	7740
Silver	DCP	3050	D4190-82

Abbreviations:
GF = Graphite Furnace Atomic Absorption; CV = Cold Vapor; IR = Irfrared; and DCP = Direct Current Plasma - Atomic Emission Spectroscopy.

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* Note: All are U.S. EPA SW864 except as indicated by superscripts [a] or [b].

U.S. Environmental Protection Agency, Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, SW, Third Edition, November 1986, with revisions.

[a] Method 418.1 in U.S. Environmental Protection Agency, Methods of Chemical Analysis of Water and Waste, EPA 600/4-79-020, March 1979 and EPA 600/4-82-055 December 1982. Environmental Monitoring and Support Laboratory, Cincinnati, OH 45268.

[b] Method D4190-82 in ASTM, 1987 Annual Book of ASTM Standards, Water and Environmental Technology, VOL 11.01 and 11.02. 1987, 1916 Race Street, Philadelphia, PA 101103.

Table A2 (Page 1 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for volatile organics using EPA Method 8240. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE										
ANALYTE	1#1	1#2	1#3	1#4	2#1	2#2	2#3	2#4	3#1	3#2	3#3
Acetone	0.0140 BJ	0.0790 BJ	0.0320 BJ	0.0220 BJ	0.0085 BJ	0.0350 BJ	0.0240 BJ	0.0041 BJ	0.0037 BJ	0.0370 BJ	0.0340 BJ
Benzene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Bromodichloromethane	0.0058	0.0067	0.0048 J	0.0046 J	0.0055 U	0.0055 U	0.0020 J	0.0055 U	0.0055 U	0.0070	0.0033 J
Bromoform	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Bromomethane	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
2-Butanone	0.1100 U	0.0330 J	0.0110 U	0.0110 U	0.1100 U	0.1100 U	0.1100 U	0.1100 U	0.1100 U	0.1100 U	0.1100 U
Carbon Tetrachloride	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Carbondisulfide	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Chlorobenzene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Chloroethane	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
Chloroform	0.0260	0.0290	0.0140	0.0230	0.0055 U	0.0055 U	0.0210	0.0200	0.0190	0.0320	0.0120
Chloromethane	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
Dibromochloromethane	0.0019 J	0.0020 J	0.0020 J	0.0005 J	0.0055 U	0.0055 U	0.0006 J	0.0006 J	0.0005 J	0.0020 J	0.0055 U
1,1-Dichloroethane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
1,2-Dichloroethane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
1,1-Dichloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
cis-1,2-Dichloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Trans-1,2-Dichloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
1,2-Dichloropropane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Cis-1,3-Dichloropropene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Trans-1,3-Dichloropropene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Ethylbenzene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
2-Hexanone	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U
Methylene Chloride	0.0080 B	0.0077 B	0.0068 B	0.0220 B	0.0210 B	0.0340 B	0.0280 B	0.0240 B	0.0160 B	0.0056 B	0.0110 B
4-Methyl-2-Pentanone	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U
Styrene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
1,1,2,2-Tetrachloroethane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Tetrachloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Toluene	0.0055 U	0.0005 J	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0012 J	0.0055 U
1,1,1-Trichloroethane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
1,1,2-Trichloroethane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Trichloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Vinyl Acetate	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U
Vinyl Chloride	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
T-Xylene	0.0055 U	0.0055 U	0.0006 J	0.0055 U	0.0055 U	0.0055 U	0.0010 J	0.0055 U	0.0055 U	0.0055 U	0.0055 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8240 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical/Chemical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compound was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analyste found in associated method blank as well as sample.
J - Indicates as estimated value below accurate quantitation limits.

Table A2 (Page 2 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for volatile organics using EPA Method 8240. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE										
ANALYTE	4#1	4#2	4#3	4#4	5#1	5#2	6#1	6#2	6#3	7#1	7#2
Acetone	0.0320 BJ	0.1100 B	0.0190 BJ	0.0560 BJ	0.1100 U	0.0240 BJ	0.0110 BJ	0.1500 B	0.0640 BJ	0.0300 BJ	0.1100 U
Benzene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Bromodichloromethane	0.0036 J	0.0055 U	0.0039 J	0.0030 J	0.0032 J	0.0042 J	0.0045 J	0.0055 U	0.0055 U	0.0055 U	0.0044 J
Bromoform	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Bromomethane	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
2-Butanone	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.1100 U	0.0020 J	0.1100 U	0.1100 U
Carbon Tetrachloride	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Carbondisulfide	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Chlorobenzene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0005 BJ	0.0010 BJ	0.0055 U	0.0055 U
Chloroethane	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
Chloroform	0.0140	0.0055 U	0.0180	0.0170	0.0096	0.0200	0.0220	0.0055 U	0.0055 U	0.0055 U	0.0190
Chloromethane	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
Dibromochloromethane	0.0055 U	0.0055 U	0.0012 J	0.0006 J	0.0055 U	0.0012 J	0.0011 J	0.0055 U	0.0055 U	0.0055 U	0.0014 J
1,1-Dichloroethane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
1,2-Dichloroethane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
1,1-Dichloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
cis-1,2-Dichloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Trans-1,2-Dichloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
1,2-Dichloropropane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Cis-1,3-Dichloropropene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Trans-1,3-Dichloropropene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Ethylbenzene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0005 BJ	0.0005 BJ	0.0055 U	0.0055 U
2-Hexanone	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U
Methylene Chloride	0.0220 B	0.0063 B	0.0160 B	0.0300 B	0.0340 B	0.0220 B	0.0250 B	0.0120 B	0.0190 B	0.0220 B	0.0120 B
4-Methyl-2-Pentanone	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U
Styrene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0006 BJ	0.0055 U	0.0055 U
1,1,2,2-Tetrachloroethane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Tetrachloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Toluene	0.0055 U	0.0055 U	0.0006 J	0.0055 U	0.0006 J	0.0055 U	0.0005 J	0.0011 J	0.0006 J	0.0055 U	0.0055 U
1,1,1-Trichloroethane	0.0005 J	0.0055 U	0.0055 U	0.0055 U	0.0078	0.0037 J	0.0027 J	0.0055 U	0.0055 U	0.0026 J	0.0055 U
1,1,2-Trichloroethane	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Trichloroethene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Vinyl Acetate	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U	0.0550 U
Vinyl Chloride	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
T-Xylene	0.0045 J	0.0032 J	0.0055 U	0.0055 U	0.0021 J	0.0011 J	0.0012 J	0.0042 BJ	0.0024 BJ	0.0055 U	0.0055 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8240 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical/Chemical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compound was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analyste found in associated method blank as well as sample.
J - Indicates as estimated value below accurate quantitation limits.

Table A2 (Page 3 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for volatile organics using EPA Method 8240. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

ANALYTE	BORING/SAMPLE										
	7#3	8#1	8#2	8#3	8#4	9#1	9#2	9#3	10#1	10#2	10#3
Acetone	0.1200 U	0.1100 U	0.1400 B	0.0340 BJ	0.0210 BJ	0.1100 U	0.0370 BJ	0.1200 B	0.0280 BJ	0.0670 BJ	0.0910 BJ
Benzene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Bromodichloromethane	0.0044 J	0.0035 J	0.0055 J	0.0058 J	0.0037 J	0.0055 U	0.0064	0.0007 J	0.0042 J	0.0060 U	0.0020 J
Bromoform	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Bromomethane	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0100 U	0.0120 U	0.0120 U
2-Butanone	0.1200 U	0.1100 U	0.1200 U	0.1200 U	0.1200 U	0.1100 U	0.1200 U	0.1100 U	0.1000 U	0.1200 U	0.1200 U
Carbon Tetrachloride	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Carbondisulfide	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Chlorobenzene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Chloroethane	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0100 U	0.0120 U	0.0120 U
Chloroform	0.0200	0.0150	0.0270	0.0240	0.0180	0.0055 U	0.0390	0.0081	0.0140	0.0100	0.0092
Chloromethane	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0100 U	0.0120 U	0.0120 U
Dibromochloromethane	0.0014 J	0.0010 J	0.0013 J	0.0024 J	0.0011 J	0.0055 U	0.0025 J	0.0055 U	0.0009 J	0.0060 U	0.0060 U
1,1-Dichloroethane	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
1,2-Dichloroethane	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
1,1-Dichloroethene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
cis-1,2-Dichloroethene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Trans-1,2-Dichloroethene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
1,2-Dichloropropane	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Cis-1,3-Dichloropropene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Trans-1,3-Dichloropropene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Ethylbenzene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0018 J	0.0060 U	0.0060 U
2-Hexanone	0.0600 U	0.0550 U	0.0600 U	0.0600 U	0.0600 U	0.0550 U	0.0600 U	0.0550 U	0.0500 U	0.0600 U	0.0600 U
Methylene Chloride	0.0100 B	0.0160 B	0.0190 B	0.0260 B	0.0190 B	0.0240 B	0.0110 B	0.0380 B	0.0390 B	0.0360 B	0.0370 B
4-Methyl-2-Pentanone	0.0600 U	0.0550 U	0.0600 U	0.0600 U	0.0600 U	0.0550 U	0.0600 U	0.0550 U	0.0500 U	0.0600 U	0.0600 U
Styrene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
1,1,2,2-Tetrachloroethane	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Tetrachloroethene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Toluene	0.0060 U	0.0055 U	0.0022 J	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0009 J	0.0020 J	0.0060 U	0.0060 U
1,1,1-Trichloroethane	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
1,1,2-Trichloroethane	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Trichloroethene	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0050 U	0.0060 U	0.0060 U
Vinyl Acetate	0.0600 U	0.0550 U	0.0600 U	0.0600 U	0.0600 U	0.0500 U	0.0600 U	0.0550 U	0.0500 U	0.0600 U	0.0600 U
Vinyl Chloride	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0100 U	0.0120 U	0.0120 U
T-Xylene	0.0060 U	0.0055 U	0.0031 J	0.0008 J	0.0060 U	0.0055 U	0.0060 U	0.0055 U	0.0120	0.0012 J	0.0060 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
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B - Analyste found in associated method blank as well as sample.
J - Indicates as estimated value below accurate quantitation limits.

Table A2 (Page 4 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for volatile organics using EPA Method 8240. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE										
ANALYTE	10#4	11#1	11#2	11#3	12#1	12#2	13#1	13#2	13#3	13#4	14#1
Acetone	0.0510 BJ	0.1100 U	0.0260 BJ	0.0410 BJ	0.0510 BJ	0.1200 U	0.0320 BJ	0.0240 BJ	0.0620 BJ	0.0520 BJ	0.1600 B
Benzene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0010 BJ	0.0011 BJ	0.0060 U	0.0060 U	0.0060 U
Bromodichloromethane	0.0005 J	0.0049 J	0.0044 J	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0039 J	0.0060 U	0.0039 J	0.0053 J
Bromoform	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Bromomethane	0.0120 U	0.0110 U	0.0110 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U
2-Butanone	0.1200 U	0.1100 U	0.1100 U	0.0180 BJ	0.1100 U	0.1200 U	0.1200 U	0.1200 U	0.1200 U	0.1200 U	0.1200 U
Carbon Tetrachloride	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Carbondisulfide	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Chlorobenzene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0008 BJ	0.0007 BJ	0.0060 U	0.0060 U	0.0060 U
Chloroethane	0.0120 U	0.0110 U	0.0110 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U
Chloroform	0.0030 J	0.0160	0.0180	0.0060 U	0.0036 J	0.0037 J	0.0003 BJ	0.0190 B	0.0060 U	0.0230	0.0310
Chloromethane	0.0120 U	0.0110 U	0.0110 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U
Dibromochloromethane	0.0060 U	0.0014 J	0.0012 J	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0009 J	0.0060 U	0.0007 J	0.0060 U
1,1-Dichloroethane	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
1,2-Dichloroethane	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
1,1-Dichloroethene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
cis-1,2-Dichloroethene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Trans-1,2-Dichloroethene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
1,2-Dichloropropane	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Cis-1,3-Dichloropropene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Trans-1,3-Dichloropropene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Ethylbenzene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0008 BJ	0.0008 BJ	0.0060 U	0.0060 U	0.0060 U
2-Hexanone	0.0600 U	0.0550 U	0.0550 U	0.0600 U	0.0550 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U
Methylene Chloride	0.0440 B	0.0170 B	0.0180 B	0.0220 B	0.0220 B	0.0110 B	0.0130 B	0.0048 BJ	0.0410 B	0.0420 B	0.0420 B
4-Methyl-2-Pentanone	0.0600 U	0.0550 U	0.0550 U	0.0600 U	0.0550 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U
Styrene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0006 BJ	0.0060 U	0.0060 U	0.0060 U	0.0060 U
1,1,2,2-Tetrachloroethane	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Tetrachloroethene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Toluene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0008 J	0.0010 J	0.0060 U	0.0060 U	0.0060 U
1,1,1-Trichloroethane	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
1,1,2-Trichloroethane	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Trichloroethene	0.0060 U	0.0055 U	0.0055 U	0.0060 U	0.0055 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Vinyl Acetate	0.0600 U	0.0550 U	0.0550 U	0.0600 U	0.0550 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U
Vinyl Chloride	0.0120 U	0.0110 U	0.0110 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U
T-Xylene	0.0014 J	0.0055 U	0.0010 J	0.0060 U	0.0055 U	0.0060 U	0.0034 BJ	0.0029 BJ	0.0060 U	0.0060 U	0.0060 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
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J - Indicates as estimated value below accurate quantitation limits.

Table A2 (Page 5 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for volatile organics using EPA Method 8240. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

ANALYTE	BORING/SAMPLE						
	14#2	14#3	14#4	15#1	15#2	15#3	15#4
Acetone	0.0910 BJ	0.0600 BJ	0.0710 BJ	0.0610 BJ	0.0530 BJ	0.0870 BJ	0.0330 BJ
Benzene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Bromodichloromethane	0.0068	0.0038 J	0.0060 U	0.0043 J	0.0058 J	0.0021 J	0.0033 J
Bromoform	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Bromomethane	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0110 U
2-Butanone	0.0130 J	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0110 J	0.1100 U
Carbon Tetrachloride	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Carbondisulfide	0.0034 J	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Chlorobenzene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Chloroethane	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0110 U
Chloroform	0.0190	0.0130	0.0060 U	0.0220	0.0260	0.0210	0.0180
Chloromethane	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0110 U
Dibromochloromethane	0.0025 J	0.0060 U	0.0060 U	0.0007 J	0.0020 J	0.0007 J	0.0010 J
1,1-Dichloroethane	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
1,2-Dichloroethane	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
1,1-Dichloroethene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
cis-1,2-Dichloroethene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Trans-1,2-Dichloroethene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
1,2-Dichloropropane	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Cis-1,3-Dichloropropene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Trans-1,3-Dichloropropene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Ethylbenzene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
2-Hexanone	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0550 U
Methylene Chloride	0.0190 B	0.0290 B	0.0130 B	0.0150 B	0.0120 B	0.0180 B	0.0170 B
4-Methyl-2-Pentanone	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0550 U
Styrene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0550 U
1,1,2,2-Tetrachloroethane	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Tetrachloroethene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Toluene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
1,1,1-Trichloroethane	0.0060 U	0.0060 U	0.0060 U	0.0011 J	0.0023 J	0.0060 U	0.0055 U
1,1,2-Trichloroethane	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Trichloroethene	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0055 U
Vinyl Acetate	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0550 U
Vinyl Chloride	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0110 U
T-Xylene	0.0060 U	0.0060 U	0.0008 J	0.0060 U	0.0060 U	0.0060 U	0.0055 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
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B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.

Table A2 (Page 6 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of surface soils collected August 1992 for volatile organics using EPA Method 8240. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

ANALYTE	SAMPLE 16	17	18
Acetone	0.0410 BJ	0.0340 BJ	0.1200 U
Benzene	0.0050 U	0.0060 U	0.0060 U
Bromodichloromethane	0.0050 U	0.0039 J	0.0048 J
Bromoform	0.0050 U	0.0060 U	0.0060 U
Bromomethane	0.0100 U	0.0120 U	0.0120 U
2-Butanone	0.1000 U	0.1200 U	0.1200 U
Carbon Tetrachloride	0.0050 U	0.0060 U	0.0060 U
Carbondisulfide	0.0050 U	0.0060 U	0.0060 U
Chlorobenzene	0.0050 U	0.0060 U	0.0060 U
Chloroethane	0.0100 U	0.0120 U	0.0120 U
Chloroform	0.0050 U	0.0150	0.0220
Chloromethane	0.0100 U	0.0120 U	0.0120 U
Dibromochloromethane	0.0050 U	0.0060 U	0.0008 J
1,1-Dichloroethane	0.0050 U	0.0060 U	0.0060 U
1,2-Dichloroethane	0.0050 U	0.0060 U	0.0060 U
1,1-Dichloroethene	0.0050 U	0.0060 U	0.0060 U
cis-1,2-Dichloroethene	0.0050 U	0.0060 U	0.0060 U
Trans-1,2-Dichloroethene	0.0050 U	0.0060 U	0.0060 U
1,2-Dichloropropane	0.0050 U	0.0060 U	0.0060 U
Cis-1,3-Dichloropropene	0.0050 U	0.0060 U	0.0060 U
Trans-1,3-Dichloropropene	0.0050 U	0.0060 U	0.0060 U
Ethylbenzene	0.0050 U	0.0060 U	0.0060 U
2-Hexanone	0.0500 U	0.0600 U	0.0600 U
Methylene Chloride	0.0200 B	0.0120 B	0.0091 B
4-Methyl-2-Pentanone	0.0500 U	0.0600 U	0.0600 U
Styrene	0.0050 U	0.0060 U	0.0060 U
1,1,2,2-Tetrachloroethane	0.0050 U	0.0060 U	0.0060 U
Tetrachloroethene	0.0050 U	0.0060 U	0.0060 U
Toluene	0.0050 U	0.0060 U	0.0060 U
1,1,1-Trichloroethane	0.0050 U	0.0006 J	0.0060 U
1,1,2-Trichloroethane	0.0050 U	0.0060 U	0.0060 U
Trichloroethene	0.0050 U	0.0060 U	0.0060 U
Vinyl Acetate	0.0500 U	0.0600 U	0.0600 U
Vinyl Chloride	0.0100 U	0.0120 U	0.0120 U
T-Xylene	0.0050 U	0.0060 U	0.0060 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
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B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.

Table A3. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of method blanks associated with analyses of surface and subsurface soils collected August 1992 for VOA's. Only analytes detected in the method blanks are presented in the table. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for boring locations.

VOA ANALYTE	CONC	METHOD BLANK	BORING#DEPTH
Acetone	0.00800 J	1	1#1-1#4, 4#1
Acetone	0.00430 J	2	2#1-3#1
Acetone	0.01400 J	3	4#2-6#1
Acetone	0.06900 J	4	6#2 6#3
Acetone	0.00480 J	5	7#1-8#4, 17#1
Acetone	0.01500 J	6	9#1 9#2 16#1 18#1
Acetone	0.00450 J	7	9#2-11#1
Acetone	0.01600 J	8	11#3-12 #2
Acetone	0.06900 J	9	13#1 13#2
Acetone	0.02700 J	10	13#3-14#3
Acetone	0.00300 J	11	14#4-15#4
Benzene	0.00040 J	9	13#1 13#2
Bromomethane	0.00010 J	9	13#1 13#2
2-Butanone	0.00510 J	8	11#3-12 #2
Chlorobenzene	0.00070 J	4	6#2 6#3
Chlorobenzene	0.00070 J	9	13#1 13#2
Chloroform	0.00040 J	9	13#1 13#2
Cis-1,3-Dichloropropene	0.00050 J	4	6#2 6#3
Cis-1,3-Dichloropropene	0.00050 J	9	13#1 13#2
Ethylbenzene	0.00090 J	4	6#2 6#3
Ethylbenzene	0.00090 J	9	13#1 13#2
2-Hexanone	0.00180 J	8	11#3-12 #2
Methylene Chloride	0.00230 J	1	1#1-1#4, 4#1
Methylene Chloride	0.00060 J	2	2#1-3#1
Methylene Chloride	0.00120 J	3	4#2-6#1
Methylene Chloride	0.00170 J	4	6#2 6#3
Methylene Chloride	0.00110 J	5	7#1-8#4, 17#1
Methylene Chloride	0.00360 J	6	9#1 9#2 16#1 18#1
Methylene Chloride	0.00750	7	9#2-11#1
Methylene Chloride	0.00110 J	8	11#3-12 #2
Methylene Chloride	0.00180 J	9	13#1 13#2
Methylene Chloride	0.00140 J	10	13#3-14#3
Methylene Chloride	0.00090 J	11	14#4-15#4
Styrene	0.00070 J	4	6#2 6#3
Styrene	0.00070 J	9	13#1 13#2
T-Xylene	0.00240 J	4	6#2 6#3
T-Xylene	0.00240 J	9	13#1 13#2

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
J - Indicates an estimated value below accurate quantitation limits.

Table A4. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of trip and field blanks and associated method blanks for analyses of surface and subsurface soils collected August 1992 for VOA's. Only analytes detected are presented in the table. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for boring locations.

VOA ANALYTE	CONC		RINSE/ METHOD BLANK	BORING#DEPTH
Acetone	0.0110	BJ	TRIP BLANK 1	1#1-3#3
Methylene Chloride	0.0009	BJ	TRIP BLANK 1	1#1-3#3
Methylene Chloride	0.0014	BJ	TRIP BLANK 2	4#1-6#3
Bromodichloromethane	0.0130		FIELD BLANK 1	
Chloroform	0.1100		FIELD BLANK 1	
Dibromochloromethane	0.0009	J	FIELD BLANK 1	
Acetone	0.0043	J	METHOD BLANK	
Methylene Chloride	0.0006	J	METHOD BLANK	
Bromodichloromethane	0.0120		FIELD BLANK 2	
Chloroform	0.0940		FIELD BLANK 2	
Dibromochloromethane	0.0011	J	FIELD BLANK 2	
Methylene Chloride	0.0018	BJ	FIELD BLANK 2	
T-Xylene	0.0001	J	FIELD BLANK 2	
Methylene Chloride	0.0032	BJ	TRIP BLANK 3	7#1-9#2,16-18
Methylene Chloride	0.0024	J	METHOD BLANK	
Methylene Chloride	0.0019	BJ	TRIP BLANK 4	Rinsates 4 and 5
Methylene Chloride	0.0046	BJ	TRIP BLANK 5	Rinsates 4 and 5
Methylene Chloride	0.0024	J	METHOD BLANK	

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
J - Indicates an estimated value below accurate quantitation limits.
B- Indicates analyte is found in the associated blank as well as in the sample.

Table A5. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Comparison of results of VOAs of subsurface and surface soil samples to risk-based concentrations for industrial soils. Only analytes detected are presented in the table. See Figure 10 for sample locations and Table A2 for complete data. Concentrations are mg/kg (ppm) dry weight.

ANALYTE	SOIL CONCENTRATION MAX		NUMBER ** DETECTED	STATIONS WITH CONCENTRATION >= DETECTION LIMIT (54 STATIONS TOTAL)	RISK-BASED CONCENTRATION INDUSTRIAL SOIL * @
Acetone	0.16000	B	46	5	200,000 n
Benzene	0.00110	BJ	2	0	200 c
Bromodichloromethane	0.00700		37	4	92 c
2-Butanone	0.03300	J	5	0	1,000,000 n
Carbondisulfide	0.00340	J	1	0	200,000 n
Chlorobenzene	0.00600	BJ	4	0	41,000 n
Chloroform	0.03900		43	39	940 c
Dibromochloromethane	0.00250	J	30	0	68 c
Ethylbenzene	0.00180	J	5	0	200,000 n
Methylene Chloride	0.04400	B	54	53	760 c
Styrene	0.00560	BJ	2	0	410,000 n
Toluene	0.00220	J	12	0	410,000 n
1,1,1-Trichloroethane	0.00780		7	1	180,000 n
T-Xylene	0.01200		18	1	1,000,000 n

Notes:
Risk-Based Concentrations * - Risk-Based Concentration Table, 1/31/95. Roy L. Smith, Senior Toxicologist(3HW13), U. S. EPA Region III. Risk Based Concentrations are in mg/kg. Basis of RBC: c=carcinogenic effect; n=noncarcinogenic effect.
MEAN - Mean computed using the reported detection limit for those samples with results reported as < detection limit (U qualified). See table 5.x.
(-) - No risk-based concentration available.
B - Indicates analyte is found in the associated blank as well as in the sample.
@ - None of the contaminants exceeded the risk-based concentrations.

Table A6 (Page 1 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for BNAs using EPA Method 8270. Concentrations are mg/kg (ppm) dry weight. See Figure10 for sample locations. Samples with detectable concentrations are shown in gray.

ANALYTE	BORING/SAMPLE 1#1	1#2	1#3	1#4	2#1	2#2	2#3	2#4	3#1	3#2
Acenaphthene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Acenaphthylene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Aniline	1.60 U	1.60 U	1.50 U	1.60 U	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.50 U
Anthracene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Benzidine	4.00 U	4.00 U	3.80 U	3.90 U	4.00 U	3.80 U	4.00 U	3.80 U	3.80 U	3.60 U
Benzo(a)Anthracene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Benzo(b)Fluoranthene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Benzo(k)Fluoranthene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Benzo(G,H,I)Perylene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Benzo(a)Pyrene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Benzoic Acid	4.00 U	4.00 U	3.80 U	3.90 U	4.00 U	3.80 U	4.00 U	3.80 U	3.80 U	3.60 U
Benzyl Alcohol	1.60 U	1.60 U	1.50 U	1.60 U	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.50 U
Bis(2-Chloroethoxy)Methane	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Bis(2-Chloroethyl)Ether	0.80 U	0.80 U	0.80 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Bis(2-Chloroisopropyl)Ether	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Bis(2-Ethylhexyl)Phthalate	0.18 J	0.12 J	0.75 U	0.04 BJ	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
4-Bromophenyl Ether	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Butylbenzylphthalate	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
4-Chloroaniline	1.60 U	1.60 U	1.50 U	1.60 U	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.50 U
4-Chloro-3-Methylphenol	1.60 U	1.60 U	1.50 U	1.60 U	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.50 U
2-Chloronaphthalene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2-Chlorophenol	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
4-Chlorophenyl Phenyl Ether	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Chrysene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Di-N-Octylphthalate	0.80 U	0.80 U	0.75 U	0.15 J	0.80 U	0.75 U	0.15 J	0.77 U	0.77 U	0.73 U
Dibenzo(A,H)Anthracene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Dibenzofuran	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Dibutylphthalate	0.80 U	0.21 J	0.75 U	0.11 BJ	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.29 BJ
1,2-Dichlorobenzene	0.80 U	0.80 U	0.80 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
1,3-Dichlorobenzene	0.80 U	0.80 U	0.80 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
1,4-Dichlorobenzene	0.80 U	0.80 U	0.80 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
3,3'Dichlorobenzidine	1.60 U	1.60 U	1.50 U	1.60 U	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.50 U
2,4-Dichlorophenol	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Diethyl Phthalate	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Dimethyl Phthalate	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2,4-Dimethylphenol	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2,4-Dinitrophenol	4.00 U	4.00 U	3.80 U	3.90 U	4.00 U	3.80 U	4.00 U	3.80 U	3.80 U	3.60 U
2,4-Dinitrotoluene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2,6-Dinitrotoluene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
1,2-Diphenylhydrazine	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Fluoranthene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Fluorene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Hexachlorobenzene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Hexachlorobutadiene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Hexachlorocyclopentadiene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Hexachloroethane	0.80 U	0.80 U	0.80 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Indeno(1,2,3-C,D)Pyrene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Isophorone	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2-Methyl-4,6-Dinotrophenol	4.00 U	4.00 U	3.80 U	3.90 U	4.00 U	3.80 U	4.00 U	3.80 U	3.80 U	3.60 U
2-Methylnaphthalene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2-Methylphenol	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
4-Methylphenol	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Naphthalene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2-Nitroaniline	4.00 U	4.00 U	3.80 U	3.90 U	4.00 U	3.80 U	4.00 U	3.80 U	3.80 U	3.60 U
3-Nitroaniline	4.00 U	4.00 U	3.80 U	3.90 U	4.00 U	3.80 U	4.00 U	3.80 U	3.80 U	3.60 U
4-Nitroaniline	4.00 U	4.00 U	3.80 U	3.90 U	4.00 U	3.80 U	4.00 U	3.80 U	3.80 U	3.60 U
Nitrobenzene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2-Nitrophenol	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
4-Nitrophenol	4.00 U	4.00 U	3.80 U	3.90 U	4.00 U	3.80 U	4.00 U	3.80 U	3.80 U	3.60 U
N-Nitrosodimethylamine	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
N-Nitrosodiphenyl Amine	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
N-Nitroso-Di-N-Propylamine	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Pentachlorophenol	4.00 U	4.00 U	3.80 U	3.90 U	4.00 U	3.80 U	4.00 U	3.80 U	3.80 U	3.60 U
Phenanthrene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Phenol	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
Pyrene	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
1,2,4-Trichlorobenzene	0.80 U	0.80 U	0.80 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2,4,5-Trichlorophenol	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U
2,4,6-Trichlorophenol	0.80 U	0.80 U	0.75 U	0.78 U	0.80 U	0.75 U	0.81 U	0.77 U	0.77 U	0.73 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8270 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A6 (Page 2 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for BNAs using EPA Method 8270. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

ANALYTE	BORING/SAMPLE 3#3	4#1	4#2	4#3	4#4	5#1	5#2	6#1	6#2	6#3
Acenaphthene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	4.90 J	0.81 U	0.75 U
Acenaphthylene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Aniline	1.60 U	1.60 U	1.50 U	1.50 U	1.50 U	15.00 U	1.60 U	28.00 U	1.60 U	1.50 U
Anthracene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	0.20 J	0.78 U	11.00 J	0.81 U	0.75 U
Benzidine	4.00 U	3.90 U	3.60 U	3.70 U	3.70 U	38.00 U	3.90 U	70.00 U	4.00 U	3.80 U
Benzo(a)Anthracene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	0.56 J	0.78 U	29.00	0.81 U	0.75 U
Benzo(b)Fluoranthene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	0.32 J	0.78 U	29.00	0.81 U	0.75 U
Benzo(k)Fluoranthene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	0.43 J	0.78 U	19.00	0.81 U	0.75 U
Benzo(G,H,I)Perylene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	9.70 J	0.81 U	0.75 U
Benzo(a)Pyrene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	27.00	0.81 U	0.75 U
Benzoic Acid	4.00 U	3.90 U	3.60 U	0.02 J	3.70 U	38.00 U	3.90 U	70.00 U	4.00 U	3.80 U
Benzyl Alcohol	1.60 U	1.60 U	1.50 U	1.50 U	1.50 U	15.00 U	1.60 U	28.00 U	1.60 U	1.50 U
Bis(2-Chloroethoxy)Methane	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Bis(2-Chloroethyl)Ether	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Bis(2-Chloroisopropyl)Ether	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Bis(2-Ethylhexyl)Phthalate	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.10 J	14.00 U	0.17 J	0.75 U
4-Bromophenyl Ether	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Butylbenzylphthalate	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
4-Chloroaniline	1.60 U	1.60 U	1.50 U	1.50 U	1.50 U	15.00 U	1.60 U	28.00 U	1.60 U	1.50 U
4-Chloro-3-Methylphenol	1.60 U	1.60 U	1.50 U	1.50 U	1.50 U	15.00 U	1.60 U	28.00 U	1.60 U	1.50 U
2-Chloronaphthalene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
2-Chlorophenol	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
4-Chlorophenyl Phenyl Ether	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Chrysene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	0.62 J	0.78 U	34.00	0.81 U	0.75 U
Di-N-Octylphthalate	0.80 U	0.78 U	0.73 U	0.74 U	0.07 J	7.60 U	0.78 U	14.00 U	0.27 J	0.07 J
Dibenzo(A,H)Anthracene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Dibenzofuran	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	2.00 J	0.81 U	0.75 U
Dibutylphthalate	0.19 BJ	0.78 U	0.64 BJ	6.90 B	6.10 B	0.32 BJ	0.18 BJ	14.00 U	0.81 U	0.75 U
1,2-Dichlorobenzene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
1,3-Dichlorobenzene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
1,4-Dichlorobenzene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
3,3'Dichlorobenzidine	1.60 U	1.60 U	1.50 U	1.50 U	1.50 U	15.00 U	1.60 U	28.00 U	1.60 U	1.50 U
2,4-Dichlorophenol	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Diethyl Phthalate	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Dimethyl Phthalate	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
2,4-Dimethylphenol	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
2,4-Dinitrophenol	4.00 U	3.90 U	3.60 U	3.70 U	3.70 U	38.00 U	3.90 U	70.00 U	4.00 U	3.80 U
2,4-Dinitrotoluene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
2,6-Dinitrotoluene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
1,2-Diphenylhydrazine	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Fluoranthene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	1.30 J	0.78 U	55.00	0.81 U	0.75 U
Fluorene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	6.00 J	0.81 U	0.75 U
Hexachlorobenzene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Hexachlorobutadiene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Hexachlorocyclopentadiene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Hexachloroethane	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Indeno(1,2,3-C,D)Pyrene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	11.00 J	0.81 U	0.75 U
Isophorone	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
2-Methyl-4,6-Dinotrophenol	4.00 U	3.90 U	3.60 U	3.70 U	3.70 U	38.00 U	3.90 U	70.00 U	4.00 U	3.80 U
2-Methylnaphthalene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
2-Methylphenol	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
4-Methylphenol	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Naphthalene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	0.21 J	0.81 U	0.75 U
2-Nitroaniline	4.00 U	3.90 U	3.60 U	3.70 U	3.70 U	38.00 U	3.90 U	70.00 U	4.00 U	3.80 U
3-Nitroaniline	4.00 U	3.90 U	3.60 U	3.70 U	3.70 U	38.00 U	3.90 U	70.00 U	4.00 U	3.80 U
4-Nitroaniline	4.00 U	3.90 U	3.60 U	3.70 U	3.70 U	38.00 U	3.90 U	70.00 U	4.00 U	3.80 U
Nitrobenzene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
2-Nitrophenol	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
4-Nitrophenol	4.00 U	3.90 U	3.60 U	3.70 U	3.70 U	38.00 U	3.90 U	70.00 U	4.00 U	3.80 U
N-Nitrosodimethylamine	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
N-Nitrosodiphenyl Amine	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
N-Nitroso-Di-N-Propylamine	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Pentachlorophenol	4.00 U	3.90 U	3.60 U	3.70 U	3.70 U	38.00 U	3.90 U	70.00 U	4.00 U	3.80 U
Phenanthrene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	0.64 J	0.78 U	49.00	0.81 U	0.75 U
Phenol	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
Pyrene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	1.30 J	0.78 U	88.00	0.81 U	0.75 U
1,2,4-Trichlorobenzene	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
2,4,5-Trichlorophenol	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U
2,4,6-Trichlorophenol	0.80 U	0.78 U	0.73 U	0.74 U	0.74 U	7.60 U	0.78 U	14.00 U	0.81 U	0.75 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8270 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A6 (Page 3 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for BNAs using EPA Method 8270. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

ANALYTE	BORING/SAMPLE 7#1	7#2	7#3	8#1	8#2	8#3	8#4	9#1	9#2	10#1
Acenaphthene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Acenaphthylene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Aniline	1.50 U	1.60 U	1.60 U	1.50 U	1.60 U	1.60 U	1.60 U	1.60 U	1.50 U	1.40 U
Anthracene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.02 J	0.75 U	0.68 U
Benzidine	3.70 U	3.80 U	4.00 U	3.80 U	4.00 U	3.90 U	4.00 U	4.00 U	3.80 U	3.40 U
Benzo(a)Anthracene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Benzo(b)Fluoranthene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Benzo(k)Fluoranthene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Benzo(G,H,I)Perylene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Benzo(a)Pyrene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Benzoic Acid	3.70 U	3.80 U	4.00 U	3.80 U	4.00 U	3.90 U	4.00 U	4.00 U	3.80 U	3.40 U
Benzyl Alcohol	1.50 U	1.50 U	1.60 U	1.50 U	1.60 U	1.60 U	1.60 U	1.60 U	1.20 U	1.40 U
Bis(2-Chloroethoxy)Methane	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Bis(2-Chloroethyl)Ether	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Bis(2-Chloroisopropyl)Ether	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Bis(2-Ethylhexyl)Phthalate	0.74 U	0.04 J	0.79 U	0.11 BJ	0.06 BJ	0.11 J	0.05 J	0.10 BJ	0.75 U	0.68 U
4-Bromophenyl Ether	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Butylbenzylphthalate	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
4-Chloroaniline	1.50 U	1.60 U	1.60 U	1.50 U	1.60 U	1.60 U	1.60 U	1.60 U	1.50 U	1.40 U
4-Chloro-3-Methylphenol	1.50 U	1.50 U	1.60 U	1.50 U	0.81 U	1.60 U	1.60 U	1.60 U	1.20 U	1.40 U
2-Chloronaphthalene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
2-Chlorophenol	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
4-Chlorophenyl Phenyl Ether	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Chrysene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Di-N-Octylphthalate	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.13 J	0.14 J	0.79 U	0.68 U
Dibenzo(A,H)Anthracene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Dibenzofuran	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Dibutylphthalate	0.08 BJ	0.27 BJ	0.79 U	0.18 BJ	0.13 BJ	0.02 BJ	0.88 B	0.12 BJ	0.08 BJ	0.13 BJ
1,2-Dichlorobenzene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
1,3-Dichlorobenzene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
1,4-Dichlorobenzene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
3,3'Dichlorobenzidine	1.50 U	1.50 U	1.60 U	1.50 U	1.60 U	1.60 U	1.60 U	1.60 U	1.20 U	1.40 U
2,4-Dichlorophenol	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Diethyl Phthalate	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.05 BJ	0.75 U	0.68 U
Dimethyl Phthalate	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
2,4-Dimethylphenol	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
2,4-Dinitrophenol	3.70 U	3.80 U	4.00 U	3.80 U	4.00 U	3.90 U	4.00 U	4.00 U	3.80 U	3.40 U
2,4-Dinitrotoluene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
2,6-Dinitrotoluene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
1,2-Diphenylhydrazine	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Fluoranthene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Fluorene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.04 J	0.75 U	0.68 U
Hexachlorobenzene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Hexachlorobutadiene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Hexachlorocyclopentadiene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Hexachloroethane	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Indeno(1,2,3-C,D)Pyrene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Isophorone	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
2-Methyl-4,6-Dinotrophenol	3.70 U	3.80 U	4.00 U	3.80 U	4.00 U	3.90 U	4.00 U	4.00 U	3.80 U	3.40 U
2-Methylnaphthalene	0.74 U	0.75 U	0.79 U	0.06 J	0.81 U	0.78 U	4.00 U	0.79 U	0.75 U	0.68 U
2-Methylphenol	0.74 U	0.75 U	0.79 U	0.21 J	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
4-Methylphenol	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Naphthalene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
2-Nitroaniline	3.70 U	3.80 U	4.00 U	3.80 U	4.00 U	3.90 U	4.00 U	4.00 U	3.80 U	3.40 U
3-Nitroaniline	3.70 U	3.80 U	4.00 U	3.80 U	4.00 U	3.90 U	4.00 U	4.00 U	3.80 U	3.40 U
4-Nitroaniline	3.70 U	3.80 U	4.00 U	3.80 U	4.00 U	3.90 U	4.00 U	4.00 U	3.80 U	3.40 U
Nitrobenzene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
2-Nitrophenol	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
4-Nitrophenol	3.70 U	3.80 U	4.00 U	3.80 U	4.00 U	3.90 U	4.00 U	4.00 U	3.80 U	3.40 U
N-Nitrosodimethylamine	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
N-Nitrosodiphenyl Amine	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
N-Nitroso-Di-N-Propylamine	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Pentachlorophenol	3.70 U	3.80 U	4.00 U	3.80 U	4.00 U	3.90 U	4.00 U	4.00 U	3.80 U	3.40 U
Phenanthrene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.12 J	0.75 U	0.68 U
Phenol	0.74 U	0.75 U	0.79 U	0.15 J	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
Pyrene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.07 J	0.75 U	0.68 U
1,2,4-Trichlorobenzene	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
2,4,5-Trichlorophenol	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U
2,4,6-Trichlorophenol	0.74 U	0.75 U	0.79 U	0.75 U	0.81 U	0.78 U	0.79 U	0.79 U	0.75 U	0.68 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8270 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A6 (Page 4 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for BNAs using EPA Method 8270. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

ANALYTE	BORING/SAMPLE									
	10#2	10#3	10#4	11#1	11#2	11#3	12#1	12#2	13#1	13#2
Acenaphthene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Acenaphthylene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Aniline	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.60 U	1.50 U	1.60 U	1.60 U	1.60 U
Anthracene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Benzidine	4.10 U	3.90 U	4.00 U	3.90 U	3.70 U	3.90 U	4.00 U	4.00 U	3.90 U	4.10 U
Benzo(a)Anthracene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Benzo(b)Fluoranthene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Benzo(k)Fluoranthene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Benzo(G,H,I)Perylene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Benzo(a)Pyrene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Benzoic Acid	4.10 U	3.90 U	4.00 U	3.90 U	3.70 U	3.90 U	3.80 U	4.00 U	3.90 U	4.10 U
Benzyl Alcohol	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.60 U	1.50 U	1.60 U	1.60 U	1.60 U
Bis(2-Chloroethoxy)Methane	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Bis(2-Chloroethyl)Ether	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Bis(2-Chloroisopropyl)Ether	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Bis(2-Ethylhexyl)Phthalate	0.82 U	0.77 U	0.06 J	0.76 J	0.04 J	0.09 J	0.75 U	0.80 U	0.05 J	0.82 U
4-Bromophenyl Ether	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Butylbenzylphthalate	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
4-Chloroaniline	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.60 U	1.50 U	1.60 U	1.60 U	1.60 U
4-Chloro-3-Methylphenol	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.60 U	1.50 U	1.60 U	1.60 U	1.60 U
2-Chloronaphthalene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2-Chlorophenol	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
4-Chlorophenyl Phenyl Ether	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Chrysene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Di-N-Octylphthalate	0.14 J	0.09 U	0.81 U	0.77 U	0.06 J	0.08 J	0.75 U	0.24	0.10 J	0.82 U
Dibenzo(A,H)Anthracene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Dibenzofuran	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Dibutylphthalate	0.11 BJ	0.10 BJ	0.81 U	0.77 U	0.08 BJ	0.78 U	0.16 BJ	0.80 U	0.18 BJ	0.39 J
1,2-Dichlorobenzene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
1,3-Dichlorobenzene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
1,4-Dichlorobenzene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
3,3'Dichlorobenzidine	1.60 U	1.50 U	1.60 U	1.50 U	1.50 U	1.60 U	1.50 U	1.60 U	1.60 U	1.60 U
2,4-Dichlorophenol	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Diethyl Phthalate	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Dimethyl Phthalate	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2,4-Dimethylphenol	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2,4-Dinitrophenol	4.10 U	3.90 U	4.00 U	3.90 U	3.70 U	3.90 U	3.80 U	4.00 U	3.90 U	4.10 U
2,4-Dinitrotoluene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2,6-Dinitrotoluene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
1,2-Diphenylhydrazine	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Fluoranthene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Fluorene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Hexachlorobenzene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Hexachlorobutadiene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Hexachlorocyclopentadiene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Hexachloroethane	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Indeno(1,2,3-C,D)Pyrene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Isophorone	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2-Methyl-4,6-Dinotrophenol	4.10 U	3.90 U	4.00 U	3.90 U	3.70 U	3.90 U	3.80 U	4.00 U	3.90 U	4.10 U
2-Methylnaphthalene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2-Methylphenol	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
4-Methylphenol	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Naphthalene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2-Nitroaniline	4.10 U	3.90 U	4.00 U	3.90 U	3.70 U	3.90 U	3.80 U	4.00 U	3.90 U	4.10 U
3-Nitroaniline	4.10 U	3.90 U	4.00 U	3.90 U	3.70 U	3.90 U	3.80 U	4.00 U	3.90 U	4.10 U
4-Nitroaniline	4.10 U	3.90 U	4.00 U	3.90 U	3.70 U	3.90 U	3.80 U	4.00 U	3.90 U	4.10 U
Nitrobenzene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2-Nitrophenol	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
4-Nitrophenol	4.10 U	3.90 U	4.00 U	3.90 U	3.70 U	3.90 U	3.80 U	4.00 U	3.90 U	4.10 U
N-Nitrosodimethylamine	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
N-Nitrosodiphenyl Amine	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
N-Nitroso-Di-N-Propylamine	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Pentachlorophenol	4.10 U	3.90 U	4.00 U	3.90 U	3.70 U	3.90 U	3.80 U	4.00 U	3.90 U	4.10 U
Phenanthrene	0.87 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Phenol	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
Pyrene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
1,2,4-Trichlorobenzene	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2,4,5-Trichlorophenol	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U
2,4,6-Trichlorophenol	0.82 U	0.77 U	0.81 U	0.77 U	0.74 U	0.78 U	0.75 U	0.80 U	0.78 U	0.82 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8270 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A6 (Page 5 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for BNAs using EPA Method 8270. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE									
ANALYTE	13#3	13#4	14#1	14#2	14#3	14#4	15#1	15#2	15#3	15#4
Acenaphthene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Acenaphthylene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Aniline	1.50 U	1.50 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.50 U
Anthracene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Benzidine	3.80 U	3.80 U	3.90 U	4.10 U	4.10 U	4.10 U	4.10 U	4.00 U	4.10 U	3.80 U
Benzo(a)Anthracene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Benzo(b)Fluoranthene	0.76 U	0.77 U	0.78 U	0.81 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.50 U
Benzo(k)Fluoranthene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Benzo(G,H,I)Perylene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Benzo(a)Pyrene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Benzoic Acid	3.80 U	3.80 U	3.90 U	4.10 U	4.10 U	4.10 U	4.10 U	4.00 U	4.10 U	3.80 U
Benzyl Alcohol	1.50 U	1.50 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.50 U
Bis(2-Chloroethoxy)Methane	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Bis(2-Chloroethyl)Ether	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Bis(2-Chloroisopropyl)Ether	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Bis(2-Ethylhexyl)Phthalate	0.76 U	0.77 U	0.78 U	0.08 J	0.82 U	0.82 U	0.83 U	0.81 U	0.06 JB	0.51 JB
4-Bromophenyl Ether	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Butylbenzylphthalate	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
4-Chloroaniline	1.50 U	1.50 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.50 U
4-Chloro-3-Methylphenol	1.50 U	1.50 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.50 U
2-Chloronaphthalene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
2-Chlorophenol	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
4-Chlorophenyl Phenyl Ether	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Chrysene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Di-N-Octylphthalate	0.76 U	0.14 J	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.10 J	0.76 U
Dibenzo(A,H)Anthracene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Dibenzofuran	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Dibutylphthalate	0.33 J	2.30	0.20 J	0.81 U	0.09 JB	0.82 U	0.13 JB	0.16 JB	0.82 U	0.11 JB
1,2-Dichlorobenzene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
1,3-Dichlorobenzene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
1,4-Dichlorobenzene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
3,3'Dichlorobenzidine	1.50 U	1.50 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.60 U	1.50 U
2,4-Dichlorophenol	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Diethyl Phthalate	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Dimethyl Phthalate	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
2,4-Dimethylphenol	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
2,4-Dinitrophenol	3.80 U	3.80 U	3.90 U	4.10 U	4.10 U	4.10 U	4.10 U	4.00 U	4.10 U	3.80 U
2,4-Dinitrotoluene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.83 U	0.83 U	0.81 U	0.82 U	0.76 U
2,6-Dinitrotoluene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
1,2-Diphenylhydrazine	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Fluoranthene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Fluorene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Hexachlorobenzene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Hexachlorobutadiene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Hexachlorocyclopentadiene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Hexachloroethane	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Indeno(1,2,3-C,D)Pyrene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Isophorone	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
2-Methyl-4,6-Dinotrophenol	3.80 U	3.80 U	3.90 U	4.10 U	4.10 U	4.10 U	4.10 U	4.00 U	4.10 U	3.80 U
2-Methylnaphthalene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
2-Methylphenol	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
4-Methylphenol	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Naphthalene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
2-Nitroaniline	3.80 U	3.80 U	3.90 U	4.10 U	4.10 U	4.10 U	4.10 U	4.00 U	4.10 U	3.80 U
3-Nitroaniline	3.80 U	3.80 U	3.90 U	4.10 U	4.10 U	4.10 U	4.10 U	4.00 U	4.10 U	3.80 U
4-Nitroaniline	3.80 U	3.80 U	3.90 U	4.10 U	4.10 U	4.10 U	4.10 U	4.00 U	4.10 U	3.80 U
Nitrobenzene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
2-Nitrophenol	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
4-Nitrophenol	3.80 U	3.80 U	3.90 U	4.10 U	4.10 U	4.10 U	4.10 U	4.00 U	4.10 U	3.80 U
N-Nitrosodimethylamine	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
N-Nitrosodiphenyl Amine	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
N-Nitroso-Di-N-Propylamine	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Pentachlorophenol	3.80 U	3.80 U	3.90 U	4.10 U	4.10 U	4.10 U	4.10 U	4.00 U	4.10 U	3.80 U
Phenanthrene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Phenol	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
Pyrene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
1,2,4-Trichlorobenzene	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
2,4,5-Trichlorophenol	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.82 U	0.76 U
2,4,6-Trichlorophenol	0.76 U	0.77 U	0.78 U	0.81 U	0.82 U	0.82 U	0.83 U	0.81 U	0.08 U	0.76 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8270 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A6 (Page 6 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of surface soils collected August 1992 for BNAs using EPA Method 8270. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

ANALYTE	SAMPLE 16	17	18
Acenaphthene	0.70 U	0.76 U	0.77 U
Acenaphthylene	0.70 U	0.76 U	0.77 U
Aniline	1.40 U	1.50 U	1.50 U
Anthracene	0.70 U	0.76 U	0.77 U
Benzidine	3.50 U	3.80 U	3.80 U
Benzo(a)Anthracene	0.70 U	0.76 U	0.77 U
Benzo(b)Fluoranthene	0.70 U	0.76 U	0.77 U
Benzo(k)Fluoranthene	0.70 U	0.76 U	0.77 U
Benzo(G,H,I)Perylene	0.70 U	0.76 U	0.77 U
Benzo(a)Pyrene	0.70 U	0.76 U	0.77 U
Benzoic Acid	3.50 U	3.80 U	3.80 U
Benzyl Alcohol	1.40 U	1.50 U	1.50 U
Bis(2-Chloroethoxy)Methane	0.70 U	0.76 U	0.77 U
Bis(2-Chloroethyl)Ether	0.70 U	0.76 U	0.77 U
Bis(2-Chloroisopropyl)Ether	0.70 U	0.76 U	0.77 U
Bis(2-Ethylhexyl)Phthalate	0.70 U	0.76 U	0.77 U
4-Bromophenyl Ether	0.70 U	0.76 U	0.77 U
Butylbenzylphthalate	0.70 U	0.76 U	0.77 U
4-Chloroaniline	1.40 U	1.50 U	1.50 U
4-Chloro-3-Methylphenol	1.40 U	1.50 U	1.50 U
2-Chloronaphthalene	0.70 U	0.76 U	0.77 U
2-Chlorophenol	0.70 U	0.76 U	0.77 U
4-Chlorophenyl Phenyl Ether	0.70 U	0.76 U	0.77 U
Chrysene	0.70 U	0.76 U	0.77 U
Di-N-Octylphthalate	0.70 U	0.76 U	0.77 U
Dibenzo(A,H)Anthracene	0.70 U	0.76 U	0.77 U
Dibenzofuran	0.70 U	0.76 U	0.77 U
Dibutylphthalate	0.08 BJ	0.21 BJ	0.35 BJ
1,2-Dichlorobenzene	0.70 U	0.76 U	0.77 U
1,3-Dichlorobenzene	0.70 U	0.76 U	0.77 U
1,4-Dichlorobenzene	0.70 U	0.76 U	0.77 U
3,3'Dichlorobenzidine	1.40 U	1.50 U	1.50 U
2,4-Dichlorophenol	0.70 U	0.76 U	0.77 U
Diethyl Phthalate	0.70 U	0.76 U	0.77 U
Dimethyl Phthalate	0.70 U	0.76 U	0.77 U
2,4-Dimethylphenol	0.70 U	0.76 U	0.77 U
2,4-Dinitrophenol	3.50 U	3.80 U	3.80 U
2,4-Dinitrotoluene	0.70 U	0.76 U	0.77 U
2,6-Dinitrotoluene	0.70 U	0.76 U	0.77 U
1,2-Diphenylhydrazine	0.70 U	0.76 U	0.77 U
Fluoranthene	0.70 U	0.76 U	0.77 U
Fluorene	0.70 U	0.76 U	0.77 U
Hexachlorobenzene	0.70 U	0.76 U	0.77 U
Hexachlorobutadiene	0.70 U	0.76 U	0.77 U
Hexachlorocyclopentadiene	0.70 U	0.76 U	0.77 U
Hexachloroethane	0.70 U	0.76 U	0.77 U
Indeno(1,2,3-C,D)Pyrene	0.70 U	0.76 U	0.77 U
Isophorone	0.70 U	0.76 U	0.77 U
2-Methyl-4,6-Dinotrophenol	3.50 U	3.80 U	3.80 U
2-Methylnaphthalene	0.70 U	0.76 U	0.77 U
2-Methylphenol	0.70 U	0.76 U	0.77 U
4-Methylphenol	0.70 U	0.76 U	0.77 U
Naphthalene	0.70 U	0.76 U	0.77 U
2-Nitroaniline	3.50 U	3.80 U	3.80 U
3-Nitroaniline	3.50 U	3.80 U	3.80 U
4-Nitroaniline	3.50 U	3.80 U	3.80 U
Nitrobenzene	0.70 U	0.76 U	0.77 U
2-Nitrophenol	0.70 U	0.76 U	0.77 U
4-Nitrophenol	3.50 U	3.80 U	3.80 U
N-Nitrosodimethylamine	0.70 U	0.76 U	0.77 U
N-Nitrosodiphenyl Amine	0.70 U	0.76 U	0.77 U
N-Nitroso-Di-N-Propylamine	0.70 U	0.76 U	0.77 U
Pentachlorophenol	3.50 U	3.80 U	3.80 U
Phenanthrene	0.70 U	0.76 U	0.77 U
Phenol	0.70 U	0.76 U	0.77 U
Pyrene	0.70 U	0.76 U	0.77 U
1,2,4-Trichlorobenzene	0.70 U	0.76 U	0.77 U
2,4,5-Trichlorophenol	0.70 U	0.76 U	0.77 U
2,4,6-Trichlorophenol	0.70 U	0.76 U	0.77 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8270 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A7. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of method blanks associated with analyses of surface an subsurface soils collected August 1992 for BNAs using EPA Method 8270. Only analytes detected in the method blanks are presented in the table. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for boring locations.

BNA ANALYTE	CONC	METHOD BLANK	BORING#DEPTH
Bis(2-Ethylhexyl)Phthalate	0.0810 J	10	7#3-8#2
Bis(2-Ethylhexyl)Phthalate	0.0600 J	12	9#1 11#1 11#3
Bis(2-Ethylhexyl)Phthalate	1.6000	18	14#2-15#4
Dibutylphthalate	0.4000 J	4	1#4 4#3
Dibutylphthalate	0.2600 J	1	2#1 2#2 2#4 3#1 3#3
Dibutylphthalate	0.0690 J	2	2#3 3#2
Dibutylphthalate	0.3600 J	5	4#1
Dibutylphthalate	0.3900 J	6	4#2 5#2 6#1
Dibutylphthalate	0.2600 J	7	4#4 6#2 6#3
Dibutylphthalate	0.0830 J	8	5#1
Dibutylphthalate	0.2600 J	9	7#1 7#2
Dibutylphthalate	0.4000 J	10	7#3-8#2
Dibutylphthalate	0.3900 J	11	8#3 8#4 9#2 17-18
Dibutylphthalate	0.2200 J	12	9#1 11#1 11#3
Dibutylphthalate	0.3900 J	13	9#3
Dibutylphthalate	0.0830 J	14	10#1-10#3 11#2
Dibutylphthalate	0.4000 J	15	10#4 12#1 12#2
Dibutylphthalate	0.4000 J	16	13#1
Dibutylphthalate	0.2500 J	18	14#2-15#4
Diethyl Phthalate	0.0750 J	8	5#1
Diethyl Phthalate	0.0900 J	12	9#1 11#1 11#3
Diethyl Phthalate	0.0750 J	14	10#1-10#3 11#2

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8270 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November
1986, with July 1992 revisions.
J - Indicates an estimated value below accurate quantitation limits.

Table A8. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Comparison of results of BNAs of subsurface and surface soil samples to risk-based concentrations for industrial soils. Only analytes detected are presented in the table. See Figure 10 for sample locations and Table A8 for complete data. Concentrations are mg/kg (ppm) dry weight. Table entries in gray indicate max soil concentrations greater than the risk-based concentration.

ANALYTE	SOIL CONCENTRATION MAX		NUMBER ** DETECTED	STATIONS WITH CONCENTRATION >= DETECTION LIMIT (54 STATIONS TOTAL)	RISK-BASED CONCENTRATION INDUSTRIAL SOIL * @
2-Methylnaphthalene	0.05	J	1	0	-
2-Methylphenol	0.21	J	1	0	100,000 n
Acenaphthene	4.90	J	1	0	120,000 n
Anthracene	11.00	J	2	0	610,000 n
Benzo(a)Anthracene	29.00		2	1(1)	7.8 c
Benzo(a)Pyrene	27.00		1	1(1)	0.78 c
Benzo(b)Fluoranthene	29.00		1	1(1)	7.8 c
Benzo(G,H,I)Perylene	9.70	J	1	0	-
Benzo(k)Fluoranthene	19.00		2	1	78 c
Benzoic Acid	0.02	J	1	0	1,000,000 n
Bis(2-Ethylhexyl)Phthalate	14.00	J	19	0	410 c
Chrysene	34.00		1	1	780 c
Di-N-Octylphthalate	0.27	J	15	0	410,000 n
Dibenzofuran	2.00	J	1	0	8,200 n
Dibutylphthalate	2.30		37	4	200,000 n
Diethyl Phthalate	0.05	JB	1	0	1,000,000 n
Fluoranthene	55.00		2	1	82,000 n
Fluorene	6.00	J	2	0	82,000 n
Indeno(1,2,3-C,D)Pyrene	11.00	J	1	0(1)	7.8 c
Naphthalene	0.21	J	1	0	82,000 n
Phenanthrene	49.00		2	1	-
Phenol	0.15	J	1	0	1,000,000 n
Pyrene	88.00		2	1	61,000 n

Notes:
Risk-Based Concentrations * - Risk-Based Concentration Table,1/31/95. Roy L. Smith, Senior Toxicologist(3HW13), U. S. EPA Region III. Risk Based Concentrations are in mg/kg. Basis of RBC: c=carcinogenic effect; n=noncarcinogenic effect.
MEAN - Mean computed using the reported detection limit for those samples with results reported as < detection limit (U qualified). See table 5.x.
(-) - No risk-based concentration available.
(1) - Number of samples that exceeded the industrial soil risked-based concentration.
** - J values are less than detection limits. See table 5.2.5 for explanation.
@ - Four of the contaminants exceeded the risk-based concentrations: Benzo(a) Anthracene, Benzo(a)Fluoranthene, Benzo(b)Fluoranthene, and Indeno(1,2,3-C,D)Pyrene. All of these exceedances were at station 6 depth 1.

Table A9 . Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of rinsates associated with analyses of surface and subsurface soils collected August 1992 for BNAs. Only analytes detected in the rinsates are presented in the table. No analytes were detected in the method blanks. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for boring locations.

BNA ANALYTE	CONC		RINSE/ * METHOD BLANK	BORING#DEPTH
Benzoic Acid	0.0080	J	RINSE 1	1#1-1#4, 4#1-5#2
Bis(2-Ethylhexyl)Phthalate	0.0180		RINSE 1	1#1-1#4, 4#1-5#2
Dibutylphthalate	0.0015	J	RINSE 1	1#1-1#4, 4#1-5#2
Phenol	0.0240		RINSE 1	1#1-1#4, 4#1-5#2
Benzoic Acid	0.0040	J	RINSE 2	6#1-8#4
Bis(2-Ethylhexyl)Phthalate	0.0074	J	RINSE 2	6#1-8#4
Dibutylphthalate	0.0017	J	RINSE 2	6#1-8#4
Benzoic Acid	0.0100	J	RINSE 3	9#1-10#4,16-18
Bis(2-Ethylhexyl)Phthalate	0.0190		RINSE 3	6#1-8#4
Dibutylphthalate	0.0011	J	RINSE 3	6#1-8#4
Diethyl Phthalate	0.0010	J	RINSE 3	6#1-8#4
Phenol	0.0810		RINSE 3	6#1-8#4
Bis(2-Ethylhexyl)Phthalate	0.0080	J	RINSE 5	13#1-15#4
Dibutylphthalate	0.0013	J	RINSE 5	13#1-15#4

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
J - Indicates an estimated value below accurate quantitation limits.
* - Rinsate 4, for borings 11#1-12#1, was lost during concentration.

Table A10. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of surface and subsurface soils collected August 1992 for metals. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations.

BORING & SAMPLE	AG	AS	BA	CD	CR	HG	PB	SE
1#1	1.00 U	9.03	61.00	0.05 B	20.40	0.10 U	16.30 *	0.30 B
1#2	1.00 U	6.04	55.00	0.02 U	20.50	0.10 U	4.00 U	0.20 U
1#3	1.00 U	3.04	58.90	0.02 U	12.60	0.10 U	4.00 U	0.20 U
1#4	1.00 U	2.77	66.60	0.03 B	14.30	0.10 U	4.00 U	0.20 U
2#1	1.00 U	8.33	65.60	0.05 B	18.50	0.10 U	20.40 *	0.20 U
2#2	1.00 U	2.93	56.40	0.02 U	15.20	0.10 U	4.00 U	0.20 U
2#3	1.00 U	2.41	60.40	0.02 U	13.00	0.10 U	4.80 *	0.20 U
2#4	1.00 U	1.22	40.70	0.02 B	9.50	0.10 U	4.00 U	0.20 U
3#1	1.00 U	5.54	116.00	0.02 U	21.90	0.10 U	7.30 *	0.20 U
3#2	1.00 U	2.40	42.60	0.02 U	14.20	0.10 U	4.00 U	0.20 U
3#3	1.00 U	2.24	72.80	0.02 U	13.50	0.10 U	6.10 *	0.20 U
4#1	1.00 U	4.91	123.00	0.05 B	12.00	0.10 U	10.30 *	0.29 B
4#2	1.00 U	10.70	54.70	0.02 U	23.50	0.10 U	4.00 U	0.32 B
4#3	1.00 U	4.29	46.70	0.02 U	17.90	0.10 U	4.00 U	0.20 U
4#4	1.00 U	2.22	127.00	0.02 U	17.00	0.10 U	4.00 U	0.20 U
5#1	1.00 U	9.30	142.00	0.26 B	25.80	0.10 U	41.00 *	0.48 B
5#2	1.00 U	11.40	74.70	0.09 B	28.60 N	0.10 U	10.00 *	0.20 U
6#1	1.00 U	4.08	183.00	0.37 B	16.20 N	0.10 U	59.90 *	0.27 BW
6#2	1.00 U	8.86	101.00	0.21 B	21.30 N	0.10 U	9.70 *	0.28 BW
6#3	1.00 U	2.94	65.70	0.03 B	20.10 N	0.10 U	5.30 *	0.20 U
7#1	1.00 U	3.86	30.60	0.02 U	16.60	0.10 U	9.60 *	0.20 U
7#2	1.00 U	3.02	28.30	0.02 U	16.70	0.10 U	8.10 *	0.20 U
7#3	1.00 U	1.46	68.90	0.20 B	13.50	0.10 U	8.00 *	0.20 U
8#1	1.00 U	8.90	85.10	0.63 B	22.90	0.10 U	34.20 *	0.28 B
8#2	1.00 U	7.36	76.30	0.20 B	17.90	0.10 U	22.30 *	0.36 B
8#3	1.00 U	4.66	35.90	0.06 B	20.40	0.10 U	10.70 *	0.20 U
8#4	1.00 U	2.91	96.00	0.06 B	21.60	0.10 U	10.00 *	0.20 U

BORING & SAMPLE	AG	AS	BA	CD	CR	HG	PB	SE
9#1	1.00 U	7.62	88.00	0.14 B	17.90	0.10 U	21.30 *	0.33 B
9#2	1.00 U	10.60	58.00	0.03 B	22.50	0.10 U	10.30 *	0.36 B
9#3	0.10 U	6.97	56.20	0.03 B	14.70	0.10 U	12.30 *	0.20 U
10#1	0.10 U	4.99	38.30	0.50 B	21.70	0.10 U	161.00 *	0.20 U
10#2	0.10 U	13.10	59.60	0.27 B	24.40	0.10 U	11.80 *	0.37 B
10#3	0.10 U	3.48	28.80	0.02 U	11.90	0.10 U	6.80 *	0.20 U
10#4	0.10 U	4.34	73.30	0.02 U	22.60	0.10 U	8.00	0.20 U
11#1	0.10 U	5.89	42.10	0.03 B	19.30	0.10 U	7.20	0.20 U
11#2	0.10 U	4.76	59.20	0.02 U	25.60	0.10 U	4.40	0.20 U
11#3	0.10 U	3.64	46.50	0.02 U	14.40	0.10 U	4.40	0.20 U
12#1	0.10 U	1.80	37.30	0.02 U	11.20	0.10 U	4.70	0.20 U
12#2	0.10 U	2.68	144.00	0.02 U	19.60	0.10 U	8.70	0.20 U
13#1	1.00 U	7.71	92.00	0.02 U	20.70	0.10 U	12.10	0.38 BWN
13#2	1.00 U	4.24	142.00	0.08 B	13.50	0.10 U	13.70	0.32 BWN
13#3	1.00 U	2.17	34.80	0.02 U	14.90	0.10 U	6.00	0.20 U
13#4	1.00 U	3.38	154.00	0.02 U	19.10	0.10 U	11.80	0.20 U
14#1	1.00 U	9.03	90.90	0.02 U	21.30	0.10 U	13.40	0.31 BN
14#2	1.00 U	7.56	103.00	0.14 B	18.70	0.10 U	14.20	0.24 BWN
14#3	1.00 U	7.11	66.20	0.35 B	20.90	0.10 U	10.10	0.20 U
14#4	1.00 U	4.97	50.60	0.02 U	17.50	0.10 U	7.19	0.20 U
15#1	1.00 U	11.10	68.00	0.02 B	19.20	0.10 U	10.90	0.20 U
15#2	1.00 U	7.09	85.70	0.03 B	18.20	0.10 U	14.90	0.37 BWN
15#3	1.00 U	9.90	67.80	0.02 U	24.40	0.10 U	8.90	0.43 BWN
15#4	1.00 U	4.87	44.00	0.02 U	24.00	0.10 U	8.80	0.20 U
16	1.00 U	0.41 B	276.00	0.60	11.50	0.10 U	10.60 *	0.20 U
17	1.00 U	5.44	126.00	0.35 B	12.50	0.10 U	19.50 *	0.32 B
18	1.00 U	7.52	81.00	0.33 B	16.60	0.10 U	14.10 *	0.22 B

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Indicates reported value is less than the contract required detection limit (CRDL) but greater than the instrument detection limit.
W - Indicates post-digestion spike for furnace AA analysis is out of control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.
N - Spiked sample recovery not within control limits.
* - Duplicate analysis not within control limits.

Table A11. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Comparison of results of metals analyses of subsurface and surface soil samples to risk-based concentrations for industrial soils. Only analytes detected are presented in the table. See Figure 10 for sample locations and Table 10 for complete data. Concentrations are mg/kg (ppm) dry weight. Table entries in gray indicate mean or max soil concentrations greater than the risk-based concentration.

ANALYTE	SOIL CONCENTRATION MAX		STATION WITH CONCENTRATIONS >= DETECTION LIMIT (54 STATIONS TOTAL)	RISK-BASED CONCENTRATIONS* INDUSTRIAL SOIL
AS	13.10		54(38)	3.3 c
AS	13.10		54	610 n
BA	276.00		54	140,000 n
CD	0.63	B	29	1,000 n
CR(VI)	25.80		50	10,000 n
PB	14.90		18	-
SE	0.48	B	11	10,000 n

Notes:
Risk-Based Concentrations * - Risk-Based Concentration Table, 1/31/95. Roy L. Smith, Senior Toxicologist(3HW13), U. S. EPA Region III. Risk Based Concentrations are in mg/kg. Basis of RBC: c=carcinogenic effect; n=noncarcinogenic effect.
(-) - No risk-based concentration available.
(38) - Number of samples that exceeded the occupational soil risked-based concentration.
B - Indicates reported value is less than the contract required detection limit (CRDL) but greater than the instrument detection limit.
CR (VI) - Chromium VI and compounds.
No values less than the detected limit (U) were reported.

Table A12. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of method blanks associated with analyses of surface an subsurface soils collected August 1992 for Metals. Only analytes detected in the method blanks are presented in the table. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for boring locations.

METAL ANALYTE	CONC	METHOD BLANK	ORING#DEPTH
Cadmium	0.098 B	2	5#2-6#3
Chromium	0.7 B	1	1#1-5#1
Chromium	1.2	2	5#2-6#3
Chromium	0.9 B	5	13#1-15#4

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
B - Indicates reported value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).

Table A13 (Page 1 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for organochlorine pesticides and PCBs using EPA Method 8080. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE										
ANALYTE	1#1	1#2	1#3	1#4	2#1	2#2	2#3	2#4	3#1	3#2	3#3
Aldrin	0.0032 U	0.0004 BJ	0.0017 BJ	0.0008 BJ	0.0032 U	0.0030 U	0.0033 U	0.0003 J	0.0032 U	0.0032 U	0.0032 U
A-BHC	0.0024 U	0.0025 U	0.0023 U	0.0024 U	0.0024 U	0.0023 U	0.0024 U	0.0023 U	0.0024 U	0.0024 U	0.0024 U
B-BHC	0.0025 BJ	0.0050 U	0.0046 U	0.0047 U	0.0025 BJ	0.0033 BJ	0.0036 BJ	0.0020 BJ	0.0025 BJ	0.0025 BJ	0.0026 BJ
D-BHC	0.0072 U	0.0075 U	0.0069 U	0.0071 U	0.0071 U	0.0068 U	0.0073 U	0.0069 U	0.0072 U	0.0072 U	0.0072 U
G-BHC	0.0032 U	0.0033 U	0.0031 U	0.0031 U	0.0032 U	0.0030 U	0.0033 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U
A-Chlordane	0.0006 BJ	0.0042 U	0.0038 U	0.0008 J	0.0007 BJ	0.0007 BJ	0.0006 BJ	0.0008 BJ	0.0008 BJ	0.0008 BJ	0.0005 BJ
G-CHLORDANE	0.0016 BJ	0.0042 U	0.0038 U	0.0039 U	0.0007 BJ	0.0038 U	0.0041 U	0.0038 U	0.0040 U	0.0040 U	0.0040 U
Dieldrin	0.0008 BJ	0.0017 U	0.0015 U	0.0016 U	0.0005 BJ	0.0003 BJ	0.0003 BJ	0.0002 BJ	0.0016 U	0.0016 U	0.0002 BJ
Disulfoton	0.0280 U	0.0290 U	0.0260 U	0.0270 U	0.0280 U	0.0260 U	0.0280 U	0.0270 U	0.0280 U	0.0280 U	0.0280 U
A-Endosulfan	0.0110 U	0.0120 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
B-Endosulfan	0.0032 U	0.0033 U	0.0031 U	0.0031 U	0.0032 U	0.0030 U	0.0033 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U
Endosulfan sulfate	0.0530 U	0.0550 U	0.0500 U	0.0520 U	0.0520 U	0.0500 U	0.0540 U	0.0510 U	0.0098 J	0.0098 J	0.0530 U
Endrin	0.0049 U	0.0007 BJ	0.0046 U	0.0047 U	0.0006 BJ	0.0045 U	0.0049 U	0.0046 U	0.0006 BJ	0.0006 BJ	0.0048 U
Endrin Aldehyde	0.0190 U	0.0190 U	0.0180 U	0.0180 U	0.0180 U	0.0170 U	0.0190 U	0.0180 U	0.0180 U	0.0180 U	0.0180 U
Ethyl Parathion	0.0240 U	0.0250 U	0.0230 U	0.0230 U	0.0240 U	0.0220 U	0.0240 U	0.0230 U	0.0240 U	0.0240 U	0.0240 U
Famphur	0.0480 U	0.0500 U	0.0460 U	0.0470 U	0.0470 U	0.0450 U	0.0490 U	0.0460 U	0.0470 U	0.0470 U	0.0480 U
Heptachlor	0.0024 U	0.0006 BJ	0.0006 BJ	0.0008 BJ	0.0024 U	0.0023 U	0.0024 U	0.0003 J	0.0024 U	0.0024 U	0.0024 U
Heptachlor Epoxide	0.0670 U	0.0690 U	0.0630 U	0.0650 U	0.0660 U	0.0630 U	0.0680 U	0.0640 U	0.0660 U	0.0660 U	0.0670 U
Kepone	0.4900 U	0.5000 U	0.4600 U	0.4700 U	0.4700 U	0.4500 U	0.4900 U	0.4600 U	0.4800 U	0.4800 U	0.4800 U
Methoxychlor	0.1400 U	0.1500 U	0.1300 U	0.1400 U	0.1400 U	0.1300 U	0.1400 U	0.1300 U	0.1400 U	0.1400 U	0.1400 U
Methyl Parathion	0.0480 U	0.0500 U	0.0460 U	0.0470 U	0.0470 U	0.0450 U	0.0490 U	0.0460 U	0.0470 U	0.0470 U	0.0480 U
PCB-1016	0.0530 U	0.0540 U	0.0500 U	0.0510 U	0.0510 U	0.0490 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U	0.0520 U
PCB-1221	0.0530 U	0.0540 U	0.0500 U	0.0510 U	0.0510 U	0.0490 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U	0.0520 U
PCB-1232	0.0530 U	0.0540 U	0.0500 U	0.0510 U	0.0510 U	0.0490 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U	0.0520 U
PCB-1242	0.0530 U	0.0540 U	0.0500 U	0.0510 U	0.0510 U	0.0490 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U	0.0520 U
PCB-1248	0.0530 U	0.0540 U	0.0500 U	0.0510 U	0.0510 U	0.0490 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U	0.0520 U
PCB-1254	0.0170 J	0.1100 U	0.0990 U	0.1000 U	-	0.0980 U	0.0140 J	0.1000 U	0.1000 U	0.1000 U	0.1000 U
PCB-1260	0.1100 U	0.1100 U	0.0990 U	0.1000 U	0.1000 U	0.0980 U	0.1100 U	0.1000 U	0.1000 U	0.1000 U	0.1000 U
Phorate	0.0160 U	0.0160 U	0.0150 U	0.0160 U	0.0160 U	0.0150 U	0.0160 U	0.0150 U	0.0160 U	0.0160 U	0.0160 U
PPDDD	0.0088 U	0.0033 U	0.0084 U	0.0086 U	0.0087 U	0.0083 U	0.0090 U	0.0084 U	0.0087 U	0.0087 U	0.0088 U
PPDDE	0.0005 J	0.0033 U	0.0031 U	0.0031 U	0.0032 U	0.0003 J	0.0033 U	0.0031 U	0.0005 J	0.0005 J	0.0032 U
PPDDT	0.0013 J	0.0100 U	0.0092 U	0.0094 U	0.0011 J	0.0091 U	0.0098 U	0.0092 U	0.0095 U	0.0095 U	0.0096 U
Toxaphene	0.1900 U	0.2000 U	0.1800 U	0.1900 U	0.1900 U	0.1800 U	0.2000 U	0.1800 U	0.1900 U	0.1900 U	0.1900 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8080 - In Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A13 (Page 2 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for organochlorine pesticides and PCBs using EPA Method 8080. Concentrations are mg/kg (ppm) dry weight. See Figure10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE										
ANALYTE	4#1	4#2	4#3	4#4	5#1	5#2	6#1	6#2	6#3	7#1	7#2
Aldrin	0.0015 BJ	0.0026 BJ	0.0030 U	0.0030 U	0.0031 U	0.0031 U	0.0028 U	0.0033 U	0.0030 U	0.0006 J	0.0030 U
A-BHC	0.0023 U	0.0022 U	0.0022 U	0.0022 U	0.0006 J	0.0024 U	0.0021 U	0.0024 U	0.0023 U	0.0021 U	0.0022 U
B-BHC	0.0046 U	0.0044 U	0.0045 U	0.0045 U	0.0046 U	0.0049 J	0.0043 U	0.0086	0.0098	0.0050	0.0022 J
D-BHC	0.0069 U	0.0066 U	0.0067 U	0.0067 U	0.0069 U	0.0071 U	0.0064 U	0.0073 U	0.0068 U	0.0062 U	0.0067 U
G-BHC	0.0031 U	0.0029 U	0.0030 U	0.0030 U	0.0030 U	0.0031 U	0.0028 U	0.0033 U	0.0030 U	0.0028 U	0.0030 U
A-Chlordane	0.0007 J	0.0018 J	0.0037 U	0.0007 J	0.0021 J	0.0015 J	0.0035 U	0.0041 U	0.0013 J	0.0027 J	0.0037 U
G-CHLORDANE	0.0038 U	0.0036 U	0.0037 U	0.0004 J	0.0034 J	0.0006 J	0.0035	0.0041 U	0.0020 J	0.0015 J	0.0037 U
Dieldrin	0.0015 U	0.0015 U	0.0024	0.0009 J	0.0002 J	0.0002 J	0.0034	0.0007 J	0.0041	0.0014 U	0.0002 J
Disulfoton	0.0270 U	0.0250 U	0.0260 U	0.0260 U	0.0270 U	0.0270 U	0.0250 U	0.0280 U	0.0260 U	0.0260 U	0.0260 U
A-Endosulfan	0.0110 U	0.0100 U	0.0100 U	0.0100 U	0.0110 U	0.0110 U	0.0990 U	0.0110 U	0.0012 J	0.0096 U	0.0100 U
B-Endosulfan	0.0031 U	0.0029 U	0.0030 U	0.0030 U	0.0006 J	0.0031 U	0.0014 J	0.0033 U	0.0100	0.0028 U	0.0030 U
Endosulfan sulfate	0.0510 U	0.0480 U	0.0490 U	0.0490 U	0.0510 U	0.0520 U	0.0470 U	0.0540 U	0.0170 J	0.0450 U	0.0490 U
Endrin	0.0046 U	0.0044 U	0.0045 U	0.0045 U	0.0046 U	0.0047 U	0.0043 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U
Endrin Aldehyde	0.0180 U	0.0170 U	0.0170 U	0.0170 U	0.0110 J	0.0024 J	0.0033 J	0.0190 U	0.0170 U	0.0160 U	0.0170 U
Ethyl Parathion	0.0230 U	0.0220 U	0.0220 U	0.0220 U	0.0230 U	0.0230 U	0.0210 U	0.0240 U	0.0230 U	0.0220 U	0.0220 U
Famphur	0.0460 U	0.0440 U	0.0440 U	0.0450 U	0.0460 U	0.0470 U	0.0420 U	0.0490 U	0.0450 U	0.0440 U	0.0440 U
Heptachlor	0.0008 BJ	0.0022 BJ	0.0022 U	0.0009 J	0.0014 J	0.0010 J	0.0021 U	0.0024 U	0.0012 J	0.0021 U	0.0022 U
Heptachlor Epoxide	0.0640 U	0.0610 U	0.0620 U	0.0620 U	0.0640 U	0.0650 U	0.0590 U	0.0680 U	0.0630 U	0.0570 U	0.0610 U
Kepone	0.4600 U	0.4400 U	0.4500 U	0.4500 U	0.4600 U	0.4700 U	0.4300 U	0.4900 U	0.4500 U	0.4100 U	0.4400 U
Methoxychlor	0.1300 U	0.0250 J	0.1300 U	0.1300 U	0.1400 U	0.1400 U	0.1200 U	0.1400 U	0.0220 J	0.1200 U	0.1300 U
Methyl Parathion	0.0460 U	0.0440 U	0.0440 U	0.0450 U	0.0460 U	0.0470 U	0.0420 U	0.0490 U	0.0450 U	0.0440 U	0.0440 U
PCB-1016	0.0500 U	0.0470 U	0.0480 U	0.0490 U	0.0500 U	0.0510 U	0.0460 U	0.0530 U	0.0490 U	0.0450 U	0.0480 U
PCB-1221	0.0500 U	0.0470 U	0.0480 U	0.0490 U	0.0500 U	0.0510 U	0.0460 U	0.0530 U	0.0490 U	0.0450 U	0.0480 U
PCB-1232	0.0500 U	0.0470 U	0.0480 U	0.0490 U	0.0500 U	0.0510 U	0.0460 U	0.0530 U	0.0490 U	0.0450 U	0.0480 U
PCB-1242	0.0500 U	0.0470 U	0.0480 U	0.0490 U	0.0500 U	0.0510 U	0.0460 U	0.0530 U	0.0490 U	0.0450 U	0.0480 U
PCB-1248	0.0500 U	0.0470 U	0.0480 U	0.0490 U	0.0500 U	0.0510 U	0.0460 U	0.0530 U	0.0490 U	0.0450 U	0.0480 U
PCB-1254	0.1000 U	0.0950 U	0.0970 U	0.0970 U	0.1000 U	0.1000 U	0.0920 U	0.1100 U	0.0980 U	0.0890 U	0.0960 U
PCB-1260	0.1000 U	0.0950 U	0.0970 U	0.0970 U	0.1000 U	0.1000 U	0.0920 U	0.1100 U	0.0980 U	0.0890 U	0.0960 U
Phorate	0.0150 U	0.0140 U	0.0150 U	0.0150 U	0.0150 U	0.0160 U	0.0140 U	0.0160 U	0.0150 U	0.0150 U	0.0150 U
PPDDD	0.0084 U	0.0082	0.0082 U	0.0082 U	0.0085 U	0.0021 BJ	0.0028 BJ	0.0010 BJ	0.0083 U	0.0076 U	0.0081 U
PPDDE	0.0031 U	0.0029 U	0.0030 U	0.0011 J	0.0029 J	0.0031 U	0.0028 U	0.0033 U	0.0030 U	0.0028 U	0.0004 J
PPDDT	0.0092 U	0.0320	0.0019 J	0.0090 U	0.0088 J	0.0094 U	0.0082 J	0.0098 U	0.0091 U	0.0083 U	0.0041 J
Toxaphene	0.1800 U	0.1800 U	0.1800 U	0.1800 U	0.1800 U	0.1900 U	0.1700 U	0.2000 U	0.1800 U	0.1700 U	0.1800 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8080 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A13 (Page 3 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for organochlorine pesticides and PCBs using EPA Method 8080. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE										
ANALYTE	7#3	8#1	8#2	8#3	8#4	9#1	9#2	9#3	10#1	10#2	10#3
Aldrin	0.0032 U	0.0030 U	0.0032 U	0.0031 U	0.0032 U	0.0032 U	0.0031 U	0.0027 U	0.0027 U	0.0033 U	0.0031 U
A-BHC	0.0024 U	0.0023 U	0.0024 U	0.0023 U	0.0024 U	0.0024 U	0.0023 U	0.0020 U	0.0020 U	0.0025 U	0.0023 U
B-BHC	0.0120	0.0038 J	0.0039 J	0.0057	0.0017 BJ	0.0048 U	0.0047 U	0.0006 BJ	0.0041 U	0.0009 BJ	0.0047 U
D-BHC	0.0071 U	0.0068 U	0.0072 U	0.0070 U	0.0073 U	0.0072 U	0.0070 U	0.0060 U	0.0061 U	0.0075 U	0.0070 U
G-BHC	0.0032 U	0.0030 U	0.0032 U	0.0031 U	0.0032 U	0.0032 U	0.0031 U	0.0027 U	0.0027 U	0.0033 U	0.0031 U
A-Chlordane	0.0040 U	0.0038 U	0.0040 U	0.0014 J	0.0005 BJ	0.0040 U	0.0039 U	0.0033 U	0.0012 BJ	0.0006 BJ	0.0009 BJ
G-CHLORDANE	0.0031 J	0.0061	0.0008 J	0.0007 J	0.0040 U	0.0040 U	0.0009 BJ	0.0033 U	0.0011 BJ	0.0042 U	0.0039 U
Dieldrin	0.0005 J	0.0066	0.0016 U	0.0006 J	0.0007 BJ	0.0410	0.0016 U	0.0002 BJ	0.0005 BJ	0.0003 BJ	0.0003 BJ
Disulfoton	0.0280 U	0.0260 U	0.0280 U	0.0270 U	0.0280 U	0.0280 U	0.0270 U	0.0270 U	0.0240 U	0.0290 U	0.0270 U
A-Endosulfan	0.0110 U	0.0110	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0093 U	0.0095 U	0.0120 U	0.0110 U
B-Endosulfan	0.0032 U	0.0007 J	0.0007 J	0.0031 U	0.0032 U	0.0032 U	0.0031 U	0.0027 U	0.0027 U	0.0033 U	0.0031 U
Endosulfan sulfate	0.0520 U	0.0500 U	0.0530 U	0.0510 U	0.0530 U	0.0530 U	0.0510 U	0.0440 U	0.0450 U	0.0550 U	0.0510 U
Endrin	0.0048 U	0.0046 U	0.0048 U	0.0047 U	0.0049 U	0.0048 U	0.0047 U	0.0040 U	0.0041 U	0.0050 U	0.0047 U
Endrin Aldehyde	0.0040 J	0.0020 J	0.0180 U	0.0180 U	0.0190 U	0.0980	0.0180 U	0.0150 U	0.0160 U	0.0190 U	0.0180 U
Ethyl Parathion	0.0240 U	0.0230 U	0.0240 U	0.0230 U	0.0160 U	0.0160 U	0.0150 U	0.0230 U	0.0200 U	0.0250 U	0.0230 U
Famphur	0.0470 U	0.0450 U	0.0480 U	0.0460 U	0.0480 U	0.0480 U	0.0460 U	0.0470 U	0.0410 U	0.0500 U	0.0460 U
Heptachlor	0.0024 U	0.0023 U	0.0024 U	0.0023 U	0.0024 U	0.0024 U	0.0023 U	0.0002 BJ	0.0020 U	0.0025 U	0.0009 BJ
Heptachlor Epoxide	0.0660 U	0.0240 J	0.0670 U	0.0640 U	0.0670 U	0.0670 U	0.0640 U	0.0550 U	0.0570 U	0.0690 U	0.0640 U
Kepone	0.4800 U	0.4600 U	0.4800 U	0.4700 U	0.4900 U	0.4800 U	0.4700 U	0.4000 U	0.4100 U	0.5000 U	0.4700 U
Methoxychlor	0.1400 U	0.1300 U	0.1400 U	0.1400 U	0.1400 U	0.1400 U	0.1400 U	0.1200 U	0.1200 U	0.1500 U	0.1400 U
Methyl Parathion	0.0470 U	0.0450 U	0.0480 U	0.0460 U	0.0480 U	0.0480 U	0.0460 U	0.0470 U	0.0400 U	0.0500 U	0.0460 U
PCB-1016	0.0510 U	0.0490 U	0.0520 U	0.0500 U	0.0530 U	0.0520 U	0.0500 U	0.0430 U	0.0440 U	0.0540 U	0.0510 U
PCB-1221	0.0510 U	0.0490 U	0.0520 U	0.0500 U	0.0530 U	0.0520 U	0.0500 U	0.0430 U	0.0440 U	0.0540 U	0.0510 U
PCB-1232	0.0510 U	0.0490 U	0.0520 U	0.0500 U	0.0530 U	0.0520 U	0.0500 U	0.0430 U	0.0440 U	0.0540 U	0.0510 U
PCB-1242	0.0510 U	0.0490 U	0.0520 U	0.0500 U	0.0530 U	0.0520 U	0.0500 U	0.0430 U	0.0440 U	0.0540 U	0.0510 U
PCB-1248	0.0510 U	0.0490 U	0.0520 U	0.0500 U	0.0530 U	0.0520 U	0.0500 U	0.0430 U	0.0440 U	0.0540 U	0.0510 U
PCB-1254	0.1000 U	0.1900	0.0260 J	0.0250 J	0.1100 U	0.1000 U	0.1000 U	0.0870 U	0.0890 U	0.1100 U	0.1000 U
PCB-1260	0.1000 U	0.0990 U	0.1000 U	0.1000 U	0.1100 U	0.1000 U	0.1000 U	0.0870 U	0.0890 U	0.1100 U	0.1000 U
Phorate	0.0160 U	0.0150 U	0.0160 U	0.0150 U	0.0160 U	0.0390	0.0160 U	0.0160 U	0.0140 U	0.0160 U	0.0150 U
PPDDD	0.0036 BJ	0.0009 BJ	0.0088 U	0.0011 BJ	0.0089 U	0.0270	0.0085 U	0.0073 U	0.0020 J	0.0092 U	0.0010 J
PPDDE	0.0005 J	0.0049	0.0005 J	0.0005 J	0.0032 U	0.0032 U	0.0031 U	0.0027 U	0.0013 BJ	0.0033 U	0.0031 U
PPDDT	0.0095 U	0.0030 J	0.0096 U	0.0093 U	0.0097 U	0.0690	0.0093 U	0.0080 U	0.0036 J	0.0100 U	0.0093 U
Toxaphene	0.1900 U	0.1800 U	0.1900 U	0.1900 U	0.1900 U	0.1900 U	0.1900 U	0.1600 U	0.1600 U	0.2000 U	0.1900 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8080 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
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Table A13 (Page 4 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for organochlorine pesticides and PCBs using EPA Method 8080. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE										
ANALYTE	10#4	11#1	11#2	11#3	12#1	12#2	13#1	13#2	13#3	13#4	14#1
Aldrin	0.0032 U	0.0031 U	0.0030 U	0.0031 U	0.0031 U	0.0021 J	0.0037 B	0.0018 BJ	0.0006 BJ	0.0021 BJ	0.0037 B
A-BHC	0.0024 U	0.0024 U	0.0023 U	0.0023 U	0.0023 U	0.0024 U	0.0024 U	0.0024 U	0.0023 U	0.0024 U	0.0024 U
B-BHC	0.0049 U	0.0047 U	0.0045 U	0.0047 U	0.0046 U	0.0049 U	0.0048 U	0.0049 U	0.0046 U	0.0048 U	0.0048 U
D-BHC	0.0073 U	0.0071 U	0.0068 U	0.0070 U	0.0069 U	0.0073 U	0.0072 U	0.0073 U	0.0070 U	0.0072 U	0.0072 U
G-BHC	0.0032 U	0.0031 U	0.0030 U	0.0031 U	0.0031 U	0.0032 U	0.0032 U	0.0033 U	0.0031 U	0.0032 U	0.0032 U
A-Chlordane	0.0010 BJ	0.0007 BJ	0.0008 BJ	0.0012 BJ	0.0007 BJ	0.0036 BJ	0.0022 BJ	0.0025 BJ	0.0012 BJ	0.0015 BJ	0.0040 U
G-CHLORDANE	0.0041 U	0.0039 U	0.0038 U	0.0039 U	0.0038 U	0.0041 U	0.0040 U	0.0041 U	0.0039 U	0.0040 U	0.0040 U
Dieldrin	0.0130	0.0008 BJ	0.0005 BJ	0.0016 U	0.0007 J	0.0016 U	0.0009 J	0.0016 U	0.0083	0.0041	0.0016 U
Disulfoton	0.0280 U	0.0270 U	0.0260 U	0.0270 U	0.0260 U	0.0280 U	0.0280 U	0.0270 U	0.0280 U	0.0280 U	0.0280 U
A-Endosulfan	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
B-Endosulfan	0.0260	0.0031 U	0.0030 U	0.0031 U	0.0031 U	0.0032 U	0.0032 U	0.0007 J	0.0031 U	0.0017 J	0.0032 U
Endosulfan sulfate	0.0540 U	0.0520 U	0.0500 U	0.0510 U	0.0500 U	0.0540 U	0.0530 U	0.0540 U	0.0510 U	0.0280 J	0.0210 J
Endrin	0.0049 U	0.0047 U	0.0045 U	0.0047 U	0.0046 U	0.0049 U	0.0048 U	0.0049 U	0.0046 U	0.0048 U	0.0048 U
Endrin Aldehyde	0.0062 J	0.0180 U	0.0170 U	0.0180 U	0.0180 U	0.0190 U	0.0180 U	0.0190 U	0.0180 U	0.0180 U	0.0028 J
Ethyl Parathion	0.0240 U	0.0230 U	0.0220 U	0.0230 U	0.0230 U	0.0240 U	0.0240 U	0.0240 U	0.0230 U	0.0240 U	0.0240 U
Famphur	0.0480 U	0.0470 U	0.0450 U	0.0460 U	0.0460 U	0.0480 U	0.0480 U	0.0480 U	0.0460 U	0.0480 U	0.0480 U
Heptachlor	0.0014 BJ	0.0024 U	0.0005 BJ	0.0009 BJ	0.0023 U	0.0026	0.0032 B	0.0009 BJ	0.0008 BJ	0.0014 BJ	0.0520 B
Heptachlor Epoxide	0.0670 U	0.0650 U	0.0630 U	0.0650 U	0.0630 U	0.0670 U	0.0660 U	0.0670 U	0.0640 U	0.0660 U	0.0660 U
Kepone	0.4900 U	0.4700 U	0.4500 U	0.4700 U	0.4600 U	0.4900 U	0.4800 U	0.4900 U	0.4600 U	0.4800 U	0.4800 U
Methoxychlor	0.0590 J	0.1400 U	0.1300 U	0.1400 U	0.1300 U	0.1400 U	0.1400 U	0.1400 U	0.0140 U	0.0220 J	0.0180 J
Methyl Parathion	0.0480 U	0.0470 U	0.0450 U	0.0460 U	0.0460 U	0.0480 U	0.0480 U	0.0480 U	0.0460 U	0.0480 U	0.0480 U
PCB-1016	0.0530 U	0.0510 U	0.0490 U	0.0510 U	0.0500 U	0.0530 U	0.0520 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U
PCB-1221	0.0530 U	0.0510 U	0.0490 U	0.0510 U	0.0500 U	0.0530 U	0.0520 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U
PCB-1232	0.0530 U	0.0510 U	0.0490 U	0.0510 U	0.0500 U	0.0530 U	0.0520 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U
PCB-1242	0.0530 U	0.0510 U	0.0490 U	0.0510 U	0.0500 U	0.0530 U	0.0520 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U
PCB-1248	0.0530 U	0.0510 U	0.0490 U	0.0510 U	0.0500 U	0.0530 U	0.0520 U	0.0530 U	0.0500 U	0.0520 U	0.0520 U
PCB-1254	0.1100 U	0.1000 U	0.0980 U	0.1000 U	0.0990 U	0.1100 U	0.1000 U	0.1100 U	0.1000 U	0.1000 U	0.1000 U
PCB-1260	0.1100 U	0.1000 U	0.0980 U	0.1000 U	0.0990 U	0.1100 U	0.1000 U	0.1100 U	0.1000 U	0.1000 U	0.1000 U
Phorate	0.0160 U	0.0160 U	0.0150 U	0.0160 U	0.0150 U	0.0160 U	0.0160 U	0.0160 U	0.0150 U	0.0160 U	0.0160 U
PPDDD	0.0081 J	0.0009 J	0.0083 U	0.0086 U	0.0084 U	0.0089 U	0.0088 U	0.0089 U	0.0085 U	0.0088 U	0.0088 U
PPDDE	0.0200	0.0004 BJ	0.0030 U	0.0031 U	0.0031 U	0.0032 U	0.0032 U	0.0033 U	0.0031 U	0.0068 B	0.0032 U
PPDDT	0.0097 U	0.0094 U	0.0012 J	0.0093 U	0.0092 U	0.0097 U	0.0096 U	0.0098 U	0.0093 U	0.0096 U	0.0060 J
Toxaphene	0.1900 U	0.1900 U	0.1800 U	0.1900 U	0.1800 U	0.1900 U	0.1900 U	0.2000 U	0.1900 U	0.1900 U	0.1900 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8080 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A13 (Page 5 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for organochlorine pesticides and PCBs using EPA Method 8080. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE						
ANALYTE	14#2	14#3	14#4	15#1	15#2	15#3	15#4
Aldrin	0.0012 J	0.0016 J	0.0014 J	0.0021 J	0.0018 J	0.0030 J	0.0011 J
A-BHC	0.0024 U	0.0024 U	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0023 U
B-BHC	0.0014 BJ	0.0048 U	0.0023 BJ	0.0016 BJ	0.0018 BJ	0.0024 BJ	0.0042 BJ
D-BHC	0.0073 U	0.0073 U	0.0074 U	0.0073 U	0.0074 U	0.0074 U	0.0068 U
G-BHC	0.0032 U	0.0032 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0030 U
A-Chlordane	0.0014 BJ	0.0047 B	0.0023 BJ	0.0027 BJ	0.0027 BJ	0.0026 BJ	0.0012 BJ
G-CHLORDANE	0.0040 U	0.0009 J	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0038 U
Dieldrin	0.0007 J	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017	0.0015 U
Disulfoton	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0260 U
A-Endosulfan	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U
B-Endosulfan	0.0032 U	0.0032 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0030 U
Endosulfan sulfate	0.0530 U	0.0530 U	0.0540 U	0.0540 U	0.0540 U	0.0540 U	0.0500 U
Endrin	0.0049 U	0.0048 U	0.0049 U	0.0049 U	0.0049 U	0.0049 U	0.0045 U
Endrin Aldehyde	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0170 U
Ethyl Parathion	0.0240 U	0.0240 U	0.0240 U	0.0240 U	0.0240 U	0.0240 U	0.0230 U
Famphur	0.0480 U	0.0480 U	0.0490 U	0.0490 U	0.0490 U	0.0490 U	0.0450 U
Heptachlor	0.0014 U	0.0047 B	0.0021 BJ	0.0027 B	0.0021 BJ	0.0026 B	0.0024 B
Heptachlor Epoxide	0.0670 U	0.0670 U	0.0680 U	0.0680 U	0.0680 U	0.0680 U	0.0630 U
Kepone	0.4900 U	0.4800 U	0.4900 U	0.4900 U	0.4900 U	0.4900 U	0.4500 U
Methoxychlor	0.1400 U	0.1400 U	0.1400 U	0.1400 U	0.1400 U	0.1400 U	0.1300 U
Methyl Parathion	0.0480 U	0.0480 U	0.0490 U	0.0490 U	0.0490 U	0.0490 U	0.0450 U
PCB-1016	0.0530 U	0.0520 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U
PCB-1221	0.0530 U	0.0520 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U
PCB-1232	0.0530 U	0.0520 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U
PCB-1242	0.0530 U	0.0520 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U
PCB-1248	0.0530 U	0.0520 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U	0.0530 U
PCB-1254	0.0160 J	0.0370 J	0.0290 J	0.1100 U	0.0320 J	0.1100 U	0.0980 U
PCB-1260	0.1100 U	0.1000 U	0.1100 U	0.1100 U	0.1100 U	0.1100 U	0.0980 U
Phorate	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0150 U
PPDDD	0.0089 U	0.0089 U	0.0090 U	0.0090 U	0.0090 U	0.0090 U	0.0083 U
PPDDE	0.0032 U	0.0012 J	0.0010 J	0.0033 U	0.0006 J	0.0023 J	0.0030 U
PPDDT	0.0097 U	0.0097 U	0.0098 U	0.0098 U	0.0044 J	0.0098 U	0.0090 U
Toxaphene	0.1900 U	0.1900 U	0.2000 U	0.2000 U	0.2000 U	0.2000 U	0.2000 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8080 - In Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A13 (Page 6 of 6). Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of surface soils collected August 1992 for organochlorine pesticides and PCBs using EPA Method 8080. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with detectable concentrations are shown in gray.

ANALYTE	SAMPLE 16	17	18
Aldrin	0.0027 U	0.0031 U	0.0031 U
A-BHC	0.0021 U	0.0023 U	0.0023 U
B-BHC	0.0012 BJ	0.0009 BJ	0.0047 U
D-BHC	0.0062 U	0.0070 U	0.0070 U
G-BHC	0.0027 U	0.0031 U	0.0031 U
A-Chlordane	0.0034 U	0.0039 U	0.0005 BJ
G-CHLORDANE	0.0034 U	0.0039 U	0.0022 BJ
Dieldrin	0.0014 U	0.0019	0.0028
Disulfoton	0.0240 U	0.0270 U	0.0440
A-Endosulfan	0.0096 U	0.0110 U	0.0110 U
B-Endosulfan	0.0027 U	0.0031 U	0.0031 U
Endosulfan sulfate	0.0450 U	0.0520 U	0.0510 U
Endrin	0.0041 U	0.0047 U	0.0047 U
Endrin Aldehyde	0.0160 U	0.0180 U	0.0051 J
Ethyl Parathion	0.0140 U	0.0160 U	0.0480
Famphur	0.0410 U	0.0470 U	0.0160 J
Heptachlor	0.0004 BJ	0.0023 U	0.0006 BJ
Heptachlor Epoxide	0.0570 U	0.0650 U	0.0650 U
Kepone	0.4100 U	0.4700 U	0.4700 U
Methoxychlor	0.1200 U	0.1400 U	0.1400 U
Methyl Parathion	0.0410 U	0.0470 U	0.0730
PCB-1016	0.0440 U	0.0510 U	0.0510 U
PCB-1221	0.0440 U	0.0510 U	0.0510 U
PCB-1232	0.0440 U	0.0510 U	0.0510 U
PCB-1242	0.0440 U	0.0510 U	0.0510 U
PCB-1248	0.0440 U	0.0510 U	0.0510 U
PCB-1254	0.0890 U	0.1000 U	0.1000 U
PCB-1260	0.0890 U	0.1000 U	0.1000 U
Phorate	0.0140 U	0.0160 U	0.0510
PPDDD	0.0075 U	0.0086 U	0.0086 U
PPDDE	0.0027 U	0.0005 BJ	0.0007 BJ
PPDDT	0.0082 U	0.0025 J	0.0010 J
Toxaphene	0.1600 U	0.1900 U	0.1900 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8080 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
(-) - No analysis reported for this compound.

Table A14. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of method blanks associated with analyses of surface an subsurface soils collected August 1992 for PPP's. Only analytes detected in the method blanks are presented in the table. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for boring locations.

VOA ANALYTE	CONC	METHOD BLANK	BORING#DEPTH
A-Chlordane	0.00072 J	1	1#1- 3#3
A-Chlordane	0.00073 J	4	8#4-11#2, 16#1-18#1
A-Chlordane	0.00052 J	5	11#3-12#3
A-Chlordane	0.00052 J	6	13#1-14#1
A-Chlordane	0.00120 J	7	14#2-15#4
Aldrin	0.00096 J	6	13#1-14#1
B-BHC	0.00360 J	1	1#1- 3#3
B-BHC	0.00086 J	4	8#4-11#2, 16#1-18#1
B-BHC	0.00110 J	7	14#2-15#4
Dieldrin	0.00610 J	1	1#1- 3#3
Dieldrin	0.00061 J	4	8#4-11#2, 16#1-18#1
Endrin	0.00086 J	1	1#1- 3#3
Endrin Aldehyde	0.00210 J	1	1#1- 3#3
Ethyl Parathion	0.02200	5	11#3-12#3
Ethyl Parathion	0.02200	6	13#1-14#1
G-Chlordane	0.00170 J	1	1#1- 3#3
G-Chlordane	0.00044 J	4	8#4-11#2, 16#1-18#1
Heptachlor	0.00059 J	2	4#3-6#3
Heptachlor	0.00047 J	4	8#4-11#2, 16#1-18#1
Heptachlor	0.00062 J	5	11#3-12#3
Heptachlor	0.00062 J	6	13#1-14#1
Heptachlor	0.00190 J	7	14#2-15#4
Methoxychlor	0.01400 J	1	1#1- 3#3
PPDDD	0.00100 J	2	4#3-6#3
PPDDD	0.00100 J	3	7#1-8#3
PPDDD	0.00096 J	4	8#4-11#2, 16#1-18#1
PPDDE	0.00065 J	1	1#1- 3#3
PPDDE	0.00055 J	4	8#4-11#2, 16#1-18#1

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
J - Indicates an estimated value below accurate quantitation limits.

Table A15. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Comparison of results of organochlorine pesticides and PCBs of subsurface and surface soil samples to risk-based concentrations for industrial soils. Only analytes detected are presented in the table. See Figure 10 for sample locations and table 13 for complete data. Concentrations are mg/kg (ppm) dry weight.

ANALYTE	SOIL CONCENTRATION MAX		NUMBER ** DETECTED	STATIONS WITH CONCENTRATION >= DETECTION LIMIT (54 STATIONS TOTAL)	RISK-BASED CONCENTRATION INDUSTRIAL SOIL * @
Aldrin	0.0037	B	20	2	0.34 c
A-BHC	0.0006	J	1	0	0.91 c
B-BHC	0.0120		28	5	3.2 c
A-Chlordane	0.0047	B	39	1	4.4 c
G-Chlordane	0.0061		16	1	4.4 c
Dieldrin	0.0410		35	11	0.36 c
Disulfoton	0.0440		1	1	82 n
A-Endosulfan	0.0012	J	1	0	12,000 n
B-Endosulfan	0.0260		8	2	12,000 n
Endosulfan sulfate	0.0280	J	5	0	12,000 n
Endrin	0.0007	BJ		0	610 n
Endrin Aldehyde	0.0980		9	1	-
Ethyl Parathion	0.0480		1	1	12,000 n
Famphur	0.0160	J	1	0	-
Heptachlor	0.0520	B	29	6	1.3 c
Heptachlor Epoxide	0.0240	J	1	0	0.63 c
Methoxychlor	0.0590	J	5	0	10,000 n
Methyl Parathion	0.0730		1	1	510 n
PCB-1254	0.1900		9	1	0.74 c
Phorate	0.0510		2	2	410 n
PPDDD	0.0270		12	1	24 c
PPDDE	0.0200		19	3	17 c
PPDDT	0.0690		16	2	17 c

Notes:
Risk-Based Concentrations * - Risk-Based Concentration Table, 1/31/95. Roy L. Smith, Senior Toxicologist(3HW13), U. S. EPA Region III. Risk Based Concentrations are in mg/kg. Basis of RBC: c=carcinogenic effect; n=noncarcinogenic effect.
(-) - No risk-based concentration available.
** - Includes J values. J - Indicates an estimated value below accurate quantitation limits.
B- Indicates analyte is found in the associated blank as well as in the sample.
@ - None of the contaminants exceeded the risk-based concentrations.

Table A16. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of rinsates associated with analyses of surface an subsurface soils collected August 1992 for PPP's. Only analytes detected in the rinsates and associated method blanks are presented in the table. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for boring locations.

VOA ANALYTE	CONC		RINSE/ METHOD BLANK	BORING#DEPTH
a-CHLORDANE	0.000012	BJ	RINSE 1	1#1-12#2 AND 16#1-18#1
Dieldrin	0.000011	BJ	RINSE 1	1#1-12#2 AND 16#1-18#1
Methyl Parathion	0.000390	J	RINSE 1	1#1-12#2 AND 16#1-18#1
PPDDD	0.000016	BJ	RINSE 1	1#1-12#2 AND 16#1-18#1
a-CHLORDANE	0.000014	BJ	RINSE 2	1#1-12#2 AND 16#1-18#1
Dieldrin	0.000011	BJ	RINSE 2	1#1-12#2 AND 16#1-18#1
PPDDT	0.000019	BJ	RINSE 2	1#1-12#2 AND 16#1-18#1
a-CHLORDANE	0.000010	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
g-CHLORDANE	0.000011	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
Dieldrin	0.000006	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
B-Endosulfan	0.000015	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
Endosulfan sulfate	0.000140	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
Endrin	0.000035	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
Endrin Aldehyde	0.000026	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
Heptachlor	0.000005	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
Methoxychlor	0.000370	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
PPDDD	0.000018	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
PPDDE	0.000006	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1
PPDDT	0.000014	J	METHOD BLANK	1#1-12#2 AND 16#1-18#1

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
J - Indicates an estimated value below accurate quantitation limits.
B - Indicates analyte is found in the associated blank as well as in the sample.

Table A17. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for chlorinated herbicides using EPA Method 8150. Concentrations are mg/kg (ppm) dry weight. See Figure10 for sample locations. Samples with detectable concentrations are shown in gray.

	BORING/SAMPLE										
ANALYT	1#1	1#2	1#3	1#4	2#1	2#2	2#3	2#4	3#1	3#2	3#3
2,4-D	0.4800 U	0.4800 U	0.4500 U	0.4700 U	0.4700 U	0.0018 J	0.4800 U	0.4600 U	0.4700 U	0.4400 U	0.0060 J
2,4,5-T	0.0800 U	0.0800 U	0.0740 U	0.0780 U	0.0780 U	0.0760 U	0.0800 U	0.0770 U	0.0780 U	0.0740 U	0.0790 U
2,4,5-TP	0.0680 U	0.0680 U	0.0630 U	0.0660 U	0.0670 U	0.0640 U	0.0680 U	0.0650 U	0.0660 U	0.0620 U	0.0670 U
Dinoseb	0.0280 U	0.0280 U	0.0260 U	0.0290 U	0.0270 U	0.0260 U	0.0280 U	0.0270 U	0.0280 U	0.0260 U	0.0590

ANALYT	4#1	4#2	4#3	4#4	5#1	5#2	6#1	6#2	6#3	7#1	7#2
2,4-D	0.4600 U	0.4400 U	0.4400 U	0.4400 U	0.4400 U	0.4700 U	0.4200 U	0.4800 U	0.4500 U	0.4400 U	0.4400 U
2,4,5-T	0.0770 U	0.0740 U	0.0740 U	0.0740 U	0.0740 U	0.0780 U	0.0710 U	0.0800 U	0.0740 U	0.0740 U	0.0740 U
2,4,5-TP	0.0650 U	0.0630 U	0.0630 U	0.0630 U	0.0630 U	0.0670 U	0.0600 U	0.0680 U	0.0630 U	0.0620 U	0.0620 U
Dinoseb	0.0280 U	0.0260 U	0.0260 U	0.0260 U	0.0260 U	0.0270 U	0.0250 U	0.0280 U	0.0260 U	0.0260 U	0.0260 U

ANALYT	7#3	8#1	8#2	8#3	8#4	9#1	9#2	9#3	10#1	10#2	10#3
2,4-D	0.4800 U	0.4800 U	0.4800 U	0.4600 U	0.4800 U	0.4600 U	0.4600 U	0.4300 U	0.4000 U	0.4900 U	0.4400 U
2,4,5-T	0.0790 U	0.0790 U	0.0790 U	0.0770 U	0.0800 U	0.0760 U	0.0780 U	0.0720 U	0.0670 U	0.0810 U	0.0740 U
2,4,5-TP	0.0680 U	0.0680 U	0.0680 U	0.0660 U	0.0680 U	0.0640 U	0.0660 U	0.0610 U	0.0570 U	0.0690 U	0.0630 U
Dinoseb	0.0280 U	0.0280 U	0.0280 U	0.0270 U	0.0280 U	0.0260 U	0.0270 U	0.0250 U	0.0230 U	0.0280 U	0.0260 U

ANALYT	10#4	11#1	11#2	11#3	12#1	12#2	13#1	13#2	13#3	13#4	14#1
2,4-D	0.4700 U	0.4700 U	0.4500 U	0.4600 U	0.4400 U	0.4700 U	0.4600 U	0.4800 U	0.4600 U	0.4600 U	0.4800 U
2,4,5-T	0.0780 U	0.0780 U	0.0750 U	0.0770 U	0.0740 U	0.0790 U	0.0770 U	0.0790 U	0.0770 U	0.0770 U	0.0800 U
2,4,5-TP	0.0660 U	0.0660 U	0.0640 U	0.0650 U	0.0630 U	0.0670 U	0.0650 U	0.0680 U	0.0650 U	0.0650 U	0.0680 U
Dinoseb	0.0270 U	0.0270 U	0.0260 U	0.0270 U	0.0260 U	0.0280 U	0.0270 U	0.0280 U	0.0270 U	0.0270 U	0.0280 U

ANALYT	14#2	14#3	14#4	15#1	15#2	15#3	15#4	16	17	18
2,4-D	0.4800 U	0.4800 U	0.4700 U	0.5000 U	0.4800 U	0.4800 U	0.4500 U	0.4200 U	0.4600 U	0.4600 U
2,4,5-T	0.0800 U	0.0790 U	0.0790 U	0.0830 U	0.0800 U	0.0810 U	0.0750 U	0.0360 J	0.0770 U	0.0760 U
2,4,5-TP	0.0680 U	0.0680 U	0.0670 U	0.0700 U	0.0680 U	0.0680 U	0.0640 U	0.0600 U	0.0650 U	0.0640 U
Dinoseb	0.0280 U	0.0280 U	0.0280 U	0.0290 U	0.0280 U	0.0280 U	0.0260 U	0.0240 U	0.0270 U	0.0260 U

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 8150 - in Test Methods for Evaluating Organic and Inorganic Wastes, Physical Methods SW846, Third Edition, November 1986, with July 1992 revisions.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
B - Analytes found in associated method blank as well as sample.
J - Indicates an estimated value below accurate quantitation limits.
Surrogate - Surrogate recoveries measure method performance. Acceptable recoveries (defined by the method) are given in parentheses.
(-) - No analysis reported for this compound.

Table A18. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Comparison of results of chlorinated herbicides of subsurface and surface soil samples to risk-based concentrations for industrial soils. Only analytes detected are presented in the table. See Figure 10 for sample locations and Table A17 for complete data. Concentrations are mg/kg (ppm) dry weight.

ANALYTE	SOIL CONCENTRATION MAX		NUMBER ** DETECTED	STATIONS WITH CONCENTRATION >= DETECTION LIMIT (54 STATIONS TOTAL)	RISK-BASED CONCENTRATION INDUSTRIAL SOIL * @
2,4-D	0.0060	J	2	0	20,000 n
2,4,5-T	0.0380	J	1	0	20,000 n
Dinoseb	0.0590		1	1	2,000 n

Notes:
Risk-Based Concentrations * - Risk-Based Concentration Table, 1/31/95. Roy L. Smith, Senior Toxicologist(3HW13), U. S. EPA Region III. Risk Based Concentrations are in mg/kg. Basis of RBC: c=carcinogenic effect; n=noncarcinogenic effect.
** - Includes J values. J - Indicates an estimated value below accurate quantitation limits.
@ - None of the contaminants exceeded the risk-based concentrations.

Table A19. Pest Control Area/R-150 Tank Site, NSWC, Crane, Indiana, SWMU #09/05. Results of analyses of subsurface soils collected August 1992 for total recoverable petroleum hydrocarbons (TRPH) using EPA Method 418.1. Concentrations are mg/kg (ppm) dry weight. See Figure 10 for sample locations. Samples with concentrations greater than the State of Indiana's action level of 100 ppm are shown in gray.

	BORING/SAMPLE										
ANALYTE	**1#1**	**1#2**	**1#3**	**1#4**	**2#1**	**2#2**	**2#3**	**2#4**	**3#1**	**3#2**	**3#3**
TRPH	4 J	94	25 U	25 U	40	25 U	25 U	25 U	25 U	25 U	25 U
ANALYTE	**4#1**	**4#2**	**4#3**	**4#4**	**5#1**	**5#2**	**6#1**	**6#2**	**6#3**	**7#1**	**7#2**
TRPH	25 U	25 U	25 U	25 U	3000	25 U	1100	25 U	25 U	25 U	25 U
ANALYTE	**7#3**	**8#1**	**8#2**	**8#3**	**8#4**	**9#1**	**9#2**	**9#3**	**10#1**	**10#2**	**10#3**
TRPH	25 U	6500	14 J	25 U	25 U	440	25 U	25 U	1900	25 U	25 U
ANALYTE	**10#4**	**11#1**	**11#2**	**11#3**	**12#1**	**12#2**	**13#1**	**13#2**	**13#3**	**13#4**	**14#1**
TRPH	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
ANALYTE	**14#2**	**14#3**	**14#4**	**15#1**	**15#2**	**15#3**	**15#4**	**16**	**17**	**18**	
TRPH	25 U	25 U	25 U	15 J	1 J	1 J	25 U	25 U	24 J	70	

Notes: Sample ID - 1#1 indicates boring number 1, sample 1.
EPA Method 418.1 - In Methods for Chemical Analysis of Water and Wastes, 1979, EPA-600/4-79-020.I.
U - Compund was analyzed for but not detected. Detection limits are given before the U symbol.
J - Indicates an estimated value below accurate quantitation limits.

Table A20. Pest Control Area/R-150, NSWC, Crane, Indiana, SWMU #09/05. Comparison of inorganic analyses of surface and subsurface soil samples (4#1-18) with those from background soil borings (1#1-3#1). MAX, MIN, and MEAN concentrations are mg/kg dry weight (ppm) and do not include data qualified by a W, N, or * (see Table A10).

Pest Control Area, Surface and Subsurface Samples

	AS (43)	BA (43)	CD (43)	CR (39)	PB (18)	HG (43)	AG (31)	SE (28)
Max	13.10	276.00	0.63	25.80	14.90	<0.10	<1.00	0.48
Min	0.41	28.30	<0.02	11.20	4.40	<0.10	<0.10	<0.20
Mean	5.89	82.61	0.13	18.58	9.41	<0.10	0.71	0.25

Pest Control Area, Background Soil Samples

	AS (11)	BA (11)	CD (11)	CR (11)	PB (*)	HG (11)	AG (11)	SE (10)
Max	9.03	116.00	0.05	21.90	*	<0.10	<1.00	0.30
Min	1.22	40.70	< 0.02	9.50	*	<0.10	<1.00	<0.20
Mean	4.18	63.27	0.03	15.78	*	<0.10	<1.00	0.21

COMPARISON OF PEST AREA BACKGROUND (BACK) WITH PEST AREA (PEST) SOILS FOR SPECIFIC ANALYTE. GREATER CONCENTRATION IS INDICATED

	AS	BA	CD	CR	PB	HG	AG	
Max	PEST	PEST	PEST	PEST	BACK	PEST	PEST	PEST
Mean	PEST	PEST	PEST	PEST	BACK	PEST	BACK	PEST
RATIO PEST CONTROL MAX / BACKGROUND MAX								
	1.45	2.38	12.60	1.18	*	1.00	1.00	1.60
RATIO PEST CONTROL MEAN / BACKGROUND MEAN								
	1.41	1.31	4.33	1.18	*	1.00	0.71	1.19
RATIO PEST CONTROL MIN / BACKGROUND MIN								
	0.34	0.70	1.00	1.18	*	1.00	0.10	1.00

Note:
(*) - All data qualified by a W, N, or * (see notes Table 5.2.9) and not used for these comparisons.
(-) - Comparison not made due to data being out of control limits.
Mean - Means were computed using the reported detection limit for those samples with results reported as < detection limit (U qualified).
Ratios - Ratios were computed using the detection limit in those cases where less than detection concentrations were reported.
(43) - Number of samples

Table A21. Ground Water Monitoring Results for Detected Concentrations of TCE and Trichloroethane.

Well no.	Trichloroethylene (ppm)			Trichloroethane (ppm)		
	Jan '88	Apr '88	Sep '91	Jan '88	Apr '88	Sep '91
WES 9-1-81	0.007	0.005	0.000	0.000	0.000	0.000
WES 9-3-81	0.220	0.168	0.024	0.340	0.179	0.0195
WES 9-4-81	0.011	0.016	0.003	0.000	0.000	0.001
WES 9-5-81	0.027	0.008	0.007	0.000	0.003	0.001
WT1P	0.024	0.008	0.003	0.000	0.000	0.000
WT2P	0.028	0.022	0.014	0.004	0.002	0.000
WT3P	0.598	0.575	0.140	0.007	0.006	0.000
WT4P	0.083	0.129	0.045	0.008	0.009	0.000
WT5P	0.000	0.004	0.001	0.000	0.000	0.000
WT6P	0.000	0.000	0.000	0.000	0.000	0.000

Note: ppm - parts per million

Method Detection Limits:

Trichloroethylene = 0.001 ppm

Trichloroethane = 0.001 ppm

Table A22.
Summary of July 1992 Pest Control Area Groundwater Sampling/Analysis Results

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-01	7/14/92	ANTIMONY	<	0.00300	
09-01	7/14/92	ARSENIC	<	0.00200	
09-01	7/14/92	BERYLLIUM	<	0.00100	
09-01	7/14/92	CADMIUM	<	0.00020	
09-01	7/14/92	CHROMIUM	<	0.00500	
09-01	7/14/92	COPPER	<	0.00500	
09-01	7/14/92	LEAD	<	0.00100	
09-01	7/14/92	MERCURY	<	0.00020	
09-01	7/14/92	NICKEL	<	0.00500	
09-01	7/14/92	SELENIUM	<	0.00200	
09-01	7/14/92	SILVER	<	0.00500	
09-01	7/14/92	THALLIUM	<	0.00200	
09-01	7/14/92	ZINC	<	0.01000	
09-01	7/14/92	ALUMINUM	<	0.03000	
09-01	7/14/92	BARIUM	<	0.02000	
09-01	7/14/92	CALCIUM		46.90000	
09-01	7/14/92	COBALT	<	0.02000	
09-01	7/14/92	IRON	<	0.04000	
09-01	7/14/92	MAGNESIUM		14.10000	
09-01	7/14/92	MANGANESE	<	0.00500	
09-01	7/14/92	POTASSIUM	B	0.86000	
09-01	7/14/92	SODIUM		23.70000	
09-01	7/14/92	VANADIUM	<	0.01000	
09-01	7/14/92	TIN	<	0.05000	
09-01	7/14/92	CYANIDE	<	0.00500	
09-01	7/14/92	SULFIDE	<	0.02000	
09-01	7/14/92	NITRITE NITROGEN	<	0.00500	
09-01	7/14/92	NITRATE NITROGEN	<	0.02000	
09-01	7/14/92	PHENOL	<	0.01000	MG/L
09-01	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-01	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-01	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-01	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-01	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-01	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-01	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-01	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-01	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-01	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-01	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-01	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-01	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-01	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-01	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-01	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	38.30000	MG/L
09-01	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	23.20000	MG/L
09-01	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	75.10000	MG/L
09-01	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-01	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-01	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-01	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-01	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-01	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-01	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-01	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-01	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-01	7/14/92	BENZIDINE	<	0.05000	MG/L
09-01	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-01	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-01	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-01	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-01	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-01	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-01	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-01	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-01	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-01	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-01	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-01	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-01	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-01	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-01	7/14/92	FLUORENE	<	0.01000	MG/L
09-01	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-01	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-01	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-01	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-01	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-01	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-01	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-01	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-01	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-01	7/14/92	PYRENE	<	0.01000	MG/L
09-01	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-01	7/14/92	CHRYSENE	<	0.01000	MG/L
09-01	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-01	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-01	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-01	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-01	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-01	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-01	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-01	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-01	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-01	7/14/92	ANILINE	<	0.02000	MG/L
09-01	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-01	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-01	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-01	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-01	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-01	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-01	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	81.20000	MG/L
09-01	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	85.80000	MG/L
09-01	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	92.70000	MG/L
09-01	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-01	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-01	7/14/92	VINYL CHLORIDE	<	0.01000	MG/L
09-01	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-01	7/14/92	METHYLENE CHLORIDE	B	0.00220	MG/L
09-01	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-01	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-01	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-01	7/14/92	CIS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-01	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-01	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-01	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-01	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-01	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L
09-01	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-01	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-01	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-01	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-01	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-01	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-01	7/14/92	BENZENE	<	0.00500	MG/L
09-01	7/14/92	BROMOFORM	<	0.00500	MG/L
09-01	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-01	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-01	7/14/92	TOLUENE	<	0.00500	MG/L
09-01	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-01	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-01	7/14/92	ACETONE	B	0.03200	MG/L
09-01	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-01	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-01	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-01	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-01	7/14/92	STYRENE	<	0.00500	MG/L
09-01	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-01	7/14/92	T-XYLENE	<	0.00500	MG/L
09-01	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	102.00000	MG/L
09-01	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	99.70000	MG/L
09-01	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	98.10000	MG/L
09-01	7/14/92	ALDRIN	<	0.00004	MG/L
09-01	7/14/92	A-BHC	<	0.00003	MG/L
09-01	7/14/92	B-BHC	<	0.00006	MG/L
09-01	7/14/92	G-BHC	<	0.00004	MG/L
09-01	7/14/92	D-BHC	<	0.00009	MG/L
09-01	7/14/92	PPDDD	<	0.00010	MG/L
09-01	7/14/92	PPDDE	<	0.00004	MG/L
09-01	7/14/92	PPDDT	<	0.00011	MG/L
09-01	7/14/92	HEPTACHLOR	B	0.00002	MG/L
09-01	7/14/92	DIELDRIN	<	0.00002	MG/L
09-01	7/14/92	A-ENDOSULFAN	<	0.00013	MG/L
09-01	7/14/92	B-ENDOSULFAN	<	0.00004	MG/L
09-01	7/14/92	ENDOSULFAN SULFATE	<	0.00064	MG/L
09-01	7/14/92	ENDRIN	<	0.00006	MG/L
09-01	7/14/92	ENDRIN ALDEHYDE	<	0.00022	MG/L
09-01	7/14/92	HEPTACHLOR EPOXIDE	<	0.00079	MG/L
09-01	7/14/92	METHOXYCHLOR	<	0.00170	MG/L
09-01	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	130.00000	MG/L
09-01	7/14/92	TOXAPHENE	<	0.00230	MG/L
09-01	7/14/92	PCB-1016	<	0.00062	MG/L
09-01	7/14/92	PCB-1221	<	0.00062	MG/L
09-01	7/14/92	PCB-1232	<	0.00062	MG/L
09-01	7/14/92	PCB-1242	<	0.00062	MG/L
09-01	7/14/92	PCB-1248	<	0.00062	MG/L
09-01	7/14/92	PCB-1254	<	0.00120	MG/L
09-01	7/14/92	PCB-1260	<	0.00120	MG/L
09-01	7/14/92	ETHYL PARATHION	<	0.00058	MG/L
09-01	7/14/92	METHYL PARATHION	<	0.00110	MG/L
09-01	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	127.00000	MG/L
09-01	7/14/92	DISULFOTON	<	0.00067	MG/L
09-01	7/14/92	FAMPHUR	<	0.00110	MG/L
09-01	7/14/92	PHORATE	<	0.00038	MG/L
09-01	7/14/92	A-CHLORDANE	<	0.00005	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-01	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-01	7/14/92	KEPONE	<	0.00580	MG/L
09-02	7/14/92	ANTIMONY	B	0.00830	
09-02	7/14/92	ARSENIC	B	0.00940	
09-02	7/14/92	BERYLLIUM	<	0.00100	
09-02	7/14/92	CADMIUM	<	0.00020	
09-02	7/14/92	CHROMIUM	<	0.00500	
09-02	7/14/92	COPPER	<	0.00500	
09-02	7/14/92	LEAD	<	0.00100	
09-02	7/14/92	MERCURY	<	0.00020	
09-02	7/14/92	NICKEL	<	0.00500	
09-02	7/14/92	SELENIUM	<	0.00200	
09-02	7/14/92	SILVER	<	0.00500	
09-02	7/14/92	THALLIUM	<	0.00200	
09-02	7/14/92	ZINC	<	0.01000	
09-02	7/14/92	ALUMINUM	<	0.03000	
09-02	7/14/92	BARIUM	B	0.13000	
09-02	7/14/92	CALCIUM		78.40000	
09-02	7/14/92	COBALT	<	0.02000	
09-02	7/14/92	IRON		8.20000	
09-02	7/14/92	MAGNESIUM		15.30000	
09-02	7/14/92	MANGANESE		3.20000	
09-02	7/14/92	POTASSIUM		8.47000	
09-02	7/14/92	SODIUM		5.43000	
09-02	7/14/92	VANADIUM	<	0.01000	
09-02	7/14/92	TIN	<	0.05000	
09-02	7/14/92	CYANIDE	<	0.00500	
09-02	7/14/92	SULFIDE		0.06100	
09-02	7/14/92	NITRITE NITROGEN	<	0.00500	
09-02	7/14/92	NITRATE NITROGEN	<	0.02000	
09-02	7/14/92	PHENOL	<	0.01000	MG/L
09-02	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-02	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-02	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-02	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-02	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-02	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-02	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-02	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-02	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-02	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-02	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-02	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-02	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-02	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-02	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-02	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	36.20000	MG/L
09-02	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	23.20000	MG/L
09-02	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	73.40000	MG/L
09-02	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-02	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-02	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-02	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-02	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-02	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-02	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-02	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-02	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-02	7/14/92	BENZIDINE	<	0.05000	MG/L
09-02	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-02	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-02	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-02	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-02	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-02	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-02	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-02	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-02	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-02	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-02	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-02	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-02	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-02	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-02	7/14/92	FLUORENE	<	0.01000	MG/L
09-02	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-02	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-02	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-02	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-02	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-02	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-02	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-02	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-02	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-02	7/14/92	PYRENE	<	0.01000	MG/L
09-02	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-02	7/14/92	CHRYSENE	<	0.01000	MG/L
09-02	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-02	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.00840	MG/L
09-02	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-02	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-02	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-02	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-02	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-02	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-02	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-02	7/14/92	ANILINE	<	0.02000	MG/L
09-02	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-02	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-02	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-02	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-02	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-02	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-02	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	58.50000	MG/L
09-02	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	65.80000	MG/L
09-02	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	108.00000	MG/L
09-02	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-02	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-02	7/14/92	VINYL CHLORIDE	<	0.01000	MG/L
09-02	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-02	7/14/92	METHYLENE CHLORIDE	B	0.00160	MG/L
09-02	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-02	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-02	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-02	7/14/92	CIS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-02	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-02	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-02	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-02	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-02	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L
09-02	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-02	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-02	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-02	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-02	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-02	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-02	7/14/92	BENZENE	<	0.00500	MG/L
09-02	7/14/92	BROMOFORM	<	0.00500	MG/L
09-02	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-02	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-02	7/14/92	TOLUENE	<	0.00500	MG/L
09-02	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-02	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-02	7/14/92	ACETONE	B	0.05100	MG/L
09-02	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-02	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-02	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-02	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-02	7/14/92	STYRENE	<	0.00500	MG/L
09-02	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-02	7/14/92	T-XYLENE	<	0.00500	MG/L
09-02	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	107.00000	MG/L
09-02	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	102.00000	MG/L
09-02	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	101.00000	MG/L
09-02	7/14/92	ALDRIN	<	0.00004	MG/L
09-02	7/14/92	A-BHC	<	0.00003	MG/L
09-02	7/14/92	B-BHC	<	0.00006	MG/L
09-02	7/14/92	G-BHC	<	0.00004	MG/L
09-02	7/14/92	D-BHC	<	0.00009	MG/L
09-02	7/14/92	PPDDD	<	0.00011	MG/L
09-02	7/14/92	PPDDE	<	0.00004	MG/L
09-02	7/14/92	PPDDT	<	0.00012	MG/L
09-02	7/14/92	HEPTACHLOR	B	0.00073	MG/L
09-02	7/14/92	DIELDRIN	<	0.00002	MG/L
09-02	7/14/92	A-ENDOSULFAN	<	0.00014	MG/L
09-02	7/14/92	B-ENDOSULFAN	<	0.00004	MG/L
09-02	7/14/92	ENDOSULFAN SULFATE	<	0.00064	MG/L
09-02	7/14/92	ENDRIN	<	0.00006	MG/L
09-02	7/14/92	ENDRIN ALDEHYDE	<	0.00022	MG/L
09-02	7/14/92	HEPTACHLOR EPOXIDE	<	0.00081	MG/L
09-02	7/14/92	METHOXYCHLOR	<	0.00170	MG/L
09-02	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	120.00000	MG/L
09-02	7/14/92	TOXAPHENE	<	0.00230	MG/L
09-02	7/14/92	PCB-1016	<	0.00630	MG/L
09-02	7/14/92	PCB-1221	<	0.00063	MG/L
09-02	7/14/92	PCB-1232	<	0.00063	MG/L
09-02	7/14/92	PCB-1242	<	0.00063	MG/L
09-02	7/14/92	PCB-1248	<	0.00063	MG/L
09-02	7/14/92	PCB-1254	<	0.00130	MG/L
09-02	7/14/92	PCB-1260	<	0.00130	MG/L
09-02	7/14/92	ETHYL PARATHION	<	0.00058	MG/L
09-02	7/14/92	METHYL PARATHION	<	0.00120	MG/L
09-02	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	111.00000	MG/L
09-02	7/14/92	DISULFOTON	<	0.00068	MG/L
09-02	7/14/92	FAMPHUR	<	0.00120	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-02	7/14/92	PHORATE	<	0.00039	MG/L
09-02	7/14/92	A-CHLORDANE	<	0.00005	MG/L
09-02	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-02	7/14/92	KEPONE	<	0.00610	MG/L
09-03	7/14/92	ANTIMONY	B	0.00460	
09-03	7/14/92	ARSENIC	<	0.00200	
09-03	7/14/92	BERYLLIUM	<	0.00100	
09-03	7/14/92	CADMIUM	<	0.00020	
09-03	7/14/92	CHROMIUM	<	0.00500	
09-03	7/14/92	COPPER	<	0.00500	
09-03	7/14/92	LEAD	<	0.00100	
09-03	7/14/92	MERCURY	<	0.00020	
09-03	7/14/92	NICKEL	B	0.02500	
09-03	7/14/92	SELENIUM	<	0.00200	
09-03	7/14/92	SILVER	<	0.00500	
09-03	7/14/92	THALLIUM	<	0.00200	
09-03	7/14/92	ZINC	<	0.01000	
09-03	7/14/92	ALUMINUM	<	0.03000	
09-03	7/14/92	BARIUM	B	0.02300	
09-03	7/14/92	CALCIUM		56.90000	
09-03	7/14/92	COBALT	<	0.02000	
09-03	7/14/92	IRON	B	0.08300	
09-03	7/14/92	MAGNESIUM		20.40000	
09-03	7/14/92	MANGANESE		1.34000	
09-03	7/14/92	POTASSIUM	B	0.88800	
09-03	7/14/92	SODIUM		28.60000	
09-03	7/14/92	VANADIUM	<	0.01000	
09-03	7/14/92	TIN	<	0.05000	
09-03	7/14/92	CYANIDE	<	0.00500	
09-03	7/14/92	SULFIDE		0.04500	
09-03	7/14/92	CHLOROMETHANE	<	0.01700	MG/L
09-03	7/14/92	BROMOMETHANE	<	0.01700	MG/L
09-03	7/14/92	VINYL CHLORIDE	<	0.01700	MG/L
09-03	7/14/92	CHLOROETHANE	<	0.01700	MG/L
09-03	7/14/92	METHYLENE CHLORIDE	B	0.00330	MG/L
09-03	7/14/92	1,1-DICHLOROETHENE		0.03000	MG/L
09-03	7/14/92	1,1-DICHLOROETHANE		0.06500	MG/L
09-03	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00840	MG/L
09-03	7/14/92	CIS-1,2-DICHLOROETHENE		0.22000	MG/L
09-03	7/14/92	CHLOROFORM	<	0.00840	MG/L
09-03	7/14/92	1,2-DICHLOROETHANE	J	0.00230	MG/L
09-03	7/14/92	1,1,1-TRICHLOROETHANE		0.15000	MG/L
09-03	7/14/92	CARBON TETRACHLORIDE	<	0.00840	MG/L
09-03	7/14/92	BROMODICHLOROMETHANE	<	0.00840	MG/L
09-03	7/14/92	1,2-DICHLOROPROPANE	<	0.00840	MG/L
09-03	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00840	MG/L
09-03	7/14/92	TRICHLOROETHENE		0.15000	MG/L
09-03	7/14/92	DIBROMOCHLOROMETHANE	<	0.00840	MG/L
09-03	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00840	MG/L
09-03	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00840	MG/L
09-03	7/14/92	BENZENE	J	0.00080	MG/L
09-03	7/14/92	BROMOFORM	<	0.00840	MG/L
09-03	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00840	MG/L
09-03	7/14/92	TETRACHLOROETHENE	<	0.00840	MG/L
09-03	7/14/92	TOLUENE	<	0.00840	MG/L
09-03	7/14/92	CHLOROBENZENE	<	0.00840	MG/L
09-03	7/14/92	ETHYLBENZENE	<	0.00840	MG/L
09-03	7/14/92	ACETONE	B	0.00420	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-03	7/14/92	2-BUTANONE	<	0.17000	MG/L
09-03	7/14/92	CARBONDISULFIDE	<	0.00840	MG/L
09-03	7/14/92	2-HEXANONE	<	0.08400	MG/L
09-03	7/14/92	4-METHYL-2-PENTANONE	<	0.08400	MG/L
09-03	7/14/92	STYRENE	<	0.00840	MG/L
09-03	7/14/92	VINYL ACETATE	<	0.08400	MG/L
09-03	7/14/92	T-XYLENE	<	0.00840	MG/L
09-03	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	100.00000	MG/L
09-03	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	101.00000	MG/L
09-03	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	99.90000	MG/L
09-03	7/14/92	PHENOL	<	0.01000	MG/L
09-03	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-03	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-03	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-03	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-03	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-03	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-03	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-03	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-03	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-03	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-03	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-03	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-03	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-03	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-03	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-03	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	36.60000	MG/L
09-03	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	23.20000	MG/L
09-03	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	87.50000	MG/L
09-03	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-03	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-03	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-03	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-03	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-03	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-03	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-03	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-03	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-03	7/14/92	BENZIDINE	<	0.05000	MG/L
09-03	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-03	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-03	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-03	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-03	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-03	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-03	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-03	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-03	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-03	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-03	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-03	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-03	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-03	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-03	7/14/92	FLUORENE	<	0.01000	MG/L
09-03	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-03	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-03	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-03	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-03	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-03	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-03	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-03	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-03	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-03	7/14/92	PYRENE	<	0.01000	MG/L
09-03	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-03	7/14/92	CHRYSENE	<	0.01000	MG/L
09-03	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-03	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-03	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-03	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-03	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-03	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-03	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-03	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-03	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-03	7/14/92	ANILINE	<	0.02000	MG/L
09-03	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-03	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-03	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-03	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-03	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-03	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-03	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	67.10000	MG/L
09-03	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	62.20000	MG/L
09-03	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	96.40000	MG/L
09-03	7/14/92	ALDRIN	<	0.00004	MG/L
09-03	7/14/92	A-BHC	<	0.00003	MG/L
09-03	7/14/92	B-BHC	J	0.00002	MG/L
09-03	7/14/92	G-BHC	<	0.00004	MG/L
09-03	7/14/92	D-BHC	<	0.00009	MG/L
09-03	7/14/92	PPDDD	<	0.00011	MG/L
09-03	7/14/92	PPDDE		0.00073	MG/L
09-03	7/14/92	PPDDT	<	0.00011	MG/L
09-03	7/14/92	HEPTACHLOR	J	0.00002	MG/L
09-03	7/14/92	DIELDRIN	<	0.00002	MG/L
09-03	7/14/92	A-ENDOSULFAN	<	0.00014	MG/L
09-03	7/14/92	B-ENDOSULFAN	<	0.00004	MG/L
09-03	7/14/92	ENDOSULFAN SULFATE	<	0.00065	MG/L
09-03	7/14/92	ENDRIN	<	0.00006	MG/L
09-03	7/14/92	ENDRIN ALDEHYDE	<	0.00023	MG/L
09-03	7/14/92	HEPTACHLOR EPOXIDE	<	0.00082	MG/L
09-03	7/14/92	METHOXYCHLOR	<	0.00170	MG/L
09-03	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	120.00000	MG/L
09-03	7/14/92	TOXAPHENE	<	0.00240	MG/L
09-03	7/14/92	PCB-1016	<	0.00065	MG/L
09-03	7/14/92	PCB-1221	<	0.00065	MG/L
09-03	7/14/92	PCB-1232	<	0.00065	MG/L
09-03	7/14/92	PCB-1242	<	0.00065	MG/L
09-03	7/14/92	PCB-1248	<	0.00065	MG/L
09-03	7/14/92	PCB-1254	<	0.00130	MG/L
09-03	7/14/92	PCB-1260	<	0.00130	MG/L
09-03	7/14/92	ETHYL PARATHION	<	0.00059	MG/L
09-03	7/14/92	METHYL PARATHION	<	0.00120	MG/L
09-03	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	142.00000	MG/L
09-03	7/14/92	DISULFOTON	<	0.00069	MG/L
09-03	7/14/92	FAMPHUR	<	0.00059	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-03	7/14/92	PHORATE	<	0.00040	MG/L
09-03	7/14/92	A-CHLORDANE	B	0.00006	MG/L
09-03	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-03	7/14/92	KEPONE	<	0.00590	MG/L
09-04	7/14/92	ANTIMONY	B	0.00460	
09-04	7/14/92	ARSENIC	<	0.00200	
09-04	7/14/92	BERYLLIUM	<	0.00100	
09-04	7/14/92	CADMIUM	B	0.00030	
09-04	7/14/92	CHROMIUM	<	0.00500	
09-04	7/14/92	COPPER	<	0.00500	
09-04	7/14/92	LEAD	<	0.00100	
09-04	7/14/92	MERCURY	<	0.00020	
09-04	7/14/92	NICKEL	B	0.02400	
09-04	7/14/92	SELENIUM	<	0.00200	
09-04	7/14/92	SILVER	<	0.00500	
09-04	7/14/92	THALLIUM	<	0.00200	
09-04	7/14/92	ZINC		0.04700	
09-04	7/14/92	ALUMINUM	<	0.03000	
09-04	7/14/92	BARIUM	B	0.02200	
09-04	7/14/92	CALCIUM		51.00000	
09-04	7/14/92	COBALT	<	0.02000	
09-04	7/14/92	IRON	<	0.04000	
09-04	7/14/92	MAGNESIUM		19.70000	
09-04	7/14/92	MANGANESE		0.53900	
09-04	7/14/92	POTASSIUM	B	2.35000	
09-04	7/14/92	SODIUM		25.50000	
09-04	7/14/92	VANADIUM	<	0.01000	
09-04	7/14/92	TIN	<	0.05000	
09-04	7/14/92	CYANIDE	<	0.00500	
09-04	7/14/92	SULFIDE	<	0.02000	
09-04	7/14/92	NITRITE NITROGEN		0.01900	
09-04	7/14/92	NITRATE NITROGEN	<	0.02000	
09-04	7/14/92	PHENOL	<	0.01000	MG/L
09-04	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-04	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-04	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-04	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-04	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-04	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-04	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-04	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-04	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-04	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-04	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-04	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-04	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-04	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-04	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-04	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	40.00000	MG/L
09-04	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	25.10000	MG/L
09-04	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	70.30000	MG/L
09-04	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-04	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-04	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-04	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-04	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-04	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-04	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-04	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-04	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-04	7/14/92	BENZIDINE	<	0.05000	MG/L
09-04	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-04	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-04	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-04	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-04	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-04	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-04	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-04	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-04	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-04	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-04	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-04	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-04	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-04	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-04	7/14/92	FLUORENE	<	0.01000	MG/L
09-04	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-04	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-04	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-04	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-04	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-04	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-04	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-04	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-04	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-04	7/14/92	PYRENE	<	0.01000	MG/L
09-04	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-04	7/14/92	CHRYSENE	<	0.01000	MG/L
09-04	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-04	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-04	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-04	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-04	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-04	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-04	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-04	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-04	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-04	7/14/92	ANILINE	<	0.02000	MG/L
09-04	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-04	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-04	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-04	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-04	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-04	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-04	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	64.60000	MG/L
09-04	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	70.10000	MG/L
09-04	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	93.70000	MG/L
09-04	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-04	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-04	7/14/92	VINYL CHLORIDE	J	0.00030	MG/L
09-04	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-04	7/14/92	METHYLENE CHLORIDE	B	0.00030	MG/L
09-04	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-04	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-04	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-04	7/14/92	CIS-1,2-DICHLOROETHENE		0.04100	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-04	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-04	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-04	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-04	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-04	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L
09-04	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-04	7/14/92	TRANS-1,3-DICHLOROPROPENE	J	0.00030	MG/L
09-04	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-04	7/14/92	DIBROMOCHLOROMETHANE		0.00930	MG/L
09-04	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-04	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-04	7/14/92	BENZENE	<	0.00500	MG/L
09-04	7/14/92	BROMOFORM	<	0.00500	MG/L
09-04	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-04	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-04	7/14/92	TOLUENE	<	0.00500	MG/L
09-04	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-04	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-04	7/14/92	ACETONE	<	0.00500	MG/L
09-04	7/14/92	2-BUTANONE	B	0.00240	MG/L
09-04	7/14/92	CARBONDISULFIDE	<	0.10000	MG/L
09-04	7/14/92	2-HEXANONE	<	0.00500	MG/L
09-04	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-04	7/14/92	STYRENE	<	0.05000	MG/L
09-04	7/14/92	VINYL ACETATE	<	0.00500	MG/L
09-04	7/14/92	T-XYLENE	<	0.05000	MG/L
09-04	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	<	0.00500	MG/L
09-04	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	105.00000	MG/L
09-04	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	102.00000	MG/L
09-04	7/14/92	ALDRIN	%	101.00000	MG/L
09-04	7/14/92	A-BHC	<	0.00004	MG/L
09-04	7/14/92	B-BHC	<	0.00003	MG/L
09-04	7/14/92	G-BHC	<	0.00006	MG/L
09-04	7/14/92	D-BHC	<	0.00004	MG/L
09-04	7/14/92	PPDDD	<	0.00009	MG/L
09-04	7/14/92	PPDDE	B	0.00003	MG/L
09-04	7/14/92	PPDDT	<	0.00004	MG/L
09-04	7/14/92	HEPTACHLOR	<	0.00012	MG/L
09-04	7/14/92	DIELDRIN	B	0.00002	MG/L
09-04	7/14/92	A-ENDOSULFAN	<	0.00002	MG/L
09-04	7/14/92	B-ENDOSULFAN	<	0.00014	MG/L
09-04	7/14/92	ENDOSULFAN SULFATE	<	0.00004	MG/L
09-04	7/14/92	ENDRIN	<	0.00067	MG/L
09-04	7/14/92	ENDRIN ALDEHYDE	<	0.00006	MG/L
09-04	7/14/92	HEPTACHLOR EPOXIDE	<	0.00023	MG/L
09-04	7/14/92	METHOXYCHLOR	<	0.00084	MG/L
09-04	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	<	0.00180	MG/L
09-04	7/14/92	TOXAPHENE	%	120.00000	MG/L
09-04	7/14/92	PCB-1016	<	0.00240	MG/L
09-04	7/14/92	PCB-1221	U	0.00066	MG/L
09-04	7/14/92	PCB-1232	<	0.00066	MG/L
09-04	7/14/92	PCB-1242	<	0.00066	MG/L
09-04	7/14/92	PCB-1248	<	0.00066	MG/L
09-04	7/14/92	PCB-1254	<	0.00066	MG/L
09-04	7/14/92	PCB-1260	<	0.00130	MG/L
09-04	7/14/92	ETHYL PARATHION	<	0.00130	MG/L
09-04	7/14/92	METHYL PARATHION	<	0.00061	MG/L
09-04	7/14/92	AZINPHOSMETHYL(SURROGATE)	<	0.00120	MG/L
			%	104.00000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-04	7/14/92	DISULFOTON	<	0.00071	MG/L
09-04	7/14/92	FAMPHUR	<	0.00120	MG/L
09-04	7/14/92	PHORATE	<	0.00040	MG/L
09-04	7/14/92	A-CHLORDANE	B	0.00003	MG/L
09-04	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-04	7/14/92	KEPONE	<	0.00610	MG/L
09-05	7/14/92	ANTIMONY	<	0.00300	
09-05	7/14/92	ARSENIC	<	0.00200	
09-05	7/14/92	BERYLLIUM	<	0.00100	
09-05	7/14/92	CADMIUM	B	0.00037	
09-05	7/14/92	CHROMIUM	<	0.00500	
09-05	7/14/92	COPPER	<	0.00500	
09-05	7/14/92	LEAD	<	0.00100	
09-05	7/14/92	MERCURY	<	0.00020	
09-05	7/14/92	NICKEL		0.08600	
09-05	7/14/92	SELENIUM	<	0.00200	
09-05	7/14/92	SILVER	<	0.00500	
09-05	7/14/92	THALLIUM	<	0.00200	
09-05	7/14/92	ZINC		0.10400	
09-05	7/14/92	ALUMINUM	<	0.03000	
09-05	7/14/92	BARIUM	B	0.02200	
09-05	7/14/92	CALCIUM		65.50000	
09-05	7/14/92	COBALT	B	0.02600	
09-05	7/14/92	IRON	<	0.04000	
09-05	7/14/92	MAGNESIUM		28.40000	
09-05	7/14/92	MANGANESE		2.34000	
09-05	7/14/92	POTASSIUM	B	2.02000	
09-05	7/14/92	SODIUM		31.00000	
09-05	7/14/92	VANADIUM	<	0.01000	
09-05	7/14/92	TIN	<	0.05000	
09-05	7/14/92	CYANIDE	<	0.00500	
09-05	7/14/92	SULFIDE	<	0.02000	
09-05	7/14/92	NITRITE NITROGEN	<	0.00500	
09-05	7/14/92	NITRATE NITROGEN		0.09100	
09-05	7/14/92	PHENOL	<	0.01000	MG/L
09-05	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-05	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-05	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-05	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-05	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-05	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-05	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-05	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-05	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-05	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-05	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-05	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-05	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-05	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-05	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-05	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	32.80000	MG/L
09-05	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	19.60000	MG/L
09-05	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	71.10000	MG/L
09-05	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-05	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-05	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-05	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-05	7/14/92	ISOPHORONE	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-05	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-05	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-05	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-05	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-05	7/14/92	BENZIDINE	<	0.05000	MG/L
09-05	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-05	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-05	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-05	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-05	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-05	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-05	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-05	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-05	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-05	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-05	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-05	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-05	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-05	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-05	7/14/92	FLUORENE	<	0.01000	MG/L
09-05	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-05	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-05	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-05	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-05	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-05	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-05	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-05	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-05	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-05	7/14/92	PYRENE	<	0.01000	MG/L
09-05	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-05	7/14/92	CHRYSENE	<	0.01000	MG/L
09-05	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-05	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-05	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-05	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-05	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-05	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-05	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-05	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-05	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-05	7/14/92	ANILINE	<	0.02000	MG/L
09-05	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-05	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-05	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-05	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-05	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-05	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-05	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	61.40000	MG/L
09-05	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	64.40000	MG/L
09-05	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	79.00000	MG/L
09-05	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-05	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-05	7/14/92	VINYL CHLORIDE	J	0.00140	MG/L
09-05	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-05	7/14/92	METHYLENE CHLORIDE	B	0.00140	MG/L
09-05	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-05	7/14/92	1,1-DICHLOROETHANE		0.00790	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-05	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-05	7/14/92	CIS-1,2-DICHLOROETHENE		0.02400	MG/L
09-05	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-05	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-05	7/14/92	1,1,1-TRICHLOROETHANE		0.00770	MG/L
09-05	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-05	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L
09-05	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-05	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-05	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-05	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-05	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-05	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-05	7/14/92	BENZENE	<	0.00500	MG/L
09-05	7/14/92	BROMOFORM	<	0.00500	MG/L
09-05	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-05	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-05	7/14/92	TOLUENE	<	0.00500	MG/L
09-05	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-05	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-05	7/14/92	ACETONE	B	0.00790	MG/L
09-05	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-05	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-05	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-05	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-05	7/14/92	STYRENE	<	0.00500	MG/L
09-05	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-05	7/14/92	T-XYLENE	<	0.00500	MG/L
09-05	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	106.00000	MG/L
09-05	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	101.00000	MG/L
09-05	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	99.40000	MG/L
09-05	7/14/92	ALDRIN	<	0.00004	MG/L
09-05	7/14/92	A-BHC	<	0.00003	MG/L
09-05	7/14/92	B-BHC	<	0.00006	MG/L
09-05	7/14/92	G-BHC	<	0.00004	MG/L
09-05	7/14/92	D-BHC	<	0.00009	MG/L
09-05	7/14/92	PPDDD	<	0.00011	MG/L
09-05	7/14/92	PPDDE	<	0.00004	MG/L
09-05	7/14/92	PPDDT	<	0.00012	MG/L
09-05	7/14/92	HEPTACHLOR	B	0.00001	MG/L
09-05	7/14/92	DIELDRIN	<	0.00002	MG/L
09-05	7/14/92	A-ENDOSULFAN	<	0.00014	MG/L
09-05	7/14/92	B-ENDOSULFAN	B	0.00000	MG/L
09-05	7/14/92	ENDOSULFAN SULFATE	<	0.00064	MG/L
09-05	7/14/92	ENDRIN	<	0.00006	MG/L
09-05	7/14/92	ENDRIN ALDEHYDE	<	0.00022	MG/L
09-05	7/14/92	HEPTACHLOR EPOXIDE	<	0.00081	MG/L
09-05	7/14/92	METHOXYCHLOR	<	0.00170	MG/L
09-05	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	120.00000	MG/L
09-05	7/14/92	TOXAPHENE	<	0.00230	MG/L
09-05	7/14/92	PCB-1016	<	0.00063	MG/L
09-05	7/14/92	PCB-1221	<	0.00063	MG/L
09-05	7/14/92	PCB-1232	<	0.00063	MG/L
09-05	7/14/92	PCB-1242	<	0.00063	MG/L
09-05	7/14/92	PCB-1248	<	0.00063	MG/L
09-05	7/14/92	PCB-1254	B	0.00044	MG/L
09-05	7/14/92	PCB-1260	<	0.00130	MG/L
09-05	7/14/92	ETHYL PARATHION	<	0.00058	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-05	7/14/92	METHYL PARATHION	<	0.00120	MG/L
09-05	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	95.00000	MG/L
09-05	7/14/92	DISULFOTON	<	0.00068	MG/L
09-05	7/14/92	FAMPHUR	<	0.00120	MG/L
09-05	7/14/92	PHORATE	<	0.00039	MG/L
09-05	7/14/92	A-CHLORDANE	B	0.00004	MG/L
09-05	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-05	7/14/92	KEPONE	<	0.00580	MG/L
09-06	7/14/92	ANTIMONY	<	0.00300	
09-06	7/14/92	ARSENIC	B	0.00260	
09-06	7/14/92	BERYLLIUM	<	0.00100	
09-06	7/14/92	CADMIUM	<	0.00020	
09-06	7/14/92	CHROMIUM	<	0.00500	
09-06	7/14/92	COPPER	<	0.00500	
09-06	7/14/92	LEAD	<	0.00100	
09-06	7/14/92	MERCURY	<	0.00020	
09-06	7/14/92	NICKEL	B	0.01600	
09-06	7/14/92	SELENIUM	<	0.00200	
09-06	7/14/92	SILVER	<	0.00500	
09-06	7/14/92	THALLIUM	<	0.00200	
09-06	7/14/92	ZINC	B	0.01200	
09-06	7/14/92	ALUMINUM	<	0.03000	
09-06	7/14/92	BARIUM	<	0.02000	
09-06	7/14/92	CALCIUM		43.50000	
09-06	7/14/92	COBALT	B	0.02200	
09-06	7/14/92	IRON		2.26000	
09-06	7/14/92	MAGNESIUM		24.30000	
09-06	7/14/92	MANGANESE		1.84000	
09-06	7/14/92	POTASSIUM	B	1.38000	
09-06	7/14/92	SODIUM		45.00000	
09-06	7/14/92	VANADIUM	<	0.01000	
09-06	7/14/92	TIN	<	0.05000	
09-06	7/14/92	CYANIDE	<	0.00500	
09-06	7/14/92	SULFIDE	<	0.02000	
09-06	7/14/92	NITRITE NITROGEN	<	0.00500	
09-06	7/14/92	NITRATE NITROGEN		0.02100	
09-06	7/14/92	PHENOL	<	0.01000	MG/L
09-06	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-06	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-06	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-06	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-06	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-06	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-06	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-06	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-06	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-06	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-06	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-06	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-06	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-06	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-06	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-06	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	27.40000	MG/L
09-06	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	15.10000	MG/L
09-06	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	76.40000	MG/L
09-06	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-06	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-06	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-06	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-06	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-06	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-06	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-06	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-06	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-06	7/14/92	BENZIDINE	<	0.05000	MG/L
09-06	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-06	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-06	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-06	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-06	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-06	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-06	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-06	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-06	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-06	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-06	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-06	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-06	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-06	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-06	7/14/92	FLUORENE	<	0.01000	MG/L
09-06	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-06	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-06	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-06	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-06	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-06	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-06	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-06	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-06	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-06	7/14/92	PYRENE	<	0.01000	MG/L
09-06	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-06	7/14/92	CHRYSENE	<	0.01000	MG/L
09-06	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-06	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-06	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-06	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-06	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-06	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-06	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-06	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-06	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-06	7/14/92	ANILINE	<	0.02000	MG/L
09-06	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-06	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-06	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-06	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-06	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-06	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-06	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	55.60000	MG/L
09-06	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	58.20000	MG/L
09-06	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	76.30000	MG/L
09-06	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-06	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-06	7/14/92	VINYL CHLORIDE	<	0.01000	MG/L
09-06	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-06	7/14/92	METHYLENE CHLORIDE	B	0.00480	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-06	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-06	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-06	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-06	7/14/92	CIS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-06	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-06	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-06	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-06	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-06	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L
09-06	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-06	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-06	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-06	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-06	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-06	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-06	7/14/92	BENZENE	<	0.00500	MG/L
09-06	7/14/92	BROMOFORM	<	0.00500	MG/L
09-06	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-06	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-06	7/14/92	TOLUENE	<	0.00500	MG/L
09-06	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-06	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-06	7/14/92	ACETONE	B	0.00950	MG/L
09-06	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-06	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-06	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-06	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-06	7/14/92	STYRENE	<	0.00500	MG/L
09-06	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-06	7/14/92	T-XYLENE	<	0.00500	MG/L
09-06	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	100.00000	MG/L
09-06	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	101.00000	MG/L
09-06	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	97.20000	MG/L
09-06	7/14/92	ALDRIN	<	0.00004	MG/L
09-06	7/14/92	A-BHC	<	0.00003	MG/L
09-06	7/14/92	B-BHC	<	0.00006	MG/L
09-06	7/14/92	G-BHC	<	0.00004	MG/L
09-06	7/14/92	D-BHC	<	0.00009	MG/L
09-06	7/14/92	PPDDD	<	0.00012	MG/L
09-06	7/14/92	PPDDE	<	0.00004	MG/L
09-06	7/14/92	PPDDT	<	0.00012	MG/L
09-06	7/14/92	HEPTACHLOR	B	0.00001	MG/L
09-06	7/14/92	DIELDRIN	<	0.00002	MG/L
09-06	7/14/92	A-ENDOSULFAN	<	0.00013	MG/L
09-06	7/14/92	B-ENDOSULFAN	B	0.00001	MG/L
09-06	7/14/92	ENDOSULFAN SULFATE	<	0.00064	MG/L
09-06	7/14/92	ENDRIN	<	0.00006	MG/L
09-06	7/14/92	ENDRIN ALDEHYDE	<	0.00022	MG/L
09-06	7/14/92	HEPTACHLOR EPOXIDE	<	0.00081	MG/L
09-06	7/14/92	METHOXYCHLOR	<	0.00170	MG/L
09-06	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	98.00000	MG/L
09-06	7/14/92	TOXAPHENE	<	0.00230	MG/L
09-06	7/14/92	PCB-1016	<	0.00063	MG/L
09-06	7/14/92	PCB-1221	<	0.00063	MG/L
09-06	7/14/92	PCB-1232	<	0.00063	MG/L
09-06	7/14/92	PCB-1242	<	0.00063	MG/L
09-06	7/14/92	PCB-1248	<	0.00063	MG/L
09-06	7/14/92	PCB-1254	B	0.00026	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-06	7/14/92	PCB-1260	<	0.00120	MG/L
09-06	7/14/92	ETHYL PARATHION	<	0.00058	MG/L
09-06	7/14/92	METHYL PARATHION	<	0.00120	MG/L
09-06	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	105.00000	MG/L
09-06	7/14/92	DISULFOTON	<	0.00068	MG/L
09-06	7/14/92	FAMPHUR	<	0.00120	MG/L
09-06	7/14/92	PHORATE	<	0.00038	MG/L
09-06	7/14/92	A-CHLORDANE	B	0.00003	MG/L
09-06	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-06	7/14/92	KEPONE	<	0.00580	MG/L
09-08	7/14/92	ANTIMONY	B	0.00600	
09-08	7/14/92	ARSENIC	<	0.00200	
09-08	7/14/92	BERYLLIUM	<	0.00100	
09-08	7/14/92	CADMIUM	<	0.00020	
09-08	7/14/92	CHROMIUM	<	0.00500	
09-08	7/14/92	COPPER	<	0.00500	
09-08	7/14/92	LEAD	<	0.00100	
09-08	7/14/92	MERCURY	<	0.00020	
09-08	7/14/92	NICKEL	<	0.00500	
09-08	7/14/92	SELENIUM	<	0.00200	
09-08	7/14/92	SILVER	<	0.00500	
09-08	7/14/92	THALLIUM	<	0.00200	
09-08	7/14/92	ZINC	<	0.01000	
09-08	7/14/92	ALUMINUM	<	0.03000	
09-08	7/14/92	BARIUM	B	0.03100	
09-08	7/14/92	CALCIUM		78.10000	
09-08	7/14/92	COBALT	<	0.02000	
09-08	7/14/92	IRON	<	0.04000	
09-08	7/14/92	MAGNESIUM		23.40000	
09-08	7/14/92	MANGANESE	B	0.00900	
09-08	7/14/92	POTASSIUM	B	1.15000	
09-08	7/14/92	SODIUM		43.60000	
09-08	7/14/92	VANADIUM	<	0.01000	
09-08	7/14/92	TIN	<	0.05000	
09-08	7/14/92	CYANIDE	<	0.00500	
09-08	7/14/92	SULFIDE	<	0.02000	
09-08	7/14/92	NITRITE NITROGEN	<	0.00500	
09-08	7/14/92	NITRATE NITROGEN		0.02000	
09-08	7/14/92	PHENOL	<	0.01000	MG/L
09-08	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-08	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-08	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-08	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-08	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-08	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-08	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-08	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-08	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-08	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-08	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-08	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-08	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-08	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-08	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-08	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	25.90000	MG/L
09-08	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	20.10000	MG/L
09-08	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	47.10000	MG/L
09-08	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-08	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-08	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-08	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-08	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-08	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-08	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-08	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-08	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-08	7/14/92	BENZIDINE	<	0.05000	MG/L
09-08	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-08	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-08	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-08	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-08	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-08	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-08	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-08	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-08	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-08	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-08	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-08	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-08	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-08	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-08	7/14/92	FLUORENE	<	0.01000	MG/L
09-08	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-08	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-08	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-08	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-08	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-08	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-08	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-08	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-08	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-08	7/14/92	PYRENE	<	0.01000	MG/L
09-08	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-08	7/14/92	CHRYSENE	<	0.01000	MG/L
09-08	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-08	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-08	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-08	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-08	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-08	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-08	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-08	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-08	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-08	7/14/92	ANILINE	<	0.02000	MG/L
09-08	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-08	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-08	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-08	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-08	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-08	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-08	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	65.70000	MG/L
09-08	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	66.20000	MG/L
09-08	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	77.30000	MG/L
09-08	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-08	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-08	7/14/92	VINYL CHLORIDE	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-08	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-08	7/14/92	METHYLENE CHLORIDE	B	0.00140	MG/L
09-08	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-08	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-08	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-08	7/14/92	CIS-1,2-DICHLOROETHENE		0.04800	MG/L
09-08	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-08	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-08	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-08	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-08	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L
09-08	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-08	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-08	7/14/92	TRICHLOROETHENE		0.01000	MG/L
09-08	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-08	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-08	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-08	7/14/92	BENZENE	<	0.00500	MG/L
09-08	7/14/92	BROMOFORM	<	0.00500	MG/L
09-08	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-08	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-08	7/14/92	TOLUENE	<	0.00500	MG/L
09-08	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-08	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-08	7/14/92	ACETONE	B	0.00130	MG/L
09-08	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-08	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-08	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-08	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-08	7/14/92	STYRENE	<	0.00500	MG/L
09-08	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-08	7/14/92	T-XYLENE	<	0.00500	MG/L
09-08	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	102.00000	MG/L
09-08	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	106.00000	MG/L
09-08	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	105.00000	MG/L
09-08	7/14/92	ALDRIN	<	0.00004	MG/L
09-08	7/14/92	A-BHC	<	0.00003	MG/L
09-08	7/14/92	B-BHC	<	0.00006	MG/L
09-08	7/14/92	G-BHC	<	0.00004	MG/L
09-08	7/14/92	D-BHC	<	0.00009	MG/L
09-08	7/14/92	PPDDD	<	0.00012	MG/L
09-08	7/14/92	PPDDE	B	0.00001	MG/L
09-08	7/14/92	PPDDT	<	0.00012	MG/L
09-08	7/14/92	HEPTACHLOR	B	0.00003	MG/L
09-08	7/14/92	DIELDRIN	<	0.00019	MG/L
09-08	7/14/92	A-ENDOSULFAN	<	0.00013	MG/L
09-08	7/14/92	B-ENDOSULFAN	J	0.00001	MG/L
09-08	7/14/92	ENDOSULFAN SULFATE	<	0.00063	MG/L
09-08	7/14/92	ENDRIN	<	0.00006	MG/L
09-08	7/14/92	ENDRIN ALDEHYDE	<	0.00022	MG/L
09-08	7/14/92	HEPTACHLOR EPOXIDE	<	0.00081	MG/L
09-08	7/14/92	METHOXYCHLOR	<	0.00170	MG/L
09-08	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	60.00000	MG/L
09-08	7/14/92	TOXAPHENE	<	0.00230	MG/L
09-08	7/14/92	PCB-1016	<	0.00062	MG/L
09-08	7/14/92	PCB-1221	<	0.00062	MG/L
09-08	7/14/92	PCB-1232	<	0.00062	MG/L
09-08	7/14/92	PCB-1242	<	0.00062	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-08	7/14/92	PCB-1248	<	0.00062	MG/L
09-08	7/14/92	PCB-1254	<	0.00120	MG/L
09-08	7/14/92	PCB-1260	<	0.00120	MG/L
09-08	7/14/92	ETHYL PARATHION	<	0.00006	MG/L
09-08	7/14/92	METHYL PARATHION	<	0.00120	MG/L
09-08	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	103.00000	MG/L
09-08	7/14/92	DISULFOTON	<	0.00067	MG/L
09-08	7/14/92	FAMPHUR	<	0.00120	MG/L
09-08	7/14/92	PHORATE	<	0.00039	MG/L
09-08	7/14/92	A-CHLORDANE	B	0.00002	MG/L
09-08	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-08	7/14/92	KEPONE	<	0.00580	MG/L
09-09	7/14/92	ANTIMONY	B	0.00510	
09-09	7/14/92	ARSENIC	<	0.00200	
09-09	7/14/92	BERYLLIUM	<	0.00100	
09-09	7/14/92	CADMIUM	<	0.00020	
09-09	7/14/92	CHROMIUM	<	0.00500	
09-09	7/14/92	COPPER	<	0.00500	
09-09	7/14/92	LEAD	<	0.00100	
09-09	7/14/92	MERCURY	<	0.00020	
09-09	7/14/92	NICKEL	B	0.00800	
09-09	7/14/92	SELENIUM	<	0.00200	
09-09	7/14/92	SILVER	<	0.00500	
09-09	7/14/92	THALLIUM	<	0.00200	
09-09	7/14/92	ZINC	<	0.01000	
09-09	7/14/92	ALUMINUM	<	0.03000	
09-09	7/14/92	BARIUM	B	0.03500	
09-09	7/14/92	CALCIUM		188.00000	
09-09	7/14/92	COBALT	B	0.04100	
09-09	7/14/92	IRON		2.92000	
09-09	7/14/92	MAGNESIUM		38.60000	
09-09	7/14/92	MANGANESE		2.33000	
09-09	7/14/92	POTASSIUM	B	4.61000	
09-09	7/14/92	SODIUM		41.40000	
09-09	7/14/92	VANADIUM	<	0.01000	
09-09	7/14/92	TIN	<	0.05000	
09-09	7/14/92	CYANIDE	<	0.00500	
09-09	7/14/92	SULFIDE	<	0.02000	
09-09	7/14/92	NITRITE NITROGEN	<	0.00500	
09-09	7/14/92	NITRATE NITROGEN	<	0.02000	
09-09	7/14/92	PHENOL	<	0.01000	MG/L
09-09	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-09	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-09	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-09	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-09	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-09	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-09	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-09	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-09	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-09	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-09	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-09	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-09	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-09	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-09	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-09	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	34.00000	MG/L
09-09	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	20.40000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-09	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	83.20000	MG/L
09-09	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-09	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-09	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-09	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-09	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-09	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-09	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-09	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-09	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-09	7/14/92	BENZIDINE	<	0.05000	MG/L
09-09	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-09	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-09	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-09	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-09	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-09	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-09	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-09	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-09	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-09	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-09	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-09	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-09	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-09	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-09	7/14/92	FLUORENE	<	0.01000	MG/L
09-09	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-09	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-09	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-09	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-09	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-09	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-09	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-09	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-09	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-09	7/14/92	PYRENE	<	0.01000	MG/L
09-09	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-09	7/14/92	CHRYSENE	<	0.01000	MG/L
09-09	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-09	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-09	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-09	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-09	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-09	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-09	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-09	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-09	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-09	7/14/92	ANILINE	<	0.02000	MG/L
09-09	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-09	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-09	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-09	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-09	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-09	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-09	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	59.30000	MG/L
09-09	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	59.50000	MG/L
09-09	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	65.10000	MG/L
09-09	7/14/92	CHLOROMETHANE	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-09	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-09	7/14/92	VINYL CHLORIDE	<	0.01000	MG/L
09-09	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-09	7/14/92	METHYLENE CHLORIDE	B	0.00110	MG/L
09-09	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-09	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-09	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-09	7/14/92	CIS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-09	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-09	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-09	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-09	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-09	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L
09-09	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-09	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-09	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-09	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-09	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-09	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-09	7/14/92	BENZENE	<	0.00500	MG/L
09-09	7/14/92	BROMOFORM	<	0.00500	MG/L
09-09	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-09	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-09	7/14/92	TOLUENE	<	0.00500	MG/L
09-09	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-09	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-09	7/14/92	ACETONE	B	0.00450	MG/L
09-09	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-09	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-09	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-09	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-09	7/14/92	STYRENE	<	0.00500	MG/L
09-09	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-09	7/14/92	T-XYLENE	<	0.00500	MG/L
09-09	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	98.70000	MG/L
09-09	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	100.00000	MG/L
09-09	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	103.00000	MG/L
09-09	7/14/92	ALDRIN	<	0.00004	MG/L
09-09	7/14/92	A-BHC	<	0.00003	MG/L
09-09	7/14/92	B-BHC	<	0.00006	MG/L
09-09	7/14/92	G-BHC	<	0.00004	MG/L
09-09	7/14/92	D-BHC	<	0.00009	MG/L
09-09	7/14/92	PPDDD	<	0.00012	MG/L
09-09	7/14/92	PPDDE	B	0.00001	MG/L
09-09	7/14/92	PPDDT	<	0.00012	MG/L
09-09	7/14/92	HEPTACHLOR	B	0.00004	MG/L
09-09	7/14/92	DIELDRIN	<	0.00019	MG/L
09-09	7/14/92	A-ENDOSULFAN	<	0.00013	MG/L
09-09	7/14/92	B-ENDOSULFAN	<	0.00004	MG/L
09-09	7/14/92	ENDOSULFAN SULFATE	<	0.00063	MG/L
09-09	7/14/92	ENDRIN	<	0.00006	MG/L
09-09	7/14/92	ENDRIN ALDEHYDE	<	0.00022	MG/L
09-09	7/14/92	HEPTACHLOR EPOXIDE	<	0.00081	MG/L
09-09	7/14/92	METHOXYCHLOR	<	0.00170	MG/L
09-09	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	34.00000	MG/L
09-09	7/14/92	TOXAPHENE	<	0.00230	MG/L
09-09	7/14/92	PCB-1016	<	0.00062	MG/L
09-09	7/14/92	PCB-1221	<	0.00062	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-09	7/14/92	PCB-1232	<	0.00062	MG/L
09-09	7/14/92	PCB-1242	<	0.00062	MG/L
09-09	7/14/92	PCB-1248	<	0.00062	MG/L
09-09	7/14/92	PCB-1254	<	0.00120	MG/L
09-09	7/14/92	PCB-1260	<	0.00120	MG/L
09-09	7/14/92	ETHYL PARATHION	<	0.00006	MG/L
09-09	7/14/92	METHYL PARATHION	<	0.00120	MG/L
09-09	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	53.00000	MG/L
09-09	7/14/92	DISULFOTON	<	0.00067	MG/L
09-09	7/14/92	FAMPHUR	<	0.00120	MG/L
09-09	7/14/92	PHORATE	<	0.00039	MG/L
09-09	7/14/92	A-CHLORDANE	B	0.00003	MG/L
09-09	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-09	7/14/92	KEPONE	<	0.00580	MG/L
09-10	7/14/92	ANTIMONY	B	0.00600	
09-10	7/14/92	ARSENIC	<	0.00200	
09-10	7/14/92	BERYLLIUM	<	0.00100	
09-10	7/14/92	CADMIUM	<	0.00020	
09-10	7/14/92	CHROMIUM	<	0.00500	
09-10	7/14/92	COPPER	<	0.00500	
09-10	7/14/92	LEAD	<	0.00100	
09-10	7/14/92	MERCURY	<	0.00020	
09-10	7/14/92	NICKEL	<	0.00500	
09-10	7/14/92	SELENIUM	<	0.00200	
09-10	7/14/92	SILVER	<	0.00500	
09-10	7/14/92	THALLIUM	<	0.00200	
09-10	7/14/92	ZINC	<	0.01000	
09-10	7/14/92	ALUMINUM	<	0.03000	
09-10	7/14/92	BARIUM	B	0.05700	
09-10	7/14/92	CALCIUM		35.40000	
09-10	7/14/92	COBALT	<	0.02000	
09-10	7/14/92	IRON	<	0.04000	
09-10	7/14/92	MAGNESIUM		11.40000	
09-10	7/14/92	MANGANESE		0.24300	
09-10	7/14/92	POTASSIUM	B	1.20000	
09-10	7/14/92	SODIUM		43.00000	
09-10	7/14/92	VANADIUM	<	0.01000	
09-10	7/14/92	TIN	<	0.05000	
09-10	7/14/92	CYANIDE	<	0.00500	
09-10	7/14/92	SULFIDE		0.03000	
09-10	7/14/92	NITRITE NITROGEN	<	0.00500	
09-10	7/14/92	NITRATE NITROGEN		0.33800	
09-10	7/14/92	PHENOL	<	0.01000	MG/L
09-10	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-10	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-10	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-10	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-10	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-10	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-10	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-10	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-10	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-10	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-10	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-10	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-10	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-10	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-10	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-10	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	32.60000	MG/L
09-10	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	18.00000	MG/L
09-10	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	66.70000	MG/L
09-10	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-10	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-10	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-10	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-10	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-10	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-10	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-10	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-10	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-10	7/14/92	BENZIDINE	<	0.05000	MG/L
09-10	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-10	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-10	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-10	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-10	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-10	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-10	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-10	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-10	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-10	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-10	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-10	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-10	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-10	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-10	7/14/92	FLUORENE	<	0.01000	MG/L
09-10	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-10	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-10	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-10	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-10	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-10	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-10	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-10	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-10	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-10	7/14/92	PYRENE	<	0.01000	MG/L
09-10	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-10	7/14/92	CHRYSENE	<	0.01000	MG/L
09-10	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-10	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE		0.02700	MG/L
09-10	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-10	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-10	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-10	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-10	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-10	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-10	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-10	7/14/92	ANILINE	<	0.02000	MG/L
09-10	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-10	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-10	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-10	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-10	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-10	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-10	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	52.90000	MG/L
09-10	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	52.90000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-10	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	65.10000	MG/L
09-10	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-10	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-10	7/14/92	VINYL CHLORIDE	<	0.01000	MG/L
09-10	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-10	7/14/92	METHYLENE CHLORIDE	B	0.00200	MG/L
09-10	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-10	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-10	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-10	7/14/92	CIS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-10	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-10	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-10	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-10	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-10	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L
09-10	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-10	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-10	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-10	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-10	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-10	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-10	7/14/92	BENZENE	<	0.00500	MG/L
09-10	7/14/92	BROMOFORM	<	0.00500	MG/L
09-10	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-10	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-10	7/14/92	TOLUENE	<	0.00500	MG/L
09-10	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-10	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-10	7/14/92	ACETONE	B	0.00300	MG/L
09-10	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-10	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-10	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-10	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-10	7/14/92	STYRENE	<	0.00500	MG/L
09-10	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-10	7/14/92	T-XYLENE	<	0.00500	MG/L
09-10	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	94.40000	MG/L
09-10	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	98.40000	MG/L
09-10	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	101.00000	MG/L
09-10	7/14/92	ALDRIN	<	0.00004	MG/L
09-10	7/14/92	A-BHC	<	0.00003	MG/L
09-10	7/14/92	B-BHC	<	0.00006	MG/L
09-10	7/14/92	G-BHC	<	0.00004	MG/L
09-10	7/14/92	D-BHC	<	0.00009	MG/L
09-10	7/14/92	PPDDD	<	0.00011	MG/L
09-10	7/14/92	PPDDE	B	0.00002	MG/L
09-10	7/14/92	PPDDT	<	0.00012	MG/L
09-10	7/14/92	HEPTACHLOR	B	0.00004	MG/L
09-10	7/14/92	DIELDRIN	<	0.00002	MG/L
09-10	7/14/92	A-ENDOSULFAN	<	0.00014	MG/L
09-10	7/14/92	B-ENDOSULFAN	<	0.00004	MG/L
09-10	7/14/92	ENDOSULFAN SULFATE	<	0.00064	MG/L
09-10	7/14/92	ENDRIN	<	0.00006	MG/L
09-10	7/14/92	ENDRIN ALDEHYDE	<	0.00022	MG/L
09-10	7/14/92	HEPTACHLOR EPOXIDE	<	0.00081	MG/L
09-10	7/14/92	METHOXYCHLOR	<	0.00170	MG/L
09-10	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	64.00000	MG/L
09-10	7/14/92	TOXAPHENE	<	0.00230	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-10	7/14/92	PCB-1016	<	0.00063	MG/L
09-10	7/14/92	PCB-1221	<	0.00063	MG/L
09-10	7/14/92	PCB-1232	<	0.00063	MG/L
09-10	7/14/92	PCB-1242	<	0.00063	MG/L
09-10	7/14/92	PCB-1248	<	0.00063	MG/L
09-10	7/14/92	PCB-1254	<	0.00130	MG/L
09-10	7/14/92	PCB-1260	<	0.00130	MG/L
09-10	7/14/92	ETHYL PARATHION	<	0.00058	MG/L
09-10	7/14/92	METHYL PARATHION	<	0.00120	MG/L
09-10	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	127.00000	MG/L
09-10	7/14/92	DISULFOTON	<	0.00068	MG/L
09-10	7/14/92	FAMPHUR	<	0.00120	MG/L
09-10	7/14/92	PHORATE	<	0.00039	MG/L
09-10	7/14/92	A-CHLORDANE	B	0.00004	MG/L
09-10	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-10	7/14/92	KEPONE	<	0.00580	MG/L
09-11	7/14/92	ANTIMONY	B	0.00590	
09-11	7/14/92	ARSENIC	<	0.00200	
09-11	7/14/92	BERYLLIUM	<	0.00100	
09-11	7/14/92	CADMIUM	<	0.00020	
09-11	7/14/92	CHROMIUM	<	0.00500	
09-11	7/14/92	COPPER	<	0.00500	
09-11	7/14/92	LEAD	<	0.00100	
09-11	7/14/92	MERCURY	<	0.00020	
09-11	7/14/92	NICKEL	<	0.00500	
09-11	7/14/92	SELENIUM	<	0.00200	
09-11	7/14/92	SILVER	<	0.00500	
09-11	7/14/92	THALLIUM	<	0.00200	
09-11	7/14/92	ZINC	<	0.01000	
09-11	7/14/92	ALUMINUM	<	0.03000	
09-11	7/14/92	BARIUM	<	0.02000	
09-11	7/14/92	CALCIUM		58.20000	
09-11	7/14/92	COBALT	<	0.02000	
09-11	7/14/92	IRON	<	0.04000	
09-11	7/14/92	MAGNESIUM		20.20000	
09-11	7/14/92	MANGANESE	<	0.00500	
09-11	7/14/92	POTASSIUM	B	0.71800	
09-11	7/14/92	SODIUM		20.90000	
09-11	7/14/92	VANADIUM	<	0.01000	
09-11	7/14/92	TIN	<	0.05000	
09-11	7/14/92	CYANIDE	<	0.00500	
09-11	7/14/92	SULFIDE		0.06600	
09-11	7/14/92	NITRITE NITROGEN	<	0.00500	
09-11	7/14/92	NITRATE NITROGEN		0.45700	
09-11	7/14/92	PHENOL	<	0.01000	MG/L
09-11	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-11	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-11	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-11	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-11	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-11	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-11	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-11	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-11	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-11	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-11	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-11	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-11	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-11	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-11	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-11	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	27.60000	MG/L
09-11	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	14.70000	MG/L
09-11	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	61.10000	MG/L
09-11	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-11	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-11	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-11	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-11	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-11	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-11	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-11	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-11	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-11	7/14/92	BENZIDINE	<	0.05000	MG/L
09-11	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-11	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-11	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-11	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-11	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L
09-11	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-11	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-11	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-11	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-11	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-11	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-11	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-11	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-11	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-11	7/14/92	FLUORENE	<	0.01000	MG/L
09-11	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-11	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-11	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-11	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-11	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-11	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-11	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-11	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-11	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-11	7/14/92	PYRENE	<	0.01000	MG/L
09-11	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-11	7/14/92	CHRYSENE	<	0.01000	MG/L
09-11	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-11	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-11	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-11	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-11	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-11	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-11	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-11	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-11	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-11	7/14/92	ANILINE	<	0.02000	MG/L
09-11	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-11	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-11	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-11	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-11	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-11	7/14/92	4-NITROANILINE	<	0.05000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-11	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	48.60000	MG/L
09-11	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	46.00000	MG/L
09-11	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	44.20000	MG/L
09-11	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-11	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-11	7/14/92	VINYL CHLORIDE	<	0.01000	MG/L
09-11	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-11	7/14/92	METHYLENE CHLORIDE	B	0.00160	MG/L
09-11	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-11	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-11	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-11	7/14/92	CIS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-11	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-11	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-11	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-11	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-11	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L
09-11	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-11	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-11	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-11	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-11	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-11	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-11	7/14/92	BENZENE	<	0.00500	MG/L
09-11	7/14/92	BROMOFORM	<	0.00500	MG/L
09-11	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-11	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-11	7/14/92	TOLUENE	<	0.00500	MG/L
09-11	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-11	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-11	7/14/92	ACETONE	B	0.00250	MG/L
09-11	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-11	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-11	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-11	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-11	7/14/92	STYRENE	<	0.00500	MG/L
09-11	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-11	7/14/92	T-XYLENE	<	0.00500	MG/L
09-11	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	98.00000	MG/L
09-11	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	99.30000	MG/L
09-11	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	101.00000	MG/L
09-11	7/14/92	ALDRIN	<	0.00004	MG/L
09-11	7/14/92	A-BHC	<	0.00003	MG/L
09-11	7/14/92	B-BHC	<	0.00006	MG/L
09-11	7/14/92	G-BHC	<	0.00004	MG/L
09-11	7/14/92	D-BHC	<	0.00009	MG/L
09-11	7/14/92	PPDDD	<	0.00011	MG/L
09-11	7/14/92	PPDDE	<	0.00004	MG/L
09-11	7/14/92	PPDDT	<	0.00012	MG/L
09-11	7/14/92	HEPTACHLOR	B	0.00003	MG/L
09-11	7/14/92	DIELDRIN	<	0.00002	MG/L
09-11	7/14/92	A-ENDOSULFAN	<	0.00014	MG/L
09-11	7/14/92	B-ENDOSULFAN	<	0.00004	MG/L
09-11	7/14/92	ENDOSULFAN SULFATE	<	0.00064	MG/L
09-11	7/14/92	ENDRIN	<	0.00006	MG/L
09-11	7/14/92	ENDRIN ALDEHYDE	<	0.00022	MG/L
09-11	7/14/92	HEPTACHLOR EPOXIDE	<	0.00081	MG/L
09-11	7/14/92	METHOXYCHLOR	<	0.00170	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-11	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	98.00000	MG/L
09-11	7/14/92	TOXAPHENE	<	0.00240	MG/L
09-11	7/14/92	PCB-1016	<	0.00064	MG/L
09-11	7/14/92	PCB-1221	<	0.00064	MG/L
09-11	7/14/92	PCB-1232	<	0.00064	MG/L
09-11	7/14/92	PCB-1242	<	0.00064	MG/L
09-11	7/14/92	PCB-1248	<	0.00064	MG/L
09-11	7/14/92	PCB-1254	<	0.00130	MG/L
09-11	7/14/92	PCB-1260	<	0.00130	MG/L
09-11	7/14/92	ETHYL PARATHION	<	0.00058	MG/L
09-11	7/14/92	METHYL PARATHION	<	0.00120	MG/L
09-11	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	127.00000	MG/L
09-11	7/14/92	DISULFOTON	<	0.00069	MG/L
09-11	7/14/92	FAMPHUR	<	0.00120	MG/L
09-11	7/14/92	PHORATE	<	0.00039	MG/L
09-11	7/14/92	A-CHLORDANE	B	0.00001	MG/L
09-11	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-11	7/14/92	KEPONE	<	0.00580	MG/L
09-12	7/14/92	ANTIMONY	B	0.00570	
09-12	7/14/92	ARSENIC	<	0.00200	
09-12	7/14/92	BERYLLIUM	<	0.00100	
09-12	7/14/92	CADMIUM	<	0.00020	
09-12	7/14/92	CHROMIUM	<	0.00500	
09-12	7/14/92	COPPER	<	0.00500	
09-12	7/14/92	LEAD	<	0.00100	
09-12	7/14/92	MERCURY	<	0.00020	
09-12	7/14/92	NICKEL		0.11600	
09-12	7/14/92	SELENIUM	<	0.00200	
09-12	7/14/92	SILVER	<	0.00500	
09-12	7/14/92	THALLIUM	<	0.00200	
09-12	7/14/92	ZINC	<	0.01000	
09-12	7/14/92	ALUMINUM	<	0.03000	
09-12	7/14/92	BARIUM	B	0.03600	
09-12	7/14/92	CALCIUM		117.00000	
09-12	7/14/92	COBALT	N	0.06700	
09-12	7/14/92	IRON		13.60000	
09-12	7/14/92	MAGNESIUM		24.50000	
09-12	7/14/92	MANGANESE		2.94000	
09-12	7/14/92	POTASSIUM	B	2.20000	
09-12	7/14/92	SODIUM		25.00000	
09-12	7/14/92	VANADIUM	B	0.01100	
09-12	7/14/92	TIN	<	0.05000	
09-12	7/14/92	CYANIDE	<	0.00500	
09-12	7/14/92	SULFIDE	<	0.02000	
09-12	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-12	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-12	7/14/92	VINYL CHLORIDE	<	0.01000	MG/L
09-12	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-12	7/14/92	METHYLENE CHLORIDE	B	0.00110	MG/L
09-12	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-12	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-12	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-12	7/14/92	CIS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-12	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-12	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-12	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-12	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-12	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-12	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-12	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-12	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-12	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-12	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-12	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-12	7/14/92	BENZENE	<	0.00500	MG/L
09-12	7/14/92	BROMOFORM	<	0.00500	MG/L
09-12	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-12	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-12	7/14/92	TOLUENE	<	0.00500	MG/L
09-12	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-12	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-12	7/14/92	ACETONE	B	0.00180	MG/L
09-12	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-12	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-12	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-12	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-12	7/14/92	STYRENE	<	0.00500	MG/L
09-12	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-12	7/14/92	T-XYLENE	<	0.00500	MG/L
09-12	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	94.60000	MG/L
09-12	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	98.10000	MG/L
09-12	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	92.80000	MG/L
09-12	7/14/92	PHENOL	<	0.01000	MG/L
09-12	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-12	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-12	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-12	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-12	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-12	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-12	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-12	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-12	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-12	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-12	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-12	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-12	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-12	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-12	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-12	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	37.30000	MG/L
09-12	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	21.30000	MG/L
09-12	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	83.10000	MG/L
09-12	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-12	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-12	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-12	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-12	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-12	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-12	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-12	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-12	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-12	7/14/92	BENZIDINE	<	0.05000	MG/L
09-12	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-12	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-12	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-12	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-12	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-12	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-12	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-12	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-12	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-12	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-12	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-12	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-12	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-12	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-12	7/14/92	FLUORENE	<	0.01000	MG/L
09-12	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-12	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-12	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-12	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-12	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-12	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-12	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-12	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-12	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-12	7/14/92	PYRENE	<	0.01000	MG/L
09-12	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-12	7/14/92	CHRYSENE	<	0.01000	MG/L
09-12	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-12	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-12	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-12	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-12	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-12	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-12	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-12	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-12	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-12	7/14/92	ANILINE	<	0.02000	MG/L
09-12	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-12	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-12	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-12	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-12	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-12	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-12	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	73.30000	MG/L
09-12	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	77.40000	MG/L
09-12	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	74.80000	MG/L
09-12	7/14/92	ALDRIN	<	0.00004	MG/L
09-12	7/14/92	A-BHC	<	0.00003	MG/L
09-12	7/14/92	B-BHC	J	0.00005	MG/L
09-12	7/14/92	G-BHC	<	0.00004	MG/L
09-12	7/14/92	D-BHC	<	0.00009	MG/L
09-12	7/14/92	PPDDD	<	0.00010	MG/L
09-12	7/14/92	PPDDE	<	0.00004	MG/L
09-12	7/14/92	PPDDT	<	0.00011	MG/L
09-12	7/14/92	HEPTACHLOR	<	0.00003	MG/L
09-12	7/14/92	DIELDRIN	<	0.00002	MG/L
09-12	7/14/92	A-ENDOSULFAN	<	0.00013	MG/L
09-12	7/14/92	B-ENDOSULFAN	<	0.00004	MG/L
09-12	7/14/92	ENDOSULFAN SULFATE	<	0.00063	MG/L
09-12	7/14/92	ENDRIN	<	0.00006	MG/L
09-12	7/14/92	ENDRIN ALDEHYDE	<	0.00022	MG/L
09-12	7/14/92	HEPTACHLOR EPOXIDE	<	0.00079	MG/L
09-12	7/14/92	METHOXYCHLOR	<	0.00170	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-12	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	85.00000	MG/L
09-12	7/14/92	TOXAPHENE	<	0.00230	MG/L
09-12	7/14/92	PCB-1016	<	0.00062	MG/L
09-12	7/14/92	PCB-1221	<	0.00062	MG/L
09-12	7/14/92	PCB-1232	<	0.00062	MG/L
09-12	7/14/92	PCB-1242	<	0.00062	MG/L
09-12	7/14/92	PCB-1248	<	0.00062	MG/L
09-12	7/14/92	PCB-1254	<	0.00130	MG/L
09-12	7/14/92	PCB-1260	<	0.00130	MG/L
09-12	7/14/92	ETHYL PARATHION	<	0.00057	MG/L
09-12	7/14/92	METHYL PARATHION	<	0.00110	MG/L
09-12	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	144.00000	MG/L
09-12	7/14/92	DISULFOTON	<	0.00067	MG/L
09-12	7/14/92	FAMPHUR	<	0.00057	MG/L
09-12	7/14/92	PHORATE	<	0.00038	MG/L
09-12	7/14/92	A-CHLORDANE	B	0.00003	MG/L
09-12	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-12	7/14/92	KEPONE	<	0.00570	MG/L
09-13	7/14/92	ANTIMONY	B	0.00910	
09-13	7/14/92	ARSENIC	<	0.00200	
09-13	7/14/92	BERYLLIUM	<	0.00100	
09-13	7/14/92	CADMIUM	<	0.00020	
09-13	7/14/92	CHROMIUM	<	0.00500	
09-13	7/14/92	COPPER	<	0.00500	
09-13	7/14/92	LEAD	<	0.00100	
09-13	7/14/92	MERCURY	<	0.00020	
09-13	7/14/92	NICKEL	B	0.01700	
09-13	7/14/92	SELENIUM	<	0.00200	
09-13	7/14/92	SILVER	<	0.00500	
09-13	7/14/92	THALLIUM	<	0.00200	
09-13	7/14/92	ZINC	<	0.01000	
09-13	7/14/92	ALUMINUM	<	0.03000	
09-13	7/14/92	BARIUM	B	0.15300	
09-13	7/14/92	CALCIUM		129.00000	
09-13	7/14/92	COBALT		0.02800	
09-13	7/14/92	IRON		0.87400	
09-13	7/14/92	MAGNESIUM		27.70000	
09-13	7/14/92	MANGANESE		2.06000	
09-13	7/14/92	POTASSIUM	B	3.26000	
09-13	7/14/92	SODIUM		26.70000	
09-13	7/14/92	VANADIUM	<	0.01000	
09-13	7/14/92	TIN	<	0.05000	
09-13	7/14/92	CYANIDE	<	0.00500	
09-13	7/14/92	SULFIDE		0.02100	
09-13	7/14/92	CHLOROMETHANE	<	0.01000	MG/L
09-13	7/14/92	BROMOMETHANE	<	0.01000	MG/L
09-13	7/14/92	VINYL CHLORIDE	<	0.01000	MG/L
09-13	7/14/92	CHLOROETHANE	<	0.01000	MG/L
09-13	7/14/92	METHYLENE CHLORIDE	B	0.00070	MG/L
09-13	7/14/92	1,1-DICHLOROETHENE	<	0.00500	MG/L
09-13	7/14/92	1,1-DICHLOROETHANE	<	0.00500	MG/L
09-13	7/14/92	TRANS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-13	7/14/92	CIS-1,2-DICHLOROETHENE	<	0.00500	MG/L
09-13	7/14/92	CHLOROFORM	<	0.00500	MG/L
09-13	7/14/92	1,2-DICHLOROETHANE	<	0.00500	MG/L
09-13	7/14/92	1,1,1-TRICHLOROETHANE	<	0.00500	MG/L
09-13	7/14/92	CARBON TETRACHLORIDE	<	0.00500	MG/L
09-13	7/14/92	BROMODICHLOROMETHANE	<	0.00500	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-13	7/14/92	1,2-DICHLOROPROPANE	<	0.00500	MG/L
09-13	7/14/92	TRANS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-13	7/14/92	TRICHLOROETHENE	<	0.00500	MG/L
09-13	7/14/92	DIBROMOCHLOROMETHANE	<	0.00500	MG/L
09-13	7/14/92	CIS-1,3-DICHLOROPROPENE	<	0.00500	MG/L
09-13	7/14/92	1,1,2-TRICHLOROETHANE	<	0.00500	MG/L
09-13	7/14/92	BENZENE	<	0.00500	MG/L
09-13	7/14/92	BROMOFORM	<	0.00500	MG/L
09-13	7/14/92	1,1,2,2-TETRACHLOROETHANE	<	0.00500	MG/L
09-13	7/14/92	TETRACHLOROETHENE	<	0.00500	MG/L
09-13	7/14/92	TOLUENE	<	0.00500	MG/L
09-13	7/14/92	CHLOROBENZENE	<	0.00500	MG/L
09-13	7/14/92	ETHYLBENZENE	<	0.00500	MG/L
09-13	7/14/92	ACETONE	B	0.00230	MG/L
09-13	7/14/92	2-BUTANONE	<	0.10000	MG/L
09-13	7/14/92	CARBONDISULFIDE	<	0.00500	MG/L
09-13	7/14/92	2-HEXANONE	<	0.05000	MG/L
09-13	7/14/92	4-METHYL-2-PENTANONE	<	0.05000	MG/L
09-13	7/14/92	STYRENE	<	0.00500	MG/L
09-13	7/14/92	VINYL ACETATE	<	0.05000	MG/L
09-13	7/14/92	T-XYLENE	<	0.00500	MG/L
09-13	7/14/92	1,2-DICHLOROETHANE-D4(SURROGAT	%	103.00000	MG/L
09-13	7/14/92	TOLUENE-D8(SURROGATE (88-110))	%	101.00000	MG/L
09-13	7/14/92	4-BROMOFLUOROBENZENE(SURROGATE	%	97.00000	MG/L
09-13	7/14/92	PHENOL	<	0.01000	MG/L
09-13	7/14/92	2-CHLOROPHENOL	<	0.01000	MG/L
09-13	7/14/92	2-NITROPHENOL	<	0.01000	MG/L
09-13	7/14/92	2,4-DIMETHYLPHENOL	<	0.01000	MG/L
09-13	7/14/92	2,4-DICHLOROPHENOL	<	0.01000	MG/L
09-13	7/14/92	4-CHLORO-3-METHYLPHENOL	<	0.02000	MG/L
09-13	7/14/92	2,4,6-TRICHLOROPHENOL	<	0.01000	MG/L
09-13	7/14/92	2,4-DINITROPHENOL	<	0.05000	MG/L
09-13	7/14/92	4-NITROPHENOL	<	0.05000	MG/L
09-13	7/14/92	2-METHYL-4,6-DINOTROPHENOL	<	0.05000	MG/L
09-13	7/14/92	PENTACHLOROPHENOL	<	0.05000	MG/L
09-13	7/14/92	BENZOIC ACID	<	0.05000	MG/L
09-13	7/14/92	2-METHYLPHENOL	<	0.01000	MG/L
09-13	7/14/92	4-METHYLPHENOL	<	0.01000	MG/L
09-13	7/14/92	2,4,5-TRICHLOROPHENOL	<	0.01000	MG/L
09-13	7/14/92	BENZYL ALCOHOL	<	0.02000	MG/L
09-13	7/14/92	2-FLUOROPHENOL(SURROGATE (21-1	%	27.80000	MG/L
09-13	7/14/92	PHENOL-D6(SURROGATE (10-94))	%	15.90000	MG/L
09-13	7/14/92	2,4,6-TRIBROMOPHENOL(SURROGATE	%	55.60000	MG/L
09-13	7/14/92	N-NITROSODIMETHYLAMINE	<	0.01000	MG/L
09-13	7/14/92	BIS(2-CHLOROISOPROPYL)ETHER	<	0.01000	MG/L
09-13	7/14/92	N-NITROSO-DI-N-PROPYLAMINE	<	0.01000	MG/L
09-13	7/14/92	NITROBENZENE	<	0.01000	MG/L
09-13	7/14/92	ISOPHORONE	<	0.01000	MG/L
09-13	7/14/92	BIS(2-CHLOROETHOXY)METHANE	<	0.01000	MG/L
09-13	7/14/92	2,6-DINITROTOLUENE	<	0.01000	MG/L
09-13	7/14/92	2,4-DINITROTOLUENE	<	0.01000	MG/L
09-13	7/14/92	1,2-DIPHENYLHYDRAZINE	<	0.01000	MG/L
09-13	7/14/92	BENZIDINE	<	0.05000	MG/L
09-13	7/14/92	3,3'DICHLOROBENZIDINE	<	0.02000	MG/L
09-13	7/14/92	BIS(2-CHLOROETHYL)ETHER	<	0.01000	MG/L
09-13	7/14/92	1,3-DICHLOROBENZENE	<	0.01000	MG/L
09-13	7/14/92	1,4-DICHLOROBENZENE	<	0.01000	MG/L
09-13	7/14/92	1,2-DICHLOROBENZENE	<	0.01000	MG/L

Table A22
(Continued)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-13	7/14/92	HEXACHLOROETHANE	<	0.01000	MG/L
09-13	7/14/92	1,2,4-TRICHLOROBENZENE	<	0.01000	MG/L
09-13	7/14/92	NAPHTHALENE	<	0.01000	MG/L
09-13	7/14/92	HEXACHLOROBUTADIENE	<	0.01000	MG/L
09-13	7/14/92	HEXACHLOROCYCLOPENTADIENE	<	0.01000	MG/L
09-13	7/14/92	2-CHLORONAPHTHALENE	<	0.01000	MG/L
09-13	7/14/92	ACENAPHTHYLENE	<	0.01000	MG/L
09-13	7/14/92	DIMETHYL PHTHALATE	<	0.01000	MG/L
09-13	7/14/92	ACENAPHTHENE	<	0.01000	MG/L
09-13	7/14/92	FLUORENE	<	0.01000	MG/L
09-13	7/14/92	DIETHYL PHTHALATE	<	0.01000	MG/L
09-13	7/14/92	4-CHLOROPHENYL PHENYL ETHER	<	0.01000	MG/L
09-13	7/14/92	N-NITROSODIPHENYL AMINE	<	0.01000	MG/L
09-13	7/14/92	4-BROMOPHENYL ETHER	<	0.01000	MG/L
09-13	7/14/92	HEXACHLOROBENZENE	<	0.01000	MG/L
09-13	7/14/92	PHENANTHRENE	<	0.01000	MG/L
09-13	7/14/92	ANTHRACENE	<	0.01000	MG/L
09-13	7/14/92	DIBUTYLPHTHALATE	<	0.01000	MG/L
09-13	7/14/92	FLUORANTHENE	<	0.01000	MG/L
09-13	7/14/92	PYRENE	<	0.01000	MG/L
09-13	7/14/92	BUTYLBENZYLPHTHALATE	<	0.01000	MG/L
09-13	7/14/92	CHRYSENE	<	0.01000	MG/L
09-13	7/14/92	BENZO(A)ANTHRACENE	<	0.01000	MG/L
09-13	7/14/92	BIS(2-ETHYLHEXYL)PHTHALATE	<	0.01000	MG/L
09-13	7/14/92	DI-N-OCTYLPHTHALATE	<	0.01000	MG/L
09-13	7/14/92	BENZO(B)FLUORANTHENE	<	0.01000	MG/L
09-13	7/14/92	BENZO(K)FLUORANTHENE	<	0.01000	MG/L
09-13	7/14/92	BENZO(A)PYRENE	<	0.01000	MG/L
09-13	7/14/92	INDENO(1,2,3-C,D)PYRENE	<	0.01000	MG/L
09-13	7/14/92	DIBENZO(A,H)ANTHRACENE	<	0.01000	MG/L
09-13	7/14/92	BENZO(G,H,I)PERYLENE	<	0.01000	MG/L
09-13	7/14/92	ANILINE	<	0.02000	MG/L
09-13	7/14/92	4-CHLOROANILINE	<	0.02000	MG/L
09-13	7/14/92	DIBENZOFURAN	<	0.01000	MG/L
09-13	7/14/92	2-METHYLNAPHTHALENE	<	0.01000	MG/L
09-13	7/14/92	2-NITROANILINE	<	0.05000	MG/L
09-13	7/14/92	3-NITROANILINE	<	0.05000	MG/L
09-13	7/14/92	4-NITROANILINE	<	0.05000	MG/L
09-13	7/14/92	NITROBENZENE-D5(SURROGATE (35-	%	49.10000	MG/L
09-13	7/14/92	2-FLUOROBIPHENYL(SURROGATE (43	%	46.70000	MG/L
09-13	7/14/92	P-TERPHENYL-D14(SURROGATE (33-	%	55.60000	MG/L
09-13	7/14/92	ALDRIN	<	0.00004	MG/L
09-13	7/14/92	A-BHC	<	0.00003	MG/L
09-13	7/14/92	B-BHC	J	0.00003	MG/L
09-13	7/14/92	G-BHC	<	0.00004	MG/L
09-13	7/14/92	D-BHC	<	0.00009	MG/L
09-13	7/14/92	PPDDD	<	0.00011	MG/L
09-13	7/14/92	PPDDE	J	0.00002	MG/L
09-13	7/14/92	PPDDT	<	0.00012	MG/L
09-13	7/14/92	HEPTACHLOR	<	0.00003	MG/L
09-13	7/14/92	DIELDRIN	<	0.00002	MG/L
09-13	7/14/92	A-ENDOSULFAN	<	0.00014	MG/L
09-13	7/14/92	B-ENDOSULFAN	<	0.00004	MG/L
09-13	7/14/92	ENDOSULFAN SULFATE	<	0.00065	MG/L
09-13	7/14/92	ENDRIN	<	0.00006	MG/L
09-13	7/14/92	ENDRIN ALDEHYDE	<	0.00023	MG/L
09-13	7/14/92	HEPTACHLOR EPOXIDE	<	0.00082	MG/L
09-13	7/14/92	METHOXYCHLOR	<	0.00170	MG/L

Table A22
(Concluded)

WELL NUMBER	DATE SAMPLE	PARAMETER	VALUE_A	AMTDET_A	UNIT
09-13	7/14/92	DIBUTYLCHLORENDATE(SURROGATE (	%	96.00000	MG/L
09-13	7/14/92	TOXAPHENE	<	0.00240	MG/L
09-13	7/14/92	PCB-1016	<	0.00065	MG/L
09-13	7/14/92	PCB-1221	<	0.00065	MG/L
09-13	7/14/92	PCB-1232	<	0.00065	MG/L
09-13	7/14/92	PCB-1242	<	0.00065	MG/L
09-13	7/14/92	PCB-1248	<	0.00065	MG/L
09-13	7/14/92	PCB-1254	<	0.00130	MG/L
09-13	7/14/92	PCB-1260	<	0.00130	MG/L
09-13	7/14/92	ETHYL PARATHION	<	0.00059	MG/L
09-13	7/14/92	METHYL PARATHION	<	0.00120	MG/L
09-13	7/14/92	AZINPHOSMETHYL(SURROGATE)	%	149.00000	MG/L
09-13	7/14/92	DISULFOTON	<	0.00069	MG/L
09-13	7/14/92	FAMPHUR	<	0.00059	MG/L
09-13	7/14/92	PHORATE	<	0.00040	MG/L
09-13	7/14/92	A-CHLORDANE	B	0.00004	MG/L
09-13	7/14/92	G-CHLORDANE	<	0.00005	MG/L
09-13	7/14/92	KEPONE	<	0.00590	MG/L

Appendix B
Boring Logs

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) 09/05-1-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 (CHEMICAL): UNDISTURBED 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER W.T. 5.1'
	16. DATE HOLE: STARTED 8/13/92: COMPLETED 8/13/92
7. THICKNESS OF OVERBURDEN 6.5'	17. ELEVATION TOP OF HOLE
8. DEPTH DRILLED INTO ROCK 0.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
9. TOTAL DEPTH OF HOLE 6.5'	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		ML, Medium stiff, dark and light brown, clayey silt low plasticity	100%	1 0.5-1.0'	NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly HNU=0 7:30 A.M.
	2		Same as above		2 2.0-2.5'	HNU=0 7:30 A.M.
	3		ML, Medium stiff, light brown and gray, clayey silt low plasticity, some fine sand			
	4		Same as above	100%	3 3.5-4.0	HNU=0 8:00 A.M.
					1A	Geotechnical sample
	5		ML, Medium stiff, light brown and gray, clayey silt some sand	5.1'		
	6		SP, Yellowish brown, fine to medium poorly graded sand	60%		
	6.5		Sandstone, Yellowish brown friable REFUSAL @ 6.5'		4 5.0-6.5'	HNU=0 8:10 A.M.
			BOTTOM OF HOLE @ 6.5' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) :09/05-2-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN :DISTURBED :5 (CHEMICAL) :UNDISTURBED :1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER W.T. 4.1'
7. THICKNESS OF OVERBURDEN 6.4'	16. DATE HOLE :STARTED :8/12/92 :COMPLETED :8/12/92
8. DEPTH DRILLED INTO ROCK 0.0'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 6.4'	18. TOTAL CORE RECOVERY FOR BORING N/A %
	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		ML, Medium stiff, dark brown, clayey silt low plasticity	shelby drive #1 100%	1 0.5-1.0'	NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly HNU=0 12:30 P.M.
	2		ML, Medium stiff, light brown, clayey silt low plasticity		2 2.0-2.5'	HNU=0 12:30 P.M.
	3		Same as above	shelby drive #2 100%	1A 3.0-3.5'	Geotechnical sample
	4			▽ 4.1'	3 3.5-4.0'	HNU=0 12:45 P.M.
	5		Sandstone, Yellowish brown, fine to medium sand clean and friable	shelby drive #3 20%	4 5.5-5.9'	HNU=0 12:55 P.M.
	6		Sandstone, Yellowish-grey friable	shelby drive #4 5%		
	6.4		REFUSAL @ 6.4'			
			BOTTOM OF HOLE @ 6.4' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) 09/05-3-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 (CHEMICAL); UNDISTURBED 2 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER W.T. 4.1'
	16. DATE HOLE: STARTED 8/12/92; COMPLETED 8/12/92
7. THICKNESS OF OVERBURDEN 6.1'	17. ELEVATION TOP OF HOLE
8. DEPTH DRILLED INTO ROCK 0.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
9. TOTAL DEPTH OF HOLE 6.1'	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			ML, Medium stiff, light brown clayey silt, low plastic, trace of sand	shelby drive #1		NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drillrig kelly
	1			100%	1 1.0-1.5'	HNU=0 2:30 P.M.
			Same as above		1A 1.5-2.0'	Geotechnical sample
	2					
	3		ML, Loose, light brown and clayey silt, some fine sand	shelby drive #2		
				90%	2 3.5-4.0'	HNU=0 2:30 P.M.
	4			▽ 4.1'		
					3 4.5-5.0'	HNU=0 2:40 P.M.
	5		Sandstone, Yellowish brown, fine to medium sand, clean and friable		2A	Geotechnical sample
			Sandstone, Yellowish-gray, friable			
	6		REFUSAL @ 6.1'			
			BOTTOM OF HOLE @ 6.1' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) :09/05-4-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN :DISTURBED :4 (CHEMICAL) :UNDISTURBED :1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER DRY
7. THICKNESS OF OVERBURDEN 6.8'	16. DATE HOLE :STARTED :8/13/92 :COMPLETED :8/13/92
8. DEPTH DRILLED INTO ROCK 0.0'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 6.8'	18. TOTAL CORE RECOVERY FOR BORING N/A %
	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		ML, Medium stiff, yellowish-brown, clayey silt low plasticity	100%	1 0.5-1.0'	NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly HNU=0 10:45 A.M.
	2		Same as above		2 1.9-2.3'	HNU=0 10:45 A.M.
	3		ML, Loose, yellowish-brown gray, sandy silt no plasticity, some fine sand and some iron stains.	100%	3 3.5-4.0'	HNU=0 11:00 A.M.
	4		Same as above		1A	Geotechnical sample
	5		ML, Loose, yellowish-brown gray, sandy silt no no plasticity, some fine	50%		
	6		SP, Yellowish brown/gray fine to medium poorly graded sand		4 6.0-6.5'	HNU=0 11:15 A.M.
	6.8		Sandstone, Yellowish brown friable REFUSAL @ 6.8'			
			BOTTOM OF HOLE @ 6.8' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) :09/05-5-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN :DISTURBED :2 (CHEMICAL) :UNDISTURBED :0 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER W.T. 2.7'
	16. DATE HOLE :STARTED :8/13/92 :COMPLETED :8/13/92
	17. ELEVATION TOP OF HOLE
7. THICKNESS OF OVERBURDEN 6.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
8. DEPTH DRILLED INTO ROCK 0.0'	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH
9. TOTAL DEPTH OF HOLE 6.0'	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Gray brown concrete sand/gravel and silt	40%		NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly
	1					
	2		ML, Dark brown, clayey silt some organics, trace of sand	1 1.8-2.3	1	HNU=0 1:45 P.M.
	3		ML, Light brown/gray clayey silt, plastic, trace of sand	▽ 2.7' 40%		
	4			2 3.5-4.0'	2	HNU=0 2:00 P.M.
	5		GM, Gray, brown concrete, aggregate sand/gravel and silt	▽ 20%		HNU=0
	6		Same as above REFUSAL @ 6.0'			HNU=0
			BOTTOM OF HOLE @ 6.0' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. MAR 71

PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) : 09/05-6-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : DISTURBED : 3 (CHEMICAL) : UNDISTURBED : 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER DRY
7. THICKNESS OF OVERBURDEN 8.0'	16. DATE HOLE : STARTED : 8/14/92 : COMPLETED : 8/14/92
8. DEPTH DRILLED INTO ROCK 0.0'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 8.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1, 2		ML, Topsoil (4") dark brown sandy, clayey silt with gravel Light gray, broken limestone fragments	30%	1 0.3-1.0'	NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly HNU=0 8:00 A.M. NOTE: Augered from 0.0' to 2.5' to clean hole filled with loose limestone fragments, Sampled from 2.5' to 5.0'.
	3, 4, 5		ML, Medium stiff, light brown and gray, clayey silt low plasticity, some fine sand Same as above	60%	2 3.5-4.0'	HNU=0 8:00 A.M.
	6, 7		ML, Medium stiff, light brown and gray, clayey silt some sand	100% 1A	3 6.5-7.0'	HNU=0 8:30 A.M. Geotechnical sample
	8		Sandstone, Brown, friable REFUSAL @ 8.0'			
			BOTTOM OF HOLE @ 8.0' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) 09/05-7-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 (CHEMICAL); UNDISTURBED 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER W.T. 4.4'
7. THICKNESS OF OVERBURDEN 7.0'	16. DATE HOLE: STARTED 8/14/92; COMPLETED 8/14/92
8. DEPTH DRILLED INTO ROCK 0.0'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 7.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			ML, Light brown, clayey silt dark red stains, some organics and roots.			NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly
	1				1 1.0-1.5'	HNU=0 12:45 A.M.
	2			100%		
			ML, Light brown, clayey silt dark red stains, some roots.			
	3				2 3.0-3.5	HNU=0 1:00 P.M.
	4			60%		
				▽ 4.4'		
	5		Same as above		1A 5.0-5.5	1:00 P.M. Geotechnical sample
	6		Sandstone, Yellowish brown and gray, friable, fine to medium sand		3 6.0-6.5	HNU=0 1:15 P.M.
	7		REFUSAL @ 7.0'			
			BOTTOM OF HOLE @ 7.0' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) 09/05-8-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 (CHEMICAL); UNDISTURBED 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER W.T. 5.1'
7. THICKNESS OF OVERBURDEN 8.0'	16. DATE HOLE: STARTED 8/14/92; COMPLETED 8/14/92
8. DEPTH DRILLED INTO ROCK 0.0'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 8.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			(Fill) Light gray, limestone gravel and crushed material			NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly
	1		CL, Light brown and gray silty clay, plastic, some organics and roots	60%	1 0.7-1.4'	HNU=0 2:30 P.M.
	2					
	3		CL, Light gray silty clay plastic, some organics and roots		2 3.0-3.5'	HNU=0 2:45 P.M.
	4			40%		
	5		ML, Light brown and gray clayey silt low plastic, some red stains, iron oxide	5.1'		
	6				1A 5.5-6.0'	Geotechnical sample
					3 6.0-6.5'	HNU=0 3:00 P.M.
	7		Sandstone, Light brown and gray, friable		4 7.0-7.5'	HNU=0 3:30 P.M.
			Same as above, hard sandstone REFUSAL @ 8.0'			
	8		BOTTOM OF HOLE @ 8.0' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF B'T 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) 09/05-9-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 (CHEMICAL); UNDISTURBED 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES 1 DUPLICATE
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER W.T. 6.0'
	16. DATE HOLE STARTED 8/15/92; COMPLETED 8/15/92
7. THICKNESS OF OVERBURDEN 9.2'	17. ELEVATION TOP OF HOLE
8. DEPTH DRILLED INTO ROCK 0.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
9. TOTAL DEPTH OF HOLE 9.2'	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Gray, Limestone crushed and gravels			NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly
	1		CL, Light brown and dark gray silty clay, plastic			NOTE: 0.0'-0.5' Augered to clear concrete aggregate 0.5' to 3.0' Shelbly tube HNU=0 9:30 A.M.
	2			60%	1 (1.0-2.0')	
	3		CL, Gray and Light brown silty clay, plastic			
	4			75%	2 (3.7-4.5')	HNU=0 9:50 A.M. DUPLICATE SAMPLE
	5					
	6		CL, Gray and Light brown silty clay, plastic	▽ 6.0		
	7		Sandstone, Light brown and fine to medium and friable		3 (6.7-7.5')	HNU=0 10:10 A.M. Geotechnical sample
	8		Augered and tried shelby tube Light brown and gray friable sandstone			
	9					
	9.2		REFUSAL @ 9.2'			
			BOTTOM OF HOLE @ 9.2' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) 09/05-10-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 (CHEMICAL); UNDISTURBED 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER DRY
	16. DATE HOLE: STARTED 8/15/92; COMPLETED 8/15/92
7. THICKNESS OF OVERBURDEN 10.1'	17. ELEVATION TOP OF HOLE
8. DEPTH DRILLED INTO ROCK 0.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
9. TOTAL DEPTH OF HOLE 10.1'	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1, 2		Dark brown, topsoil (6") Light gray, limestone crushed and gravel, very loose	40%	1 0.3-1.3	NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly HNU=0 1:30 A.M.
	3, 4, 5		Augered to clean caved in material up to 3.0' CL, Light brown-yellowish and gray, silty clay, plastic, some red and black stains	100%	2 4.0-4.7'	HNU=0 1:40 P.M.
					1A 4.7-5.2'	1:40 P.M. Geotechnical sample
	6, 7, 8		CL, Light brown-yellowish and gray, silty clay, stiff, some red and black stains	70%	3 5.5-7.0'	HNU=0 1:50 P.M.
	9		CL, Light brown-yellowish and gray, silty clay,	100%	4 9.0-9.5'	HNU=0 2:30 P.M.
	10		Sandstone, Yellowish brown and gray, fine to medium sand and friable REFUSAL @ 10.1'			NOTE: SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. MAR 71 | PROJECT | HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) : 09/05-11-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : DISTURBED : 4 (CHEMICAL) : UNDISTURBED : 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER CAVED IN
	16. DATE HOLE : STARTED 8/17/92 : COMPLETED 8/17/92
	17. ELEVATION TOP OF HOLE
7. THICKNESS OF OVERBURDEN 8.9'	18. TOTAL CORE RECOVERY FOR BORING N/A %
8. DEPTH DRILLED INTO ROCK 0.0'	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH
9. TOTAL DEPTH OF HOLE 8.9'	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1, 2		Topsoil, light gray, limestone crushed loose, very small sample	0%		NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly NOTE: Almost no recovery. No sample taken.
	3, 4, 5		CL, Light brown yellowish and and gray, silty clay, plastic, some red stain (iron oxide)	100%	1 (3.0-3.7')	HNU=0 9:25 A.M.
	5, 6		CL, Light brown yellowish and and gray, silty clay, some red stain (iron oxide)	100%	1A; 2 (5.5-6.5')	Geotechnical sample 5.2'-5.5'; HNU=0 9:45 A.M.
	7		Yellowish brown, fine to medium sand and friable sandstone			
	8		Sandstone, Yellowish brown, fine to medium sand and friable some black stains	100%	3 (8.0-8.5')	HNU=0 10:00 A.M.
	8.9		REFUSAL @ 8.9'			
			BOTTOM OF HOLE @ 8.9' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) 09/05-12-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 2 (CHEMICAL): UNDISTURBED 2 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER CAVED IN
7. THICKNESS OF OVERBURDEN 8.0'	16. DATE HOLE: STARTED 8/17/92: COMPLETED 8/17/92
8. DEPTH DRILLED INTO ROCK 0.0'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 8.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
	19. SIGNATURE OF INSPECTOR ZAINUL KIDWAI / LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1, 2		Topsoil, Light gray limestone crushed, loose, very small sample	0%		NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly NOTE: No sample taken
	3		Light gray crushed limestone ML, Light brown and yellow clayey silt low plastic	80%	1 3.0-3.5'	HNU=0 12:45 P.M.
	4				1A 3.5-4.0'	Geotechnical sample
	5		ML, Light brown and yellow and gray, clayey silt	100%		
	6		Sandstone, Yellowish brown fine to medium sand, friable		2 5.5-6.0'	HNU=0 12:50 A.M.
					2A 6.0-6.5'	Geotechnical sample
	7		Sandstone, Yellowish brown fine to medium sand, friable less friable at bottom 8"	90%		HNU=0 No sample collected
	8		REFUSAL @ 8.0'			
			BOTTOM OF HOLE @ 8.0' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 2 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) 09/05-13-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 (CHEMICAL): UNDISTURBED 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER W.T. 5.1'
7. THICKNESS OF OVERBURDEN 10.3'	16. DATE HOLE STARTED 8/18/92 COMPLETED 8/18/92
8. DEPTH DRILLED INTO ROCK 0.0'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 10.3'	18. TOTAL CORE RECOVERY FOR BORING N/A %
	19. SIGNATURE OF INSPECTOR LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			(Fill) Light gray crushed limestone			NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly
	1		ML, Light brown, clayey silt low plastic	100%		
					1 1.5-2.0'	HNU=0 7:45 A.M.
	2					HNU=0 7:30 A.M.
	3		ML, Yellowish brown silt non plastic			
	4			80%	2 3.5-4.0'	HNU=0 8:00 A.M.
					1A 4.0-4.5	Geotechnical sample
	5		Same as above			
	6		ML, Light brown sandy silt friable			
	7			100%	3 6.5-7.0'	HNU=0 8:15 A.M.
	8		Same as above			
	9		Sandstone, Yellowish brown medium sand yellowish friable	100%	4 9.1-9.6'	HNU=0 8:20 A.M.
	10					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE	Hole No. 09/05-13-92
PROJECT: PCA/R-150, RFI PHASE II SOILS	INSTALLATION: WILMINGTON DISTRICT	SHEET 2 OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	10		Same as above			
	10.3		REFUSAL @ 10.3'			
			BOTTOM OF HOLE @ 10.3' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836-A PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.
MAR 71

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 2 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) 09/05-14-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 (CHEMICAL); UNDISTURBED 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER CAVED IN
	16. DATE HOLE: STARTED 8/18/92; COMPLETED 8/18/92
7. THICKNESS OF OVERBURDEN 12.0'	17. ELEVATION TOP OF HOLE
8. DEPTH DRILLED INTO ROCK 0.0'	18. TOTAL CORE RECOVERY FOR BORING N/A %
9. TOTAL DEPTH OF HOLE 12.0'	19. SIGNATURE OF INSPECTOR LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		(Fill) Light gray crushed limestone	20%		NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly HNU=0 10:00 A.M.
	2		ML, Light brown clayey silt low plastic			
	3		Same as above			
	4			100%	1 3.5-4.0'	HNU=0 10:10 A.M.
					1A 4.0-4.5'	Geotechnical sample
	5		ML, Light brown clayey silt some organics, low plastic			
	6			100%	2 5.5-6.0'	HNU=0 10:15 A.M.
					2 6.0-6.5'	Duplicate sample
	7		CL, Gray, light brown, silty clay, plastic			
	8		Same as above			
	9			100%	3 8.5-9.0'	HNU=0 10:20 A.M.
			ML, Olive gray, reddish streaks, low plastic			
	10					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG (Cont Sheet) | ELEVATION TOP OF HOLE | Hole No. 09/05-14-92

PROJECT: PCA/R-150, RFI PHASE II SOILS | INSTALLATION: WILMINGTON DISTRICT | SHEET 2 OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	10		Sandstone, Yellowish brown medium sand, streaks of iron, friable			
	11				4 (11.0-11.5)	HNU=0 10:30 A.M.
			Hard sandstone REFUSAL @ 12.0'			
	12		BOTTOM OF HOLE @ 12.0' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836-A PREVIOUS EDITIONS ARE OBSOLETE. MAR 71 | PROJECT | HOLE NO.

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION WILMINGTON DISTRICT	SHEET 1 OF 2 SHEETS

1. PROJECT PCA/R-150, RFI PHASE II SOILS	10. SIZE AND TYPE OF BIT 3" SHELBY TUBE
2. LOCATION (Coordinates or Station) NWSC, CRANE, INDIANA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY CORPS OF ENGINEERS, WES	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) : 09/05-15-92	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : DISTURBED : 4 (CHEMICAL) : UNDISTURBED : 1 (GEOTECH)
5. NAME OF DRILLER ELASTIC BROWN	14. TOTAL NUMBER CORE BOXES N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. DEPTH TO GROUND WATER CAVED IN
7. THICKNESS OF OVERBURDEN 11.7'	16. DATE HOLE : STARTED 8/18/92 : COMPLETED 8/18/92
8. DEPTH DRILLED INTO ROCK 0.0'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 11.7'	18. TOTAL CORE RECOVERY FOR BORING N/A %
	19. SIGNATURE OF INSPECTOR LEWIS SMITH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		(FILL) Light gray crushed limestone	20%		NOTE: Sampled with 3" diameter 2.5' long shelby tube pushed with drill rig kelly HNU=0 12:15 P.M.
	2		ML, Light brown clayey silt low plastic			
	3		CL, Brown and gray silty clay, plastic	80%	1 3.0-3.5'	HNU=0 12:25 P.M.
	4		ML, Gray, clayey silt, low plastic, some limestone gravel			
	5		ML, Brown and olive clayey silt, low plastic			
	6			100%	2 5.5-6.0'	HNU=0 12:35 P.M.
					1A 6.0-6.5'	Geotechnical sample
	7		Same as above			
	8			100%	3 8.0-8.5'	HNU=0 12:40 P.M.
	9		ML, Light brown, clayey silt with sand, friable			
	10					Continued on Sheet 2

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

DRILLING LOG (Cont Sheet) | ELEVATION TOP OF HOLE | Hole No. 09/05-15-92

PROJECT: PCA/R-150, RFI PHASE II SOILS | INSTALLATION: WILMINGTON DISTRICT | SHEET 2 OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	10		Sandstone, Yellowish brown medium sand, friable	100%	4 10.5'-11'	HNU=0 1:00 P.M.
	11					
	11.7		Hard sandstone REFUSAL @ 11.7'			
			BOTTOM OF HOLE @ 11.7' SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM			

ENG FORM 1836-A PREVIOUS EDITIONS ARE OBSOLETE. MAR 71 | PROJECT | HOLE NO.

Appendix C
Chain of Custody Forms

Cooler #1

USAE WA[illegible] EXPERIMENT STATION

CHAIN [illegible]STODY RECORD

PROJECT NAME: PCA/R-150, RFI Phase II, Soils, NWSC, Crane Indiana

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE ID	NO. OF CONTAINERS	VOA	Herb & Pest.	Inorg. & Semivol.	Trip Blank	Field Blank		REMARKS
8.12.92.	12.30 P.M.	09/05-2-92-1	4	2	1	1				
8.12.92.	12.30 P.M	09/05-2-92-2	4	2	1	1				
8.12.92.	12.45 P.M.	09/05-2-92-3	4	2	1	1				
8.12.92	12.55 PM.	09/05-2-92-4	4	2	1	1				
8.12.92	2.30 P.M.	09/05-3-92-1	4	2	1	1				
8.12.92	2.30 PM.	09/05-3-92-2	4	2	1	1				
8.12.92.	2.40 P.M.	09/05-3-92-3	4	2	1	1				
8.13.92	7.30 A.M	09/05-1-92-1	4	2	1	1				
8.13.92	7.30 A.M.	09/05-1-92-2	4	2	1	1				
8.13.92	8.0 A.M.	09/05-1-92-3	4	2	1	1				
8.13.92	8.10 A.M.	09/05-1-92-4	4	2	1	1				
8.13.92		Trip Blank	1				1			
8.13.92 7AM.		Field Blank	2					2		

Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
[illegible]	8.13.92. 9.0 A.M.				
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Date /Time	Remarks	

WES FORM R Nov 89 2196

PREVIOUS EDITIONS OBSOLETE

Cooler #2

USAE WATERWAYS EXPERIMENT STATION

CHAIN OF CUSTODY RECORD

PROJECT NAME: PCA / R-150, RFI Phase II Soils, NWSC Crane, Indiana

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE ID	NO. OF CONTAINERS	VOA	Herb. & Pest.	Inorg. & Semivol.	Trip Blank				REMARKS
8.13.92	10.45	09/05-4-92-1	4	2	1	1					
8.13.92	10.45	09/05-4-92-2	4	2	1	1					
8.13.92	11.0 A.M.	09/05-4-92-3	4	2	1	1					
8.13.92	11.15	09/05-4-92-4 TAK	4	2	1	1					
8.13.92	1.45	09/05-5-92-1	4	2	1	1					
8.13.92	2.00	09/05-5-92-2	4	2	1	1					
8.14.92	8.00	09/05-6-92-1	4	2	1	1					
8.14.92	8.00	09/05-6-92-2	4	2	1	1					
8.14.92	8.30	09/05-6-92-3	4	2	1	1					
8.14.92		Trip Blank	1				1				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8.14.92				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks	

WES FORM R Nov 80 2196 PREVIOUS EDITIONS OBSOLETE

Cooler #3

USAE W[illegible] EXPERIMENT STATION

CHAIN OF CUSTODY RECORD

PROJECT NAME: PCA/R-150, RFI Phase II Soils, NWSC Crane Indiana

SAMPLERS: (Signature) TAKidwai

DATE	TIME	SAMPLE ID	NO. OF CONTAINERS	VOA	Herb + Pest.	Inorg. + Semivol.	Trip Blank	Rinsate		REMARKS
8.14.92	12.45	09/05-7-92-1 ✓	4	2	1	1				
8.14.92	1.00 P.M.	09/05-7-92-2 ✓	4	2	1	1				
8.14.92	1.15	09/05-7-92-3 ✓	4	2	1	1				
8.14.92	2.30 P.M.	09/05-8-92-1 ✓	4	2	1	1				
8.14.92	2.45 P.M.	09/05-8-92-2 ✓	4	2	1	1				
8.14.92	3.00 P.M.	09/05-8-92-3 ✓	4	2	1	1				
8.14.92	3.30 P.M.	09/05-8-92-4 ✓	4	2	1	1				
8.15.92	8.15 AM.	09/05-17-92-1 ✓	4	2	1	1				Surface soil sample
8.15.92	8.30 A.M.	09/05-16-92-1 ✓	4	2	1	1				← do —
8.15.92	8.30 A.M.	09/05-18-92-1 ✓	4	2	1	1				— do —
8.15.92	9.30 A.M.	09/05-9-92-1 ✓	4	2	1	1				
8.15.92	9.50 A.M.	09/05-9-92-2 ✓	4	2	1	1				
8.15.92	9.50 A.M.	09/05-9-92-2 ✓	4	2	1	1				Duplicate
8.15.92	10.10 A.M.	09/05-9-92-3 ✓	4	2	1	1				
		Trip Blank · From WES Lab ✓					1			
8.14.92	4.30 P.M.	Rinsate ✓						1		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
TAKidwai	8.17.92 11.45				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks	

WES FORM 2196 R Nov 80

PREVIOUS EDITIONS OBSOLETE

Cooler #4

USAE WA[illegible]S EXPERIMENT STATION

CHAIN OF CUSTODY RECORD

PROJECT NAME: PCA/R-150, RFI Phase II Soils, NWSC, Crane Indiana

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE ID	NO. OF CONTAINERS	VOA	Herb. + Pest	Inorg + semivol	Trip Blank	Rinsate	Field Blank	REMARKS
8.15.92	1.30 P.M	09/05-10-92-1	4	2	1	1				
8.15.92	1.40 P.M	09/05-10-92-2	4	2	1	1				
8.15.92	1.50 P.M	09/05-10-92-3	4	2	1	1				
8.15.92	2.30 P.M	09/05-10-92-4	4	2	1	1				
8.15.92	3.0 P.M	Rinsate	1					1		
8.13.92	3.30 P.M	Rinsate	1					1		
8.17.92	10.0 A.M.	Field Blank	2						2	
8.17.92		Trip Blank	1				1			
8.17.92	9.25 A.M.	09/05-11-92-1	4	2	1	1				
8.17.92	9.45 A.M.	09/05-11-92-2	4	2	1	1				
8.17.92	10.00 A.M.	09/05-11-92-3	4	2	1	1				
			Ner.				Ner.			
~~8.17.92~~	~~12.45 P.M~~	~~09/05-12-92-1~~	~~4~~	~~2~~	~~1~~	~~1~~				
~~8.17.92~~	~~12.50 P.M~~	~~09/05-12-92-2~~	~~4~~	~~2~~	~~1~~	~~1~~				

Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
[illegible]	8.17.92 1.30 PM				
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Date /Time	Remarks	

WES FORM R Nov 80 2196 PREVIOUS EDITIONS OBSOLETE

Cooler # 5

USAE WA[illegible] EXPERIMENT STATION

CHAIN [illegible] CUSTODY RECORD

PROJECT NAME: PCA/R-150 RFI Phase II

SAMPLERS: (Signature): Kristy L Smith

DATE	TIME	SAMPLE ID	NO. OF CONTAINERS	VOA		Herbs & Pest	Trans & Semivol	Trip Blank			REMARKS
8.18.92	7:45 AM	09/05-13-92-1	4	2	1	1					
"	8:00 AM	09/05-13-92-2	4	2	1	1					
"	8:10 AM	09/05-13-92-3	4	2	1	1					
"	8:20 AM	09/05-13-92-4	4	2	1	1					
"	10:10 AM	09/05-14-92-1	4	2	1	1					
"	10:15 AM	09/05-14-92-2	8	4	2	2					Duplicate
"	10:20 AM	09/05-14-92-3	4	2	1	1					
"	10:30 AM	09/05-14-92-4	4	2							
"	12:25 pm	09/05-15-92-1	4	2	1	1					
"	12:30 pm	09/05-15-92-2	4	2	1	1					
"	12:50 pm	09/05-15-92-3	4	2	1						
"	1:00 pm	09/05-15-92-4	4	2	1						
8.19.92		Trip Blank	2				2				

Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
Kristy L Smith	8.19.92 / 1400				
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Date /Time	Remarks	

WES FORM R Nov 80 2196 PREVIOUS EDITIONS OBSOLETE

color #6

USAE W[illegible]YS EXPERIMENT STATION

CHAIN [illegible]USTODY RECORD

PROJECT NAME: DCA/R-150 RFI Phase II

SAMPLERS: (Signature) Keating L Smith

DATE	TIME	SAMPLE ID	NO. OF CONTAINERS	Rinsate	Trip Blank						REMARKS
8·18·92	1:30 Pm	Rinsate 8·18·92	7	7							
8·19·92		Trip Blank	1		1						

Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
Keating L Smith	8·19·92 1400hrs				
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Date /Time	Remarks	

WES FORM R Nov 89 2196

PREVIOUS EDITIONS OBSOLETE

cooler #7

USAE WA EXPERIMENT STATION

CHAIN OF CUSTODY RECORD

PROJECT NAME: PCA / R-150 RFI Phase II

SAMPLERS: (Signature) Keaty L Smith

DATE	TIME	SAMPLE ID	NO. OF CONTAINERS	Rinsate	Trip Blank						REMARKS
8.17.92	12:30pm	Rinsate	2	2							
8.18.92	1:30pm	Rinsate	4	4							
8.19.92		Trip Blank	1		1						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Keaty L Smith	8.19.92 1400hrs				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks	

WES FORM R Nov 80 2196 PREVIOUS EDITIONS OBSOLETE

ter #1 - Geotechnics

USAE WATER[illegible] EXPERIMENT STATION

CHAIN O[illegible]TODY RECORD

PROJECT NAME: PCA/R-150, RFI Phase II Soils, NWSC Crane Indiana

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE ID	NO. OF CONTAINERS							REMARKS
8.13.92	8 A.M.	09/05-1-92-1A	one Plastic Bag							
8.12.92	12.45 P.M.	09/05-2-92-1A	"							Soil Analysis for Physical
8.12.92	2.40 P.M.	09/05-3-92-1A	"							Parameters according to
8.12.92	2.45 P.M.	09/05-3-92-2A	"							PCA/R-150 Tank site work
8.13.92	11.0 A.M.	09/05-4-92-1A	"							Plan
8.14.92	8.30 A.M.	09/05-6-92-1A	"							
8.14.92	1.30 P.M.	09/05-7-92-1A	"							
8.14.92	3.00 P.M.	09/05-8-92-1A	"							
8.15.92	10.10 A.M.	09/05-9-92-1A	"							

Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
[illegible]	8.17.92				
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Date /Time	Remarks	

WES FORM R Nov 89 2196 PREVIOUS EDITIONS OBSOLETE

Carter #2 - Geotechnical

USAE W[illegible] EXPERIMENT STATION

CHAIN [illegible]USTODY RECORD

PROJECT NAME: PCA/R-150, RFI Phase II Soils, NWSC Crane, Indiana.

SAMPLERS: (Signature) Keaty & Smith

DATE	TIME	SAMPLE ID	NO. OF CONTAINERS							REMARKS
8.15.92	1.40 P.M.	09/05-10-92-1A	one Plastic Bag.							
8.17.92	10:0 A.M.	09/05-11-92-1A								Analysis of Physical parameters
8.17.92	12.45 P.M.	09/05-12-92-1A								of soils according to PCA/R-150
8.17.92	12.50 P.M.	09/05-12-92-2A								Tank site Work Plan
8.18.92	8:00 Am	09/05-13-92-1A								
8.18.92	10:10 Am	09/05-14-92-1A								
8.18.92	12:50 Pm	09/05-15-92-1A								

Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
Keaty & Smith					
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Relinquished by: (Signature)	Date /Time	Received by: (Signature)
Relinquished by: (Signature)	Date /Time	Received by: (Signature)	Date /Time	Remarks	

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PREVIOUS EDITIONS OBSOLETE

Appendix D
Data Validation Report

DEPARTMENT OF THE ARMY
WATERWAYS EXPERIMENT STATION, CORPS OF ENGINEERS
3909 HALLS FERRY ROAD
VICKSBURG, MISSISSIPPI 39180-6199

REPLY TO ATTENTION OF

CEWES-EE-C 24 May 1995

MEMORANDUM FOR US ARMY ENGINEER DISTRICT, WILMINGTON, 69 DARLINGTON AVENUE, WILMINGTON, NC 28403 (ATTN: MR. KIDWAI)

SUBJECT: Data validation for samples collected 12 August 1992 - 19 August 1992 - Crane PCA/R-150

1. Completeness check

a. All samples and analyses were processed.

b. Data reported included copies of all chain-of-custody records received from the field. QC results for blanks, spikes, duplicates and standard reference materials were included in the data report.

c. Procedures specified in the project planning document were followed for all analyses with the exception of tin that was analyzed by plasma emission spectrometer.

d A review of the raw data sheets shows that all calibrations were performed in accordance with SW-846 procedures.

2. All data were reported at or below project required detection limits.

3. Data were evaluated with respect to control limits for duplicates, spikes, blanks and surrogates. The following problems were noted and corrective actions taken where appropriate.

a. Metals: The predigestion spike recovery for selenium associated with soil samples #25360-25371 was outside control limits; however the sample concentrations were well below project required detection limits. No further action was required.

b. Volatile organic analysis had low levels of methylene chloride and acetone in both samples and lab blanks. These concentrations were below levels requiring corrective action.

c. BNA Analysis: A number of samples had internal standard areas outside acceptable limits. This was attributed to the dirty extracts from the complex soil matrices. Clean-up of extracts using gel permeation chromatography was the preferred corrective action; however this technology was not available at WES at the time of analysis. No additional

sample aliquots were available for repeat analysis. Since no contaminant concentrations above project required detection limits were found, the data was deemed acceptable.

d. Pesticide/PCB Analysis: High surrogate recovery for soil sample #24829 was attributed to matrix enhancement and was not considered to be a problem since the sample contained no detectable levels of PCBs. High surrogate on sample #24813 was attributed to duplicate spiking.

4. All samples were analyzed within acceptable holding times.

5. Data for QA samples were within acceptable limits.

ANN B. STRONG
Chief, Environmental Chemistry Branch

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY *(Leave blank)*

2. REPORT DATE
September 1998

3. REPORT TYPE AND DATES COVERED
Final report

4. TITLE AND SUBTITLE
Final Report: RCRA Facility Investigation, Phase II Soils Release Characterization, SWMU 09/05 Pest Control Area/R-150 Tank Site, Naval Surface Warfare Center Crane, Indiana

5. FUNDING NUMBERS

6. AUTHOR(S)
John Stephen Nohrstedt, Zanul Kidwai, Frank Yelverton, Phil Payonk, Al Bjorkquist, James H. May

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army Engineer District, Wilmington, Geotechnical Branch, Engineering Division, 69 Darlington Avenue, Wilmington, NC 28403

U.S. Army Engineer Waterways Experiment Station
3909 Halls Ferry Road, Vicksburg, MS 39180-6199

8. PERFORMING ORGANIZATION REPORT NUMBER
Technical Report GL-98-22

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Department of the Navy
Southern Division, Naval Facilities Engineering Command
Charleston, SC 29411-0068

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
Available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Further dissemination of this document only as directed by the Department of the Navy, Southern Division, Naval Facilities Engineering Command, Charleston, SC 29411-0068; September 1998; or higher DoD authority.

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

An RCRA Facility Investigation Phase II Soils Study was conducted at Pest Control Area/R-150 Tank Site at the Naval Surface Warfare Center Crane (NSWCC), Indiana, by personnel of the U.S. Army Engineer Waterways Experiment Station. The field work was conducted in August 1992 to determine the presence and extent of soil contamination. The data analyses and report preparation were completed in July 1998. The contamination at the site was limited to base neutral/acid extractable (BNAs), pesticides, polychlorinated biphenyls (PCBs), and total recoverable hydrocarbons (TRPHS).

14. SUBJECT TERMS
Contamination, Navy, Crane, Soils, Pesticides

15. NUMBER OF PAGES
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16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT
UNCLASSIFIED

18. SECURITY CLASSIFICATION OF THIS PAGE
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19. SECURITY CLASSIFICATION OF ABSTRACT

20. LIMITATION OF ABSTRACT