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NSWC CRANE
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9-1-2008

DEPARTMENT OF THE NAVY
CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
300 HIGHWAY 361
CRANE INDIANA 47522-5001

IN REPLY REFER TO:
5090/S4.7.3
Ser PRCR4/7327
22 OCT 2007

U.S. Environmental Protection Agency, Region V
Waste, Pesticides, & Toxics Division
Waste Management Branch
Corrective Action Section LU-9J
77 West Jackson Blvd.
Chicago, IL 60604

Dear Mr. Ramanauskas:

Crane Division, Naval Surface Warfare Center submits the Interim Measures Work Plan (IMWP) for Solid Waste Management Unit (SWMU) 9, Pesticide Control Area as enclosure (1). Recognizing that the October 2, 2007 responses to the U.S. EPA comments of June 14 and 21, 2007 have not been approved, this IMWP is submitted as a draft final. The permit required Certification Statement is provided as enclosure (2).

If you require any further information, my point of contact is Mr. Thomas J. Brent, Code PRCR4-TB, at 812-854-6160, email thomas.brent@navy.mil.

Sincerely,

C.D. Freeman for

J. M. HUNSICKER
Environmental Site Mgr
By direction of the Commanding Officer

Enclosures: 1. Draft Final IMWP for SWMU 9
2. Certification Statement

Copy to:
ADMINISTRATIVE RECORD
NAVFAC MW (Howard Hickey) (w/o encl)
IDEM (Doug Griffin)
TTNUS (Ralph Basinski) (w/o encl)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Christine D. Green

SIGNATURE

Environmental Site Mgr

TITLE

10/22/07

DATE

Comprehensive Long-term Environmental Action Navy

CONTRACT NUMBER N62467-04-D-0055

Rev. 3
09/08

Interim Measures Work Plan
for
SWMU 9 – Pesticide Control Area/ R-150 Tank Area

Naval Surface Warfare Center Crane
Crane, Indiana

Contract Task Order 42

September 2008

NAVFAC
Naval Facilities Engineering Command
Midwest
201 Decatur Avenue
Building 1A, Code EV
Great Lakes, Illinois 60088

TETRA TECH NUS, Inc.

INTERIM MEASURES WORK PLAN
FOR
SWMU 9 – PESTICIDE CONTROL AREA

NAVAL SURFACE WARFARE CENTER CRANE
CRANE, INDIANA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
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CONTRACT NO. N62467-04-D-0055
CONTRACT TASK ORDER 42

SEPTEMBER 2008

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ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
AST	aboveground storage tank
ASTM	American Society of Testing and Materials
bgs	below ground surface
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-term Environmental Action Navy
COC	chemical of concern
CTO	Contract Task Order
cy	cubic yard
DNR	Department of Natural Resources
DRMO	Defense Reutilization Marketing Office
DRO	diesel range organics
EMAC	Environmental Multiple Award Contract
ESA	Endangered Species Act
HI	hazard index
HSWA	Hazardous and Solid Waste Amendments
IAS	Initial Assessment Study
IDEM	Indiana Department of Environmental Management
IMWP	Interim Measures Work Plan
IR	Installation Restoration
LDPE	Low density polyethylene
LDR	Land Disposal Restriction
mg/kg	milligram(s) per kilogram
MSDS	Material Safety Data Sheet
msl	mean sea level
NSWC	Naval Surface Warfare Center
OICC	Officer in Charge of Construction
PCB	polychlorinated biphenyl
ppb	part per billion
ppm	part per million
psi	pound per square inch
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act

RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RISC	Risk Integrated System of Closure
SWMU	Solid Waste Management Unit
TPH	total petroleum hydrocarbon
TSCA	Toxic Substance Control Act
TtNUS	Tetra Tech NUS, Inc.
µg/kg	micrograms/kilogram
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of this document is to present the Interim Measures Work Plan (IMWP) for the Pesticide Control Area/R-150 Tank Area, which has been designated Solid Waste Management Unit (SWMU) 9, at Naval Surface Warfare Center (NSWC) Crane located in Crane, Indiana. The IMWP provides requirements for the excavation and off-site disposal of polychlorinated biphenyl (PCB)-, pesticide-, and total petroleum hydrocarbon (TPH)- contaminated soil located in the vicinity of former Building 55 and existing Building 150. The IMWP was prepared for the United States Navy, Naval Facilities Engineering Command, Midwest by Tetra Tech NUS, Inc. (TtNUS) under Contract Task Order (CTO) 0042 of the Comprehensive Long-term Environmental Action Navy (CLEAN) IV Contract Number N62467-04-D-0055.

This work is being performed under the Navy's Installation Restoration (IR) Program. The following are the five distinct phases of work conducted for IR sites:

- Phase 1 is the Preliminary Assessment [formerly known as the Initial Assessment Study (IAS)]
- Phase 2 is the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)
- Phase 3 is the RCRA Facility Investigation (RFI)/Corrective Measures Study
- Phase 4 is the Corrective Measures Implementation
- Phase 5 is the Interim Remedial Action

This IMWP has been prepared under Phase 5 of the IR Program and defines activities associated with interim measures conducted to address the contaminated soils in the vicinity of former Building 55 and existing Building 150.

1.2 FACILITY DESCRIPTION

NSWC Crane is located in the southern portion of Indiana, approximately 75 miles southwest of Indianapolis and 71 miles northwest of Louisville, Kentucky, immediately east of Crane Village and Burns City (Figure 1-1). NSWC Crane encompasses 62,463 acres (approximately 98 square miles), most of which are located in the northern portion of Martin County. Smaller portions of NSWC Crane are located in Greene, Daviess, and Lawrence Counties. NSWC Crane is located in a rural, sparsely populated area. Most of NSWC Crane is forested, and the surrounding area is wooded or farmed land. NSWC Crane provides material, technical, and logistical support to the Navy for equipment, shipboard weapons systems, and nonexpendable ordnance items. In addition, NSWC Crane supports the Crane Army

Ammunition Activity with production, renovation, storage, shipment, demilitarization, and disposal of conventional ammunition.

1.3 REGULATORY SUMMARY

1.3.1 NSWC Crane

Following promulgation of the RCRA hazardous waste regulatory program, NSWC Crane filed notification and application to operate as a RCRA hazardous waste treatment, storage, or disposal facility in October 1980. Interim status was granted subject to operating requirements and applicable technical standards found in Title 40 of the Code of Federal Regulations (CFR), Part 265.

Corrective action programs established as part of the 1984 RCRA Hazardous and Solid Waste Amendments (HSWA) required NSWC Crane to address past releases of hazardous waste or hazardous constituents at SWMUs. Accordingly, NSWC Crane completed a Hazardous Waste Management Report and a RFI was conducted to characterize the potential for releases of hazardous waste or constituents from approximately 100 SWMUs identified during the RFA (TtNUS, 2005).

On December 23, 1989, the United States Environmental Protection Agency (USEPA) issued the federal portion of the final RCRA Part B Permit for NSWC Crane to the Navy. USEPA renewed the permit in 1995. The Indiana Department of Environmental Management (IDEM) now has responsibility for the Federal Corrective Action Permit. IDEM renewed the Corrective Action Permit on October 18, 2001. However, certain ongoing corrective actions, including corrective actions at SWMU 9, will continue under the USEPA/IDEM Work Sharing Agreement for Corrective Action Activities at NSWC Crane.

1.3.2 SWMU 9 – Pesticide Control Area

SWMU 9 is located in the central portion of NSWC Crane as shown on Figure 1-1. SWMU 9 is an inactive site occupying approximately 11 acres, including the area between the three distinct locations of interest where the interim measures described in this report will occur (Figure 1-2). The three distinct areas include the area around existing Building 150, the area around former Building 55 (south of Building 150), and the former fire training area south of former Building 55. SWMU 9 was used as a pesticides control area from 1950 through 1974. The control activities consisted of storage and management of various types and quantities of pesticides and herbicides. The original Pesticide Control Building for the facility was former Building 55. Pesticide spray tanks were reportedly rinsed in the vicinity of this building. It is not known whether the rinsing occurred inside or outside of former Building 55. Around 1970,

pesticide operations were removed from the building. Following the end of operations in 1974, Building 55 was demolished. Concrete pads associated with the building are still visible at SWMU 9.

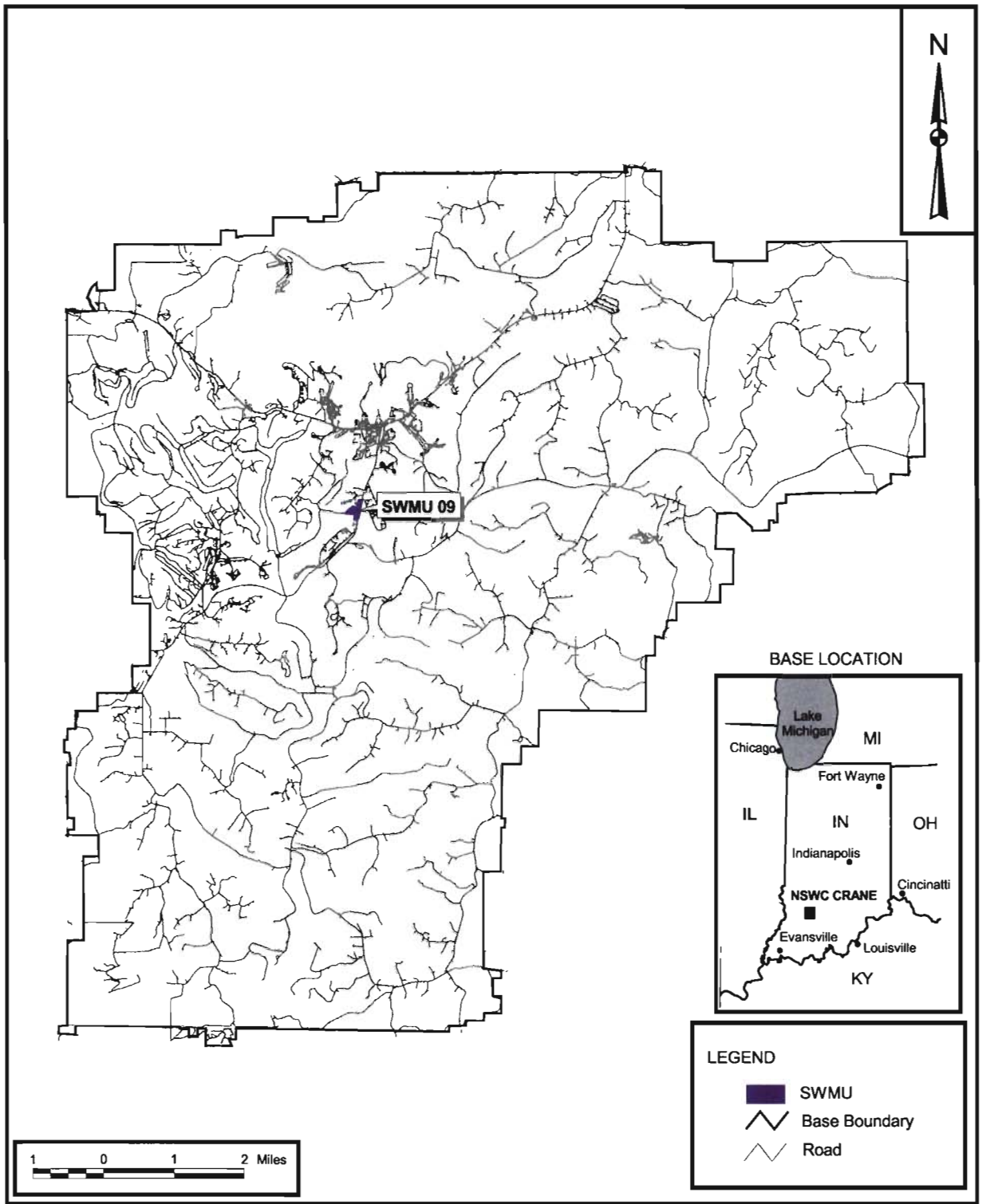
Other areas associated with SWMU 9 include the former fire training area and Building 150. The former fire training area was used to train base personnel to fight fires. The training fires were started with a variety of fuels including diesel fuel and used oils. Building 150 is currently being used as a heat plant with associated above ground fuel tanks and fuel lines.

The portion of the work presented in this IMWP associated with the former fire training area located south of former Building 55 involves the removal of soils that are PCB-contaminated. This area is a moderately sized site (approximately 0.4 acres) where remedial activities, according to 40 CFR 761.61, will result in a low residual environmental impact. 40 CFR 276.61 (PCB remediation waste) contains requirements for self-implementing on-site cleanup and disposal of PCB remediation waste at moderately-sized sites. Therefore, the portion of this IMWP that address PCBs remediation activities is submitted under the provisions of 40 CFR 761.61.

1.4 REPORT ORGANIZATION

The following are the sections contained in the remainder of this document:

- Section 2.0 summarizes site characteristics including site description, summary of environmental investigations, and nature and extent of contamination.
- Section 3.0 presents the IMWP.
- Section 4.0 presents the erosion and sediment control plan.
- Section 5.0 presents the sampling and analysis plan.



DRAWN BY J. LAMEY	DATE 5/6/02	SITE LOCATION MAP SWMU 9 RFI ADDENDUM NSWC, CRANE CRANE, INDIANA	CONTRACT NUMBER CTO 00042
CHECKED BY T. SMITH	DATE 10/15/07		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED	NAVFAC		DRAWING NO. FIGURE 1-1 / REV 0

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CONTRACT NO.
CTO 00042

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REV 0

SITE LAYOUT MAP
SWMU 9
INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

DRAWN BY S. PAXTON DATE 2/12/07

CHECKED BY T. SMITH DATE 7/05/07

COST/SCHED-AREA

SCALE AS NOTED

2.0 SITE SUMMARY

2.1 SITE SUMMARY

This section describes the physical and geophysical conditions of areas addressed in the SWMU 9 IMWP. These descriptions were excerpted from the SWMU 9 RCRA Corrective Measures Study Report (TtNUS, 2004).

2.1.1 Physiography and Topography

SWMU 9 is located in the Crawford Upland area of the NSWC facility. The topography at SWMU 9 consists of undulating terrain dissected by many small drainageways. SWMU 9 lies along the northwestward slope of a topographic high created by a road (Highway 45) and a railroad located east of the site and oriented north to south.

Elevations at SWMU 9 range from a low of approximately 690 feet above mean sea level (msl) along the unnamed tributary west of SWMU 9 to approximately 720 feet above msl along Highway 45 east of SWMU 9. Thus, there is a total relief of approximately 30 feet across SWMU 9.

2.1.2 Surface Water Hydrology

As indicated above, the topography at SWMU 9 consists of a ridge that runs along Highway 45 in a north-south orientation with gradual slopes to the west. The crest of the ridge forms the eastern limits of SWMU 9. Surface water runoff east of the topographic high runs east through several drainage ditches that convey flow to an unnamed stream, which in turn, flows southward and discharges into Turkey Creek. Surface water west of the topographic high (SWMU 9 surface water) runs west across SWMU 9 and enters several drainage ditches that convey flow to an unnamed stream that also flows southward and discharges to Boggs Creek.

2.1.3 Geology

SWMU 9 is underlain by up to 10 feet of unconsolidated natural material overlying Pennsylvanian age sedimentary rocks of the Raccoon Creek Group Mansfield Formation. Soils mapped at SWMU 9 are representative of residual soils derived from the Pennsylvanian bedrock. The encountered subsurface materials at SWMU 9 include natural unconsolidated materials and bedrock. The natural unconsolidated materials are extensive across the SWMU 9 area and consist primarily of silt and clay. Bedrock was

encountered at depths as shallow as 5 feet below ground surface (bgs) and consists primarily of sandstone with lenses of siltstone, shale, and coal.

2.1.4 Hydrogeology

Groundwater is present beneath the NSWC Crane in both the natural unconsolidated materials and bedrock. The depth to groundwater ranges from less than 5 feet bgs in low areas near surface water bodies to 25 feet bgs at higher elevations. The majority of the monitoring wells at SWMU 9 were completed within the first groundwater-yielding unit encountered during drilling, which existed in either the natural unconsolidated material or the shallow bedrock. Groundwater flows through the unconsolidated material or in fractures in shallow bedrock where it appears to be hydraulically connected. This shallow groundwater system flows generally west and southwest toward the stream valleys that serve as groundwater discharge points. The hydraulic gradient in the shallow groundwater system is approximately 0.08 foot/foot. A well (0914A) installed deeper in bedrock in an interbedded shale and sandstone was found to contain no groundwater. A shale unit was also encountered less than 10 feet bgs in this boring. It may be possible that shallow groundwater becomes perched on the shale and other lower permeable units that act as localized aquitards within the bedrock, therefore limiting the vertical hydraulic connection in the bedrock.

2.2 PREVIOUS INVESTIGATIONS

The major sources of contamination at SWMU 9 include the rinsing of pesticide containers and minor spills near former Building 55, fuel spills from tanks located in the vicinity of Building 150, and activities conducted at the former fire training area south of former Building 55. Various environmental investigations have been conducted at SWMU 9. Because of the detection of significant concentrations of known contaminants in soil, the discovery of unsuspected contaminants during field sampling, information gathered on historical operations from facility documents, and revisions to the IDEM Risk Integrated System of Closure (RISC) TPH guidance, these various environmental investigations have evolved through multiple field efforts. For ease of discussion, the SWMU 9 investigations are referred to in the following paragraphs as Phase 1, Phase 2, Phase 3, Phase 4, and Phase 5 Investigations. Prior to sampling during Phases 1, 2, 3, 4, and 5, SWMU 9 was believed to be located north of its actual location. Sampling at the believed SWMU location was conducted in 1992 and 2000. The locations of the samples collected during these earlier investigations that are within the vicinity of the actual SWMU 9 location are identified on Figure 2-1). The analytical results from these investigations are presented in Appendix A. Since the focus of the IMWP is to address soil contamination at SWMU 9, the following sections will focus on the results from the Phases 1, 2, 3, 4, and 5 soil investigations.

2.2.1 Phase 1 Investigation (March 2005)

Field activities for the Phase 1 investigation consisted of collecting surface soil, subsurface soil, groundwater, surface water, and sediment samples within the area of historical pesticide operations (former Building 55). Analytical results indicated that pesticides were present beyond the area sampled. In addition, the area adjacent to the assumed pesticide operations area (south of former Building 55) showed evidence of PCBs in groundwater. Figure 2-1 presents the Phase 1 sampling locations.

2.2.2 Phase 2 Investigation (May 2005)

The Phase 2 investigation included further delineation of the nature and extent of contamination found in Phase 1. Figure 2-2 presents the Phase 2 sampling locations. The analytical results from the two phases indicated the following:

- Significant pesticide and petroleum contamination was present in the soil and confined primarily to an area along a hillside adjacent to a former wash rack located immediately west of former Building 55.

- Petroleum products were detected in sediment within a nearby (downgradient) tributary.

- High levels of PCBs were found in surface and subsurface soils in an area immediately to the south of the assumed pesticide operations area (the fire training area).

Based on these findings, additional discussions were held with the base historian and the following two additional findings were made:

- Fire training exercises were conducted in the past using burning pans (and possibly transformer oil) in the area where the Phase 2 investigation indicated elevated levels of PCBs in surface and subsurface soils. Other than the presence of an aluminum pan and lid in that area, there is no visual evidence of where the training was actually conducted. The duration of the fire training and the types and volumes of fuel used are unknown.

- An oil spill occurred on March 6, 2003 at a location immediately to the north of where the current SWMU 9 investigation is being conducted. The reported 100-gallon spill was from one of the two aboveground storage tanks (ASTs) located on the northeastern side of Building 150. The spill flowed from the AST to a nearby drainage ditch that discharges to the small tributary on the western side of

Building 150 that was identified in the Phase 2 investigation as containing petroleum contamination. The spill was reported to IDEM, and correspondence and response actions were documented in the NSWC Crane Spill Log.

A site visit was conducted by the Navy, USEPA, and TtNUS on August 3, 2005 in preparation for the Phase 3 investigation. During the visit, a NSWC Crane drawing (PW Drawing 64 dated February 1946) was reviewed. This drawing indicated the presence of a former gas station and two ASTs located approximately 70 feet southeast of former Building 55. The presence of these ASTs indicated the need to perform additional sampling within the area of the former gas station located east of the former Building 55 area.

2.2.3 Phase 3 Investigation (October 2005)

Based on the findings during Phases 1 and 2, the Phase 3 investigation focused on six areas: the hillside adjacent to the wash rack, the fuel spill of March 6, 2003, the tributary downgradient of the site, the fire training area, restroom piping, and the former gas station. The following paragraphs describe the results of the investigations at these locations, and Figure 2-3 presents the sampling locations.

Hillside Adjacent to the Wash Rack – Previous investigations showed elevated concentrations of pesticides in surface and subsurface soil along a hillside immediately west of former Building 55. Additionally, two samples collected during Phase 2 were visually stained and had a strong petroleum odor and therefore were analyzed for TPH. In order to delineate the nature and extent of soil contamination along the hillside adjacent to the wash rack, seven additional soil borings (SB042 through SB045 and SB047 through SB049) were installed. Three permanent groundwater monitoring wells (T08, T011, and T012) were installed downgradient of the hillside and close to a tributary immediately downgradient of the hillside (monitoring well locations identified on Figure 1-2).

Fuel Spill of March 6, 2003 – Prior to Phase 3, no known sampling and analysis had been conducted related to the fuel spill of March 6, 2003 at the Building 150 ASTs. No visual evidence of the spill was observed during the site visit on August 3, 2005. During Phase 3, soil samples were collected adjacent to the ASTs along the northeastern part of the building where the spill reportedly occurred. Two soil samples were collected from within the drainage ditch and along the bank of the parking lot adjacent to the area of the spill. A smaller AST (approximately 250 gallons) is located along the southern wall of Building 150. The soil close to the concrete pad for the AST was stained with petroleum, and therefore samples from two soil borings were collected at this area.

Tributary Downgradient of Site – A small tributary is located in the western downgradient portion of SWMU 9 as seen on Figure 2-3. Surface water flow within this tributary originates toward the north within the vicinity of Mine Fill A and flows in a southwesterly direction along the western side of SWMU 9. Surface water and sediment samples were collected within this tributary to delineate the nature and extent of contamination detected during Phases 1 and 2. Pesticides and petroleum products were also detected within this tributary in surface water and sediment.

Fire Training Area – During Phase 1, PCBs were detected in a perched water sample collected from a temporary well point within the area of former fire training operations. This area is located approximately 250 feet south of the former Building 55. Groundwater sampling during the Phase 2 investigation from three temporary well points did not confirm the presence of PCBs in the groundwater. It should be noted that the sample collected during Phase 1 was unfiltered, and the samples collected during Phase 2 were filtered. Five surface soil samples were analyzed for PCBs during Phase 2, and all had detectable concentrations of PCBs ranging from 42 to 260,000 micrograms/kilogram (µg/kg). Because of the high concentrations of PCBs, the area surrounding these sample points was delineated with a fence of rebar and caution tape. During Phase 3, eight additional soil samples (SB050 through SB057) were collected within this area to determine the nature and extent of PCB contamination. The locations of these borings are shown on Figure 2-3. Three permanent groundwater monitoring wells were also installed within this area; T013 serves as an upgradient well and T014 and T015 as downgradient wells. PCBs were not detected in samples from these wells.

Restroom Piping – It was determined that the three pipes protruding above the ground within the footprint of the former Building 55 are the remains of plumbing within a former restroom. The pipes are currently plugged with soil. No soil staining is present within the area. Although a surface soil sample (SB064) was scheduled to be collected from the largest pipe with a flanged head connection, an insufficient volume of soil was contained within the pipe for analysis. An effort was made during subsequent sampling efforts to collect a soil sample from within this pipe and within the general area.

Former Gas Station – The remains of a concrete fuel dispenser foundation is the only remaining structure that indicates the presence of the former gas station. During Phase 3, soil samples were collected from two openings within the existing concrete pad (SB058 and SB059) that may have supported fuel dispensers. Four additional soil borings (SB060 to SB063) were collected from the area where the ASTs were thought to be located. One upgradient groundwater monitoring well (T09) and one downgradient well (T013) were also installed. It should be noted that well T13 also serves as the upgradient well for the Fire Training Area.

2.2.4 Phase 4 Investigation (August 2006)

Analytical results from the first three phases of investigation did not fully delineate the extent of surface and subsurface soil contamination in the area west of former Building 55 and within the former gas station area. Additionally, soil samples needed to be collected and analyzed at the fuel spill area at Building 150 for specific PAHs and related constituents using the IDEM RISC TPH guidance and the USEPA speciation recommendation. In total, 21 additional soil borings were advance in these areas and samples were collected from various depths at each location (see Figure 2-4).

2.2.5 Phase 5 Investigation (August 2007)

The samples collected from the former Building 55 area during the first four phases of the SWMU 9 investigation did not include herbicide analysis. Therefore, within the area of the highest pesticide concentrations 16 borings were advanced (adjacent to former sampling locations) to determine the presence of herbicides within the soils. In addition, six borings were advanced at locations further from the highest pesticide concentrations to bound the herbicide contamination if found. Lastly, to close data gaps in the pesticide data, pesticide samples were collected from three of the six outlying locations established during the Phase 5 investigation. In total, from the 22 new sampling locations established during the Phase 5 investigation, 66 samples were collected for herbicide analysis from various depths; 11 of these samples were also analyzed for pesticides (see Figure 2-5).

2.3 EXTENT OF CONTAMINATION

Using the analytical data obtained from the four SWMU 9 field investigations within and around Building 150, former Building 55, and the fire training area, TtNUS has started the process of developing human health and ecological risk assessments. The preliminary results of these risk assessments were used to develop a list of chemicals of concern (COCs) detected at concentrations that present unacceptable risks to ecological and human receptors. The COC detections were used to establish the locations that require excavation to reduce the risks associated with the site to acceptable levels.

2.3.1 Human Health

The results of the preliminary risk assessment identify seven COCs as causing unacceptable human health risks. Under an industrial land use scenario, the COCs include total PCBs, 4,4'-DDT, and diesel range organics (DRO) in the surface soil (0 to 2 feet bgs) and total PCBs and DRO in the subsurface soil (deeper than 2 feet bgs). Under a residential land use scenario, the COCs include total PCBs, 4,4'-DDD,

4,4'-DDE, 4,4'-DDT, dieldrin, heptachlor, alpha-chlordane, gamma-chlordane, and DRO in the surface soil (0 to 2 feet bgs) and total PCBs and DRO in the subsurface soil (deeper than 2 feet bgs).

Using average COC concentration values, an unacceptable cancer risk level of $1x10^{-5}$, and an unacceptable hazard index (HI) of 0.1, locations requiring excavation to ensure an acceptable cancer risk level of $1x10^{-4}$ and an acceptable HI of 1.0 were identified by replacing elevated COC concentrations with clean fill that theoretically had COC concentrations equal to one half the analytical detection limits. Under an industrial land use scenario, these calculations identified sample locations 09SB018 (surface soil only), 09SB031 (surface and subsurface soil), 09SB032 (surface and subsurface soil), and 09SB034 (surface soil only) as locations to be excavated (locations identified on Figure 2-6). Under a residential land use scenario, these calculations identified sample locations 09SB018 (surface and subsurface soil), 09SB019 (subsurface soil), 09SB024 (subsurface soil), 09SB026 (surface soil only), 09SB031 (surface and subsurface soil), 09SB032 (surface and subsurface soil), 09SB034 (surface soil only), 09SB040 (surface soil only), 09SB046 (surface and subsurface soil), and 09SB070 (surface soil only), as locations to be excavated (locations identified on Figure 2-7).

2.3.2 Ecological

In addition to the preliminary human health risks, preliminary ecological risks were identified. The preliminary ecological risk assessment identified COCs including 4-4'-DDD, 4,4'-DDE, 4,4'-DDT, alpha-chlordane, gamma-chlordane, dieldrin, and heptachlor. Although ecological preliminary remediation goals were not developed, the preliminary ecological risk assessment identified locations where a minimum of 2 feet of soil needs to be removed to reduce the risks to ecological receptors to acceptable levels. These locations include former Building 55 soil boring locations 09SB018, 09SB019, 09SB020, 09SB021, 09SB022, 09SB025, 09SB026, 09SB044, 09SB046, 09SB066, 09SB067, 09SB069, 09SB070 and fire training area soil borings 09SB031, 09SB032, and 09SB034 (see Figure 2-8).

2.3.3 Extent of Unacceptable Risk

A review of the results of the preliminary human health and ecological risk assessments indicates that the remedial action required under an industrial land use scenario is similar to the remedial action required under a residential land use scenario. That is, the soil required to be excavated to reduce ecological risks encompasses the surface soil that requires removal to reduce human health risk to acceptable levels under both the industrial and residential scenarios. Figure 2-8 presents the extent of contamination that requires remediation to achieve acceptable human health and ecological risks. Figures provided in Appendix A present the COCs and the concentrations of the COCs.

Note, although contamination within the subsurface of soil boring 09SB046 presented an unacceptable risk, the COC concentrations only slightly exceeded the cleanup goals. Therefore, it was determined that this subsurface soil could be left in place. However, prior to backfilling the surface soil in this area a discrete verification sample will be collected following surface soil removal at the 09SB046 location. If COCs within this sample exceed present concentrations, additional soil will be removed.

P:\GIS\CRANE_NSWC\MAPDOCS\APR\OLD SQL CONNECTIONS\SWMU09.APR PHASE 1 SAMPLING LOCATIONS LAYOUT 10/14/07 SS

Legend

- Phase 1 Soil Boring Location
- Phase 1 Previous Temporary Well/Soil Boring Location
- Phase 1 Surface Water/Sediment Location
- Previous Soil Boring Location 1992
- Previous Soil Boring Location 2000
- Previous Surface Water / Sediment Location 2000
- Road
- Topographic Contour
- Building

Note: Previous soil boring locations were advanced at the time SWMU 9 was believed to be located north of its current location.

CONTRACT NO. CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE 2-1 REV 0

PHASE 1 SAMPLING LOCATIONS (MARCH 2005)
SWMU 9
INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

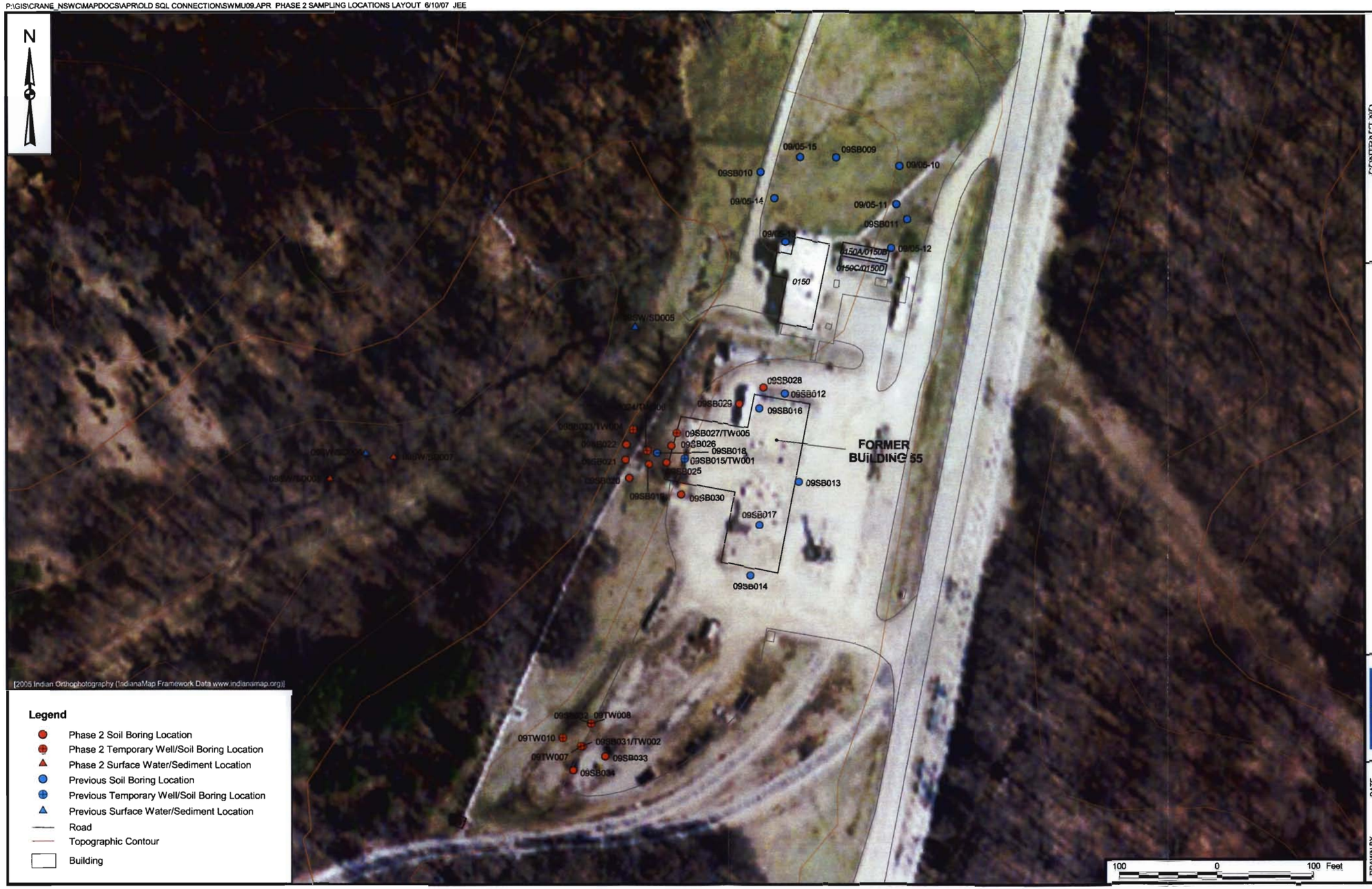
DRAWN BY S. PAXTON DATE 6/07/07

CHECKED BY T. SMITH DATE 10/15/07

COST/SCHED-AREA

SCALE AS NOTED

P:\GIS\CRANE_NSWC\MAPDOCS\APR\OLD SQL CONNECTIONS\SWMU09.APR PHASE 2 SAMPLING LOCATIONS LAYOUT 6/10/07 JEE



CONTRACT NO. CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE 2-2 REV 0

PHASE 2 SAMPLING LOCATIONS (MAY 2005)
SWMU 9
INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

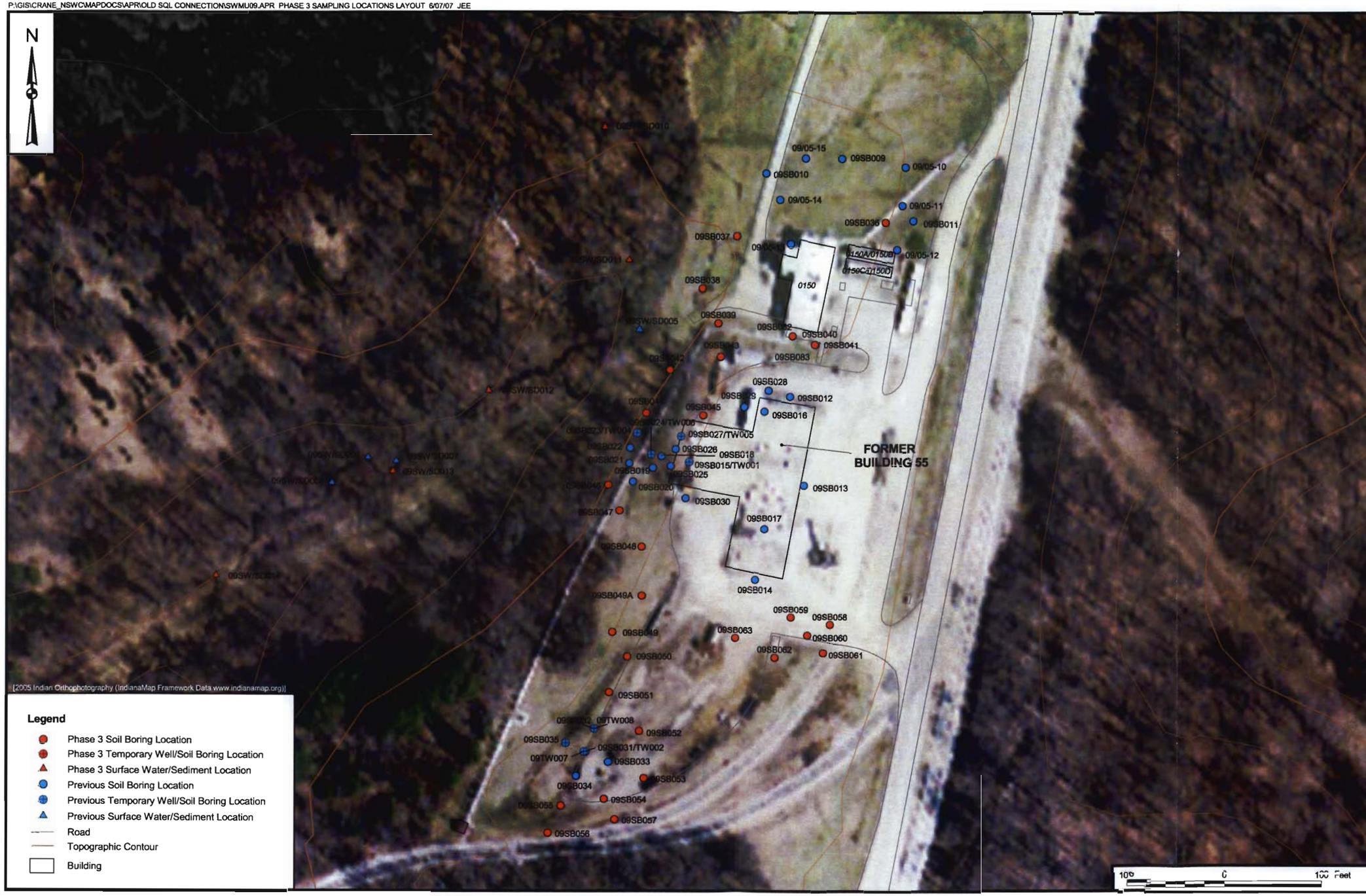
DRAWN BY S. PAXTON DATE 6/07/07

CHECKED BY T. SMITH DATE 6/11/07

COST/SCHED-AREA

SCALE AS NOTED

P:\GIS\CRANE_NSWC\MAPDOCS\APR\OLD SQL CONNECTION\SWMU09.APR PHASE 3 SAMPLING LOCATIONS LAYOUT 6/07/07 JEE



CONTRACT NO. CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE 2-3

REV 0

PHASE 3 SAMPLING LOCATIONS (OCTOBER 2005)
SWMU 9
INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

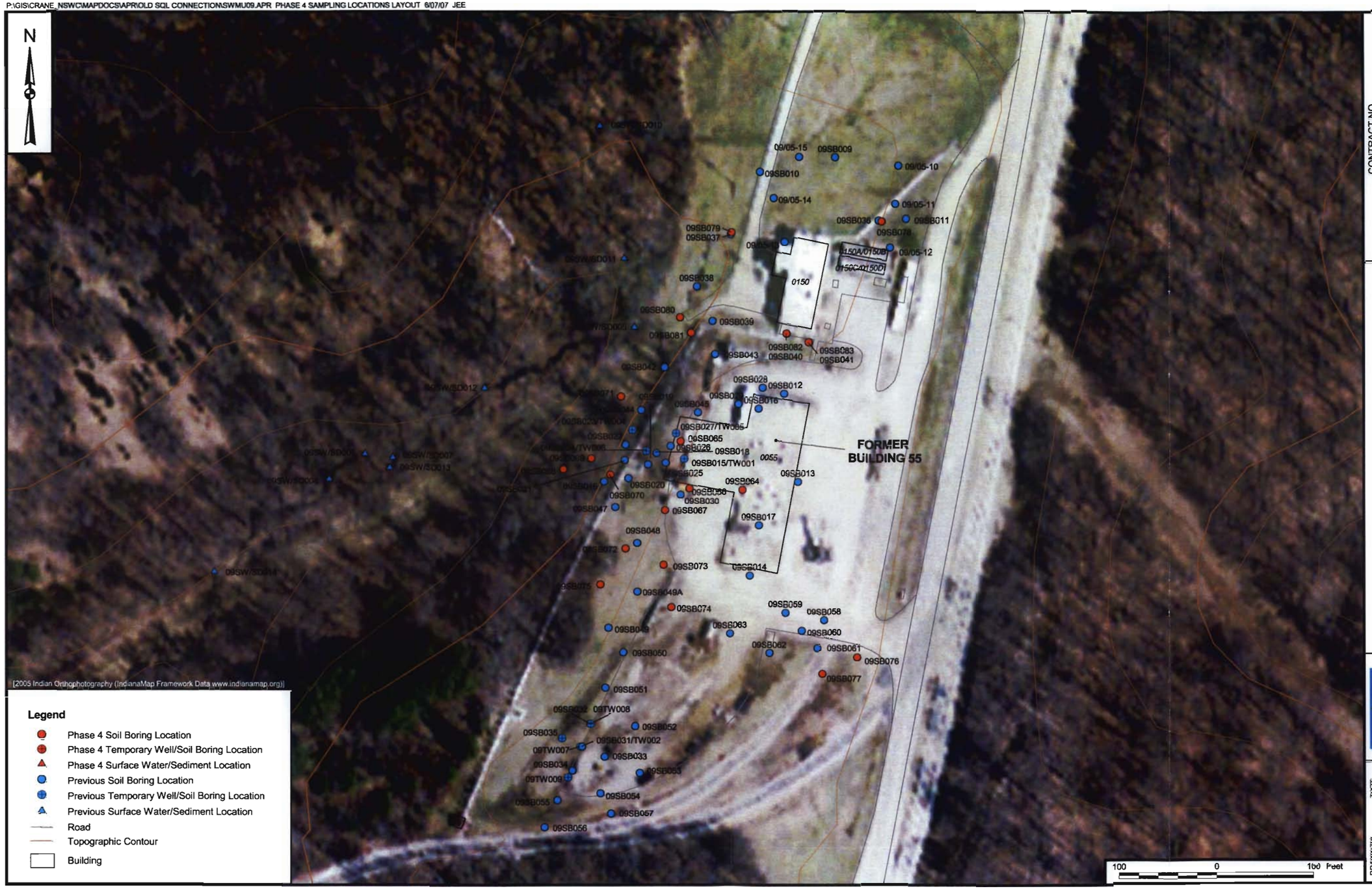
DRAWN BY S. PAXTON DATE 6/07/07

CHECKED BY T. SMITH DATE 6/07/07

COST/SCHED-AREA

SCALE AS NOTED

P:\GIS\CRANE_NSWC\MAPDOCS\APR\OLD SQL CONNECTIONS\SWMU09.APR PHASE 4 SAMPLING LOCATIONS LAYOUT 6/07/07 JEE



Legend

- Phase 4 Soil Boring Location
- Phase 4 Temporary Well/Soil Boring Location
- Phase 4 Surface Water/Sediment Location
- Previous Soil Boring Location
- Previous Temporary Well/Soil Boring Location
- Previous Surface Water/Sediment Location
- Road
- Topographic Contour
- Building

CONTRACT NO. CTO 00042

APPROVED BY ____ DATE ____

APPROVED BY ____ DATE ____

DRAWING NO. FIGURE 2-4 REV 0

PHASE 4 SAMPLING LOCATIONS (AUGUST 2006)
SWMU 9
INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

DRAWN BY S. PAXTON DATE 6/07/07

CHECKED BY T. SMITH DATE 6/07/07

COST/SCHED-AREA

SCALE AS NOTED

P:\GIS\CRANE_NSWC\MAPDOCS\APR\OLD SQL CONNECTIONS\SWMU09.APR PHASE 5 SAMPLING LOCATIONS LAYOUT 10/8/07 KM

CONTRACT NO.
CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE 2-5

REV 0

PHASE 5 SAMPLING LOCATIONS (AUGUST 2007)
SWMU 9
INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

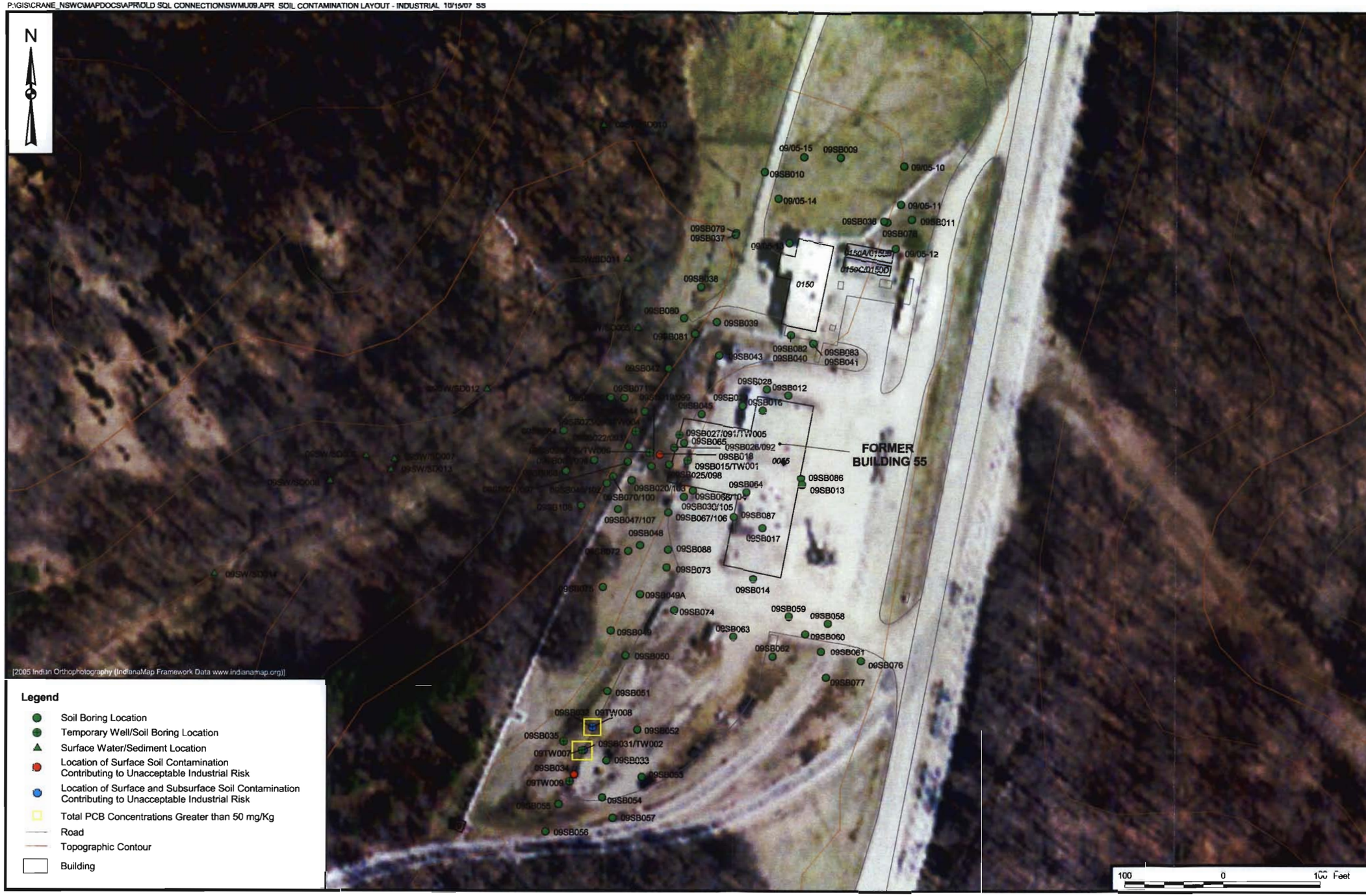
DRAWN BY K. MOORE DATE 10/8/07

CHECKED BY T. SMITH DATE 10/8/07

COST/SCHED-AREA

SCALE AS NOTED

P:\GIS\CRANE_NSWC\MAPDOCS\APR\OLD SQL CONNECTIONS\SWMU09.APR SOIL CONTAMINATION LAYOUT - INDUSTRIAL 10/15/07 SS



CONTRACT NO.
CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE 2-6

REV 0

SOIL CONTAMINATION CAUSING INDUSTRIAL RISK
SWMU 9
INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

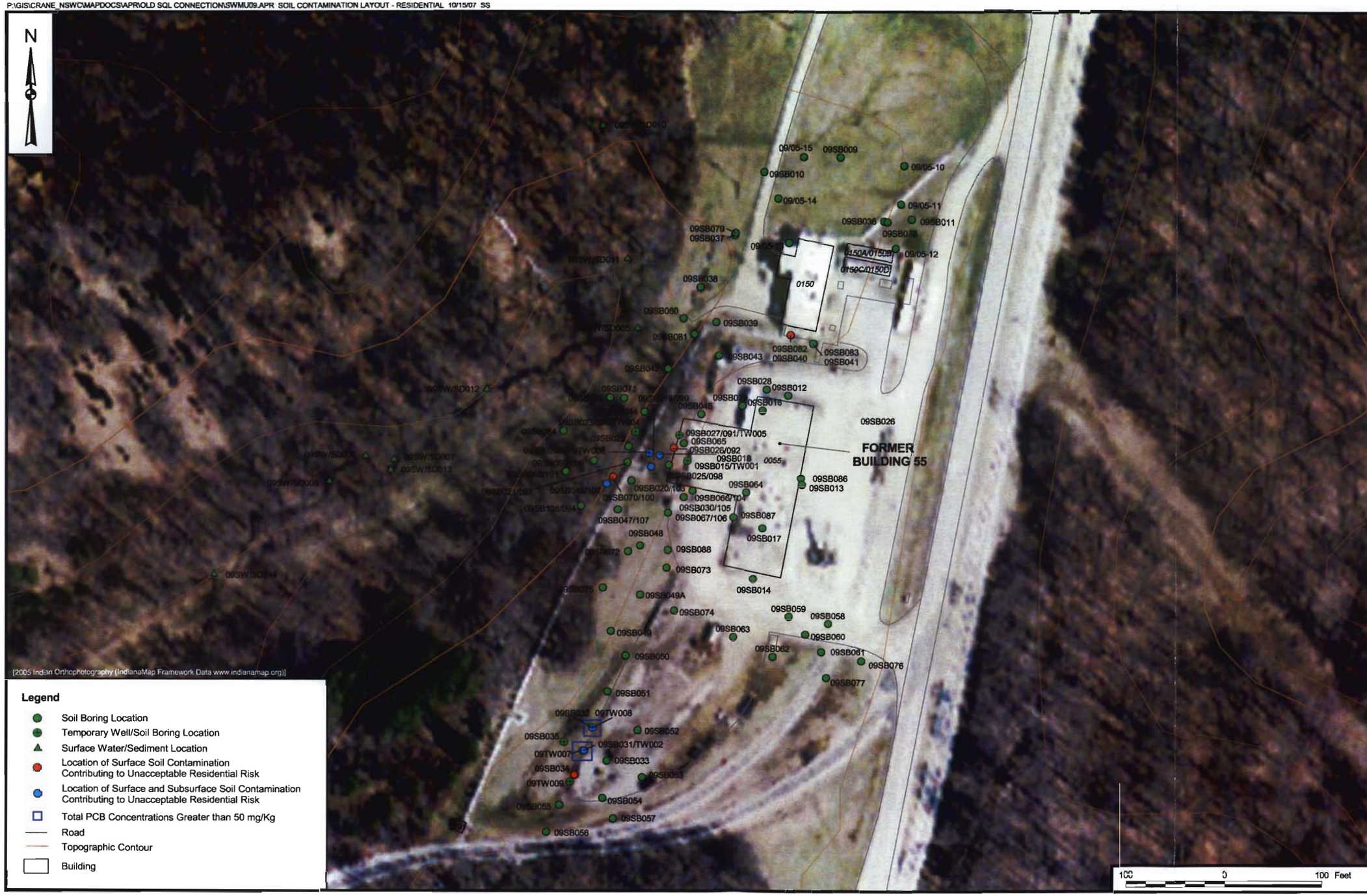
DRAWN BY J. ENGLISH DATE 6/07/07

CHECKED BY T. SMITH DATE 10/15/07

COST/SCHED-AREA

SCALE AS NOTED

P:\GIS\CRANE_NSWC\MAPDOCS\APR\OLD SQL CONNECTIONS\SWMU09.APR SOIL CONTAMINATION LAYOUT - RESIDENTIAL 10/15/07 SS



CONTRACT NO.
CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE 2-7

REV 0

SOIL CONTAMINATION CAUSING RESIDENTIAL RISK
SWMU 9
INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

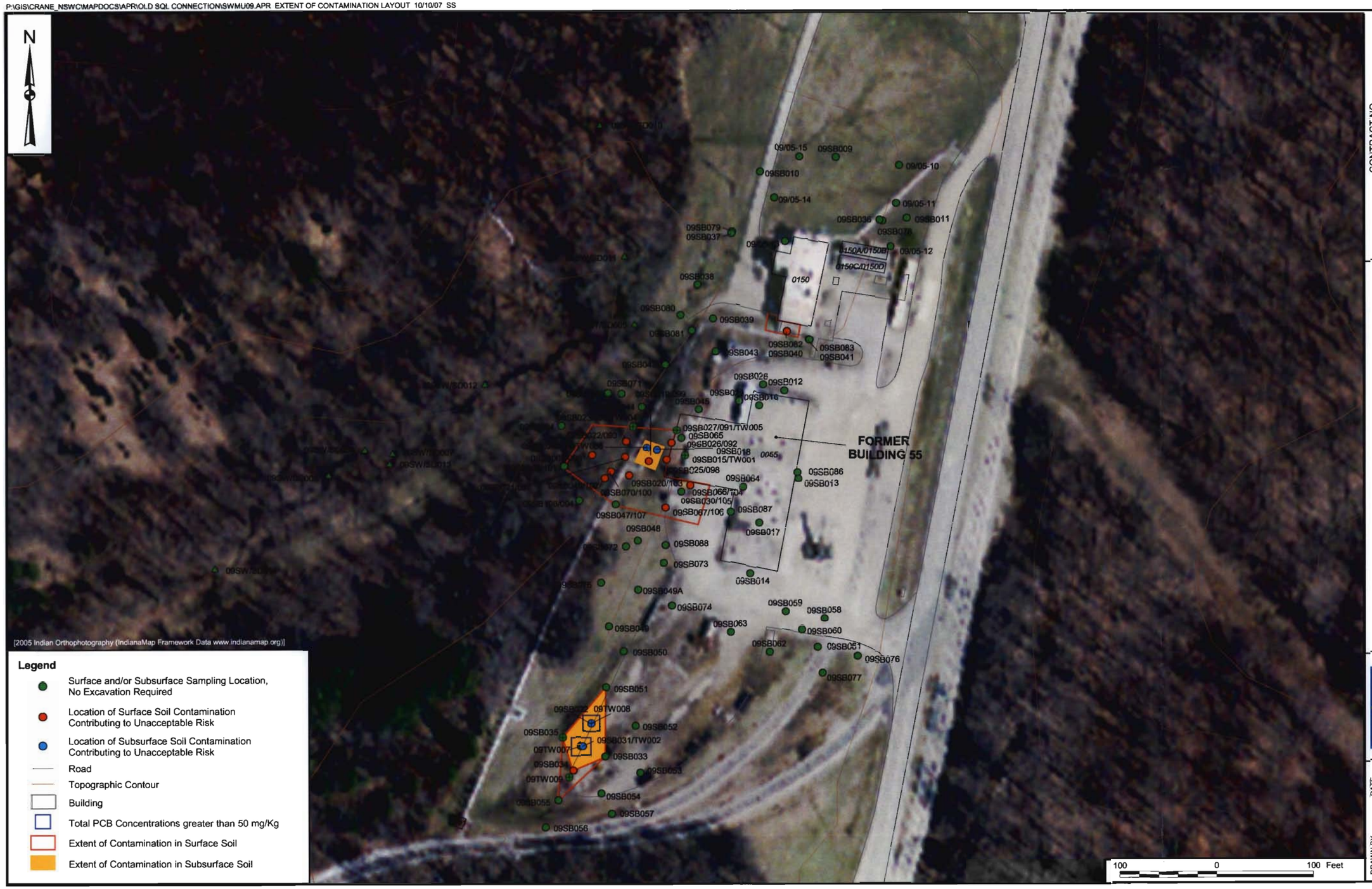
DRAWN BY J. ENGLISH DATE 6/07/07

CHECKED BY T. SMITH DATE 10/10/07

COST/SCHED-AREA

SCALE AS NOTED

P:\GIS\CRANE_NSWC\MAPDOCS\APR\OLD SQL CONNECTION\SWMU09.APR EXTENT OF CONTAMINATION LAYOUT 10/10/07 SS



CONTRACT NO.
CTO 00042

APPROVED BY ____ DATE ____

APPROVED BY ____ DATE ____

DRAWING NO. FIGURE 2-8

REV 0

EXTENT OF CONTAMINATION
SWMU 9
INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

DRAWN BY S. PAXTON DATE 6/08/07

CHECKED BY T. SMITH DATE 10/10/07

COST/SCHED-AREA

SCALE AS NOTED

3.0 INTERIM MEASURES WORK PLAN

The intent of this IMWP is to remove surface and subsurface soil at SWMU 9 containing COCs at concentrations resulting in unacceptable risks to human health and ecological receptors As per Section 2.3.3, the remedial action needed to reduce the ecological risks to acceptable levels will result in achieving acceptable residential direct contact human health risks in surface soil. The remainder of this section describes the remedial activities and soil volumes to be removed in order to satisfy human and ecological risk reduction requirements in SWMU 9 surface and subsurface soil.

3.1 DESCRIPTION OF THE INTERIM MEASURES

The IMWP specifies the removal of contaminated surface and subsurface soil within the limits of SWMU 9 that has been identified as containing COCs at concentrations that result in unacceptable ecological and human health risks. The excavation volumes presented in this IMWP are in-place estimates; in an unconsolidated state, it is expected that these volumes will increase based on an expansion factor of 5 to 10 percent.

A work assignment responsibility chart (Table 3-1) identifies the responsibilities of the Environmental Multiple Award Contract (EMAC) contractor, NSWC Crane, and TtNUS in the implementation of this IMWP.

Specifically, the IMWP consists of the following major components:

- Surface Soil Excavation – Four areas within the limits of SWMU 9 require surface soil excavation to achieve acceptable human health and ecological risks. These locations include two areas west of former Building 55, one area at the former fire training area, and one area at the southern end of Building 150. Designated surface soil at these locations will be excavated, characterized for disposal purposes, and transported and disposed off site at an approved facility. The surface soil excavation areas are identified on Figures 3-1 and 3-2.

- Subsurface Soil Excavation – Two areas within the limits of SWMU 9 require subsurface soil excavation to achieve acceptable human health risk levels. These locations include an area at the former fire training area and an area west of former Building 55. The subsurface soil at these locations will be excavated, characterized for disposal purposes, and transported and disposed off

site at an approved facility. The subsurface soil excavation areas are identified on Figures 3-1 and 3-2.

- Steam Line Support – Due to the proximity of steam lines to the excavation areas west of former Building 55 and at the southern end of Building 150, steam line support systems will need to be erected. The support systems will allow for the continual operation of the steam lines while excavation is conducted around the steam line foundation concrete pier structures. Where supports are required across surface soil excavation areas (0 to 2 feet bgs), the support system need only prevent lateral movement of the steam lines since excavation is not expected to extend to depths greater than the existing concrete foundations (existing concrete piers extend at a minimum to a depth of 2.5 feet bgs). Where supports are required across subsurface excavation areas (greater than 2.5 feet bgs), the support system may need to prevent lateral and horizontal movement of the steam lines since the excavation may encompass and extend to depths grater than the existing concrete foundations. The anticipated extent of steam line that is affected by the soil excavation is identified on Figure 3-1.

- Disposal of Debris – A pile of debris consisting primarily of scrap steel and creosoted wood product is located at the former SWMU 9 fire training area. This pile, which contains approximately 10 cubic yards of material, will be removed from SWMU 9 and stockpiled separately from other soils removed from SWMU 9. The creosoted wood product will be disposed along with the excavated soil. The scrap steel will be salvaged if possible. If scrap steel cannot be salvaged, the scrap steel will be cut into manageable pieces for characterization and off-site disposal. The location of the debris pile is identified on Figure 3-2.

- Dewatering of Subsurface Soils – In the event that subsurface excavation extends below the water table, subsurface soils may need dewatering prior to disposal to meet transportation and disposal requirements. The water drained from the stockpiled soil during dewatering will be containerized, filtered, and characterized, and, where applicable, contaminated water and filters will be managed in accordance with Toxic Substance Control Act (TSCA) regulations. The EMAC contractor will arrange for off-site disposal or treatment of containerized water and filters. The volume of water collected through dewatering is not expected to be large unless excavation/removal is performed during periods of heavy rain.

- Sampling and Analysis – Following the excavation/removal of identified surface and subsurface soil, the exposed surfaces of the excavation areas will be sampled to verify contaminant removal. The

Contracting Officer may require additional excavation based on the analytical results of verification sampling. In addition, at the completion of this IMWP and following the removal of the support facilities (e.g., dewatering pad, access road, decontamination pad, and material storage area), the Contracting Officer will require verification samples to confirm that the lining systems of the support facilities did not fail during the implementation of this IMWP. If it is determined that the lining system under any of the support facilities did fail, potentially resulting in the contamination of the soil below a support facility, the EMAC contractor will be required to remove that contamination at their own expense. Section 5.0 presents sampling and analysis procedures.

- Off Site Disposal of Soils – Excavated soil containing PCBs will be disposed based on the in-place (in-situ) concentration of PCBs. Soils with in-situ PCB concentrations greater than or equal to 50 ppm will be segregated from soils with in-situ PCB concentrations less than 50 ppm. Soils with PCB concentrations greater than or equal to 50 ppm will be disposed in a TSCA-approved or RCRA landfill. Soils with PCB concentrations less than 50 ppm will be disposed at an NSWC Crane-approved solid waste landfill.

  Pesticides are present in SWMU 9 soils in concentrations that may require soil disposal as a listed hazardous waste. NSWC Crane has requested that IDEM determine whether the concentrations of pesticides in soils are such that the soils would be deemed to contain hazardous wastes. Soils 'containing' hazardous wastes must meet the Land Disposal Restriction (LDR) universal treatment standards for underlying hazardous constituents prior to land disposal. NSWC Crane has requested an LDR treatment variance from USEPA Region 5 for these SWMU 9 soils that are subject to LDR universal treatment standards and do not meet these standards.

  Excavated soils containing pesticides will be disposed based on whether threshold concentrations for 'contained-in' determinations are exceeded and whether soils containing hazardous wastes exceed the LDR treatment standards.

  If USEPA Region 5 grants NSWC Crane's LDR variance request, then soils will be segregated only on the basis of whether it contains hazardous waste.

- Backfilling and Restoration – After verification that the contaminated surface and subsurface soils have been removed, the excavated areas will be backfilled and regraded to match pre-construction grades and surrounding surfaces. In addition, the backfilled areas will be restored to pre-construction surface conditions using permanent stabilization practices that include vegetation and gravel pavement.

- Detailed Characterization Sampling Plan – The EMAC contractor will prepare a characterization sampling plan as indicated in Table 3-1. This plan must describe sampling procedures for collected soil, wastewaters, and removed debris. The sampling procedures and analytical methods must comply with acceptable methods and must comply with the requirements of the approved waste disposal facility. The EMAC contractor will also provide these waste characterization procedures to Tetra Tech for inclusion into the Confirmation Sampling Quality Assurance Project Plan (QAPP).

3.2 PERFORMANCE STANDARDS

Performance standards for the IMWP are presented in the following sections.

3.2.1 Surface Soil Excavation

All surface soils excavated from SWMU 9 that are identified as having COCs at concentrations that result in unacceptable risks to human and ecological receptors will be removed, characterized, and disposed at an approved off-site hazardous, non-hazardous, or TSCA regulated waste disposal facility. Soil from each surface soil excavation area will be stockpiled or containerized separately for characterization purposes. The stockpiled soil will be placed on a material handling pad located adjacent to each excavation area or at a central location. The material handling pad(s) will be constructed in accordance with Section 3.2.12. Alternatively, removed soil may be placed in roll-off boxes or other approved containers placed adjacent to each excavation area or in a central location. When transporting soil, appropriate measures such as lining the roll-off boxes or containers or providing sealed tailgates must be used to prevent loss of stored material during transportation. All excavated soil will remain on site until waste characterization has been completed.

The planned surface soil excavation (0 to 2 feet bgs) areas are identified on Figures 3-1 and 3-2. The excavation area located at the former fire training area (south of former Building 55) includes approximately 184 cubic yards (cy) of non-TSCA regulated soil and 39 cy of TSCA regulated soils (based on in-place PCB concentrations). The TSCA regulated material (PCB concentrations greater than 50 ppm) must be excavated and handled separately. The two excavation areas located south and west of the former Building 55 includes approximately 673 cy of hazardous soil (based on contaminant concentrations and process). The excavation area located south of Building 150 includes approximately 26 cy of non-hazardous soil (based on contaminant concentration). Portions of the excavation areas south and west of former Building 55 and south of Building 150 extend below existing steam lines.

Excavation around steam line supports (concrete piers) and directly beneath the steam lines must be conducted by hand.

Northing and Easting coordinates for the surface soil excavation area vertices are provided in Table 3-2. The reported surface soil excavation volumes are based on the area of each excavation and a 2-foot excavation depth, with no sloping of the excavation sides. Volume calculations are provided in Appendix B and summarized below:

Surface Soil Excavation				
Excavation Area	**Area**	**Depth of Excavation**	**Volume**	**Weight**
Fire Training Area	2,485 sf	2 feet bgs	184 cy(1)	274 tons
Fire Training Area*	526 sf	2 feet bgs	39 cy	58 tons
Former Building 55 Area**	9,000 sf	2 feet bgs	673 cy	999 tons
Building 150 Area	350 sf	2 feet bgs	26 cy	39 tons
Total Surface Soil to be Excavated			922 cy	1,370 tons

* TSCA regulated material
** Hazardous material
(1) This volume is the total surface soil volume (223 cy) minus the TSCA regulated material (30 cy).

Physical features will not be removed during the excavation of surface soils. Physical features include, but are not limited to, steam lines, monitoring wells, buildings, concrete pads, railroad track, and bituminous concrete paved roads. The NSWC Crane Officer in Charge of Construction (OICC) will clearly identify the physical features that are not to be removed or disturbed prior to implementation of this IMWP. The volume estimates presented in this IMWP assume that these physical features remain in place.

Sediment that accumulates in the erosion and sediment control devices (see Section 4.0) prior to verification that all contaminated soil has been removed from the associated surface soil excavation areas will be disposed off site along with the excavated contaminated surface soil. Following verification of contaminant removal, sediment that accumulates in the erosion and sediment control devices will be placed in the excavation as backfill material or spread across the disturbed ground surface of the associated soil excavation area.

3.2.2 Subsurface Soil Excavation

All SWMU 9 subsurface soils identified as having COCs at concentrations that result in unacceptable risks to ecological and human receptors will be removed, characterized, and disposed at an approved off-site hazardous, non-hazardous, or TSCA regulated waste disposal facility. Excavated/removed soil will be stockpiled or containerized for characterization purposes. If the excavated soil is stockpiled, it will be placed on a material handling pad located adjacent to the excavation area or at a central location. The material handling pad(s) will be constructed in accordance with Section 3.2.12. Alternatively, removed soil may be placed in roll-off boxes or other approved containers placed adjacent to each excavation area or in a central location. When transporting soil, appropriate measures such as lining the roll-off boxes or containers or providing sealed tailgates must be used to prevent loss or stored material during transportation. All excavated soil will remain on site until waste characterization has been completed.

The planned subsurface soil excavation areas are identified on Figures 3-1 and 3-2. The excavation area located at the former fire training area (south of former Building 55) includes approximately 434 cy of non-TSCA regulated soil. No TSCA regulated soil was found in the former fire training area subsurface. The former fire training area subsurface excavation area is identified on Figure 3-2. The area located west of former Building 55 includes approximately 111 cy of hazardous soil (based on contaminant concentration and process). The side sloping of this excavation area west of former Building 55 extends below existing steam lines. Excavation around steam line supports (concrete piers) and directly beneath the steam lines must be conducted by hand.

Northing and Easting coordinates for the subsurface soil excavation area vertices are provided in Table 3-2. Due to the depth of this excavation, the sidewalls will be sloped to provide stable excavation surfaces. This layback of side slopes requires the removal of an additional 312 cy of soil from the former fire training area excavation and an additional 84 cy of soil from the area west of former Building 55. This soil will be disposed off-site with the other excavated soils but should be kept separate from identified hazardous materials to the extent possible for disposal characterization purposes. It is expected that this material will be characterized as non-TSCA regulated waste (at the former fire training area) and hazardous waste (west of former Building 55). The side sloping for the excavation areas are identified on Figures 3-1 and 3-2. Excavation volume calculations, including the side slope volumes, are provided in Appendix B and summarized below:

Subsurface Soil Excavation				
Excavation Area	**Area**	**Depth of Excavation**	**Volume**	**Weight**
Fire Training Area	2,344 sf	5 feet bgs	434 cy(1)	644 tons
Fire Training Area Side Slopes	--	5 feet bgs	312 cy	463 tons
Former Building 55*	720 sf	4 feet bgs	111 cy	165 tons
Former Building 55 Side Slopes*	--	4 feet bgs	84 cy	125 tons
Total Subsurface Soil to be Excavated			**941 cy**	**1,397 tons**

* Hazardous
(1) This volume is the total subsurface volume (434 cy) minus the TSCA regulated material (39 cy).

Physical features will not be removed during the excavation of subsurface soils. Physical features include, but are not limited to, steam lines, monitoring wells, buildings, concrete pads, railroad track, and paved roads. The NSWC Crane OICC will clearly identify the physical features that are not to be removed or disturbed prior to implementation of this IMWP. The volume estimates presented in this IMWP assume that these physical features remain in place.

Sediment that accumulates in the erosion and sediment control devices (see Section 4.0) prior to verification that all contaminated soil has been removed from the associated soil excavation will be disposed off site along with the excavated contaminated subsurface soil. Following verification of contaminant removal, sediment that accumulates in the erosion and sediment control devices will be placed in the excavation as backfill material or spread across the disturbed ground surface of the associated soil excavation area.

3.2.3 Steam Line Support

The excavation of contaminated soils at SWMU 9 will result in the requirement to support the existing active steam lines that traverse the proposed excavation area west of former Building 55 and south of Building 150. The excavation in these areas include the removal of soil from beneath active steam lines. As shown on the drawing provided in Appendix C, the existing concrete piers used for steam line support in this area extend to a minimum depth of 2.5 feet bgs. Therefore, the surface soil excavation will not undermine the concrete piers south of Building 150. However, because of the subsurface excavation west of former Building 55 it appears that the concrete piers in this area will be undermined (Verification of undermining will depend upon side sloping and actual concrete pier locations).

As indicated above, it is likely that the steam line concrete piers will be undermined due to subsurface excavation activities west of former Building 55. Therefore, the support system for the steam lines in this area, and any other area where verification samples require deeper excavation, need to be capable of supporting the existing steam lines at their current horizontal and vertical alignment. In this situation, the temporary steam line support system will be installed prior to undermining the existing concrete piers and the existing concrete piers will be disconnected from the steam line support structure and disposed off site with the excavated soils. To re-establish the steam line support system the following requirements shall be met.

- Because of the existing steam line arrangements, placing the concrete piers directly below the steam lines will not be possible. Therefore, a minimum of two concrete piers will be required to re-support the steam lines within the excavation area.

- Backfilled soil placed within the excavation below steam lines will compacted to 95 percent standard proctor. The EMAC contractor will be required to perform compaction tests to verify adequate compaction.

- New pier holes will be drilled following backfilling of the entire excavation. The pier holes will be sized to allow the installation of a 2.5 foot inside-diameter sonitube placed at a minimum depth of 2.5 feet bgs.

- Concrete used to fill the sonitubes will be 4,000 pounds per square inch (psi) strength. Refer to the drawings provided in Appendix C for concrete pier construction requirements.

- The steel steam line support frame will be reconstructed to accommodate the required two pier support system. Refer to the drawings provided in Appendix C for steel framing requirements and framing/concrete pier attachment requirements.

The EMAC contractor will be required to submit a proposed temporary steam line support system plan for NSWC Crane approval. Additionally, the EMAC contractor will be required to submit a steam line support replacement plan along with proposed construction drawings for NSWC Crane approval. Excavating around steam line supports will not be permitted until these plans are approved.

3.2.4 Dewatering

It is not anticipated that excavated soil will require dewatering. However, in the event that subsurface excavation limits require the removal of saturated soil, dewatering of the soil will be required prior to transportation and off-site disposal. Excavated soil that requires dewatering will be dewatered adjacent to the excavation area. This material will be placed on a material handling pad at a lift thickness no greater than 3 feet and allowed to drain by gravity. Material handling pad(s) will be constructed in accordance with Section 3.2.12. Following dewatering, the EMAC contractor will collect the required soil disposal characterization samples (including moisture content), and if required, the EMAC contractor will mix the soil on the material handling pad to promote additional dewatering. It is estimated that following the second day of dewatering, the moisture content of the soil will have been sufficiently reduced and the soil will not require the addition of an absorbent agent to be suitable for transportation and disposal.

Water that has drained from the staged soil lifts and collected within the material handling pad, along with any standing water removed from excavations, will be containerized for characterization prior to off-site disposal, and, where applicable, managed in accordance with TSCA regulations.

3.2.5 Sampling and Analysis

Verification samples will be collected from the excavation floors and sidewalls to confirm the removal of COCs at concentrations that result in unacceptable human health and ecological risk. Based on the comparison of verification sample results to the risk based cleanup goals, the Navy may or may not direct the EMAC contractor to perform additional excavation and soil removal. In addition, verification samples will be collected from the surface soil below the decontamination pad, material handling pad(s), gravel construction entrance and any other support facility constructed by the EMAC contractor. Verification sampling and analysis procedures and acceptable COC concentrations are provided in Section 5.0.

3.2.6 Disposal

Excavated soil and removed debris will be sampled and analyzed for waste disposal characterization per the approved characterization sampling plan provided by the EMAC contractor as part of this work plan and in accordance with the methods required by the NSWC Crane-approved waste disposal facility. The soil will be sampled following the dewatering process, if dewatering is required. To prevent loss of material stored in containers or trucks, measures such as lining and covering containers and trucks or providing sealed tailgates on trucks will be performed. The EMAC contractor is responsible for satisfying all transportation and disposal requirements (solid and liquid) and providing TtNUS with all disposal facility sampling requirements including disposal facility name, contact information (including permit

number), waste profile, and responsible parties. This information will then be incorporated into the SWMU QAPP. The following is a summary of the in-place volumes expected to be disposed off site:

Location	Non-Hazardous	Hazardous	TSCA Regulated
Fire Training Area	930 cy	0 cy	39 cy
Former Building 55 Area	0 cy	868 cy	0 cy
Building 150 Area	26 cy	0 cy	0 cy
Volume of Debris	10 cy	0 cy	0 cy
Total Volume Disposed Off-site	966 cy	868 cy	39 cy

3.2.7 Backfilling

Excavation areas will be backfilled to preconstruction grades. The backfill soil obtained from an off-site borrow source will have properties similar to the native SWMU 9 soils. The backfill soil should come from a source where due diligence shows no evidence of a release of a regulated substance (i.e., clean fill). A certification must be provided regarding the origin of the clean fill, including a statement that, to the best of the provider's knowledge, the backfill soil has not been contaminated with the release of regulated substances. The backfill soil will be subject to analytical testing to assure that the material satisfies the following requirements:

- TPH, diesel range organics, USEPA method SW-846 8015M DRO - less than 1 milligram per kilogram (mg/kg)
- TPH, gasoline range organics, USEPA method SW-846 8015M GRO - less than 1 mg/kg
- Sum of benzene, toluene, ethylbenzene, and xylenes, USEPA method SW-846 5030 / 8021 - less than 1 mg/kg
- Characteristic waste determination (ignitability, corrosivity, reactivity, and toxicity), USEPA method SW-846 1311 - shall not fail the test for characteristic waste
- Total PCBs, USEPA method SW-846 8082 – Less than 1 mg/kg
- 4,4'-DDD, USEPA method SW-846 8081 - Less than 3.2 µg/kg
- 4,4'-DDE, USEPA method SW-8468081 - Less than 3.2 µg/kg

- 4,4'-DDT, USEPA method SW-846 8081 – Less than 3.2 µg/kg
- Dieldrin, USEPA EPA method SW-846 8081 – Less than 3.2 µg/kg
- Heptachlor, USEPA method SW-846 8081) – Less than 1.5 µg/kg
- Alpha-chlordane, USEPA method SW-846 8081 – Less than 1.5 µg/kg
- Gamma-chlordane, USEPA method SW-846 8081 – Less than 1.5 µg/kg
- DRO, USEPA method SW-846 8015M – Less than 1,600 µg/kg

Based on the Restoration Plan (Figure 3-3), three types of backfill material are required for site restoration, common fill, topsoil, and gravel. The physical characteristics required for each type of backfill material are discussed below.

Common Fill – Common fill will be used to backfill all excavation areas to a depth of 6 inches below final grade. This material will be placed into the excavation in 1-foot-thick lifts and compacted by track-walking across 100 percent of the backfilled area with track-type equipment. When backfilling at depths greater than 2 feet, compaction can be performed using the bucket of an excavator or hand tamping equipment. When placed around steam line supports within the identified limits on Figure 3-3, the backfill material will be placed in 6-inch lifts and will be compacted using hand-tamping equipment to 95 percent standard proctor. Common fill will meet the following physical characteristics:

- American Society for Testing and Materials (ASTM) D 2487, Classifications GW, GP, GM, SW, SP, or SM
- ASTM D 4318, Liquid limit, 35 maximum
- ASTM D 4318, Plasticity index, 12 maximum
- Maximum of 25 percent by weight passing ASTM D 1140, No. 200 sieve
- Maximum particle size of 1 inch

Topsoil – The uppermost 6 inches of backfill used to establish final grades will be medium-textured loam suitable for establishing vegetation.

Gravel – Where the Restoration Plan calls for the use of gravel pavement (see Figure 3-3), the uppermost 6 inches of backfill used to establish final grades will be American Association of State Highway and Transportation Officials (AASHTO) No. 7 stone that is compacted using a smooth drum roller or equivalent.

3.2.8 Restoration

To restore the excavation areas, backfilling will be performed to re-establish preconstruction grades using common fill and topsoil or gravel as indicated in Section 3.2.7. Based on the volumes excavated from SWMU 9, the estimated in place volumes of backfill material required are as follows:

- Common fill 1,576 cy
- Topsoil 224 cy
- Gravel 63 cy

Following backfilling, the entire limits of disturbance will be restored/stabilized using permanent stabilization practices. Restoration will consist of surface preparation, fertilizing, seeding, and mulching, where vegetation is proposed (Figure 3-3). Seeding procedures, and procedures for associated activities (fertilizing and mulching) are presented in detail in Section 4.4.

3.2.9 Erosion and Sediment Control

Before excavation activities begin, erosion and sediment controls will be established to prevent impacts to surface water downgradient of the disturbance areas, namely drainage channels and the unnamed streams that feed Boggs Creek (see Section 4.0). During excavation, backfilling, and restoration operations and until vegetation is established, the erosion and sediment controls will be regularly inspected and maintained. Erosion and sediment control requirements to be complied with during IMWP implementation include those presented in the Indiana Handbook for Erosion Control in Developing Areas (IDEM, 1992).

3.2.10 Gravel Construction Entrance

Ingress to and egress from the disturbed areas will be controlled using a gravel construction entrance, which is described in detail in Section 4.0. The gravel construction entrance placement requirements may result in the use of temporary access trails. If this is the case, the EMAC contractor will be required

to have a gravel construction entrance at the end of each temporary access trail that connects to NSWC Crane facility roads or parking areas, regardless as to whether these areas are paved or not.

3.2.11 Decontamination Pad

A temporary decontamination pad will be set up to clean equipment used to excavate and transport contaminated soil. The pad will be sized to accommodate all the equipment to be used at the site and will be constructed in a manner that contains all the contaminated materials removed from equipment and the liquids used to clean the equipment. Contaminated materials removed from the equipment will be disposed off site with the excavated soil. Wash water will be filtered, containerized, and characterized for off-site disposal or treatment, and, where applicable, wastewater and filters will be managed in accordance with TSCA regulations. Additional decontamination pad requirements are discussed in Section 4.5. Care will be taken to keep off-road transport equipment clean to minimize the spread of contaminated soil to areas adjacent to the excavations or the temporary access trails. Any soil removal from these areas and the associated disposal and restoration costs will be the responsibility of the EMAC contractor.

3.2.12 Material Handling Pad

Temporary material handling pads will be set up to hold and dewater if necessary, all excavated soil. The material handling pads will be sized to accommodate excavated soil and loading equipment as necessary. Material handling pads will be constructed in such a manner that they will retain all materials and allow the water that drains by gravity from the soil to be collected in a sump. At a minimum, the material handling pads shall be constructed of an 8-mil-thick polyethylene geomembrane overlain by a gravel drainage layer. During rain events and downtime, stockpiled materials within the material handling pads must be covered with a minimum 8-mil-thick polyethylene geomembrane to prevent movement of material to surrounding areas and to minimize the collection of additional water. The geomembrane cover will be secured daily using sandbags and rope or equivalent methods. Material handling pads must be constructed so that water discharges to a containment system. Prior to off-site disposal the containerized water must be filtered and an initial characterization sample must be collected, and, where applicable, wastewater and filters will be managed in accordance with TSCA regulations.

3.2.13 Clearing

Clearing will be performed only within the limits of excavation shown on Figures 3-1 and 3-2. Clearing activities will be kept to a minimum to minimize impacts to natural habitat. Cleared vegetation will be chipped and disposed off site. Standing trees will not be removed between April 15 and September 15 to

comply with Indiana bat regulations, which are further addressed in Section 3.5.2, unless approval is granted by the NSWC Crane Natural Resources Office. Prior to initiating clearing activities, the EMAC contractor will meet with the NWSC Crane Biologist to define the clearing activities and receive approval to proceed. Additionally, minor tree clearing (e.g., small areas of non-habitat value trees) must be approved by the NSWC Crane Natural Resources Office.

3.3 SEQUENCE OF IMWP IMPLEMENTATION

The generalized sequence of construction activities is presented below. This sequence of construction is subject to change based on the EMAC contractor's Work Plan:

1. Hold a pre-IMWP implementation meeting with the NSWC Crane OICC, Contracting Officer, EMAC contractor, and TtNUS representative, at a minimum. The EMAC contractor must provide a minimum of 7 days notice to OICC and TtNUS prior to the pre-IMWP implementation meeting.

2. Inspect SWMU 9 to verify existing site conditions and overhead and underground utility locations and obtain all required permits as detailed in Table 3-1. The EMAC contractor must provide a minimum of 7 days notice to OICC and TtNUS prior to the start of construction activities.

3. Install perimeter controls for the gravel construction entrance(s), and construct the gravel construction entrance(s). Install the remaining perimeter controls as indicated in the Erosion and Sediment Control Plan (Section 4.0).

4. Clear areas for support features including, but not limited to, the decontamination pad, material handling pad(s), and materials storage area. Construct the support features.

5. Install utility support/protection systems as required.

6. Excavate/remove surface and subsurface soil from the defined excavation areas at the former fire training, former Building 55 area, and Building 150 area. Place excavated soil in the material handling pad to dewater by gravity (if necessary) and for characterization. Following dewatering (if necessary), collect disposal characterization samples. Following disposal characterization, load and transport soil to the NSWC Crane-approved off-site disposal facility. During excavation, maintain erosion and sediment controls.

7. Collect verification samples (TtNUS) as identified in Section 5.0 of this IMWP. Perform additional excavation (Implementation Sequence Item No. 6) if required by the Contracting Officer. Following verification that contaminated soil is removed, restore the excavation areas as required, and restore utility foundation systems if needed.

8. Following transportation and disposal of all excavated soil, remove the material handling pad(s) and decontamination pad(s), and collect verification samples from within the footprint of the support features and from the temporary access trails as described in Section 5.0. Following verification that the temporary access trails and the ground below the support features were not impacted by construction activities, regrade as necessary and establish permanent stabilization.

9. Following permanent stabilization of all disturbed areas, and with the approval of the OICC, remove all remaining perimeter controls and immediately stabilize all remaining disturbed areas.

3.4 STORMWATER CONTROLS

The SWMU 9 ground surface hydrology, grading, and cover will not be altered due to IMWP implementation activities. Since pre- and post-construction runoff from the limits of disturbance will be the same, permanent stormwater detention capacity is not required, and pre- and post-construction stormwater runoff calculations were not prepared.

The disturbed area will be approximately 0.85 acre in size; therefore, an IDEM Storm Water General Permit is not required (stormwater permits are required for disturbances greater than 1 acre). Additionally, because the IM activities do not include working in and around a water course, the IDEM 401 Permit and Department of Natural Resources (DNR) Construction in Floodway Permit is not required (refer to Table 3-1). IMWP implementation activities will require the use of best management practices for erosion and sediment control and stormwater pollution prevention as described in Section 4.0.

3.5 OTHER IMWP IMPLEMENTATION REQUIREMENTS

3.5.1 Utilities

The EMAC contractor is responsible for obtaining utility locations and adequately protecting any utilities located in the active work areas before any earth-disturbing activities begin. Since steam lines traverse an excavation area at SWMU 9, the EMAC contractor will provide appropriate temporary support for the steam line support structures during excavation as indicated in Section 3.2.3 (prior to installation, the proposed temporary support systems must be approved by the OICC).

3.5.2 Groundwater Monitoring Wells

There are existing groundwater monitoring wells within the limits of excavation and within the vicinity of construction activities (refer to Figures 1-2, 3-1, and 3-2). The EMAC contractor shall protect these groundwater monitoring wells during construction activities. As indicated in Figure 3-1, groundwater monitoring well 09MWT010 is located within the limits of the excavation located south and west of former Building 55. Currently, groundwater monitoring well 09MWT010 is located within the limits of surface soil excavation and can be preserved by hand excavation and backfilling around the existing well. However, if subsurface excavation limits extend to include this groundwater monitoring well, the EMAC contractor will abandon groundwater monitoring well 09MWT010 in accordance with IDEM requirements. If any of the remaining groundwater monitoring wells are damaged by the EMAC contractor, those groundwater monitoring wells will be replaced by the EMAC contractor at the cost of the EMAC contractor. The available groundwater monitoring well construction logs are provided in Appendix A.

3.5.3 Protection of Natural Resources

Threatened and endangered species or species of special concern protected under Indiana or Federal regulations exist or may exist within the limits of SWMU 9 and will therefore be protected. Protected bird species that may use SWMU 9 as part of their home ranges include the bald eagle, osprey, sharp-shinned hawk, red-shouldered hawk, broad-winged hawk, black and white warbler, hooded warbler, and the worm-eating warbler (B&RE, 1997). Also, the Indiana bat, a federal endangered species, is known to forage at NSWC Crane. During the spring and summer, Indiana bats roost in trees and forage for insects primarily in riparian and upland forests. The most important characteristic of roost trees is thought to be structural-exfoliating bark with space for bats to roost between the bark and the bole of the tree. To a limited extent, tree cavities and crevices are also used for roosting.

In 1997, NSWC Crane received a letter from the United States Fish and Wildlife Service (USFWS) stating that, in their opinion, NSWC Crane had an abundance of Indiana bat habitat and that any activity that would result in the clearing of woody vegetation may affect the Indiana bat and would require consultation under the Endangered Species Act (ESA). The USFWS recommended interim guidelines for protecting Indiana bats and their habitat from silvicultural activities, and these recommendations were immediately implemented by NSWC Crane under the timber management program.

Because of the Indiana bat and its potential habitat, the cutting of trees at NSWC Crane is restricted to certain times during the year, and the cutting of shagbark hickory trees (potential Indiana bat habitat) is

prohibited. A summary of Indiana bat-related restrictions prepared by the NSWC Crane Natural Resources Office (i.e., "bat primer") is as follows:

- Woody vegetation that is 5 inches in diameter or greater at 4.5 feet above the ground surface may not be removed between April 15 and September 15.
- Standing dead trees may not be removed between April 15 and September 15.
- Timber harvesting may occur between September 15 and April 15 without a case-by-case consultation, provided the interim guidelines for silvicultural treatment issued to the NSWC Crane Natural Resources Office by the USFWS are followed.
- During emergency situations, necessary and prudent tree removal is allowed at all times without consultation.
- Tree removal from residential settings and industrial areas for safety reasons is allowed between September 15 and April 15 without further consultation. This includes tree trimming.
- Tree removal within 25 feet of railroad tracks and within 50 feet of explosive storage and explosive operating buildings is allowed between September 15 and April 15 without further consultation.
- Brush clearing of woody vegetation less than 3 inches in diameter at 4.5 feet above the ground may occur at any time of the year without consultation.
- All other tree removal or clearing projects not covered above must be submitted to the USFWS for informal consultation on a case-by-case basis.

As noted in Section 3.2.13, approval for minor tree clearing can be obtained from the NSWC Crane Natural Resources Office between April 15 and September 15.

3.5.4 Traffic Control Plan

Access to NSWC Crane is via four gates: the Main Gate referred to as the Bloomington Gate (Gate House No. 1) in the north, Burns City Gate (Gate House No. 2) in the west, Bedford Gate (Gate House No. 3) in the east, and Crane Gate (Gate house No. 4) in the northwest. NSWC Crane will be accessed by the EMAC contractor only through the Crane Gate. All vehicles will pass through the Crane

Gate via the traffic routing plan shown on Figure 3-4. The EMAC contractor is not permitted to travel within restricted areas of the facility. All waste hauling vehicles will be weighed upon arrival and at time of departure using the certified weight scale located at the Defense Reutilization and Marketing Office (DRMO) (Building 1940). The DRMO scale is operated during normal business hours, and weight tickets are available. The DRMO scale is the preferred scale for contractors' use. Alternatively, the Army scale (Building 2913) may be used when the DRMO scale is not available. The Army scale is no longer manned, and weight tickets are not available. However, weight readout is available at the Army scale.

3.5.5 EMAC Contractor Requirements

The EMAC contractor will be required to perform all IMWP implementation activities in accordance with the EMAC Basic Contract, NSWC Crane Contractor's Operations Manual (NSWC Crane, 2002), and supplemental specifications provided in Appendix D.

The IWMP will be implemented by the EMAC contractor, NSWC Crane, and TtNUS, with work assignments as summarized on Table 3-1.

3.6 IMPLEMENTATION

The EMAC contractor will coordinate all field work through the OICC.

IMWP implementation may be impacted by NSWC Crane activities and the facility's "Protective Measures." NSWC Crane will implement a corresponding set of "Protective Measures" based on the warnings provided by the Homeland Security Advisory System in the form of graduated "Threat Conditions." The EMAC contractor will be subject to any implemented "Protective Measures."

The Navy will provide a full-time oversight representative during IMWP implementation. The EMAC contractor shall provide a minimum of 7 days notification to the OICC and the Navy's oversight representative prior to mobilization.

TABLE 3-1

WORK ASSIGNMENT RESPONSIBILITY CHART
INTERIM MEASURES WORK PLAN SWMU 9
NSWC CRANE
CRANE, INDIANA
PAGE 1 OF 2

Work Item	EMAC Contractor[1]	NSWC Crane	TtNUS
Pre-IMWP Implementation Meeting	X	X	X
Interim Measure Implementation	X		
EMAC Contractor Work Plan [1] [2]	X		
Pre-Construction Conditions [3]	X	X	X
Locations and Flagging of Excavation Limits (see Table 3-2)	X		
Site Specific Health and Safety Plan / Activity Hazard Analysis	X		
Project Quality Control Plan	X		
Environmental Conditions Report	[1]		X
Permits			
- Safety & Building Availability Permit (ESO 8020/11)	X		
- Digging Permit (NWSCC 11000/3)	X	[4]	
- Flame Tool / Hot Work Permit (NWSCC 11320)	X		
- HERO Permit (approval for portable radios)	X		
- Tree Clearing Permit		X	
- IDEM Storm Water General Permit			X
- IDEM 401 Permit			X
- DNR Construction in the Floodway Permit			X
Field Work Reports and Submittals [5]	X		
Sampling and Analysis	X[6]		X[6]
Wastewater Disposal (Decontamination Water)	X	[7]	
CTO Closure Report	[8]		X

NOTES:

1. In addition to the listed items, the EMAC contractor is required to perform all IMWP implementation activities in accordance with the EMAC Basic Contract, NSWC Crane Contractor's Operations Manual (NSWC Crane, 2002), and supplemental specifications provided in Appendix D.
2. EMAC Contractor Work Plan includes, but is not limited to, an excavation and handling plan, steam line support plan, waste management plan, environmental protection plan, erosion and sediment control plan, stormwater pollution prevention plan, characterization sampling plan, and transportation and disposal plan.
3. EMAC contractor will participate in documenting environmental conditions before, during, and after implementation of the interim measures.
4. EMAC contractor completes the permit form. NSWC Crane performs the utility clearance.
5. EMAC contractor will furnish items identified in the Basic Contract, NSWC Crane Contractor's Operations Manual, and the Supplemental Specifications provided in Appendix B.
6. EMAC contractor will be responsible for the collection of characterization samples required for off-site disposal of excavated surface soils and sediments. TtNUS will collect verification samples from the excavation areas and from the surface soils below the support facilities following the removal of the support facilities. TtNUS will also collect verification samples from the temporary access trails. The EMAC contractor will need to coordinate and accommodate TtNUS sampling and field activities.

TABLE 3-1

WORK ASSIGNMENT RESPONSIBILITY CHART
INTERIM MEASURES WORK PLAN SWMU 9
NSWC CRANE
CRANE, INDIANA

7. EMAC Contractor will be responsible for collection, storage, characterization, and discharge of wastewater to the NSWC Crane approved stabilized drainage channel, storm drain, wastewater treatment plant, or transported to an off-site treatment and/or disposal facility per direction by NSWC Crane.
8. EMAC Contractor will furnish items identified in the Supplemental Specifications provided in Appendix B.

CTO - Contract Task Order
EMAC - Environmental Multiple Award Contract
HERO - Hazards of Electromagnetic Radiation to Ordnance
IMWP - Interim Measures Work Plan
NSWC - Naval Surface Warfare Center
TtNUS - Tetra Tech NUS, Inc
X – Indicates responsible party

TABLE 3-2

NORTHING AND EASTING EXCAVATION COORDINATES
INTERIM MEASURES WORK PLAN SWMU 9
NSWC CRANE
CRANE, INDIANA

EXCAVATION NODE	EASTING	NORTHING
FTA-01	3025122.22	1311073.21
FTA-02	3025170.00	1311118.26
FTA-03	3025170.85	1311189.64
FTA-04	3025126.92	1311137.69
FTA-05	3025137.49	1311103.79
FTA-06	3025148.03	1311147.37
FTA-07	3025157.21	1311143.78
FTA-08	3025139.30	1311094.61
FTA-09	3025130.13	1311098.20
FB55-01	3025281.55	1311396.64
FB55-02	3025241.57	1311353.59
FB55-03	3025203.17	1311359.16
FB55-04	3025128.40	1311417.33
FB55-05	3025160.95	1311461.47
FB55-06	3025242.89	1311454.68
FB55-07	3025230.02	1311406.99
FB55-08	3025211.38	1311445.05
FB55-09	3025200.09	1311421.90
FB55-10	3025231.02	1311438.02
FB55-11	3025221.68	1311413.01
FB55-12	3025202.59	1311483.91
FB55-13	3025212.60	1311483.92
FB55-14	3025212.59	1311473.98
FB55-15	3025202.55	1311473.98
B150-01	3025330.41	1311577.81
B150-02	3025328.93	1311563.78
B150-03	3025357.36	1311555.86
B150-04	3025359.73	1311565.82
B150-05	3025345.90	1311568.68
B150-06	3025346.89	1311573.46

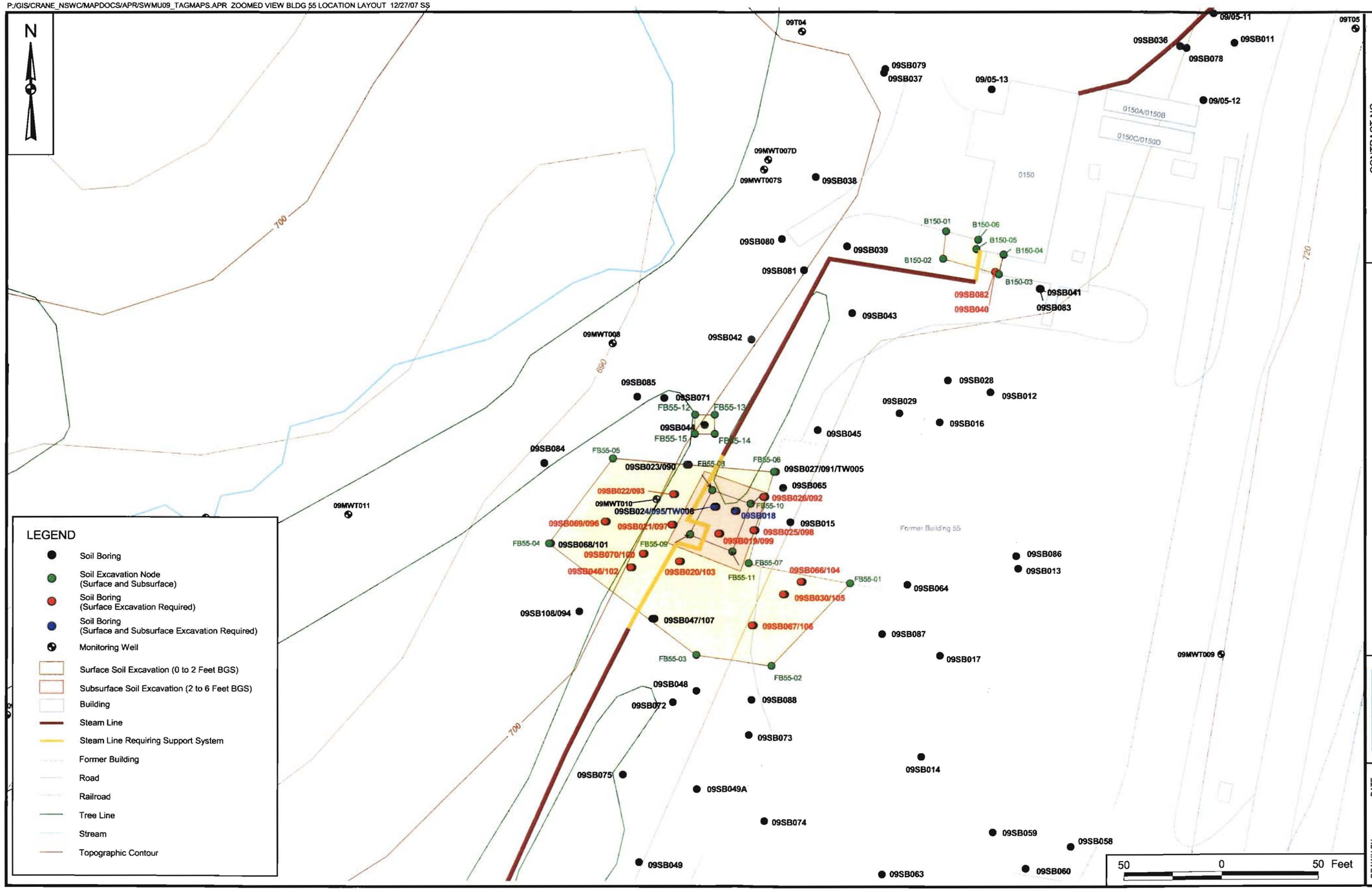
Notes:

1) Excavation nodes identified the extent of contaminated soil requiring excavtion (See Figures 3-1 and 3-2). The nodes do not identify the exent of excavtion side slope lay backs. In addion the nodes identified in this table will be locate and flag in the field by the EMAC contractor (see Table 3-1). The locations of the excavation nodes are subject to Navy approval prior to excavation.

2) Northing and easting coordinates reference NAD 1983 State Plain Coordinate System Indiana West (Feet).

FTR = Former Fire Training Excavation Area
FB55 = Former Building 55 Excavation Area
B150 = Building 150 Excavation Area

P:/GIS/CRANE_NSWC/MAPDOCS/APR/SWMU09_TAGMAPS.APR ZOOMED VIEW BLDG 55 LOCATION LAYOUT 12/27/07 SS



CONTRACT NO. CTO 00042

APPROVED BY ____ DATE ____

APPROVED BY ____ DATE ____

DRAWING NO. FIGURE 3-1

REV 0

FORMER BUILDING 55 AND BUILDING 150 EXCAVATION AREA
SWMU 9 QAPP ADDENDUM NO. 4
NSWC CRANE
CRANE, INDIANA

NAVFAC

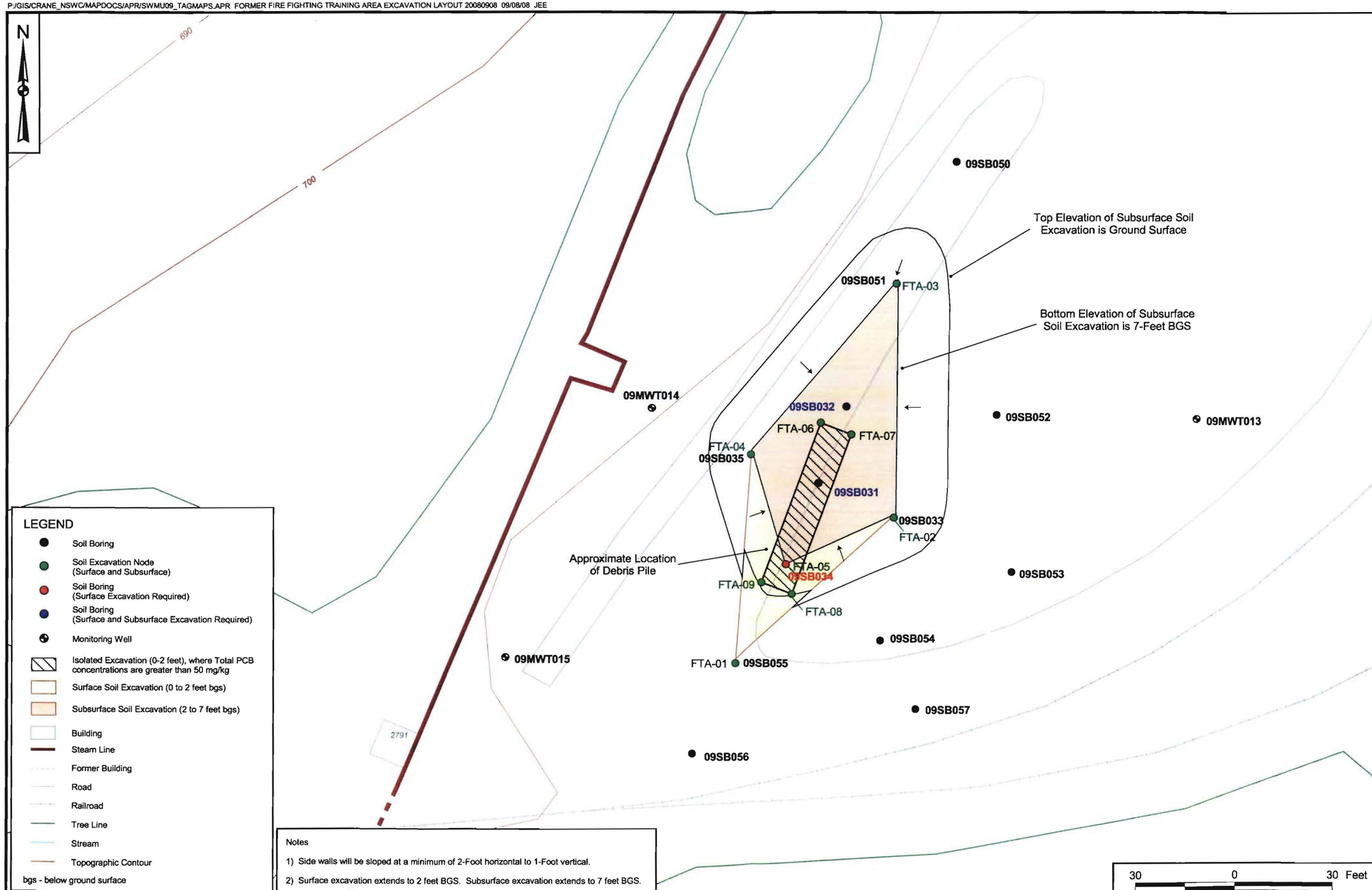
DRAWN BY S. STROZ DATE 3/29/07

CHECKED BY V. PLACHY DATE 12/27/07

COST/SCHED-AREA

SCALE AS NOTED

P:/GIS/CRANE_NSWC/MAPDOCS/APR/SWMU09_TAGMAPS.APR FORMER FIRE FIGHTING TRAINING AREA EXCAVATION LAYOUT 20080908 09/08/08 JEE



LEGEND

- Soil Boring
- Soil Excavation Node (Surface and Subsurface)
- Soil Boring (Surface Excavation Required)
- Soil Boring (Surface and Subsurface Excavation Required)
- Monitoring Well
- Isolated Excavation (0-2 feet), where Total PCB concentrations are greater than 50 mg/kg
- Surface Soil Excavation (0 to 2 feet bgs)
- Subsurface Soil Excavation (2 to 7 feet bgs)
- Building
- Steam Line
- Former Building
- Road
- Railroad
- Tree Line
- Stream
- Topographic Contour

bgs - below ground surface

Notes

1) Side walls will be sloped at a minimum of 2-Foot horizontal to 1-Foot vertical.

2) Surface excavation extends to 2 feet BGS. Subsurface excavation extends to 7 feet BGS.

CONTRACT NO. CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE 3-2

REV 0

FORMER FIRE FIGHTING TRAINING AREA EXCAVATION
SWMU 9 QAPP ADDENDUM NO. 4
NSWC CRANE
CRANE, INDIANA

NAVFAC

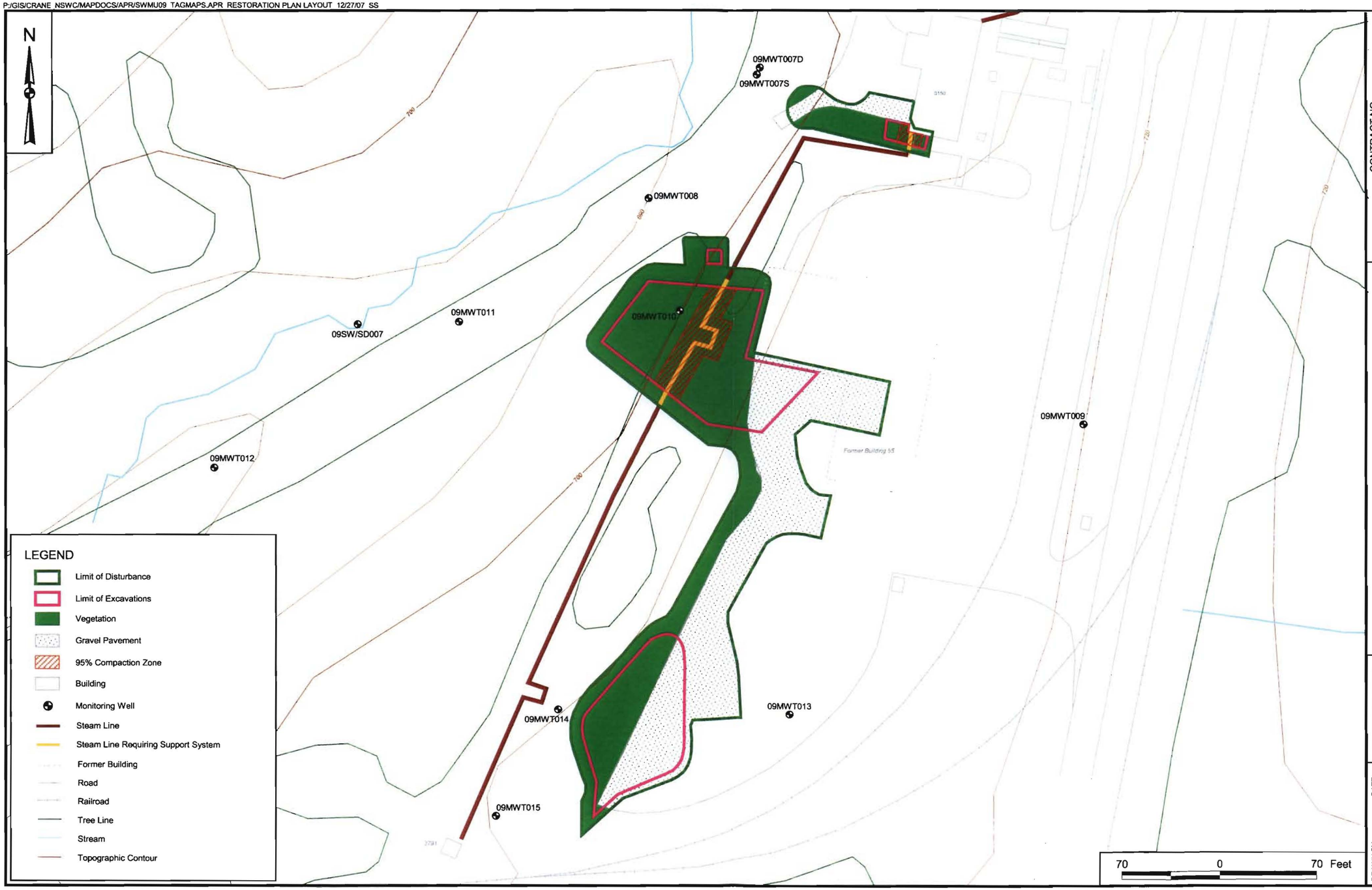
DRAWN BY J. ENGLISH DATE 09/08/08

CHECKED BY T. SMITH DATE 09/08/08

COST/SCHED-AREA

SCALE AS NOTED

P:/GIS/CRANE_NSWC/MAPDOCS/APR/SWMU09_TAGMAPS.APR RESTORATION PLAN LAYOUT 12/27/07 SS



CONTRACT NO.
CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE 3 - 3

REV 0

RESTORATION PLAN
SWMU 9 INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

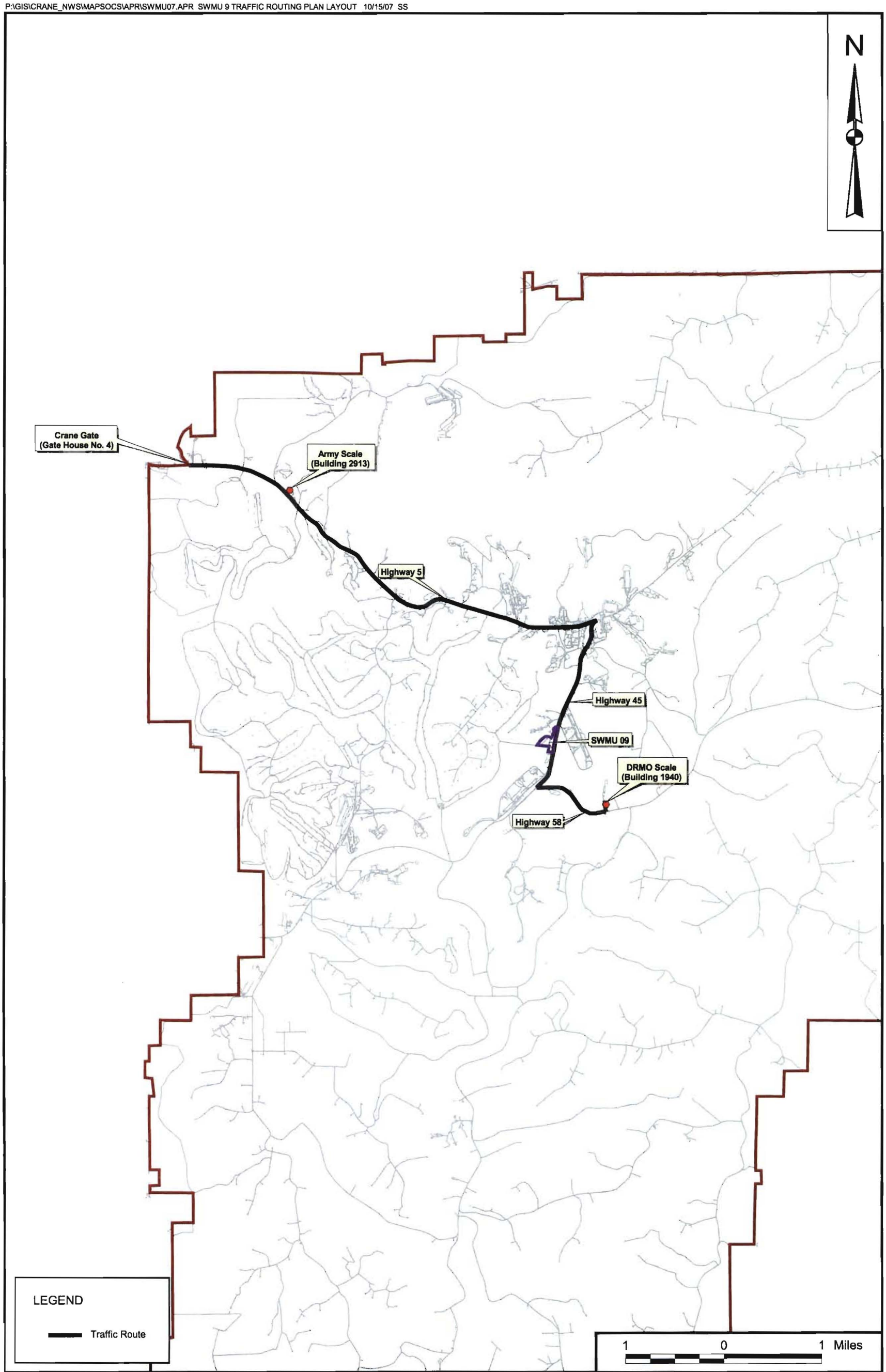
DRAWN BY A. JANOCHA DATE 5/25/07

CHECKED BY V. PLACHY DATE 12/27/07

COST/SCHED-AREA

SCALE AS NOTED

P:\GIS\CRANE_NWS\MAPSOCS\APR\SWMU07.APR SWMU 9 TRAFFIC ROUTING PLAN LAYOUT 10/15/07 SS



DRAWN BY S. STROZ	DATE 5/17/06	TRAFFIC ROUTING PLAN SWMU 9 INTERIM MEASURES WORK PLAN NSWC CRANE CRANE, INDIANA	CONTRACT NUMBER CTO 00042
CHECKED BY T. SMITH	DATE 10/15/07		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED	NAVFAC		DRAWING NO. FIGURE 3-4 REV 0

4.0 EROSION AND SEDIMENT CONTROL PLAN

4.1 PURPOSE

The purpose of this section is to provide the steps that will be taken to minimize and/or eliminate erosion and sedimentation during the implementation of the IMWP at SWMU 9. The erosion and sediment control plan has been developed in accordance with the guidelines defined in the Indiana Handbook for Erosion Control in Developing Areas (Handbook) (IDEM, 1992). Relevant standards and specifications from the Handbook are included in this section and Appendix E. The erosion and sediment control devices described in this text can be modified based on construction equipment and techniques presented in the EMAC contractor's Work Plan. Selected erosion and sediment control devices must be identified in the Erosion and Sediment Control Plan submitted with the EMAC contractor Work Plan. After the Erosion and Sediment Control Plan is approved, no changes can be made without the approval of the OICC and IDEM.

4.2 EROSION AND SEDIMENT CONTROL REQUIREMENTS

Erosion and sediment control measures are implemented to reduce or eliminate erosion and sedimentation of soil that would be detrimental to surface water quality. SWMU 9 drainage channels only carry flow from stormwater runoff during rain events; however, these drainage channels convey flow to streams that have a base flow and support aquatic life. Surface drainage at SWMU 9 collects in the local drainage ditches located west of SWMU 9. The ditches lead to larger drainageways and gullies that flow down the west side of the ridge in a southwest direction. The drainage ways and gullies flow southwestward to an unnamed tributary that discharges into Boggs Creek. The locations at which the unnamed tributary discharges to Boggs Creek is located approximately 8,500 feet downstream from SWMU 9.

IMWP implementation activities for SWMU 9 consist of excavation and off-site disposal of contaminated surface and subsurface soil, backfilling the excavations, and restoration of disturbed areas. Surface soil will be excavated from three areas, and subsurface soil will also be excavated from two of these three areas. The surface soil excavation areas are located south and west of former Building 55, south of Building 150, and at the former fire training area. The subsurface excavation areas are located west of former Building 55 and at the former fire training area. Because of site conditions, temporary access trails may need to be constructed to allow access to all excavation areas.

Based on the type of field activities being implemented in the SWMU 9 IMWP, the proposed erosion and sediment control measures include the following:

- Silt Fence - Placed along the downslope sides of the excavation areas, gravel construction entrances, decontamination pads, and dewatering pad(s). The silt fence will provide a temporary sediment barrier and consist of synthetic filter fabric and wooden posts.

- Gravel Construction Entrances - Placed as controlled site entrances to reduce the amount of sediment transported by construction vehicles onto facility and public roads.

- Dust Control - Utilized to prevent the movement of airborne dust particles from exposed soil surfaces that may present human health hazards, traffic safety problems, or ecological impacts.

- Permanent Seeding - Utilized to establish perennial vegetation on disturbed areas by planting seeds of native grasses.

The construction, implementation, and maintenance of these erosion and sediment control devices will be in accordance with the Handbook. Figure 4-1 presents the proposed excavation areas along with the limits of disturbance and the locations of the proposed erosion and sediment control devices. Figure 4-2 presents typical details of the erosion and sediment control devices proposed for the IMWP implementation (i.e., silt fence and gravel construction entrance). Permanent seeding is discussed in Section 4.4. Dust control will be addressed in the EMAC contractor Work Plan. All erosion and sediment controls will remain in place until all upstream areas have been stabilized. Completion of stabilization will be determined by the OICC.

4.3 INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS

In general, all erosion and sediment control measures will be checked daily and after each runoff-producing rainfall event. Any required repairs will be made immediately. The following items will be checked during each inspection:

- Silt fence will be checked for undermining or deterioration of the fabric. Sediment will be removed when the level of sediment causes bulging or reaches one-half of the fabric height.

- Stone construction entrances will be maintained in conditions that will minimize tracking of sediment onto facility or public roads.

- Seeded areas will be checked regularly to ensure that a good growth of vegetation is maintained, and these areas will be fertilized and reseeded, as needed.

- The fuel and lubricant materials storage area will be checked to ensure that stored containers are not leaking and that the lining system is functioning properly.

All erosion and sediment control devices will be inspected and maintained until the OICC has formally accepted the permanent stabilization of the disturbed areas. The EMAC contractor will maintain a log book of all erosion and sediment control device inspections and maintenance. This log book will be available at the site at all times for inspection by NSWC Crane personnel and the IDEM.

4.4 SITE RESTORATION

All areas disturbed by IMWP implementation activities (i.e., excavation areas and support facility areas) will be restored/stabilized using appropriate soil and permanent seeding. Activities to establish permanent stabilization will be implemented as soon as possible following the construction of final grades. Permanent vegetation activities include site/seed bed preparation, seeding, and mulching of the restored excavation areas and the surface soils located underneath support facilities.

The procedures and requirements for permanent seeding activities are presented in Section 3.12 of the Handbook. The seed mixture recommended for use at SWMU 9 is a standard Indiana seed mixture for open and disturbed areas. The seed mixture includes perennial ryegrass and tall fescue. Planting rates and optimum soil pH for this mixture are presented in Exhibit 3.12-C of the Handbook (provided in Appendix E). Following seeding, the seeded areas will be covered with temporary erosion control matting (e.g., coconut fiber matting) to provide additional stabilization until vegetation is established. In the event that disturbed areas are brought to final grade outside of the optimal growing season for the permanent seed mixture, the disturbed areas will be temporarily stabilized using a temporary seed mixture. The procedures and requirements for establishing temporary stabilization are presented in Section 3.11 of the Handbook. As indicated in the Handbook, erosion and sediment control devices will remain in place until permanent stabilization is established over the disturbed areas. Erosion and sediment control devices will not be removed by the EMAC contractor until directed by the OICC.

Sections 3.11 through 3.15 (Temporary Seeding, Permanent Seeding, Dormant and Frost Seeding, and Mulching) of the Handbook are provided in Appendix E.

4.5 RESPONSE PROCEDURES FOR SPILL MITIGATION

Potential non-stormwater discharges anticipated during IMWP implementation activities include: wash water resulting from decontamination efforts associated with field equipment; spills from vehicle fueling, lubrication, and maintenance; and spills of fertilizers, laboratory chemicals used in sample collection, and other flammable substances.

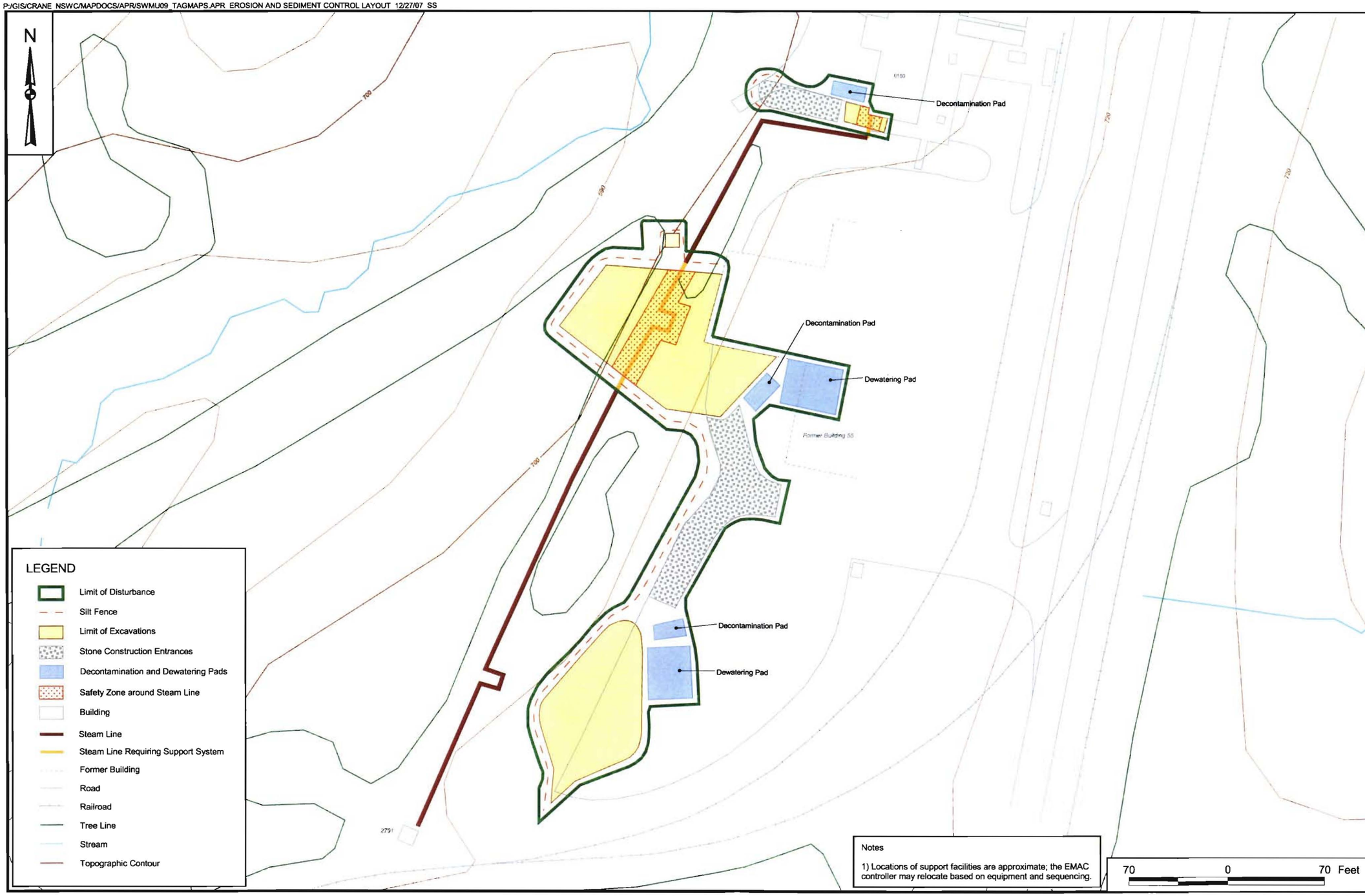
All decontamination wash water will be collected in a lined decontamination pad. All waters generated from decontamination and/or other washing activities will be collected, characterized, and transported to an approved off-site treatment facility. All vehicle fueling, lubrication, and maintenance will be performed utilizing drip pans or within the decontamination pad. Containers of detergents and vehicle maintenance fluids (e.g., oil, grease, antifreeze, hydraulic fluid, etc.) will be stored within an enclosed, lined, diked area along with the equipment fuel, which will be stored in tanks. This area, referred to as the materials storage area, will be bermed and lined with a 60-mil low-density polyethylene (LDPE) geomembrane and will be sized to contain 110 percent of the volume of material stored within the area. A small sump or low point in the liner will be designed to serve as a collection and monitoring point for any leaks or spills from the containers stored within the materials storage area. When not in use, chemicals, paints, and other flammable substances will be stored in a flammable storage cabinet located within the EMAC contractor's equipment trailer.

Good housekeeping procedures will be followed to reduce risks associated with construction materials and chemicals. These procedures include, but are not limited to, keeping materials in their original containers whenever possible, maintaining original labels and Material Safety Data Sheets (MSDSs), and using proper disposal methods for surplus materials. Accidental spills that may occur will be reported to the OICC, immediately contained as appropriate for the spilled medium (liquid or solid), and collected and containerized immediately after discovery of the spill to the satisfaction of the OICC. Containerized material will be characterized for off-site transportation and disposal. The following spill mitigation equipment will be available on site during construction activities:

- Drip pans
- Oil-dry or similar compound
- Absorbent socks
- Shovels
- 55-gallon drums or storage tank (for containerization)
- Labels for contents identification

Following spill cleanup, the cause of the spill will be investigated, and material storage and handling procedures will be reviewed and revised where appropriate. All spills will be reported to the NSWC Crane Environmental Department. The cleanup of the any spills or other chemical releases will be the responsibility of the EMAC contractor under the direction of the OICC.

P:/GIS/CRANE_NSWC/MAPDOCS/APR/SWMU09_TAGMAPS.APR EROSION AND SEDIMENT CONTROL LAYOUT 12/27/07 SS



Notes

1) Locations of support facilities are approximate; the EMAC controller may relocate based on equipment and sequencing.

CONTRACT NO. CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE 4-1

REV 0

EROSION AND SEDIMENT CONTROL PLAN
SWMU 9 INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

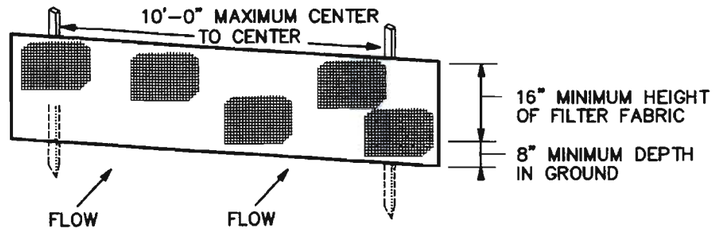
DRAWN BY J. ENGLISH DATE 6/09/07

CHECKED BY V. PLACHY DATE 12/27/07

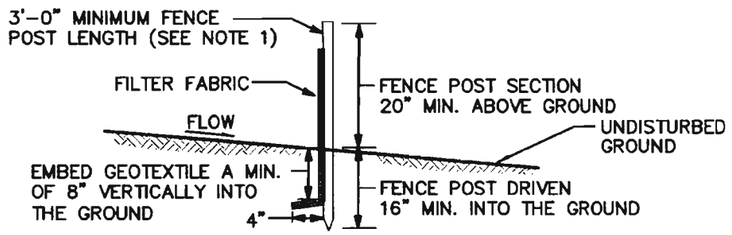
COST/SCHED-AREA

SCALE AS NOTED

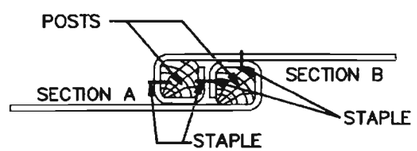
ACAD:0477CD01.dwg 06/04/07 MF PIT



PERSPECTIVE VIEW



CROSS SECTION

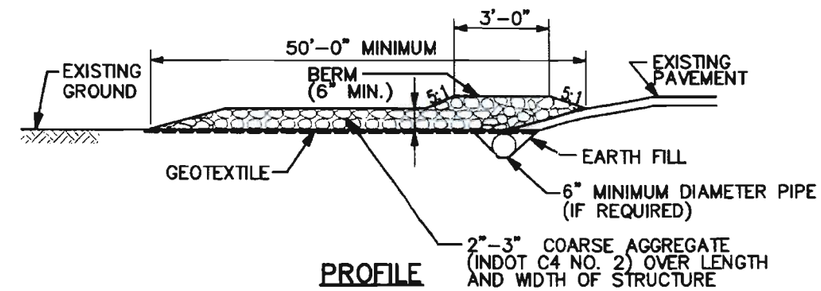


TOP VIEW – JOINING TWO
ADJACENT SILT FENCE SECTIONS

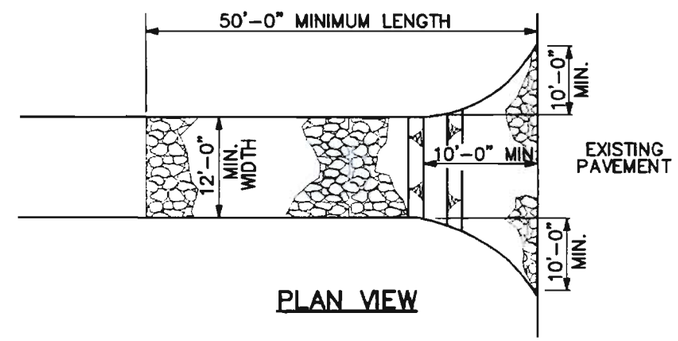
NOTES:

1. WOOD POSTS SHALL BE 1.5" BY 1.5" SQUARE (MIN) CUT OR 1.75" DIAMETER (MIN) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.
2. FILTER FABRIC SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
3. INSTALL SILT FENCE PARALLEL TO THE CONTOUR OF THE LAND.

SILT FENCE



PROFILE

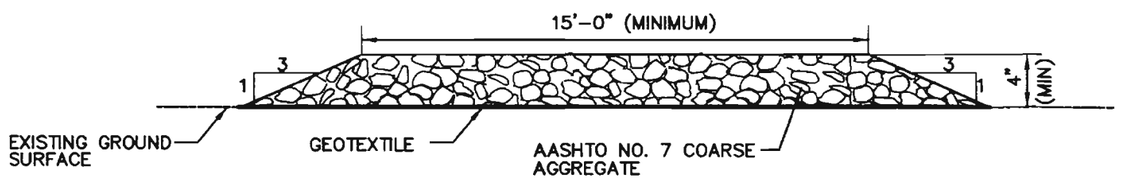


PLAN VIEW

NOTES:

1. ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE.
2. IF REQUIRED PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM DIAMETER WILL BE REQUIRED.

GRAVEL CONSTRUCTION ENTRANCE



TEMPORARY SITE ACCESS ROAD

NOT TO SCALE

DRAWN BY MF	DATE 6/4/07	EROSION AND SEDIMENT CONTROL DEVICES SWMU 9 INTERIM MEASURES WORK PLAN NSWC CRANE CRANE, INDIANA	CONTRACT NO. 0477
CHECKED BY	DATE		OWNER NO. 0042
REVISED BY	DATE		APPROVED BY / DATE
SCALE NOT TO SCALE			DRAWING NO. FIGURE 4-2 / REV. 0

FORM CADD NO. TTNUS-BH.DWG – REV 1 – 9/10/98

5.0 VERIFICATION SAMPLING PLAN

5.1 PURPOSE

The purpose of this section is to present the two types of verification samples to be collected during and following implementation of the SWMU 9 IMWP. The two types of verification samples include the samples collected from within the excavation areas to verify the removal of soil with COCs at concentrations causing unacceptable human health and ecological risks and the samples collected from surface soils located beneath the support facilities (i.e., decontamination pad, dewatering pad(s), material storage areas, construction entrances, and access trails) to ensure contamination was not spread during construction. The verification samples collected to confirm the removal of unacceptable contamination will be collected following excavation. The verification samples collected to confirm that there were no contamination impacts to surface soils located below the footprints of the support facilities will be collected after IMWP implementation is complete. This section also presents criteria and procedures used to evaluate verification sample data. Verification samples will be collected by TtNUS. The sampling procedures, sample locations, and fixed-base laboratory analytical methods will be addressed in the QAPP (to be provided under separate cover).

5.2 VERFICATION SAMPLING OF EXCAVATION AREAS

IMWP implementation activities include the excavation and off-site disposal of surface and subsurface soil containing contaminants at concentrations causing unacceptable human health and ecological risks. These excavation areas are shown on Figures 3-1 and 3-2. Verification samples will be collected from the excavation floors and sidewalls to determine if all the IMWP soil cleanup goals have been reached. In general, as indicated in the QAPP, excavation floor samples will be collected at a rate of one composite sample for every 1,000 square feet of exposed surface area and excavation side wall samples will be collected at a rate of one composite sample for every 25 linear feet of exposed side wall. Samples collected for DRO analysis will be collected at a rate of one grab sample per 1,000 square feet of excavation and one grab sample per 25 linear feet of exposed sidewall. The following paragraphs describe the verification sampling procedures to be performed for each of the excavation area.

- Soil Excavation Areas - Verification samples will be collected from the excavation side walls and excavation floor in the three soil excavation areas. Based on the estimated extent of excavation at the former Building 55 area, 11 excavation floor samples will be collected, and 15 excavation side wall samples will be collected. From the excavation area on the southern end of Building 150, one excavation floor sample and four excavation side wall samples will be collected. Lastly, at the former

fire training area, two excavation floor samples and six excavation side wall samples will be collected. The verification samples will be analyzed for the location specific COCs at each excavation area. The analytical results of these samples will be directly compared to the COC media cleanup goals. The following is a listing of the COCs that are present at each of the three excavation areas.

Excavation Area	Applicable COCs
Former Fire Training Area	PCBs
Former Building 55 Area	Pesticides and DRO
Building 150 Area	DRO

In the event that verification sample results indicate that COC concentrations remaining in an excavated area still pose unacceptable human health or ecological risks (COC concentrations exceed COC media cleanup goals), the Navy may direct the EMAC contractor to extend the excavation in the appropriate direction(s). The extent of additional excavation will depend on the location and concentrations of the COCs that still pose risks to human or ecological receptors. Following the additional excavation effort, additional verification samples will be collected by Tetra Tech. Excavation expansion may continue, at the discretion of the Contracting Officer, until all verification sample results indicate that all COC concentrations within the excavated area fall within acceptable human health and ecological risks (COC concentrations less than the COC media cleanup goals).

- Support Facility Areas - The frequency of verification sampling collected from the soils located beneath the support facilities after IMWP implementation has been completed, is the same as that for excavation samples (i.e., one verification sample for every 1,000 square feet of area disturbed). Side wall samples are not included in the support facility verification sampling program because no excavation will occur at the support facility areas. Based on the anticipated footprints of the support facilities, it is estimated that seven verification samples will be collected from the support facility areas (minimum of 1 sample from each support facility). The verification samples will be analyzed for the COCs (i.e., pesticides, PCBs, and DRO). As with the excavation areas, samples to be analyzed for DRO will be collected at a rate of one grab sample per 1,000 square feet of area. In the event that a verification sample result exceeds the acceptable risk levels (see previous paragraph), 6 inches of soil will be removed from the impacted support facility footprint (the support facility footprint equals the actual footprint plus an additional 10 feet in all directions). Following the additional excavation activities, additional verification samples will be collected by TtNUS. Excavation expansion may continue until no unacceptable risks remain in the surface soil at the site (COC concentrations less than the COC medial cleanup goals).

The COC media cleanup goals for achieving acceptable human health risks in soil at SWMU 9 are listed in the following table:

Contaminant Group	COCs	Media Cleanup Goals
PCBs	Total PCBs (surface soil)	1 ppm(1)
	Total PCBs (subsurface soil)	25 ppm(1)
DRO	DRO	1,600 ppm(2)
Pesticides	4,4'-DDD	24,300 ppb(4)
	4,4'-DDE	17,150 ppb(4)
	4,4'-DDT	3,600 ppb(3)
	Dieldrin	300 ppb(4)
	Heptaclor	1,050 ppb(4)
	Alpha-chlordane	3,500 ppb(3)
	Gamma-chlordane	3,500 ppb(3)

ppm (parts per million)
ppb (parts per billion)

1 TSCA high occupancy areas standard of 1 ppm [40 CFR 761.61(a)(4)(i)(A)] and low occupancy areas standard of 25 ppm [40 CFR 761.61(a)(4)(i)(A)].
2 IDEM Default Closure Level for direct contact to soil under a residential scenario.
3 Risk-based concentration for residential exposures to soil based on a target hazard index (HI) of 0.1.
4 Risk based concentration for residential exposure to soil based on a 1E-05 cancer risk level.

Risks to ecological receptors are based on the evaluation of average chemical concentrations at a particular site. Based on the proposed excavation areas, risks to ecological receptors will be acceptable at SWMU 9 because the excavated areas will be backfilled with clean fill as detailed in Section 3.2.7, and the average concentrations of COCs left in place at SWMU 9 will not exceed remediation goals established for protection of ecological receptors.

In order to minimize EMAC contractor downtime associated with waiting for sampling results, verification samples will be analyzed with field test kits to guide the excavation. Due to the cost associated with using the test kits and the time associated with performing the test kit analysis, the samples will be analyzed in batches. Once the test kit analysis is complete, TtNUS will submit a select number of samples for analysis at a fixed-base laboratory. The EMAC contractor should note that although the field test kit analysis takes only 2 to 3 hours, because TtNUS has to report the results to the Navy and because the Navy needs to evaluate those results, the EMAC contractor should expect a 24-hour delay

between TtNUS collecting the verification sample, the Navy reporting test kit results to the EMAC contractor, and the Navy's decision to extend the excavation or send samples to a fixed-base laboratory. The turnaround time for receiving analytical results from the fixed-base laboratory is 5 days, which includes time for sample shipment and results evaluation.

In the event the fixed-base laboratory results exceed the site cleanup goals, the Navy may or may not direct the EMAC contractor to perform additional excavation. If the Navy directs the EMAC contractor to perform additional excavation, TtNUS will collect additional verification samples following that excavation and the analysis process starting with test kit analysis will be repeated.

5.3 SAMPLING LOCATIONS

The numbers and locations of verification samples for the excavation areas and support facilities will be identified in a QAPP Addendum that will be provided under separate cover.

REFERENCES

B&RE (Brown & Root Environmental), 1997. Current Contamination Conditions Risk Assessment. SWMU #03/10 (Ammunition Burning Ground), SWMU #07/09 (old Rifle Range), SWMU #06/09 (Demolition Range). Naval Surface Warfare Center Crane Division, Crane, Indiana. November.

IDEM (Indiana Department of Environmental Management), 1992. Indiana Handbook for Erosion Control in Developing Areas, Department of Natural Resources.

NSWC (Naval Surface Warfare Center) Crane, 2002. Contractor's Operations Manual, Naval Surface Warfare Center Crane Division, March.

TtNUS (Tetra Tech NUS, Inc.), 2004. Resource Conservation and Recovery Act Corrective Measures Study Report for SWMU 9 – Pesticide Control/R-150 Tank Area, Naval Surface Warfare Center Crane Division, Crane, Indiana. December.

APPENDIX A

A.1 SWMU 9 ANALYTICAL DATA
A.2 SWMU 9 ANALYTICAL TAG MAPS
A.3 GROUNDWATER MONITORING WELL CONSTRUCTION LOGS

A.1

SWMU 9 ANALYTICAL DATA

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-01	09/05-01	09/05-01	09/05-01	09/05-02	09/05-02	09/05-02	09/05-02	09/05-03	09/05-03	09/05-03	09/05-04	09/05-04	09/05-04	09/05-04	09/05-05
SAMPLE ID	09/05-1-92-1 (92)	09/05-1-92-2 (92)	09/05-1-92-3 (92)	09/05-1-92-4 (92)	09/05-2-92-2 (92)	09/05-2-92-3 (92)	09/05-2-92-4 (92)	09/05-2-92-1 (92)	09/05-3-92-1 (92)	09/05-3-92-2 (92)	09/05-3-92-3 (92)	09/05-4-92-1 (92)	09/05-4-92-2 (92)	09/05-4-92-3 (92)	09/05-4-92-4 (92)	09/05-5-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0.5	2	3.5	6	2	3.5	5.5	0.5	1	3.5	4.5	0.5	1.9	3.5	6	1.8
BOTTOM DEPTH	1	2.5	4	6.5	2.5	4	5.9	1	1.5	4	5	1	2.3	4	6.5	2.3
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992
Volatile Organics (ug/kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	0.5 J	5.5 U	5.5 U	5.5 U	7.8
1,1,2,2-TETRACHLOROETHANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
1,1,2-TRICHLOROETHANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
1,1-DICHLOROETHANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
1,1-DICHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
1,2,3-TRICHLOROPROPANE																
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROETHANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
1,2-DICHLOROPROPANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
1,4-DIOXANE																
2-BUTANONE	110 U	33 J	11 U	11 U	110 U	110 U	110 U	110 U	110 U	110 U	110 U	11 U	11 U	11 U	11 U	11 U
2-HEXANONE	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U
3-CHLOROPROPENE																
4-METHYL-2-PENTANONE	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U
ACETONE	14 J	79 J	32 J	22 J	35 J	24 J	4.1 J	8.5 J	3.7 J	37 J	34 J	32 J	110	19 J	56 J	110 U
ACETONITRILE																
ACROLEIN																
ACRYLONITRILE																
BENZENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
BROMODICHLOROMETHANE	5.8	6.7	4.8 J	4.6 J	5.5 U	2.9 J	5.5 U	5.5 U	5.5 U	7	3.3 J	3.6 J	5.5 U	3.9 J	3 J	3.2 J
BROMOFORM	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
BROMOMETHANE	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
CARBON DISULFIDE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
CARBON TETRACHLORIDE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
CHLOROBENZENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
CHLORODIBROMOMETHANE	1.9 J	2 J	2 J	0.5 J	5.5 U	0.64 J	0.56 J	5.5 U	0.53 J	2 J	5.5 U	5.5 U	5.5 U	1.2 J	0.56 J	5.5 U
CHLOROETHANE	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
CHLOROFORM	26	29	14	23	5.5 U	21	20	5.5 U	19	32	12	14	5.5 U	16	17	9.6
CHLOROMETHANE	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
CHLOROPRENE																
CIS-1,2-DICHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
CIS-1,3-DICHLOROPROPENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
DIBROMOMETHANE																
DICHLORODIFLUOROMETHANE																
ETHYL METHACRYLATE																
ETHYLBENZENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
ISOBUTANOL																
METHACRYLONITRILE																
METHYL IODIDE																
METHYL METHACRYLATE																
METHYLENE CHLORIDE	8	7.7	6.8	22	34	28	24	21	16	5.6	11	22	6.3	16	30	34
PROPIONITRILE																
STYRENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 J
TETRACHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 J
TOLUENE	5.5 U	0.54 J	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	1.2 J	5.5 U	5.5 U	5.5 U	0.6 J	5.5 U	0.61 J
TOTAL XYLENES	5.5 U	5.5 U	0.62 J	5.5 U	5.5 U	0.96 J	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	4.5 J	3.2 J	5.5 U	5.5 U	2.1 J
TRANS-1,2-DICHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
TRANS-1,3-DICHLOROPROPENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 J	5.5 U
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 J	5.5 U
TRICHLOROFLUOROMETHANE																
VINYL ACETATE	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U	55 U
VINYL CHLORIDE	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-01	09/05-01	09/05-01	09/05-01	09/05-02	09/05-02	09/05-02	09/05-02	09/05-03	09/05-03	09/05-03	09/05-04	09/05-04	09/05-04	09/05-04	09/05-05
SAMPLE ID	09/05-1-92-1 (92)	09/05-1-92-2 (92)	09/05-1-92-3 (92)	09/05-1-92-4 (92)	09/05-2-92-2 (92)	09/05-2-92-3 (92)	09/05-2-92-4 (92)	09/05-2-92-1 (92)	09/05-3-92-1 (92)	09/05-3-92-2 (92)	09/05-3-92-3 (92)	09/05-4-92-1 (92)	09/05-4-92-2 (92)	09/05-4-92-3 (92)	09/05-4-92-4 (92)	09/05-5-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0.5	2	3.5	6	2	3.5	5.5	0.5	1	3.5	4.5	0.5	1.9	3.5	6	1.8
BOTTOM DEPTH	1	2.5	4	6.5	2.5	4	5.9	1	1.5	4	5	1	2.3	4	6.5	2.3
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992
Semivolatile Organics (ug/kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE	800 U	800 U	800 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
1,2-DICHLOROBENZENE	800 U	800 U	800 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
1,2-DIPHENYLHYDRAZINE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
1,3-DICHLOROBENZENE	800 U	800 U	800 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
1,4-DICHLOROBENZENE	800 U	800 U	800 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
1,4-NAPHTHOQUINONE																
1,4-PHENYLENEDIAMINE																
1-NAPHTHYLAMINE																
2,2'-OXYBIS(1-CHLOROPROPANE)	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2,3,4,6-TETRACHLOROPHENOL																
2,4,5-TRICHLOROPHENOL	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2,4,6-TRICHLOROPHENOL	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2,4-DICHLOROPHENOL	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2,4-DIMETHYLPHENOL	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2,4-DINITROPHENOL	4000 U	4000 U	3800 U	3900 U	3800 U	4000 U	3800 U	4000 U	3800 U	3600 U	4000 U	3900 U	3600 U	3700 U	3700 U	38000 U
2,4-DINITROTOLUENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2,6-DICHLOROPHENOL																
2,6-DINITROTOLUENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2-ACETYLAMINOFLUORENE																
2-CHLORONAPHTHALENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2-CHLOROPHENOL	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2-METHYLNAPHTHALENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2-METHYLPHENOL	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2-NAPHTHYLAMINE																
2-NITROANILINE	4000 U	4000 U	3800 U	3900 U	3800 U	4000 U	3800 U	4000 U	3800 U	3600 U	4000 U	3900 U	3600 U	3700 U	3700 U	38000 U
2-NITROPHENOL	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
2-PICOLINE																
3,3'-DICHLOROBENZIDINE	1600 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U	1600 U	1600 U	1500 U	1500 U	1500 U	15000 U
3,3'-DIMETHYLBENZIDINE																
3-METHYLCHOLANTHRENE																
3-NITROANILINE	4000 U	4000 U	3800 U	3900 U	3800 U	4000 U	3800 U	4000 U	3800 U	3600 U	4000 U	3900 U	3600 U	3700 U	3700 U	38000 U
4,6-DINITRO-2-METHYLPHENOL	4000 U	4000 U	3800 U	3900 U	3800 U	4000 U	3800 U	4000 U	3800 U	3600 U	4000 U	3900 U	3600 U	3700 U	3700 U	38000 U
4-AMINOBIPHENYL																
4-BROMOPHENYL PHENYL ETHER	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
4-CHLORO-3-METHYLPHENOL	1600 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U	1600 U	1600 U	1500 U	1500 U	1500 U	15000 U
4-CHLOROANILINE	1600 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U	1600 U	1600 U	1500 U	1500 U	1500 U	15000 U
4-CHLOROPHENYL PHENYL ETHER	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
4-METHYLPHENOL	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
4-NITROANILINE	4000 U	4000 U	3800 U	3900 U	3800 U	4000 U	3800 U	4000 U	3800 U	3800 U	4000 U	3900 U	3600 U	3700 U	3700 U	38000 U
4-NITROPHENOL	4000 U	4000 U	3800 U	3900 U	3800 U	4000 U	3800 U	4000 U	3800 U	3600 U	4000 U	3900 U	3600 U	3700 U	3700 U	38000 U
4-NITROQUINOLINE-1-OXIDE																
5-NITRO-O-TOLUIDINE																
7,12-DIMETHYLBENZ(A)ANTHRACENE																
A,A-DIMETHYLPHENETHYLAMINE																
ACENAPHTHENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
ACENAPHTHYLENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
ACETOPHENONE																
ANILINE	1600 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U	1600 U	1600 U	1500 U	1500 U	1500 U	15000 U
ANTHRACENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	200 J
ARAMITE																
BENZIDINE	4000 U	4000 U	3800 U	3900 U	3800 U	4000 U	3800 U	4000 U	3800 U	3600 U	4000 U	3900 U	3600 U	3700 U	3700 U	38000 U
BENZO(A)ANTHRACENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	560 J
BENZO(A)PYRENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
BENZO(B)FLUORANTHENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	320 J
BENZO(G,H,I)PERYLENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
BENZO(K)FLUORANTHENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	430 J
BENZOIC ACID	4000 U	4000 U	3800 U	3900 U	3800 U	4000 U	3800 U	4000 U	3800 U	3600 U	4000 U	3900 U	3600 U	20 J	3700 U	38000 U
BENZYL ALCOHOL	1600 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U	1600 U	1600 U	1500 U	1500 U	1500 U	15000 U
BIS(2-CHLOROETHOXY)METHANE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-01	09/05-01	09/05-01	09/05-01	09/05-02	09/05-02	09/05-02	09/05-02	09/05-03	09/05-03	09/05-03	09/05-04	09/05-04	09/05-04	09/05-04	09/05-05
SAMPLE ID	09/05-1-92-1 (92)	09/05-1-92-2 (92)	09/05-1-92-3 (92)	09/05-1-92-4 (92)	09/05-2-92-2 (92)	09/05-2-92-3 (92)	09/05-2-92-4 (92)	09/05-2-92-1 (92)	09/05-3-92-1 (92)	09/05-3-92-2 (92)	09/05-3-92-3 (92)	09/05-4-92-1 (92)	09/05-4-92-2 (92)	09/05-4-92-3 (92)	09/05-4-92-4 (92)	09/05-5-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0.5	2	3.5	6	2	3.5	5.5	0.5	1	3.5	4.5	0.5	1.9	3.5	6	1.8
BOTTOM DEPTH	1	2.5	4	6.5	2.5	4	5.9	1	1.5	4	5	1	2.3	4	6.5	2.3
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992
BIS(2-CHLOROETHYL)ETHER	800 U	800 U	800 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
BIS(2-ETHYLHEXYL)PHTHALATE	180 J	120 J	750 U	40 J	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
BUTYL BENZYL PHTHALATE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
CHLOROBENZILATE																
CHRYSENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	620 J
DI-N-BUTYL PHTHALATE	800 U	210 J	750 U	110 J	750 U	810 U	770 U	800 U	770 U	290 J	190 J	780 U	640 J	6900	6100	320 J
DI-N-OCTYL PHTHALATE	800 U	800 U	750 U	150 J	750 U	150 J	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	69 J	7600 U
DIALLATE																
DIBENZO(A,H)ANTHRACENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
DIBENZOFURAN	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
DIETHYL PHTHALATE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
DIMETHOATE																
DIMETHYL PHTHALATE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
DIPHENYLAMINE																
DISULFOTON																
ETHYL METHANE SULFONATE																
ETHYL PARATHION																
FAMPHUR	48 U	50 U	46 U	47 U	45 U	49 U	46 U	47 U	47 U	45 U	48 U	46 U	44 U	44 U	45 U	46 U
FLUORANTHENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	1300 J
FLUORENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
HEXACHLOROBENZENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
HEXACHLOROBUTADIENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
HEXACHLOROCYCLOPENTADIENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
HEXACHLOROETHANE	800 U	800 U	800 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
HEXACHLOROPROPENE																
INDENO(1,2,3-CD)PYRENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
ISODRIN																
ISOPHORONE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
ISOSAFROLE																
KEPONE	490 U	500 U	460 U	470 U	450 U	490 U	460 U	470 U	480 U	450 U	480 U	460 U	440 U	450 U	450 U	460 U
METHAPYRILENE																
METHYL METHANE SULFONATE																
METHYL PARATHION																
N-NITROSO-DI-N-BUTYLAMINE																
N-NITROSO-DI-N-PROPYLAMINE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
N-NITROSODIETHYLAMINE																
N-NITROSODIMETHYLAMINE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
N-NITROSODIPHENYLAMINE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
N-NITROSOMETHYLETHYLAMINE																
N-NITROSOMORPHOLINE																
N-NITROSOPIPERIDINE																
N-NITROSOPYRROLIDINE																
NAPHTHALENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
NITROBENZENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
O,O,O-TRIETHYL PHOSPHOROTHIOATE																
O-TOLUIDINE																
P-(DIMETHYLAMINO)AZOBENZENE																
PENTACHLOROBENZENE																
PENTACHLOROETHANE																
PENTACHLORONITROBENZENE																
PENTACHLOROPHENOL	4000 U	4000 U	3800 U	3900 U	3800 U	4000 U	3800 U	4000 U	3800 U	3600 U	4000 U	3900 U	3600 U	3700 U	3700 U	38000 U
PHENACETIN																
PHENANTHRENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	940 J
PHENOL	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	7600 U
PHORATE																
PRONAMIDE																
PYRENE	800 U	800 U	750 U	780 U	750 U	810 U	770 U	800 U	770 U	730 U	800 U	780 U	730 U	740 U	740 U	1300 J
PYRIDINE																
SAFROLE																
SULFOTEPP																
THIONAZIN																

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-01	09/05-01	09/05-01	09/05-01	09/05-02	09/05-02	09/05-02	09/05-02	09/05-03	09/05-03	09/05-03	09/05-04	09/05-04	09/05-04	09/05-04	09/05-05
SAMPLE ID	09/05-1-92-1 (92)	09/05-1-92-2 (92)	09/05-1-92-3 (92)	09/05-1-92-4 (92)	09/05-2-92-2 (92)	09/05-2-92-3 (92)	09/05-2-92-4 (92)	09/05-2-92-1 (92)	09/05-3-92-1 (92)	09/05-3-92-2 (92)	09/05-3-92-3 (92)	09/05-4-92-1 (92)	09/05-4-92-2 (92)	09/05-4-92-3 (92)	09/05-4-92-4 (92)	09/05-5-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0.5	2	3.5	6	2	3.5	5.5	0.5	1	3.5	4.5	0.5	1.9	3.5	6	1.8
BOTTOM DEPTH	1	2.5	4	6.5	2.5	4	5.9	1	1.5	4	5	1	2.3	4	6.5	2.3
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992
Pesticides/PCBs (ug/kg)																
4,4'-DDD	8.8 U	3.3 U	8.4 U	8.6 U	8.3 U	9 U	8.4 U	8.7 U	8.7 U	0.87 J	8.8 U	8.4 U	8.2	8.2 U	8.2 U	8.5 U
4,4'-DDE	0.53 J	3.3 U	3.1 U	3.1 U	0.31 J	3.3 U	3.1 U	3.2 U	0.48 J	3 U	3.2 U	3.1 U	2.9 U	3 U	1.1 J	2.9 J
4,4'-DDT	1.3 J	10 U	9.2 U	9.4 U	9.1 U	9.8 U	9.2 U	1.1 J	9.5 U	1.2 J	9.6 U	9.2 U	32	1.9 J	9 U	6.8 J
ALDRIN	3.2 U	0.4 J	1.7 J	0.78 J	3 U	3.3 U	0.31 J	3.2 U	3.2 U	3 U	3.2 U	1.5 J	2.6 J	3 U	3 U	3.1 U
ALPHA-BHC	2.4 U	2.5 U	2.3 U	2.4 U	2.3 U	2.4 U	2.3 U	2.4 U	2.4 U	2.2 U	2.4 U	2.3 U	2.2 U	2.2 U	2.2 U	0.62 J
ALPHA-CHLORDANE	0.62 J	4.2 U	3.8 U	0.83 J	0.7 J	0.6 J	0.6 J	0.74 J	0.76 J	0.63 J	0.52 J	0.73 J	1.8 J	3.7 U	0.7 J	2.1 J
AROCLOR-1016	53 U	54 U	50 U	51 U	49 U	53 U	50 U	51 U	52 U	49 U	52 U	50 U	47 U	48 U	49 U	50 U
AROCLOR-1221	53 U	54 U	50 U	51 U	49 U	53 U	50 U	51 U	52 U	49 U	52 U	50 U	47 U	48 U	49 U	50 U
AROCLOR-1232	53 U	54 U	50 U	51 U	49 U	53 U	50 U	51 U	52 U	49 U	52 U	50 U	47 U	48 U	49 U	50 U
AROCLOR-1242	53 U	54 U	50 U	51 U	49 U	53 U	50 U	51 U	52 U	49 U	52 U	50 U	47 U	48 U	49 U	50 U
AROCLOR-1248	53 U	54 U	50 U	51 U	49 U	53 U	50 U	51 U	52 U	49 U	52 U	50 U	47 U	48 U	49 U	50 U
AROCLOR-1254	17 J	110 U	99 U	100 U	98 U	14 J	100 U	0 U	100 U	97 U	100 U	100 U	95 U	97 U	97 U	100 U
AROCLOR-1260	110 U	110 U	99 U	100 U	98 U	110 U	100 U	100 U	100 U	97 U	100 U	100 U	95 U	97 U	97 U	100 U
TOTAL AROCLOR	17	0 U	0 U	0 U	0 U	14	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	2.5 J	5 U	4.6 U	4.7 U	3.3 J	3.6 J	2 J	2.5 J	2.5 J	3 J	2.6 J	4.6 U	4.4 U	4.5 U	4.5 U	4.6 U
DELTA-BHC	7.2 U	7.5 U	6.9 U	7.1 U	6.8 U	7.3 U	6.9 U	7.1 U	7.2 U	6.7 U	7.2 U	6.9 U	6.6 U	6.7 U	6.7 U	6.9 U
DIELDRIN	0.77 J	1.7 U	1.5 U	1.6 U	0.3 J	0.33 J	0.23 J	0.53 J	1.6 U	0.23 J	0.17 J	1.5 U	1.5 U	2.4	0.9 J	0.21 J
DISULFOTON	28 U	29 U	26 U	27 U	26 U	28 U	27 U	28 U	28 U	26 U	28 U	27 U	25 U	26 U		27 U
ENDOSULFAN I	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	10 U	11 U	11 U	10 U	10 U	10 U	11 U
ENDOSULFAN II	3.2 U	3.3 U	3.1 U	3.1 U	3 U	3.3 U	3.1 U	3.2 U	3.2 U	3 U	3.2 U	3.1 U	2.9 U	3 U	3 U	0.56 J
ENDOSULFAN SULFATE	53 U	55 U	50 U	52 U	50 U	54 U	51 U	52 U	9.8 J	6.5 J	53 U	51 U	48 U	49 U	49 U	51 U
ENDRIN	4.9 U	0.74 J	4.6 U	4.7 U	4.5 U	4.9 U	4.6 U	0.6 J	0.55 J	0.49 J	4.8 U	4.6 U	4.4 U	4.5 U	4.5 U	4.6 U
ENDRIN ALDEHYDE	19 U	19 U	18 U	18 U	17 U	19 U	18 U	18 U	18 U	17 U	18 U	18 U	17 U	17 U	17 U	11 J
ETHYL PARATHION	24 U	25 U	23 U	23 U	22 U	24 U	23 U	24 U	24 U	22 U	24 U	23 U	22 U	22 U		23 U
GAMMA-BHC (LINDANE)	3.2 U	3.3 U	3.1 U	3.1 U	3 U	3.3 U	3.1 U	3.2 U	3.2 U	3 U	3.2 U	3.1 U	2.9 U	3 U	3 U	3 U
GAMMA-CHLORDANE	1.6 J	4.2 U	3.8 U	3.9 U	3.8 U	4.1 U	3.8 U	0.72 J	4 U	0.51 J	4 U	3.8 U	3.6 U	3.7 U	0.4 J	3.4 J
HEPTACHLOR	2.4 U	0.61 J	0.6 J	0.79 J	2.3 U	2.4 U	0.29 J	2.4 U	2.4 U	2.2 U	2.4 U	0.76 J	2.2 J	2.2 U	0.9 J	1.4 J
HEPTACHLOR EPOXIDE	67 U	69 U	63 U	65 U	63 U	68 U	64 U	66 U	66 U	62 U	67 U	64 U	61 U	62 U	62 U	64 U
METHOXYCHLOR	140 U	150 U	130 U	140 U	130 U	140 U	130 U	140 U	140 U	130 U	140 U	130 U	25 J	130 U	130 U	140 U
METHYL PARATHION	48 U	50 U	46 U	47 U	45 U	49 U	46 U	47 U	47 U	45 U	48 U	46 U	44 U	44 U		46 U
PHORATE	16 U	16 U	15 U	16 U	15 U	16 U	15 U	16 U	16 U	15 U	16 U	15 U	14 U	15 U		15 U
TOXAPHENE	190 U	200 U	180 U	190 U	180 U	200 U	180 U	190 U	190 U	180 U	190 U	180 U	180 U	180 U	180 U	180 U
Herbicides (ug/kg)																
2,4,5-T	80 U	80 U	74 U	78 U	76 U	80 U	77 U	78 U	78 U	74 U	79 U	77 U	74 U	74 U	74 U	74 U
2,4,5-TP (SILVEX)	68 U	68 U	63 U	66 U	64 U	68 U	65 U	67 U	66 U	62 U	67 U	65 U	63 U	63 U	63 U	63 U
2,4-D	480 U	480 U	450 U	470 U	1.8 J	480 U	460 U	470 U	470 U	440 U	6 J	460 U	440 U	440 U	440 U	440 U
DINOSEB	28 U	28 U	26 U	29 U	26 U	28 U	27 U	27 U	28 U	26 U	59	28 U	26 U	26 U	26 U	26 U
DISULFOTON															26 U	
ETHYL PARATHION															22 U	
HEXACHLOROPHENE																
METHYL PARATHION															45 U	
PENTACHLOROPHENOL																
PHORATE															15 U	
Petroleum Hydrocarbons (mg/kg)																
TOTAL PETROLEUM HYDROCARBONS	4 J	94	25 U	25 U	25 U	25 U	25 U	40	25 U	25 U	25 U	25 U	25 U	25 U	25 U	3000

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-01	09/05-01	09/05-01	09/05-01	09/05-02	09/05-02	09/05-02	09/05-02	09/05-03	09/05-03	09/05-03	09/05-04	09/05-04	09/05-04	09/05-04	09/05-05
SAMPLE ID	09/05-1-92-1 (92)	09/05-1-92-2 (92)	09/05-1-92-3 (92)	09/05-1-92-4 (92)	09/05-2-92-2 (92)	09/05-2-92-3 (92)	09/05-2-92-4 (92)	09/05-2-92-1 (92)	09/05-3-92-1 (92)	09/05-3-92-2 (92)	09/05-3-92-3 (92)	09/05-4-92-1 (92)	09/05-4-92-2 (92)	09/05-4-92-3 (92)	09/05-4-92-4 (92)	09/05-5-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0.5	2	3.5	6	2	3.5	5.5	0.5	1	3.5	4.5	0.5	1.9	3.5	6	1.8
BOTTOM DEPTH	1	2.5	4	6.5	2.5	4	5.9	1	1.5	4	5	1	2.3	4	6.5	2.3
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/12/1992	8/12/1992	8/12/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992	8/13/1992
Inorganics (mg/kg)																
ALUMINUM																
ANTIMONY																
ARSENIC	9.03	6.04	3.04	2.77	2.93	2.41	1.22	8.33	5.54	2.4	2.24	4.91	10.7	4.29	2.22	9.3
BARIUM	61	55	58.9	66.6	56.4	60.4	40.7	65.6	116	42.6	72.8	123	54.7	46.7	127	142
BERYLLIUM																
CADMIUM	0.051	0.02 U	0.02 U	0.028	0.02 U	0.02 U	0.022	0.051	0.02 U	0.02 U	0.02 U	0.047	0.02 U	0.02 U	0.02 U	0.259
CALCIUM																
CHROMIUM	20.4	20.5	12.6	14.3	15.2	13	9.5	18.5	21.9	14.2	13.5	12	23.5	17.9	17	25.8
COBALT																
COPPER																
IRON																
LEAD	16.3	4 U	4 U	4 U	4 U	4.8	4 U	20.4	7.3	4 U	6.1	10.3	4 U	4 U	4 U	41
MAGNESIUM																
MANGANESE																
MERCURY	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL																
POTASSIUM																
SELENIUM	0.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.29	0.32	0.2 U	0.2 U	0.48
SILVER	0.999 U	1 U	1 U	1 U	0.999 U	1 U	1 U	0.999 U	1 U	1 U	1 U	1 U	1 U	0.999 U	1 U	0.999 U
SODIUM																
THALLIUM																
TIN																
VANADIUM																
ZINC																
Miscellaneous Parameters																
CATION EXCHANGE CAPACITY (MEQ/100)																
CYANIDE (MG/KG)																
PH																
TOTAL ORGANIC CARBON (MG/KG)																

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-05	09/05-06	09/05-06	09/05-06	09/05-07	09/05-07	09/05-07	09/05-08	09/05-08	09/05-08	09/05-08	09/05-09	09/05-09	09/05-09	09/05-10	09/05-10
SAMPLE ID	09/05-5-92-2 (92)	09/05-6-92-1 (92)	09/05-6-92-2 (92)	09/05-6-92-3 (92)	09/05-7-92-1 (92)	09/05-7-92-2 (92)	09/05-7-92-3 (92)	09/05-8-92-1 (92)	09/05-8-92-2 (92)	09/05-8-92-3 (92)	09/05-8-92-4 (92)	09/05-9-92-1 (92)	09/05-9-92-2 (92)	09/05-9-92-3 (92)	09/05-10-92-1 (92)	09/05-10-92-2 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	3.5	0.3	3.5	6.5	1	3	6	0.7	3	6	7	1	3.7	6.7	0.3	4
BOTTOM DEPTH	4	1	4	7	1.5	3.5	6.5	1.4	3.5	6.5	7.5	2	4.5	7.5	1.3	4.7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992
Volatile Organics (ug/kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	3.7 J	2.7 J	5.5 U	5.5 U	2.6 J	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
1,1,2,2-TETRACHLOROETHANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
1,1,2-TRICHLOROETHANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
1,1-DICHLOROETHANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
1,1-DICHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
1,2,3-TRICHLOROPROPANE																
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROETHANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
1,2-DICHLOROPROPANE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
1,4-DIOXANE																
2-BUTANONE	11 U	11 U	110 U	2 J	110 U	110 U	120 U	110 U	120 U	120 U	120 U	110 U	120 U	110 U	100 U	120 U
2-HEXANONE	55 U	55 U	55 U	55 U	55 U	55 U	60 U	55 U	60 U	60 U	60 U	55 U	60 U	55 U	50 U	60 U
3-CHLOROPROPENE																
4-METHYL-2-PENTANONE	55 U	55 U	55 U	55 U	55 U	55 U	60 U	55 U	60 U	60 U	60 U	55 U	60 U	55 U	50 U	60 U
ACETONE	24 J	11 J	150	64 J	30 J	110 U	120 U	110 U	140	34 J	21 J	110 U	37 J	120	26 J	67 J
ACETONITRILE																
ACROLEIN																
ACRYLONITRILE																
BENZENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
BROMODICHLOROMETHANE	4.2 J	4.5 J	5.5 U	5.5 U	5.5 U	4.4 J	4.4 J	3.5 J	5.5 J	5.8 J	3.7 J	5.5 U	6.4	0.73 J	4.2 J	6 U
BROMOFORM	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
BROMOMETHANE	11 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	12 U	12 U	12 U	11 U	12 U	11 U	10 U	12 U
CARBON DISULFIDE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
CARBON TETRACHLORIDE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
CHLOROBENZENE	5.5 U	5.5 U	0.47 J	1 J	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
CHLORODIBROMOMETHANE	1.2 J	1.1 J	5.5 U	5.5 U	5.5 U	1.4 J	1.4 J	1 J	1.3 J	2.4 J	1.1 J	5.5 U	2.5 J	5.5 U	0.91 J	6 U
CHLOROETHANE	11 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	12 U	12 U	12 U	11 U	12 U	11 U	10 U	12 U
CHLOROFORM	20	22	5.5 U	5.5 U	5.5 U	19	20	15	27	24	18	5.5 U	39	8.1	14	10
CHLOROMETHANE	11 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	12 U	12 U	12 U	11 U	12 U	11 U	10 U	12 U
CHLOROPRENE																
CIS-1,2-DICHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
CIS-1,3-DICHLOROPROPENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
DIBROMOMETHANE																
DICHLORODIFLUOROMETHANE																
ETHYL METHACRYLATE																
ETHYLBENZENE	5.5 U	5.5 U	0.49 J	0.53 J	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	1.8 J	6 U
ISOBUTANOL																
METHACRYLONITRILE																
METHYL IODIDE																
METHYL METHACRYLATE																
METHYLENE CHLORIDE	22	25	12	19	22	12	10	16	19	26	19	24	11	36	39	36
PROPIONITRILE																
STYRENE	5.5 U	5.5 U	5.5 U	0.56 J	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
TETRACHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
TOLUENE	5.5 U	0.51 J	1.1 J	0.62 J	5.5 U	5.5 U	6 U	5.5 U	2.2 J	6 U	6 U	5.5 U	6 U	0.86 J	2 J	6 U
TOTAL XYLENES	1.1 J	1.2 J	4.2 J	2.4 J	5.5 U	5.5 U	6 U	5.5 U	3.1 J	0.83 J	6 U	5.5 U	6 U	5.5 U	12	1.2 J
TRANS-1,2-DICHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
TRANS-1,3-DICHLOROPROPENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHENE	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	5.5 U	6 U	5.5 U	5 U	6 U
TRICHLOROFLUOROMETHANE																
VINYL ACETATE	55 U	55 U	55 U	55 U	55 U	55 U	60 U	55 U	60 U	60 U	60 U	50 U	60 U	55 U	50 U	60 U
VINYL CHLORIDE	11 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	12 U	12 U	12 U	11 U	12 U	11 U	10 U	12 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-05	09/05-06	09/05-06	09/05-06	09/05-07	09/05-07	09/05-07	09/05-08	09/05-08	09/05-08	09/05-08	09/05-09	09/05-09	09/05-09	09/05-10	09/05-10
SAMPLE ID	09/05-5-92-2 (92)	09/05-6-92-1 (92)	09/05-6-92-2 (92)	09/05-6-92-3 (92)	09/05-7-92-1 (92)	09/05-7-92-2 (92)	09/05-7-92-3 (92)	09/05-8-92-1 (92)	09/05-8-92-2 (92)	09/05-8-92-3 (92)	09/05-8-92-4 (92)	09/05-9-92-1 (92)	09/05-9-92-2 (92)	09/05-9-92-3 (92)	09/05-10-92-1 (92)	09/05-10-92-2 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	3.5	0.3	3.5	6.5	1	3	6	0.7	3	6	7	1	3.7	6.7	0.3	4
BOTTOM DEPTH	4	1	4	7	1.5	3.5	6.5	1.4	3.5	6.5	7.5	2	4.5	7.5	1.3	4.7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992
Semivolatile Organics (ug/kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
1,2-DICHLOROBENZENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
1,2-DIPHENYLHYDRAZINE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
1,3-DICHLOROBENZENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
1,4-DICHLOROBENZENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
1,4-NAPHTHOQUINONE																
1,4-PHENYLENEDIAMINE																
1-NAPHTHYLAMINE																
2,2'-OXYBIS(1-CHLOROPROPANE)	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2,3,4,6-TETRACHLOROPHENOL																
2,4,5-TRICHLOROPHENOL	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2,4,6-TRICHLOROPHENOL	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2,4-DICHLOROPHENOL	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2,4-DIMETHYLPHENOL	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2,4-DINITROPHENOL	3900 U	70000 U	4000 U	3800 U	3700 U	3800 U	4000 U	3800 U	4000 U	3900 U	4000 U	4000 U	3800 U	3900 U	3400 U	4100 U
2,4-DINITROTOLUENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2,6-DICHLOROPHENOL																
2,6-DINITROTOLUENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2-ACETYLAMINOFLUORENE																
2-CHLORONAPHTHALENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2-CHLOROPHENOL	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2-METHYLNAPHTHALENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	50 J	810 U	780 U	4000 U	790 U	750 U	780 U	680 U	820 U
2-METHYLPHENOL	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	210 J	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2-NAPHTHYLAMINE																
2-NITROANILINE	3900 U	70000 U	4000 U	3800 U	3700 U	3800 U	4000 U	3800 U	4000 U	3900 U	4000 U	4000 U	3800 U	3900 U	3400 U	4100 U
2-NITROPHENOL	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
2-PICOLINE																
3,3'-DICHLOROBENZIDINE	1600 U	28000 U	1600 U	1500 U	1500 U	1500 U	1600 U	1500 U	1600 U	1600 U	1600 U	1600 U	1200 U	1600 U	1400 U	1600 U
3,3'-DIMETHYLBENZIDINE																
3-METHYLCHOLANTHRENE																
3-NITROANILINE	3900 U	70000 U	4000 U	3800 U	3700 U	3800 U	4000 U	3800 U	4000 U	3900 U	4000 U	4000 U	3800 U	3900 U	3400 U	4100 U
4,6-DINITRO-2-METHYLPHENOL	3900 U	70000 U	4000 U	3800 U	3700 U	3800 U	4000 U	3800 U	4000 U	3900 U	4000 U	4000 U	3800 U	3900 U	3400 U	4100 U
4-AMINOBIPHENYL																
4-BROMOPHENYL PHENYL ETHER	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
4-CHLORO-3-METHYLPHENOL	1600 U	28000 U	1600 U	1500 U	1500 U	1500 U	1600 U	1500 U	810 U	1600 U	1600 U	1600 U	1200 U	1600 U	1400 U	1600 U
4-CHLOROANILINE	1600 U	28000 U	1600 U	1500 U	1500 U	1600 U	1600 U	1500 U	1500 U	1600 U	1600 U	1600 U	1500 U	1600 U	1400 U	1600 U
4-CHLOROPHENYL PHENYL ETHER	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
4-METHYLPHENOL	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
4-NITROANILINE	3900 U	70000 U	4000 U	3800 U	3700 U	3800 U	4000 U	3800 U	4000 U	3900 U	4000 U	4000 U	3800 U	3900 U	3400 U	4100 U
4-NITROPHENOL	3900 U	70000 U	4000 U	3800 U	3700 U	3800 U	4000 U	3800 U	4000 U	3900 U	4000 U	4000 U	3800 U	3900 U	3400 U	4100 U
4-NITROQUINOLINE-1-OXIDE																
5-NITRO-O-TOLUIDINE																
7,12-DIMETHYLBENZ(A)ANTHRACENE																
A,A-DIMETHYLPHENETHYLAMINE																
ACENAPHTHENE	780 U	4900 J	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
ACENAPHTHYLENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
ACETOPHENONE																
ANILINE	1600 U	28000 U	1600 U	1500 U	1500 U	1600 U	1600 U	1500 U	1600 U	1600 U	1600 U	1600 U	1500 U	1600 U	1400 U	1600 U
ANTHRACENE	780 U	11000 J	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	21 J	750 U	780 U	680 U	820 U
ARAMITE																
BENZIDINE	3900 U	70000 U	4000 U	3800 U	3700 U	3800 U	4000 U	3800 U	4000 U	3900 U	4000 U	4000 U	3800 U	3900 U	3400 U	4100 U
BENZO(A)ANTHRACENE	780 U	29000	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
BENZO(A)PYRENE	780 U	27000	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
BENZO(B)FLUORANTHENE	780 U	29000	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
BENZO(G,H,I)PERYLENE	780 U	9700 J	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
BENZO(K)FLUORANTHENE	780 U	19000	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
BENZOIC ACID	3900 U	70000 U	4000 U	3800 U	3700 U	3800 U	4000 U	3800 U	4000 U	3900 U	4000 U	4000 U	3800 U	3900 U	3400 U	4100 U
BENZYL ALCOHOL	1600 U	28000 U	1600 U	1500 U	1500 U	1500 U	1600 U	1500 U	1600 U	1600 U	1600 U	1600 U	1200 U	1600 U	1400 U	1600 U
BIS(2-CHLOROETHOXY)METHANE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-05	09/05-06	09/05-06	09/05-06	09/05-07	09/05-07	09/05-07	09/05-08	09/05-08	09/05-08	09/05-08	09/05-09	09/05-09	09/05-09	09/05-10	09/05-10
SAMPLE ID	09/05-5-92-2 (92)	09/05-6-92-1 (92)	09/05-6-92-2 (92)	09/05-6-92-3 (92)	09/05-7-92-1 (92)	09/05-7-92-2 (92)	09/05-7-92-3 (92)	09/05-8-92-1 (92)	09/05-8-92-2 (92)	09/05-8-92-3 (92)	09/05-8-92-4 (92)	09/05-9-92-1 (92)	09/05-9-92-2 (92)	09/05-9-92-3 (92)	09/05-10-92-1 (92)	09/05-10-92-2 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	3.5	0.3	3.5	6.5	1	3	6	0.7	3	6	7	1	3.7	6.7	0.3	4
BOTTOM DEPTH	4	1	4	7	1.5	3.5	6.5	1.4	3.5	6.5	7.5	2	4.5	7.5	1.3	4.7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992
BIS(2-CHLOROETHYL)ETHER	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
BIS(2-ETHYLHEXYL)PHTHALATE	100 J	14000 U	170 J	750 U	740 U	39 J	790 U	110 J	55 J	110 J	53 J	98 J	750 U	780 U	680 U	820 U
BUTYL BENZYL PHTHALATE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
CHLOROBENZILATE																
CHRYSENE	780 U	34000	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
DI-N-BUTYL PHTHALATE	180 J	14000 U	810 U	750 U	79 J	270 J	790 U	180 J	130 J	22 J	880	120 J	81 J	180 J	130 J	110 J
DI-N-OCTYL PHTHALATE	780 U	14000 U	270 J	69 J	740 U	750 U	790 U	750 U	810 U	780 U	130 J	140 J	790 U	790 U	680 U	140 J
DIALLATE																
DIBENZO(A,H)ANTHRACENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
DIBENZOFURAN	780 U	2000 J	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
DIETHYL PHTHALATE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	48 J	750 U	780 U	680 U	820 U
DIMETHOATE																
DIMETHYL PHTHALATE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
DIPHENYLAMINE																
DISULFOTON																
ETHYL METHANE SULFONATE																
ETHYL PARATHION																
FAMPHUR	47 U	42 U	49 U	45 U	44 U	44 U	47 U	45 U	48 U	46 U	48 U	48 U	46 U	47 U	41 U	50 U
FLUORANTHENE	780 U	55000	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
FLUORENE	780 U	6000 J	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	40 J	750 U	780 U	680 U	820 U
HEXACHLOROBENZENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
HEXACHLOROBUTADIENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
HEXACHLOROCYCLOPENTADIENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
HEXACHLOROETHANE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
HEXACHLOROPROPENE																
INDENO(1,2,3-CD)PYRENE	780 U	11000 J	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
ISODRIN																
ISOPHORONE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
ISOSAFROLE																
KEPONE	470 U	430 U	490 U	450 U	410 U	440 U	480 U	460 U	480 U	470 U	490 U	480 U	470 U	400 U	410 U	500 U
METHAPYRILENE																
METHYL METHANE SULFONATE																
METHYL PARATHION																
N-NITROSO-DI-N-BUTYLAMINE																
N-NITROSO-DI-N-PROPYLAMINE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
N-NITROSODIETHYLAMINE																
N-NITROSODIMETHYLAMINE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
N-NITROSODIPHENYLAMINE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
N-NITROSOMETHYLETHYLAMINE																
N-NITROSOMORPHOLINE																
N-NITROSOPIPERIDINE																
N-NITROSOPYRROLIDINE																
NAPHTHALENE	780 U	210 J	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
NITROBENZENE	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
O,O,O-TRIETHYL PHOSPHOROTHIOATE																
O-TOLUIDINE																
P-(DIMETHYLAMINO)AZOBENZENE																
PENTACHLOROBENZENE																
PENTACHLOROETHANE																
PENTACHLORONITROBENZENE																
PENTACHLOROPHENOL	3900 U	70000 U	4000 U	3800 U	3700 U	3800 U	4000 U	3800 U	4000 U	3900 U	4000 U	4000 U	3800 U	3900 U	3400 U	4100 U
PHENACETIN																
PHENANTHRENE	780 U	49000	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	120 J	750 U	780 U	680 U	870 U
PHENOL	780 U	14000 U	810 U	750 U	740 U	750 U	790 U	150 J	810 U	780 U	790 U	790 U	750 U	780 U	680 U	820 U
PHORATE																
PRONAMIDE																
PYRENE	780 U	88000	810 U	750 U	740 U	750 U	790 U	750 U	810 U	780 U	790 U	72 J	750 U	780 U	680 U	820 U
PYRIDINE																
SAFROLE																
SULFOTEPP																
THIONAZIN																

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-05	09/05-06	09/05-06	09/05-06	09/05-07	09/05-07	09/05-07	09/05-08	09/05-08	09/05-08	09/05-08	09/05-09	09/05-09	09/05-09	09/05-10	09/05-10
SAMPLE ID	09/05-5-92-2 (92)	09/05-6-92-1 (92)	09/05-6-92-2 (92)	09/05-6-92-3 (92)	09/05-7-92-1 (92)	09/05-7-92-2 (92)	09/05-7-92-3 (92)	09/05-8-92-1 (92)	09/05-8-92-2 (92)	09/05-8-92-3 (92)	09/05-8-92-4 (92)	09/05-9-92-1 (92)	09/05-9-92-2 (92)	09/05-9-92-3 (92)	09/05-10-92-1 (92)	09/05-10-92-2 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	3.5	0.3	3.5	6.5	1	3	6	0.7	3	6	7	1	3.7	6.7	0.3	4
BOTTOM DEPTH	4	1	4	7	1.5	3.5	6.5	1.4	3.5	6.5	7.5	2	4.5	7.5	1.3	4.7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992
Pesticides/PCBs (ug/kg)																
4,4'-DDD	2.1 J	2.8 J	1 J	8.3 U	7.6 U	8.1 U	3.6 J	0.91 J	8.8 U	1.1 J	8.9 U	27	8.5 U	7.3 U	2 J	9.2 U
4,4'-DDE	3.1 U	2.8 U	3.3 U	3 U	2.8 U	0.39 J	0.46 J	4.9	0.52 J	0.54 J	3.2 U	3.2 U	3.1 U	2.7 U	1.3 J	3.3 U
4,4'-DDT	9.4 U	8.2 J	9.8 U	9.1 U	8.3 U	4.1 J	9.5 U	3 J	9.6 U	9.3 U	9.7 U	69	9.3 U	8 U	3.6 J	10 U
ALDRIN	3.1 U	2.8 U	3.3 U	3 U	0.57 J	3 U	3.2 U	3 U	3.2 U	3.1 U	3.2 U	3.2 U	3.1 U	2.7 U	2.7 U	3.3 U
ALPHA-BHC	2.4 U	2.1 U	2.4 U	2.3 U	2.1 U	2.2 U	2.4 U	2.3 U	2.4 U	2.3 U	2.4 U	2.4 U	2.3 U	2 U	2 U	2.5 U
ALPHA-CHLORDANE	1.5 J	3.5 U	4.1 U	1.3 J	2.7 J	3.7 U	4 U	3.8 U	4 U	1.4 J	0.49 J	4 U	3.9 U	3.3 U	1.2 J	0.6 J
AROCLOR-1016	51 U	46 U	53 U	49 U	45 U	48 U	51 U	49 U	52 U	50 U	53 U	52 U	50 U	43 U	44 U	54 U
AROCLOR-1221	51 U	46 U	53 U	49 U	45 U	48 U	51 U	49 U	52 U	50 U	53 U	52 U	50 U	43 U	44 U	54 U
AROCLOR-1232	51 U	46 U	53 U	49 U	45 U	48 U	51 U	49 U	52 U	50 U	53 U	52 U	50 U	43 U	44 U	54 U
AROCLOR-1242	51 U	46 U	53 U	49 U	45 U	48 U	51 U	49 U	52 U	50 U	53 U	52 U	50 U	43 U	44 U	54 U
AROCLOR-1248	51 U	46 U	53 U	49 U	45 U	48 U	51 U	49 U	52 U	50 U	53 U	52 U	50 U	43 U	44 U	54 U
AROCLOR-1254	100 U	92 U	110 U	98 U	89 U	96 U	100 U	190	26 J	25 J	110 U	100 U	100 U	87 U	89 U	110 U
AROCLOR-1260	100 U	92 U	110 U	98 U	89 U	96 U	100 U	99 U	100 U	100 U	110 U	100 U	100 U	87 U	89 U	110 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	190	26	25	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	4.9 J	4.3 U	8.6	9.8	5	2.2 J	12	3.8 J	3.9 J	5.7	1.7 J	4.8 U	4.7 U	0.57 J	4.1 U	0.9 J
DELTA-BHC	7.1 U	6.4 U	7.3 U	6.8 U	6.2 U	6.7 U	7.1 U	6.8 U	7.2 U	7 U	7.3 U	7.2 U	7 U	6 U	6.1 U	7.5 U
DIELDRIN	0.21 J	3.4	0.72 J	4.1	1.4 U	0.21 J	0.54 J	6.6	1.6 U	0.62 J	0.66 J	41	1.6 U	0.15 J	0.47 J	0.29 J
DISULFOTON	27 U	25 U	28 U	26 U	26 U	26 U	28 U	26 U	28 U	27 U	28 U	28 U	27 U	27 U	24 U	29 U
ENDOSULFAN I	11 U	99 U	11 U	1.2 J	9.6 U	10 U	11 U	11	11 U	11 U	11 U	11 U	11 U	9.3 U	9.5 U	12 U
ENDOSULFAN II	3.1 U	1.4 J	3.3 U	10	2.8 U	3 U	3.2 U	0.74 J	0.66 J	3.1 U	3.2 U	3.2 U	3.1 U	2.7 U	2.7 U	3.3 U
ENDOSULFAN SULFATE	52 U	47 U	54 U	17 J	45 U	49 U	52 U	50 U	53 U	51 U	53 U	53 U	51 U	44 U	45 U	55 U
ENDRIN	4.7 U	4.3 U	4.9 U	4.5 U	4.1 U	4.4 U	4.8 U	4.6 U	4.8 U	4.7 U	4.9 U	4.8 U	4.7 U	4 U	4.1 U	5 U
ENDRIN ALDEHYDE	2.4 J	3.3 J	19 U	17 U	16 U	17 U	4 J	2 J	18 U	18 U	19 U	99	18 U	15 U	16 U	19 U
ETHYL PARATHION	23 U	21 U	24 U	23 U	22 U	22 U	24 U	23 U	24 U	23 U	16 U	16 U	15 U	23 U	20 U	25 U
GAMMA-BHC (LINDANE)	3.1 U	2.8 U	3.3 U	3 U	2.8 U	3 U	3.2 U	3 U	3.2 U	3.1 U	3.2 U	3.2 U	3.1 U	2.7 U	2.7 U	3.3 U
GAMMA-CHLORDANE	0.64 J	3.5	4.1 U	2 J	1.5 J	3.7 U	3.1 J	6.1	0.78 J	0.73 J	4 U	4 U	0.87 J	3.3 U	1.1 J	4.2 U
HEPTACHLOR	1 J	2.1 U	2.4 U	1.2 J	2.1 U	2.2 U	2.4 U	2.3 U	2.4 U	2.3 U	2.4 U	2.4 U	2.3 U	0.2 J	2 U	2.5 U
HEPTACHLOR EPOXIDE	65 U	59 U	68 U	63 U	57 U	61 U	66 U	24 J	67 U	64 U	67 U	67 U	64 U	55 U	57 U	69 U
METHOXYCHLOR	140 U	120 U	140 U	22 J	120 U	130 U	140 U	130 U	140 U	140 U	140 U	140 U	140 U	120 U	120 U	150 U
METHYL PARATHION	47 U	42 U	49 U	45 U	44 U	44 U	47 U	45 U	48 U	46 U	48 U	48 U	46 U	47 U	40 U	50 U
PHORATE	16 U	14 U	16 U	15 U	15 U	15 U	16 U	15 U	16 U	15 U	16 U	39	16 U	16 U	14 U	16 U
TOXAPHENE	190 U	170 U	200 U	180 U	170 U	180 U	190 U	180 U	190 U	190 U	190 U	190 U	190 U	160 U	160 U	200 U
Herbicides (ug/kg)																
2,4,5-T	78 U	71 U	80 U	74 U	74 U	74 U	79 U	79 U	79 U	77 U	80 U	76 U	78 U	72 U	67 U	81 U
2,4,5-TP (SILVEX)	67 U	60 U	68 U	63 U	62 U	62 U	68 U	68 U	68 U	66 U	68 U	64 U	66 U	61 U	57 U	69 U
2,4-D	470 U	420 U	480 U	450 U	440 U	440 U	480 U	480 U	480 U	460 U	480 U	460 U	460 U	430 U	400 U	490 U
DINOSEB	27 U	25 U	28 U	26 U	26 U	26 U	28 U	28 U	28 U	27 U	28 U	26 U	27 U	25 U	23 U	28 U
DISULFOTON																
ETHYL PARATHION																
HEXACHLOROPHENE																
METHYL PARATHION																
PENTACHLOROPHENOL																
PHORATE																
Petroleum Hydrocarbons (mg/kg)																
TOTAL PETROLEUM HYDROCARBONS	25 U	1100	25 U	25 U	25 U	25 U	25 U	6500	14 J	25 U	25 U	440	25 U	25 U	1900	25 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-05	09/05-06	09/05-06	09/05-06	09/05-07	09/05-07	09/05-07	09/05-08	09/05-08	09/05-08	09/05-08	09/05-09	09/05-09	09/05-09	09/05-10	09/05-10
SAMPLE ID	09/05-5-92-2 (92)	09/05-6-92-1 (92)	09/05-6-92-2 (92)	09/05-6-92-3 (92)	09/05-7-92-1 (92)	09/05-7-92-2 (92)	09/05-7-92-3 (92)	09/05-8-92-1 (92)	09/05-8-92-2 (92)	09/05-8-92-3 (92)	09/05-8-92-4 (92)	09/05-9-92-1 (92)	09/05-9-92-2 (92)	09/05-9-92-3 (92)	09/05-10-92-1 (92)	09/05-10-92-2 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	3.5	0.3	3.5	6.5	1	3	6	0.7	3	6	7	1	3.7	6.7	0.3	4
BOTTOM DEPTH	4	1	4	7	1.5	3.5	6.5	1.4	3.5	6.5	7.5	2	4.5	7.5	1.3	4.7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/13/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992	8/15/1992
Inorganics (mg/kg)																
ALUMINUM																
ANTIMONY																
ARSENIC	11.4	4.08	8.86	2.94	3.86	3.02	1.46	8.9	7.36	4.66	2.91	7.62	10.6	6.97	4.99	13.1
BARIUM	74.7	183	101	65.7	30.6	28.3	68.9	85.1	76.3	35.9	96	88	58	56.2	38.3	59.6
BERYLLIUM																
CADMIUM	0.087	0.374	0.214	0.034	0.02 U	0.02 U	0.198	0.633	0.197	0.058	0.057	0.136	0.03	0.029	0.496	0.274
CALCIUM																
CHROMIUM	28.6	16.2	21.3	20.1	16.6	16.7	13.5	22.9	17.9	20.4	21.6	17.9	22.5	14.7	21.7	24.4
COBALT																
COPPER																
IRON																
LEAD	10	59.9	9.7	5.3	9.6	8.1	8	34.2	22.3	10.7	10	21.3	10.3	12.3	161	11.8
MAGNESIUM																
MANGANESE																
MERCURY	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL																
POTASSIUM																
SELENIUM	0.2 U	0.27	0.28	0.2 U	0.2 U	0.2 U	0.2 U	0.28	0.36	0.2 U	0.2 U	0.33	0.36	0.2 U	0.2 U	0.37
SILVER	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U
SODIUM																
THALLIUM																
TIN																
VANADIUM																
ZINC																
Miscellaneous Parameters																
CATION EXCHANGE CAPACITY (MEQ/100)																
CYANIDE (MG/KG)																
PH																
TOTAL ORGANIC CARBON (MG/KG)																

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-10	09/05-10	09/05-11	09/05-11	09/05-11	09/05-12	09/05-12	09/05-13	09/05-13	09/05-13	09/05-13	09/05-14	09/05-14	09/05-14	09/05-14	09/05-15
SAMPLE ID	09/05-10-92-3 (92)	09/05-10-92-4 (92)	09/05-11-92-1 (92)	09/05-11-92-2 (92)	09/05-11-92-3 (92)	09/05-12-92-1 (92)	09/05-12-92-2 (92)	09/05-13-92-1 (92)	09/05-13-92-2 (92)	09/05-13-92-3 (92)	09/05-13-92-4 (92)	09/05-14-92-1 (92)	09/05-14-92-2 (92)	09/05-14-92-3 (92)	09/05-14-92-4 (92)	09/05-15-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	6.5	9	3	5.5	8	3	5.5	1.5	3.5	6.5	9.1	3.5	5.5	8.5	11	3
BOTTOM DEPTH	7	9.5	3.7	6.5	8.5	3.5	6	2	4	7	9.6	4	6	9	11.5	3.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/15/1992	8/15/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992
Volatile Organics (ug/kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	1.1 J
1,1,2,2-TETRACHLOROETHANE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,1,2-TRICHLOROETHANE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,1-DICHLOROETHANE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,1-DICHLOROETHENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,2,3-TRICHLOROPROPANE																
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROETHANE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,2-DICHLOROPROPANE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,4-DIOXANE																
2-BUTANONE	120 U	120 U	110 U	110 U	18 J	110 U	120 U	120 U	120 U	120 U	120 U	120 U	13 J	12 U	12 U	12 U
2-HEXANONE	60 U	60 U	55 U	55 U	60 U	55 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
3-CHLOROPROPENE																
4-METHYL-2-PENTANONE	60 U	60 U	55 U	55 U	60 U	55 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
ACETONE	91 J	51 J	110 U	26 J	41 J	51 J	120 U	32 J	24 J	62 J	52 J	160	91 J	60 J	71 J	61 J
ACETONITRILE																
ACROLEIN																
ACRYLONITRILE																
BENZENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	1 J	1.1 J	6 U	6 U	6 U	6 U	6 U	6 U	6 U
BROMODICHLOROMETHANE	2 J	0.52 J	4.9 J	4.4 J	6 U	5.5 U	6 U	6 U	3.9 J	6 U	3.9 J	5.3 J	6.8	3.8 J	6 U	4.3 J
BROMOFORM	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
BROMOMETHANE	12 U	12 U	11 U	11 U	12 U	11 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U
CARBON DISULFIDE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	3.4 J	6 U	6 U	6 U
CARBON TETRACHLORIDE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
CHLOROBENZENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	0.8 J	0.73 J	6 U	6 U	6 U	6 U	6 U	6 U	6 U
CHLORODIBROMOMETHANE	6 U	6 U	1.4 J	1.2 J	6 U	5.5 U	6 U	6 U	0.88 J	6 U	0.72 J	6 U	2.5 J	6 U	6 U	0.67 J
CHLOROETHANE	12 U	12 U	11 U	11 U	12 U	11 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U
CHLOROFORM	9.2	3 J	16	18	6 U	3.6 J	3.7 J	0.27 J	19	6 U	23	31	19	13	6 U	22
CHLOROMETHANE	12 U	12 U	11 U	11 U	12 U	11 U	12 U	12 J	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U
CHLOROPRENE																
CIS-1,2-DICHLOROETHENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
CIS-1,3-DICHLOROPROPENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
DIBROMOMETHANE																
DICHLORODIFLUOROMETHANE																
ETHYL METHACRYLATE																
ETHYLBENZENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	0.79 J	0.77 J	6 U	6 U	6 U	6 U	6 U	6 U	6 U
ISOBUTANOL																
METHACRYLONITRILE																
METHYL IODIDE																
METHYL METHACRYLATE																
METHYLENE CHLORIDE	37	44	17	18	22	22	11	13	4.8 J	41	42	42	19	29	13	15
PROPIONITRILE																
STYRENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	0.64 J	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
TETRACHLOROETHENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
TOLUENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	0.82 J	0.98 J	6 U	6 U	6 U	6 U	6 U	6 U	6 U
TOTAL XYLENES	6 U	1.4 J	5.5 U	0.98 J	6 U	5.5 U	6 U	3.4 J	2.9 J	6 U	6 U	6 U	6 U	6 U	0.76 J	6 U
TRANS-1,2-DICHLOROETHENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
TRANS-1,3-DICHLOROPROPENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHENE	6 U	6 U	5.5 U	5.5 U	6 U	5.5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 J	6 U
TRICHLOROFLUOROMETHANE																
VINYL ACETATE	60 U	60 U	55 U	55 U	60 U	55 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 J	60 U
VINYL CHLORIDE	12 U	12 U	11 U	11 U	12 U	11 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-10	09/05-10	09/05-11	09/05-11	09/05-11	09/05-12	09/05-12	09/05-13	09/05-13	09/05-13	09/05-13	09/05-14	09/05-14	09/05-14	09/05-14	09/05-15
SAMPLE ID	09/05-10-92-3 (92)	09/05-10-92-4 (92)	09/05-11-92-1 (92)	09/05-11-92-2 (92)	09/05-11-92-3 (92)	09/05-12-92-1 (92)	09/05-12-92-2 (92)	09/05-13-92-1 (92)	09/05-13-92-2 (92)	09/05-13-92-3 (92)	09/05-13-92-4 (92)	09/05-14-92-1 (92)	09/05-14-92-2 (92)	09/05-14-92-3 (92)	09/05-14-92-4 (92)	09/05-15-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	6.5	9	3	5.5	8	3	5.5	1.5	3.5	6.5	9.1	3.5	5.5	8.5	11	3
BOTTOM DEPTH	7	9.5	3.7	6.5	8.5	3.5	6	2	4	7	9.6	4	6	9	11.5	3.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/15/1992	8/15/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992
Semivolatile Organics (ug/kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
1,2-DICHLOROBENZENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
1,2-DIPHENYLHYDRAZINE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
1,3-DICHLOROBENZENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
1,4-DICHLOROBENZENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
1,4-NAPHTHOQUINONE																
1,4-PHENYLENEDIAMINE																
1-NAPHTHYLAMINE																
2,2'-OXYBIS(1-CHLOROPROPANE)	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2,3,4,6-TETRACHLOROPHENOL																
2,4,5-TRICHLOROPHENOL	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2,4,6-TRICHLOROPHENOL	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2,4-DICHLOROPHENOL	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2,4-DIMETHYLPHENOL	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2,4-DINITROPHENOL	3900 U	4000 U	3900 U	3700 U	3900 U	3800 U	4000 U	3900 U	4100 U	3800 U	3800 U	3900 U	4100 U	4100 U	4100 U	4100 U
2,4-DINITROTOLUENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	828 U	830 U
2,6-DICHLOROPHENOL																
2,6-DINITROTOLUENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2-ACETYLAMINOFLUORENE																
2-CHLORONAPHTHALENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2-CHLOROPHENOL	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2-METHYLNAPHTHALENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2-METHYLPHENOL	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2-NAPHTHYLAMINE																
2-NITROANILINE	3900 U	4000 U	3900 U	3700 U	3900 U	3800 U	4000 U	3900 U	4100 U	3800 U	3800 U	3900 U	4100 U	4100 U	4100 U	4100 U
2-NITROPHENOL	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
2-PICOLINE																
3,3'-DICHLOROBENZIDINE	1500 U	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1600 U	1600 U	1500 U	1500 U	1600 U	1600 U	1600 U	1600 U	1600 U
3,3'-DIMETHYLBENZIDINE																
3-METHYLCHOLANTHRENE																
3-NITROANILINE	3900 U	4000 U	3900 U	3700 U	3900 U	3800 U	4000 U	3900 U	4100 U	3800 U	3800 U	3900 U	4100 U	4100 U	4100 U	4100 U
4,6-DINITRO-2-METHYLPHENOL	3900 U	4000 U	3900 U	3700 U	3900 U	3800 U	4000 U	3900 U	4100 U	3800 U	3800 U	3900 U	4100 U	4100 U	4100 U	4100 U
4-AMINOBIPHENYL																
4-BROMOPHENYL PHENYL ETHER	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
4-CHLORO-3-METHYLPHENOL	1500 U	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1600 U	1600 U	1500 U	1500 U	1600 U	1600 U	1600 U	1600 U	1600 U
4-CHLOROANILINE	1500 U	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1600 U	1600 U	1500 U	1500 U	1600 U	1600 U	1600 U	1600 U	1600 U
4-CHLOROPHENYL PHENYL ETHER	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
4-METHYLPHENOL	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
4-NITROANILINE	3900 U	4000 U	3900 U	3700 U	3900 U	3800 U	4000 U	3900 U	4100 U	3800 U	3800 U	3900 U	4100 U	4100 U	4100 U	4100 U
4-NITROPHENOL	3900 U	4000 U	3900 U	3700 U	3900 U	3800 U	4000 U	3900 U	4100 U	3800 U	3800 U	3900 U	4100 U	4100 U	4100 U	4100 U
4-NITROQUINOLINE-1-OXIDE																
5-NITRO-O-TOLUIDINE																
7,12-DIMETHYLBENZ(A)ANTHRACENE																
A,A-DIMETHYLPHENETHYLAMINE																
ACENAPHTHENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
ACENAPHTHYLENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
ACETOPHENONE																
ANILINE	1500 U	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1600 U	1600 U	1500 U	1500 U	1600 U	1600 U	1600 U	1600 U	1600 U
ANTHRACENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
ARAMITE																
BENZIDINE	3900 U	4000 U	3900 U	3700 U	3900 U	4000 U	4000 U	3900 U	4100 U	3800 U	3800 U	3900 U	4100 U	4100 U	4100 U	4100 U
BENZO(A)ANTHRACENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
BENZO(A)PYRENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
BENZO(B)FLUORANTHENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	1600 U	1600 U	1600 U
BENZO(G,H,I)PERYLENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
BENZO(K)FLUORANTHENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
BENZOIC ACID	3900 U	4000 U	3900 U	3700 U	3900 U	3800 U	4000 U	3900 U	4100 U	3800 U	3800 U	3900 U	4100 U	4100 U	4100 U	4100 U
BENZYL ALCOHOL	1500 U	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1600 U	1600 U	1500 U	1500 U	1600 U	1600 U	1600 U	1600 U	1600 U
BIS(2-CHLOROETHOXY)METHANE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-10	09/05-10	09/05-11	09/05-11	09/05-11	09/05-12	09/05-12	09/05-13	09/05-13	09/05-13	09/05-13	09/05-14	09/05-14	09/05-14	09/05-14	09/05-15
SAMPLE ID	09/05-10-92-3 (92)	09/05-10-92-4 (92)	09/05-11-92-1 (92)	09/05-11-92-2 (92)	09/05-11-92-3 (92)	09/05-12-92-1 (92)	09/05-12-92-2 (92)	09/05-13-92-1 (92)	09/05-13-92-2 (92)	09/05-13-92-3 (92)	09/05-13-92-4 (92)	09/05-14-92-1 (92)	09/05-14-92-2 (92)	09/05-14-92-3 (92)	09/05-14-92-4 (92)	09/05-15-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	6.5	9	3	5.5	8	3	5.5	1.5	3.5	6.5	9.1	3.5	5.5	8.5	11	3
BOTTOM DEPTH	7	9.5	3.7	6.5	8.5	3.5	6	2	4	7	9.6	4	6	9	11.5	3.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/15/1992	8/15/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992
BIS(2-CHLOROETHYL)ETHER	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
BIS(2-ETHYLHEXYL)PHTHALATE	770 U	64 J	760 J	44 J	28 J	750 U	800 U	51 J	820 U	750 U	770 U	780 U	81 J	820 U	820 U	830 U
BUTYL BENZYL PHTHALATE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
CHLOROBENZILATE																
CHRYSENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
DI-N-BUTYL PHTHALATE	99 J	810 U	770 U	81 J	780 U	160 J	800 U	180 J	390 J	330 J	2300	200 J	810 U	92 J	820 U	130 J
DI-N-OCTYL PHTHALATE	86 U	810 U	770 U	84 J	82 J	750 U	240	98 J	820 U	760 U	140 J	780 U	810 U	820 U	820 U	830 U
DIALLATE																
DIBENZO(A,H)ANTHRACENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
DIBENZOFURAN	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
DIETHYL PHTHALATE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
DIMETHOATE																
DIMETHYL PHTHALATE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
DIPHENYLAMINE																
DISULFOTON																
ETHYL METHANE SULFONATE																
ETHYL PARATHION																
FAMPHUR	46 U	48 U	47 U	45 U	46 U	46 U	48 U	48 U	48 U	46 U	48 U	48 U	48 U	48 U	49 U	49 U
FLUORANTHENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
FLUORENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
HEXACHLOROBENZENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
HEXACHLOROBUTADIENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
HEXACHLOROCYCLOPENTADIENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
HEXACHLOROETHANE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
HEXACHLOROPROPENE																
INDENO(1,2,3-CD)PYRENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
ISODRIN																
ISOPHORONE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
ISOSAFROLE																
KEPONE	470 U	490 U	470 U	450 U	470 U	460 U	490 U	480 U	490 U	460 U	480 U	480 U	490 U	480 U	490 U	490 U
METHAPYRILENE																
METHYL METHANE SULFONATE																
METHYL PARATHION																
N-NITROSO-DI-N-BUTYLAMINE																
N-NITROSO-DI-N-PROPYLAMINE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
N-NITROSODIETHYLAMINE																
N-NITROSODIMETHYLAMINE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
N-NITROSODIPHENYLAMINE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
N-NITROSOMETHYLETHYLAMINE																
N-NITROSOMORPHOLINE																
N-NITROSOPIPERIDINE																
N-NITROSOPYRROLIDINE																
NAPHTHALENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
NITROBENZENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
O,O,O-TRIETHYL PHOSPHOROTHIOATE																
O-TOLUIDINE																
P-(DIMETHYLAMINO)AZOBENZENE																
PENTACHLOROBENZENE																
PENTACHLOROETHANE																
PENTACHLORONITROBENZENE																
PENTACHLOROPHENOL	3900 U	4000 U	3900 U	3700 U	3900 U	3800 U	4000 U	3900 U	4100 U	3800 U	3800 U	3900 U	4100 U	4100 U	4100 U	4100 U
PHENACETIN																
PHENANTHRENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
PHENOL	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
PHORATE																
PRONAMIDE																
PYRENE	770 U	810 U	770 U	740 U	780 U	750 U	800 U	780 U	820 U	760 U	770 U	780 U	810 U	820 U	820 U	830 U
PYRIDINE																
SAFROLE																
SULFOTEPP																
THIONAZIN																

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-10	09/05-10	09/05-11	09/05-11	09/05-11	09/05-12	09/05-12	09/05-13	09/05-13	09/05-13	09/05-13	09/05-14	09/05-14	09/05-14	09/05-14	09/05-15
SAMPLE ID	09/05-10-92-3 (92)	09/05-10-92-4 (92)	09/05-11-92-1 (92)	09/05-11-92-2 (92)	09/05-11-92-3 (92)	09/05-12-92-1 (92)	09/05-12-92-2 (92)	09/05-13-92-1 (92)	09/05-13-92-2 (92)	09/05-13-92-3 (92)	09/05-13-92-4 (92)	09/05-14-92-1 (92)	09/05-14-92-2 (92)	09/05-14-92-3 (92)	09/05-14-92-4 (92)	09/05-15-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	6.5	9	3	5.5	8	3	5.5	1.5	3.5	6.5	9.1	3.5	5.5	8.5	11	3
BOTTOM DEPTH	7	9.5	3.7	6.5	8.5	3.5	6	2	4	7	9.6	4	6	9	11.5	3.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/15/1992	8/15/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992
Pesticides/PCBs (ug/kg)																
4,4'-DDD	0.97 J	6.1 J	0.91 J	8.3 U	8.6 U	8.4 U	8.9 U	8.8 U	8.9 U	8.5 U	8.8 U	8.8 U	8.9 U	8.9 U	9 U	9 U
4,4'-DDE	3.1 U	20	0.39 J	3 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.1 U	6.8	3.2 U	3.2 U	1.2 J	1 J	3.3 U
4,4'-DDT	9.3 U	9.7 U	9.4 U	1.2 J	9.3 U	9.2 U	9.7 U	9.6 U	9.8 U	9.3 U	9.6 U	6 J	9.7 U	9.7 U	9.8 U	9.8 U
ALDRIN	3.1 U	3.2 U	3.1 U	3 U	3.1 U	3.1 U	2.1 J	3.7	1.8 J	0.61 J	2.1 J	3.7	1.2 J	1.6 J	1.4 J	2.1 J
ALPHA-BHC	2.3 U	2.4 U	2.4 U	2.3 U	2.3 U	2.3 U	2.4 U	2.4 U	2.4 U	2.3 U	2.4 U	2.4 U	2.4 U	2.4 U	2.5 U	2.4 U
ALPHA-CHLORDANE	0.88 J	0.99 J	0.71 J	0.75 J	1.2 J	0.73 J	3.6 J	2.2 J	2.5 J	1.2 J	1.5 J	4 U	1.4 J	4.7	2.3 J	2.7 J
AROCLOR-1016	51 U	53 U	51 U	49 U	51 U	50 U	53 U	52 U	53 U	50 U	52 U	52 U	53 U	52 U	53 U	53 U
AROCLOR-1221	51 U	53 U	51 U	49 U	51 U	50 U	53 U	52 U	53 U	50 U	52 U	52 U	53 U	52 U	53 U	53 U
AROCLOR-1232	51 U	53 U	51 U	49 U	51 U	50 U	53 U	52 U	53 U	50 U	52 U	52 U	53 U	52 U	53 U	53 U
AROCLOR-1242	51 U	53 U	51 U	49 U	51 U	50 U	53 U	52 U	53 U	50 U	52 U	52 U	53 U	52 U	53 U	53 U
AROCLOR-1248	51 U	53 U	51 U	49 U	51 U	50 U	53 U	52 U	53 U	50 U	52 U	52 U	53 U	52 U	53 U	53 U
AROCLOR-1254	100 U	110 U	100 U	98 U	100 U	99 U	110 U	100 U	110 U	100 U	100 U	100 U	16 J	37 J	29 J	110 U
AROCLOR-1260	100 U	110 U	100 U	98 U	100 U	99 U	110 U	100 U	110 U	100 U	100 U	100 U	110 U	100 U	110 U	110 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	16	37	29	0 U
BETA-BHC	4.7 U	4.9 U	4.7 U	4.5 U	4.7 U	4.6 U	4.9 U	4.8 U	4.9 U	4.6 U	4.8 U	4.8 U	1.4 J	4.8 U	2.3 J	1.6 J
DELTA-BHC	7 U	7.3 U	7.1 U	6.8 U	7 U	6.9 U	7.3 U	7.2 U	7.3 U	7 U	7.2 U	7.2 U	7.3 U	7.3 U	7.4 U	7.3 U
DIELDRIN	0.3 J	13	0.75 J	0.52 J	1.6 U	0.69 J	1.6 U	0.93 J	1.6 U	8.3	4.1	1.6 U	0.71 J	1.6 U	1.6 U	1.6 U
DISULFOTON	27 U	28 U	27 U	26 U	27 U	26 U	28 U	28 U	27 U	28 U	28 U	28 U	28 U	28 U	28 U	28 U
ENDOSULFAN I	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
ENDOSULFAN II	3.1 U	26	3.1 U	3 U	3.1 U	3.1 U	3.2 U	3.2 U	0.71 J	3.1 U	1.7 J	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U
ENDOSULFAN SULFATE	51 U	54 U	52 U	50 U	51 U	50 U	54 U	53 U	54 U	51 U	28 J	21 J	53 U	53 U	54 U	54 U
ENDRIN	4.7 U	4.9 U	4.7 U	4.5 U	4.7 U	4.6 U	4.9 U	4.8 U	4.9 U	4.6 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	4.9 U
ENDRIN ALDEHYDE	18 U	6.2 J	18 U	17 U	18 U	18 U	19 U	18 U	19 U	18 U	18 U	2.8 J	19 U	19 U	19 U	19 U
ETHYL PARATHION	23 U	24 U	23 U	22 U	23 U	23 U	24 U	24 U	24 U	23 U	24 U	24 U	24 U	24 U	24 U	24 U
GAMMA-BHC (LINDANE)	3.1 U	3.2 U	3.1 U	3 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.1 U	3.2 U	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U
GAMMA-CHLORDANE	3.9 U	4.1 U	3.9 U	3.8 U	3.9 U	3.8 U	4.1 U	4 U	4.1 U	3.9 U	4 U	4 U	4 U	0.86 J	4.1 U	4.1 U
HEPTACHLOR	0.89 J	1.4 J	2.4 U	0.49 J	0.94 J	2.3 U	2.6	3.2	0.9 J	0.76 J	1.4 J	52	1.4 U	4.7	2.1 J	2.7
HEPTACHLOR EPOXIDE	64 U	67 U	65 U	63 U	65 U	63 U	67 U	66 U	67 U	64 U	66 U	66 U	67 U	67 J	68 U	68 U
METHOXYCHLOR	140 U	59 J	140 U	130 U	140 U	130 U	140 U	140 U	140 U	14 U	22 J	18 J	140 U	140 U	140 U	140 U
METHYL PARATHION	46 U	48 U	47 U	45 U	46 U	46 U	48 U	48 U	48 U	46 U	48 U	48 U	48 U	48 U	49 U	49 U
PHORATE	15 U	16 U	16 U	15 U	16 U	15 U	16 U	16 U	16 U	15 U	16 U	16 U	16 U	16 U	16 U	16 U
TOXAPHENE	190 U	190 U	190 U	180 U	190 U	180 U	190 U	190 U	200 U	190 U	190 U	190 U	190 U	190 U	200 U	200 U
Herbicides (ug/kg)																
2,4,5-T	74 U	78 U	78 U	75 U	77 U	74 U	79 U	77 U	79 U	77 U	77 U	80 U	80 U	79 U	79 U	83 U
2,4,5-TP (SILVEX)	63 U	66 U	66 U	64 U	65 U	63 U	67 U	65 U	68 U	65 U	65 U	68 U	68 U	68 U	67 U	70 U
2,4-D	440 U	470 U	470 U	450 U	460 U	440 U	470 U	460 U	480 U	460 U	460 U	480 U	480 U	480 U	470 U	500 U
DINOSEB	26 U	27 U	27 U	26 U	27 U	26 U	28 U	27 U	28 U	27 U	27 U	28 U	28 U	28 U	28 U	29 U
DISULFOTON																
ETHYL PARATHION																
HEXACHLOROPHENE																
METHYL PARATHION																
PENTACHLOROPHENOL																
PHORATE																
Petroleum Hydrocarbons (mg/kg)																
TOTAL PETROLEUM HYDROCARBONS	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	15 J

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-10	09/05-10	09/05-11	09/05-11	09/05-11	09/05-12	09/05-12	09/05-13	09/05-13	09/05-13	09/05-13	09/05-14	09/05-14	09/05-14	09/05-14	09/05-15
SAMPLE ID	09/05-10-92-3 (92)	09/05-10-92-4 (92)	09/05-11-92-1 (92)	09/05-11-92-2 (92)	09/05-11-92-3 (92)	09/05-12-92-1 (92)	09/05-12-92-2 (92)	09/05-13-92-1 (92)	09/05-13-92-2 (92)	09/05-13-92-3 (92)	09/05-13-92-4 (92)	09/05-14-92-1 (92)	09/05-14-92-2 (92)	09/05-14-92-3 (92)	09/05-14-92-4 (92)	09/05-15-92-1 (92)
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	6.5	9	3	5.5	8	3	5.5	1.5	3.5	6.5	9.1	3.5	5.5	8.5	11	3
BOTTOM DEPTH	7	9.5	3.7	6.5	8.5	3.5	6	2	4	7	9.6	4	6	9	11.5	3.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/15/1992	8/15/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992
Inorganics (mg/kg)																
ALUMINUM																
ANTIMONY																
ARSENIC	3.48	4.34	5.89	4.76	3.64	1.8	2.68	7.71	4.24	2.17	3.38	9.03	7.56	7.11	4.97	11.1
BARIUM	28.8	73.3	42.1	59.2	46.5	37.3	144	92	142	34.8	154	90.9	103	66.2	50.6	68
BERYLLIUM																
CADMIUM	0.02 U	0.02 U	0.027	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.081	0.02 U	0.02 U	0.02 U	0.137	0.346	0.02 U	0.024
CALCIUM																
CHROMIUM	11.9	22.6	19.3	25.8	14.4	11.2	19.6	20.7	13.5	14.9	19.1	21.3	18.7	20.9	17.5	19.2
COBALT																
COPPER																
IRON																
LEAD	6.8	8	7.2	4.4	4.4	4.7	8.7	12.1	13.7	6	11.8	13.4	14.2	10.1	7.19	10.9
MAGNESIUM																
MANGANESE																
MERCURY	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL																
POTASSIUM																
SELENIUM	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.38	0.32	0.2 U	0.2 U	0.31	0.24	0.2 U	0.2 U	0.2 U
SILVER	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SODIUM																
THALLIUM																
TIN																
VANADIUM																
ZINC																
Miscellaneous Parameters																
CATION EXCHANGE CAPACITY (MEQ/100)																
CYANIDE (MG/KG)																
PH																
TOTAL ORGANIC CARBON (MG/KG)																

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-15	09/05-15	09/05-15	09/05-16	09/05-17	09/05-18	09SB001	09SB001	09SB001	09SB002	09SB002	09SB002	09SB003	09SB003	09SB003	09SB004	09SB004
SAMPLE ID	09/05-15-92-2 (92)	09/05-15-92-3 (92)	09/05-15-92-4 (92)	09/05-16-92-1 (92)	09/05-17-92-1 (92)	09/05-18-92-1 (92)	09SB010002	09SB010102	09SB010810	09SB020002	09SB020102	09SB020608	09SB030002	09SB030102	09SB030406	09SB040002	09SB040102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	5.5	8	10.5	0.5	0.5	0.5	0	1	6	0	1	6	0	1	4	0	1
BOTTOM DEPTH	6	6.5	11	1.5	1.5	1.5	2	2	10	2	2	8	2	2	6	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/18/1992	8/18/1992	8/18/1992	8/15/1992	8/15/1992	8/15/1992	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	12/4/2000	12/4/2000
Volatile Organics (ug/kg)																	
1,1,1,2-TETRACHLOROETHANE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,1,1-TRICHLOROETHANE	2.3 J	6 U	5.5 U	5 U	0.55 J	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,1,2,2-TETRACHLOROETHANE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 UJ	3 U		3 U
1,1,2-TRICHLOROETHANE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,1-DICHLOROETHANE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,1-DICHLOROETHENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,2,3-TRICHLOROPROPANE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,2-DIBROMO-3-CHLOROPROPANE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,2-DIBROMOETHANE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,2-DICHLOROETHANE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,2-DICHLOROPROPANE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
1,4-DIOXANE								180 UJ	190 U		210 U	190 U		190 U	220 U		220 U
2-BUTANONE	12 U	11 J	110 U	100 U	120 U	120 U		15 U	14 U		18 U	15 U		15 UJ	15 U		17 UJ
2-HEXANONE	60 U	60 U	55 U	50 U	60 U	60 U		15 U	14 U		18 U	15 U		15 UJ	15 U		17 U
3-CHLOROPROPENE								10 UJ	10 UJ		12 UJ	10 UJ		10 UJ	10 UJ		11 UJ
4-METHYL-2-PENTANONE	60 U	60 U	55 U	50 U	60 U	60 U		15 U	14 U		18 U	15 U		15 UJ	15 U		17 U
ACETONE	53 J	87 J	33 J	41 J	34 J	120 U		15 U	14 U		18 U	15 U		15 UJ	15 U		17 U
ACETONITRILE								73 UJ	77 U		84 U	74 U		77 U	86 U		88 U
ACROLEIN								50 UR	48 UR		60 UR	49 UR		50 UR	51 UR		55 UR
ACRYLONITRILE								10 UR	10 UR		12 UR	10 UR		10 UR	10 UR		11 UR
BENZENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
BROMODICHLOROMETHANE	5.8 J	2.1 J	3.3 J	5 U	3.9 J	4.8 J		3 U	3 U		4 U	3 U		3 U	3 U		3 U
BROMOFORM	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
BROMOMETHANE	12 U	12 U	11 U	10 U	12 U	12 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
CARBON DISULFIDE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
CARBON TETRACHLORIDE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
CHLOROBENZENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
CHLORODIBROMOMETHANE	2 J	0.71 J	1 J	5 U	6 U	0.81 J		3 U	3 U		4 U	3 U		3 U	3 U		3 U
CHLOROETHANE	12 U	12 U	11 U	10 U	12 U	12 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
CHLOROFORM	26	21	18	5 U	15	22		3 U	3 U		4 U	3 U		3 U	3 U		3 U
CHLOROMETHANE	12 U	12 U	11 U	10 U	12 U	12 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
CHLOROPRENE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
CIS-1,2-DICHLOROETHENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
CIS-1,3-DICHLOROPROPENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
DIBROMOMETHANE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
DICHLORODIFLUOROMETHANE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
ETHYL METHACRYLATE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
ETHYLBENZENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
ISOBUTANOL								73 UJ	77 U		84 U	74 U		77 U	86 U		88 U
METHACRYLONITRILE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
METHYL IODIDE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
METHYL METHACRYLATE								30 U	29 U		36 U	29 U		30 U	31 U		33 U
METHYLENE CHLORIDE	12	18	17	20	12	9.1		4 J	3 J		4 U	4 J		5 J	3 J		3 U
PROPIONITRILE								73 UJ	77 U		84 U	74 U		77 U	86 U		88 U
STYRENE	6 U	6 U	55 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
TETRACHLOROETHENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
TOLUENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
TOTAL XYLENES	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
TRANS-1,2-DICHLOROETHENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
TRANS-1,3-DICHLOROPROPENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
TRANS-1,4-DICHLORO-2-BUTENE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
TRICHLOROETHENE	6 U	6 U	5.5 U	5 U	6 U	6 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U
TRICHLOROFLUOROMETHANE								3 U	3 U		4 U	3 U		3 U	3 U		3 U
VINYL ACETATE	60 U	60 U	55 U	50 U	60 U	60 U		30 U	29 U		36 U	29 U		30 U	31 U		33 U
VINYL CHLORIDE	12 U	12 U	11 U	10 U	12 U	12 U		3 U	3 U		4 U	3 U		3 U	3 U		3 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-15	05/05-15	09/05-15	09/05-16	09/05-17	09/05-18	09SB001	09SB001	09SB001	09SB002	09SB002	09SB002	09SB003	09SB003	09SB003	09SB004	09SB004
SAMPLE ID	09/05-15-92-2 (92)	09/05-15-92-3 (92)	09/05-15-92-4 (92)	09/05-16-92-1 (92)	09/05-17-92-1 (92)	09/05-18-92-1 (92)	09SB010002	09SB010102	09SB010810	09SB020002	09SB020102	09SB020608	09SB030002	09SB030102	09SB030406	09SB040002	09SB040102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	5.5	8	10.5	0.5	0.5	0.5	0	1	8	0	1	6	0	1	4	0	1
BOTTOM DEPTH	6	8.5	11	1.5	1.5	1.5	2	2	10	2	2	8	2	2	6	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/18/1992	8/18/1992	8/18/1992	8/15/1992	8/15/1992	8/15/1992	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	12/4/2000	12/4/2000
Semivolatile Organics (ug/kg)																	
1,2,4,5-TETRACHLOROBENZENE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
1,2,4-TRICHLOROBENZENE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
1,2-DICHLOROBENZENE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
1,2-DIPHENYLHYDRAZINE	810 U	820 U	760 U	700 U	760 U	770 U											
1,3-DICHLOROBENZENE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
1,4-DICHLOROBENZENE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
1,4-NAPHTHOQUINONE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
1,4-PHENYLENEDIAMINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
1-NAPHTHYLAMINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2,2'-OXYBIS(1-CHLOROPROPANE)	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2,3,4,6-TETRACHLOROPHENOL							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2,4,5-TRICHLOROPHENOL	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2,4,6-TRICHLOROPHENOL	810 U	82 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2,4-DICHLOROPHENOL	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2,4-DIMETHYLPHENOL	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2,4-DINITROPHENOL	4000 U	4100 U	3800 U	3500 U	3800 U	3800 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2,4-DINITROTOLUENE	810 U	820 U	760 U	700 U	760 U	770 U											
2,6-DICHLOROPHENOL							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2,6-DINITROTOLUENE	810 U	820 U	760 U	700 U	760 U	770 U											
2-ACETYLAMINOFLUORENE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2-CHLORONAPHTHALENE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2-CHLOROPHENOL	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2-METHYLNAPHTHALENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	40		8 UJ	8.00 U	
2-METHYLPHENOL	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2-NAPHTHYLAMINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2-NITROANILINE	4000 U	4100 U	3800 U	3500 U	3800 U	3800 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2-NITROPHENOL	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
2-PICOLINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
3,3'-DICHLOROBENZIDINE	1600 U	1600 U	1500 U	1400 U	1500 U	1500 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
3,3'-DIMETHYLBENZIDINE							380 U		380 U	400 U		380 U	410 UJ		410 U	420 U	
3-METHYLCHOLANTHRENE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
3-NITROANILINE	4000 U	4100 U	3800 U	3500 U	3800 U	3800 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4,6-DINITRO-2-METHYLPHENOL	4000 U	4100 U	3800 U	3500 U	3800 U	3800 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4-AMINOBIPHENYL							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4-BROMOPHENYL PHENYL ETHER	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4-CHLORO-3-METHYLPHENOL	1600 U	1600 U	1500 U	1400 U	1500 U	1500 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4-CHLOROANILINE	1600 U	1600 U	1500 U	1400 U	1500 U	1500 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4-CHLOROPHENYL PHENYL ETHER	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4-METHYLPHENOL	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4-NITROANILINE	4000 U	4100 U	3800 U	3500 U	3800 U	3800 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4-NITROPHENOL	4000 U	4100 U	3800 U	3500 U	3800 U	3800 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
4-NITROQUINOLINE-1-OXIDE							380 UR		380 UR	400 UR		380 UR	410 UR		410 UR	420 UR	
5-NITRO-O-TOLUIDINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
7,12-DIMETHYLBENZ(A)ANTHRACENE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
A,A-DIMETHYLPHENETHYLAMINE							770 U		770 U	800 U		770 U	810 U		820 U	840 U	
ACENAPHTHENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	20		8 UJ	8.00 U	
ACENAPHTHYLENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	18		8 UJ	8.00 U	
ACETOPHENONE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
ANILINE	1600 U	1600 U	1500 U	1400 U	1500 U	1500 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
ANTHRACENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	52		8 UJ	8.00 U	
ARAMITE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
BENZIDINE	4000 U	4100 U	3800 U	3500 U	3800 U	3800 U											
BENZO(A)ANTHRACENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	150		8 UJ	8.00 U	
BENZO(A)PYRENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	130		8 UJ	8.00 U	
BENZO(B)FLUORANTHENE	1600 U	1600 U	1500 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	120		8 UJ	8.00 U	
BENZO(G,H,I)PERYLENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	9		8 U	57		8 UJ	8.00 U	
BENZO(K)FLUORANTHENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	110 J		8 UJ	8.00 U	
BENZOIC ACID	4000 U	4100 U	3800 U	3500 U	3800 U	3800 U											
BENZYL ALCOHOL	1600 U	1600 U	1500 U	1400 U	1500 U	1500 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
BIS(2-CHLOROETHOXY)METHANE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-15	09/05-15	09/05-15	09/05-16	09/05-17	09/05-18	09SB001	09SB001	09SB001	09SB002	09SB002	09SB002	09SB003	09SB003	09SB003	09SB004	09SB004
SAMPLE ID	09/05-15-92-2 (92)	09/05-15-92-3 (92)	09/05-15-92-4 (92)	09/05-16-92-1 (92)	09/05-17-92-1 (92)	09/05-18-92-1 (92)	09SB010002	09SB010102	09SB010810	09SB020002	09SB020102	09SB020608	09SB030002	09SB030102	09SB030406	09SB040002	09SB040102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	5.5	8	10.5	0.5	0.5	0.5	0	1	8	0	1	6	0	1	4	0	1
BOTTOM DEPTH	6	8.5	11	1.5	1.5	1.5	2	2	10	2	2	8	2	2	6	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/18/1992	8/18/1992	8/18/1992	8/15/1992	8/15/1992	8/15/1992	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	12/4/2000	12/4/2000
BIS(2-CHLOROETHYL)ETHER	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
BIS(2-ETHYLHEXYL)PHTHALATE	810 U	62 J	510 J	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
BUTYL BENZYL PHTHALATE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
CHLOROBENZILATE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
CHRYSENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	140		8 UJ	8.00 U	
DI-N-BUTYL PHTHALATE	160 J	820 U	110 J	80 J	210 J	350 J	380 U		380 U	1200		380 U	410 U		410 U	420 U	
DI-N-OCTYL PHTHALATE	810 U	100 J	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
DIALLATE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
DIBENZO(A,H)ANTHRACENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	29		8 UJ	8.00 U	
DIBENZOFURAN	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
DIETHYL PHTHALATE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
DIMETHOATE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
DIMETHYL PHTHALATE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
DIPHENYLAMINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
DISULFOTON							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
ETHYL METHANE SULFONATE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
ETHYL PARATHION							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
FAMPHUR	49 U	49 U	45 U	41 U	47 U	16 J	770 UR		770 UR	800 UR		770 UR	810 UR		820 UR	840 UR	
FLUORANTHENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8		8 U	300 J		8 UJ	8.00 UJ	
FLUORENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	29		8 UJ	8.00 U	
HEXACHLOROBENZENE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
HEXACHLOROBUTADIENE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
HEXACHLOROCYCLOPENTADIENE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 UJ		410 U	420 UJ	
HEXACHLOROETHANE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
HEXACHLOROPROPENE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
INDENO(1,2,3-CD)PYRENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	58		8 UJ	8.00 U	
ISODRIN							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
ISOPHORONE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
ISOSAFROLE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
KEPONE	490 U	490 U	450 U	410 U	470 U	470 U	380 UR		380 UR	400 UR		380 UR	410 UR		410 UR	420 UR	
METHAPYRILENE							380 U		380 U	400 U		380 J	410 U		410 U	420 U	
METHYL METHANE SULFONATE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
METHYL PARATHION							380 U		380 U	400 U		380 J	410 U		410 U	420 UJ	
N-NITROSO-DI-N-BUTYLAMINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
N-NITROSO-DI-N-PROPYLAMINE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
N-NITROSODIETHYLAMINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
N-NITROSODIMETHYLAMINE	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
N-NITROSODIPHENYLAMINE	810 U	820 U	760 U	700 U	760 U	770 U											
N-NITROSOMETHYLETHYLAMINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
N-NITROSOMORPHOLINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
N-NITROSOPIPERIDINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
N-NITROSOPYRROLIDINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
NAPHTHALENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	30		8 UJ	8.00 U	
NITROBENZENE	810 U	820 U	760 U	700 U	760 U	770 U											
O,O,O-TRIETHYL PHOSPHOROTHIOATE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
O-TOLUIDINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
P-(DIMETHYLAMINO)AZOBENZENE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
PENTACHLOROBENZENE							380 U		380 U	400 U		380 U	410 U		410 U	420 UJ	
PENTACHLOROETHANE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
PENTACHLORONITROBENZENE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
PENTACHLOROPHENOL	4000 U	4100 U	3800 U	3500 U	3800 U	3800 U											
PHENACETIN							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
PHENANTHRENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	300 J		8 UJ	8.00 U	
PHENOL	810 U	820 U	760 U	700 U	760 U	770 U	380 U		380 U	400 U		380 U	410 U		410 U	420 U	
PHORATE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
PRONAMIDE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
PYRENE	810 U	820 U	760 U	700 U	760 U	770 U	8 U		8 U	8 U		8 U	230 J		8 UJ	8.00 UJ	
PYRIDINE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
SAFROLE							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
SULFOTEPP							380 U		380 U	400 U		380 U	410 U		410 U	420 U	
THIONAZIN							380 U		380 U	400 U		380 U	410 U		410 U	420 U	

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-15	09/05-15	09/05-15	09/05-16	09/05-17	09/05-18	09SB001	09SB001	09SB001	09SB002	09SB002	09SB002	09SB003	09SB003	09SB003	09SB004	09SB004
SAMPLE ID	09/05-15-92-2 (92)	09/05-15-92-3 (92)	09/05-15-92-4 (92)	09/05-16-92-1 (92)	09/05-17-92-1 (92)	09/05-18-92-1 (92)	09SB010002	09SB010102	09SB010810	09SB020002	09SB020102	09SB020608	09SB030002	09SB030102	09SB030406	09SB040002	09SB040102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	5.5	8	10.5	0.5	0.5	0.5	0	1	8	0	1	6	0	1	4	0	1
BOTTOM DEPTH	6	8.5	11	1.5	1.5	1.5	2	2	10	2	2	8	2	2	6	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/18/1992	8/18/1992	8/18/1992	8/15/1992	8/15/1992	8/15/1992	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	12/4/2000	12/4/2000
Pesticides/PCBs (ug/kg)																	
4,4'-DDD	9 U	9 U	8.3 U	7.5 U	8.6 U	8.6 U	3.8 UJ		3.8 UJ	4.0 U		3.8 UJ	4.0 UJ		4.1 UJ	4.2 U	
4,4'-DDE	0.62 J	2.3 J	3 U	2.7 U	0.54 J	0.66 J	3.8 UJ		3.8 UJ	4.0 U		3.8 UJ	4.0 UJ		4.1 UJ	4.2 U	
4,4'-DDT	4.4 J	9.8 U	9 U	8.2 U	2.5 J	0.97 J	3.8 UJ		3.8 UJ	4.0 U		3.8 UJ	4.0 U		4.1 UJ	4.2 U	
ALDRIN	1.8 J	3 J	1.1 J	2.7 U	3.1 U	3.1 U	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 UJ		2.1 UJ	2.2 U	
ALPHA-BHC	2.5 U	2.5 U	2.3 U	2.1 U	2.3 U	2.3 U	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 UJ		2.1 UJ	2.2 U	
ALPHA-CHLORDANE	2.7 J	2.6 J	1.2 J	3.4 U	3.9 U	0.51 J	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 U		2.1 UJ	2.2 U	
AROCLOR-1016	53 U	53 U	53 U	44 U	51 U	51 U	38 UJ		38 UJ	40 U		38 UJ	40 U		41 UJ	42 U	
AROCLOR-1221	53 U	53 U	53 U	44 U	51 U	51 U	76 UJ		76 UJ	80 U		76 UJ	80 U		81 UJ	84 U	
AROCLOR-1232	53 U	53 U	53 U	44 U	51 U	51 U	38 UJ		38 UJ	40 U		38 UJ	40 U		41 UJ	42 U	
AROCLOR-1242	53 U	53 U	53 U	44 U	51 U	51 U	38 UJ		38 UJ	40 U		38 UJ	40 U		41 UJ	42 U	
AROCLOR-1248	53 U	53 U	53 U	44 U	51 U	51 U	38 UJ		38 UJ	40 U		38 UJ	40 U		41 UJ	42 U	
AROCLOR-1254	32 J	110 U	98 U	89 U	100 U	100 U	38 UJ		38 UJ	40 U		38 UJ	40 U		41 UJ	42 U	
AROCLOR-1260	110 U	110 U	98 U	89 U	100 U	100 U	38 UJ		38 UJ	40 U		38 UJ	40 U		41 UJ	42 U	
TOTAL AROCLOR	32	0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U		0 U	0 U		0 U	0 U	
BETA-BHC	1.8 J	2.4 J	4.2 J	1.2 J	0.87 J	4.7 U	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 U		2.1 UJ	2.2 U	
DELTA-BHC	7.4 U	7.4 U	6.8 U	6.2 U	7 U	7 U	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 UJ		2.1 UJ	2.2 U	
DIELDRIN	1.6 U	1.7	1.5 U	1.4 U	1.9	2.8	3.8 UJ		3.8 UJ	4.0 U		3.8 UJ	4.0 UJ		4.1 UJ	4.2 U	
DISULFOTON	28 U		26 U	24 U	27 U	44											
ENDOSULFAN I	11 U	11 U	11 U	9.6 U	11 U	11 U	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 U		2.1 UJ	2.2 U	
ENDOSULFAN II	3.3 U	3.3 U	3 U	2.7 U	3.1 U	3.1 U	3.8 UJ		3.8 UJ	4.0 U		3.8 UJ	4.0 UJ		4.1 UJ	4.2 U	
ENDOSULFAN SULFATE	54 U	54 U	50 U	45 U	52 U	51 U	3.8 UJ		3.8 UJ	4.0 U		3.8 UJ	4.0 U		4.1 UJ	4.2 U	
ENDRIN	4.9 U	4.9 U	4.5 U	4.1 U	4.7 U	4.7 U	3.8 UJ		3.8 UJ	4.0 U		3.8 UJ	4.0 UJ		4.1 UJ	4.2 U	
ENDRIN ALDEHYDE	19 U	19 U	17 U	16 U	18 U	5.1 J	3.8 UJ		3.8 UJ	4.0 UJ		3.8 UJ	4.0 U		4.1 UJ	4.2 U	
ETHYL PARATHION	24 U		23 U	14 U	16 U	48											
GAMMA-BHC (LINDANE)	3.3 U	3.3 U	3 U	2.7 U	3.1 U	3.1 U	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 UJ		2.1 UJ	2.2 U	
GAMMA-CHLORDANE	4.1 U	4.1 U	3.8 U	3.4 U	3.9 U	2.2 J	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 U		2.1 UJ	2.2 U	
HEPTACHLOR	2.1 J	2.6	2.4	0.41 J	2.3 U	0.59 J	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 U		2.1 UJ	2.2 U	
HEPTACHLOR EPOXIDE	68 U	68 U	63 U	57 U	65 U	65 U	2.0 UJ		2.0 UJ	2.0 U		2.0 UJ	2.1 U		2.1 UJ	2.2 U	
METHOXYCHLOR	140 U	140 U	130 U	120 U	140 U	140 U	20 UJ		20 UJ	20 UJ		20 UJ	21 U		21 UJ	22 U	
METHYL PARATHION	49 U		45 U	41 U	47 U	73											
PHORATE	16 U		15 U	14 U	16 U	51											
TOXAPHENE	200 U	200 U	200 U	160 U	190 U	190 U	200 UJ		200 UJ	200 U		200 UJ	210 U		210 UJ	220 U	
Herbicides (ug/kg)																	
2,4,5-T	80 U	81 U	75 U	38 J	77 U	76 U	3.1 UJ		3.1 U	3.2 U		3.1 U	3.3 U		3.3 U	3.4 U	
2,4,5-TP (SILVEX)	68 U	68 U	64 U	60 U	65 U	64 U	3.1 UJ		3.1 U	3.2 U		3.1 U	3.3 U		3.3 U	3.4 U	
2,4-D	480 U	480 U	450 U	420 U	460 U	460 U	3.1 UJ		3.1 U	17 R		3.1 U	3.3 U		3.3 U	20 J	
DINOSEB	28 U	28 U	26 U	24 U	27 U	26 U	3.1 UJ		3.1 U	3.2 U		3.1 U	3.3 U		3.3 U	22 R	
DISULFOTON		28 U															
ETHYL PARATHION		24 U															
HEXACHLOROPHENE							0.77 UJ		0.77 U	0.81 U		0.77 U	0.82 UJ		0.83 U	0.85 U	
METHYL PARATHION		49 U															
PENTACHLOROPHENOL							0.77 UJ		0.77 U	3.5		0.77 U	0.82 U		0.83 U	2.0 J	
PHORATE		16 U															
Petroleum Hydrocarbons (mg/kg)																	
TOTAL PETROLEUM HYDROCARBONS	1 J	1 J	25 U	25 U	24 J	70											

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09/05-15	09/05-15	09/05-15	09/05-16	09/05-17	09/05-18	09SB001	09SB001	09SB001	09SB002	09SB002	09SB002	09SB003	09SB003	09SB003	09SB004	09SB004
SAMPLE ID	09/05-15-92-2 (92)	09/05-15-92-3 (92)	09/05-15-92-4 (92)	09/05-16-92-1 (92)	09/05-17-92-1 (92)	09/05-18-92-1 (92)	09SB010002	09SB010102	09SB010810	09SB020002	09SB020102	09SB020608	09SB030002	09SB030102	09SB030406	09SB040002	09SB040102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	5.5	8	10.5	0.5	0.5	0.5	0	1	8	0	1	6	0	1	4	0	1
BOTTOM DEPTH	6	8.5	11	1.5	1.5	1.5	2	2	10	2	2	8	2	2	6	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	8/18/1992	8/18/1992	8/18/1992	8/15/1992	8/15/1992	8/15/1992	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	11/30/2000	12/4/2000	12/4/2000
Inorganics (mg/kg)																	
ALUMINUM							8680 J		8690 J	11900 J		9480 J	8950 J		11000 J	10900	
ANTIMONY							0.89 U		0.85 U	0.91 U		0.89 U	0.90 U		1.9	0.97 UJ	
ARSENIC	7.09	9.9	4.87	0.41	5.44	7.52	5.2		3.0	7.6		2.2	5.5		3.0	6.4 J	
BARIUM	85.7	67.8	44	276	126	81	49.6 J		62.5 J	98.8 J		94.2 J	62.8 J		108 J	104 J	
BERYLLIUM							0.82 U		0.87 U	0.89 U		1.0 J	0.93 U		0.93 U	0.91 U	
CADMIUM	0.027	0.02 U	0.02 U	0.601	0.35	0.332	0.82 U		0.87 U	0.89 U		0.82 U	0.93 U		0.93 U	0.91 U	
CALCIUM							1430 J		480 J	15900 J		602 J	15700 J		604 J	1350 J	
CHROMIUM	18.2	24.4	24	11.5	12.5	16.6	8.4		11.7	12.9		12.0	11.3		13.9	10.6 J	
COBALT							5.4 J		5.6 J	14.0 J		13.8 J	5.1 J		32.2 J	23.0	
COPPER							9.3 J		6.1 J	13.6 J		11.5 J	11.9 J		8.2 J	9.5 J	
IRON							16300		17900	19800		31900	18000		29100	16100	
LEAD	14.9	8.9	8.8	10.6	19.5	14.1	8.6 J		11.5 J	19.8 J		13.6 J	18.7 J		13.4 J	19.8 J	
MAGNESIUM							731 J		925 J	1950 J		2510 J	3070 J		1600 J	1490 J	
MANGANESE							333 J		117 J	755 J		335 J	225 J		275 J	1060 J	
MERCURY	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.04 U		0.05 U	0.04 U		0.04 U	0.05 U		0.04 U	0.06	
NICKEL							9.5 J		7.0 J	12.8 J		24.3 J	11.7 J		13.1 J	12.5	
POTASSIUM							409 UJ		434 UJ	545 J		411 UJ	466 UJ		464 UJ	479 J	
SELENIUM	0.37	0.43	0.2 U	0.2 U	0.32	0.22	0.82 U		0.87 U	0.89 U		0.82 U	0.93 U		0.93 U	0.91 U	
SILVER	1 U	1 U	1 U	1 U	1 U	1 U	0.82 U		0.87 U	0.89 U		0.82 U	0.93 U		0.93 U	0.91 U	
SODIUM							409 U		434 U	445 U		411 U	466 U		464 U	453 U	
THALLIUM							0.82 U		0.87 U	0.89 U		0.82 U	0.93 U		0.93 U	0.91 U	
TIN							4.5 UJ		4.2 UJ	4.5 UJ		4.4 UJ	4.5 UJ		4.7 UJ	4.9 UJ	
VANADIUM							14.6		19.0	24.4		15.9	18.5		21.4	22.4 J	
ZINC							30.3 J		17.5 J	54.1 J		73.8 J	39.8 J		36.4 J	37.3 J	
Miscellaneous Parameters																	
CATION EXCHANGE CAPACITY (MEQ/100)									8.7						10.0	11.0 J	
CYANIDE (MG/KG)							0.60 UJ		0.60 UJ	0.60 UJ		0.60 UJ	0.60 UJ		0.60 UJ	1.0 UJ	
PH									5.1 J						5.5 J	6.9 J	
TOTAL ORGANIC CARBON (MG/KG)									1200						2200	8500	

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB004	09SB005	09SB005	09SB005	09SB006	09SB006	09SB006	09SB007	09SB007	09SB007	09SB008	09SB008	09SB008	09SB009	09SB009	09SB009	09SB010	09SB010
SAMPLE ID	09SB040406	09SB050002	09SB050102	09SB050406	09SB060002	09SB060102	09SB060810	09SB070002	09SB070102	09SB070709	09SB080002	09SB080102	09SB080406	09SB090002	09SB090102	09SB090810	09SB100002	09SB100102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	0	1	4	0	1	8	0	1	7	0	1	4	0	1	8	0	1
BOTTOM DEPTH	6	2	2	6	2	2	10	2	2	9	2	2	6	2	2	10	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/5/2000	12/5/2000	12/5/2000	12/4/2000	12/4/2000	12/4/2000	11/30/2000	11/30/2000
Volatile Organics (ug/kg)																		
1,1,1,2-TETRACHLOROETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,1,1-TRICHLOROETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,1,2,2-TETRACHLOROETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,1,2-TRICHLOROETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,1-DICHLOROETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,1-DICHLOROETHENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,2,3-TRICHLOROPROPANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,2-DIBROMO-3-CHLOROPROPANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,2-DIBROMOETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,2-DICHLOROETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,2-DICHLOROPROPANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
1,4-DIOXANE	220 U		220 UJ	180 UJ		190 U	190 U		200 U	200 U		210 UJ	190 UJ		210 U	170 UJ		200 U
2-BUTANONE	15 UJ		17 U	16 U		14 U	14 U		15 U	14 U		16 U	14 U		17 U	14 UJ		17 U
2-HEXANONE	15 U		17 U	16 U		14 U	14 U		15 U	14 U		16 U	14 U		17 U	14 U		17 U
3-CHLOROPROPENE	10 UJ		11 UJ	11 UJ		9 UJ	9 UJ		10 UJ	9 UJ		11 UJ	10 UJ		11 UJ	9 UJ		12 UJ
4-METHYL-2-PENTANONE	15 U		17 U	16 U		14 U	14 U		15 U	14 U		16 U	14 U		17 U	14 U		17 U
ACETONE	15 U		17 U	16 U		14 U	14 U		15 U	14 U		16 U	14 U		17 U	14 U		17 U
ACETONITRILE	89 U		89 UJ	72 UJ		76 U	74 U		82 U	79 U		83 UJ	77 UJ		85 U	70 UJ		79 U
ACROLEIN	51 UR		56 UR	53 UR		45 UR	45 UR		50 UR	47 UR		54 UR	48 UR		57 UR	45 UR		58 UR
ACRYLONITRILE	10 UR		11 UR	11 UR		9 UR	9 UR		10 UR	9 UR		11 UR	10 UR		11 UR	9 UR		12 UR
BENZENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
BROMODICHLOROMETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
BROMOFORM	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
BROMOMETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CARBON DISULFIDE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CARBON TETRACHLORIDE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CHLOROBENZENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CHLORODIBROMOMETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CHLOROETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CHLOROFORM	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CHLOROMETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CHLOROPRENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CIS-1,2-DICHLOROETHENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
CIS-1,3-DICHLOROPROPENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
DIBROMOMETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
DICHLORODIFLUOROMETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
ETHYL METHACRYLATE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
ETHYLBENZENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
ISOBUTANOL	89 U		89 UJ	72 UJ		76 U	74 U		82 U	79 U		83 UJ	77 UJ		85 U	70 UJ		79 U
METHACRYLONITRILE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
METHYL IODIDE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
METHYL METHACRYLATE	31 U		34 U	32 U		27 U	27 U		30 U	28 U		83 UJ	29 U		34 U	27 U		35 U
METHYLENE CHLORIDE	3 U		3 U	3 U		3 U	3 J		3 U	3 U		6 J	3 J		6 J	3 U		5 J
PROPIONITRILE	89 U		89 UJ	72 UJ		76 U	74 U		82 U	79 U		87 U	77 UJ		85 U	70 UJ		79 U
STYRENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
TETRACHLOROETHENE	3 U		3 U	3 U		3 U	3 U		3 U	4		3 U	3 U		3 U	3 U		4 U
TOLUENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
TOTAL XYLENES	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
TRANS-1,2-DICHLOROETHENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
TRANS-1,3-DICHLOROPROPENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
TRANS-1,4-DICHLORO-2-BUTENE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
TRICHLOROETHENE	3 U		3 U	3 U		3 U	3 U		3 U	18		3 U	3 U		3 U	3 U		4 U
TRICHLOROFLUOROMETHANE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U
VINYL ACETATE	31 U		34 U	32 U		27 U	27 U		30 U	28 U		32 U	29 U		34 U	27 U		35 U
VINYL CHLORIDE	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		3 U	3 U		4 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB004	09SB005	09SB005	09SB005	09SB006	09SB006	09SB006	09SB007	09SB007	09SB007	09SB008	09SB008	09SB008	09SB009	09SB009	09SB009	09SB010	09SB010
SAMPLE ID	09SB040406	09SB050002	09SB050102	09SB050406	09SB060002	09SB060102	09SB060810	09SB070002	09SB070102	09SB070709	09SB080002	09SB080102	09SB080406	09SB090002	09SB090102	09SB090810	09SB100002	09SB100102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	0	1	4	0	1	8	0	1	7	0	1	4	0	1	8	0	1
BOTTOM DEPTH	6	2	2	6	2	2	10	2	2	9	2	2	6	2	2	10	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/5/2000	12/5/2000	12/5/2000	12/4/2000	12/4/2000	12/4/2000	11/30/2000	11/30/2000
Semivolatile Organics (ug/kg)																		
1,2,4,5-TETRACHLOROBENZENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
1,2,4-TRICHLOROBENZENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
1,2-DICHLOROBENZENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
1,2-DIPHENYLHYDRAZINE																		
1,3-DICHLOROBENZENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
1,4-DICHLOROBENZENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
1,4-NAPHTHOQUINONE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
1,4-PHENYLENEDIAMINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
1-NAPHTHYLAMINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2,3,4,6-TETRACHLOROPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2,4,5-TRICHLOROPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2,4,6-TRICHLOROPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2,4-DICHLOROPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2,4-DIMETHYLPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2,4-DINITROPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 UJ		390 U	430 U		370 U	400 U	
2,4-DINITROTOLUENE																		
2,6-DICHLOROPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2,6-DINITROTOLUENE																		
2-ACETYLAMINOFLUORENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2-CHLORONAPHTHALENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2-CHLOROPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2-METHYLNAPHTHALENE	8.00 U	9.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	1800		8.00 U	8 UJ	
2-METHYLPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2-NAPHTHYLAMINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2-NITROANILINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2-NITROPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
2-PICOLINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
3,3'-DICHLOROBENZIDINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
3,3'-DIMETHYLBENZIDINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
3-METHYLCHOLANTHRENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
3-NITROANILINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4,6-DINITRO-2-METHYLPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4-AMINOBIPHENYL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4-BROMOPHENYL PHENYL ETHER	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4-CHLORO-3-METHYLPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4-CHLOROANILINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4-CHLOROPHENYL PHENYL ETHER	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4-METHYLPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4-NITROANILINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4-NITROPHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
4-NITROQUINOLINE-1-OXIDE	380 UR	440 UR		390 UR	400 UR		390 UR	400 UR		380 UR	420 UR		390 UR	430 UR		370 UR	400 UR	
5-NITRO-O-TOLUIDINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
7,12-DIMETHYLBENZ(A)ANTHRACENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
A,A-DIMETHYLPHENETHYLAMINE	770 U	880 U		780 U	790 U		780 U	790 U		770 U	830 U		780 UJ	850 U		750 U	800 U	
ACENAPHTHENE	8.00 U	9.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8 UJ	
ACENAPHTHYLENE	8.00 U	9.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8 UJ	
ACETOPHENONE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
ANILINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
ANTHRACENE	8.00 U	9.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8 UJ	
ARAMITE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
BENZIDINE																		
BENZO(A)ANTHRACENE	8.00 U	9.00 U		8.00 U	18.0		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	100		8.00 U	56 J	
BENZO(A)PYRENE	8.00 U	9.00 U		8.00 U	22.0 J		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	65.0 J		8.00 U	64 J	
BENZO(B)FLUORANTHENE	8.00 U	9.00 U		8.00 U	40.0 J		8.00 U	9.00		8.00 U	8.00 U		8.00 U	61.0 J		8.00 U	69 J	
BENZO(G,H,I)PERYLENE	8.00 U	9.00 U		8.00 U	26.0 J		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	29.0 J		8.00 U	37 J	
BENZO(K)FLUORANTHENE	8.00 U	9.00 U		8.00 U	18.0 J		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	47.0 J		8.00 U	54 J	
BENZOIC ACID																		
BENZYL ALCOHOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
BIS(2-CHLOROETHOXY)METHANE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB004	09SB005	09SB005	09SB005	09SB006	09SB006	09SB006	09SB007	09SB007	09SB007	09SB008	09SB008	09SB008	09SB009	09SB009	09SB009	09SB010	09SB010
SAMPLE ID	09SB040406	09SB050002	09SB050102	09SB050406	09SB060002	09SB060102	09SB060810	09SB070002	09SB070102	09SB070709	09SB080002	09SB080102	09SB080406	09SB090002	09SB090102	09SB090810	09SB100002	09SB100102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	0	1	4	0	1	8	0	1	7	0	1	4	0	1	8	0	1
BOTTOM DEPTH	6	2	2	6	2	2	10	2	2	9	2	2	6	2	2	10	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/5/2000	12/5/2000	12/5/2000	12/4/2000	12/4/2000	12/4/2000	11/30/2000	11/30/2000
BIS(2-CHLOROETHYL)ETHER	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	440 U		390 U	400 U		390 U	400 U		660	420 U		390 U	430 U		370 U	400 U	
BUTYL BENZYL PHTHALATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
CHLOROBENZILATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
CHRYSENE	8.00 U	9.00 U		8.00 U	29.0		8.00 U	10.0		8.00 U	8.00 U		8.00 U	98.0		8.00 U	67 J	
DI-N-BUTYL PHTHALATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
DI-N-OCTYL PHTHALATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
DIALLATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
DIBENZO(A,H)ANTHRACENE	8.00 U	9.00 U		8.00 U	8.00 UJ		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	10.0 J		8.00 U	14 J	
DIBENZOFURAN	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
DIETHYL PHTHALATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
DIMETHOATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
DIMETHYL PHTHALATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
DIPHENYLAMINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
DISULFOTON	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
ETHYL METHANE SULFONATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
ETHYL PARATHION	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
FAMPHUR	770 UR	880 UR		780 UR	790 UR		780 UR	790 UR		770 UR	830 UR		780 UR	850 UR		750 UR	800 UR	
FLUORANTHENE	8.00 U	9.00 U		8.00 U	23.0		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	100		8.00 U	130 J	
FLUORENE	8.00 U	9.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8 UJ	
HEXACHLOROBENZENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
HEXACHLOROBUTADIENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
HEXACHLOROCYCLOPENTADIENE	380 UJ	440 UJ		390 UJ	400 UJ		390 UJ	400 UJ		380 UJ	420 U		390 U	430 UJ		370 UJ	400 U	
HEXACHLOROETHANE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
HEXACHLOROPROPENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
INDENO(1,2,3-CD)PYRENE	8.00 U	9.00 U		8.00 U	14.0 J		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	15.0 J		8.00 U	35 J	
ISODRIN	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
ISOPHORONE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
ISOSAFROLE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
KEPONE	380 UR	440 UR		390 UR	400 UR		390 UR	400 UR		380 UR	420 UR		390 UR	430 UR		370 UR	400 UR	
METHAPYRILENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
METHYL METHANE SULFONATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
METHYL PARATHION	380 UJ	440 UJ		390 UJ	400 UJ		390 UJ	400 UJ		380 UJ	420 U		390 U	430 UJ		370 UJ	400 U	
N-NITROSO-DI-N-BUTYLAMINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
N-NITROSO-DI-N-PROPYLAMINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
N-NITROSODIETHYLAMINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
N-NITROSODIMETHYLAMINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
N-NITROSODIPHENYLAMINE																		
N-NITROSOMETHYLETHYLAMINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
N-NITROSOMORPHOLINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
N-NITROSOPIPERIDINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
N-NITROSOPYRROLIDINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
NAPHTHALENE	8.00 U	9.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	8.00 U		8.00 U	930		8.00 U	8 UJ	
NITROBENZENE																		
O,O,O-TRIETHYL PHOSPHOROTHIOATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
O-TOLUIDINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
P-(DIMETHYLAMINO)AZOBENZENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
PENTACHLOROBENZENE	380 UJ	440 UJ		390 UJ	400 UJ		390 UJ	400 UJ		380 UJ	420 U		390 U	430 UJ		370 UJ	400 U	
PENTACHLOROETHANE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
PENTACHLORONITROBENZENE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
PENTACHLOROPHENOL																		
PHENACETIN	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
PHENANTHRENE	8.00 U	9.00 U		8.00 U	8.00 U		8.00 U	13.0		8.00 U	8.00 U		8.00 U	630		8.00 U	55 J	
PHENOL	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
PHORATE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
PRONAMIDE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
PYRENE	8.00 U	9.00 U		8.00 U	28.0		8.00 U	13.0		8.00 U	8.00 U		8.00 U	140		8.00 U	110 J	
PYRIDINE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
SAFROLE	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
SULFOTEPP	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	
THIONAZIN	380 U	440 U		390 U	400 U		390 U	400 U		380 U	420 U		390 U	430 U		370 U	400 U	

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB004	09SB005	09SB005	09SB005	09SB006	09SB006	09SB006	09SB007	09SB007	09SB007	09SB008	09SB008	09SB008	09SB009	09SB009	09SB009	09SB010	09SB010
SAMPLE ID	09SB040406	09SB050002	09SB050102	09SB050406	09SB060002	09SB060102	09SB060810	09SB070002	09SB070102	09SB070709	09SB080002	09SB080102	09SB080406	09SB090002	09SB090102	09SB090810	09SB100002	09SB100102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	0	1	4	0	1	8	0	1	7	0	1	4	0	1	8	0	1
BOTTOM DEPTH	6	2	2	6	2	2	10	2	2	9	2	2	6	2	2	10	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/5/2000	12/5/2000	12/5/2000	12/4/2000	12/4/2000	12/4/2000	11/30/2000	11/30/2000
Pesticides/PCBs (ug/kg)																		
4,4'-DDD	3.8 U	4.3 U		3.8 U	3.9 U		3.9 U	3.9 U		3.8 U	4.1 U		3.9 U	4.2 U		3.7 U	4.0 UJ	
4,4'-DDE	3.8 U	4.3 U		3.8 U	3.9 U		3.9 U	3.9 U		3.8 U	4.1 U		3.9 U	4.2 U		3.7 U	4.0 UJ	
4,4'-DDT	3.8 U	4.3 U		3.8 U	3.9 U		3.9 U	3.9 U		3.8 U	4.1 U-		3.9 U	4.7		3.7 U	4.0 UJ	
ALDRIN	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
ALPHA-BHC	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
ALPHA-CHLORDANE	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
AROCLOR-1016	38 U	43 U		38 U	39 U		39 U	39 U		38 U	41 U		39 U	42 U		37 U	40 UJ	
AROCLOR-1221	76 U	87 U		77 U	79 U		78 U	79 U		76 U	82 U		78 U	85 U		74 U	80 UJ	
AROCLOR-1232	38 U	43 U		38 U	39 U		39 U	39 U		38 U	41 U		39 U	42 U		37 U	40 UJ	
AROCLOR-1242	38 U	43 U		38 U	39 U		39 U	39 U		38 U	41 U		39 U	42 U		37 U	40 UJ	
AROCLOR-1248	38 U	43 U		38 U	39 U		39 U	39 U		38 U	41 U		39 U	42 U		37 U	40 UJ	
AROCLOR-1254	38 U	43 U		38 U	39 U		39 U	39 U		460	41 U		39 U	42 U		37 U	40 UJ	
AROCLOR-1260	38 U	43 U		38 U	39 U		39 U	39 U		38 U	41 U		39 U	42 U		37 U	40 UJ	
TOTAL AROCLOR	0 U	0 U		0 U	0 U		0 U	0 U		460	0 U		0 U	0 U		0 U	0 U	
BETA-BHC	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
DELTA-BHC	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
DIELDRIN	3.8 U	4.3 U		3.8 U	3.9 U		3.9 U	3.9 U		14 R	4.1 U		3.9 U	4.2 U		3.7 U	4.0 UJ	
DISULFOTON																		
ENDOSULFAN I	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
ENDOSULFAN II	3.8 U	4.3 U		3.8 U	3.9 U		3.9 U	3.9 U		24 R	4.1 U		3.9 U	4.2 U		3.7 U	4.0 UJ	
ENDOSULFAN SULFATE	3.8 U	4.3 U		3.8 U	3.9 U		3.9 U	3.9 U		3.8 U	4.1 U		3.9 U	4.2 U		3.7 U	4.0 UJ	
ENDRIN	3.8 U	4.3 U		3.8 U	3.9 U		3.9 U	3.9 U		14 R	4.1 U		3.9 U	4.2 U		3.7 U	4.0 UJ	
ENDRIN ALDEHYDE	3.8 U	4.3 U		3.8 U	3.9 U		3.9 U	3.9 U		3.8 U	4.1 U		3.9 U	4.2 U		3.7 UJ	4.0 UJ	
ETHYL PARATHION																		
GAMMA-BHC (LINDANE)	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
GAMMA-CHLORDANE	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
HEPTACHLOR	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
HEPTACHLOR EPOXIDE	2.0 U	2.2 U		2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.1 U		2.0 U	2.2 U		1.9 U	2.0 UJ	
METHOXYCHLOR	20 U	22 U		20 U	20 U		20 U	20 U		20 U	21 U		20 U	25 J		19 U	20 UJ	
METHYL PARATHION																		
PHORATE																		
TOXAPHENE	200 U	220 U		200 U	200 U		200 U	200 U		200 U	210 U		200 U	220 U		190 U	200 UJ	
Herbicides (ug/kg)																		
2,4,5-T	3.1 U	15 R		3.1 U	3.2 U		3.1 U	3.2 U		3.1 U	49 R		3.1 U	100 R		3.0 U	3.2 UJ	
2,4,5-TP (SILVEX)	3.1 U	3.5 U		3.1 U	3.2 U		3.1 U	3.2 U		3.1 U	3.3 U		3.1 U	3.4 U		3.0 U	3.2 UJ	
2,4-D	3.1 U	18 R		3.1 U	3.2 U		3.1 U	8.5 R		3.1 U	82 R		3.1 U	12 R		3.0 U	3.2 UJ	
DINOSEB	3.1 U	3.5 U		3.1 U	3.2 U		3.1 U	14 R		3.1 U	14 J		3.1 U	3.4 U		3.0 U	3.2 UJ	
DISULFOTON																		
ETHYL PARATHION																		
HEXACHLOROPHENE	0.77 U	0.88 U		0.78 U	0.80 U		0.79 U	0.80 U		0.77 U	0.84 U		0.79 U	2.9 R		0.75 U	0.81 UJ	
METHYL PARATHION																		
PENTACHLOROPHENOL	0.77 U	0.88 U		0.78 U	0.80 U		0.79 U	1.2 J		0.77 U	5.4 R		0.79 U	6.0 R		0.75 U	0.81 UJ	
PHORATE																		
Petroleum Hydrocarbons (mg/kg)																		
TOTAL PETROLEUM HYDROCARBONS																		

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB004	09SB005	09SB005	09SB005	09SB006	09SB006	09SB006	09SB007	09SB007	09SB007	09SB008	09SB008	09SB008	09SB009	09SB009	09SB009	09SB010	09SB010
SAMPLE ID	09SB040406	09SB050002	09SB050102	09SB050406	09SB060002	09SB060102	09SB060810	09SB070002	09SB070102	09SB070709	09SB080002	09SB080102	09SB080406	09SB090002	09SB090102	09SB090810	09SB100002	09SB100102
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	0	1	4	0	1	8	0	1	7	0	1	4	0	1	8	0	1
BOTTOM DEPTH	6	2	2	6	2	2	10	2	2	9	2	2	6	2	2	10	2	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/4/2000	12/5/2000	12/5/2000	12/5/2000	12/4/2000	12/4/2000	12/4/2000	11/30/2000	11/30/2000
Inorganics (mg/kg)																		
ALUMINUM	8340	12000		8930	5140		9820	8450		7460	12900		7370	10500		3280	5480 J	
ANTIMONY	0.83 UJ	1.0 UJ		0.86 UJ	3.1 J		1.7 J	0.93 UJ		0.85 UJ	0.95 UJ		0.87 UJ	0.91 UJ		0.84 UJ	0.97	
ARSENIC	3.4 J	7.0 J		4.8 J	2.9 J		3.8 J	5.1 J		3.4 J	8.6 J		3.3 J	9.6 J		0.26 J	4.2	
BARIUM	34.3 J	85.2 J		41.7 J	52.9 J		92.7 J	78.7 J		77.1 J	105 J		30.3 J	106 J		15.8 J	68.1 J	
BERYLLIUM	0.89 U	1.0 U		0.92 U	0.90 U		0.91 U	0.91 U		1.0 J	1.0 U		0.94 U	0.92 U		0.82 U	0.92 U	
CADMIUM	0.89 U	1.0 U		0.92 U	0.90 U		0.91 U	0.91 U		0.89 U	1.0 U		0.94 U	0.92 U		0.82 U	0.96 J	
CALCIUM	447 UJ	1780 J		458 UJ	71700 J		1740 J	93500 J		516 J	843 J		472 UJ	2150 J		409 UJ	130000 J	
CHROMIUM	12.6 J	13.4 J		12.9 J	11.2 J		12.7 J	10.9 J		9.1 J	13.7 J		9.8 J	13.1 J		3.0 J	8.7	
COBALT	8.0	16.8		4.3	5.1		7.0	8.7		37.0	13.4		4.9	13.6		1.4	4.8 J	
COPPER	9.8 J	11.4 J		11.2 J	12.4 J		13.5 J	9.8 J		11.6 J	13.4 J		9.1 J	12.7 J		2.3 J	20.1 J	
IRON	26300	18300		18100	13600		19200	13600		24200	20100		26200	18700		2610	10500	
LEAD	13.2 J	18.3 J		10.1 J	14.3 J		15.2 J	18.2 J		15.9 J	16.8 J		9.5 J	25.8 J		6.7 J	34.9 J	
MAGNESIUM	2010 J	1480 J		1570 J	1510 J		1550 J	4490 J		1270 J	1750 J		765 J	1490 J		409 U	10800 J	
MANGANESE	116 J	903 J		106 J	135 J		255 J	531 J		494 J	782 J		84.7 J	912 J		4.4 J	327 J	
MERCURY	0.04 U	0.04		0.04 U	0.04 U		0.03	0.05		0.04 U	0.05		0.04 U	0.06		0.04 U	0.04 U	
NICKEL	12.8	12.4		8.0	12.1		9.5	13.5		14.6	13.7		8.1	15.0		2.7	18.3 J	
POTASSIUM	447 UJ	533 J		458 UJ	449 UJ		630 J	464 J		443 UJ	618 J		472 UJ	462 UJ		409 UJ	489 J	
SELENIUM	0.89 U	1.0 U		0.92 U	0.90 U		0.91 U	0.91 U		0.89 U	1.0 U		0.94 U	0.92 U		0.82 U	0.92 U	
SILVER	0.89 U	1.0 U		0.92 U	0.90 U		0.91 U	0.91 U		0.89 U	1.0 U		0.94 U	0.92 U		0.82 U	0.92 U	
SODIUM	447 U	501 U		458 U	449 U		454 U	453 U		443 U	515 U		472 U	462 U		409 U	461 U	
THALLIUM	0.89 U	1.0 U		0.92 U	0.90 U		0.91 U	0.91 U		0.89 U	1.0 U		0.94 U	0.92 U		0.82 U	0.92 U	
TIN	4.2 UJ	5.0 UJ		4.3 UJ	4.6 UJ		4.3 UJ	4.6 UJ		4.2 UJ	4.8 UJ		4.3 UJ	4.6 UJ		4.2 UJ	4.6 UJ	
VANADIUM	19.8 J	26.3 J		20.1 J	16.6 J		22.4 J	20.2 J		13.3 J	27.6 J		13.5 J	29.3 J		2.4 J	22.5	
ZINC	49.1 J	44.3 J		30.5 J	120 J		37.3 J	39.4 J		39.8 J	48.6 J		28.4 J	43.0 J		9.9 J	63.7 J	
Miscellaneous Parameters																		
CATION EXCHANGE CAPACITY (MEQ/100)		9.8 J						8.4 J					13.0 J			7.4 J		
CYANIDE (MG/KG)	1.0 UJ	1.0 UJ		1.0 UJ	1.0 UJ		1.0 UJ	1.0 UJ		1.0 UJ	1.0 UJ		1.0 UJ	1.0 UJ		1.0 UJ	0.60 UJ	
PH		7.2 J						8.0 J					4.9 J			4.3 J		
TOTAL ORGANIC CARBON (MG/KG)		5700						6400					2400			1000 U		

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB010	09SB011	09SB011	09SB011	09SW/SD001	09SW/SD002	09SW/SD003	09SW/SD004	09SW/SD005
SAMPLE ID	09SB100204	09SB110002	09SB110102	09SB110406	09SD0101	09SD0201	09SD0301	09SD0401	09SD0501
MATRIX	SO	SO	SO	SO	SD	SD	SD	SD	SD
TOP DEPTH	2	0	1	4	0	0	0	0	0
BOTTOM DEPTH	4	2	2	6	0.5	0.5	0.5	0.5	0.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	11/30/2000	12/4/2000	12/4/2000	12/4/2000	12/15/2000	12/14/2000	12/13/2000	12/13/2000	12/14/2000
Volatile Organics (ug/kg)									
1,1,1,2-TETRACHLOROETHANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
1,1,1-TRICHLOROETHANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
1,1,2,2-TETRACHLOROETHANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 UJ
1,1,2-TRICHLOROETHANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
1,1-DICHLOROETHANE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
1,1-DICHLOROETHENE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
1,2,3-TRICHLOROPROPANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
1,2-DIBROMO-3-CHLOROPROPANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
1,2-DIBROMOETHANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
1,2-DICHLOROETHANE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
1,2-DICHLOROPROPANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
1,4-DIOXANE	210 UJ		190 U	190 U	350 UJ	260 U	270 U	260 U	250 U
2-BUTANONE	15 UJ		15 U	15 U	27 U	22 U	20 U	20 U	17 UJ
2-HEXANONE	15 U		15 U	15 U	27 UJ	22 U	20 U	20 U	17 UJ
3-CHLOROPROPENE	10 UJ		10 UJ	10 UJ	18 UJ	15 UJ	13 UJ	14 UJ	12 UJ
4-METHYL-2-PENTANONE	15 U		15 U	15 U	27 UJ	22 U	20 U	20 U	17 UJ
ACETONE	15 U		15 U	15 U	27 U	22 U	20 U	20 U	17 UJ
ACETONITRILE	83 UJ		74 U	77 U	140 UJ	110 U	110 U	100 U	100 U
ACROLEIN	51 UR		48 UR	49 UR	89 U	75 U	67 U	68 U	58 U
ACRYLONITRILE	10 UR		10 UR	10 UR	18 U	15 U	13 U	14 U	12 U
BENZENE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
BROMODICHLOROMETHANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
BROMOFORM	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
BROMOMETHANE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
CARBON DISULFIDE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
CARBON TETRACHLORIDE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
CHLOROBENZENE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
CHLORODIBROMOMETHANE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
CHLOROETHANE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
CHLOROFORM	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
CHLOROMETHANE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
CHLOROPRENE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
CIS-1,2-DICHLOROETHENE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
CIS-1,3-DICHLOROPROPENE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
DIBROMOMETHANE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
DICHLORODIFLUOROMETHANE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
ETHYL METHACRYLATE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
ETHYLBENZENE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
ISOBUTANOL	83 UJ		74 U	77 U	140 UJ	110 U	110 U	100 U	100 U
METHACRYLONITRILE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
METHYL IODIDE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
METHYL METHACRYLATE	30 U		29 U	29 U	53 U	45 U	40 U	41 U	35 U
METHYLENE CHLORIDE	6 J		3 U	3 U	8 J	4 U	4 J	4 J	4 U
PROPIONITRILE	83 UJ		74 U	77 U	140 UJ	110 U	110 U	100 U	100 U
STYRENE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
TETRACHLOROETHENE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
TOLUENE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
TOTAL XYLENES	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
TRANS-1,2-DICHLOROETHENE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
TRANS-1,3-DICHLOROPROPENE	3 U		3 U	3 U	5 UJ	4 U	4 U	4 U	4 U
TRANS-1,4-DICHLORO-2-BUTENE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
TRICHLOROETHENE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
TRICHLOROFLUOROMETHANE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U
VINYL ACETATE	30 U		29 U	29 U	53 U	45 U	40 U	41 U	35 U
VINYL CHLORIDE	3 U		3 U	3 U	5 U	4 U	4 U	4 U	4 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB010	09SB011	09SB011	09SB011	09SW/SD001	09SW/SD002	09SW/SD003	09SW/SD004	09SW/SD005
SAMPLE ID	09SB100204	09SB110002	09SB110102	09SB110406	09SD0101	09SD0201	09SD0301	09SD0401	09SD0501
MATRIX	SO	SO	SO	SO	SD	SD	SD	SD	SD
TOP DEPTH	2	0	1	4	0	0	0	0	0
BOTTOM DEPTH	4	2	2	6	0.5	0.5	0.5	0.5	0.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	11/30/2000	12/4/2000	12/4/2000	12/4/2000	12/15/2000	12/14/2000	12/13/2000	12/13/2000	12/14/2000
Semivolatile Organics (ug/kg)									
1,2,4,5-TETRACHLOROBENZENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
1,2,4-TRICHLOROBENZENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
1,2-DICHLOROBENZENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
1,2-DIPHENYLHYDRAZINE									
1,3-DICHLOROBENZENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
1,4-DICHLOROBENZENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
1,4-NAPHTHOQUINONE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
1,4-PHENYLENEDIAMINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
1-NAPHTHYLAMINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2,2'-OXYBIS(1-CHLOROPROPANE)	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2,3,4,6-TETRACHLOROPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2,4,5-TRICHLOROPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2,4,6-TRICHLOROPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2,4-DICHLOROPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2,4-DIMETHYLPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2,4-DINITROPHENOL	400 U	390 U		390 U	540 UJ	440 UJ	440 UJ	450 UJ	440 UJ
2,4-DINITROTOLUENE									
2,6-DICHLOROPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2,6-DINITROTOLUENE									
2-ACETYLAMINOFLUORENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2-CHLORONAPHTHALENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2-CHLOROPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2-METHYLNAPHTHALENE	8 U	8.00 U		8.00 U	11.0 U	9.00 U	9.00 U	9.00 U	9.00 U
2-METHYLPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2-NAPHTHYLAMINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2-NITROANILINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2-NITROPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
2-PICOLINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
3,3'-DICHLOROBENZIDINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
3,3'-DIMETHYLBENZIDINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
3-METHYLCHOLANTHRENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
3-NITROANILINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4,6-DINITRO-2-METHYLPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4-AMINOBIPHENYL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4-BROMOPHENYL PHENYL ETHER	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4-CHLORO-3-METHYLPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4-CHLOROANILINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4-CHLOROPHENYL PHENYL ETHER	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4-METHYLPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4-NITROANILINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4-NITROPHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
4-NITROQUINOLINE-1-OXIDE	400 UR	390 UR		390 UR	540 UR	440 UR	440 UR	450 UR	440 UR
5-NITRO-O-TOLUIDINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
7,12-DIMETHYLBENZ(A)ANTHRACENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
A,A-DIMETHYLPHENETHYLAMINE	790 U	780 U		780 U	1100 U	880 U	890 U	900 UJ	880 U
ACENAPHTHENE	8 U	8.00 U		8.00 U	11.0 U	9.00 U	9.00 U	9.00 U	9.00 U
ACENAPHTHYLENE	8 U	8.00 U		8.00 U	11.0 U	9.00 U	9.00 U	9.00 U	9.00 U
ACETOPHENONE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
ANILINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
ANTHRACENE	8 U	8.00 U		8.00 U	11.0 U	9.00 U	9.00 U	9.00 U	9.00 U
ARAMITE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
BENZIDINE									
BENZO(A)ANTHRACENE	8 U	8.00 U		8.00 U	11.0 U	9.00 U	9.00 U	9.00 U	9.00 U
BENZO(A)PYRENE	8 U	8.00 U		8.00 U	11.0 UJ	9.00 U	9.00 UJ	9.00 UJ	9.00 UJ
BENZO(B)FLUORANTHENE	8 U	8.00 U		8.00 U	14.0 J	9.00 U	9.00 UJ	9.00 UJ	9.00 UJ
BENZO(G,H,I)PERYLENE	8 U	8.00 U		8.00 U	11.0 UJ	9.00 U	9.00 UJ	9.00 UJ	9.00 UJ
BENZO(K)FLUORANTHENE	8 U	8.00 U		8.00 U	11.0 UJ	9.00 U	9.00 UJ	9.00 UJ	9.00 UJ
BENZOIC ACID									
BENZYL ALCOHOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
BIS(2-CHLOROETHOXY)METHANE	400 U	390 U		390 U	540 UJ	440 UJ	440 U	450 UJ	440 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB010	09SB011	09SB011	09SB011	09SW/SD001	09SW/SD002	09SW/SD003	09SW/SD004	09SW/SD005
SAMPLE ID	09SB100204	09SB110002	09SB110102	09SB110406	09SD0101	09SD0201	09SD0301	09SD0401	09SD0501
MATRIX	SO	SO	SO	SO	SD	SD	SD	SD	SD
TOP DEPTH	2	0	1	4	0	0	0	0	0
BOTTOM DEPTH	4	2	2	6	0.5	0.5	0.5	0.5	0.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	11/30/2000	12/4/2000	12/4/2000	12/4/2000	12/15/2000	12/14/2000	12/13/2000	12/13/2000	12/14/2000
BIS(2-CHLOROETHYL)ETHER	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
BIS(2-ETHYLHEXYL)PHTHALATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
BUTYL BENZYL PHTHALATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
CHLOROBENZILATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
CHRYSENE	8 U	8.00 U		8.00 U	11.0	9.00 U	9.00 U	9.00 U	9.00 U
DI-N-BUTYL PHTHALATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
DI-N-OCTYL PHTHALATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
DIALLATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
DIBENZO(A,H)ANTHRACENE	8 U	8.00 U		8.00 U	11.0 UJ	9.00 U	9.00 UJ	9.00 UJ	9.00 UJ
DIBENZOFURAN	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
DIETHYL PHTHALATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
DIMETHOATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
DIMETHYL PHTHALATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
DIPHENYLAMINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
DISULFOTON	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
ETHYL METHANE SULFONATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
ETHYL PARATHION	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
FAMPHUR	790 UR	780 UR		780 UR	1100 UR	880 UR	890 UR	900 UR	880 UR
FLUORANTHENE	8 U	8.00 U		8.00 U	13.0	9.00 U	10.0	9.00 U	9.00 U
FLUORENE	8 U	8.00 U		8.00 U	11.0 U	9.00 U	9.00 U	9.00 U	9.00 U
HEXACHLOROBENZENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
HEXACHLOROBUTADIENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
HEXACHLOROCYCLOPENTADIENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
HEXACHLOROETHANE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
HEXACHLOROPROPENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
INDENO(1,2,3-CD)PYRENE	8 U	8.00 U		8.00 U	11.0 UJ	9.00 U	9.00 UJ	9.00 UJ	9.00 UJ
ISODRIN	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
ISOPHORONE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
ISOSAFROLE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
KEPONE	400 UR	390 UR		390 UR	540 UR	440 UR	440 UR	450 UR	440 UR
METHAPYRILENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
METHYL METHANE SULFONATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
METHYL PARATHION	400 U	390 UJ		390 UJ	540 U	440 U	440 U	450 UJ	440 U
N-NITROSO-DI-N-BUTYLAMINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
N-NITROSO-DI-N-PROPYLAMINE	400 U	390 U		390 U	540 UJ	440 UJ	440 U	450 UJ	440 U
N-NITROSODIETHYLAMINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
N-NITROSODIMETHYLAMINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
N-NITROSODIPHENYLAMINE									
N-NITROSOMETHYLETHYLAMINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
N-NITROSOMORPHOLINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
N-NITROSOPIPERIDINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
N-NITROSOPYRROLIDINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
NAPHTHALENE	8 U	8.00 U		8.00 U	11.0 U	9.00 U	9.00 U	9.00 U	9.00 U
NITROBENZENE									
O,O,O-TRIETHYL PHOSPHOROTHIOATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
O-TOLUIDINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
P-(DIMETHYLAMINO)AZOBENZENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
PENTACHLOROBENZENE	400 U	390 UJ		390 UJ	540 U	440 U	440 U	450 UJ	440 U
PENTACHLOROETHANE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
PENTACHLORONITROBENZENE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
PENTACHLOROPHENOL									
PHENACETIN	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
PHENANTHRENE	8 U	8.00 U		8.00 U	11.0 U	9.00 U	9.00 U	9.00 U	9.00 U
PHENOL	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
PHORATE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
PRONAMIDE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
PYRENE	8 U	8.00 U		8.00 U	14.0	9.00 U	9.00 U	9.00 U	9.00 U
PYRIDINE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
SAFROLE	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
SULFOTEPP	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U
THIONAZIN	400 U	390 U		390 U	540 U	440 U	440 U	450 UJ	440 U

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB010	09SB011	09SB011	09SB011	09SW/SD001	09SW/SD002	09SW/SD003	09SW/SD004	09SW/SD005
SAMPLE ID	09SB100204	09SB110002	09SB110102	09SB110406	09SD0101	09SD0201	09SD0301	09SD0401	09SD0501
MATRIX	SO	SO	SO	SO	SD	SD	SD	SD	SD
TOP DEPTH	2	0	1	4	0	0	0	0	0
BOTTOM DEPTH	4	2	2	6	0.5	0.5	0.5	0.5	0.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	11/30/2000	12/4/2000	12/4/2000	12/4/2000	12/15/2000	12/14/2000	12/13/2000	12/13/2000	12/14/2000
Pesticides/PCBs (ug/kg)									
4,4'-DDD	3.9 UJ	3.8 U		3.8 U	5.3 UJ	4.3 UJ	4.4 UJ	4.5 UJ	4.3 UJ
4,4'-DDE	3.9 UJ	3.8 U		3.8 U	5.3 U	4.3 U	4.4 U	4.5 U	4.3 U
4,4'-DDT	3.9 UJ	3.8 U		3.8 U	5.3 U	4.3 U	4.4 U	4.5 U	4.3 U
ALDRIN	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	2.3 U	2.3 U	2.2 U
ALPHA-BHC	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	2.3 U	2.3 U	2.2 U
ALPHA-CHLORDANE	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	2.3 U	2.3 U	2.2 U
AROCLOR-1016	39 UJ	38 U		38 U	53 U	43 U	44 U	45 U	43 U
AROCLOR-1221	79 UJ	77 U		77 U	110 U	87 U	88 U	89 U	87 U
AROCLOR-1232	39 UJ	38 U		38 U	53 U	43 U	44 U	45 U	43 U
AROCLOR-1242	39 UJ	38 U		38 U	53 U	43 U	44 U	45 U	43 U
AROCLOR-1248	39 UJ	38 U		38 U	53 U	43 U	380 J	45 U	43 U
AROCLOR-1254	39 UJ	38 U		38 U	53 U	43 U	44 U	45 U	43 U
AROCLOR-1260	39 UJ	38 U		38 U	53 U	43 U	44 U	45 U	43 U
TOTAL AROCLOR	0 U	0 U		0 U	0 U	0 U	380	0 U	0 U
BETA-BHC	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	2.3 U	2.3 U	2.2 U
DELTA-BHC	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	2.3 U	2.3 U	2.2 U
DIELDRIN	3.9 UJ	3.8 U		3.8 U	5.3 U	4.3 U	4.4 U	4.5 U	4.3 U
DISULFOTON									
ENDOSULFAN I	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	2.3 U	2.3 U	2.2 U
ENDOSULFAN II	3.9 UJ	3.8 U		3.8 U	5.3 U	4.3 U	4.4 U	4.5 U	4.3 U
ENDOSULFAN SULFATE	3.9 UJ	3.8 U		3.8 U	5.3 U	4.3 U	4.4 U	4.5 U	4.3 U
ENDRIN	3.9 UJ	3.8 U		3.8 U	5.3 U	4.3 U	4.4 UJ	4.5 UJ	4.3 UJ
ENDRIN ALDEHYDE	3.9 UJ	3.8 U		3.8 U	5.3 U	4.3 U	4.4 U	4.5 U	4.3 UJ
ETHYL PARATHION									
GAMMA-BHC (LINDANE)	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	2.3 U	2.3 U	2.2 U
GAMMA-CHLORDANE	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	11 R	2.3 U	2.2 U
HEPTACHLOR	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	2.3 U	2.3 U	2.2 U
HEPTACHLOR EPOXIDE	2.0 UJ	2.0 U		2.0 U	2.7 U	2.2 U	2.3 U	2.3 U	2.2 U
METHOXYCHLOR	20 UJ	20 U		20 U	27 UJ	22 UJ	23 UJ	23 UJ	22 UJ
METHYL PARATHION									
PHORATE									
TOXAPHENE	200 UJ	200 U		200 U	270 U	220 U	230 U	230 U	220 U
Herbicides (ug/kg)									
2,4,5-T	3.2 U	3.1 U		3.1 U	39 R	3.5 U	3.6 U	3.6 U	3.5 U
2,4,5-TP (SILVEX)	3.2 U	3.1 U		3.1 U	4.3 U	3.5 U	3.6 U	3.6 U	3.5 U
2,4-D	3.2 U	3.1 U		13 R	4.3 U	3.5 U	3.6 U	3.6 U	3.5 U
DINOSEB	3.2 U	3.1 U		28 R	8.2 J	3.5 U	3.6 U	3.6 U	3.5 U
DISULFOTON									
ETHYL PARATHION									
HEXACHLOROPHENE	0.80 U	0.78 U		0.78 U	4.7 R	0.88 U	0.89 U	0.91 U	0.88 UJ
METHYL PARATHION									
PENTACHLOROPHENOL	0.80 U	0.78 U		1.4 J	2.7 J	0.88 U	0.89 U	7.1 R	0.88 U
PHORATE									
Petroleum Hydrocarbons (mg/kg)									
TOTAL PETROLEUM HYDROCARBONS									

TABLE A-1

ANALYTICAL RESULTS (1992, AND 2000 INVESTIGATIONS)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB010	09SB011	09SB011	09SB011	09SW/SD001	09SW/SD002	09SW/SD003	09SW/SD004	09SW/SD005
SAMPLE ID	09SB100204	09SB110002	09SB110102	09SB110406	09SD0101	09SD0201	09SD0301	09SD0401	09SD0501
MATRIX	SO	SO	SO	SO	SD	SD	SD	SD	SD
TOP DEPTH	2	0	1	4	0	0	0	0	0
BOTTOM DEPTH	4	2	2	6	0.5	0.5	0.5	0.5	0.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE_DATE	11/30/2000	12/4/2000	12/4/2000	12/4/2000	12/15/2000	12/14/2000	12/13/2000	12/13/2000	12/14/2000
Inorganics (mg/kg)									
ALUMINUM	10000 J	5040		8330	7600 J	8690 J	7900 J	5470 J	10800 J
ANTIMONY	0.93 U	0.92 UJ		0.86 UJ	1.2 U	1.3 J	1.0 U	0.96 U	0.98 U
ARSENIC	5.8	3.4 J		4.8 J	3.7	4.5	6.1	5.4	0.77
BARIUM	51.5 J	103 J		90.3 J	78.1	43.2	103	77.0	39.3
BERYLLIUM	0.85 U	0.83 U		0.84 U	1.2 U	0.97 U	0.83 U	0.82 U	1.0 U
CADMIUM	0.85 U	0.83 U		0.84 U	1.2 U	0.97 U	0.83 U	0.82 U	1.0 U
CALCIUM	1760 J	175000 J		1380 J	2120 J	1010 J	1470 J	786 J	1130 J
CHROMIUM	12.2	7.6 J		10.1 J	8.7	11.9	11.4	11.1	13.0
COBALT	4.9 J	5.5		12.8	9.2	4.8	10.9	14.5	7.2
COPPER	12.1 J	7.6 J		7.2 J	16.0	9.1	10.3	9.0	27.7
IRON	18000	8840		13100	9620 J	16700 J	18600 J	15700 J	16000 J
LEAD	11.3 J	12.7 J		14.6 J	22.1 J	10.1 J	22.7 J	14.5 J	6.6 J
MAGNESIUM	1350 J	32500 J		1090 J	1290 J	1450 J	760 J	597 J	1820 J
MANGANESE	236 J	385 J		516 J	350	181	1300	1290	86.8
MERCURY	0.05 U	0.04 U		0.05	0.05 J	0.05 U	0.05 U	0.05 U	0.04 U
NICKEL	8.2 J	14.5		9.4	12.2	7.4	9.8	11.6	10.7
POTASSIUM	424 UJ	417 UJ		418 UJ	589 UJ	487 UJ	413 UJ	411 UJ	913 J
SELENIUM	0.85 U	0.83 U		0.84 U	1.2 U	0.97 U	0.83 U	0.82 U	1.0 U
SILVER	0.85 U	0.83 U		0.84 U	1.2 UJ	0.97 UJ	0.83 UJ	0.82 UJ	1.0 UJ
SODIUM	424 U	417 U		418 U	589 U	487 U	413 U	411 U	500 U
THALLIUM	0.85 U	0.83 U		0.84 U	1.2 U	0.97 U	0.83 U	0.82 U	1.0 U
TIN	4.6 UJ	4.6 UJ		4.3 UJ	6.1 U	4.9 U	5.2 U	4.8 U	4.9 U
VANADIUM	19.7	14.5 J		19.4 J	15.2	19.9	21.2	16.8	12.2
ZINC	30.6 J	49.2 J		26.7 J	40.9	27.7	95.3	33.4	72.2
Miscellaneous Parameters									
CATION EXCHANGE CAPACITY (MEQ/100)	7.6								
CYANIDE (MG/KG)	0.60 UJ	1.0 UJ		1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
PH	6.9 J								
TOTAL ORGANIC CARBON (MG/KG)	6500				38000	5500	7600	14000	1600

TABLE A-2
ANALYTICAL RESULTS (PHASE 1 MARCH 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB012	09SB012	09SB012	09SB013	09SB013	09SB013	09SB014	09SB014	09SB014	09SB015/TW001	09SB015/TW001
SAMPLE ID	09SB120204	09SB121315	09SS120002	09SB130204	09SB130911	09SS130002	09SB140204	09SB140809	09SS140002	09SB151112	09SB151416
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	13	0	2	9	0	2	8	0	11	14
BOTTOM DEPTH	4	15	2	4	11	2	4	9	2	12	16
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005
Pesticides/PCBs (ug/kg)											
4,4'-DDD	3.3 U	3.1 U	3.3 U	3.5 U	3.1 U	3.2 U	3.4 U	3.1 U	3.2 U	1.2 J	3.3 U
4,4'-DDE	3.3 U	3.1 U	3.3 U	3.5 U	3.1 U	3.2 U	3.4 U	3.1 U	3.2 U	3.4 U	3.3 U
4,4'-DDT	3.3 U	3.1 U	3.3 U	3.5 U	3.1 U	3.2 U	3.4 U	3.1 U	1.2 J	3 J	3.3 U
ALDRIN	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U
ALPHA-BHC	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U
ALPHA-CHLORDANE	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	1.6	1.5 U	2.4	1.6 U	1.6 U
AROCLOR-1016	21 U	19 U	20 U	21 U	19 U	20 U	21 U	19 U	20 U	21 U	20 U
AROCLOR-1221	21 U	19 U	20 U	21 U	19 U	20 U	21 U	19 U	20 U	21 U	20 U
AROCLOR-1232	21 U	19 U	20 U	21 U	19 U	20 U	21 U	19 U	20 U	21 U	20 U
AROCLOR-1242	21 U	19 U	20 U	21 U	19 U	20 U	21 U	19 U	20 U	21 U	20 U
AROCLOR-1248	21 U	19 U	20 U	21 U	19 U	20 U	21 U	19 U	20 U	21 U	20 U
AROCLOR-1254	21 U	19 U	20 U	21 U	19 U	20 U	21 U	19 U	20 U	21 U	20 U
AROCLOR-1260	21 U	19 U	20 U	21 U	19 U	20 U	21 U	19 U	20 U	21 U	20 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BH	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U
DELTA-BHC	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U
DIELDRIN	3.3 U	3.1 U	3.3 U	3.5 U	3.1 U	3.2 U	3.4 U	3.1 U	3.2 U	3.4 U	3.3 U
ENDOSULFAN I	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U
ENDOSULFAN II	3.3 U	3.1 U	3.3 U	3.5 U	3.1 U	3.2 U	3.4 U	3.1 U	3.2 U	3.4 U	3.3 U
ENDOSULFAN SULFATE	3.3 U	3.1 U	3.3 U	3.5 U	3.1 U	3.2 U	3.4 U	3.1 U	3.2 U	3.4 U	3.3 U
ENDRIN	3.3 U	3.1 U	3.3 U	3.5 U	3.1 U	3.2 U	3.4 U	3.1 U	3.2 U	3.4 U	3.3 U
ENDRIN ALDEHYDE	3.3 U	3.1 U	3.3 U	3.5 U	3.1 U	3.2 U	3.4 U	3.1 U	3.2 U	3.4 U	3.3 U
ENDRIN KETONE	3.3 U	3.1 U	3.3 U	3.5 U	3.1 U	3.2 U	3.4 U	3.1 U	3.2 U	3.4 U	3.3 U
GAMMA-BHC (LINDANE)	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U
GAMMA-CHLORDANE	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	2.3	1.5 U	3.9	1.7 J	1.6 U
HEPTACHLOR	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U
HEPTACHLOR EPOXIDE	1.6 U	1.5 U	1.6 U	1.7 U	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.6 U	1.6 U
METHOXYCHLOR	16 U	15 U	16 U	17 U	15 U	15 U	16 U	15 U	15 U	16 U	16 U
TOXAPHENE	41 U	39 U	41 U	43 U	38 U	40 U	42 U	38 U	39 U	42 U	40 U
Miscellaneous Parameters											
CATION EXCHANGE CAPACITY (MEQ/100)			16 J	14 J				9.7 J			
PH			6.9	7.1				5.9			
TOTAL ORGANIC CARBON (MG/KG)			5500 J	3700 J				1000 UJ			

TABLE A-2
ANALYTICAL RESULTS (PHASE 1 MARCH 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB015/TW001	09SB016	09SB016	09SB016	09SB017	09SB017	09SB017	09SB018	09SW/SD006
SAMPLE ID	09SS150002	09SB160607	09SB161314	09SS160002	09SB170204	09SB170911	09SS170002	09SS180002	09SD060006
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SD
TOP DEPTH	0	6	13	0	2	9	0	0	0
BOTTOM DEPTH	2	7	14	2	4	11	2	2	0.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/1/2005	3/4/2005	3/4/2005
Pesticides/PCBs (ug/kg)									
4,4'-DDD	49	3.3 U	3.1 U	5.1 J	3.3 U	3.1 U	3.1 U	22000 J	110 J
4,4'-DDE	8.1 J	2.6 J	3.1 U	320	3.3 U	3.1 U	3.8	130000	41
4,4'-DDT	81 J	1.4 J	3.1 U	140	3.3 U	3.1 U	1.5 J	2200000	250 J
ALDRIN	1.5 U	1.6 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	1600 U	1.7 U
ALPHA-BHC	1.5 U	1.6 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	1600 U	1.7 U
ALPHA-CHLORDANE	1.5 U	1.6 U	1.5 U	3.3	1.6 U	1.5 U	1.5 U	170000	56 J
AROCLOR-1016	19 U	21 U	19 U	18 U	20 U	19 U	19 U	20000 U	22 U
AROCLOR-1221	19 U	21 U	19 U	18 U	20 U	19 U	19 U	20000 U	22 U
AROCLOR-1232	19 U	21 U	19 U	18 U	20 U	19 U	19 U	20000 U	22 U
AROCLOR-1242	19 U	21 U	19 U	18 U	20 U	19 U	19 U	20000 U	22 U
AROCLOR-1248	19 U	21 U	19 U	18 U	20 U	19 U	19 U	20000 U	22 U
AROCLOR-1254	19 U	21 U	19 U	18 U	20 U	19 U	19 U	20000 U	22 U
AROCLOR-1260	19 U	21 U	19 U	18 U	20 U	19 U	19 U	20000 U	22 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BH	1.5 U	1.6 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	1600 U	1.7 U
DELTA-BHC	1.5 U	1.6 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	1600 U	1.7 U
DIELDRIN	3.1 U	3.3 U	3.1 U	8.1	3.3 U	3.1 U	3.1 U	3300 U	3.6 U
ENDOSULFAN I	1.5 U	1.6 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	1600 U	1.7 UJ
ENDOSULFAN II	3.1 U	3.3 U	3.1 U	2.9 U	3.3 U	3.1 U	3.1 U	3300 U	3.6 U
ENDOSULFAN SULFATE	3.1 U	3.3 U	3.1 U	2.9 U	3.3 U	3.1 U	3.1 U	3300 U	3.6 U
ENDRIN	3.1 U	3.3 U	3.1 U	2.9 U	3.3 U	3.1 U	3.1 U	3300 U	3.6 U
ENDRIN ALDEHYDE	3.1 U	3.3 U	3.1 U	2.9 U	3.3 U	3.1 U	3.1 U	3300 U	3.6 U
ENDRIN KETONE	3.1 U	3.3 U	3.1 U	2.9 U	3.3 U	3.1 U	3.1 U	3300 U	3.6 U
GAMMA-BHC (LINDANE)	1.5 U	1.6 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	1600 U	1.7 U
GAMMA-CHLORDANE	1.5 U	1.6 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	210000	76 J
HEPTACHLOR	1.5 U	1.6 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	48000	1.7 U
HEPTACHLOR EPOXIDE	1.5 U	1.6 U	1.5 U	1.4 U	1.6 U	1.5 U	1.5 U	1600 U	1.7 U
METHOXYCHLOR	15 U	16 U	15 U	14 U	16 U	15 U	15 U	16000 U	17 U
TOXAPHENE	38 U	41 U	38 U	36 U	41 U	38 U	39 U	41000 U	44 U
Miscellaneous Parameters									
CATION EXCHANGE CAPACITY (MEQ/100)	6 J	12 J				13 J			
PH	9.9	8.4				5.3			
TOTAL ORGANIC CARBON (MG/KG)	23000 J	5700 J				1000 UJ			5700

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB018	09SB018	09SB019	09SB019	09SB019	09SB020	09SB020	09SB020	09SB021	09SB021	09SB021	09SB022	09SB022
SAMPLE ID	09SB180204	09SB180406	09SB190204	09SB190406	09SS190002	09SB200204	09SB200608	09SS200002	09SB210204	09SB210507	09SS210002	09SB220204	09SB220507
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	2	4	0	2	6	0	2	5	0	2	5
BOTTOM DEPTH	4	6	4	6	2	4	8	2	4	7	2	4	7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005
Miscellaneous													
CATION EXCHANGE CAPACITY (MEQ/100)	7.9	--	--	11	--	--	--	13	13	--	--	--	11
PH	7.4	--	--	5.6	--	--	--	6.9	4.1	--	--	--	4.3
TOTAL ORGANIC CARBON (MG/KG)	21000	--	--	1400	--	--	--	4000	2100	--	--	--	1000
Volatile Organics (ug/kg)													
1,1,1,2-TETRACHLOROETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
1,1,1-TRICHLOROETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
1,2,3-TRICHLOROPROPANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
1,2-DIBROMO-3-CHLOROPROPANE	1.25 UJ	1.57 UJ	--	--	--	--	--	--	--	--	--	--	--
1,2-DIBROMOETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
3-CHLOROPROPENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
ACETONE	1.25 U	35 U	--	--	--	--	--	--	--	--	--	--	--
ACROLEIN	1.25 U	1.57 UR	--	--	--	--	--	--	--	--	--	--	--
ACRYLONITRILE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
BENZENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROBENZENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CHLORODIBROMOMETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROFORM	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROMETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROPRENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CIS-1,2-DICHLOROETHENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
DIBROMOMETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
DICHLORODIFLUOROMETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
ETHYL METHACRYLATE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
METHACRYLONITRILE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
METHYL IODIDE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
METHYL METHACRYLATE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
METHYL TERT-BUTYL ETHER	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	1.25 U	1.57 UJ	--	--	--	--	--	--	--	--	--	--	--

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB018	09SB018	09SB019	09SB019	09SB019	09SB020	09SB020	09SB020	09SB021	09SB021	09SB021	09SB022	09SB022
SAMPLE ID	09SB180204	09SB180406	09SB190204	09SB190406	09SS190002	09SB200204	09SB200608	09SS200002	09SB210204	09SB210507	09SS210002	09SB220204	09SB220507
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	2	4	0	2	6	0	2	5	0	2	5
BOTTOM DEPTH	4	6	4	6	2	4	8	2	4	7	2	4	7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005
STYRENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,2-DICHLOROETHENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,4-DICHLORO-2-BUTENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROFLUOROMETHANE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	1.25 U	1.57 U	--	--	--	--	--	--	--	--	--	--	--
Pesticides/PCBs (ug/kg)													
4,4'-DDD	1000	48	8.7	99	820 J	360	9.8	1700	7.1	7.5	220	1.67 U	1.6 U
4,4'-DDE	87	73	17	300 J	3100 J	89 J	1.61 U	670	0.89 J	1.61 U	45	1.67 U	1.6 U
4,4'-DDT	500	2200	380	7100	27000 J	1400	18	3500	8.4	7.8	180	1.67 U	1.4 J
ALDRIN	1.56 U	1.6 U	0.804 U	3.89 U	0.778 UJ	0.789 U	0.775 U	6.9 J	0.79 U	0.774 U	0.794 U	0.804 U	0.771 U
ALPHA-BHC	20	1.6 U	0.804 U	3.89 U	0.778 UJ	0.789 U	0.775 U	3.97 U	0.79 U	0.774 U	0.794 U	0.804 U	0.771 U
ALPHA-CHLORDANE	52	7.7	3.1	25	700 J	18	0.775 U	140	1.1 J	0.774 U	74	0.804 U	0.771 U
AROCLOR-1016	21.6 U	22.1 U	11.1 U	53.9 U	10.8 UJ	10.9 U	10.7 U	55 U	10.9 U	10.7 U	11 U	11.1 U	10.7 U
AROCLOR-1221	21.6 U	22.1 U	11.1 U	53.9 U	10.8 UJ	10.9 U	10.7 U	55 U	10.9 U	10.7 U	11 U	11.1 U	10.7 U
AROCLOR-1232	21.6 U	22.1 U	11.1 U	53.9 U	10.8 UJ	10.9 U	10.7 U	55 U	10.9 U	10.7 U	11 U	11.1 U	10.7 U
AROCLOR-1242	21.6 U	22.1 U	11.1 U	53.9 U	10.8 UJ	10.9 U	10.7 U	55 U	10.9 U	10.7 U	11 U	11.1 U	10.7 U
AROCLOR-1248	21.6 U	22.1 U	11.1 U	53.9 U	10.8 UJ	10.9 U	10.7 U	55 U	10.9 U	10.7 U	11 U	11.1 U	10.7 U
AROCLOR-1254	21.6 U	22.1 U	11.1 U	53.9 U	10.8 UJ	10.9 U	10.7 U	55 U	10.9 U	10.7 U	11 U	11.1 U	10.7 U
AROCLOR-1260	21.6 U	22.1 U	11.1 U	53.9 U	10.8 UJ	10.9 U	10.7 U	55 U	10.9 U	10.7 U	11 U	11.1 U	10.7 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	1.56 U	1.6 U	0.804 U	3.89 U	0.778 UJ	1.5 J	0.775 U	5.6 J	0.79 U	0.774 U	2 J	0.804 U	0.771 U
DELTA-BHC	1.56 U	1.6 U	0.804 U	3.89 U	0.778 UJ	0.789 U	0.775 U	3.97 U	0.79 U	0.774 U	0.794 U	0.804 U	0.771 U
DIELDRIN	3.24 U	3.32 U	1.67 U	16 J	7 J	29	1.61 U	420	1.64 U	1.61 U	12	1.67 U	1.6 U
ENDOSULFAN I	1.56 U	1.6 U	0.804 U	3.89 U	0.778 UJ	4	0.775 U	3.97 UJ	0.79 U	0.774 U	0.794 U	0.804 U	0.771 U
ENDOSULFAN II	3.24 U	3.32 U	1.67 U	8.08 U	1.62 UJ	1.64 U	1.61 U	8.25 U	1.64 U	1.61 U	1.65 U	1.67 U	1.6 U
ENDOSULFAN SULFATE	3.24 U	3.32 U	1.67 U	8.08 U	1.62 UJ	1.64 U	1.61 U	8.25 U	1.64 U	1.61 U	1.65 U	1.67 U	1.6 U
ENDRIN	3.24 U	3.32 U	1.67 U	8.08 U	1.62 UJ	1.64 U	1.61 U	8.25 U	1.64 U	1.61 U	1.65 U	1.67 U	1.6 U
ENDRIN ALDEHYDE	3.24 U	3.32 U	1.67 U	8.08 U	1.62 UJ	1.64 U	1.61 U	8.25 U	1.64 U	1.61 U	1.65 U	1.67 U	1.6 U
ENDRIN KETONE	3.24 U	3.32 U	1.67 U	8.08 U	1.62 UJ	1.64 U	1.61 U	8.25 U	1.64 U	1.61 U	1.65 U	1.67 U	1.6 U
GAMMA-BHC (LINDANE)	1.56 U	1.6 U	0.804 U	3.89 U	0.778 UJ	0.789 U	0.775 U	3.97 U	0.79 U	0.774 U	0.794 U	0.804 U	0.771 U
GAMMA-CHLORDANE	63	8.6	2.7	25	700 J	22	0.775 U	150	1 J	0.774 U	50	0.804 U	0.771 U
HEPTACHLOR	1.56 U	1.6 U	0.804 U	3.89 U	3.4 J	0.789 U	0.775 U	3.97 U	0.79 U	0.774 U	0.794 U	0.804 U	0.771 U
HEPTACHLOR EPOXIDE	1.56 U	1.6 U	0.804 U	3.89 U	15 J	6.7 R	0.775 U	3.97 U	0.79 U	0.774 U	11 J	0.804 U	0.771 U
METHOXYCHLOR	15.6 U	16 U	8.04 U	38.9 U	7.78 UJ	7.89 U	7.75 U	39.7 U	7.9 U	7.74 U	7.94 U	8.04 U	7.71 U
TOXAPHENE	40.8 U	41.8 U	21 U	102 U	20.4 UJ	20.6 U	20.3 U	104 U	20.7 U	20.2 U	20.8 U	21 U	20.2 U
Petroleum Hydrocarbons (mg/kg)													
DIESEL RANGE ORGANICS	4000 J	61.5 U	--	--	--	--	--	--	--	--	--	--	--
OIL RANGE ORGANICS (C24-C40)	10000 J	120 U	--	--	--	--	--	--	--	--	--	--	--

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB022	09SB023/TW004	09SB023/TW004	09SB023/TW004	09SB024/TW006	09SB024/TW006	09SB024/TW006	09SB025	09SB025	09SB025	09SB026	09SB026	09SB026
SAMPLE ID	09SS220002	09SB230204	09SB230507	09SS230002	09SB240204	09SB240406	09SS240002	09SB250204	09SB250709	09SS250002	09SB260204	09SB260507	09SS260002
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	5	0	2	4	0	2	7	0	2	5	0
BOTTOM DEPTH	2	4	7	2	4	6	2	4	9	2	4	7	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005
Miscellaneous													
CATION EXCHANGE CAPACITY (MEQ/100)	--	--	--	15	4.2	--	--	--	10	--	--	--	21
PH	--	--	--	6.7	7.4	--	--	--	8.2	--	--	--	7.6
TOTAL ORGANIC CARBON (MG/KG)	--	--	--	1400	20000	--	--	--	3100	--	--	--	44000
Volatile Organics (ug/kg)													
1,1,1,2-TETRACHLOROETHANE	--	--	--	--	--	1.28 UJ	--	--	1.38 U	--	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
1,2,3-TRICHLOROPROPANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
1,2-DIBROMO-3-CHLOROPROPANE	--	--	--	--	--	1.28 UJ	--	--	1.38 UJ	--	--	--	--
1,2-DIBROMOETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
2-BUTANONE	--	--	--	--	--	1.28 U	--	--	6 J	--	--	--	--
2-HEXANONE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
3-CHLOROPROPENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
ACETONE	--	--	--	--	--	56 J	--	--	43 J	--	--	--	--
ACROLEIN	--	--	--	--	--	1.28 UR	--	--	1.38 U	--	--	--	--
ACRYLONITRILE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
BENZENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
BROMOFORM	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
BROMOMETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
CHLOROBENZENE	--	--	--	--	--	13	--	--	110	--	--	--	--
CHLORODIBROMOMETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
CHLOROETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
CHLOROFORM	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
CHLOROMETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
CHLOROPRENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
CIS-1,2-DICHLOROETHENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
DIBROMOMETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
DICHLORODIFLUOROMETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
ETHYL METHACRYLATE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
ETHYLBENZENE	--	--	--	--	--	1.28 UJ	--	--	1.38 U	--	--	--	--
METHACRYLONITRILE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
METHYL IODIDE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
METHYL METHACRYLATE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
METHYL TERT-BUTYL ETHER	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
METHYLENE CHLORIDE	--	--	--	--	--	1.28 UJ	--	--	1.38 U	--	--	--	--

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB022	09SB023/TW004	09SB023/TW004	09SB023/TW004	09SB024/TW006	09SB024/TW006	09SB024/TW006	09SB025	09SB025	09SB025	09SB026	09SB026	09SB026
SAMPLE ID	09SS220002	09SB230204	09SB230507	09SS230002	09SB240204	09SB240406	09SS240002	09SB250204	09SB250709	09SS250002	09SB260204	09SB260507	09SS260002
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	5	0	2	4	0	2	7	0	2	5	0
BOTTOM DEPTH	2	4	7	2	4	6	2	4	9	2	4	7	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005
STYRENE	--	--	--	--	--	1.28 UJ	--	--	1.38 U	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
TOLUENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
TOTAL XYLENES	--	--	--	--	--	7 J	--	--	1.38 U	--	--	--	--
TRANS-1,2-DICHLOROETHENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
TRANS-1,4-DICHLORO-2-BUTENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
TRICHLOROFLUOROMETHANE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
VINYL ACETATE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	1.28 U	--	--	1.38 U	--	--	--	--
Pesticides/PCBs (ug/kg)													
4,4'-DDD	65	1.66 U	1.72 U	1.63 U	40 J	58	1.59 U	1.63 U	1.67 U	19 J	1.57 U	2.9 J	1800 J
4,4'-DDE	10	1.66 U	1.72 U	1.63 U	64 J	1800	70	1.63 U	2.4 J	400	7.2	51	30000 J
4,4'-DDT	66	1.66 U	1.72 U	1.63 U	3.09 U	8600	350	12	1.67 U	990	20 J	160	110000 J
ALDRIN	0.812 U	0.8 U	0.826 U	0.784 U	1.49 U	4.08 U	0.767 U	0.787 U	0.805 U	0.703 U	0.755 U	0.805 U	93.8 U
ALPHA-BHC	0.812 U	0.8 U	0.826 U	0.784 U	150	4.08 U	0.767 U	0.787 U	5.8	0.703 U	0.755 U	0.805 U	93.8 U
ALPHA-CHLORDANE	19	0.8 U	0.826 U	0.784 U	1.49 U	93	7.2 J	3.8	0.805 U	800	0.755 U	1.8	1000 J
AROCLOR-1016	11.2 U	11.1 U	11.4 U	10.9 U	20.6 U	56.5 U	10.6 U	10.9 U	11.2 U	38.9 U	10.5 U	11.2 U	1299 U
AROCLOR-1221	11.2 U	11.1 U	11.4 U	10.9 U	20.6 U	56.5 U	10.6 U	10.9 U	11.2 U	38.9 U	10.5 U	11.2 U	1299 U
AROCLOR-1232	11.2 U	11.1 U	11.4 U	10.9 U	20.6 U	56.5 U	10.6 U	10.9 U	11.2 U	38.9 U	10.5 U	11.2 U	1299 U
AROCLOR-1242	11.2 U	11.1 U	11.4 U	10.9 U	20.6 U	56.5 U	10.6 U	10.9 U	11.2 U	38.9 U	10.5 U	11.2 U	1299 U
AROCLOR-1248	11.2 U	11.1 U	11.4 U	10.9 U	20.6 U	56.5 U	10.6 U	10.9 U	11.2 U	38.9 U	10.5 U	11.2 U	1299 U
AROCLOR-1254	11.2 U	11.1 U	11.4 U	10.9 U	20.6 U	56.5 U	10.6 U	10.9 U	11.2 U	38.9 U	10.5 U	11.2 U	1299 U
AROCLOR-1260	11.2 U	11.1 U	11.4 U	10.9 U	20.6 U	56.5 U	10.6 U	10.9 U	11.2 U	38.9 U	10.5 U	11.2 U	1299 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	0.812 U	0.8 U	0.826 U	0.784 U	1.49 U	4.08 U	0.767 U	0.787 U	0.805 U	0.703 U	0.755 U	0.805 U	93.8 U
DELTA-BHC	0.812 U	0.8 U	0.826 U	0.784 U	1.49 U	4.08 U	0.767 U	0.787 U	0.805 U	0.703 U	0.755 U	0.805 U	93.8 U
DIELDRIN	1.69 U	1.66 U	1.72 U	1.63 U	3.09 U	8.48 U	1.59 U	1.63 U	1.67 U	17	1.57 U	1.67 U	210 J
ENDOSULFAN I	0.812 U	0.8 U	0.826 U	0.784 U	1.49 U	4.08 U	0.767 U	0.787 U	0.805 U	0.703 U	0.755 U	0.805 U	93.8 U
ENDOSULFAN II	1.69 U	1.66 U	1.72 U	1.63 U	3.09 U	8.48 U	1.59 U	1.63 U	1.67 U	1.46 U	1.57 U	1.67 U	195 U
ENDOSULFAN SULFATE	1.69 U	1.66 U	1.72 U	1.63 U	3.09 U	8.48 U	1.59 U	1.63 U	1.67 U	1.46 U	1.57 U	1.67 U	195 U
ENDRIN	1.69 U	1.66 U	1.72 U	1.63 U	3.09 U	8.48 U	1.59 U	1.63 U	1.67 U	1.46 U	1.57 U	1.67 U	195 U
ENDRIN ALDEHYDE	1.69 U	1.66 U	1.72 U	1.63 U	3.09 U	8.48 U	1.59 U	1.63 U	1.67 U	1.46 U	1.57 U	1.67 U	195 U
ENDRIN KETONE	1.69 U	1.66 U	1.72 U	1.63 U	3.09 U	8.48 U	1.59 U	1.63 U	1.67 U	1.46 U	1.57 U	1.67 U	195 U
GAMMA-BHC (LINDANE)	0.812 U	0.8 U	0.826 U	0.784 U	1.49 U	4.08 U	0.767 U	0.787 U	0.805 U	0.703 U	0.755 U	0.805 U	93.8 U
GAMMA-CHLORDANE	11	0.8 U	0.826 U	0.784 U	1.49 U	98	16 J	2.3	0.805 U	760	0.755 U	2.1	1100 J
HEPTACHLOR	0.812 U	0.8 U	0.826 U	0.784 U	1.49 U	4.08 U	0.767 U	0.787 U	0.805 U	59	0.755 U	0.805 U	93.8 U
HEPTACHLOR EPOXIDE	5.7 J	0.8 U	0.826 U	0.784 U	1.49 U	28	0.767 U	2	0.805 U	94	0.755 U	0.805 U	93.8 U
METHOXYCHLOR	8.12 U	8 U	8.26 U	7.84 U	14.9 U	40.8 U	7.67 U	7.87 U	8.05 U	7.03 U	7.55 U	8.05 U	938 U
TOXAPHENE	21.2 U	20.9 U	21.6 U	20.5 U	38.9 U	107 U	20 U	20.6 U	21.1 U	18.4 U	19.7 U	21.1 U	2453 U
Petroleum Hydrocarbons (mg/kg)													
DIESEL RANGE ORGANICS	--	--	--	--	--	1900 J	--	--	110 J	--	--	--	--
OIL RANGE ORGANICS (C24-C40)	--	--	--	--	--	4800 J	--	--	270	--	--	--	--

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB027/TW005	09SB027/TW005	09SB027/TW005	09SB028	09SB028	09SB028	09SB029	09SB029	09SB029	09SB030	09SB030	09SB030	09SB031/TW002
SAMPLE ID	09SB270204	09SB270507	09SS270002	09SB280204	09SB280608	09SS280002	09SB290204	09SB290507	09SS290002	09SB300204	09SB300507	09SS300002	09SB310204
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	5	0	2	6	0	2	5	0	2	5	0	2
BOTTOM DEPTH	4	7	2	4	8	2	4	7	2	4	7	2	4
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/9/2005	5/9/2005	5/9/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005
Miscellaneous													
CATION EXCHANGE CAPACITY (MEQ/100)	14	--	--	--	13	--	--	--	16	15	--	--	--
PH	6.9	--	--	--	7.5	--	--	--	6.6	6.7	--	--	--
TOTAL ORGANIC CARBON (MG/KG)	3800	--	--	--	8900	--	--	--	1000 U	2200	--	--	--
Volatile Organics (ug/kg)													
1,1,1,2-TETRACHLOROETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
1,1,1-TRICHLOROETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
1,2,3-TRICHLOROPROPANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
1,2-DIBROMO-3-CHLOROPROPANE	--	1.35 UJ	--	--	--	--	--	--	--	--	--	--	--
1,2-DIBROMOETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	--	8 J	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
3-CHLOROPROPENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
ACETONE	--	72 J	--	--	--	--	--	--	--	--	--	--	--
ACROLEIN	--	1.35 UR	--	--	--	--	--	--	--	--	--	--	--
ACRYLONITRILE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
BENZENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROBENZENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CHLORODIBROMOMETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROFORM	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROMETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CHLOROPRENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CIS-1,2-DICHLOROETHENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
DIBROMOMETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
DICHLORODIFLUOROMETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
ETHYL METHACRYLATE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
METHACRYLONITRILE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
METHYL IODIDE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
METHYL METHACRYLATE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
METHYL TERT-BUTYL ETHER	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	1.35 UJ	--	--	--	--	--	--	--	--	--	--	--

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB027/TW005	09SB027/TW005	09SB027/TW005	09SB028	09SB028	09SB028	09SB029	09SB029	09SB029	09SB030	09SB030	09SB030	09SB031/TW002
SAMPLE ID	09SB270204	09SB270507	09SS270002	09SB280204	09SB280608	09SS280002	09SB290204	09SB290507	09SS290002	09SB300204	09SB300507	09SS300002	09SB310204
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	5	0	2	6	0	2	5	0	2	5	0	2
BOTTOM DEPTH	4	7	2	4	8	2	4	7	2	4	7	2	4
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/9/2005	5/9/2005	5/9/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005
STYRENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,2-DICHLOROETHENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,4-DICHLORO-2-BUTENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROFLUOROMETHANE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	1.35 U	--	--	--	--	--	--	--	--	--	--	--
Pesticides/PCBs (ug/kg)													
4,4'-DDD	43	1.67 U	83	1.7 U	1.68 U	1.57 U	1.69 U	1.1 J	1.65 U	1.73 U	1.65 U	1.77 U	1.82 U
4,4'-DDE	4.4	1.67 U	80	1.7 U	1.68 U	1.57 U	1.69 U	0.93 J	1.65 U	1.73 U	2.2 J	1.77 U	1.82 U
4,4'-DDT	51	2.5 J	47	3.5	1.8 J	6.6 J	1.69 U	2.6 J	1.65 U	1.73 U	4.6	1.77 U	1.82 U
ALDRIN	0.789 U	0.802 U	0.742 U	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
ALPHA-BHC	0.789 U	0.802 U	0.742 U	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
ALPHA-CHLORDANE	14	0.98 J	170	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
AROCLOR-1016	10.9 U	11.1 U	10.3 U	11.3 U	11.2 U	10.5 U	11.3 U	11.3 U	11 U	11.5 U	11 U	11.8 U	12.2 U
AROCLOR-1221	10.9 U	11.1 U	10.3 U	11.3 U	11.2 U	10.5 U	11.3 U	11.3 U	11 U	11.5 U	11 U	11.8 U	12.2 U
AROCLOR-1232	10.9 U	11.1 U	10.3 U	11.3 U	11.2 U	10.5 U	11.3 U	11.3 U	11 U	11.5 U	11 U	11.8 U	12.2 U
AROCLOR-1242	10.9 U	11.1 U	10.3 U	11.3 U	11.2 U	10.5 U	11.3 U	11.3 U	11 U	11.5 U	11 U	11.8 U	2000
AROCLOR-1248	10.9 U	11.1 U	10.3 U	11.3 U	11.2 U	10.5 U	11.3 U	11.3 U	11 U	11.5 U	11 U	11.8 U	12.2 U
AROCLOR-1254	10.9 U	11.1 U	10.3 U	11.3 U	11.2 U	10.5 U	11.3 U	11.3 U	11 U	11.5 U	11 U	11.8 U	12.2 U
AROCLOR-1260	10.9 U	11.1 U	10.3 U	11.3 U	11.2 U	10.5 U	11.3 U	11.3 U	11 U	11.5 U	11 U	11.8 U	12.2 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	2000
BETA-BHC	0.789 U	0.802 U	0.742 U	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
DELTA-BHC	0.789 U	0.802 U	0.742 U	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
DIELDRIN	1.64 U	1.67 U	1.54 U	1.7 U	1.68 U	1.57 U	1.69 U	1.7 U	1.65 U	1.73 U	1.65 U	1.77 U	1.82 U
ENDOSULFAN I	0.789 U	0.802 U	0.742 U	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
ENDOSULFAN II	1.64 U	1.67 U	1.54 U	1.7 U	1.68 U	1.57 U	1.69 U	1.7 U	1.65 U	1.73 U	1.65 U	1.77 U	1.82 U
ENDOSULFAN SULFATE	1.64 U	1.67 U	1.54 U	1.7 U	1.68 U	1.57 U	1.69 U	1.7 U	1.65 U	1.73 U	1.65 U	1.77 U	1.82 U
ENDRIN	1.64 U	1.67 U	1.54 U	1.7 U	1.68 U	1.57 U	1.69 U	1.7 U	1.65 U	1.73 U	1.65 U	1.77 U	1.82 U
ENDRIN ALDEHYDE	1.64 U	1.67 U	1.54 U	1.7 U	1.68 U	1.57 U	1.69 U	1.7 U	1.65 U	1.73 U	1.65 U	1.77 U	1.82 U
ENDRIN KETONE	1.64 U	1.67 U	1.54 U	1.7 U	1.68 U	1.57 U	1.69 U	1.7 U	1.65 U	1.73 U	1.65 U	1.77 U	1.82 U
GAMMA-BHC (LINDANE)	0.789 U	0.802 U	0.742 U	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
GAMMA-CHLORDANE	14	1.3 J	190	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
HEPTACHLOR	0.789 U	0.802 U	0.742 U	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
HEPTACHLOR EPOXIDE	0.789 U	0.802 U	0.742 U	0.819 U	0.807 U	0.756 U	0.815 U	0.817 U	0.793 U	0.832 U	0.793 U	0.852 U	0.878 U
METHOXYCHLOR	7.89 U	8.02 U	7.42 U	8.19 U	8.07 U	7.56 U	8.15 U	8.17 U	7.93 U	8.32 U	7.93 U	8.52 U	8.78 U
TOXAPHENE	20.6 U	21 U	19.4 U	21.4 U	21.1 U	19.8 U	21.3 U	21.4 U	20.7 U	21.8 U	20.7 U	22.3 U	23 U
Petroleum Hydrocarbons (mg/kg)													
DIESEL RANGE ORGANICS	--	62 J	--	--	--	--	--	--	--	--	--	--	--
OIL RANGE ORGANICS (C24-C40)	--	120 U	--	--	--	--	--	--	--	--	--	--	--

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB031/TW002	09SB031/TW002	09SB032	09SB032	09SB032	09SB033	09SB033	09SB033	09SB034	09SB034	09SB034	09SB035	09SB035
SAMPLE ID	09SB310507	09SS310002	09SB320204	09SB320406	09SS320002	09SB330204	09SB330507	09SS330002	09SB340204	09SB340406	09SS340002	09SB350204	09SB350406
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	5	0	2	4	0	2	5	0	2	4	0	2	4
BOTTOM DEPTH	7	2	4	6	2	4	7	2	4	6	2	4	6
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005
Miscellaneous													
CATION EXCHANGE CAPACITY (MEQ/100)	--	--	--	--	--	--	--	--	--	--	--	--	--
PH	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL ORGANIC CARBON (MG/KG)	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (ug/kg)													
1,1,1,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3-TRICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DIBROMO-3-CHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DIBROMOETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--	--	--
3-CHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--	--	--	--	--
ACROLEIN	--	--	--	--	--	--	--	--	--	--	--	--	--
ACRYLONITRILE	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLORODIBROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROPRENE	--	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,2-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
DICHLORODIFLUOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
ETHYL METHACRYLATE	--	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
METHACRYLONITRILE	--	--	--	--	--	--	--	--	--	--	--	--	--
METHYL IODIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
METHYL METHACRYLATE	--	--	--	--	--	--	--	--	--	--	--	--	--
METHYL TERT-BUTYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB031/TW002	09SB031/TW002	09SB032	09SB032	09SB032	09SB033	09SB033	09SB033	09SB034	09SB034	09SB034	09SB035	09SB035
SAMPLE ID	09SB310507	09SS310002	09SB320204	09SB320406	09SS320002	09SB330204	09SB330507	09SS330002	09SB340204	09SB340406	09SS340002	09SB350204	09SB350406
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	5	0	2	4	0	2	5	0	2	4	0	2	4
BOTTOM DEPTH	7	2	4	6	2	4	7	2	4	6	2	4	6
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005	5/10/2005
STYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	--	--	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,2-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,4-DICHLORO-2-BUTENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROFLUOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
Pesticides/PCBs (ug/kg)													
4,4'-DDD	1.67 U	684 U	1.67 U	333 U	651 U	1.74 U	1.65 U	1.43 U	1.71 U	1.67 U	4116 U	1.67 U	1.59 U
4,4'-DDE	1.67 U	684 U	1.67 U	333 U	651 U	1.74 U	1.65 U	1.43 U	1.71 U	1.67 U	4116 U	1.67 U	1.59 U
4,4'-DDT	1.67 U	684 U	1.67 U	333 U	651 U	1.74 U	1.65 U	4.1	1.71 U	1.67 U	4116 U	1.67 U	1.59 U
ALDRIN	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
ALPHA-BHC	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
ALPHA-CHLORDANE	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
AROCLOR-1016	11.1 U	4557 U	11.1 U	2222 U	4337 U	11.6 U	11 U	9.52 U	11.4 U	11.1 U	27439 U	11.1 U	10.6 U
AROCLOR-1221	11.1 U	4557 U	11.1 U	2222 U	4337 U	11.6 U	11 U	9.52 U	11.4 U	11.1 U	27439 U	11.1 U	10.6 U
AROCLOR-1232	11.1 U	4557 U	11.1 U	2222 U	4337 U	11.6 U	11 U	9.52 U	11.4 U	11.1 U	27439 U	11.1 U	10.6 U
AROCLOR-1242	29000	100000 J	7900	38000	47000	11.6 U	11 U	9.52 U	5900	20000	260000	11.1 U	10.6 U
AROCLOR-1248	11.1 U	4557 U	11.1 U	2222 U	4337 U	100	11 U	9.52 U	11.4 U	11.1 U	27439 U	68	43
AROCLOR-1254	11.1 U	4557 U	11.1 U	2222 U	4337 U	11.6 U	11 U	72 J	11.4 U	11.1 U	27439 U	11.1 U	10.6 U
AROCLOR-1260	11.1 U	4557 U	11.1 U	2222 U	4337 U	11.6 U	11 U	9.52 U	11.4 U	11.1 U	27439 U	11.1 U	10.6 U
TOTAL AROCLOR	29000	100000	7900	38000	47000	100	0 U	72	5900	20000	260000	68	43
BETA-BHC	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
DELTA-BHC	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
DIELDRIN	1.67 U	684 U	1.67 U	333 U	651 U	1.74 U	1.65 U	1.43 U	1.71 U	1.67 U	4116 U	1.67 U	1.59 U
ENDOSULFAN I	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
ENDOSULFAN II	1.67 U	684 U	1.67 U	333 U	651 U	1.74 U	1.65 U	1.43 U	1.71 U	1.67 U	4116 U	1.67 U	1.59 U
ENDOSULFAN SULFATE	1.67 U	684 U	1.67 U	333 U	651 U	1.74 U	1.65 U	1.43 U	1.71 U	1.67 U	4116 U	1.67 U	1.59 U
ENDRIN	1.67 U	684 U	1.67 U	333 U	651 U	1.74 U	1.65 U	1.43 U	1.71 U	1.67 U	4116 U	1.67 U	1.59 U
ENDRIN ALDEHYDE	1.67 U	684 U	1.67 U	333 U	651 U	1.74 U	1.65 U	1.43 U	1.71 U	1.67 U	4116 U	1.67 U	1.59 U
ENDRIN KETONE	1.67 U	684 U	1.67 U	333 U	651 U	1.74 U	1.65 U	1.43 U	1.71 U	1.67 U	4116 U	1.67 U	1.59 U
GAMMA-BHC (LINDANE)	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
GAMMA-CHLORDANE	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
HEPTACHLOR	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
HEPTACHLOR EPOXIDE	0.802 U	329 U	0.802 U	160 U	313 U	0.835 U	0.794 U	0.688 U	0.823 U	0.802 U	1982 U	0.802 U	0.765 U
METHOXYCHLOR	8.02 U	3291 U	8.02 U	1605 U	3133 U	8.35 U	7.94 U	6.88 U	8.23 U	8.02 U	19817 U	8.02 U	7.65 U
TOXAPHENE	21 U	8608 U	21 U	4198 U	8193 U	21.9 U	20.8 U	18 U	21.5 U	21 U	51829 U	21 U	20 U
Petroleum Hydrocarbons (mg/kg)													
DIESEL RANGE ORGANICS	--	--	--	--	--	--	--	--	--	--	--	--	--
OIL RANGE ORGANICS (C24-C40)	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB035	09SW/SD007	09SW/SD008
SAMPLE ID	09SS350002	09SD070006	09SD080006
MATRIX	SO	SD	SD
TOP DEPTH	0	0	0
BOTTOM DEPTH	2	4	4
SAMPLE CODE	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/10/2005	5/20/2005	5/20/2005
Miscellaneous			
CATION EXCHANGE CAPACITY (MEQ/100)	--	--	--
PH	--	--	--
TOTAL ORGANIC CARBON (MG/KG)	--	4500	7800
Volatile Organics (ug/kg)			
1,1,1,2-TETRACHLOROETHANE	--	1.55 U	5.67 UJ
1,1,1-TRICHLOROETHANE	--	1.55 U	5.67 U
1,1,2,2-TETRACHLOROETHANE	--	1.55 U	5.67 U
1,1,2-TRICHLOROETHANE	--	1.55 U	5.67 U
1,1-DICHLOROETHANE	--	1.55 U	5.67 UJ
1,1-DICHLOROETHENE	--	1.55 U	5.67 U
1,2,3-TRICHLOROPROPANE	--	1.55 U	5.67 U
1,2-DIBROMO-3-CHLOROPROPANE	--	1.55 U	5.67 U
1,2-DIBROMOETHANE	--	1.55 U	5.67 UJ
1,2-DICHLOROETHANE	--	1.55 U	5.67 UJ
1,2-DICHLOROPROPANE	--	1.55 U	5.67 UJ
2-BUTANONE	--	1.55 U	5.67 U
2-HEXANONE	--	1.55 U	5.67 U
3-CHLOROPROPENE	--	1.55 U	5.67 U
4-METHYL-2-PENTANONE	--	1.55 U	5.67 U
ACETONE	--	6 J	140 J
ACROLEIN	--	1.55 UR	5.67 UR
ACRYLONITRILE	--	1.55 U	5.67 U
BENZENE	--	1.55 U	5.67 UJ
BROMODICHLOROMETHANE	--	1.55 U	5.67 UJ
BROMOFORM	--	1.55 U	5.67 UJ
BROMOMETHANE	--	1.55 U	5.67 U
CARBON DISULFIDE	--	1.55 U	5.67 U
CARBON TETRACHLORIDE	--	1.55 U	5.67 U
CHLOROBENZENE	--	1.55 U	5.67 UJ
CHLORODIBROMOMETHANE	--	1.55 U	5.67 UJ
CHLOROETHANE	--	1.55 U	5.67 U
CHLOROFORM	--	1.55 U	5.67 UJ
CHLOROMETHANE	--	1.55 U	5.67 U
CHLOROPRENE	--	1.55 UJ	5.67 UJ
CIS-1,2-DICHLOROETHENE	--	1.55 U	5.67 U
CIS-1,3-DICHLOROPROPENE	--	1.55 U	5.67 UJ
DIBROMOMETHANE	--	1.55 U	5.67 UJ
DICHLORODIFLUOROMETHANE	--	1.55 U	5.67 U
ETHYL METHACRYLATE	--	1.55 U	5.67 U
ETHYLBENZENE	--	1.55 U	5.67 UJ
METHACRYLONITRILE	--	1.55 U	5.67 U
METHYL IODIDE	--	1.55 U	5.67 U
METHYL METHACRYLATE	--	1.55 U	5.67 U
METHYL TERT-BUTYL ETHER	--	1.55 U	5.67 U
METHYLENE CHLORIDE	--	1.55 UJ	5.67 UJ

TABLE A-3

ANALYTICAL DATA (PHASE 2 MAY 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB035	09SW/SD007	09SW/SD008
SAMPLE ID	09SS350002	09SD070006	09SD080006
MATRIX	SO	SD	SD
TOP DEPTH	0	0	0
BOTTOM DEPTH	2	4	4
SAMPLE CODE	NORMAL	NORMAL	NORMAL
SAMPLE DATE	5/10/2005	5/20/2005	5/20/2005
STYRENE	--	1.55 U	5.67 UJ
TETRACHLOROETHENE	--	1.55 U	5.67 UJ
TOLUENE	--	1.55 U	5.67 UJ
TOTAL XYLENES	--	1.55 U	5.67 UJ
TRANS-1,2-DICHLOROETHENE	--	1.55 U	5.67 U
TRANS-1,3-DICHLOROPROPENE	--	1.55 U	5.67 UJ
TRANS-1,4-DICHLORO-2-BUTENE	--	1.55 U	5.67 U
TRICHLOROETHENE	--	1.55 U	5.67 UJ
TRICHLOROFLUOROMETHANE	--	1.55 U	5.67 U
VINYL ACETATE	--	1.55 U	5.67 U
VINYL CHLORIDE	--	1.55 U	5.67 U
Pesticides/PCBs (ug/kg)			
4,4'-DDD	1.57 U	60	15
4,4'-DDE	1.57 U	37	0.183 U
4,4'-DDT	1.57 U	280	7.7
ALDRIN	0.756 U	0.087 U	0.088 U
ALPHA-BHC	0.756 U	0.087 U	0.088 U
ALPHA-CHLORDANE	0.756 U	10	1.4 J
AROCLOR-1016	10.5 U	1.2 UJ	1.22 UJ
AROCLOR-1221	10.5 U	1.2 U	1.22 U
AROCLOR-1232	10.5 U	1.2 U	1.22 U
AROCLOR-1242	10.5 U	1.2 U	1.22 U
AROCLOR-1248	42 J	1.2 U	1.22 U
AROCLOR-1254	10.5 U	1.2 U	1.22 U
AROCLOR-1260	10.5 U	1.2 UJ	1.22 UJ
TOTAL AROCLOR	42	0 U	0 U
BETA-BHC	0.756 U	0.087 U	0.088 U
DELTA-BHC	0.756 U	0.087 U	0.088 U
DIELDRIN	1.57 U	1.2 R	0.183 U
ENDOSULFAN I	0.756 U	0.087 U	0.088 U
ENDOSULFAN II	1.57 U	0.18 U	0.183 U
ENDOSULFAN SULFATE	1.57 U	0.18 U	0.183 U
ENDRIN	1.57 U	0.18 U	0.183 U
ENDRIN ALDEHYDE	1.57 U	0.18 U	0.183 U
ENDRIN KETONE	1.57 U	0.18 U	0.183 U
GAMMA-BHC (LINDANE)	0.756 U	0.087 U	0.088 U
GAMMA-CHLORDANE	0.756 U	10	1.6 J
HEPTACHLOR	0.756 U	0.087 U	0.088 U
HEPTACHLOR EPOXIDE	0.756 U	0.087 U	0.088 U
METHOXYCHLOR	7.56 U	0.869 U	0.883 U
TOXAPHENE	19.8 U	2.27 U	2.31 U
Petroleum Hydrocarbons (mg/kg)			
DIESEL RANGE ORGANICS	--	37	1300 J
OIL RANGE ORGANICS (C24-C40)	--	66.8 U	360 J

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB036	09SB036	09SB037	09SB037	09SB037	09SB037	09SB038	09SB039	09SB039	09SB039	09SB039
SAMPLE ID	09SB360204	09SS360002	09SB370204	09SB370406	09SB370810	09SS370002	09SS380002	09SB390204	09SB390406	09SB390608	09SS390002
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	0	2	4	8	0	0	2	4	6	0
BOTTOM DEPTH	4	2	4	6	10	2	2	4	6	8	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
1,1,1-TRICHLOROETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
1,1,2,2-TETRACHLOROETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
1,1,2-TRICHLOROETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
1,1-DICHLOROETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 J	1.18 U	1.32 U	1.19 U	1.05 U
1,1-DICHLOROETHENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
1,2,3-TRICHLOROPROPANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
1,2-DIBROMO-3-CHLOROPROPANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
1,2-DIBROMOETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
1,2-DICHLOROETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
1,2-DICHLOROPROPANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
2-BUTANONE	2 J	1.07 U	3 J	4 J	5 J	8 J	54 J	1.18 U	2 J	1.19 U	1.05 U
2-HEXANONE	4 J	1.07 U	2 J	2 J	1.42 U	1.18 U	1.36 U	1.18 U	3 J	1.19 U	1.05 J
3-CHLOROPROPENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
4-METHYL-2-PENTANONE	2 J	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	4 J	1.18 U	2 J	1.19 U	1.05 U
ACETONE	15 BU	1.07 U	14 BU	20 BU	56 BJ	45 BJ	320 J	1.18 U	14 BU	7 BU	5 BU
ACROLEIN	1.27 UR	1.07 UR	1.05 R	2 R	1.42 UR	1.18 UR	1.36 UR	1.18 UR	1.32 UR	1.19 UR	1.05 UR
ACRYLONITRILE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
BENZENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
BROMODICHLOROMETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
BROMOFORM	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
BROMOMETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
CARBON DISULFIDE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	5 J	1.18 U	1.32 U	1.19 U	1.05 U
CARBON TETRACHLORIDE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
CHLOROBENZENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
CHLORODIBROMOMETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
CHLOROETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
CHLOROFORM	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
CHLOROMETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
CHLOROPRENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
CIS-1,2-DICHLOROETHENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
CIS-1,3-DICHLOROPROPENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
DIBROMOMETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
DICHLORODIFLUOROMETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
ETHYL METHACRYLATE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
ETHYLBENZENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
METHACRYLONITRILE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
METHYL IODIDE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
METHYL METHACRYLATE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
METHYL TERT-BUTYL ETHER	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
METHYLENE CHLORIDE	1.27 UJ	1.07 UJ	1.05 UJ	1.12 UJ	1.42 UJ	2 J	1.36 UJ	3 J	1.32 UJ	1.19 UJ	1.05 UJ
STYRENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
TETRACHLOROETHENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
TOLUENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	4 J	1.18 U	1.32 U	1.19 U	1.05 U
TOTAL XYLENES	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	6 J	1.18 U	1.32 U	1.19 U	1.05 U
TRANS-1,2-DICHLOROETHENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
TRANS-1,3-DICHLOROPROPENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
TRANS-1,4-DICHLORO-2-BUTENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 UJ	1.18 U	1.32 U	1.19 U	1.05 U
TRICHLOROETHENE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
TRICHLOROFLUOROMETHANE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
VINYL ACETATE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
VINYL CHLORIDE	1.27 U	1.07 U	1.05 U	1.12 U	1.42 U	1.18 U	1.36 U	1.18 U	1.32 U	1.19 U	1.05 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											
BENZO(B)FLUORANTHENE											
BENZO(G,H,I)PERYLENE											
BENZO(K)FLUORANTHENE											
CHRYSENE											
DIBENZO(A,H)ANTHRACENE											

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB036	09SB036	09SB037	09SB037	09SB037	09SB037	09SB038	09SB039	09SB039	09SB039	09SB039
SAMPLE ID	09SB360204	09SS360002	09SB370204	09SB370406	09SB370810	09SS370002	09SS380002	09SB390204	09SB390406	09SB390608	09SS390002
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	0	2	4	8	0	0	2	4	6	0
BOTTOM DEPTH	4	2	4	6	10	2	2	4	6	8	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005
FLUORANTHENE											
FLUORENE											
INDENO(1,2,3-CD)PYRENE											
NAPHTHALENE											
PHENANTHRENE											
PYRENE											
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1.69 U	1.59 U	1.7 UJ	1.75 UJ	1.88 UJ	1.72 U	3 J	1.65 UJ	1.61 U	1.67 U	1.62 UJ
4,4'-DDE	1.69 U	1.59 U	1.7 UJ	1.75 UJ	1.88 UJ	1.72 UJ	1.8 U	1.65 UJ	1.61 U	1.67 U	1.62 UJ
4,4'-DDT	1.69 U	4.5 J	3.6	1.75 U	1.88 U	1.72 U	1.8 U	1.65 UJ	1.61 U	1.67 U	1.62 UJ
ALDRIN	0.812 U	0.765 U	0.818 U	0.841 U	0.905 U	0.83 U	0.866 U	0.796 UJ	0.773 U	0.804 U	0.779 UJ
ALPHA-BHC	0.812 U	0.765 UJ	1.5 J	0.841 UJ	0.905 UJ	0.83 UJ	0.866 UJ	0.796 UJ	0.773 U	0.804 U	0.779 UJ
ALPHA-CHLORDANE	0.812 U	0.765 U	0.818 U	0.841 U	0.905 U	0.83 U	0.866 U	0.796 U	0.773 U	0.804 U	0.779 U
AROCLOR-1016	11.2 U	10.6 U	11.3 UJ	11.6 UJ	12.5 UJ	11.5 UJ	12 U	11 U	10.7 U	11.1 U	10.8 U
AROCLOR-1221	11.2 U	10.6 U	11.3 U	11.6 U	12.5 U	11.5 U	12 U	11 U	10.7 U	11.1 U	10.8 U
AROCLOR-1232	11.2 U	10.6 U	11.3 U	11.6 U	12.5 U	11.5 U	12 U	11 U	10.7 U	11.1 U	10.8 U
AROCLOR-1242	11.2 U	10.6 U	11.3 U	11.6 U	12.5 U	11.5 U	12 U	11 U	10.7 U	11.1 U	10.8 U
AROCLOR-1248	11.2 U	10.6 U	11.3 U	11.6 U	12.5 U	11.5 U	12 U	11 U	10.7 U	11.1 U	10.8 U
AROCLOR-1254	11.2 U	10.6 U	11.3 U	11.6 U	12.5 U	11.5 U	12 U	11 U	10.7 U	11.1 U	10.8 U
AROCLOR-1260	11.2 U	10.6 U	41 J	11.6 UJ	12.5 UJ	11.5 UJ	12 UJ	11 U	10.7 U	11.1 U	10.8 U
TOTAL AROCLOR	0 U	0 U	41	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	0.812 U	0.765 U	0.818 UJ	0.841 UJ	0.905 UJ	0.83 U	0.866 U	0.796 UJ	0.773 U	0.804 U	0.779 UJ
DELTA-BHC	0.812 U	0.765 UJ	0.818 UJ	0.841 UJ	0.905 UJ	0.83 UJ	0.866 UJ	0.796 UJ	0.773 U	0.804 U	0.779 UJ
DIELDRIN	1.69 U	1.59 U	1.7 U	1.75 U	1.88 U	1.72 U	1.8 U	1.65 UJ	1.61 U	1.67 U	1.62 UJ
ENDOSULFAN I	0.812 U	0.765 U	0.818 U	0.841 U	0.905 U	0.83 U	0.866 U	0.796 UJ	0.773 U	0.804 U	0.779 UJ
ENDOSULFAN II	1.69 U	1.59 U	1.7 U	1.75 U	1.88 U	1.72 U	1.8 U	1.65 UJ	1.61 U	1.67 U	1.62 UJ
ENDOSULFAN SULFATE	1.69 U	1.59 U	1.7 UJ	1.75 UJ	1.88 UJ	1.72 U	1.8 U	1.65 UJ	1.61 U	1.67 U	1.62 UJ
ENDRIN	1.69 U	1.59 U	1.7 U	1.75 U	1.88 U	1.72 U	1.8 U	1.65 UJ	1.61 U	1.67 U	1.62 UJ
ENDRIN ALDEHYDE	1.69 U	1.59 U	1.7 U	1.75 U	1.88 U	1.72 U	1.8 U	1.65 U	1.61 U	1.67 U	1.62 U
ENDRIN KETONE	1.69 U	1.59 U	1.7 UJ	1.75 UJ	1.88 UJ	1.72 U	1.8 U	1.65 UJ	1.61 U	1.67 U	1.62 UJ
GAMMA-BHC (LINDANE)	0.812 U	0.765 UJ	0.818 UJ	0.841 UJ	0.905 U	0.83 U	0.866 UJ	0.796 UJ	0.773 U	0.804 U	0.779 UJ
GAMMA-CHLORDANE	0.812 U	0.765 U	0.818 U	0.841 U	0.905 U	0.83 U	0.866 U	0.796 UJ	0.773 U	0.804 U	0.779 UJ
HEPTACHLOR	0.812 U	0.765 U	0.818 U	0.841 U	0.905 U	0.83 U	0.866 U	0.796 UJ	0.773 U	0.804 U	0.779 UJ
HEPTACHLOR EPOXIDE	0.812 U	0.765 U	0.818 U	0.841 U	0.905 U	0.83 U	0.866 U	0.796 UJ	0.773 U	0.804 U	0.779 UJ
METHOXYCHLOR	8.12 U	7.65 U	8.18 UJ	8.41 UJ	9.05 UJ	8.3 UJ	8.66 U	7.96 UJ	7.73 U	8.04 U	7.79 UJ
TOXAPHENE	106 U	100 U	107 U	110 U	118 U	109 U	113 U	104 UJ	101 U	105 U	102 UJ
Inorganics (mg/kg)											
LEAD											
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD											
1,2,3,4,6,7,8,9-OCDF											
1,2,3,4,6,7,8-HPCDD											
1,2,3,4,6,7,8-HPCDF											
1,2,3,4,7,8,9-HPCDF											
1,2,3,4,7,8-HXCDD											
1,2,3,4,7,8-HXCDF											
1,2,3,6,7,8-HXCDD											
1,2,3,6,7,8-HXCDF											
1,2,3,7,8,9-HXCDD											
1,2,3,7,8,9-HXCDF											
1,2,3,7,8-PECDD											
1,2,3,7,8-PECDF											
2,3,4,6,7,8-HXCDF											
2,3,4,7,8-PECDF											
2,3,7,8-TCDD											
2,3,7,8-TCDF											
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	3.12 U	29	260	120	39	93	810	3.06 U	2.97 U	3.09 U	3 U
GASOLINE RANGE ORGANICS	3.12 U	2.94 U	3.14 U	14	3.48 U	3.19 U	10.6	3.06 U	2.97 U	3.09 U	3 U
OIL & GREASE - HEM	250 U	760	1700	430 J	279 U	3600	8500	245 U	238 U	248 U	240 U
OIL RANGE ORGANICS (C24-C40)	12.5 U	110	45	36	61	230	460	12.2 U	11.9 U	12.4 U	12 U

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB040	09SB041	09SB041	09SB041	09SB042	09SB042	09SB042	09SB042	09SB043	09SB043	09SB043
SAMPLE ID	09SS400002	09SB410204	09SB410405	09SS410002	09SB420204	09SB420406	09SB420607	09SS420002	09SB430204	09SB430406	09SB431618
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	0	2	4	6	0	2	4	16
BOTTOM DEPTH	2	4	5	2	4	6	7	2	4	6	18
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	9/28/2005	9/28/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,1,1-TRICHLOROETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,1,2,2-TETRACHLOROETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,1,2-TRICHLOROETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,1-DICHLOROETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,1-DICHLOROETHENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,2,3-TRICHLOROPROPANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,2-DIBROMO-3-CHLOROPROPANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,2-DIBROMOETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,2-DICHLOROETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
1,2-DICHLOROPROPANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
2-BUTANONE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
2-HEXANONE	1.07 U	1.02 U	1.26 J	0.972 U	1 J	0.914 U	0.952 U	1.05 U	1.02 J	1.07 U	1.02 J
3-CHLOROPROPENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
4-METHYL-2-PENTANONE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
ACETONE	13 BU	5 BU	8 BU	0.972 U	4 BU	3 BU	2 BU	9 BU	3 BU	5 BU	4 BU
ACROLEIN	1.07 UR	1.02 UR	1.26 UR	0.972 UR	0.856 UR	0.914 UR	0.952 UR	1.05 UR	1.02 UR	1.07 UR	1.02 UR
ACRYLONITRILE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
BENZENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
BROMODICHLOROMETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
BROMOFORM	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
BROMOMETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CARBON DISULFIDE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CARBON TETRACHLORIDE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CHLOROBENZENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CHLORODIBROMOMETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CHLOROETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CHLOROFORM	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CHLOROMETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CHLOROPRENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CIS-1,2-DICHLOROETHENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
CIS-1,3-DICHLOROPROPENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
DIBROMOMETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
DICHLORODIFLUOROMETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
ETHYL METHACRYLATE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
ETHYLBENZENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
METHACRYLONITRILE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
METHYL IODIDE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
METHYL METHACRYLATE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
METHYL TERT-BUTYL ETHER	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
METHYLENE CHLORIDE	3 J	1.02 UJ	1.26 UJ	1 J	0.856 UJ	0.914 UJ	0.952 UJ	1.05 UJ	1.02 UJ	1.07 UJ	1.02 UJ
STYRENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
TETRACHLOROETHENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
TOLUENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
TOTAL XYLENES	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
TRANS-1,2-DICHLOROETHENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
TRANS-1,3-DICHLOROPROPENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
TRANS-1,4-DICHLORO-2-BUTENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
TRICHLOROETHENE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
TRICHLOROFLUOROMETHANE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
VINYL ACETATE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
VINYL CHLORIDE	1.07 U	1.02 U	1.26 U	0.972 U	0.856 U	0.914 U	0.952 U	1.05 U	1.02 U	1.07 U	1.02 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											
BENZO(B)FLUORANTHENE											
BENZO(G,H,I)PERYLENE											
BENZO(K)FLUORANTHENE											
CHRYSENE											
DIBENZO(A,H)ANTHRACENE											

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB040	09SB041	09SB041	09SB041	09SB042	09SB042	09SB042	09SB042	09SB043	09SB043	09SB043
SAMPLE ID	09SS400002	09SB410204	09SB410405	09SS410002	09SB420204	09SB420406	09SB420607	09SS420002	09SB430204	09SB430406	09SB431618
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	0	2	4	6	0	2	4	16
BOTTOM DEPTH	2	4	5	2	4	6	7	2	4	6	18
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	9/28/2005	9/28/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005
FLUORANTHENE											
FLUORENE											
INDENO(1,2,3-CD)PYRENE											
NAPHTHALENE											
PHENANTHRENE											
PYRENE											
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1.68 UJ	1.57 U	1.63 U	1.6 UJ	1.52 UJ	1.55 UJ	1.62 UJ	1.67 U	1.6 UJ	1.56 UJ	1.63 UJ
4,4'-DDE	1.68 UJ	1.57 U	1.63 U	1.6 UJ	1.52 UJ	1.55 UJ	1.62 UJ	13 J	1.6 UJ	1.56 UJ	1.63 UJ
4,4'-DDT	1.68 UJ	1.57 U	1.63 U	1.9 J	1.52 U	1.55 U	1.62 U	13	1.6 U	1.56 U	1.63 UJ
ALDRIN	0.808 UJ	0.758 U	0.786 U	0.77 UJ	0.734 U	0.748 U	0.779 U	0.803 U	0.768 U	0.753 U	0.785 U
ALPHA-BHC	0.808 UJ	0.758 U	0.786 U	0.77 UJ	0.734 UJ	0.748 UJ	0.779 UJ	0.803 UJ	0.768 UJ	0.753 UJ	0.785 UJ
ALPHA-CHLORDANE	0.808 U	0.758 U	0.786 U	0.77 U	0.734 U	0.748 U	0.779 U	0.803 U	0.768 U	0.753 U	0.785 U
AROCLOR-1016	11.2 U	10.5 U	10.9 U	10.7 U	10.2 UJ	10.4 UJ	10.8 UJ	11.1 UJ	10.6 UJ	10.4 UJ	10.9 UJ
AROCLOR-1221	11.2 U	10.5 U	10.9 U	10.7 U	10.2 U	10.4 U	10.8 U	11.1 U	10.6 U	10.4 U	10.9 U
AROCLOR-1232	11.2 U	10.5 U	10.9 U	10.7 U	10.2 U	10.4 U	10.8 U	11.1 U	10.6 U	10.4 U	10.9 U
AROCLOR-1242	11.2 U	10.5 U	10.9 U	10.7 U	10.2 U	10.4 U	10.8 U	11.1 U	10.6 U	10.4 U	10.9 U
AROCLOR-1248	11.2 U	10.5 U	10.9 U	10.7 U	10.2 U	10.4 U	10.8 U	11.1 U	10.6 U	10.4 U	10.9 U
AROCLOR-1254	11.2 U	10.5 U	10.9 U	10.7 U	10.2 U	10.4 U	10.8 U	11.1 U	10.6 U	10.4 U	10.9 U
AROCLOR-1260	11.2 U	10.5 U	10.9 U	10.7 U	10.2 UJ	10.4 UJ	10.8 UJ	11.1 UJ	10.6 UJ	10.4 UJ	10.9 UJ
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	0.808 UJ	0.758 U	0.786 U	0.77 UJ	0.734 UJ	0.748 UJ	0.779 UJ	0.803 U	0.768 UJ	0.753 UJ	0.785 UJ
DELTA-BHC	0.808 UJ	0.758 U	0.786 U	0.77 UJ	0.734 UJ	0.748 UJ	0.779 UJ	0.803 UJ	0.768 UJ	0.753 UJ	0.785 UJ
DIELDRIN	1.68 UJ	1.57 U	1.63 U	1.6 UJ	1.52 U	1.55 U	1.62 U	1.67 U	1.6 U	1.56 U	1.63 U
ENDOSULFAN I	0.808 UJ	0.758 U	0.786 U	0.77 UJ	0.734 U	0.748 U	0.779 U	0.803 U	0.768 U	0.753 U	0.785 U
ENDOSULFAN II	1.68 UJ	1.57 U	1.63 U	1.6 UJ	1.52 U	1.55 U	1.62 U	1.67 U	1.6 U	1.56 U	1.63 U
ENDOSULFAN SULFATE	1.68 UJ	1.57 U	1.63 U	1.6 UJ	1.52 UJ	1.55 UJ	1.62 UJ	1.67 U	1.6 UJ	1.56 UJ	1.63 UJ
ENDRIN	1.68 UJ	1.57 U	1.63 U	1.6 UJ	1.52 U	1.55 U	1.62 U	1.67 U	1.6 U	1.56 U	1.63 U
ENDRIN ALDEHYDE	1.68 U	1.57 U	1.63 U	1.6 U	1.52 U	1.55 U	1.62 U	1.67 U	1.6 U	1.56 U	1.63 U
ENDRIN KETONE	1.68 UJ	1.57 U	1.63 U	1.6 UJ	1.52 UJ	1.55 UJ	1.62 UJ	1.67 U	1.6 UJ	1.56 UJ	1.63 UJ
GAMMA-BHC (LINDANE)	0.808 UJ	0.758 U	0.786 U	0.77 UJ	0.734 UJ	0.748 UJ	0.779 UJ	0.803 U	0.768 UJ	0.753 UJ	0.785 UJ
GAMMA-CHLORDANE	0.808 UJ	0.758 U	0.786 U	0.77 UJ	0.734 U	0.748 U	0.779 U	0.803 U	0.768 U	0.753 U	0.785 U
HEPTACHLOR	0.808 UJ	0.758 U	0.786 U	0.77 UJ	0.734 U	0.748 U	0.779 U	0.803 U	0.768 U	0.753 U	0.785 U
HEPTACHLOR EPOXIDE	0.808 UJ	0.758 U	0.786 U	0.77 UJ	0.734 U	0.748 U	0.779 U	0.803 U	0.768 U	0.753 U	0.785 U
METHOXYCHLOR	8.08 UJ	7.58 U	7.86 U	7.7 UJ	7.34 UJ	7.48 UJ	7.79 UJ	8.03 UJ	7.68 UJ	7.53 UJ	7.85 UJ
TOXAPHENE	106 UJ	99.1 U	103 U	101 UJ	95.9 U	97.8 U	102 U	105 U	100 U	98.5 U	103 U
Inorganics (mg/kg)											
LEAD											
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD											
1,2,3,4,6,7,8,9-OCDF											
1,2,3,4,6,7,8-HPCDD											
1,2,3,4,6,7,8-HPCDF											
1,2,3,4,7,8,9-HPCDF											
1,2,3,4,7,8-HXCDD											
1,2,3,4,7,8-HXCDF											
1,2,3,6,7,8-HXCDD											
1,2,3,6,7,8-HXCDF											
1,2,3,7,8,9-HXCDD											
1,2,3,7,8,9-HXCDF											
1,2,3,7,8-PECDD											
1,2,3,7,8-PECDF											
2,3,4,6,7,8-HXCDF											
2,3,4,7,8-PECDF											
2,3,7,8-TCDD											
2,3,7,8-TCDF											
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	5800 J	2.91 U	3.02 U	25	2.82 U	2.88 U	3 U	10	2.96 U	2.9 U	8.4 J
GASOLINE RANGE ORGANICS	49.7	2.91 U	3.02 U	2.96 U	2.82 U	2.88 U	3 U	3.09 U	2.96 U	2.9 U	3.02 U
OIL & GREASE - HEM	9000	233 U	990	237 U	226 U	230 U	240 U	247 U	236 U	232 U	242 U
OIL RANGE ORGANICS (C24-C40)	570 J	11.7 U	12.1 U	69	11.3 U	11.5 U	12 U	36	11.8 U	11.6 U	36 J

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB043	09SB044	09SB044	09SB044	09SB045	09SB045	09SB045	09SB045	09SB046	09SB046	09SB046
SAMPLE ID	09SS430002	09SB440204	09SB440405	09SS440002	09SB450204	09SB450406	09SB451416	09SS450002	09SB460204	09SB460406	09SB460607
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	0	2	4	14	0	2	4	6
BOTTOM DEPTH	2	4	5	2	4	6	16	2	4	6	7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,1,1-TRICHLOROETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,1,2,2-TETRACHLOROETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,1,2-TRICHLOROETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,1-DICHLOROETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,1-DICHLOROETHENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,2,3-TRICHLOROPROPANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,2-DIBROMO-3-CHLOROPROPANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,2-DIBROMOETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,2-DICHLOROETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
1,2-DICHLOROPROPANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
2-BUTANONE	0.905 U	1.14 U	5 J	1.09 U	0.96 U	3 J	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
2-HEXANONE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
3-CHLOROPROPENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
4-METHYL-2-PENTANONE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
ACETONE	0.905 U	16 BU	35 BU	1.09 U	2 BU	25 BU	6 BU	0.973 U	6 BU	6 BU	6 BU
ACROLEIN	0.905 UR	1.14 UR	3 R	1.09 UR	0.96 UR	1.01 UR	0.921 UR	0.973 UR	0.98 UR	0.941 UR	1.02 UR
ACRYLONITRILE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
BENZENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
BROMODICHLOROMETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
BROMOFORM	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
BROMOMETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CARBON DISULFIDE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CARBON TETRACHLORIDE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CHLOROBENZENE	0.905 U	1.14 U	4	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CHLORODIBROMOMETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CHLOROETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CHLOROFORM	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CHLOROMETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CHLOROPRENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CIS-1,2-DICHLOROETHENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
CIS-1,3-DICHLOROPROPENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
DIBROMOMETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
DICHLORODIFLUOROMETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
ETHYL METHACRYLATE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
ETHYLBENZENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
METHACRYLONITRILE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
METHYL IODIDE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
METHYL METHACRYLATE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
METHYL TERT-BUTYL ETHER	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
METHYLENE CHLORIDE	0.905 UJ	1.14 UJ	1.04 UJ	1.09 UJ	0.96 UJ	1.01 J	0.921 UJ	0.973 UJ	1 J	2 J	1.02 UJ
STYRENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
TETRACHLOROETHENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
TOLUENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
TOTAL XYLENES	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
TRANS-1,2-DICHLOROETHENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
TRANS-1,3-DICHLOROPROPENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
TRANS-1,4-DICHLORO-2-BUTENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
TRICHLOROETHENE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
TRICHLOROFLUOROMETHANE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
VINYL ACETATE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
VINYL CHLORIDE	0.905 U	1.14 U	1.04 U	1.09 U	0.96 U	1.01 U	0.921 U	0.973 U	0.98 U	0.941 U	1.02 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											
BENZO(B)FLUORANTHENE											
BENZO(G,H,I)PERYLENE											
BENZO(K)FLUORANTHENE											
CHRYSENE											
DIBENZO(A,H)ANTHRACENE											

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB043	09SB044	09SB044	09SB044	09SB045	09SB045	09SB045	09SB045	09SB046	09SB046	09SB046
SAMPLE ID	09SS430002	09SB440204	09SB440405	09SS440002	09SB450204	09SB450406	09SB451416	09SS450002	09SB460204	09SB460406	09SB460607
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	0	2	4	14	0	2	4	6
BOTTOM DEPTH	2	4	5	2	4	6	16	2	4	6	7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005	10/3/2005
FLUORANTHENE											
FLUORENE											
INDENO(1,2,3-CD)PYRENE											
NAPHTHALENE											
PHENANTHRENE											
PYRENE											
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1.56 U	1.64 U	1.68 U	1500 J	1.61 U	1.64 U	1.59 U	1.6 UJ	6.8	400 U	1.59 U
4,4'-DDE	60 J	1.64 UJ	1.68 UJ	2200	1.61 UJ	1.64 UJ	1.59 UJ	1.6 UJ	9.2 J	550 J	1.59 UJ
4,4'-DDT	66	1.64 U	1.68 U	570	1.61 U	1.64 U	1.59 U	1.6 U	68	10000	7.2 J
ALDRIN	0.753 U	0.789 U	0.81 U	0.806 U	0.774 U	0.792 U	0.767 U	0.771 UJ	0.777 U	193 U	0.767 U
ALPHA-BHC	0.753 UJ	0.789 UJ	0.81 UJ	0.806 U	0.774 UJ	0.792 UJ	0.767 UJ	0.771 UJ	0.777 UJ	193 U	0.767 U
ALPHA-CHLORDANE	0.753 U	0.789 U	0.81 U	900	0.774 U	0.792 U	0.767 U	0.771 U	0.777 U	193 U	0.767 U
AROCLOR-1016	10.4 UJ	10.9 UJ	11.2 UJ	11.2 U	10.7 UJ	11 UJ	10.6 UJ	10.7 U	10.8 UJ	2666 UJ	10.6 UJ
AROCLOR-1221	10.4 U	10.9 U	11.2 U	11.2 U	10.7 U	11 U	10.6 U	10.7 U	10.8 U	2666 U	10.6 U
AROCLOR-1232	10.4 U	10.9 U	11.2 U	11.2 U	10.7 U	11 U	10.6 U	10.7 U	10.8 U	2666 U	10.6 U
AROCLOR-1242	10.4 U	10.9 U	11.2 U	11.2 U	10.7 U	11 U	10.6 U	10.7 U	10.8 U	2666 U	10.6 U
AROCLOR-1248	10.4 U	10.9 U	11.2 U	11.2 U	10.7 U	11 U	10.6 U	10.7 U	10.8 U	2666 U	10.6 U
AROCLOR-1254	10.4 U	10.9 U	11.2 U	11.2 U	10.7 U	11 U	10.6 U	10.7 U	10.8 U	2666 U	10.6 U
AROCLOR-1260	10.4 UJ	10.9 UJ	11.2 UJ	11.2 U	10.7 UJ	11 UJ	10.6 UJ	10.7 U	10.8 UJ	2666 UJ	10.6 UJ
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	0.753 U	0.789 U	0.81 U	0.806 U	0.774 U	0.792 U	0.767 U	0.771 UJ	0.777 U	193 U	0.767 U
DELTA-BHC	0.753 UJ	0.789 UJ	0.81 UJ	0.806 U	0.774 UJ	0.792 UJ	0.767 UJ	0.771 UJ	0.777 UJ	193 UJ	0.767 UJ
DIELDRIN	1.56 U	1.64 U	1.68 U	1.67 U	1.61 U	1.64 U	1.59 U	1.6 UJ	12	400 U	1.59 U
ENDOSULFAN I	0.753 U	0.789 U	0.81 U	0.806 U	0.774 U	0.792 U	0.767 U	0.771 U	0.777 U	193 U	0.767 U
ENDOSULFAN II	1.56 U	1.64 U	1.68 U	1.67 U	1.61 U	1.64 U	1.59 U	1.6 U	1.61 U	400 U	1.59 U
ENDOSULFAN SULFATE	1.56 U	1.64 U	1.68 U	1.67 U	1.61 U	1.64 U	1.59 U	1.6 UJ	1.61 U	400 U	1.59 U
ENDRIN	1.56 U	1.64 U	1.68 U	1.67 U	1.61 U	1.64 U	1.59 U	1.6 U	1.61 U	400 U	1.59 U
ENDRIN ALDEHYDE	1.56 U	1.64 U	1.68 U	1.67 U	1.61 U	1.64 U	1.59 U	1.6 U	1.61 U	400 U	1.59 U
ENDRIN KETONE	1.56 U	1.64 U	1.68 U	1.67 U	1.61 U	1.64 U	1.59 U	1.6 UJ	1.61 U	400 U	1.59 U
GAMMA-BHC (LINDANE)	0.753 U	0.789 U	0.81 U	0.806 U	0.774 U	0.792 U	0.767 U	0.771 UJ	0.777 U	193 U	0.767 U
GAMMA-CHLORDANE	3.3	0.789 U	0.81 U	820	0.774 U	0.792 U	0.767 U	0.771 U	0.777 U	193 U	0.767 U
HEPTACHLOR	0.753 U	0.789 U	0.81 U	0.806 U	0.774 U	0.792 U	0.767 U	0.771 UJ	0.777 U	193 U	0.767 U
HEPTACHLOR EPOXIDE	1.7 J	0.789 U	0.81 U	66	0.774 U	0.792 U	0.767 U	0.771 U	0.777 U	193 U	0.767 U
METHOXYCHLOR	7.53 UJ	7.89 UJ	8.1 UJ	8.06 U	7.74 UJ	7.92 UJ	7.67 UJ	7.71 U	7.77 UJ	1925 UJ	7.67 UJ
TOXAPHENE	98.5 U	103 U	106 U	105 U	101 U	104 U	100 U	101 U	102 U	25178 U	100 U
Inorganics (mg/kg)											
LEAD											
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD											
1,2,3,4,6,7,8,9-OCDF											
1,2,3,4,6,7,8-HPCDD											
1,2,3,4,6,7,8-HPCDF											
1,2,3,4,7,8,9-HPCDF											
1,2,3,4,7,8-HXCDD											
1,2,3,4,7,8-HXCDF											
1,2,3,6,7,8-HXCDD											
1,2,3,6,7,8-HXCDF											
1,2,3,7,8,9-HXCDD											
1,2,3,7,8,9-HXCDF											
1,2,3,7,8-PECDD											
1,2,3,7,8-PECDF											
2,3,4,6,7,8-HXCDF											
2,3,4,7,8-PECDF											
2,3,7,8-TCDD											
2,3,7,8-TCDF											
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	35	3.03 U	3.12 UJ	120	2.98 U	3.05 U	2.95 U	2.97 U	2.99 U	6.6	2.95 U
GASOLINE RANGE ORGANICS	2.9 U	3.03 U	3.12 U	3.1 U	2.98 U	3.05 U	2.95 U	2.97 U	2.99 U	2.96 U	2.95 U
OIL & GREASE - HEM	680	243 U	249 U	2700	238 U	244 U	236 U	237 U	239 U	237 U	236 U
OIL RANGE ORGANICS (C24-C40)	78	12.1 U	12.5 UJ	720	11.9 U	12.2 U	11.8 U	11.9 U	11.9 U	11.8 U	11.8 U

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB046	09SB047	09SB047	09SB047	09SB047	09SB048	09SB048	09SB048	09SB048	09SB049	09SB049
SAMPLE ID	09SS460002	09SB470204	09SB470406	09SB470608	09SS470002	09SB480204	09SB480406	09SB480608	09SS480002	09SB490204	09SB490406
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	6	0	2	4	6	0	2	4
BOTTOM DEPTH	2	4	6	8	2	4	6	8	2	4	6
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/3/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,1,1-TRICHLOROETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,1,2,2-TETRACHLOROETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,1,2-TRICHLOROETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,1-DICHLOROETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,1-DICHLOROETHENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,2,3-TRICHLOROPROPANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,2-DIBROMO-3-CHLOROPROPANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,2-DIBROMOETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,2-DICHLOROETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
1,2-DICHLOROPROPANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
2-BUTANONE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	6 J	5 J	1.05 U	1.22 U	1 U	0.894 U
2-HEXANONE	1.04 U	1.11 J	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
3-CHLOROPROPENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
4-METHYL-2-PENTANONE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
ACETONE	2 BU	28 J	3 J	2 J	1.06 UR	64 J	45 J	1.05 U	1.22 UR	3 J	0.894 U
ACROLEIN	1.04 UR	1.11 UR	1.01 UR	1.04 UR	1.06 UR	1 UR	1.08 UR	1.05 UR	1.22 UR	1 UR	0.894 UR
ACRYLONITRILE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
BENZENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
BROMODICHLOROMETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
BROMOFORM	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
BROMOMETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CARBON DISULFIDE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CARBON TETRACHLORIDE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CHLOROBENZENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CHLORODIBROMOMETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CHLOROETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CHLOROFORM	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CHLOROMETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CHLOROPRENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CIS-1,2-DICHLOROETHENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
CIS-1,3-DICHLOROPROPENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
DIBROMOMETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
DICHLORODIFLUOROMETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
ETHYL METHACRYLATE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
ETHYLBENZENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
METHACRYLONITRILE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
METHYL IODIDE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
METHYL METHACRYLATE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
METHYL TERT-BUTYL ETHER	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
METHYLENE CHLORIDE	1.04 UJ	1.11 UJ	1.01 UJ	1.04 UJ	1.06 UJ	1 UJ	1.08 UJ	1.05 UJ	1.22 UJ	1 UJ	0.894 UJ
STYRENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
TETRACHLOROETHENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
TOLUENE	1.04 U	4 J	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
TOTAL XYLENES	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
TRANS-1,2-DICHLOROETHENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
TRANS-1,3-DICHLOROPROPENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
TRANS-1,4-DICHLORO-2-BUTENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
TRICHLOROETHENE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
TRICHLOROFLUOROMETHANE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
VINYL ACETATE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
VINYL CHLORIDE	1.04 U	1.11 U	1.01 U	1.04 U	1.06 U	1 U	1.08 U	1.05 U	1.22 U	1 U	0.894 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											
BENZO(B)FLUORANTHENE											
BENZO(G,H,I)PERYLENE											
BENZO(K)FLUORANTHENE											
CHRYSENE											
DIBENZO(A,H)ANTHRACENE											

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB046	09SB047	09SB047	09SB047	09SB047	09SB048	09SB048	09SB048	09SB048	09SB049	09SB049
SAMPLE ID	09SS460002	09SB470204	09SB470406	09SB470608	09SS470002	09SB480204	09SB480406	09SB480608	09SS480002	09SB490204	09SB490406
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	6	0	2	4	6	0	2	4
BOTTOM DEPTH	2	4	6	8	2	4	6	8	2	4	6
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/3/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005
FLUORANTHENE											
FLUORENE											
INDENO(1,2,3-CD)PYRENE											
NAPHTHALENE											
PHENANTHRENE											
PYRENE											
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1034 U	1.56 UJ	1.55 J	1.62 UJ	120	1.65 UJ	45 J	1.64 U	250 J	1.68 U	1.57 U
4,4'-DDE	1900 J	1.56 UJ	1.55 U	1.62 U	300	1.65 U	150	1.64 U	560 J	1.68 U	1.57 U
4,4'-DDT	130000 J	1.56 U	1.9 J	1.62 U	320	1.65 U	440	1.64 J	830 J	1.9 J	1.57 U
ALDRIN	498 U	0.749 UJ	0.745 U	0.782 U	0.799 UJ	0.795 U	0.844 U	0.79 U	0.853 UJ	0.808 U	0.756 U
ALPHA-BHC	498 U	0.749 UJ	0.745 UJ	0.782 UJ	0.799 UJ	0.795 UJ	0.844 UJ	0.79 UJ	0.853 UJ	0.808 UJ	0.756 UJ
ALPHA-CHLORDANE	498 U	0.749 U	0.745 U	0.782 U	0.799 U	0.795 U	0.844 U	0.79 U	0.853 U	0.808 U	0.756 U
AROCLOR-1016	6893 U	10.4 U	10.3 U	10.8 U	11.1 U	11 U	11.7 U	10.9 U	11.8 U	11.2 U	10.5 U
AROCLOR-1221	6893 U	10.4 U	10.3 U	10.8 U	11.1 U	11 U	11.7 U	10.9 U	11.8 U	11.2 U	10.5 U
AROCLOR-1232	6893 U	10.4 U	10.3 U	10.8 U	11.1 U	11 U	11.7 U	10.9 U	11.8 U	11.2 U	10.5 U
AROCLOR-1242	6893 U	10.4 U	10.3 U	10.8 U	11.1 U	11 U	11.7 U	10.9 U	11.8 U	11.2 U	10.5 U
AROCLOR-1248	6893 U	10.4 U	10.3 U	10.8 U	11.1 U	11 U	11.7 U	10.9 U	11.8 U	11.2 U	10.5 U
AROCLOR-1254	6893 U	10.4 U	10.3 U	10.8 U	11.1 U	11 U	11.7 U	10.9 U	11.8 U	11.2 U	10.5 U
AROCLOR-1260	6893 U	10.4 UJ	54	61	11.1 U	11 U	11.7 U	44	11.8 U	26 J	980
TOTAL AROCLOR	0 U	0 U	54	61	0 U	0 U	0 U	44	0 U	26	980
BETA-BHC	498 U	0.749 U	0.745 U	0.782 U	0.799 U	0.795 U	0.844 U	0.79 U	0.853 U	0.808 U	0.756 U
DELTA-BHC	498 U	0.749 UJ	0.745 UJ	0.782 UJ	0.799 UJ	0.795 UJ	0.844 UJ	0.79 UJ	0.853 UJ	0.808 UJ	0.756 UJ
DIELDRIN	1034 U	1.56 U	1.55 U	1.62 U	6.6	1.65 U	1.75 U	1.64 U	1.77 U	1.68 U	1.57 U
ENDOSULFAN I	498 U	0.749 U	0.745 U	0.782 U	0.799 U	0.795 U	0.844 U	0.79 U	0.853 U	0.808 U	0.756 U
ENDOSULFAN II	1034 U	1.56 U	1.55 U	1.62 U	1.66 U	1.65 U	1.75 U	1.64 U	1.77 U	1.68 U	1.57 U
ENDOSULFAN SULFATE	1034 U	1.56 UJ	1.55 UJ	1.62 UJ	1.66 UJ	1.65 UJ	1.75 UJ	1.64 UJ	1.77 UJ	1.68 UJ	1.57 UJ
ENDRIN	1034 U	1.56 U	1.55 U	1.62 U	1.66 U	1.65 U	1.75 U	1.64 U	1.77 U	1.68 U	1.57 U
ENDRIN ALDEHYDE	1034 U	1.56 U	1.55 U	1.62 U	1.66 U	1.65 U	1.75 U	1.64 U	1.77 U	1.68 U	1.57 U
ENDRIN KETONE	1034 U	1.56 UJ	1.55 U	1.62 U	1.66 UJ	1.65 U	1.75 U	1.64 U	1.77 UJ	1.68 U	1.57 U
GAMMA-BHC (LINDANE)	498 U	0.749 UJ	0.745 UJ	0.782 UJ	0.799 UJ	0.795 UJ	0.844 UJ	0.79 UJ	0.853 UJ	0.808 UJ	0.756 UJ
GAMMA-CHLORDANE	498 U	0.749 U	0.745 U	0.782 U	0.799 U	0.795 U	0.844 U	0.79 U	0.853 U	0.808 U	0.756 U
HEPTACHLOR	498 U	0.749 UJ	0.745 U	0.782 U	0.799 UJ	0.795 U	0.844 U	0.79 U	0.853 UJ	0.808 U	0.756 U
HEPTACHLOR EPOXIDE	498 U	0.749 U	0.745 U	0.782 U	0.799 U	0.795 U	0.844 U	0.79 U	0.853 U	0.808 U	0.756 U
METHOXYCHLOR	4979 U	7.49 U	7.45 U	7.82 U	7.99 U	7.95 U	8.44 U	7.9 U	8.53 U	8.08 U	7.56 U
TOXAPHENE	65100 U	97.9 U	97.5 U	102 U	104 U	104 U	110 U	103 U	112 U	106 U	98.8 U
Inorganics (mg/kg)											
LEAD											
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD											
1,2,3,4,6,7,8,9-OCDF											
1,2,3,4,6,7,8-HPCDD											
1,2,3,4,6,7,8-HPCDF											
1,2,3,4,7,8,9-HPCDF											
1,2,3,4,7,8-HXCDD											
1,2,3,4,7,8-HXCDF											
1,2,3,6,7,8-HXCDD											
1,2,3,6,7,8-HXCDF											
1,2,3,7,8,9-HXCDD											
1,2,3,7,8,9-HXCDF											
1,2,3,7,8-PECDD											
1,2,3,7,8-PECDF											
2,3,4,6,7,8-HXCDF											
2,3,4,7,8-PECDF											
2,3,7,8-TCDD											
2,3,7,8-TCDF											
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	58	2.88 U	2.87 U	3.01 U	3.07 U	6.2	49	21	180	3.11 U	2.91 U
GASOLINE RANGE ORGANICS	3.06 U	2.88 U	2.87 U	3.01 U	3.07 U	3.06 U	3.25 U	3.04 U	3.28 U	3.11 U	2.91 U
OIL & GREASE - HEM	440 J	230 U	229 U	241 U	246 U	244 U	3600	243 U	3200	249 U	233 U
OIL RANGE ORGANICS (C24-C40)	81	11.5 U	11.5 U	12 U	12.3 U	12.2 U	180	56	730	12.4 U	11.6 U

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB049	09SB049	09SB049A	09SB049A	09SB049A	09SB049A	09SB050	09SB050	09SB050	09SB050	09SB051
SAMPLE ID	09SB490607	09SS490002	09SB49A0204	09SB49A0406	09SB49A1415	09SS49A0002	09SB500204	09SB500406	09SB500608	09SS500002	09SB510204
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	6	0	2	4	14	0	2	4	6	0	2
BOTTOM DEPTH	7	2	4	6	15	2	4	6	8	2	4
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,1,1-TRICHLOROETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,1,2,2-TETRACHLOROETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,1,2-TRICHLOROETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,1-DICHLOROETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,1-DICHLOROETHENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,2,3-TRICHLOROPROPANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,2-DIBROMO-3-CHLOROPROPANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,2-DIBROMOETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,2-DICHLOROETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
1,2-DICHLOROPROPANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
2-BUTANONE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
2-HEXANONE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
3-CHLOROPROPENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
4-METHYL-2-PENTANONE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
ACETONE	2 J	0.976 U	1 J	0.931 U	18 J	1.05 UR	11 J	0.955 U	0.917 U	0.866 U	1.08 U
ACROLEIN	1.08 UR	0.976 UR	0.944 UR	0.931 UR	1.22 UR	1.05 UR	1.04 UR	0.955 UR	0.917 UR	0.866 UR	1.08 UR
ACRYLONITRILE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
BENZENE	1.08 U	0.976 U	0.944 UJ	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
BROMODICHLOROMETHANE	1.08 U	0.976 U	0.944 UJ	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
BROMOFORM	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
BROMOMETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CARBON DISULFIDE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CARBON TETRACHLORIDE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CHLOROBENZENE	1.08 U	0.976 U	0.944 UJ	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CHLORODIBROMOMETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CHLOROETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CHLOROFORM	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CHLOROMETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CHLOROPRENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CIS-1,2-DICHLOROETHENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
CIS-1,3-DICHLOROPROPENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
DIBROMOMETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
DICHLORODIFLUOROMETHANE	1.08 U	0.976 UJ	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 UJ	1.08 U
ETHYL METHACRYLATE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
ETHYLBENZENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
METHACRYLONITRILE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
METHYL IODIDE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
METHYL METHACRYLATE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
METHYL TERT-BUTYL ETHER	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
METHYLENE CHLORIDE	1.08 UJ	1 J	0.944 UJ	0.931 UJ	1.22 UJ	1.05 UJ	1.04 UJ	0.955 UJ	0.917 UJ	2 J	1.08 UJ
STYRENE	1.08 U	0.976 U	0.944 UJ	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
TETRACHLOROETHENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
TOLUENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 UJ	0.917 U	0.866 U	1.08 U
TOTAL XYLENES	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
TRANS-1,2-DICHLOROETHENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
TRANS-1,3-DICHLOROPROPENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
TRANS-1,4-DICHLORO-2-BUTENE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
TRICHLOROETHENE	1.08 U	0.976 U	0.944 UJ	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
TRICHLOROFLUOROMETHANE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
VINYL ACETATE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
VINYL CHLORIDE	1.08 U	0.976 U	0.944 U	0.931 U	1.22 U	1.05 U	1.04 U	0.955 U	0.917 U	0.866 U	1.08 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											
BENZO(B)FLUORANTHENE											
BENZO(G,H,I)PERYLENE											
BENZO(K)FLUORANTHENE											
CHRYSENE											
DIBENZO(A,H)ANTHRACENE											

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB049	09SB049	09SB049A	09SB049A	09SB049A	09SB049A	09SB050	09SB050	09SB050	09SB050	09SB051
SAMPLE ID	09SB490607	09SS490002	09SB49A0204	09SB49A0406	09SB49A1415	09SS49A0002	09SB500204	09SB500406	09SB500608	09SS500002	09SB510204
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	6	0	2	4	14	0	2	4	6	0	2
BOTTOM DEPTH	7	2	4	6	15	2	4	6	8	2	4
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005
FLUORANTHENE											
FLUORENE											
INDENO(1,2,3-CD)PYRENE											
NAPHTHALENE											
PHENANTHRENE											
PYRENE											
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1.64 U	1.63 UJ	1.61 U	1.9 J	1.71 U	92 J	1.57 U	1.55 U	1.54 U	1.7 J	1.67 U
4,4'-DDE	1.64 U	28 J	3.1 J	20	13 J	900	1.57 U	1.55 U	1.54 U	44 J	1.67 U
4,4'-DDT	1.64 U	9.3	8.6 J	11	1.71 U	690	1.57 U	1.55 U	1.54 U	8.9	1.67 U
ALDRIN	0.789 U	0.787 UJ	0.773 U	0.751 U	0.824 U	0.778 UJ	0.758 U	0.745 U	0.739 U	0.743 UJ	0.803 U
ALPHA-BHC	0.789 UJ	0.787 UJ	0.773 UJ	0.751 UJ	0.824 U	0.778 UJ	0.758 U	0.745 U	0.739 U	0.743 UJ	0.803 U
ALPHA-CHLORDANE	0.789 U	0.787 U	0.773 U	0.751 U	0.824 U	0.778 U	0.758 U	0.745 U	0.739 U	0.743 U	0.803 U
AROCLOR-1016	10.9 U	10.9 U	10.7 U	10.4 U	11.4 U	10.8 U	10.5 U	10.3 U	10.2 U	10.3 U	11.1 U
AROCLOR-1221	10.9 U	10.9 U	10.7 U	10.4 U	11.4 U	10.8 U	10.5 U	10.3 U	10.2 U	10.3 U	11.1 U
AROCLOR-1232	10.9 U	10.9 U	10.7 U	10.4 U	11.4 U	10.8 U	10.5 U	10.3 U	10.2 U	10.3 U	11.1 U
AROCLOR-1242	10.9 U	10.9 U	10.7 U	10.4 U	11.4 U	10.8 U	10.5 U	10.3 U	10.2 U	10.3 U	11.1 U
AROCLOR-1248	10.9 U	10.9 U	10.7 U	10.4 U	11.4 U	10.8 U	10.5 U	10.3 U	10.2 U	10.3 U	11.1 U
AROCLOR-1254	10.9 U	10.9 U	10.7 U	10.4 U	11.4 U	10.8 U	10.5 U	10.3 U	10.2 U	10.3 U	11.1 U
AROCLOR-1260	100	21 J	10.7 U	26	2200	10.8 U	10.5 U	17 J	21	10.3 U	11.1 U
TOTAL AROCLOR	100	21	0 U	26	2200	0 U	0 U	17	21	0 U	0 U
BETA-BHC	0.789 U	0.787 U	0.773 U	0.751 U	0.824 U	0.778 U	0.758 U	0.745 U	0.739 U	0.743 U	0.803 U
DELTA-BHC	0.789 UJ	0.787 UJ	0.773 UJ	0.751 UJ	0.824 UJ	0.778 UJ	0.758 UJ	0.745 UJ	0.739 UJ	0.743 UJ	0.803 UJ
DIELDRIN	1.64 U	1.63 U	1.61 U	1.56 U	1.71 U	1.62 U	1.57 U	1.55 U	1.54 U	1.54 U	1.67 U
ENDOSULFAN I	0.789 U	0.787 U	0.773 U	0.751 U	0.824 U	0.778 U	0.758 U	0.745 U	0.739 U	0.743 U	0.803 U
ENDOSULFAN II	1.64 U	1.63 U	1.61 U	1.56 U	1.71 U	1.62 U	1.57 U	1.55 U	1.54 U	1.54 U	1.67 U
ENDOSULFAN SULFATE	1.64 UJ	1.63 UJ	1.61 UJ	1.56 UJ	1.71 U	1.62 UJ	1.57 U	1.55 U	1.54 U	1.54 UJ	1.67 U
ENDRIN	1.64 U	1.63 U	1.61 U	1.56 U	1.71 U	1.62 U	1.57 U	1.55 U	1.54 U	1.54 U	1.67 U
ENDRIN ALDEHYDE	1.64 U	1.63 U	1.61 U	1.56 U	1.71 U	1.62 U	1.57 U	1.55 U	1.54 U	1.54 U	1.67 U
ENDRIN KETONE	1.64 U	1.63 UJ	1.61 U	1.56 U	1.71 U	1.62 UJ	1.57 U	1.55 U	1.54 U	1.54 UJ	1.67 U
GAMMA-BHC (LINDANE)	0.789 UJ	0.787 UJ	0.773 UJ	0.751 UJ	0.824 U	0.778 UJ	0.758 U	0.745 U	0.739 U	0.743 UJ	0.803 U
GAMMA-CHLORDANE	0.789 U	0.787 U	0.773 U	0.751 U	0.824 U	9.6	0.758 U	0.745 U	0.739 U	0.743 U	0.803 U
HEPTACHLOR	0.789 U	0.787 UJ	0.773 U	0.751 U	0.824 U	0.778 UJ	0.758 U	0.745 U	0.739 U	0.743 UJ	0.803 U
HEPTACHLOR EPOXIDE	0.789 U	0.787 U	0.773 U	0.751 U	0.824 U	0.778 U	0.758 U	0.745 U	0.739 U	0.743 U	0.803 U
METHOXYCHLOR	7.89 U	7.87 U	7.73 U	7.51 U	32 J	7.78 U	7.58 U	7.45 U	7.39 U	7.43 U	8.03 U
TOXAPHENE	103 U	103 U	101 U	98.2 U	108 U	102 U	99.1 U	97.5 U	96.7 U	97.1 U	105 U
Inorganics (mg/kg)											
LEAD											
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD										4.7	
1,2,3,4,6,7,8,9-OCDF										0.063 U	
1,2,3,4,6,7,8-HPCDD										0.085 U	
1,2,3,4,6,7,8-HPCDF										0.028 U	
1,2,3,4,7,8,9-HPCDF										0.027 U	
1,2,3,4,7,8-HXCDD										0.026 U	
1,2,3,4,7,8-HXCDF										0.015 U	
1,2,3,6,7,8-HXCDD										0.025 U	
1,2,3,6,7,8-HXCDF										0.014 U	
1,2,3,7,8,9-HXCDD										0.022 U	
1,2,3,7,8,9-HXCDF										0.018 U	
1,2,3,7,8-PECDD										0.036 U	
1,2,3,7,8-PECDF										0.019 U	
2,3,4,6,7,8-HXCDF										0.016 U	
2,3,4,7,8-PECDF										0.02 U	
2,3,7,8-TCDD										0.023 U	
2,3,7,8-TCDF										0.018 U	
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	3.03 U	3.03 U	2.97 U	2.89 U	130	22	2.91 U	2.87 U	2.84 U	2.86 U	3.09 U
GASOLINE RANGE ORGANICS	3.03 U	3.03 U	2.97 U	2.89 U	18	2.99 U	2.91 U	2.87 U	2.84 U	2.86 U	3.09 U
OIL & GREASE - HEM	243 U	242 U	238 U	231 U	253 U	240 U	233 U	229 U	228 U	229 U	247 U
OIL RANGE ORGANICS (C24-C40)	12.1 U	12.1 U	11.9 U	11.5 U	12.7 U	76	11.7 U	11.5 U	11.4 U	11.4 U	12.4 U

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB051	09SB051	09SB051	09SB052	09SB052	09SB052	09SB052	09SB053	09SB053	09SB053	09SB053
SAMPLE ID	09SB510406	09SB510608	09SS510002	09SB520204	09SB520406	09SB520709	09SS520002	09SB530204	09SB530406	09SB530608	09SS530002
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	6	0	2	4	7	0	2	4	6	0
BOTTOM DEPTH	6	8	2	4	6	9	2	4	6	8	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/30/2005	9/30/2005	9/30/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,1,1-TRICHLOROETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,1,2,2-TETRACHLOROETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,1,2-TRICHLOROETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,1-DICHLOROETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,1-DICHLOROETHENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,2,3-TRICHLOROPROPANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,2-DIBROMO-3-CHLOROPROPANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,2-DIBROMOETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,2-DICHLOROETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
1,2-DICHLOROPROPANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
2-BUTANONE	3 J	6 J	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	2 J
2-HEXANONE	1.26 U	1.04 U	1.03 U	2 J	0.995 U	0.942 U	0.949 U	0.877 U	1 J	1.03 J	2 J
3-CHLOROPROPENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
4-METHYL-2-PENTANONE	1.26 U	1.04 U	1.03 U	1.04 J	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 J
ACETONE	25 J	66 J	1.03 UR	9 BU	5 BU	5 BU	0.949 UR	4 BU	7 BU	6 BU	8 J
ACROLEIN	1.26 UR	1.04 UR	1.03 UR	1.04 UR	0.995 UR	0.942 UR	0.949 UR	0.877 UR	0.962 UR	1.03 UR	1.06 UR
ACRYLONITRILE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
BENZENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
BROMODICHLOROMETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
BROMOFORM	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
BROMOMETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CARBON DISULFIDE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CARBON TETRACHLORIDE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CHLOROBENZENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CHLORODIBROMOMETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CHLOROETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CHLOROFORM	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CHLOROMETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CHLOROPRENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CIS-1,2-DICHLOROETHENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
CIS-1,3-DICHLOROPROPENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
DIBROMOMETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
DICHLORODIFLUOROMETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 UJ	0.877 U	0.962 U	1.03 U	1.06 UJ
ETHYL METHACRYLATE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
ETHYLBENZENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
METHACRYLONITRILE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
METHYL IODIDE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
METHYL METHACRYLATE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
METHYL TERT-BUTYL ETHER	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
METHYLENE CHLORIDE	1.26 UJ	1.04 UJ	1.03 UJ	1.04 UJ	0.995 UJ	0.942 UJ	0.949 UJ	0.877 UJ	0.962 UJ	1.03 UJ	1.06 UJ
STYRENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
TETRACHLOROETHENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
TOLUENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
TOTAL XYLENES	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
TRANS-1,2-DICHLOROETHENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
TRANS-1,3-DICHLOROPROPENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
TRANS-1,4-DICHLORO-2-BUTENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
TRICHLOROETHENE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
TRICHLOROFLUOROMETHANE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
VINYL ACETATE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
VINYL CHLORIDE	1.26 U	1.04 U	1.03 U	1.04 U	0.995 U	0.942 U	0.949 U	0.877 U	0.962 U	1.03 U	1.06 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											
BENZO(B)FLUORANTHENE											
BENZO(G,H,I)PERYLENE											
BENZO(K)FLUORANTHENE											
CHRYSENE											
DIBENZO(A,H)ANTHRACENE											

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB051	09SB051	09SB051	09SB052	09SB052	09SB052	09SB052	09SB053	09SB053	09SB053	09SB053
SAMPLE ID	09SB510406	09SB510608	09SS510002	09SB520204	09SB520406	09SB520709	09SS520002	09SB530204	09SB530406	09SB530608	09SS530002
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	6	0	2	4	7	0	2	4	6	0
BOTTOM DEPTH	6	8	2	4	6	9	2	4	6	8	2
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/30/2005	9/30/2005	9/30/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005
FLUORANTHENE											
FLUORENE											
INDENO(1,2,3-CD)PYRENE											
NAPHTHALENE											
PHENANTHRENE											
PYRENE											
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1.76 U	1.66 U	2.4 J	1.65 U	1.59 U	1.58 U	1.61 U	1.56 U	1.58 U	1.58 U	1.63 U
4,4'-DDE	1.76 U	1.66 U	13	1.65 U	1.59 U	1.58 U	3.4	1.56 U	1.58 U	1.58 U	1.63 U
4,4'-DDT	1.76 U	1.66 U	19	1.65 U	1.59 U	1.58 U	2.2 J	1.56 U	1.58 U	1.58 U	1.63 U
ALDRIN	0.85 U	0.798 U	0.792 U	0.796 U	0.764 U	0.759 U	0.777 U	0.752 U	0.763 U	0.761 U	0.787 U
ALPHA-BHC	0.85 UJ	0.798 U	0.792 U	0.796 U	0.764 U	0.759 U	0.777 UJ	0.752 U	0.763 UJ	0.761 UJ	0.787 UJ
ALPHA-CHLORDANE	0.85 U	0.798 U	0.792 U	0.796 U	0.764 U	0.759 U	0.777 U	0.752 U	0.763 U	0.761 U	0.787 U
AROCLOR-1016	11.8 U	11 U	11 U	11 U	10.6 U	10.5 U	10.8 U	10.4 U	10.6 U	10.5 U	10.9 U
AROCLOR-1221	11.8 U	11 U	11 U	11 U	10.6 U	10.5 U	10.8 U	10.4 U	10.6 U	10.5 U	10.9 U
AROCLOR-1232	11.8 U	11 U	11 U	11 U	10.6 U	10.5 U	10.8 U	10.4 U	10.6 U	10.5 U	10.9 U
AROCLOR-1242	11.8 U	11 U	11 U	11 U	10.6 U	10.5 U	10.8 U	10.4 U	10.6 U	10.5 U	10.9 U
AROCLOR-1248	11.8 U	11 U	880	11 U	24	10.5 U	10.8 U	10.4 U	10.6 U	10.5 U	10.9 U
AROCLOR-1254	11.8 U	11 U	11 U	11 U	10.6 U	10.5 U	10.8 U	10.4 U	10.6 U	10.5 U	10.9 U
AROCLOR-1260	36	11 U	11 U	11 U	10.6 U	10.5 U	10.8 U	10.4 U	10.6 U	10.5 U	10.9 U
TOTAL AROCLOR	36	0 U	880	0 U	24	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	0.85 U	0.798 U	0.792 U	0.796 U	0.764 U	0.759 U	0.777 U	0.752 U	0.763 U	0.761 U	0.787 U
DELTA-BHC	0.85 UJ	0.798 UJ	0.792 U	0.796 U	0.764 U	0.759 U	0.777 UJ	0.752 U	0.763 UJ	0.761 UJ	0.787 UJ
DIELDRIN	1.76 U	1.66 U	1.64 U	1.65 U	1.59 U	1.58 U	1.61 U	1.56 U	1.58 U	1.58 U	1.63 U
ENDOSULFAN I	0.85 U	0.798 U	0.792 U	0.796 U	0.764 U	0.759 U	0.777 U	0.752 U	0.763 U	0.761 U	0.787 U
ENDOSULFAN II	1.76 U	1.66 U	1.64 U	1.65 U	1.59 U	1.58 U	1.61 U	1.56 U	1.58 U	1.58 U	1.63 U
ENDOSULFAN SULFATE	1.76 U	1.66 U	1.64 U	1.65 U	1.59 U	1.58 U	1.61 U	1.56 U	1.58 U	1.58 U	1.63 U
ENDRIN	1.76 U	1.66 U	1.64 U	1.65 U	1.59 U	1.58 U	1.61 U	1.56 U	1.58 U	1.58 U	1.63 U
ENDRIN ALDEHYDE	1.76 U	1.66 U	1.64 U	1.65 U	1.59 U	1.58 U	1.61 U	1.56 U	1.58 U	1.58 U	1.63 U
ENDRIN KETONE	1.76 U	1.66 U	1.64 U	1.65 U	1.59 U	1.58 U	1.61 U	1.56 U	1.58 U	1.58 U	1.63 U
GAMMA-BHC (LINDANE)	0.85 U	0.798 U	0.792 U	0.796 U	0.764 U	0.759 U	0.777 UJ	0.752 U	0.763 UJ	0.761 UJ	0.787 UJ
GAMMA-CHLORDANE	0.85 U	0.798 U	0.792 U	0.796 U	0.764 U	0.759 U	0.777 U	0.752 U	0.763 U	0.761 U	0.787 U
HEPTACHLOR	0.85 U	0.798 U	0.792 U	0.796 U	0.764 U	0.759 U	0.777 U	0.752 U	0.763 U	0.761 U	0.787 U
HEPTACHLOR EPOXIDE	0.85 U	0.798 U	0.792 U	0.796 U	0.764 U	0.759 U	0.777 U	0.752 U	0.763 U	0.761 U	0.787 U
METHOXYCHLOR	8.5 U	7.98 U	7.92 U	7.96 U	7.64 U	7.59 U	7.77 U	7.52 U	7.63 U	7.61 U	7.87 U
TOXAPHENE	111 U	104 U	104 U	104 U	99.9 U	99.3 U	102 U	98.4 U	99.8 U	99.5 U	103 U
Inorganics (mg/kg)											
LEAD											
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD			2.2 J				12				16
1,2,3,4,6,7,8,9-OCDF			0.073 U				1.1 U				0.33 U
1,2,3,4,6,7,8-HPCDD			0.077 U				0.76 U				0.26 U
1,2,3,4,6,7,8-HPCDF			0.046 U				0.71 U				0.2 U
1,2,3,4,7,8,9-HPCDF			0.032 U				0.45 U				0.17 U
1,2,3,4,7,8-HXCDD			0.033 U				0.12 U				0.14 U
1,2,3,4,7,8-HXCDF			0.02 U				0.69 U				0.21 U
1,2,3,6,7,8-HXCDD			0.035 U				0.13 U				0.21 U
1,2,3,6,7,8-HXCDF			0.019 U				0.64 U				0.2 U
1,2,3,7,8,9-HXCDD			0.031 U				0.11 U				0.19 U
1,2,3,7,8,9-HXCDF			0.02 U				0.22 U				0.2 U
1,2,3,7,8-PECDD			0.05 U				0.61 U				0.21 U
1,2,3,7,8-PECDF			0.024 U				0.42 U				0.21 U
2,3,4,6,7,8-HXCDF			0.024 U				0.62 U				0.21 U
2,3,4,7,8-PECDF			0.021 U				0.55 U				0.2 U
2,3,7,8-TCDD			0.026 U				0.27 U				0.08 U
2,3,7,8-TCDF			0.018 U				0.24 U				0.095 U
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	3.27 U	3.07 U	3.05 U	3.06 U	2.94 U	2.92 U	6.6	2.89 U	2.93 U	2.93 U	3.03 U
GASOLINE RANGE ORGANICS	3.27 U	3.07 U	3.05 U	3.06 U	2.94 U	2.92 U	2.99 U	2.89 U	2.93 U	2.93 U	3.03 U
OIL & GREASE - HEM	261 U	245 U	244 U	245 U	670	570	630	231 U	235 U	234 U	242 U
OIL RANGE ORGANICS (C24-C40)	13.1 U	12.3 U	12.2 U	12.2 U	11.8 U	11.7 U	28	11.6 U	11.7 U	11.7 U	12.1 U

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB054	09SB054	09SB054	09SB054	09SB055	09SB055	09SB055	09SB055	09SB056	09SB056	09SB056
SAMPLE ID	09SB540204	09SB540406	09SB540607	09SS540002	09SB550204	09SB550406	09SB550608	09SS550002	09SB560204	09SB560406	09SB560607
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	6	0	2	4	6	0	2	4	6
BOTTOM DEPTH	4	6	7	2	4	6	8	2	4	6	7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,1,1-TRICHLOROETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,1,2,2-TETRACHLOROETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,1,2-TRICHLOROETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,1-DICHLOROETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,1-DICHLOROETHENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,2,3-TRICHLOROPROPANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,2-DIBROMO-3-CHLOROPROPANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,2-DIBROMOETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,2-DICHLOROETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
1,2-DICHLOROPROPANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
2-BUTANONE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
2-HEXANONE	1 J	1 J	2 J	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
3-CHLOROPROPENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
4-METHYL-2-PENTANONE	0.974 U	0.967 U	1 J	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
ACETONE	6 BU	6 BU	14 BU	1.02 UR	0.886 U	2 J	2 J	0.969 UR	2 J	0.885 UR	1.01 UR
ACROLEIN	0.974 UR	0.967 UR	0.983 UR	1.02 UR	0.886 UR	1.07 UR	0.961 UR	0.969 UR	0.98 UR	0.885 UR	1.01 UR
ACRYLONITRILE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
BENZENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
BROMODICHLOROMETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
BROMOFORM	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
BROMOMETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CARBON DISULFIDE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CARBON TETRACHLORIDE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CHLOROBENZENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CHLORODIBROMOMETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CHLOROETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CHLOROFORM	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CHLOROMETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CHLOROPRENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CIS-1,2-DICHLOROETHENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
CIS-1,3-DICHLOROPROPENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
DIBROMOMETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
DICHLORODIFLUOROMETHANE	0.974 U	0.967 U	0.983 U	1.02 UJ	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
ETHYL METHACRYLATE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
ETHYLBENZENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
METHACRYLONITRILE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
METHYL IODIDE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
METHYL METHACRYLATE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
METHYL TERT-BUTYL ETHER	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
METHYLENE CHLORIDE	0.974 UJ	0.967 UJ	0.983 UJ	1.02 UJ	0.886 UJ	1.07 UJ	0.961 UJ	0.969 UJ	0.98 UJ	0.885 UJ	1.01 UJ
STYRENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
TETRACHLOROETHENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
TOLUENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
TOTAL XYLENES	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
TRANS-1,2-DICHLOROETHENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
TRANS-1,3-DICHLOROPROPENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
TRANS-1,4-DICHLORO-2-BUTENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
TRICHLOROETHENE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
TRICHLOROFLUOROMETHANE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
VINYL ACETATE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
VINYL CHLORIDE	0.974 U	0.967 U	0.983 U	1.02 U	0.886 U	1.07 U	0.961 U	0.969 U	0.98 U	0.885 U	1.01 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											
BENZO(B)FLUORANTHENE											
BENZO(G,H,I)PERYLENE											
BENZO(K)FLUORANTHENE											
CHRYSENE											
DIBENZO(A,H)ANTHRACENE											

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB054	09SB054	09SB054	09SB054	09SB055	09SB055	09SB055	09SB055	09SB056	09SB056	09SB056
SAMPLE ID	09SB540204	09SB540406	09SB540607	09SS540002	09SB550204	09SB550406	09SB550608	09SS550002	09SB560204	09SB560406	09SB560607
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	6	0	2	4	6	0	2	4	6
BOTTOM DEPTH	4	6	7	2	4	6	8	2	4	6	7
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005
FLUORANTHENE											
FLUORENE											
INDENO(1,2,3-CD)PYRENE											
NAPHTHALENE											
PHENANTHRENE											
PYRENE											
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1.58 U	1.59 U	1.54 U	1.62 U	1.58 U	1.7 UJ	1.53 UJ	1.65 UJ	1.61 UJ	1.55 UJ	1.6 UJ
4,4'-DDE	1.58 U	1.59 U	1.54 U	10	1.58 U	1.7 UJ	1.53 UJ	1.65 UJ	1.61 UJ	1.55 UJ	1.6 UJ
4,4'-DDT	1.58 U	1.59 U	1.54 U	6.2	1.58 U	1.7 U	1.53 U	1.65 U	1.61 U	1.55 U	1.6 U
ALDRIN	0.76 U	0.767 U	0.741 U	0.781 U	0.759 U	0.821 UJ	0.738 UJ	0.794 UJ	0.777 UJ	0.748 UJ	0.772 UJ
ALPHA-BHC	0.76 UJ	0.767 UJ	0.741 U	0.781 UJ	0.759 U	0.821 UJ	0.738 UJ	0.794 UJ	0.777 UJ	0.748 UJ	0.772 UJ
ALPHA-CHLORDANE	0.76 U	0.767 U	0.741 U	0.781 U	0.759 U	0.821 U	0.738 U	0.794 U	0.777 U	0.748 U	0.772 U
AROCLOR-1016	10.5 U	10.6 U	10.3 U	10.8 U	10.5 U	11.4 UJ	10.2 U	11 U	10.8 U	10.4 U	23
AROCLOR-1221	10.5 U	10.6 U	10.3 U	10.8 U	10.5 U	11.4 U	10.2 U	11 U	10.8 U	10.4 U	10.7 U
AROCLOR-1232	10.5 U	10.6 U	1000	10.8 U	10.5 U	11.4 U	10.2 U	11 U	10.8 U	10.4 U	10.7 U
AROCLOR-1242	10.5 U	10.6 U	10.3 U	10.8 U	10.5 U	11.4 U	10.2 U	11 U	10.8 U	10.4 U	10.7 U
AROCLOR-1248	10.5 U	10.6 U	10.3 U	10.8 U	10.5 U	11.4 U	10.2 U	11 U	10.8 U	10.4 U	10.7 U
AROCLOR-1254	10.5 U	10.6 U	10.3 U	10.8 U	10.5 U	11.4 U	10.2 U	11 U	10.8 U	10.4 U	10.7 U
AROCLOR-1260	10.5 U	10.6 U	10.3 U	10.8 U	16 J	11.4 U	44	11 U	84	10.4 U	10.7 U
TOTAL AROCLOR	0 U	0 U	1000	0 U	16	0 U	44	0 U	84	0 U	23
BETA-BHC	0.76 U	0.767 U	0.741 U	0.781 U	0.759 U	0.821 U	0.738 U	0.794 U	0.777 U	0.748 U	0.772 U
DELTA-BHC	0.76 UJ	0.767 UJ	0.741 U	0.781 UJ	0.759 UJ	0.821 UJ	0.738 UJ	0.794 UJ	0.777 UJ	0.748 UJ	0.772 UJ
DIELDRIN	1.58 U	1.59 U	1.54 U	1.62 U	1.58 U	1.7 U	1.53 U	1.65 U	1.61 U	1.55 U	1.6 U
ENDOSULFAN I	0.76 U	0.767 U	0.741 U	0.781 U	0.759 U	0.821 U	0.738 U	0.794 U	0.777 U	0.748 U	0.772 U
ENDOSULFAN II	1.58 U	1.59 U	1.54 U	1.62 U	1.58 U	1.7 U	1.53 U	1.65 U	1.61 U	1.55 U	1.6 U
ENDOSULFAN SULFATE	1.58 U	1.59 U	1.54 U	1.62 U	1.58 U	1.7 UJ	1.53 UJ	1.65 UJ	1.61 UJ	1.55 UJ	1.6 UJ
ENDRIN	1.58 U	1.59 U	1.54 U	1.62 U	1.58 U	1.7 U	1.53 U	1.65 U	1.61 U	1.55 U	1.6 U
ENDRIN ALDEHYDE	1.58 U	1.59 U	1.54 U	1.62 U	1.58 U	1.7 U	1.53 U	1.65 U	1.61 U	1.55 U	1.6 U
ENDRIN KETONE	1.58 U	1.59 U	1.54 U	1.62 U	1.58 U	1.7 UJ	1.53 UJ	1.65 UJ	1.61 UJ	1.55 UJ	1.6 UJ
GAMMA-BHC (LINDANE)	0.76 UJ	0.767 UJ	0.741 U	0.781 UJ	0.759 U	0.821 UJ	0.738 UJ	0.794 UJ	0.777 UJ	0.748 UJ	0.772 UJ
GAMMA-CHLORDANE	0.76 U	0.767 U	0.741 U	0.781 U	0.759 U	0.821 U	0.738 U	0.794 U	0.777 U	0.748 U	0.772 U
HEPTACHLOR	0.76 U	0.767 U	0.741 U	0.781 U	0.759 U	0.821 UJ	0.738 UJ	0.794 UJ	0.777 UJ	0.748 UJ	0.772 UJ
HEPTACHLOR EPOXIDE	0.76 U	0.767 U	0.741 U	0.781 U	0.759 U	0.821 U	0.738 U	0.794 U	0.777 U	0.748 U	0.772 U
METHOXYCHLOR	7.6 U	7.67 U	7.41 U	7.81 U	7.59 U	8.21 U	7.38 U	7.94 U	7.77 U	7.48 U	7.72 U
TOXAPHENE	99.4 U	100 U	96.9 U	102 U	99.3 U	107 U	96.5 U	104 U	102 U	97.6 U	101 U
Inorganics (mg/kg)											
LEAD											
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD				8.8				15			
1,2,3,4,6,7,8,9-OCDF				0.11 U				0.06 U			
1,2,3,4,6,7,8-HPCDD				0.15 U				0.15 U			
1,2,3,4,6,7,8-HPCDF				0.057 U				0.02 U			
1,2,3,4,7,8,9-HPCDF				0.046 U				0.026 U			
1,2,3,4,7,8-HXCDD				0.056 U				0.023 U			
1,2,3,4,7,8-HXCDF				0.03 U				0.012 U			
1,2,3,6,7,8-HXCDD				0.063 U				0.029 U			
1,2,3,6,7,8-HXCDF				0.026 U				0.011 U			
1,2,3,7,8,9-HXCDD				0.053 U				0.018 U			
1,2,3,7,8,9-HXCDF				0.043 U				0.016 U			
1,2,3,7,8-PECDD				0.058 U				0.03 U			
1,2,3,7,8-PECDF				0.063 U				0.01 U			
2,3,4,6,7,8-HXCDF				0.036 U				0.011 U			
2,3,4,7,8-PECDF				0.038 U				0.015 U			
2,3,7,8-TCDD				0.042 U				0.019 U			
2,3,7,8-TCDF				0.03 U				0.011 U			
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	2.92 U	2.95 U	140	3 U	2.92 U	3.16 U	2.84 U	3.05 U	2.99 U	2.88 U	2.97 U
GASOLINE RANGE ORGANICS	2.92 U	2.95 U	12	3 U	2.92 U	3.16 U	2.84 U	3.05 U	2.99 U	2.88 U	2.97 U
OIL & GREASE - HEM	234 U	236 U	770	240 U	234 U	253 U	227 U	244 U	239 U	230 U	238 U
OIL RANGE ORGANICS (C24-C40)	11.7 U	11.8 U	62	12 U	11.7 U	12.6 U	11.4 U	12.2 U	11.9 U	11.5 U	11.9 U

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB056	09SB057	09SB057	09SB057	09SB057	09SB058	09SB058	09SB058	09SB059	09SB059	09SB059
SAMPLE ID	09SS560002	09SB570204	09SB570406	09SB570608	09SS570002	09SB580204	09SB580406	09SS580002	09SB590204	09SB590406	09SB590608
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	6	0	2	4	0	2	4	6
BOTTOM DEPTH	2	4	6	8	2	4	6	2	4	6	8
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,1,1-TRICHLOROETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,1,2,2-TETRACHLOROETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,1,2-TRICHLOROETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,1-DICHLOROETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,1-DICHLOROETHENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,2,3-TRICHLOROPROPANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,2-DIBROMO-3-CHLOROPROPANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,2-DIBROMOETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,2-DICHLOROETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
1,2-DICHLOROPROPANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
2-BUTANONE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	2 J
2-HEXANONE	1.08 U	0.946 U	1 J	2 J	1.05 J	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 J
3-CHLOROPROPENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
4-METHYL-2-PENTANONE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
ACETONE	1.08 UR	6 J	23 J	2 J	3 J	4 J	1.01 J	1.02 UR	1 J	4 J	8 J
ACROLEIN	1.08 UR	0.946 UR	0.981 UR	1.04 UR	1.05 UR	0.997 UR	1.01 UR	1.02 UR	0.925 UR	0.962 UR	1.03 UR
ACRYLONITRILE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
BENZENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
BROMODICHLOROMETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
BROMOFORM	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
BROMOMETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CARBON DISULFIDE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CARBON TETRACHLORIDE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CHLOROBENZENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CHLORODIBROMOMETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CHLOROETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CHLOROFORM	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CHLOROMETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CHLOROPRENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CIS-1,2-DICHLOROETHENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
CIS-1,3-DICHLOROPROPENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
DIBROMOMETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
DICHLORODIFLUOROMETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 UJ	1.01 U	1.02 UJ	0.925 U	0.962 U	1.03 U
ETHYL METHACRYLATE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
ETHYLBENZENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
METHACRYLONITRILE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
METHYL IODIDE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
METHYL METHACRYLATE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
METHYL TERT-BUTYL ETHER	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
METHYLENE CHLORIDE	1.08 UJ	0.946 UJ	0.981 UJ	1.04 UJ	1.05 UJ	0.997 UJ	1.01 UJ	1.02 UJ	0.925 UJ	0.962 UJ	1.03 UJ
STYRENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
TETRACHLOROETHENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
TOLUENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
TOTAL XYLENES	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
TRANS-1,2-DICHLOROETHENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
TRANS-1,3-DICHLOROPROPENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
TRANS-1,4-DICHLORO-2-BUTENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
TRICHLOROETHENE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
TRICHLOROFLUOROMETHANE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
VINYL ACETATE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
VINYL CHLORIDE	1.08 U	0.946 U	0.981 U	1.04 U	1.05 U	0.997 U	1.01 U	1.02 U	0.925 U	0.962 U	1.03 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE						3.82 U	3.86 U	4 J	3.85 U	3.87 U	3.79 U
ACENAPHTHENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
ACENAPHTHYLENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
ANTHRACENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
BENZO(A)ANTHRACENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
BENZO(A)PYRENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
BENZO(B)FLUORANTHENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
BENZO(G,H,I)PERYLENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
BENZO(K)FLUORANTHENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
CHRYSENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
DIBENZO(A,H)ANTHRACENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB056	09SB057	09SB057	09SB057	09SB057	09SB058	09SB058	09SB058	09SB059	09SB059	09SB059
SAMPLE ID	09SS560002	09SB570204	09SB570406	09SB570608	09SS570002	09SB580204	09SB580406	09SS580002	09SB590204	09SB590406	09SB590608
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	6	0	2	4	0	2	4	6
BOTTOM DEPTH	2	4	6	8	2	4	6	2	4	6	8
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/30/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005
FLUORANTHENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
FLUORENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	32
INDENO(1,2,3-CD)PYRENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
NAPHTHALENE						3.82 U	3.86 U	3.57 U	3.85 U	3.87 U	3.79 U
PHENANTHRENE						3.82 U	3.86 U	5 J	3.85 U	3.87 U	3.79 U
PYRENE						3.82 U	3.86 U	4 J	3.85 U	3.87 U	3.79 U
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1.63 UJ	1.56 UJ	1.59 UJ	1.64 UJ	1.67 UJ	1.56 U	1.58 U	1.46 U	1.57 U	1.58 U	1.55 U
4,4'-DDE	3.6 J	1.56 UJ	1.59 UJ	1.64 UJ	1.67 UJ	1.56 U	1.58 U	1.46 U	1.57 U	1.58 U	1.55 U
4,4'-DDT	12	1.56 U	1.59 U	1.64 U	1.67 U	1.56 U	1.58 U	1.46 U	1.57 U	1.58 U	1.55 U
ALDRIN	0.786 UJ	0.75 UJ	0.766 UJ	0.788 UJ	0.806 UJ	0.751 U	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
ALPHA-BHC	0.786 UJ	0.75 UJ	0.766 UJ	0.788 UJ	0.806 UJ	0.751 UJ	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
ALPHA-CHLORDANE	0.786 U	0.75 U	0.766 U	0.788 U	0.806 U	0.751 U	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
AROCLOR-1016	10.9 U	10.4 U	900 J	10.9 U	11.2 U	10.4 U	10.5 UJ	9.75 UJ	10.5 UJ	10.6 UJ	10.3 UJ
AROCLOR-1221	10.9 U	10.4 U	10.6 U	10.9 U	11.2 U	10.4 U	10.5 U	9.75 U	10.5 U	10.6 U	10.3 UJ
AROCLOR-1232	10.9 U	10.4 U	10.6 U	10.9 U	11.2 U	10.4 U	10.5 U	9.75 U	10.5 U	10.6 U	10.3 UJ
AROCLOR-1242	10.9 U	10.4 U	10.6 U	10.9 U	11.2 U	10.4 U	10.5 U	9.75 U	10.5 U	10.6 U	10.3 UJ
AROCLOR-1248	10.9 U	10.4 U	10.6 U	10.9 U	11.2 U	10.4 U	10.5 U	9.75 U	10.5 U	10.6 U	10.3 UJ
AROCLOR-1254	10.9 U	10.4 U	10.6 U	10.9 U	11.2 U	10.4 U	10.5 U	9.75 U	10.5 U	10.6 U	10.3 UJ
AROCLOR-1260	10.9 U	22	10.6 U	31	11.2 U	10.4 U	10.5 U	9.75 UJ	10.5 U	10.6 U	10.3 UJ
TOTAL AROCLOR	0 U	22	900	31	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	0.786 U	0.75 U	0.766 U	0.788 U	0.806 U	0.751 U	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
DELTA-BHC	0.786 UJ	0.75 UJ	0.766 UJ	0.788 UJ	0.806 UJ	0.751 UJ	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
DIELDRIN	1.63 U	1.56 U	1.59 U	1.64 U	1.67 U	1.56 U	1.58 U	1.46 U	1.57 U	1.58 U	1.55 U
ENDOSULFAN I	0.786 U	0.75 U	0.766 U	0.788 U	0.806 U	0.751 U	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
ENDOSULFAN II	1.63 U	1.56 U	1.59 U	1.64 U	1.67 U	1.56 U	1.58 U	1.46 U	1.57 U	1.58 U	1.55 U
ENDOSULFAN SULFATE	1.63 UJ	1.56 UJ	1.59 UJ	1.64 UJ	1.67 UJ	1.56 U	1.58 U	1.46 U	1.57 U	1.58 U	1.55 U
ENDRIN	1.63 U	1.56 U	1.59 U	1.64 U	1.67 U	1.56 U	1.58 U	1.46 U	1.57 U	1.58 U	1.55 U
ENDRIN ALDEHYDE	1.63 U	1.56 U	1.59 U	1.64 U	1.67 U	1.56 U	1.58 U	1.46 U	1.57 U	1.58 U	1.55 U
ENDRIN KETONE	1.63 UJ	1.56 UJ	1.59 UJ	1.64 UJ	1.67 UJ	1.56 U	1.58 U	1.46 U	1.57 U	1.58 U	1.55 U
GAMMA-BHC (LINDANE)	0.786 UJ	0.75 UJ	0.766 UJ	0.788 UJ	0.806 UJ	0.751 UJ	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
GAMMA-CHLORDANE	0.786 U	0.75 U	0.766 U	0.788 U	0.806 U	0.751 U	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
HEPTACHLOR	0.786 UJ	0.75 UJ	0.766 UJ	0.788 UJ	0.806 UJ	0.751 U	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
HEPTACHLOR EPOXIDE	0.786 U	0.75 U	0.766 U	0.788 U	0.806 U	0.751 U	0.76 U	0.704 U	0.758 U	0.763 U	0.747 U
METHOXYCHLOR	7.86 U	7.5 U	7.66 U	7.88 U	8.06 U	7.51 U	7.6 U	7.04 U	7.58 U	7.63 U	7.47 U
TOXAPHENE	103 U	98 U	100 U	103 U	105 U	98.3 U	99.4 U	92.1 U	99.1 U	99.8 U	97.7 U
Inorganics (mg/kg)											
LEAD						11.7 J	13 J	13.6 J	8.9 J	12 J	11 J
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD	7.7				6.6						
1,2,3,4,6,7,8,9-OCDF	0.11 U				0.081 U						
1,2,3,4,6,7,8-HPCDD	0.27 U				0.11 U						
1,2,3,4,6,7,8-HPCDF	0.045 U				0.04 U						
1,2,3,4,7,8,9-HPCDF	0.044 U				0.046 U						
1,2,3,4,7,8-HXCDD	0.058 U				0.052 U						
1,2,3,4,7,8-HXCDF	0.038 U				0.028 U						
1,2,3,6,7,8-HXCDD	0.062 U				0.053 U						
1,2,3,6,7,8-HXCDF	0.035 U				0.026 U						
1,2,3,7,8,9-HXCDD	0.054 U				0.049 U						
1,2,3,7,8,9-HXCDF	0.057 U				0.027 U						
1,2,3,7,8-PECDD	0.063 U				0.069 U						
1,2,3,7,8-PECDF	0.048 U				0.031 U						
2,3,4,6,7,8-HXCDF	0.052 U				0.022 U						
2,3,4,7,8-PECDF	0.043 U				0.035 U						
2,3,7,8-TCDD	0.049 U				0.03 U						
2,3,7,8-TCDF	0.031 U				0.025 U						
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	6.4	2.88 U	260	3.03 U	3.1 U	2.89 U	2.92 U	12	2.91 U	2.93 U	280 J
GASOLINE RANGE ORGANICS	3.02 U	2.88 U	13.6	3.03 U	3.1 U	2.89 U	2.92 U	2.71 U	2.91 U	2.93 U	2.87 U
OIL & GREASE - HEM	242 U	231 U	610	242 U	248 U	231 U	234 U	217 U	233 U	235 U	230 U
OIL RANGE ORGANICS (C24-C40)	12.1 U	11.5 U	180	12.1 U	12.4 U	11.6 U	11.7 U	84	11.7 U	11.7 U	11.5 U

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB059	09SB060	09SB060	09SB060	09SB061	09SB061	09SB061	09SB061	09SB062	09SB062	09SB062
SAMPLE ID	09SS590002	09SB600204	09SB600406	09SS600002	09SB610204	09SB610406	09SB610608	09SS610002	09SB620204	09SB620406	09SB621416
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	0	2	4	6	0	2	4	14
BOTTOM DEPTH	2	4	6	2	4	6	8	2	4	6	16
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,1,1-TRICHLOROETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,1,2,2-TETRACHLOROETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,1,2-TRICHLOROETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,1-DICHLOROETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,1-DICHLOROETHENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,2,3-TRICHLOROPROPANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,2-DIBROMO-3-CHLOROPROPANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,2-DIBROMOETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,2-DICHLOROETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
1,2-DICHLOROPROPANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
2-BUTANONE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	2 J
2-HEXANONE	1.17 U	1 J	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
3-CHLOROPROPENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
4-METHYL-2-PENTANONE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
ACETONE	1.17 UR	3 J	3 J	3 J	4 J	5 J	2 J	33 J	1.04 UR	1.18 UR	16 J
ACROLEIN	1.17 UR	0.932 UR	1.02 UR	0.877 UR	1.01 UR	1.01 UR	0.96 UR	0.881 UR	1.04 UR	1.18 UR	0.994 UR
ACRYLONITRILE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
BENZENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
BROMODICHLOROMETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
BROMOFORM	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
BROMOMETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
CARBON DISULFIDE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	2 J
CARBON TETRACHLORIDE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
CHLOROBENZENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
CHLORODIBROMOMETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
CHLOROETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
CHLOROFORM	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
CHLOROMETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
CHLOROPRENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
CIS-1,2-DICHLOROETHENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
CIS-1,3-DICHLOROPROPENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
DIBROMOMETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
DICHLORODIFLUOROMETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 UJ	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
ETHYL METHACRYLATE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
ETHYLBENZENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
METHACRYLONITRILE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
METHYL IODIDE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
METHYL METHACRYLATE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
METHYL TERT-BUTYL ETHER	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
METHYLENE CHLORIDE	1.17 UJ	0.932 UJ	1.02 UJ	0.877 UJ	1.01 UJ	1.01 UJ	0.96 UJ	0.881 UJ	1.04 UJ	1.18 UJ	1 J
STYRENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
TETRACHLOROETHENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
TOLUENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
TOTAL XYLENES	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	2 J	1.04 UJ	1.18 U	0.994 U
TRANS-1,2-DICHLOROETHENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
TRANS-1,3-DICHLOROPROPENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
TRANS-1,4-DICHLORO-2-BUTENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
TRICHLOROETHENE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
TRICHLOROFLUOROMETHANE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
VINYL ACETATE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
VINYL CHLORIDE	1.17 U	0.932 U	1.02 U	0.877 U	1.01 U	1.01 U	0.96 U	0.881 UJ	1.04 UJ	1.18 U	0.994 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE	4 J	3.82 U	3.91 U	5 J	3.94 U	3.79 U	3.74 U	350 J	13	4.14 U	8 U
ACENAPHTHENE	3.7 U	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	3.72 U	3.85 U	80	8 U
ACENAPHTHYLENE	3.7 U	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	3.72 U	3.85 U	4.14 U	8 U
ANTHRACENE	3.7 U	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	3.72 U	3.85 U	53	8 U
BENZO(A)ANTHRACENE	9	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	16 J	3.85 U	4.14 U	13 J
BENZO(A)PYRENE	9	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	19 J	3.85 U	4.14 U	8 U
BENZO(B)FLUORANTHENE	3.7 U	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	37 J	3.85 U	4.14 U	8 U
BENZO(G,H,I)PERYLENE	46	3.82 U	3.91 U	15	3.94 U	3.79 U	3.74 U	17 J	3.85 U	4.14 U	8 U
BENZO(K)FLUORANTHENE	3.7 U	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	16 J	3.85 U	4.14 U	8 U
CHRYSENE	12	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	43 J	3.85 U	4.14 U	21
DIBENZO(A,H)ANTHRACENE	3.7 U	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	3.72 UJ	3.85 U	4.14 U	8 U

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB059	09SB060	09SB060	09SB060	09SB061	09SB061	09SB061	09SB061	09SB062	09SB062	09SB062
SAMPLE ID	09SS590002	09SB600204	09SB600406	09SS600002	09SB610204	09SB610406	09SB610608	09SS610002	09SB620204	09SB620406	09SB621416
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	0	2	4	6	0	2	4	14
BOTTOM DEPTH	2	4	6	2	4	6	8	2	4	6	16
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005
FLUORANTHENE	13	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	65 J	4 J	4.14 U	9 J
FLUORENE	3.7 U	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	220 J	3.85 U	110	8 U
INDENO(1,2,3-CD)PYRENE	3.7 U	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	14 J	3.85 U	4.14 U	8 U
NAPHTHALENE	3.7 U	3.82 U	3.91 U	3.76 U	3.94 U	3.79 U	3.74 U	3.72 U	8	4.14 U	17
PHENANTHRENE	8	3.82 U	3.91 U	5 J	3.94 U	3.79 U	3.74 U	280 J	4 J	260	14 J
PYRENE	18	3.82 U	3.91 U	8	3.94 U	3.79 U	3.74 U	99 J	4 J	17	36
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1.51 U	1.56 U	1.6 U	3.5 J	1.61 U	1.55 U	1.53 U	1.52 U	1.58 U	1.69 U	1.64 U
4,4'-DDE	1.51 U	1.56 U	1.6 U	20 J	1.61 U	1.55 U	1.53 U	1.52 U	1.58 U	1.69 U	1.64 U
4,4'-DDT	1.51 U	1.56 U	1.6 U	13 J	1.61 U	1.55 U	1.53 U	1.52 U	1.58 U	1.69 U	1.64 U
ALDRIN	0.729 U	0.751 U	0.771 U	0.741 U	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
ALPHA-BHC	0.729 U	0.751 U	0.771 U	0.741 U	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
ALPHA-CHLORDANE	0.729 U	0.751 U	0.771 U	9.1 J	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
AROCLOR-1016	10.1 UJ	10.4 UJ	10.7 UJ	10.3 UJ	10.7 UJ	10.3 UJ	10.2 UJ	10.2 UJ	10.5 UJ	11.3 UJ	10.9 UJ
AROCLOR-1221	10.1 U	10.4 U	10.7 U	10.3 U	10.7 U	10.3 U	10.2 U	10.2 UJ	10.5 U	11.3 U	10.9 U
AROCLOR-1232	10.1 U	10.4 U	10.7 U	10.3 U	10.7 U	10.3 U	10.2 U	10.2 UJ	10.5 U	11.3 U	10.9 U
AROCLOR-1242	10.1 U	10.4 U	10.7 U	10.3 U	10.7 U	10.3 U	10.2 U	10.2 UJ	10.5 U	11.3 U	10.9 U
AROCLOR-1248	10.1 U	10.4 U	10.7 U	10.3 U	10.7 U	10.3 U	10.2 U	10.2 UJ	10.5 U	11.3 U	10.9 U
AROCLOR-1254	10.1 U	10.4 U	10.7 U	10.3 U	10.7 U	10.3 U	10.2 U	10.2 UJ	10.5 U	11.3 U	10.9 U
AROCLOR-1260	10.1 UJ	10.4 U	10.7 U	10.3 UJ	10.7 U	10.3 U	10.2 UJ	10.2 UJ	10.5 UJ	11.3 UJ	10.9 UJ
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	0.729 U	0.751 U	0.771 U	0.741 U	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
DELTA-BHC	0.729 U	0.751 U	0.771 U	0.741 U	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
DIELDRIN	1.51 U	1.56 U	1.6 U	1.54 U	1.61 U	1.55 U	1.53 U	1.52 U	1.58 U	1.69 U	1.64 U
ENDOSULFAN I	0.729 U	0.751 U	0.771 U	0.741 U	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
ENDOSULFAN II	1.51 U	1.56 U	1.6 U	1.54 U	1.61 U	1.55 U	1.53 U	1.52 U	1.58 U	1.69 U	1.64 U
ENDOSULFAN SULFATE	1.51 U	1.56 U	1.6 U	1.54 U	1.61 U	1.55 U	1.53 U	1.52 U	1.58 U	1.69 U	1.64 U
ENDRIN	1.51 U	1.56 U	1.6 U	1.54 U	1.61 U	1.55 U	1.53 U	1.52 U	1.58 U	1.69 U	1.64 U
ENDRIN ALDEHYDE	1.51 U	1.56 U	1.6 U	1.54 U	1.61 U	1.55 U	1.53 U	1.52 U	1.58 U	1.69 U	1.64 U
ENDRIN KETONE	1.51 U	1.56 U	1.6 U	1.54 U	1.61 U	1.55 U	1.53 U	1.52 U	1.58 U	1.69 U	1.64 U
GAMMA-BHC (LINDANE)	0.729 U	0.751 U	0.771 U	0.741 U	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
GAMMA-CHLORDANE	0.729 U	0.751 U	0.771 U	14 J	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
HEPTACHLOR	0.729 U	0.751 U	0.771 U	0.741 U	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
HEPTACHLOR EPOXIDE	0.729 U	0.751 U	0.771 U	0.741 U	0.776 U	0.746 U	0.737 U	0.734 U	0.758 U	0.815 U	0.788 U
METHOXYCHLOR	7.29 U	7.51 U	7.71 U	7.41 U	7.76 U	7.46 U	7.37 U	7.34 U	7.58 U	8.15 U	7.88 U
TOXAPHENE	95.3 U	98.3 U	101 U	96.9 U	101 U	97.6 U	96.4 U	95.9 U	99.2 U	107 U	103 U
Inorganics (mg/kg)											
LEAD	27.9 J	8.1 J	10.6 J	13.1 J	13.4 J	11 J	9.7 J	24.6 J	13.5 J	13.1 J	10.7 J
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD											
1,2,3,4,6,7,8,9-OCDF											
1,2,3,4,6,7,8-HPCDD											
1,2,3,4,6,7,8-HPCDF											
1,2,3,4,7,8,9-HPCDF											
1,2,3,4,7,8-HXCDD											
1,2,3,4,7,8-HXCDF											
1,2,3,6,7,8-HXCDD											
1,2,3,6,7,8-HXCDF											
1,2,3,7,8,9-HXCDD											
1,2,3,7,8,9-HXCDF											
1,2,3,7,8-PECDD											
1,2,3,7,8-PECDF											
2,3,4,6,7,8-HXCDF											
2,3,4,7,8-PECDF											
2,3,7,8-TCDD											
2,3,7,8-TCDF											
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	34	2.89 U	2.97 U	16	64	2.87 U	2.83 U	600 J	8	55	6.2
GASOLINE RANGE ORGANICS	2.8 U	2.89 U	2.97 U	2.85 U	2.98 U	2.87 U	2.83 U	200 J	2.92 U	3.13 U	27
OIL & GREASE - HEM	224 U	231 U	237 U	1100	239 U	230 U	227 U	226 UJ	233 U	640	470 J
OIL RANGE ORGANICS (C24-C40)	83	11.6 U	11.9 U	95	11.9 U	11.5 U	11.3 U	56.4 U	11.7 U	12.5 U	45

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB062	09SB063	09SB063	09SB063	09SB063	09SW/SD009	09SW/SD010	09SW/SD011	09SW/SD012	09SW/SD013	09SW/SD014
SAMPLE ID	09SS620002	09SB630204	09SB630406	09SB630608	09SS630002	09SD090006	09SD100006	09SD110006	09SD120006	09SD130006	09SD140006
MATRIX	SO	SO	SO	SO	SO	SD	SD	SD	SD	SD	SD
TOP DEPTH	0	2	4	6	0	0	0	0	0	0	0
BOTTOM DEPTH	2	4	6	8	2	0.5	0.5	0.5	0.5	0.5	0.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	10/1/2005	10/1/2005	10/1/2005	10/1/2005	10/1/2005	10/1/2005
Volatile Organics (ug/kg)											
1,1,1,2-TETRACHLOROETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,1,1-TRICHLOROETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,1,2,2-TETRACHLOROETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,1,2-TRICHLOROETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,1-DICHLOROETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,1-DICHLOROETHENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,2,3-TRICHLOROPROPANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,2-DIBROMO-3-CHLOROPROPANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,2-DIBROMOETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,2-DICHLOROETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
1,2-DICHLOROPROPANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
2-BUTANONE	1.2 U	1.01 U	1 J	1 U	1.11 U	1.11 U	1.32 U	1.42 U	6 J	1.18 U	1.27 U
2-HEXANONE	1.2 U	1.01 J	0.951 U	1 J	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 UJ
3-CHLOROPROPENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
4-METHYL-2-PENTANONE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
ACETONE	1.2 UR	2 J	5 J	3 J	1.11 UR	2 BU	3 BU	1.42 U	36 BJ	4 BU	1.27 U
ACROLEIN	1.2 UR	1.01 UR	0.951 UR	1 UR	1.11 UR	1.11 UR	1.32 UR	1.42 UR	1.23 UR	1.18 UR	1.27 UR
ACRYLONITRILE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
BENZENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
BROMODICHLOROMETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
BROMOFORM	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
BROMOMETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
CARBON DISULFIDE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	2 J	1.18 U	1.27 U
CARBON TETRACHLORIDE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
CHLOROBENZENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
CHLORODIBROMOMETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
CHLOROETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
CHLOROFORM	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
CHLOROMETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
CHLOROPRENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
CIS-1,2-DICHLOROETHENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
CIS-1,3-DICHLOROPROPENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 UJ
DIBROMOMETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
DICHLORODIFLUOROMETHANE	1.2 UJ	1.01 U	0.951 U	1 UJ	1.11 UJ	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
ETHYL METHACRYLATE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
ETHYLBENZENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
METHACRYLONITRILE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
METHYL IODIDE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
METHYL METHACRYLATE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
METHYL TERT-BUTYL ETHER	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
METHYLENE CHLORIDE	1.2 UJ	1.01 UJ	0.951 UJ	1 UJ	1.11 UJ	1.11 UJ	1.32 UJ	1.42 UJ	1.23 UJ	1.18 UJ	1.27 UJ
STYRENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 UJ
TETRACHLOROETHENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
TOLUENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
TOTAL XYLENES	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 UJ
TRANS-1,2-DICHLOROETHENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
TRANS-1,3-DICHLOROPROPENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
TRANS-1,4-DICHLORO-2-BUTENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
TRICHLOROETHENE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
TRICHLOROFLUOROMETHANE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
VINYL ACETATE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
VINYL CHLORIDE	1.2 U	1.01 U	0.951 U	1 U	1.11 U	1.11 U	1.32 U	1.42 U	1.23 U	1.18 U	1.27 U
Semivolatile Organics (ug/kg)											
2-METHYLNAPHTHALENE	3.96 U	3.86 U	3.83 U	3.84 U	3.96 U						
ACENAPHTHENE	3.96 U	3.86 U	3.83 U	3.84 U	3.96 U						
ACENAPHTHYLENE	3.96 U	3.86 U	3.83 U	3.84 U	3.96 U						
ANTHRACENE	3.96 U	3.86 U	3.83 U	3.84 U	3.96 U						
BENZO(A)ANTHRACENE	5 J	3.86 U	3.83 U	3.84 U	4 J						
BENZO(A)PYRENE	5 J	3.86 U	3.83 U	3.84 U	7 J						
BENZO(B)FLUORANTHENE	10 J	3.86 U	3.83 U	3.84 U	18						
BENZO(G,H,I)PERYLENE	3.96 U	3.86 U	3.83 U	3.84 U	9						
BENZO(K)FLUORANTHENE	4 J	3.86 U	3.83 U	3.84 U	3.96 U						
CHRYSENE	10	3.86 U	3.83 U	3.84 U	6 J						
DIBENZO(A,H)ANTHRACENE	3.96 U	3.86 U	3.83 U	3.84 U	3.96 U						

TABLE A-4

ANALYTICAL DATA (PHASE 3 SEPTEMBER/OCTOBER 2005)
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB062	09SB063	09SB063	09SB063	09SB063	09SW/SD009	09SW/SD010	09SW/SD011	09SW/SD012	09SW/SD013	09SW/SD014
SAMPLE ID	09SS620002	09SB630204	09SB630406	09SB630608	09SS630002	09SD090006	09SD100006	09SD110006	09SD120006	09SD130006	09SD140006
MATRIX	SO	SO	SO	SO	SO	SD	SD	SD	SD	SD	SD
TOP DEPTH	0	2	4	6	0	0	0	0	0	0	0
BOTTOM DEPTH	2	4	6	8	2	0.5	0.5	0.5	0.5	0.5	0.5
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	9/28/2005	9/28/2005	9/28/2005	9/28/2005	9/28/2005	10/1/2005	10/1/2005	10/1/2005	10/1/2005	10/1/2005	10/1/2005
FLUORANTHENE	10	3.86 U	3.83 U	3.84 U	3.96 U						
FLUORENE	3.96 U	3.86 U	3.83 U	3.84 U	3.96 U						
INDENO(1,2,3-CD)PYRENE	3.96 U	3.86 U	3.83 U	3.84 U	3.96 U						
NAPHTHALENE	3.96 U	3.86 U	3.83 U	3.84 U	3.96 U						
PHENANTHRENE	3.96 U	3.86 U	3.83 U	3.84 U	3.96 U						
PYRENE	10	3.86 U	3.83 U	3.84 U	5 J						
Pesticides/PCBs (ug/kg)											
4,4'-DDD	1.62 U	1.58 U	1.57 U	1.57 U	1.62 U	1.62 UJ	1.69 UJ	1.88 UJ	220 J	29 J	47 J
4,4'-DDE	1.62 U	1.58 U	1.57 U	1.57 U	7.2	1.62 UJ	1.69 UJ	1.88 UJ	38 J	8.9 J	11 J
4,4'-DDT	1.62 U	1.58 U	1.57 U	1.57 U	8.1 J	1.62 U	1.69 U	4	76	54	69
ALDRIN	0.78 U	0.761 U	0.754 U	0.757 U	0.78 U	0.779 UJ	0.811 UJ	0.903 UJ	0.8 UJ	0.795 UJ	0.826 UJ
ALPHA-BHC	0.78 UJ	0.761 U	0.754 U	0.757 U	0.78 UJ	0.779 UJ	0.811 UJ	0.903 UJ	0.8 UJ	0.795 UJ	0.826 UJ
ALPHA-CHLORDANE	0.78 U	0.761 U	0.754 U	0.757 U	2.3	0.779 U	0.811 U	0.903 U	7.4	8 J	18 J
AROCLOR-1016	10.8 U	10.5 UJ	10.4 UJ	10.5 UJ	10.8 U	10.8 U	11.2 UJ	12.5 U	11.1 U	11 UJ	11.4 U
AROCLOR-1221	10.8 U	10.5 U	10.4 U	10.5 U	10.8 U	10.8 U	11.2 UJ	12.5 U	11.1 U	11 UJ	11.4 U
AROCLOR-1232	10.8 U	10.5 U	10.4 U	10.5 U	10.8 U	10.8 U	11.2 UJ	12.5 U	11.1 U	11 UJ	11.4 U
AROCLOR-1242	10.8 U	10.5 U	10.4 U	10.5 U	10.8 U	10.8 U	11.2 UJ	12.5 U	11.1 U	11 UJ	11.4 U
AROCLOR-1248	10.8 U	10.5 U	10.4 U	10.5 U	10.8 U	10.8 U	11.2 UJ	12.5 U	11.1 U	11 UJ	11.4 U
AROCLOR-1254	10.8 U	10.5 U	10.4 U	10.5 U	10.8 U	10.8 U	11.2 UJ	12.5 U	11.1 U	11 UJ	11.4 U
AROCLOR-1260	10.8 U	10.5 UJ	10.4 UJ	10.5 UJ	10.8 U	10.8 U	11.2 UJ	12.5 U	11.1 U	11 UJ	11.4 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BETA-BHC	0.78 U	0.761 U	0.754 U	0.757 U	0.78 U	0.779 UJ	0.811 UJ	0.903 UJ	0.8 UJ	0.795 UJ	0.826 UJ
DELTA-BHC	0.78 UJ	0.761 U	0.754 U	0.757 U	0.78 UJ	0.779 UJ	0.811 UJ	0.903 UJ	0.8 UJ	0.795 UJ	0.826 UJ
DIELDRIN	1.62 U	1.58 U	1.57 U	1.57 U	1.62 U	1.62 UJ	1.69 UJ	1.88 UJ	1.66 UJ	1.65 UJ	1.72 UJ
ENDOSULFAN I	0.78 U	0.761 U	0.754 U	0.757 U	0.78 U	0.779 U	0.811 U	0.903 U	0.8 U	0.795 U	0.826 U
ENDOSULFAN II	1.62 U	1.58 U	1.57 U	1.57 U	1.62 U	1.62 U	1.69 U	1.88 U	1.66 U	1.65 U	1.72 U
ENDOSULFAN SULFATE	1.62 U	1.58 U	1.57 U	1.57 U	1.62 U	1.62 UJ	1.69 UJ	1.88 UJ	1.66 UJ	1.65 UJ	1.72 UJ
ENDRIN	1.62 U	1.58 U	1.57 U	1.57 U	1.62 U	1.62 U	1.69 U	1.88 U	1.66 U	1.65 U	1.72 U
ENDRIN ALDEHYDE	1.62 U	1.58 U	1.57 U	1.57 U	1.62 U	1.62 U	1.69 U	1.88 U	1.66 U	1.65 U	1.72 U
ENDRIN KETONE	1.62 U	1.58 U	1.57 U	1.57 U	1.62 U	1.62 UJ	1.69 UJ	1.88 UJ	1.66 UJ	1.65 UJ	1.72 UJ
GAMMA-BHC (LINDANE)	0.78 UJ	0.761 U	0.754 U	0.757 U	0.78 UJ	0.779 UJ	0.811 UJ	0.903 UJ	0.8 UJ	0.795 UJ	0.826 UJ
GAMMA-CHLORDANE	0.78 U	0.761 U	0.754 U	0.757 U	2.3	0.779 U	0.811 U	0.903 U	10 J	8.5 J	18
HEPTACHLOR	0.78 U	0.761 U	0.754 U	0.757 U	0.78 U	0.779 UJ	0.811 UJ	0.903 UJ	0.8 UJ	0.795 UJ	0.826 UJ
HEPTACHLOR EPOXIDE	0.78 U	0.761 U	0.754 U	0.757 U	0.78 U	0.779 U	0.811 U	0.903 U	0.8 U	0.795 U	0.826 U
METHOXYCHLOR	7.8 U	7.61 U	7.54 U	7.57 U	7.8 U	7.79 U	8.11 U	9.03 U	8 U	7.95 U	8.26 U
TOXAPHENE	102 U	99.5 U	98.6 U	99 U	102 U	102 U	106 U	118 U	105 U	104 U	108 U
Inorganics (mg/kg)											
LEAD	12 J	9.4 J	12.6 J	9.8 J	23.8 J						
Dioxins (ug/kg)											
1,2,3,4,6,7,8,9-OCDD											
1,2,3,4,6,7,8,9-OCDF											
1,2,3,4,6,7,8-HPCDD											
1,2,3,4,6,7,8-HPCDF											
1,2,3,4,7,8,9-HPCDF											
1,2,3,4,7,8-HXCDD											
1,2,3,4,7,8-HXCDF											
1,2,3,6,7,8-HXCDD											
1,2,3,6,7,8-HXCDF											
1,2,3,7,8,9-HXCDD											
1,2,3,7,8,9-HXCDF											
1,2,3,7,8-PECDD											
1,2,3,7,8-PECDF											
2,3,4,6,7,8-HXCDF											
2,3,4,7,8-PECDF											
2,3,7,8-TCDD											
2,3,7,8-TCDF											
Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	3 U	2.93 U	2.9 U	2.91 U	7.8	3 U	8.1	36	50	16	35
GASOLINE RANGE ORGANICS	3 U	2.93 U	2.9 U	2.91 U	3 U	3 U	3.12 U	3.47 U	3.08 U	3.06 U	3.18 U
OIL & GREASE - HEM	240 U	234 U	232 U	233 U	240 U	240 U	510	560	246 U	244 U	1300 J
OIL RANGE ORGANICS (C24-C40)	12 U	11.7 U	11.6 U	11.6 U	30	25	12.5 U	120	140	37	66

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB065	09SB065	09SB065	09SB065	09SB066	09SB066	09SB066	09SB066	09SB067	09SB067
SAMPLE ID	09SB650204	09SB650406	09SB651416	09SS650002	09SB660204	09SB660406	09SB661416	09SS660002	09SB670204	09SB670406
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	14	0	2	4	14	0	2	4
BOTTOM DEPTH	4	6	16	2	4	6	16	2	4	6
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006
GRO Specific Volatile Organics (ug/kg)										
BENZENE										
ETHYLBENZENE										
M+P-XYLENES										
METHYL TERT-BUTYL ETHER										
O-XYLENE										
TOLUENE										
TOTAL XYLENES										
DRO Specific Semivolatile Organics (ug/kg)										
2-METHYLNAPHTHALENE	3.9 U	4 U	4 U	850	4.5 U	4 U	4.3 U	5.5 J	220	540
ACENAPHTHENE	3.9 U	4 U	4 U	21	4.5 U	4 U	4.3 U	3.8 U	11	12
ACENAPHTHYLENE	3.9 U	4 U	4 U	3.7 U	4.5 U	4 U	4.3 U	3.8 U	4.1 U	4 U
ANTHRACENE	3.9 U	4 U	4 U	27	4.5 U	4 U	4.3 U	6 J	7.4 J	4 U
BENZO(A)ANTHRACENE	3.9 U	4 U	4 U	45	4.5 U	4 U	24	44 J	12	4 U
BENZO(A)PYRENE	3.9 U	4 U	4 U	29 J	4.5 U	4 U	16	52 J	5.6 J	4 U
BENZO(B)FLUORANTHENE	3.9 U	4 U	4 U	45 J	4.5 U	4 U	170	73 J	4.1 U	4 U
BENZO(G,H,I)PERYLENE	3.9 U	4 U	4 U	42 J	4.5 U	4 U	38	64 J	4.1 U	4 U
BENZO(K)FLUORANTHENE	3.9 U	4 U	4 U	11 J	4.5 U	4 U	18	26 J	4.1 U	4 U
CHRYSENE	3.9 U	4 U	4 U	44	4.5 U	4 U	31	52 J	10	4 U
DIBENZO(A,H)ANTHRACENE	3.9 U	4 U	4 U	3.7 UJ	4.5 U	4 U	4.3 U	3.8 UJ	4.1 U	4 U
FLUORANTHENE	3.9 U	4 U	4 U	46	4.5 U	4 U	100	72	11	4 U
FLUORENE	3.9 U	4 U	4 U	13	4.5 U	4 U	4.3 U	3.8 U	21	21
INDENO(1,2,3-CD)PYRENE	3.9 U	4 U	4 U	23 J	4.5 U	4 U	13	46 J	4.1 U	4 U
NAPHTHALENE	3.9 U	4 U	4 U	330	4.5 U	4 U	4.3 U	3.8 U	78	130
PHENANTHRENE	4.4 J	4 U	4 U	160	4.5 U	4 U	17	40	29	4.3 J
PYRENE	3.9 U	4 U	4 U	87	4.7 J	4 U	480	140 J	16	4 U
Pesticides/PCBs (ug/kg)										
4,4'-DDD	1.6 U	1.6 UJ	1.6 U	39 J	1.8 UJ	45 J	1.8 U	290 J	1.7 UJ	1.7 UJ
4,4'-DDE	1.6 U	22 R	1.6 U	48 J	1.8 UJ	100	1.8 U	730 J	2 J	1.7 UJ
4,4'-DDT	1.6 U	1.6 UJ	1.6 U	34 J	1.8 UJ	340	1.8 U	2500 J	2.9 J	1.7 UJ
ALDRIN	0.76 U	0.79 UJ	0.79 U	0.73 U	0.88 UJ	0.8 U	0.85 U	0.75 UR	0.8 UJ	0.79 UJ
ALPHA-BHC	0.76 U	0.79 UJ	0.79 U	0.73 U	0.88 UJ	0.8 U	0.85 U	0.75 UR	0.8 UJ	0.79 UJ
ALPHA-CHLORDANE	0.76 U	0.79 UJ	0.79 U	7.6	0.88 UJ	15	0.85 U	220 J	0.8 UJ	0.79 UJ
AROCLOR-1016	11 U	11 U	11 U	10 U	12 U	11 U	12 U	10 UR	11 U	11 U
AROCLOR-1221	11 U	11 U	11 U	10 U	12 U	11 U	12 U	10 UR	11 U	11 U
AROCLOR-1232	11 U	11 U	11 U	10 U	12 U	11 U	12 U	10 UR	11 U	11 U
AROCLOR-1242	11 U	11 U	11 U	10 U	12 U	11 U	12 U	10 UR	11 U	11 U
AROCLOR-1248	11 U	11 U	11 U	10 U	12 U	11 U	12 U	10 UR	11 U	11 U
AROCLOR-1254	11 U	11 U	11 U	10 U	12 U	11 U	12 U	10 UR	11 U	11 U
AROCLOR-1260	11 U	11 U	11 U	10 U	12 U	11 U	12 U	10 UR	11 U	11 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 UR	0 U	0 U

TABLE A-5

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB065	09SB065	09SB065	09SB065	09SB066	09SB066	09SB066	09SB066	09SB067	09SB067
SAMPLE ID	09SB650204	09SB650406	09SB651416	09SS650002	09SB660204	09SB660406	09SB661416	09SS660002	09SB670204	09SB670406
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	14	0	2	4	14	0	2	4
BOTTOM DEPTH	4	6	16	2	4	6	16	2	4	6
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006
BETA-BHC	0.76 U	0.79 UJ	0.79 U	0.73 U	0.88 UJ	0.8 U	0.85 U	0.75 UR	0.8 UJ	0.79 UJ
DELTA-BHC	0.76 U	0.79 UJ	0.79 U	0.73 U	0.88 UJ	0.8 U	0.85 U	0.75 UR	0.8 UJ	0.79 UJ
DIELDRIN	1.6 U	1.6 UJ	1.6 U	1.5 U	1.8 UJ	1.7 UJ	1.8 U	1.6 UR	1.9 J	1.7 UJ
ENDOSULFAN I	0.76 U	0.79 UJ	0.79 U	0.73 U	0.88 UJ	0.8 U	0.85 U	0.75 UR	0.8 UJ	0.79 UJ
ENDOSULFAN II	1.6 U	1.6 UJ	1.6 U	1.5 U	1.8 UJ	1.7 U	1.8 U	1.6 UR	1.7 UJ	1.7 UJ
ENDOSULFAN SULFATE	1.6 U	1.6 UJ	1.6 U	1.5 U	1.8 UJ	1.7 U	1.8 U	1.6 UR	1.7 UJ	1.7 UJ
ENDRIN	1.6 U	1.6 UJ	1.6 U	1.5 U	1.8 UJ	1.7 U	1.8 U	1.6 UR	1.7 UJ	1.7 UJ
ENDRIN ALDEHYDE	1.6 U	1.6 UJ	1.6 U	1.5 U	1.8 UJ	1.7 U	1.8 U	1.6 UR	1.7 UJ	1.7 UJ
ENDRIN KETONE	1.6 U	1.6 UJ	1.6 U	1.5 U	1.8 UJ	1.7 U	1.8 U	1.6 UR	1.7 UJ	1.7 UJ
GAMMA-BHC (LINDANE)	0.76 U	0.79 UJ	0.79 U	0.73 U	0.88 UJ	0.8 U	0.85 U	0.75 UR	0.8 UJ	0.79 UJ
GAMMA-CHLORDANE	0.76 U	0.79 UJ	0.79 U	20 J	0.88 UJ	19 J	0.85 U	260 J	0.8 UJ	0.79 UJ
HEPTACHLOR	0.76 U	0.79 UJ	0.79 U	0.73 U	0.88 UJ	0.8 U	0.85 U	0.75 UR	0.8 UJ	0.79 UJ
HEPTACHLOR EPOXIDE	0.76 U	0.79 UJ	0.79 U	0.73 U	0.88 UJ	0.8 U	0.85 U	0.75 UR	0.8 UJ	0.79 UJ
METHOXYCHLOR	7.6 U	7.9 UJ	7.9 U	7.3 U	8.8 UJ	8 U	8.5 U	7.5 UR	8 UJ	7.9 UJ
TOXAPHENE	100 U	100 UJ	100 U	96 U	120 UJ	100 U	110 U	98 UR	100 UJ	100 UJ
Petroleum Hydrocarbons (mg/kg)										
DIESEL RANGE ORGANICS	4.3 J	5 J	3 U	95	3.5 J	3 U	52	38	33	21
GASOLINE RANGE ORGANICS										

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB067	09SB067	09SB068	09SB068	09SB069	09SB069	09SB069	09SB070	09SB070	09SB070
SAMPLE ID	09SB671214	09SS670002	09SB680204	09SS680002	09SB690204	09SB690406	09SS690002	09SB700204	09SB700406	09SS700002
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	12	0	2	0	2	4	0	2	4	0
BOTTOM DEPTH	14	2	4	2	4	6	2	4	6	2
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/21/2006	10/21/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006
GRO Specific Volatile Organics (ug/kg)										
BENZENE										
ETHYLBENZENE										
M+P-XYLENES										
METHYL TERT-BUTYL ETHER										
O-XYLENE										
TOLUENE										
TOTAL XYLENES										
DRO Specific Semivolatile Organics (ug/kg)										
2-METHYLNAPHTHALENE	3.8 U	66	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
ACENAPHTHENE	3.8 U	3.9 J	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
ACENAPHTHYLENE	3.8 U	4.4 J	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
ANTHRACENE	3.8 U	6.9 J	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
BENZO(A)ANTHRACENE	3.8 U	16 J	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
BENZO(A)PYRENE	3.8 U	3.7 UJ	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
BENZO(B)FLUORANTHENE	3.8 U	27 J	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
BENZO(G,H,I)PERYLENE	3.8 U	42 J	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
BENZO(K)FLUORANTHENE	3.8 U	3.7 UJ	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
CHRYSENE	3.8 U	28 J	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
DIBENZO(A,H)ANTHRACENE	3.8 U	3.7 UJ	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
FLUORANTHENE	3.8 U	16	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
FLUORENE	12	3.7 U	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
INDENO(1,2,3-CD)PYRENE	3.8 U	3.7 UJ	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
NAPHTHALENE	3.8 U	26	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
PHENANTHRENE	11	57	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
PYRENE	3.8 U	44 J	4 U	4.3 U	3.8 U	3.8 U	4.2 U	3.9 U	4 U	4.3 U
Pesticides/PCBs (ug/kg)										
4,4'-DDD	1.5 U	160 J	1.6 U	1.7 UJ	1.6 U	1.6 U	170 J	53 J	6.6 J	5400 J
4,4'-DDE	1.5 U	1500 J	1.6 U	5.9 J	1.6 U	1.6 U	180	17	4.4	3700 J
4,4'-DDT	1.5 U	2000 J	1.8 J	17 J	66	100	6400	170	85	190000
ALDRIN	0.74 U	0.72 UJ	0.78 U	0.84 UJ	0.75 U	0.75 U	42 U	0.78 U	0.78 U	84 U
ALPHA-BHC	0.74 U	0.72 UJ	0.78 U	0.84 UJ	0.75 U	0.75 U	42 U	0.78 U	0.78 U	84 U
ALPHA-CHLORDANE	0.74 U	790 J	0.78 U	0.84 UJ	0.75 U	0.75 U	78 J	8.7	0.92 J	360 J
AROCLOR-1016	10 U	10 UJ	11 U	12 UJ	10 U	10 U	580 U	11 U	11 U	1200 U
AROCLOR-1221	10 U	10 UJ	11 U	12 UJ	10 U	10 U	580 U	11 U	11 U	1200 U
AROCLOR-1232	10 U	10 UJ	11 U	12 UJ	10 U	10 U	580 U	11 U	11 U	1200 U
AROCLOR-1242	10 U	10 UJ	11 U	12 UJ	10 U	10 U	580 U	11 U	11 U	1200 U
AROCLOR-1248	10 U	10 UJ	11 U	12 UJ	10 U	10 U	580 U	11 U	11 U	1200 U
AROCLOR-1254	10 U	10 UJ	11 U	12 UJ	10 U	10 U	580 U	11 U	11 U	1200 U
AROCLOR-1260	10 U	10 UJ	11 U	12 UJ	10 U	10 U	580 U	11 U	11 U	1200 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U

TABLE A-5

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB067	09SB067	09SB068	09SB068	09SB069	09SB069	09SB069	09SB070	09SB070	09SB070
SAMPLE ID	09SB671214	09SS670002	09SB680204	09SS680002	09SB690204	09SB690406	09SS690002	09SB700204	09SB700406	09SS700002
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	12	0	2	0	2	4	0	2	4	0
BOTTOM DEPTH	14	2	4	2	4	6	2	4	6	2
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/21/2006	10/21/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006
BETA-BHC	0.74 U	0.72 UJ	0.78 U	0.84 UJ	0.75 U	0.75 U	42 U	1.9	0.78 U	84 U
DELTA-BHC	0.74 U	3 R	0.78 U	0.84 UJ	0.75 U	0.75 U	42 U	0.78 U	0.78 U	84 U
DIELDRIN	1.5 U	6000 J	1.6 U	1.7 UJ	1.6 J	1.6 U	360	59 J	6.9 J	4200 J
ENDOSULFAN I	0.74 U	0.72 UJ	0.78 U	0.84 UJ	0.75 U	0.75 U	42 U	0.78 U	0.78 U	84 U
ENDOSULFAN II	1.5 U	1.5 UJ	1.6 U	1.7 UJ	1.6 U	1.6 U	86 U	1.6 U	1.6 U	170 U
ENDOSULFAN SULFATE	1.5 U	1.5 UJ	1.6 U	1.7 UJ	1.6 U	1.6 U	86 U	1.6 U	1.6 U	470 R
ENDRIN	1.5 U	1.5 UJ	1.6 U	1.7 UJ	1.6 U	1.6 U	86 U	1.6 U	1.6 U	170 U
ENDRIN ALDEHYDE	1.5 U	1.5 UJ	1.6 U	1.7 UJ	1.6 U	1.6 U	86 U	1.6 U	1.6 U	170 U
ENDRIN KETONE	1.5 U	1.5 UJ	1.6 U	1.7 UJ	1.6 U	1.6 U	86 U	1.6 U	1.6 U	170 U
GAMMA-BHC (LINDANE)	0.74 U	0.72 UJ	0.78 U	0.84 UJ	0.75 U	0.75 U	42 U	0.78 U	0.78 U	84 U
GAMMA-CHLORDANE	0.74 U	860 J	0.78 U	0.84 UJ	0.75 U	0.75 U	73 J	9.2 J	0.78 U	540 J
HEPTACHLOR	0.74 U	0.72 UJ	0.78 U	0.84 UJ	0.75 U	0.75 U	42 U	0.78 U	0.78 U	84 U
HEPTACHLOR EPOXIDE	0.74 U	0.72 UJ	0.78 U	0.84 UJ	0.75 U	0.75 U	42 U	0.78 U	0.78 U	84 U
METHOXYCHLOR	7.4 U	7.2 UJ	7.8 U	8.4 UJ	7.5 U	7.5 U	420 U	7.8 U	7.8 U	840 U
TOXAPHENE	97 U	94 UJ	100 U	110 UJ	98 U	99 U	5400 U	100 U	100 U	11000 U
Petroleum Hydrocarbons (mg/kg)										
DIESEL RANGE ORGANICS	53	200	3 U	12 J	2.9 UJ	2.9 U	13 J	3 U	3 U	360
GASOLINE RANGE ORGANICS										

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB071	09SB071	09SB071	09SB072	09SB072	09SB072	09SB072	09SB073	09SB073	09SB073
SAMPLE ID	09SB710204	09SB710406	09SS710002	09SB720204	09SB720406	09SB720810	09SS720002	09SB730204	09SB730406	09SB730810
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	0	2	4	8	0	2	4	8
BOTTOM DEPTH	4	6	2	4	6	10	2	4	6	10
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/22/2006	10/22/2006	10/22/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006
GRO Specific Volatile Organics (ug/kg)										
BENZENE										
ETHYLBENZENE										
M+P-XYLENES										
METHYL TERT-BUTYL ETHER										
O-XYLENE										
TOLUENE										
TOTAL XYLENES										
DRO Specific Semivolatile Organics (ug/kg)										
2-METHYLNAPHTHALENE	3.8 U	5.1 U	4 U	5.2 J	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
ACENAPHTHENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
ACENAPHTHYLENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
ANTHRACENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
BENZO(A)ANTHRACENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	4.8 J	4.1 U	4 U	3.8 U
BENZO(A)PYRENE	3.8 U	5.1 U	4 UJ	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
BENZO(B)FLUORANTHENE	3.8 U	5.1 U	4 UJ	4.1 U	4 UJ	3.8 U	7.7 J	4.1 U	4 U	3.8 U
BENZO(G,H,I)PERYLENE	3.8 U	5.1 U	4 UJ	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
BENZO(K)FLUORANTHENE	3.8 U	5.1 U	4 UJ	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
CHRYSENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	7.7 J	4.1 U	4 U	3.8 U
DIBENZO(A,H)ANTHRACENE	3.8 U	5.1 U	4 UJ	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
FLUORANTHENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	11	4.1 U	4 U	3.8 U
FLUORENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
INDENO(1,2,3-CD)PYRENE	3.8 U	5.1 U	4 UJ	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
NAPHTHALENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	4.2 U	4.1 U	4 U	3.8 U
PHENANTHRENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	4.8 J	4.1 U	4 U	3.8 U
PYRENE	3.8 U	5.1 U	4 U	4.1 U	4 UJ	3.8 U	8.7	4.1 U	4 U	3.8 U
Pesticides/PCBs (ug/kg)										
4,4'-DDD	1.6 U	2.1 U	1.6 UJ	1.7 UJ	1.6 U	1.6 U	36 J	1.7 UJ	1.6 U	1.6 U
4,4'-DDE	1.6 U	2.1 U	1.6 UJ	1.7 UJ	1.6 U	1.6 U	210	33 J	1.6 U	1.6 U
4,4'-DDT	1.6 U	2.1 U	6.7 J	1.7 UJ	1.6 U	2.6 J	71	12 J	1.6 U	1.6 U
ALDRIN	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 U
ALPHA-BHC	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 U
ALPHA-CHLORDANE	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 U
AROCLOR-1016	10 U	14 U	11 UJ	11 U	11 U	10 U	12 U	11 U	11 U	10 U
AROCLOR-1221	10 U	14 U	11 UJ	11 U	11 U	10 U	12 U	11 U	11 U	10 U
AROCLOR-1232	10 U	14 U	11 UJ	11 U	11 U	10 U	12 U	11 U	11 U	10 U
AROCLOR-1242	10 U	14 U	11 UJ	11 U	11 U	10 U	12 U	11 U	11 U	10 U
AROCLOR-1248	10 U	14 U	11 UJ	11 U	11 U	10 U	12 U	11 U	11 U	10 U
AROCLOR-1254	10 U	14 U	11 UJ	11 U	11 U	10 U	12 U	11 U	11 U	10 U
AROCLOR-1260	10 U	14 U	11 UJ	11 U	11 U	10 U	12 U	11 U	11 U	10 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U

TABLE A-5

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB071	09SB071	09SB071	09SB072	09SB072	09SB072	09SB072	09SB073	09SB073	09SB073
SAMPLE ID	09SB710204	09SB710406	09SS710002	09SB720204	09SB720406	09SB720810	09SS720002	09SB730204	09SB730406	09SB730810
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	0	2	4	8	0	2	4	8
BOTTOM DEPTH	4	6	2	4	6	10	2	4	6	10
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/22/2006	10/22/2006	10/22/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006
BETA-BHC	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 U
DELTA-BHC	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 U
DIELDRIN	1.6 U	2.1 U	1.6 UJ	1.7 UJ	1.6 U	1.6 U	67 R	1.7 UJ	1.6 U	1.6 U
ENDOSULFAN I	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 UJ
ENDOSULFAN II	1.6 U	2.1 U	1.6 UJ	1.7 UJ	1.6 U	1.6 U	1.7 U	1.7 UJ	1.6 U	1.6 U
ENDOSULFAN SULFATE	1.6 U	2.1 U	1.6 UJ	1.7 UJ	1.6 U	1.6 U	1.7 U	1.7 UJ	1.6 U	1.6 U
ENDRIN	1.6 U	2.1 U	1.6 UJ	1.7 UJ	1.6 U	1.6 U	1.7 U	1.7 UJ	1.6 U	1.6 U
ENDRIN ALDEHYDE	1.6 U	2.1 U	1.6 UJ	1.7 UJ	1.6 U	1.6 U	1.7 U	1.7 UJ	1.6 U	1.6 U
ENDRIN KETONE	1.6 U	2.1 U	1.6 UJ	1.7 UJ	1.6 U	1.6 U	1.7 U	1.7 UJ	1.6 U	1.6 U
GAMMA-BHC (LINDANE)	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 U
GAMMA-CHLORDANE	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 U
HEPTACHLOR	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 U
HEPTACHLOR EPOXIDE	0.75 U	1 U	0.79 UJ	0.81 UJ	0.78 U	0.75 U	0.84 U	0.81 UJ	0.78 U	0.76 U
METHOXYCHLOR	7.5 U	10 U	7.9 UJ	8.1 UJ	7.8 U	7.5 U	8.4 U	8.1 UJ	7.8 U	7.6 U
TOXAPHENE	99 U	130 U	100 UJ	110 UJ	100 U	98 U	110 U	110 UJ	100 U	99 U
Petroleum Hydrocarbons (mg/kg)										
DIESEL RANGE ORGANICS	2.9 U	6.9 J	170	3.1 U	3 UJ	2.9 U	7.5	3.1 U	3 U	2.9 U
GASOLINE RANGE ORGANICS										

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB073	09SB074	09SB074	09SB074	09SB074	09SB075	09SB075	09SB075	09SB075	09SB076
SAMPLE ID	09SS730002	09SB740204	09SB740406	09SB741416	09SS740002	09SB750204	09SB750406	09SB750709	09SS750002	09SB760204
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	14	0	2	4	7	0	2
BOTTOM DEPTH	2	4	6	16	2	4	6	9	2	4
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/23/2006
GRO Specific Volatile Organics (ug/kg)										
BENZENE										0.90 U
ETHYLBENZENE										0.90 U
M+P-XYLENES										0.90 U
METHYL TERT-BUTYL ETHER										0.90 U
O-XYLENE										0.90 U
TOLUENE										0.90 U
TOTAL XYLENES										0.90 U
DRO Specific Semivolatile Organics (ug/kg)										
2-METHYLNAPHTHALENE	3.9 U	4.7 J	3.9 U	3.7 U	9	3.8 U	3.8 U	3.7 U	3.9 U	
ACENAPHTHENE	3.9 U	3.8 U	3.9 U	3.7 U	3.5 U	3.8 U	3.8 U	3.7 U	3.9 U	
ACENAPHTHYLENE	3.9 U	3.8 U	3.9 U	3.7 U	3.5 U	3.8 U	3.8 U	3.7 U	3.9 U	
ANTHRACENE	3.9 U	3.8 UJ	3.9 U	3.7 U	3.5 U	3.8 U	3.8 U	3.7 U	3.9 U	
BENZO(A)ANTHRACENE	15	3.8 UJ	11	15	8.5 J	3.8 U	3.8 U	3.7 U	3.9 U	
BENZO(A)PYRENE	19	3.8 U	8.2	14	3.5 UJ	3.8 U	3.8 U	3.7 U	3.9 U	
BENZO(B)FLUORANTHENE	32	3.8 U	20	28	3.5 UJ	3.8 U	3.8 U	3.7 U	3.9 U	
BENZO(G,H,I)PERYLENE	14	3.8 U	16	16	3.5 UJ	3.8 U	3.8 U	3.7 U	3.9 U	
BENZO(K)FLUORANTHENE	8.8	3.8 U	3.9 U	3.7 U	3.5 UJ	3.8 U	3.8 U	3.7 U	3.9 U	
CHRYSENE	20	3.8 UJ	13	20	6.9 J	3.8 U	3.8 U	3.7 U	3.9 U	
DIBENZO(A,H)ANTHRACENE	3.9 U	3.8 U	3.9 U	3.7 U	3.5 UJ	3.8 U	3.8 U	3.7 U	3.9 U	
FLUORANTHENE	37	3.8 UJ	16	54	5.3 J	3.8 U	3.8 U	3.7 U	3.9 U	
FLUORENE	3.9 U	3.8 U	3.9 U	3.7 U	3.5 U	3.8 U	3.8 U	3.7 U	3.9 U	
INDENO(1,2,3-CD)PYRENE	11	3.8 U	6.8 J	7.3 J	3.5 UJ	3.8 U	3.8 U	3.7 U	3.9 U	
NAPHTHALENE	3.9 U	3.8 U	3.9 U	3.7 U	5.6 J	3.8 U	3.8 U	3.7 U	3.9 U	
PHENANTHRENE	14	3.8 UJ	3.9 U	3.7 U	7.4	3.8 U	3.8 U	3.7 U	3.9 U	
PYRENE	44	3.8 UJ	16	46	14 J	3.8 U	3.8 U	3.7 U	3.9 U	
Pesticides/PCBs (ug/kg)										
4,4'-DDD	5.8	1.6 U	1.6 UJ	1.5 UJ	10	1.6 U	1.5 U	1.5 U	1.6 U	
4,4'-DDE	230	1.6 U	2.8 J	1.8 J	76	1.6 U	1.5 U	1.5 U	1.6 U	
4,4'-DDT	68	1.6 U	6.1 J	2.5 J	83	1.6 U	1.5 U	1.5 U	1.6 U	
ALDRIN	0.77 U	0.75 U	0.76 UJ	0.73 UJ	0.69 U	0.76 U	0.74 U	0.72 U	0.77 U	
ALPHA-BHC	0.77 U	0.75 U	0.76 UJ	0.73 UJ	0.69 U	0.76 U	0.74 U	0.72 U	0.77 U	
ALPHA-CHLORDANE	0.77 U	0.75 U	0.76 UJ	0.73 UJ	4.6	0.76 U	0.74 U	0.72 U	0.77 U	
AROCLOR-1016	11 U	10 U	11 U	10 U	9.6 U	10 U	10 U	10 U	11 U	
AROCLOR-1221	11 U	10 U	11 U	10 U	9.6 U	10 U	10 U	10 U	11 U	
AROCLOR-1232	11 U	10 U	11 U	10 U	9.6 U	10 U	10 U	10 U	11 U	
AROCLOR-1242	11 U	10 U	11 U	10 U	9.6 U	10 U	10 U	10 U	11 U	
AROCLOR-1248	11 U	10 U	11 U	10 U	9.6 U	10 U	10 U	10 U	11 U	
AROCLOR-1254	11 U	10 U	11 U	10 U	9.6 U	10 U	10 U	10 U	11 U	
AROCLOR-1260	11 U	10 U	11 U	10 U	9.6 U	10 U	10 U	10 U	11 U	
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	

TABLE A-5

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB073	09SB074	09SB074	09SB074	09SB074	09SB075	09SB075	09SB075	09SB075	09SB076
SAMPLE ID	09SS730002	09SB740204	09SB740406	09SB741416	09SS740002	09SB750204	09SB750406	09SB750709	09SS750002	09SB760204
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	2	4	14	0	2	4	7	0	2
BOTTOM DEPTH	2	4	6	16	2	4	6	9	2	4
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/21/2006	10/23/2006
BETA-BHC	0.77 U	0.75 U	0.76 UJ	0.73 UJ	0.69 U	0.76 U	0.74 U	0.72 U	0.77 U	
DELTA-BHC	0.77 U	0.75 U	0.76 UJ	0.73 UJ	0.69 U	0.76 U	0.74 U	0.72 U	0.77 U	
DIELDRIN	1.6 U	1.6 U	1.6 UJ	1.5 UJ	3.5 R	1.6 U	1.5 U	1.5 U	1.6 U	
ENDOSULFAN I	0.77 U	0.75 U	0.76 UJ	0.73 UJ	0.69 U	0.76 U	0.74 U	0.72 U	0.77 U	
ENDOSULFAN II	1.6 U	1.6 U	1.6 UJ	1.5 UJ	1.4 U	1.6 U	1.5 U	1.5 U	1.6 U	
ENDOSULFAN SULFATE	1.6 U	1.6 U	1.6 UJ	1.5 UJ	1.4 U	1.6 U	1.5 U	1.5 U	1.6 U	
ENDRIN	1.6 U	1.6 U	1.6 UJ	1.5 UJ	1.4 U	1.6 U	1.5 U	1.5 U	1.6 U	
ENDRIN ALDEHYDE	1.6 U	1.6 U	1.6 UJ	1.5 UJ	1.4 U	1.6 U	1.5 U	1.5 U	1.6 U	
ENDRIN KETONE	1.6 U	1.6 U	1.6 UJ	1.5 UJ	1.4 U	1.6 U	1.5 U	1.5 U	1.6 U	
GAMMA-BHC (LINDANE)	0.77 U	0.75 U	0.76 UJ	0.73 UJ	0.69 U	0.76 U	0.74 U	0.72 U	0.77 U	
GAMMA-CHLORDANE	2.1	0.75 U	0.76 UJ	0.73 UJ	5.3	0.76 U	0.74 U	0.72 U	0.77 U	
HEPTACHLOR	0.77 U	0.75 U	0.76 UJ	0.73 UJ	0.69 U	0.76 U	0.74 U	0.72 U	0.77 U	
HEPTACHLOR EPOXIDE	0.77 U	0.75 U	0.76 UJ	0.73 UJ	0.69 U	0.76 U	0.74 U	0.72 U	0.77 U	
METHOXYCHLOR	7.7 U	7.5 U	7.6 UJ	7.3 UJ	6.9 U	7.6 U	7.4 U	7.2 U	7.7 U	
TOXAPHENE	100 U	98 U	100 UJ	96 UJ	91 U	99 U	96 U	94 U	100 U	
Petroleum Hydrocarbons (mg/kg)										
DIESEL RANGE ORGANICS	8	1400	4.8 J	20	33	2.9 U	2.8 U	2.8 U	5.4 J	
GASOLINE RANGE ORGANICS										5.5 U

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB076	09SB076	09SB077	09SB077	09SB077	09SB078	09SB078	09SB078	09SB078	09SB079
SAMPLE ID	09SB760406	09SS760002	09SB770204	09SB770405	09SS770002	09SB780204	09SB780406	09SB780810	09SS780002	09SB790204
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	0	2	4	0	2	4	8	0	2
BOTTOM DEPTH	6	2	4	5	2	4	6	10	2	4
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/23/2006	10/23/2006	10/23/2006	10/23/2006	10/23/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006
GRO Specific Volatile Organics (ug/kg)										
BENZENE	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U					
ETHYLBENZENE	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U					
M+P-XYLENES	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U					
METHYL TERT-BUTYL ETHER	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U					
O-XYLENE	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U					
TOLUENE	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U					
TOTAL XYLENES	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U					
DRO Specific Semivolatile Organics (ug/kg)										
2-METHYLNAPHTHALENE						4.0 U	3.9 U	3.8 U	29 J	7.8 J
ACENAPHTHENE						4.0 U	3.9 U	3.8 U	19 U	5.9 J
ACENAPHTHYLENE						4.0 U	3.9 U	3.8 U	19 U	4.1 U
ANTHRACENE						4.0 U	3.9 U	3.8 U	24 J	4.1 U
BENZO(A)ANTHRACENE						4.0 U	3.9 U	3.8 U	100 J	4.1 U
BENZO(A)PYRENE						4.0 U	3.9 U	3.8 U	100 J	4.1 UJ
BENZO(B)FLUORANTHENE						4.0 U	3.9 U	3.8 U	150 J	4.1 UJ
BENZO(G,H,I)PERYLENE						4.0 U	3.9 U	3.8 U	710 J	4.1 UJ
BENZO(K)FLUORANTHENE						4.0 U	3.9 U	3.8 U	68 J	4.1 UJ
CHRYSENE						4.0 U	3.9 U	3.8 U	79 J	4.1 U
DIBENZO(A,H)ANTHRACENE						4.0 U	3.9 U	3.8 U	19 UJ	4.1 UJ
FLUORANTHENE						4.0 U	3.9 U	3.8 U	66	4.1 U
FLUORENE						4.0 U	3.9 U	3.8 U	19 U	13
INDENO(1,2,3-CD)PYRENE						4.0 U	3.9 U	3.8 U	19 UJ	4.1 UJ
NAPHTHALENE						4.0 U	3.9 U	3.8 U	22 J	4.4 J
PHENANTHRENE						4.0 U	3.9 U	3.8 U	49	7.5 J
PYRENE						4.0 U	3.9 U	3.8 U	190 J	17
Pesticides/PCBs (ug/kg)										
4,4'-DDD										
4,4'-DDE										
4,4'-DDT										
ALDRIN										
ALPHA-BHC										
ALPHA-CHLORDANE										
AROCLOR-1016										
AROCLOR-1221										
AROCLOR-1232										
AROCLOR-1242										
AROCLOR-1248										
AROCLOR-1254										
AROCLOR-1260										
TOTAL AROCLOR										

TABLE A-5

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB076	09SB076	09SB077	09SB077	09SB077	09SB078	09SB078	09SB078	09SB078	09SB079
SAMPLE ID	09SB760406	09SS760002	09SB770204	09SB770405	09SS770002	09SB780204	09SB780406	09SB780810	09SS780002	09SB790204
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	0	2	4	0	2	4	8	0	2
BOTTOM DEPTH	6	2	4	5	2	4	6	10	2	4
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/23/2006	10/23/2006	10/23/2006	10/23/2006	10/23/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006
BETA-BHC										
DELTA-BHC										
DIELDRIN										
ENDOSULFAN I										
ENDOSULFAN II										
ENDOSULFAN SULFATE										
ENDRIN										
ENDRIN ALDEHYDE										
ENDRIN KETONE										
GAMMA-BHC (LINDANE)										
GAMMA-CHLORDANE										
HEPTACHLOR										
HEPTACHLOR EPOXIDE										
METHOXYCHLOR										
TOXAPHENE										
Petroleum Hydrocarbons (mg/kg)										
DIESEL RANGE ORGANICS						12 J	2.9 U	2.9 U	410	32 J
GASOLINE RANGE ORGANICS	5.3 U	4.9 U	5.0 U	5.3 U	5.2 U					

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB079		09SB079		09SB079		09SB080		09SB080		09SB080		09SB081		09SB081		09SB081		09SB081	
SAMPLE ID	09SB790406		09SB790810		09SS790002		09SB800204		09SB800406		09SS800002		09SB810204		09SB810406		09SB810709		09SS810002	
MATRIX	SO		SO		SO		SO		SO		SO		SO		SO		SO		SO	
TOP DEPTH	4		8		0		2		4		0		2		4		7		0	
BOTTOM DEPTH	6		10		2		4		6		2		4		6		9		2	
SAMLE CODE	NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL		NORMAL	
SAMPLE DATE	10/22/2006		10/22/2006		10/22/2006		10/22/2006		10/22/2006		10/22/2006		10/22/2006		10/22/2006		10/22/2006		10/22/2006	
GRO Specific Volatile Organics (ug/kg)																				
BENZENE																				
ETHYLBENZENE																				
M+P-XYLENES																				
METHYL TERT-BUTYL ETHER																				
O-XYLENE																				
TOLUENE																				
TOTAL XYLENES																				
DRO Specific Semivolatile Organics (ug/kg)																				
2-METHYLNAPHTHALENE	96		7.1	J	4.0	U	3.9	U	3.9	U	13		3.8	U	3.8	U	9.0	J	4.1	U
ACENAPHTHENE	50		4.3	J	4.0	U	3.9	U	3.9	U	85		3.8	U	3.8	U	6.2	U	4.1	U
ACENAPHTHYLENE	4.1	U	4.1	U	4.0	U	3.9	U	3.9	U	5.1	J	3.8	U	3.8	U	6.2	U	4.1	U
ANTHRACENE	4.1	U	5.2	J	4.0	U	3.9	U	3.9	U	130		3.8	U	3.8	U	6.2	U	4.1	U
BENZO(A)ANTHRACENE	16		31		5.5	J	3.9	U	3.9	U	730	J	3.8	U	3.8	U	110		4.3	J
BENZO(A)PYRENE	14	J	33	J	5.8	J	3.9	U	3.9	U	850	J	3.8	U	3.8	U	6.2	UJ	4.1	U
BENZO(B)FLUORANTHENE	4.1	UJ	140	J	8.5		3.9	U	3.9	U	1300	J	3.8	U	3.8	U	350	J	4.3	J
BENZO(G,H,I)PERYLENE	22	J	170	J	14		3.9	U	3.9	U	760	J	3.8	U	3.8	U	53	J	4.1	U
BENZO(K)FLUORANTHENE	4.1	UJ	23	J	4.0	U	3.9	U	3.9	U	370	J	3.8	U	3.8	U	32	J	4.1	U
CHRYSENE	16	J	90		4.9	J	3.9	U	3.9	U	930	J	3.8	U	3.8	U	92		4.1	U
DIBENZO(A,H)ANTHRACENE	4.1	UJ	16	J	4.0	U	3.9	U	3.9	U	150	J	3.8	U	3.8	U	6.2	UJ	4.1	U
FLUORANTHENE	7.1	J	260		11		3.9	U	3.9	U	1300		3.8	U	3.8	U	130		8.6	
FLUORENE	64		4.1	U	4.0	U	3.9	U	3.9	U	62		3.8	U	3.8	U	6.2	U	4.1	U
INDENO(1,2,3-CD)PYRENE	4.1	UJ	28	J	4.0	U	3.9	U	3.9	U	580	J	3.8	U	3.8	U	30	J	4.1	U
NAPHTHALENE	4.1	U	13		4.0	U	3.9	U	3.9	U	12		3.8	U	3.8	U	7.1	J	4.1	U
PHENANTHRENE	63		230		5.8	J	3.9	U	3.9	U	840		3.8	U	3.8	U	29		6.8	J
PYRENE	140	J	490		13		3.9	U	3.9	U	2500	J	3.8	U	3.8	U	630		6.8	J
Pesticides/PCBs (ug/kg)																				
4,4'-DDD																				
4,4'-DDE																				
4,4'-DDT																				
ALDRIN																				
ALPHA-BHC																				
ALPHA-CHLORDANE																				
AROCLOR-1016																				
AROCLOR-1221																				
AROCLOR-1232																				
AROCLOR-1242																				
AROCLOR-1248																				
AROCLOR-1254																				
AROCLOR-1260																				
TOTAL AROCLOR																				

TABLE A-5

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB079	09SB079	09SB079	09SB080	09SB080	09SB080	09SB081	09SB081	09SB081	09SB081
SAMPLE ID	09SB790406	09SB790810	09SS790002	09SB800204	09SB800406	09SS800002	09SB810204	09SB810406	09SB810709	09SS810002
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	4	8	0	2	4	0	2	4	7	0
BOTTOM DEPTH	6	10	2	4	6	2	4	6	9	2
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006	10/22/2006
BETA-BHC										
DELTA-BHC										
DIELDRIN										
ENDOSULFAN I										
ENDOSULFAN II										
ENDOSULFAN SULFATE										
ENDRIN										
ENDRIN ALDEHYDE										
ENDRIN KETONE										
GAMMA-BHC (LINDANE)										
GAMMA-CHLORDANE										
HEPTACHLOR										
HEPTACHLOR EPOXIDE										
METHOXYCHLOR										
TOXAPHENE										
Petroleum Hydrocarbons (mg/kg)										
DIESEL RANGE ORGANICS	20 J	63	5.3 J	2.9 U	3.0 U	44	2.9 U	2.9 U	59	3.1 UJ
GASOLINE RANGE ORGANICS										

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB082		09SB083		09SB083		09SB083	
SAMPLE ID	09SS820002		09SB830204		09SB830406		09SS830002	
MATRIX	SO		SO		SO		SO	
TOP DEPTH	0		2		4		0	
BOTTOM DEPTH	2		4		6		2	
SAMLE CODE	NORMAL		NORMAL		NORMAL		NORMAL	
SAMPLE DATE	10/24/2006		10/21/2006		10/21/2006		10/21/2006	
GRO Specific Volatile Organics (ug/kg)								
BENZENE								
ETHYLBENZENE								
M+P-XYLENES								
METHYL TERT-BUTYL ETHER								
O-XYLENE								
TOLUENE								
TOTAL XYLENES								
DRO Specific Semivolatile Organics (ug/kg)								
2-METHYLNAPHTHALENE	3.9	U	3.9	U	4.5	U	130	
ACENAPHTHENE	3.9	U	3.9	U	4.5	U	8.0	U
ACENAPHTHYLENE	3.9	U	3.9	U	4.5	U	8.0	U
ANTHRACENE	3.9	U	3.9	U	4.5	U	8.0	U
BENZO(A)ANTHRACENE	12	J	3.9	U	4.5	U	11	J
BENZO(A)PYRENE	28		3.9	UJ	4.5	U	8.0	UJ
BENZO(B)FLUORANTHENE	61	J	3.9	UJ	4.5	U	8.0	UJ
BENZO(G,H,I)PERYLENE	32		32	J	4.5	U	140	J
BENZO(K)FLUORANTHENE	21	J	3.9	UJ	4.5	U	8.0	UJ
CHRYSENE	12	J	3.9	U	4.5	U	18	J
DIBENZO(A,H)ANTHRACENE	9.5		3.9	UJ	4.5	U	8.0	UJ
FLUORANTHENE	17	J	3.9	U	4.5	U	21	
FLUORENE	3.9	U	3.9	U	4.5	U	8.0	U
INDENO(1,2,3-CD)PYRENE	26		3.9	UJ	4.5	U	8.0	UJ
NAPHTHALENE	3.9	U	3.9	U	4.5	U	41	
PHENANTHRENE	8.0	J	3.9	U	4.5	U	18	
PYRENE	28	J	3.9	U	4.5	U	57	J
Pesticides/PCBs (ug/kg)								
4,4'-DDD								
4,4'-DDE								
4,4'-DDT								
ALDRIN								
ALPHA-BHC								
ALPHA-CHLORDANE								
AROCLOR-1016								
AROCLOR-1221								
AROCLOR-1232								
AROCLOR-1242								
AROCLOR-1248								
AROCLOR-1254								
AROCLOR-1260								
TOTAL AROCLOR								

TABLE A-5

ANALYTICAL DATA (PHASE 4 OCTOBER 2005)
SWMU 9
NSWC CRANE
CRANE, INDIANA

LOCATION	09SB082	09SB083	09SB083	09SB083
SAMPLE ID	09SS820002	09SB830204	09SB830406	09SS830002
MATRIX	SO	SO	SO	SO
TOP DEPTH	0	2	4	0
BOTTOM DEPTH	2	4	6	2
SAMLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE DATE	10/24/2006	10/21/2006	10/21/2006	10/21/2006
BETA-BHC				
DELTA-BHC				
DIELDRIN				
ENDOSULFAN I				
ENDOSULFAN II				
ENDOSULFAN SULFATE				
ENDRIN				
ENDRIN ALDEHYDE				
ENDRIN KETONE				
GAMMA-BHC (LINDANE)				
GAMMA-CHLORDANE				
HEPTACHLOR				
HEPTACHLOR EPOXIDE				
METHOXYCHLOR				
TOXAPHENE				
Petroleum Hydrocarbons (mg/kg)				
DIESEL RANGE ORGANICS	210	26	4.3 J	250
GASOLINE RANGE ORGANICS				

Phase 5 Analytical Data

August 2007

I

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB86-SO-0204

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04201 Run Sequence: R021631

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04201-012

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9140735.d

% Moisture: 20.8 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) PFEX Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.086	U
319-85-7	beta-BHC	0.086	U
319-86-8	delta-BHC	0.085	U
58-89-9	gamma-BHC	0.086	U
76-44-8	Heptachlor	0.11	U
309-00-2	Aldrin	0.076	U
1024-57-3	Heptachlor epoxide	0.093	U
959-98-8	Endosulfan I	0.095	U
60-57-1	Dieldrin	0.13	U
72-55-9	4,4'-DDE	0.16	U
72-20-8	Endrin	0.14	U
33213-65-9	Endosulfan II	0.23	U
72-54-8	4,4'-DDD	0.18	U
1031-07-8	Endosulfan sulfate	0.21	U
50-29-3	4,4'-DDT	0.18	U
72-43-5	Methoxychlor	1.3	U
7421-93-4	Endrin aldehyde	0.23	U
5103-71-9	alpha-Chlordane	0.090	U
53494-70-5	Endrin ketone	0.24	U
5103-74-2	gamma-Chlordane	0.076	U
8001-35-2	Toxaphene	8.1	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB86-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021631

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-013

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9140736.d

% Moisture: 14.7 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) PFEX

Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.080	U
319-85-7	beta-BHC	0.080	U
319-86-8	delta-BHC	0.079	U
58-89-9	gamma-BHC	0.080	U
76-44-8	Heptachlor	0.10	U
309-00-2	Aldrin	0.070	U
1024-57-3	Heptachlor epoxide	0.087	U
959-98-8	Endosulfan I	0.088	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.15	U
72-20-8	Endrin	0.13	U
33213-65-9	Endosulfan II	0.21	U
72-54-8	4,4'-DDD	0.16	U
1031-07-8	Endosulfan sulfate	0.20	U
50-29-3	4,4'-DDT	2.8	J
72-43-5	Methoxychlor	1.2	U
7421-93-4	Endrin aldehyde	0.21	U
5103-71-9	alpha-Chlordane	0.083	U
53494-70-5	Endrin ketone	0.22	U
5103-74-2	gamma-Chlordane	0.070	U
8001-35-2	Toxaphene	7.5	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09S886-SO-0810

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04201 Run Sequence: RC21631

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04201-014

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9140737.d

% Moisture: 16.5 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) PFEX Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.081	U
319-85-7	beta-BHC	0.081	U
319-86-8	delta-BHC	0.080	U
58-89-9	gamma-BHC	0.081	U
76-44-8	Heptachlor	0.10	U
309-00-2	Aldrin	0.072	U
1024-57-3	Heptachlor epoxide	0.089	U
959-98-8	Endosulfan I	0.090	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.16	U
72-20-8	Endrin	0.13	U
33213-65-9	Endosulfan II	0.22	U
72-54-8	4,4'-DDD	0.17	U
1031-07-8	Endosulfan sulfate	0.20	U
50-29-3	4,4'-DDT	0.17	U
72-43-5	Methoxychlor	1.2	U
7421-93-4	Endrin aldehyde	0.22	U
5103-71-9	alpha-Chlordane	0.085	U
53494-70-5	Endrin ketone	0.23	U
5103-74-2	gamma-Chlordane	0.072	U
8001-35-2	Toxaphene	7.7	U

Comments:

I

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB86-SO-0002

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04201 Run Sequence: R021631

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04201-011

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9140734.d

% Moisture: 15.7 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) PFEX Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.081	U
319-85-7	beta-BHC	0.081	U
319-86-8	delta-BHC	0.079	U
58-89-9	gamma-BHC	0.081	U
76-44-8	Heptachlor	0.10	U
309-00-2	Aldrin	0.071	U
1024-57-3	Heptachlor epoxide	0.088	U
959-98-8	Endosulfan I	0.089	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	2.7	J
72-20-8	Endrin	0.13	U
33213-65-9	Endosulfan II	0.21	U
72-54-8	4,4'-DDD	0.17	U
1031-07-8	Endosulfan sulfate	0.20	U
50-29-3	4,4'-DDT	3.5	
72-43-5	Methoxychlor	1.2	U
7421-93-4	Endrin aldehyde	0.21	U
5103-71-9	alpha-Chlordane	0.084	U
53494-70-5	Endrin ketone	0.23	U
5103-74-2	gamma-Chlordane	0.071	U
8001-35-2	Toxaphene	7.6	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB104-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-001

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090721.d

% Moisture: 14.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/10/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.41	U
94-75-7	2,4-D	0.35	U
88-85-7	Dinoseb	0.53	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB104-SO-1012

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04201 Run Sequence: R021411

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04201-002

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9080708.d

% Moisture: 16.0 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) SONC Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB104-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-003

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080709.d

% Moisture: 16.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	2.8	J
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB104-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-004

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080710.d

% Moisture: 21.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.27	U
93-72-1	2,4,5-TP	0.44	U
94-75-7	2,4-D	0.38	U
88-85-7	Dinoseb	0.58	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB105-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-005

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080711.d

% Moisture: 15.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.41	U
94-75-7	2,4-D	0.35	U
88-85-7	Dinoseb	0.54	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB105-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-006

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080712.d

% Moisture: 16.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB106-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-007

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080713.d

% Moisture: 16.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB106-SO-1214

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-008

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080714.d

% Moisture: 16.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB106-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-009

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080715.d

% Moisture: 18.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.56	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB106-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-010

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080716.d

% Moisture: 20.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.44	U
94-75-7	2,4-D	5.1	P
88-85-7	Dinoseb	0.58	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB86-SO-0002

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04201 Run Sequence: R021411

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04201-011

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9080721.d

% Moisture: 16.0 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) SONC Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	3.5	
93-72-1	2,4,5-TP	2.9	J
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB86-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-012

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080722.d

% Moisture: 21.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.27	U
93-72-1	2,4,5-TP	0.44	U
94-75-7	2,4-D	0.38	U
88-85-7	Dinoseb	0.58	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB86-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-013

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080723.d

% Moisture: 15.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.41	U
94-75-7	2,4-D	0.35	U
88-85-7	Dinoseb	0.54	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB86-SO-0810

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04201 Run Sequence: R021411

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04201-014

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9080724.d

% Moisture: 16.0 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) SONC Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB87-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-015

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080725.d

% Moisture: 15.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/09/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.41	U
94-75-7	2,4-D	0.35	U
88-85-7	Dinoseb	0.54	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB87-SO-1012

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-016

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080726.d

% Moisture: 14.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/10/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.41	U
94-75-7	2,4-D	0.35	U
88-85-7	Dinoseb	0.53	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB87-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04201

Run Sequence: R021411

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04201-017

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9080727.d

% Moisture: 17.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/10/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB87-SO-0406

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04201 Run Sequence: R021411

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04201-018

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9080728.d

% Moisture: 19.0 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) SONC Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/10/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.57	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB105-SO-1315

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04201 Run Sequence: R021411

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04201-019

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9080729.d

% Moisture: 17.0 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) SONC Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/10/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB105-SO-0204

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04201 Run Sequence: R021411

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04201-020

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9080730.d

% Moisture: 18.0 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) SONC Date Extracted: 08/30/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/10/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.56	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB84-SO-0607

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021631

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-001

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9140742.d

% Moisture: 14.7 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) PFEX

Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.080	U
319-85-7	beta-BHC	0.080	U
319-86-8	delta-BHC	0.079	U
58-89-9	gamma-BHC	0.080	U
76-44-8	Heptachlor	0.10	U
309-00-2	Aldrin	0.070	U
1024-57-3	Heptachlor epoxide	0.087	U
959-98-8	Endosulfan I	0.088	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.15	U
72-20-8	Endrin	0.13	U
33213-65-9	Endosulfan II	0.21	U
72-54-8	4,4'-DDD	0.16	U
1031-07-8	Endosulfan sulfate	0.20	U
50-29-3	4,4'-DDT	0.16	U
72-43-5	Methoxychlor	1.2	U
7421-93-4	Endrin aldehyde	0.21	U
5103-71-9	alpha-Chlordane	0.083	U
53494-70-5	Endrin ketone	0.22	U
5103-74-2	gamma-Chlordane	0.070	U
8001-35-2	Toxaphene	7.5	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB85-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021631

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-002

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9140743.d

% Moisture: 14.6 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) PFEX

Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.080	U
319-85-7	beta-BHC	2.4	
319-86-8	delta-BHC	0.078	U
58-89-9	gamma-BHC	0.080	U
76-44-8	Heptachlor	0.10	U
309-00-2	Aldrin	0.070	U
1024-57-3	Heptachlor epoxide	1.4	J
959-98-8	Endosulfan I	0.088	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	1.8	J
72-20-8	Endrin	0.13	U
33213-65-9	Endosulfan II	0.21	U
72-54-8	4,4'-DDD	0.16	U
1031-07-8	Endosulfan sulfate	0.20	U
50-29-3	4,4'-DDT	5.4	
72-43-5	Methoxychlor	1.2	U
7421-93-4	Endrin aldehyde	0.21	U
5103-71-9	alpha-Chlordane	18	
53494-70-5	Endrin ketone	0.22	U
5103-74-2	gamma-Chlordane	20	
8001-35-2	Toxaphene	7.5	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB85-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021631

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-003

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9140744.d

% Moisture: 17.8 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) PFEX

Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.083	U
319-85-7	beta-BHC	0.083	U
319-86-8	delta-BHC	0.082	U
58-89-9	gamma-BHC	0.083	U
76-44-8	Heptachlor	0.10	U
309-00-2	Aldrin	0.073	U
1024-57-3	Heptachlor epoxide	0.090	U
959-98-8	Endosulfan I	0.091	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.16	U
72-20-8	Endrin	0.13	U
33213-65-9	Endosulfan II	0.22	U
72-54-8	4,4'-DDD	0.17	U
1031-07-8	Endosulfan sulfate	0.21	U
50-29-3	4,4'-DDT	0.17	U
72-43-5	Methoxychlor	1.2	U
7421-93-4	Endrin aldehyde	0.22	U
5103-71-9	alpha-Chlordane	0.086	U
53494-70-5	Endrin ketone	0.23	U
5103-74-2	gamma-Chlordane	0.073	U
8001-35-2	Toxaphene	7.8	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB85-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021631

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-004

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9140745.d

% Moisture: 24.1 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) PFEX

Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.090	U
319-85-7	beta-BHC	0.090	U
319-86-8	delta-BHC	0.088	U
58-89-9	gamma-BHC	0.090	U
76-44-8	Heptachlor	0.11	U
309-00-2	Aldrin	0.079	U
1024-57-3	Heptachlor epoxide	0.097	U
959-98-8	Endosulfan I	0.099	U
60-57-1	Dieldrin	0.13	U
72-55-9	4,4'-DDE	0.17	U
72-20-8	Endrin	0.14	U
33213-65-9	Endosulfan II	0.24	U
72-54-8	4,4'-DDD	0.18	U
1031-07-8	Endosulfan sulfate	0.22	U
50-29-3	4,4'-DDT	0.18	U
72-43-5	Methoxychlor	1.3	U
7421-93-4	Endrin aldehyde	0.24	U
5103-71-9	alpha-Chlordane	0.094	U
53494-70-5	Endrin ketone	0.25	U
5103-74-2	gamma-Chlordane	0.079	U
8001-35-2	Toxaphene	8.4	U

Comments:

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB85-SO-0204RX

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021880

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-003RX

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: Q9230739.d

% Moisture: 17.8 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) PFEX

Date Extracted: 09/19/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/24/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.083	U
319-85-7	beta-BHC	0.083	U
319-86-8	delta-BHC	0.082	U
58-89-9	gamma-BHC	0.083	U
76-44-8	Heptachlor	0.10	U
309-00-2	Aldrin	0.073	U
1024-57-3	Heptachlor epoxide	0.090	U
959-98-8	Endosulfan I	0.091	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.16	U
72-20-8	Endrin	0.13	U
33213-65-9	Endosulfan II	0.22	U
72-54-8	4,4'-DDD	0.17	U
1031-07-8	Endosulfan sulfate	0.21	U
50-29-3	4,4'-DDT	0.17	U
72-43-5	Methoxychlor	1.2	U
7421-93-4	Endrin aldehyde	0.22	U
5103-71-9	alpha-Chlordane	0.086	U
53494-70-5	Endrin ketone	0.23	U
5103-74-2	gamma-Chlordane	0.073	U
8001-35-2	Toxaphene	7.8	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB84-SO-0607

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-001

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090724.d

% Moisture: 15.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/10/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.41	U
94-75-7	2,4-D	0.35	U
88-85-7	Dinoseb	0.54	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB85-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-002

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090725.d

% Moisture: 15.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/10/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.41	U
94-75-7	2,4-D	0.35	U
88-85-7	Dinoseb	0.54	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB85-SO-0204

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04202 Run Sequence: R021440

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04202-003

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9090726.d

% Moisture: 18.0 Decanted: (Y/N) N Date Collected: 08/29/2007

Extraction: (Type) SONC Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/10/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.56	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB85-SO-0406

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04202 Run Sequence: R021440

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04202-004

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9090727.d

% Moisture: 24.0 Decanted: (Y/N) N Date Collected: 08/29/2007

Extraction: (Type) SONC Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.28	U
93-72-1	2,4,5-TP	0.46	U
94-75-7	2,4-D	0.39	U
88-85-7	Dinoseb	0.61	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB08-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-005

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090728.d

% Moisture: 13.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.40	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.53	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB88-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-006

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090729.d

% Moisture: 17.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB88-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-007

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090730.d

% Moisture: 17.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB88-SO-0810

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-008

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090751.d

% Moisture: 16.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB90-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-011

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090736.d

% Moisture: 12.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.40	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.52	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB90-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-012

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090737.d

% Moisture: 16.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB90-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-013

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090738.d

% Moisture: 19.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.57	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB93-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-014

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090752.d

% Moisture: 13.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.40	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.53	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB93-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-015

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090753.d

% Moisture: 20.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.44	U
94-75-7	2,4-D	0.38	U
88-85-7	Dinoseb	0.58	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB93-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-016

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090754.d

% Moisture: 16.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB97-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-017

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9090755.d

% Moisture: 15.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.41	U
94-75-7	2,4-D	0.35	U
88-85-7	Dinoseb	0.54	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB97-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04202

Run Sequence: R021440

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04202-018

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9120702.d

% Moisture: 16.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09FD-08292007-02

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04203 Run Sequence: R021631

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04203-010

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9140746.d

% Moisture: 18.9 Decanted: (Y/N) N Date Collected: 08/29/2007

Extraction: (Type) PFEX Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.084	U
319-85-7	beta-BHC	0.084	U
319-86-8	delta-BHC	0.083	U
58-89-9	gamma-BHC	0.084	U
76-44-8	Heptachlor	0.10	U
309-00-2	Aldrin	0.074	U
1024-57-3	Heptachlor epoxide	0.091	U
959-98-8	Endosulfan I	0.092	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.16	U
72-20-8	Endrin	0.14	U
33213-65-9	Endosulfan II	0.22	U
72-54-8	4,4'-DDD	0.17	U
1031-07-8	Endosulfan sulfate	0.21	U
50-29-3	4,4'-DDT	0.17	U
72-43-5	Methoxychlor	1.2	U
7421-93-4	Endrin aldehyde	0.22	U
5103-71-9	alpha-Chlordane	0.088	U
53494-70-5	Endrin ketone	0.23	U
5103-74-2	gamma-Chlordane	0.074	U
8001-35-2	Toxaphene	7.9	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB84-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021631

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-018

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9140747.d

% Moisture: 12.3 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) PFEX

Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.078	U
319-85-7	beta-BHC	0.078	U
319-86-8	delta-BHC	0.60	J
58-89-9	gamma-BHC	0.078	U
76-44-8	Heptachlor	0.097	U
309-00-2	Aldrin	0.068	U
1024-57-3	Heptachlor epoxide	0.084	U
959-98-8	Endosulfan I	0.086	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	1.1	J
72-20-8	Endrin	0.13	U
33213-65-9	Endosulfan II	0.21	U
72-54-8	4,4'-DDD	0.16	U
1031-07-8	Endosulfan sulfate	0.19	U
50-29-3	4,4'-DDT	1.4	J
72-43-5	Methoxychlor	1.1	U
7421-93-4	Endrin aldehyde	0.21	U
5103-71-9	alpha-Chlordane	0.95	J
53494-70-5	Endrin ketone	0.22	U
5103-74-2	gamma-Chlordane	0.068	U
8001-35-2	Toxaphene	7.3	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB84-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021631

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-019

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9140748.d

% Moisture: 10.2 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) PFEX

Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.076	U
319-85-7	beta-BHC	0.076	U
319-86-8	delta-BHC	0.075	U
58-89-9	gamma-BHC	0.076	U
76-44-8	Heptachlor	0.095	U
309-00-2	Aldrin	0.067	U
1024-57-3	Heptachlor epoxide	0.082	U
959-98-8	Endosulfan I	0.084	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.14	U
72-20-8	Endrin	0.12	U
33213-65-9	Endosulfan II	0.20	U
72-54-8	4,4'-DDD	0.16	U
1031-07-8	Endosulfan sulfate	0.19	U
50-29-3	4,4'-DDT	0.16	U
72-43-5	Methoxychlor	1.1	U
7421-93-4	Endrin aldehyde	0.20	U
5103-71-9	alpha-Chlordane	0.079	U
53494-70-5	Endrin ketone	0.21	U
5103-74-2	gamma-Chlordane	0.067	U
8001-35-2	Toxaphene	7.1	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB84-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021631

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-020

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9140749.d

% Moisture: 19.4 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) PFEX

Date Extracted: 09/04/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
319-84-6	alpha-BHC	0.084	U
319-85-7	beta-BHC	0.084	U
319-86-8	delta-BHC	0.083	U
58-89-9	gamma-BHC	0.084	U
76-44-8	Heptachlor	0.11	U
309-00-2	Aldrin	0.074	U
1024-57-3	Heptachlor epoxide	0.092	U
959-98-8	Endosulfan I	0.093	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.16	U
72-20-8	Endrin	0.14	U
33213-65-9	Endosulfan II	0.22	U
72-54-8	4,4'-DDD	0.17	U
1031-07-8	Endosulfan sulfate	0.21	U
50-29-3	4,4'-DDT	0.17	U
72-43-5	Methoxychlor	1.2	U
7421-93-4	Endrin aldehyde	0.22	U
5103-71-9	alpha-Chlordane	0.088	U
53494-70-5	Endrin ketone	0.24	U
5103-74-2	gamma-Chlordane	0.074	U
8001-35-2	Toxaphene	7.9	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB91-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-001

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9120703.d

% Moisture: 6.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.22	U
93-72-1	2,4,5-TP	0.37	U
94-75-7	2,4-D	0.32	U
88-85-7	Dinoseb	0.49	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB91-SO-1416

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-002

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9110709.d

% Moisture: 14.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.41	U
94-75-7	2,4-D	0.35	U
88-85-7	Dinoseb	0.53	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB91-SO-0204

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04203 Run Sequence: R021484

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04203-003

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9110710.d

% Moisture: 12.0 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) SONC Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.40	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.52	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB91-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-004

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9120704.d

% Moisture: 22.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.27	U
93-72-1	2,4,5-TP	0.45	U
94-75-7	2,4-D	0.38	U
88-85-7	Dinoseb	0.59	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB91-SO-0406RX

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R022194

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-004RX

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: XA010709.d

% Moisture: 22.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 09/13/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 10/01/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.27	U
93-72-1	2,4,5-TP	0.45	U
94-75-7	2,4-D	0.38	U
88-85-7	Dinoseb	0.59	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB98-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-005

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9120705.d

% Moisture: 8.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.38	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.50	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB98-SO-1618

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04203 Run Sequence: R021484

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04203-006

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9110713.d

% Moisture: 16.0 Decanted: (Y/N) N Date Collected: 08/28/2007

Extraction: (Type) SONC Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB98-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-007

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9110714.d

% Moisture: 13.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.40	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.53	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB98-SO-0406

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-008

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9110715.d

% Moisture: 18.0 Decanted: (Y/N) N

Date Collected: 08/28/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/11/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.56	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09FD-08292007-01

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-009

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9110720.d

% Moisture: 17.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09FD-08292007-02

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-010

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9110721.d

% Moisture: 19.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.57	U

Comments:

1
HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
09SB100-SO-0002

Lab Name: Laucks Testing Laboratories,
Contract: N/A
SDG No.: TT04203
Run Sequence: R021484
Matrix: (SOIL/WATER) Soil
Lab Sample ID: TT04203-011
Sample wt/vol: 15.0 (g/mL) gm
Lab File ID: X9120706.d
% Moisture: 21.0 Decanted: (Y/N) N
Date Collected: 08/29/2007
Extraction: (Type) SONC
Date Extracted: 08/31/2007
Concentrated Extract Volume: 5000.0 (uL)
Date Analyzed: 09/12/2007
Injection Volume: 0.5 (uL)
Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH:
Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.27	U
93-72-1	2,4,5-TP	0.44	U
94-75-7	2,4-D	0.38	U
88-85-7	Dinoseb	4.1	

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB100-SO-0203

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-012

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9110723.d

% Moisture: 21.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.27	U
93-72-1	2,4,5-TP	0.44	U
94-75-7	2,4-D	0.38	U
88-85-7	Dinoseb	0.58	U

Comments:

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB102-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-013

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9120707.d

% Moisture: 10.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.39	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.51	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB102-SO-0203

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04203 Run Sequence: R021484

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04203-014

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9110725.d

% Moisture: 17.0 Decanted: (Y/N) N Date Collected: 08/29/2007

Extraction: (Type) SONC Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.25	U
93-72-1	2,4,5-TP	0.42	U
94-75-7	2,4-D	0.36	U
88-85-7	Dinoseb	0.55	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB103-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-015

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9110726.d

% Moisture: 22.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.27	U
93-72-1	2,4,5-TP	0.45	U
94-75-7	2,4-D	0.38	U
88-85-7	Dinoseb	0.59	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB103-SO-0203

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-016

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9110727.d

% Moisture: 19.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.57	U

Comments:

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB107-SO-0002

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04203 Run Sequence: R021484

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04203-017

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9110733.d

% Moisture: 12.0 Decanted: (Y/N) N Date Collected: 08/29/2007

Extraction: (Type) SONC Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.40	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.52	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB84-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04203

Run Sequence: R021484

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04203-018

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9120710.d

% Moisture: 12.0 Decanted: (Y/N) N

Date Collected: 08/29/2007

Extraction: (Type) SONC

Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.40	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.52	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB84-SO-0204

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04203 Run Sequence: R021484

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04203-019

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9120711.d

% Moisture: 10.0 Decanted: (Y/N) N Date Collected: 08/29/2007

Extraction: (Type) SONC Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.39	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.51	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB84-SO-0406

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04203 Run Sequence: R021484

Matrix: (SOIL/WATER) Soil Lab Sample ID: TT04203-020

Sample wt/vol: 15.0 (g/mL) gm Lab File ID: X9120712.d

% Moisture: 19.0 Decanted: (Y/N) N Date Collected: 08/29/2007

Extraction: (Type) SONC Date Extracted: 08/31/2007

Concentrated Extract Volume: 5000.0 (uL) Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.57	U

Comments:

1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
09-RB-08302007-02

Lab Name: Laucks Testing Laboratories,
Contract: N/A
SDG No.: TT04204
Run Sequence: R021631
Matrix: (SOIL/WATER) Water
Lab Sample ID: TT04204-001
Sample wt/vol: 500.0 (g/mL) mL
Lab File ID: X9140730.d
% Moisture: _____ Decanted: (Y/N) N
Date Collected: 08/30/2007
Extraction: (Type) SPE
Date Extracted: 09/06/2007
Concentrated Extract Volume: 5000.0 (uL)
Date Analyzed: 09/15/2007
Injection Volume: 0.5 (uL)
Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: <2
Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
319-84-6	alpha-BHC	0.0032	U
319-85-7	beta-BHC	0.0042	U
319-86-8	delta-BHC	0.0040	U
58-89-9	gamma-BHC	0.0037	U
76-44-8	Heptachlor	0.0031	U
309-00-2	Aldrin	0.0034	U
1024-57-3	Heptachlor epoxide	0.0035	U
959-98-8	Endosulfan I	0.0036	U
60-57-1	Dieldrin	0.0070	U
72-55-9	4,4'-DDE	0.0086	U
72-20-8	Endrin	0.0075	U
33213-65-9	Endosulfan II	0.0079	U
72-54-8	4,4'-DDD	0.0072	U
1031-07-8	Endosulfan sulfate	0.0064	U
50-29-3	4,4'-DDT	0.0088	U
72-43-5	Methoxychlor	0.035	U
53494-70-5	Endrin ketone	0.0067	U
7421-93-4	Endrin aldehyde	0.010	U
5103-71-9	alpha-Chlordane	0.0039	U
5103-74-2	gamma-Chlordane	0.0043	U
8001-35-2	Toxaphene	0.66	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09-RB-08302007-02RX

Lab Name: Laucks Testing Laboratories, Contract: N/A

SDG No.: TT04204 Run Sequence: R022151

Matrix: (SOIL/WATER) Water Lab Sample ID: TT04204-001RX

Sample wt/vol: 250.0 (g/mL) mL Lab File ID: X9230723.d

% Moisture: _____ Decanted: (Y/N) N Date Collected: 08/30/2007

Extraction: (Type) SPE Date Extracted: 09/20/2007

Concentrated Extract Volume: 2500.0 (uL) Date Analyzed: 09/24/2007

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: <2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
319-84-6	alpha-BHC	0.0032	U
319-85-7	beta-BHC	0.0042	U
319-86-8	delta-BHC	0.0040	U
58-89-9	gamma-BHC	0.0037	U
76-44-8	Heptachlor	0.0031	U
309-00-2	Aldrin	0.0034	U
1024-57-3	Heptachlor epoxide	0.0035	U
959-98-8	Endosulfan I	0.0036	U
60-57-1	Dieldrin	0.0070	U
72-55-9	4,4'-DDE	0.020	J
72-20-8	Endrin	0.0075	U
33213-65-9	Endosulfan II	0.0079	U
72-54-8	4,4'-DDD	0.024	J
1031-07-8	Endosulfan sulfate	0.0064	U
50-29-3	4,4'-DDT	0.48	
72-43-5	Methoxychlor	0.035	U
53494-70-5	Endrin ketone	0.0067	U
7421-93-4	Endrin aldehyde	0.010	U
5103-71-9	alpha-Chlordane	0.0039	U
5103-74-2	gamma-Chlordane	0.0043	U
8001-35-2	Toxaphene	0.66	U

Comments:

1

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09-RB-08302007-01

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021631

Matrix: (SOIL/WATER) Water

Lab Sample ID: TT04204-005

Sample wt/vol: 500.0 (g/mL) mL

Lab File ID: X9140731.d

% Moisture: _____ Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SPE

Date Extracted: 09/06/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/15/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: <2

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
319-84-6	alpha-BHC	0.0032	U
319-85-7	beta-BHC	0.0042	U
319-86-8	delta-BHC	0.0040	U
58-89-9	gamma-BHC	0.0037	U
76-44-8	Heptachlor	0.0031	U
309-00-2	Aldrin	0.0034	U
1024-57-3	Heptachlor epoxide	0.0035	U
959-98-8	Endosulfan I	0.0036	U
60-57-1	Dieldrin	0.0070	U
72-55-9	4,4'-DDE	0.0086	U
72-20-8	Endrin	0.0075	U
33213-65-9	Endosulfan II	0.0079	U
72-54-8	4,4'-DDD	0.0072	U
1031-07-8	Endosulfan sulfate	0.0064	U
50-29-3	4,4'-DDT	0.0088	U
72-43-5	Methoxychlor	0.035	U
53494-70-5	Endrin ketone	0.0067	U
7421-93-4	Endrin aldehyde	0.010	U
5103-71-9	alpha-Chlordane	0.0039	U
5103-74-2	gamma-Chlordane	0.0043	U
8001-35-2	Toxaphene	0.66	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09-RB-08302007-02

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021488

Matrix: (SOIL/WATER) Water

Lab Sample ID: TT04204-001

Sample wt/vol: 50.0 (g/mL) mL

Lab File ID: X9120717.d

% Moisture: _____ Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SEPF

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
93-76-5	2,4,5-T	0.064	U
93-72-1	2,4,5-TP	0.086	U
94-75-7	2,4-D	0.062	U
88-85-7	Dinoseb	0.065	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09FD-08302007-01

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-002

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130706.d

% Moisture: 8.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.38	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.50	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09FD-08302007-02

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-003

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130707.d

% Moisture: 19.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.57	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09FD-08302007-03

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-004

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130708.d

% Moisture: 9.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.38	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.51	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09-RB-08302007-01

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021488

Matrix: (SOIL/WATER) Water

Lab Sample ID: TT04204-005

Sample wt/vol: 50.0 (g/mL) mL

Lab File ID: X9120718.d

% Moisture: _____ Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SEPF

Date Extracted: 09/05/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/12/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
93-76-5	2,4,5-T	0.064	U
93-72-1	2,4,5-TP	0.086	U
94-75-7	2,4-D	0.062	U
88-85-7	Dinoseb	0.065	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB101-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-006

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130709.d

% Moisture: 10.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.39	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.51	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB101-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-007

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130710.d

% Moisture: 8.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.38	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.50	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB108-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-008

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130711.d

% Moisture: 11.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.39	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.52	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB108-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-009

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130712.d

% Moisture: 10.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.39	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.51	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB92-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-010

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130713.d

% Moisture: 12.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.40	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.52	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB94-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-011

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130718.d

% Moisture: 9.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.38	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.51	U

Comments:

I

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB94-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-012

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130719.d

% Moisture: 18.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.56	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09S895-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-013

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130720.d

% Moisture: 9.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.38	U
~~93-72-1~~	~~2,4,5-TP~~	~~0.38~~	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.51	U
~~88-85-7~~	~~Dinoseb~~	~~0.51~~	U

Comments:

GR
10/11/07

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB96-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-014

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130721.d

% Moisture: 13.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.24	U
93-72-1	2,4,5-TP	0.40	U
94-75-7	2,4-D	0.34	U
88-85-7	Dinoseb	0.53	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB96-SO-0204

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-015

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130722.d

% Moisture: 18.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.26	U
93-72-1	2,4,5-TP	0.43	U
94-75-7	2,4-D	0.37	U
88-85-7	Dinoseb	0.56	U

Comments:

1

HERBICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

09SB99-SO-0002

Lab Name: Laucks Testing Laboratories,

Contract: N/A

SDG No.: TT04204

Run Sequence: R021530

Matrix: (SOIL/WATER) Soil

Lab Sample ID: TT04204-016

Sample wt/vol: 15.0 (g/mL) gm

Lab File ID: X9130723.d

% Moisture: 8.0 Decanted: (Y/N) N

Date Collected: 08/30/2007

Extraction: (Type) SONC

Date Extracted: 09/10/2007

Concentrated Extract Volume: 5000.0 (uL)

Date Analyzed: 09/13/2007

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Sulfur Cleanup: (Y/N) N

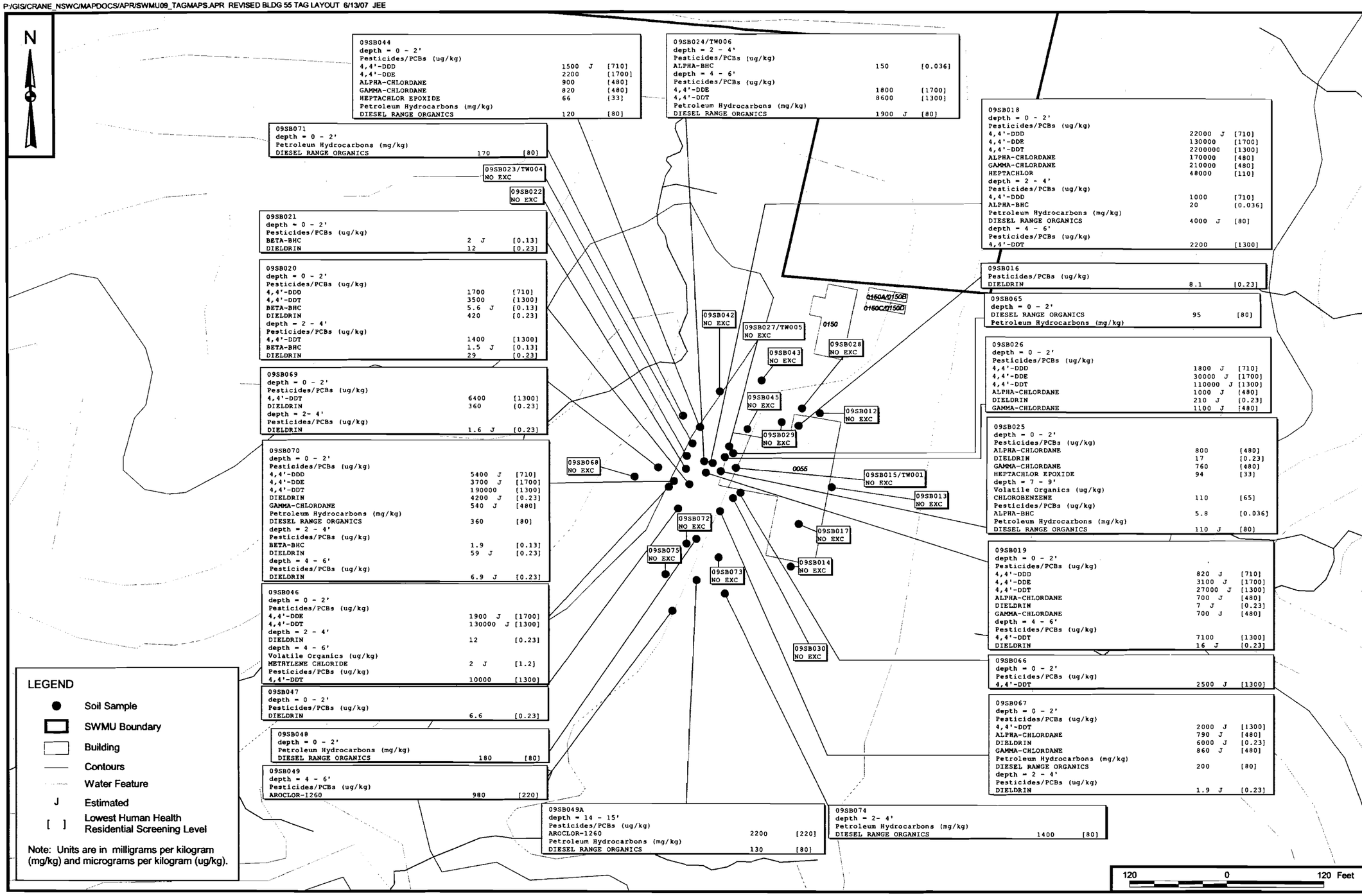
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
93-76-5	2,4,5-T	0.23	U
93-72-1	2,4,5-TP	0.38	U
94-75-7	2,4-D	0.33	U
88-85-7	Dinoseb	0.50	U

Comments:

A.2

SWMU 9 ANALYTICAL TAG MAPS

P:/GIS/CRANE_NSWC/MAPDOCS/APR/SWMU09_TAGMAPS.APR REVISED BLDG 55 TAG LAYOUT 6/13/07 JEE



CONTRACT NO. CTO 0367

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE A-1

REV 0

ORGANIC CONTAMINANTS IN SOIL EXCEEDING HUMAN HEALTH SCREENING LEVELS

FORMER BUILDING 55
SWMU 9 SOUTH RFI REPORT
NSWC CRANE
CRANE, INDIANA

NAVFAC

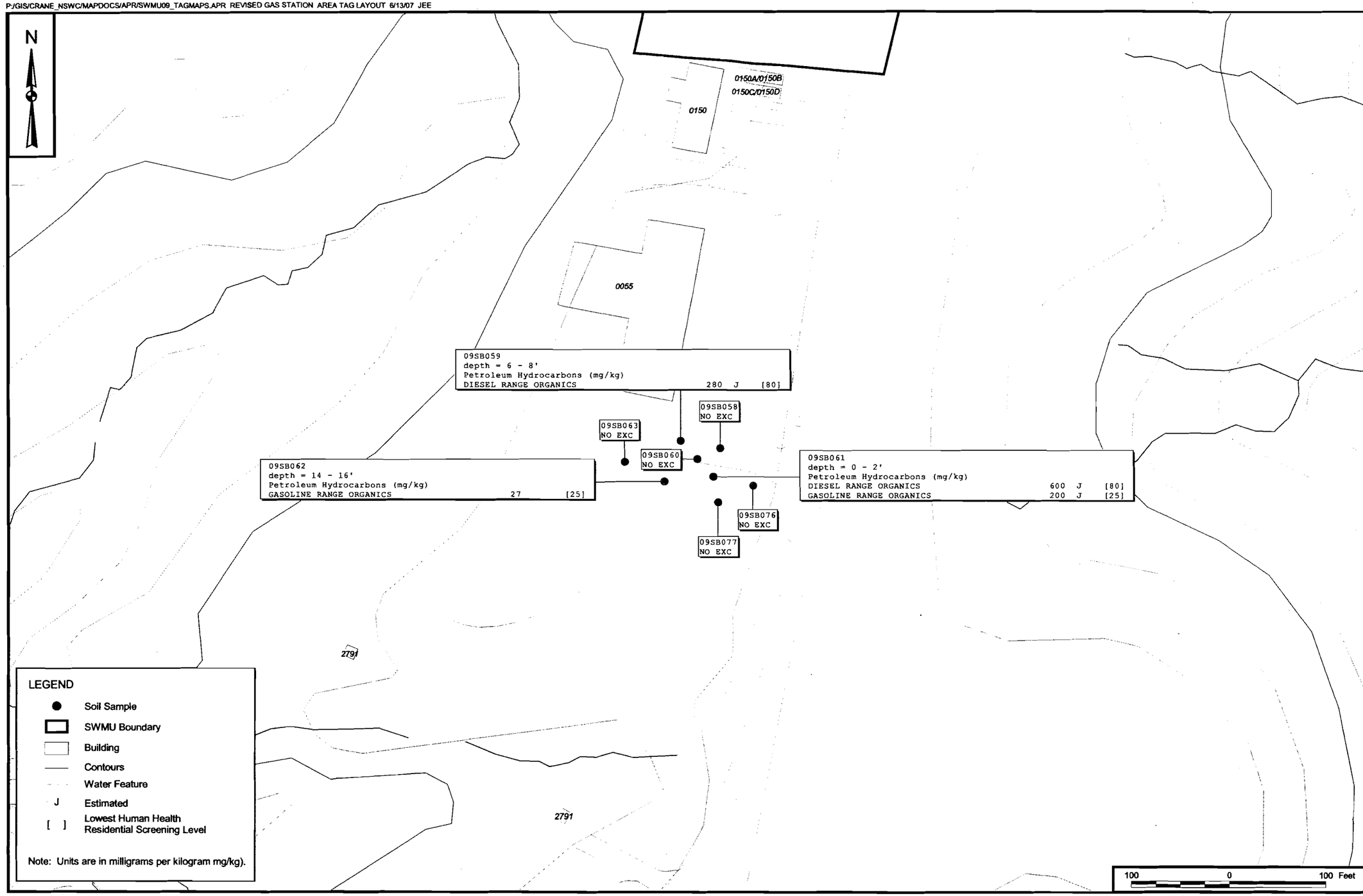
DRAWN BY S. STROZ DATE 3/28/07

CHECKED BY V. PLACHY DATE 6/13/07

COST/SCHED-AREA

SCALE AS NOTED

P:/GIS/CRANE_NSWC/MAPDOCS/APR/SWMU09_TAGMAPS.APR REVISED GAS STATION AREA TAG LAYOUT 6/13/07 JEE



CONTRACT NO.
CTO 0367

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE A-2

REV 0

ORGANIC CONTAMINANTS IN SOIL
EXCEEDING HUMAN HEALTH SCREENING LEVELS
FORMER GAS STATION AREA
SWMU 9 SOUTH RFI REPORT
NSWC CRANE
CRANE, INDIANA

NAVFAC

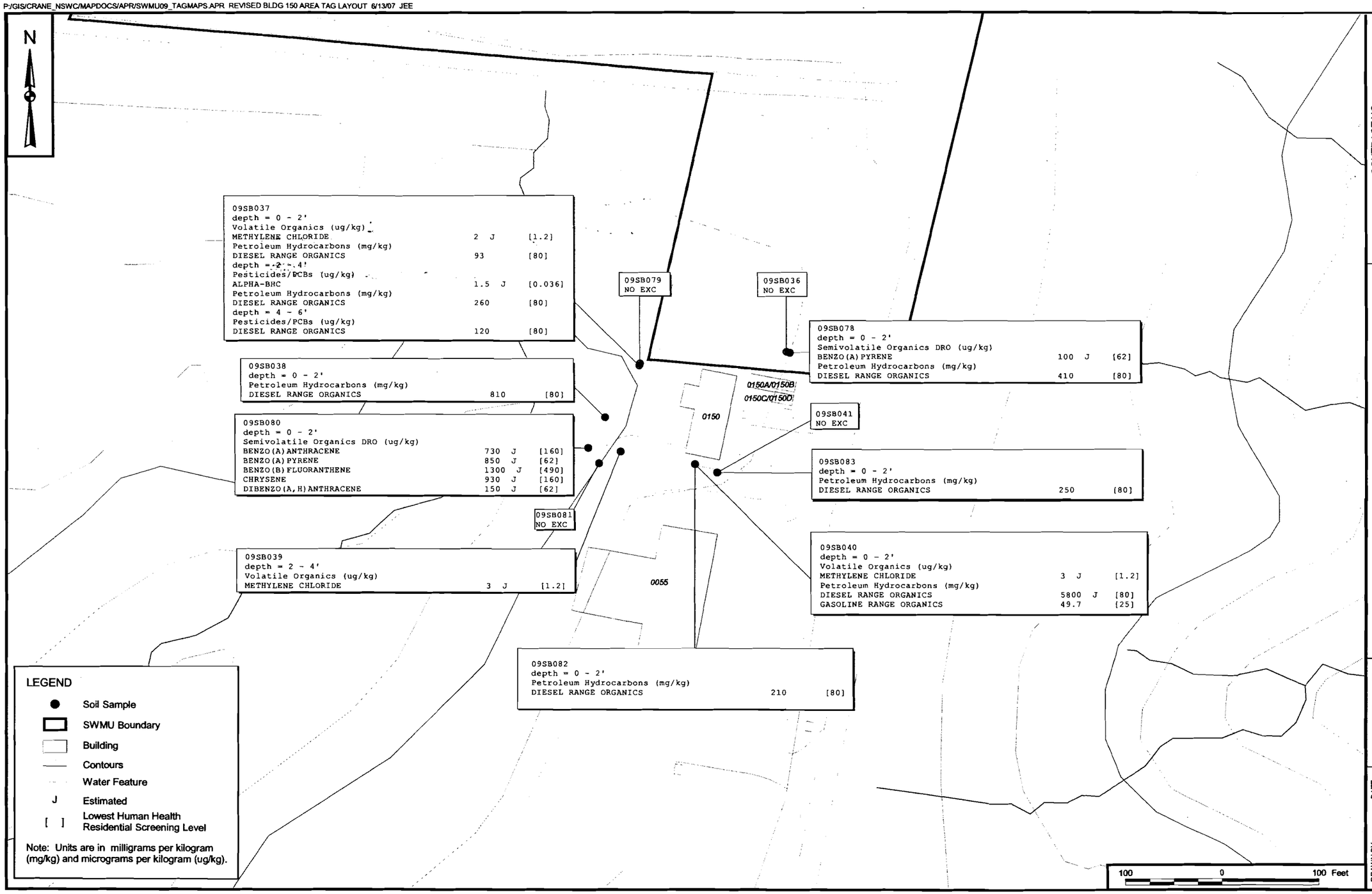
DRAWN BY S. STROZ DATE 3/29/07

CHECKED BY V. PLACHY DATE 6/13/07

COST/SCHED-AREA

SCALE AS NOTED

P:/GIS/CRANE_NSWC/MAPDOCS/APR/SWMU09_TAGMAPS.APR REVISED BLDG 150 AREA TAG LAYOUT 6/13/07 JEE



CONTRACT NO. CTO 0367

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE A-3

REV 0

ORGANIC CONTAMINANTS IN SOIL EXCEEDING HUMAN HEALTH SCREENING LEVELS
BUILDING 150
SWMU 9 SOUTH RFI REPORT
NSWC CRANE
CRANE, INDIANA

NAVFAC

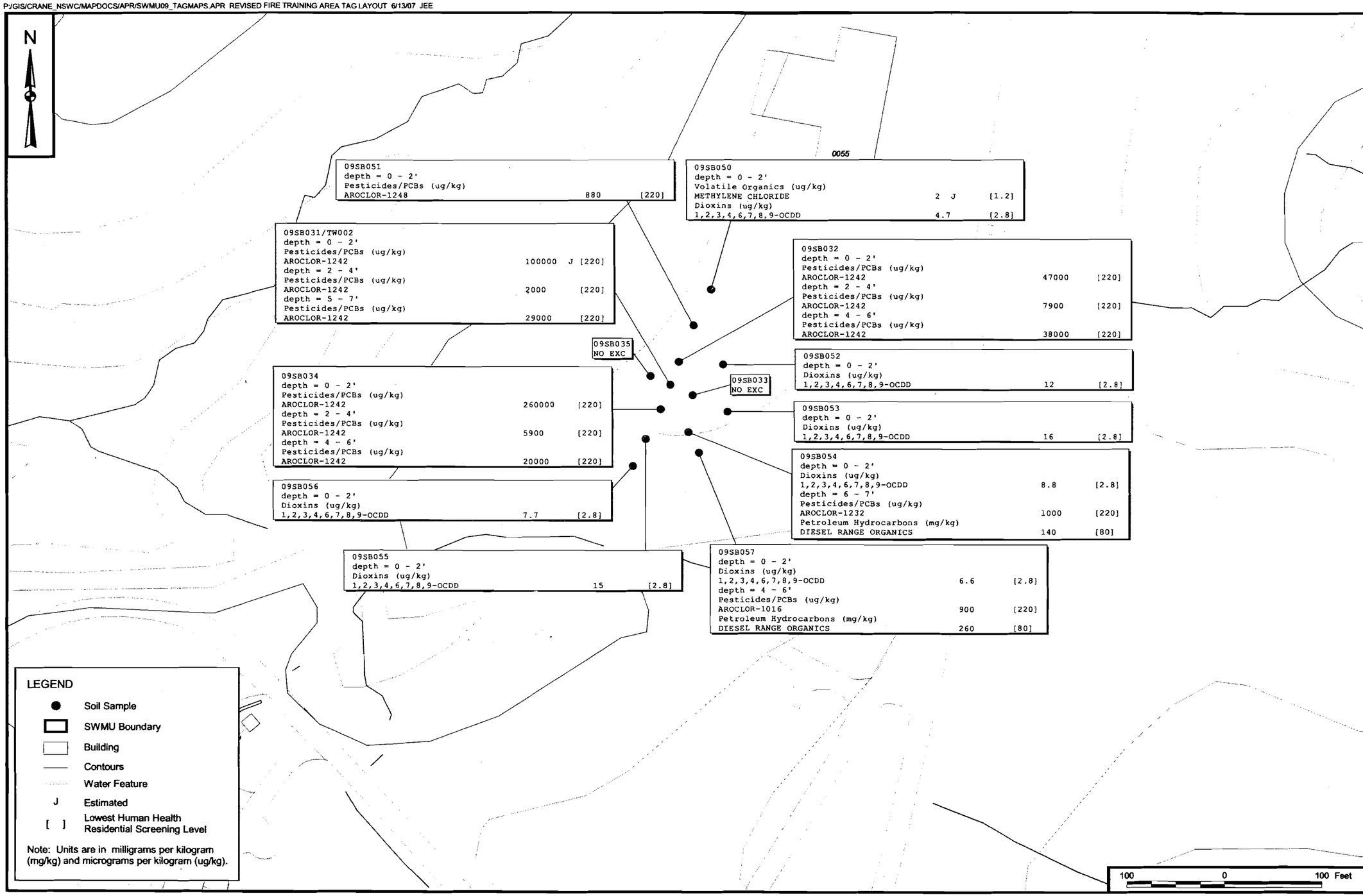
DRAWN BY S. STROZ DATE 3/28/07

CHECKED BY V. PLACHY DATE 6/13/07

COST/SCHED-AREA

SCALE AS NOTED

P:/GIS/CRANE_NSWC/MAPDOCS/APR/SWMU09_TAGMAPS.APR REVISED FIRE TRAINING AREA TAG LAYOUT 6/13/07 JEE



CONTRACT NO. CTO 0367

APPROVED BY ____ DATE ____

APPROVED BY ____ DATE ____

DRAWING NO. FIGURE A-4

REV 0

ORGANIC CONTAMINANTS IN SOIL EXCEEDING HUMAN HEALTH SCREENING LEVELS
FORMER FIRE FIGHTING TRAINING AREA
SWMU 9 SOUTH RFI REPORT
NSWC CRANE
CRANE, INDIANA

NAVFAC

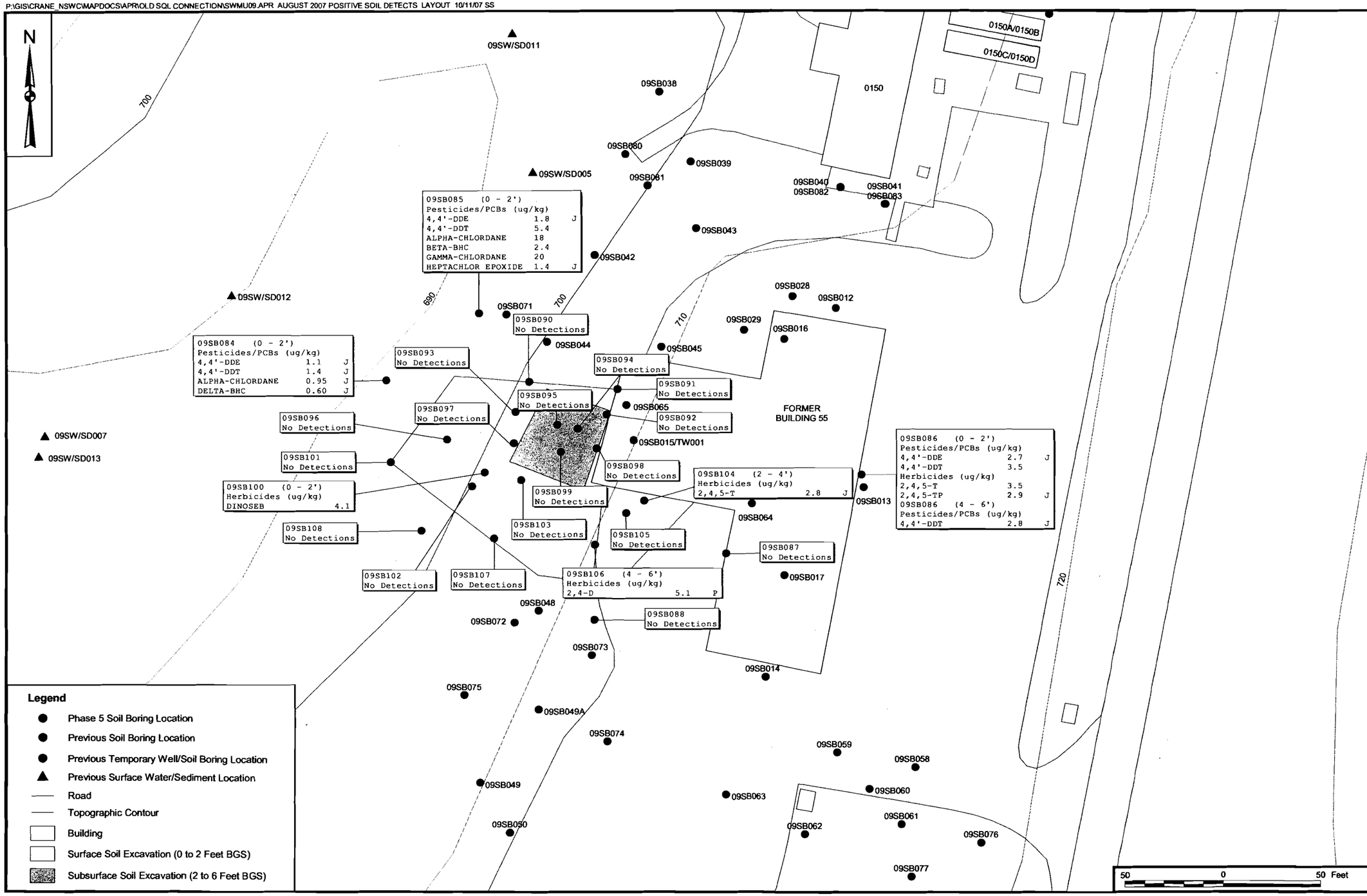
DRAWN BY S. STROZ DATE 3/29/07

CHECKED BY V. PLACHY DATE 6/13/07

COST/SCHED-AREA

SCALE AS NOTED

P:\GIS\CRANE_NSWC\MAPDOCS\APR\OLD SQL CONNECTION\SWMU09.APR AUGUST 2007 POSITIVE SOIL DETECTS LAYOUT 10/11/07 SS



CONTRACT NO.
CTO 00042

APPROVED BY ___ DATE ___

APPROVED BY ___ DATE ___

DRAWING NO. FIGURE A-5

REV 0

AUGUST 2007 INVESTIGATION
SUMMARY OF POSITIVE SOIL DETECTIONS
FORMER BUILDING 55 AND BUILDING 55 EXCAVATION AREA
SWMU 9 INTERIM MEASURES WORK PLAN
NSWC CRANE
CRANE, INDIANA

NAVFAC

DRAWN BY S. STROZ DATE 10/10/07

CHECKED BY T. SMITH DATE 10/11/07

COST/SCHED-AREA

SCALE AS NOTED

A.3

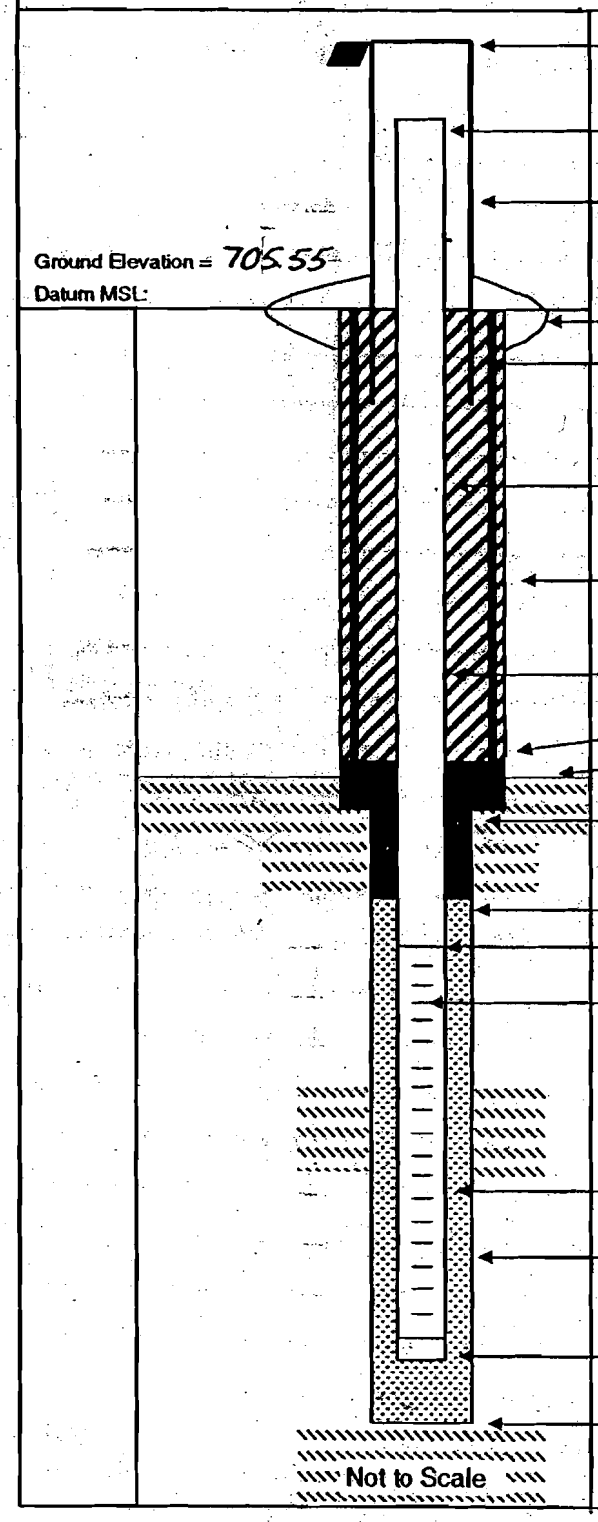
GROUNDWATER MONITORING WELL CONSTRUCTION LOGS

Tetra Tech NUS, Inc.

BEDROCK MONITORING WELL SHEET

WELL No.: 09T03

PROJECT:	NSWC CRANE	DRILLING Co.:	BOWSER MORNER	BORING No.:	09T03
PROJECT No.:	7141 CTO 010	DRILLER:	A. WOLFE	DATE COMPLETED:	12-12-00
SITE:	SWMU 9	DRILLING METHOD:	AIR ROTARY	NORTHING:	1311791.416
GEOLOGIST:	M. G. COCHRAN	DEV. METHOD:	SURGE & WHALE PUMP	EASTING:	3025295.689



Elevation of Top of Casing: 708.56

Stick Up of Casing Above Ground Surface: 3.01'

Elevation of Top of Riser: 708.08

I.D. of Surface Casing: 4"

Type of Surface Casing: 4" STEEL SQUARE

Type of Surface Seal: CEMENT PAD

I.D. of Casing: 6"

Type of Casing: TEMPORARY STEEL FLUSH JOINT (REMOVED)

Casing Length: 9'

I.D. of Riser: 2"

Type of Riser: PVC SCH. 40

Borehole Diameter: 8 1/2

Type of Backfill: CEMENT-BENTONITE GROUT QUIKRETE + AMCOLLOID WYOMING BENTONITE

Elevation / Depth Top of Seal: 702.55' / 3'

Elevation / Depth Top Bedrock: 696.05' / 9.5'

Type of Seal: BENTONITE PELLETS COLLOID ENVIRONMENTAL

Elevation / Depth of Top of Filter Pack: 700.55' / 5

Elevation / Depth of Top of Screen: 698.55' / 7

Type of Screen: PVC

Slot Size x Length: .01" X 10'

I.D. of Screen: 2"

Type of Filter Pack: GLOBAL #6 19-6', #7 6-5'

Diameter of Hole in Bedrock: 5 5/8"

Elevation / Depth of Bottom of Screen: 688.55' / 17'

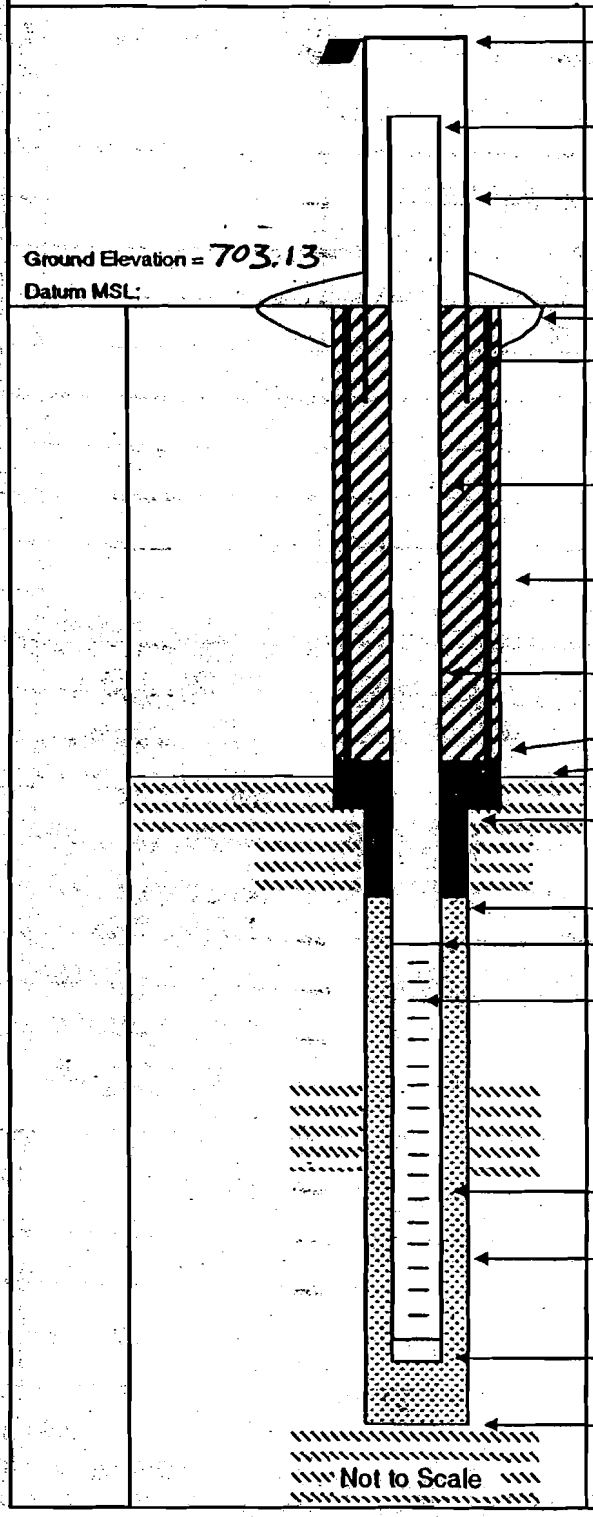
Elevation / Total Depth of Borehole: 686.55' / 19'

Tetra Tech NUS, Inc.

BEDROCK MONITORING WELL SHEET

WELL No.: 09T04

PROJECT:	NSWC CRANE	DRILLING Co.:	BOWSER MORNER	BORING No.:	09T04
PROJECT No.:	7141 CTO 010	DRILLER:	A. WOLFE	DATE COMPLETED:	12-13-00
SITE:	SWMU 9	DRILLING METHOD:	AIR ROTARY	NORTHING:	1311679.977
GEOLOGIST:	M.G. COCHRAN	DEV. METHOD:	SURGE & WHALE PUMP	EASTING:	3025257.301



Elevation of Top of Casing: 706.53'

Stick Up of Casing Above Ground Surface: 3.40'

Elevation of Top of Riser: 705.70'

I.D. of Surface Casing: 4"

Type of Surface Casing: 4" STEEL SQUARE

Type of Surface Seal: CEMENT PAD

I.D. of Casing: 6"

Type of Casing: TEMPORARY STEEL FLUSH JOINT (REMOVED)

Casing Length: 10'

I.D. of Riser: 2"

Type of Riser: PVC SCH 40

Borehole Diameter: 8 1/2"

Type of Backfill: CEMENT - BENTONITE GROUT QUIKRETE + AM COLLOID WYOMING BENTONITE

Elevation / Depth Top of Seal: 700.13' / 3'

Elevation / Depth Top Bedrock: 693.13' / 10'

Type of Seal: BENTONITE PELLETS COLLOID ENVIRONMENTAL

Elevation / Depth of Top of Filter Pack: 699.13' / 4

Elevation / Depth of Top of Screen: 697.13' / 6

Type of Screen: PVC

Slot Size x Length: .01" X 10'

I.D. of Screen: 2"

Type of Filter Pack: GLOBAL #6 16-5', #7 5-4'

Diameter of Hole in Bedrock: 5 5/8"

Elevation / Depth of Bottom of Screen: 687.13' / 16'

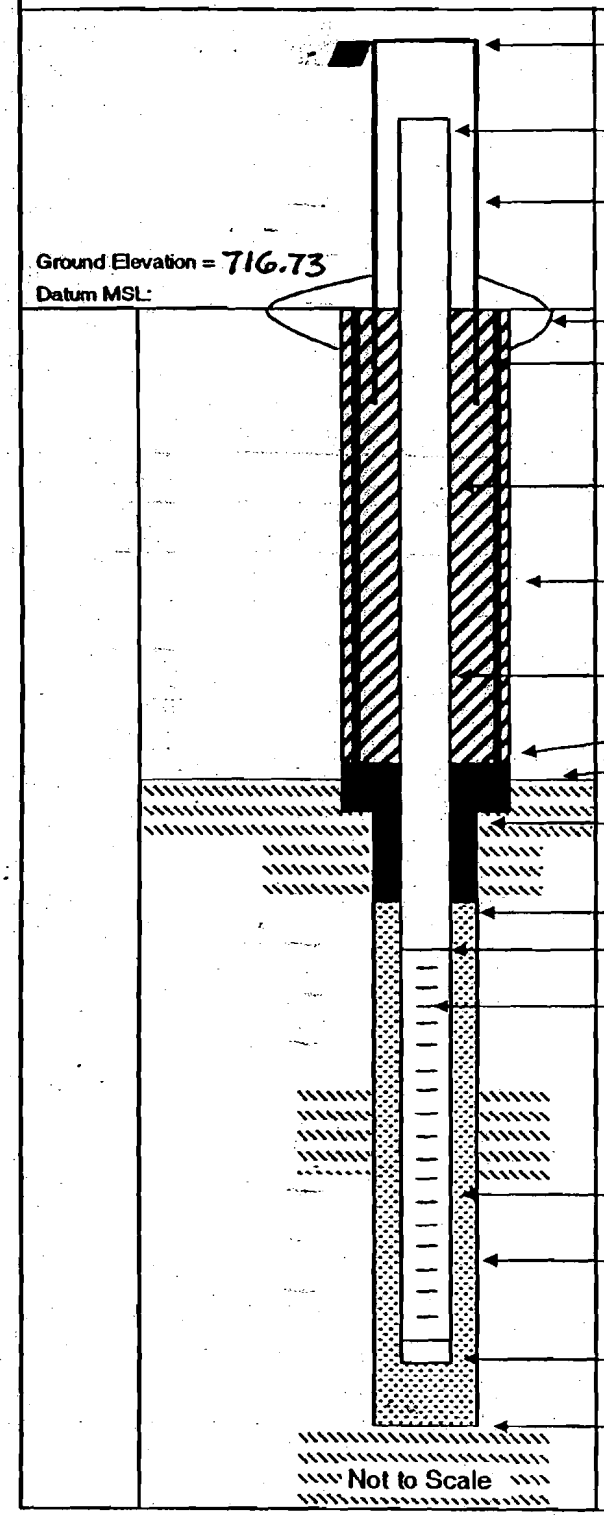
Elevation / Total Depth of Borehole: 687.13' / 16'

Tetra Tech NUS, Inc.

BEDROCK MONITORING WELL SHEET

WELL No.: 09T05

PROJECT:	NSWC CRANE	DRILLING Co.:	BOWSER MORNER	BORING No.:	09T05
PROJECT No.:	7141 CTO 010	DRILLER:	A. WOLF	DATE COMPLETED:	12-4-00
SITE:	SWMU 9	DRILLING METHOD:	AIR ROTARY	NORTHING:	1311681.497
GEOLOGIST:	M.G. COCHRAN	DEV. METHOD:	SURGE & WHALE PUMP	EASTING:	3025540.482



Elevation of Top of Casing: 719.71

Stick Up of Casing Above Ground Surface: 2.98

Elevation of Top of Riser: 719.19

I.D. of Surface Casing: 4"

Type of Surface Casing: SQUARE STEEL

Type of Surface Seal: CEMENT PAD

I.D. of Casing:

Type of Casing: TEMPORARY STEEL FLUSH JOINT (REMOVED)

Casing Length: 9'

I.D. of Riser: 2"

Type of Riser: PVC SCHEDULE 40

Borehole Diameter: 8 1/2"

Type of Backfill: CEMENT-BENTONITE GROUT, QUIKRETE + AM. COLLOID WYOMING BENTONITE

Elevation / Depth Top of Seal: 713.73' / 3'

Elevation / Depth Top Bedrock: 707.73' / 9'

Type of Seal: BENTONITE PELLETS COLLOID ENVIRONMENTAL

Elevation / Depth of Top of Filter Pack: 711.73' / 5'

Elevation / Depth of Top of Screen: 709.73' / 7'

Type of Screen: PVC

Slot Size x Length: .01" X 10'

I.D. of Screen: 2"

Type of Filter Pack: GLOBAL #6 - 17'-6" #7 6-5'

Diameter of Hole in Bedrock: 5 5/8"

Elevation / Depth of Bottom of Screen: 699.73' / 17'

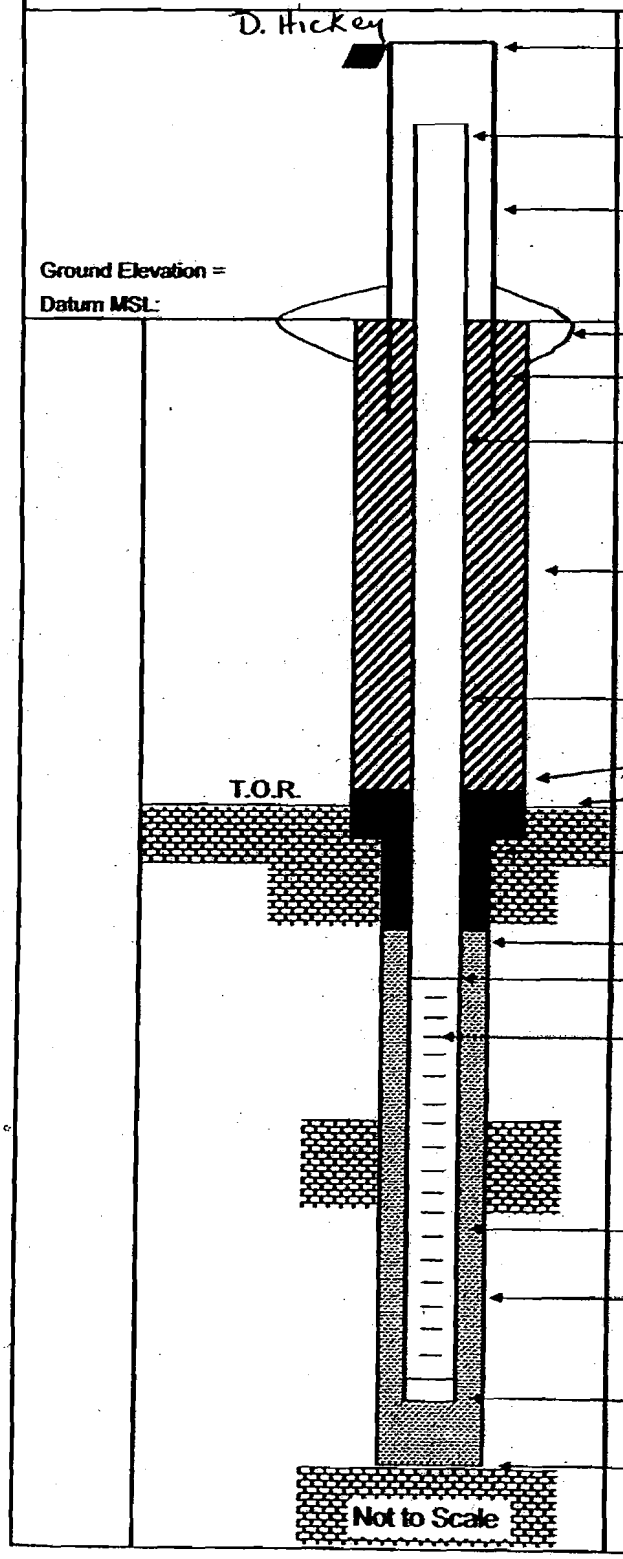
Elevation / Total Depth of Borehole: 699.73' / 17'

Tetra Tech NUS, Inc.

BEDROCK MONITORING WELL SHEET

WELL No.: 09T06
PERMIT No.: 09MWT06

PROJECT:	NSW CRANE	DRILLING Co.:	Bowser Morner	BORING No.:	
PROJECT No.:	~~9000 CTO 0279~~ 00042	DRILLER:	J. Walsh	DATE COMPLETED:	10/20/05
SITE:	SWMU 13 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEG~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing: _____

Stick Up of Casing Above Ground Surface: _____

Elevation of Top of Riser: _____

I.D. of Surface Casing: _____

Type of Surface Casing: _____

Type of Surface Seal: _____

I.D. of Permanent Casing: _____

I.D. of Riser: 2"

Type of Riser: sch 40 PVC

Borehole Diameter: 9.0"

Type of Backfill: _____

Elevation / Depth Top of Seal: 16.0'

Elevation / Depth Top of Bedrock: 110.0'

Type of Seal: Bentonite Chips (med)

Elevation / Depth of Top of Fine Sand: — / —

Elevation / Depth of Top of Filter Pack: 120.0'

Elevation / Depth of Top of Screen: 122.0'

Type of Screen: sch 40 PVC

Slot Size x Length: 0.02" x 15'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: ~2.5"/~6" (NX Core)

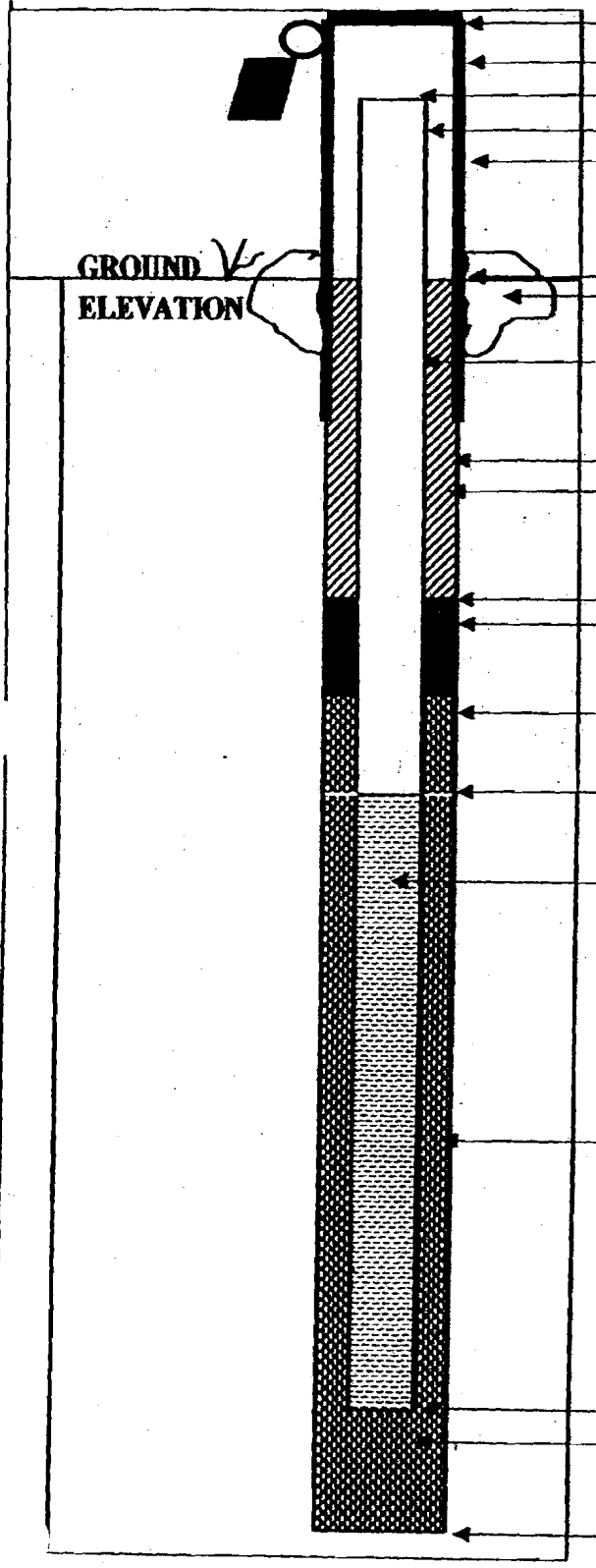
Elevation / Depth of Bottom of Screen: 137.0'

Elevation / Total Depth of Borehole: 137.0'

BORING NO.: 09MWT07S

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

PROJECT:	~~NIROP FRIDLEY~~ NSWC Crane	DRILLING Co.: Bowser Morner	BORING No.:
PROJECT No.: 00042	~~7842 CTO 0057~~	DRILLER: J. Walsh	DATE COMPLETED: 10/31/05
SITE: SWMUQ	~~ANOKA PARK~~	DRILLING METHOD: HSA	NORTHING:
GEOLOGIST:	D. Hickey	DEV. METHOD:	EASTING:



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE:

I.D. OF SURFACE CASING:

TYPE OF SURFACE CASING:

GROUND ELEVATION:

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: CARBON STEEL

BOREHOLE DIAMETER: 9"

TYPE OF SEAL:

ELEVATION / DEPTH OF SEAL: 12'

TYPE OF SEAL: BENTONITE CHIPS

ELEVATION / DEPTH TOP OF FILTER PACK: 14'

ELEVATION / DEPTH TOP OF SCREEN: 16.0'

TYPE OF SCREEN: CARBON STEEL

SLOT SIZE X LENGTH: 10 SLOT x 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: SILICA SAND
(No. 10-20 U.S. STANDARD SIEVE SIZE)

ELEVATION / DEPTH BOTTOM OF SCREEN: 11.0

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 11.0

TYPE OF BACKFILL BELOW WELL:

ELEVATION / DEPTH OF BOREHOLE: 11.0'

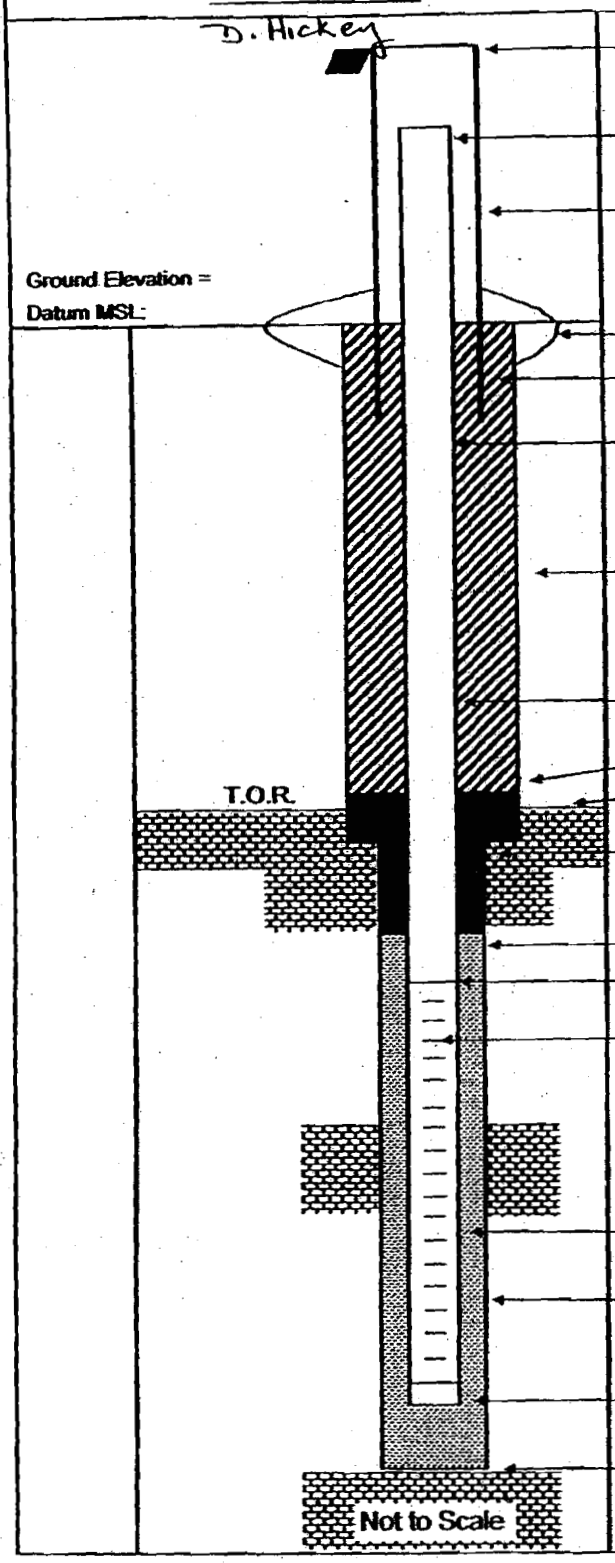
Tetra Tech NUS, Inc.

BEDROCK
MONITORING WELL SHEET

WELL No.: 09MWT07D

PERMIT No:

PROJECT:	NSW CRANE	DRILLING Co.:	Bowser Morner	BORING No.:	09T07
PROJECT No.:	~~9060 CTO 0279~~ 00022	DRILLER:	J. Walsh	DATE COMPLETED:	10/31/05
SITE:	SWMU 13 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEG~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing:

Stick Up of Casing Above Ground Surface:

Elevation of Top of Riser:

I.D. of Surface Casing:

Type of Surface Casing:

Type of Surface Seal:

I.D. of Permanent Casing:

I.D. of Riser: 2"

Type of Riser: Sch 40 PVC

Borehole Diameter: 9"

Type of Backfill:

Elevation / Depth Top of Seal: 13.0

Elevation / Depth Top of Bedrock: 111.0'

Type of Seal: Bentonite Chips

Elevation / Depth of Top of Fine Sand: —/—

Elevation / Depth of Top of Filter Pack: 112'

Elevation / Depth of Top of Screen: 113'

Type of Screen: Sch 40 PVC

Slot Size x Length: 0.020" X 10'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: 2.5" / 6"

Elevation / Depth of Bottom of Screen: 123'

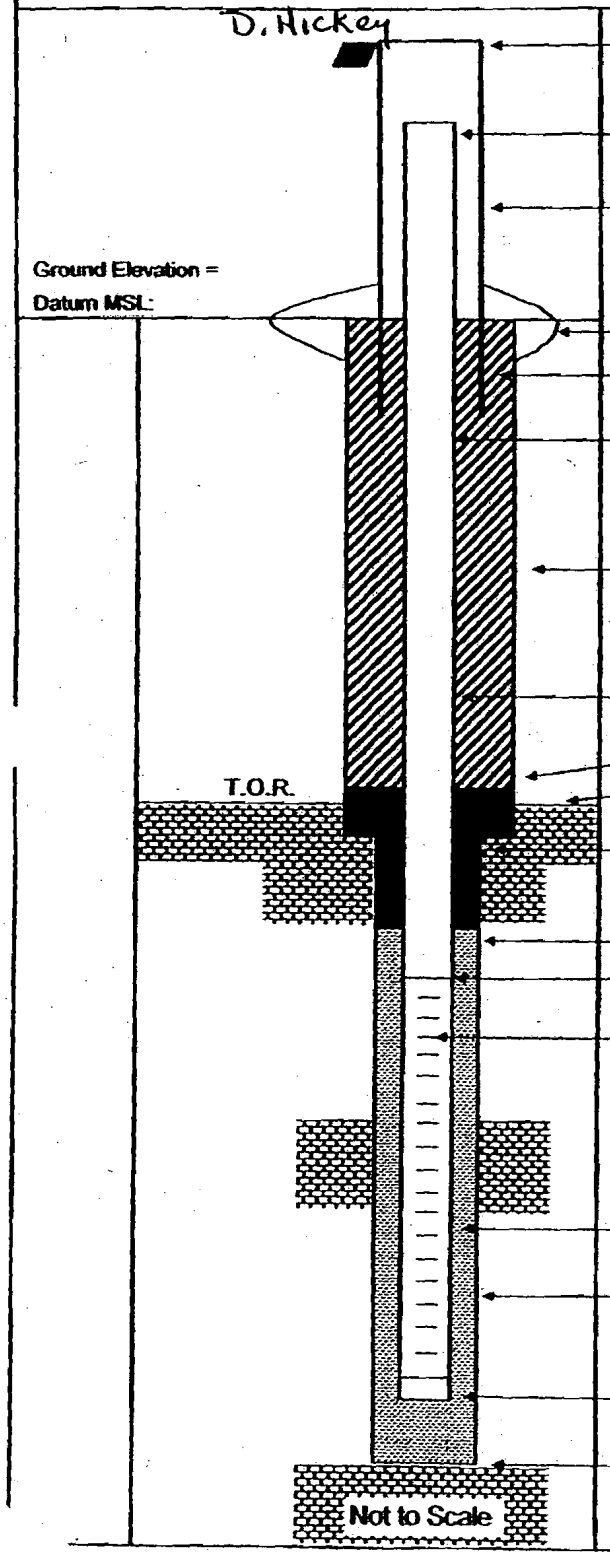
Elevation / Total Depth of Borehole: 123'

Tetra Tech NUS, Inc.

BEDROCK MONITORING WELL SHEET

WELL No.: 09T08
PERMIT No.: 09MWT08

PROJECT:	NSW CRANE	DRILLING Co.:	Bonser Morner	BORING No.:	09T08
PROJECT No.:	~~9060 CTO 0279~~ 00042	DRILLER:	J. Walsh	DATE COMPLETED:	10-22-05
SITE:	SWMU 18 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEC~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing:

Stick Up of Casing Above Ground Surface:

Elevation of Top of Riser:

I.D. of Surface Casing:

Type of Surface Casing:

Type of Surface Seal:

I.D. of Permanent Casing:

I.D. of Riser: 2"

Type of Riser: Sch 40 PVC

Borehole Diameter: ~9"

Type of Backfill:

Elevation / Depth Top of Seal: 13.0'

Elevation / Depth Top of Bedrock: 16.5'

Type of Seal: Bentonite Chips (med)

Elevation / Depth of Top of Fine Sand: — / —

Elevation / Depth of Top of Filter Pack: 11.0'

Elevation / Depth of Top of Screen: 13.0'

Type of Screen: Sch 40 PVC

Slot Size x Length: 0.02" X 10'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: ~2.5"/~6"

Elevation / Depth of Bottom of Screen: 23.0'

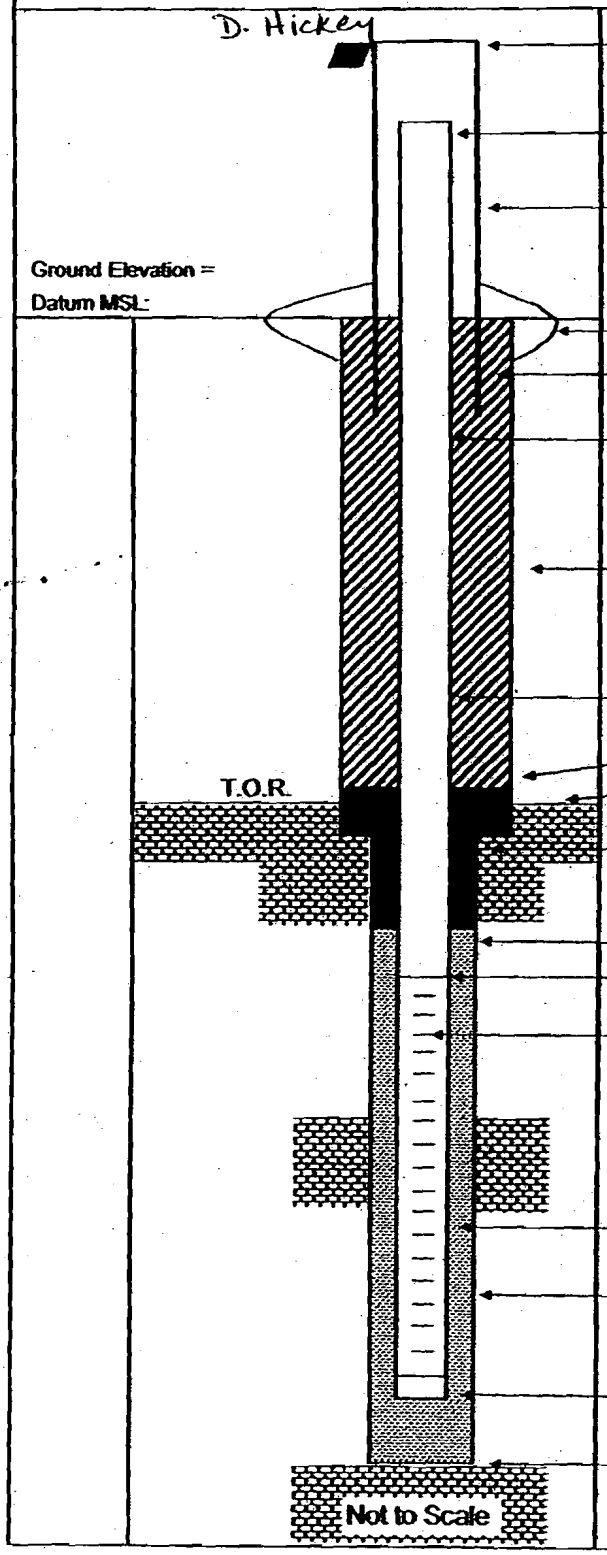
Elevation / Total Depth of Borehole: 23.0'

Tetra Tech NUS, Inc.

BEDROCK
MONITORING WELL SHEET

WELL No.: 09T09
PERMIT No.: 09MWT09

PROJECT:	NSW CRANE	DRILLING Co.:	Bowser Morner	BORING No.:	
PROJECT No.:	~~9060 GTO 0270~~ 00092	DRILLER:	J. Walsh	DATE COMPLETED:	10/19/05
SITE:	SWMU 18 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEC~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing:

Stick Up of Casing Above Ground Surface:

Elevation of Top of Riser:

I.D. of Surface Casing:

Type of Surface Casing:

Type of Surface Seal:

I.D. of Permanent Casing:

I.D. of Riser: 2"

Type of Riser: Sch 40 PVC

Borehole Diameter: 9.0"

Type of Backfill:

Elevation / Depth Top of Seal: 16.0'

Elevation / Depth Top of Bedrock: 1~9.5'

Type of Seal: Bentonite Chips (med)

Elevation / Depth of Top of Fine Sand: —/—

Elevation / Depth of Top of Filter Pack: 120.0

Elevation / Depth of Top of Screen: 122.0

Type of Screen: Sch 40 flush Thrd PVC

Slot Size x Length: 0.020" x 10'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: ~2.5"/~6" (NX Core)

Elevation / Depth of Bottom of Screen: 132.0'

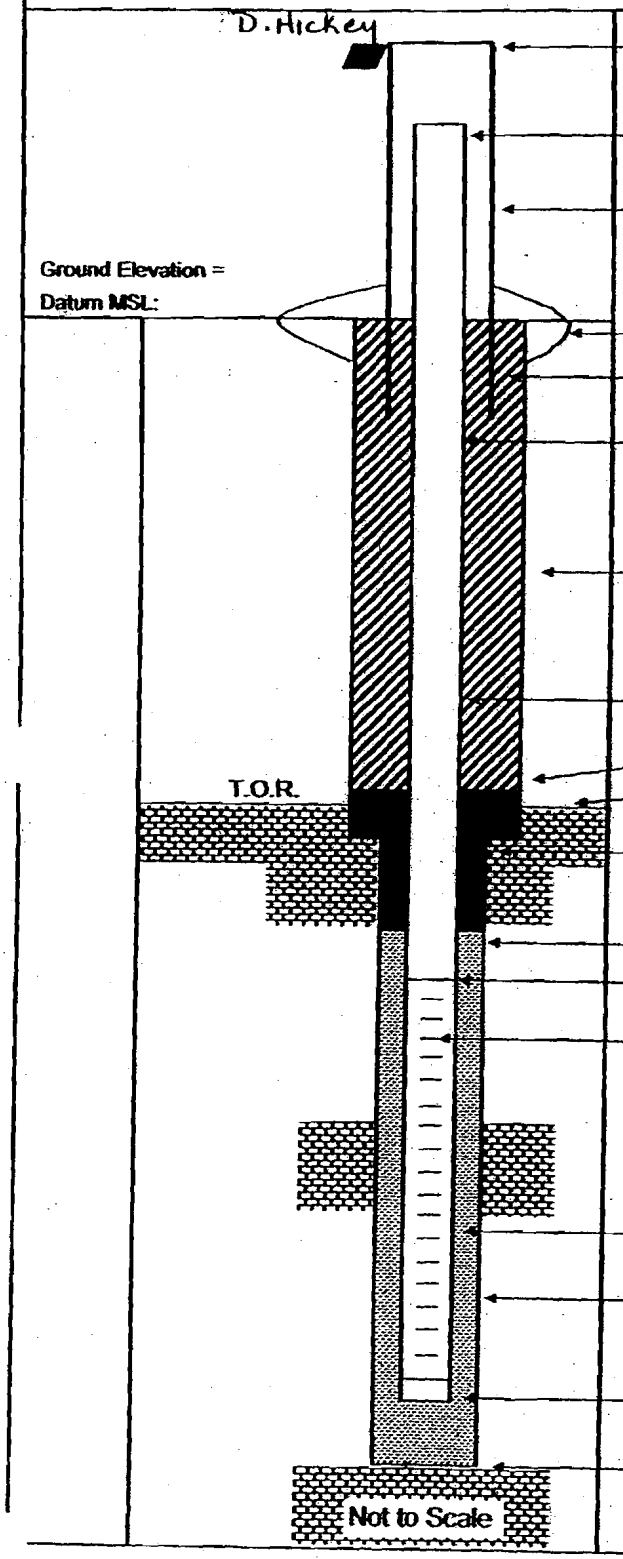
Elevation / Total Depth of Borehole: 132.0'

Tetra Tech NUS, Inc.

BEDROCK MONITORING WELL SHEET

WELL No.: 09T10
PERMIT No.: 09MWT10

PROJECT:	NSW CRANE	DRILLING Co.:	Bowser Morner	BORING No.:	09T10
PROJECT No.:	~~9000 CTO 0279~~ 00047	DRILLER:	J. Walsh	DATE COMPLETED:	10/25/05
SITE:	SWMU 15 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEG~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing:

Stick Up of Casing Above Ground Surface:

Elevation of Top of Riser:

I.D. of Surface Casing:

Type of Surface Casing:

Type of Surface Seal:

I.D. of Permanent Casing:

I.D. of Riser: 2"

Type of Riser: Sch 40 PVC

Borehole Diameter: ~9"

Type of Backfill:

Elevation / Depth Top of Seal: 1

Elevation / Depth Top of Bedrock: 16.0'

Type of Seal: Bentonite Chips

Elevation / Depth of Top of Fine Sand: — 1 —

Elevation / Depth of Top of Filter Pack: 1 10.0'

Elevation / Depth of Top of Screen: 1 12.0'

Type of Screen: Sch 40 PVC

Slot Size x Length: 0.02" X 10'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: ~2.5"/~6"

Elevation / Depth of Bottom of Screen: 1 22.0'

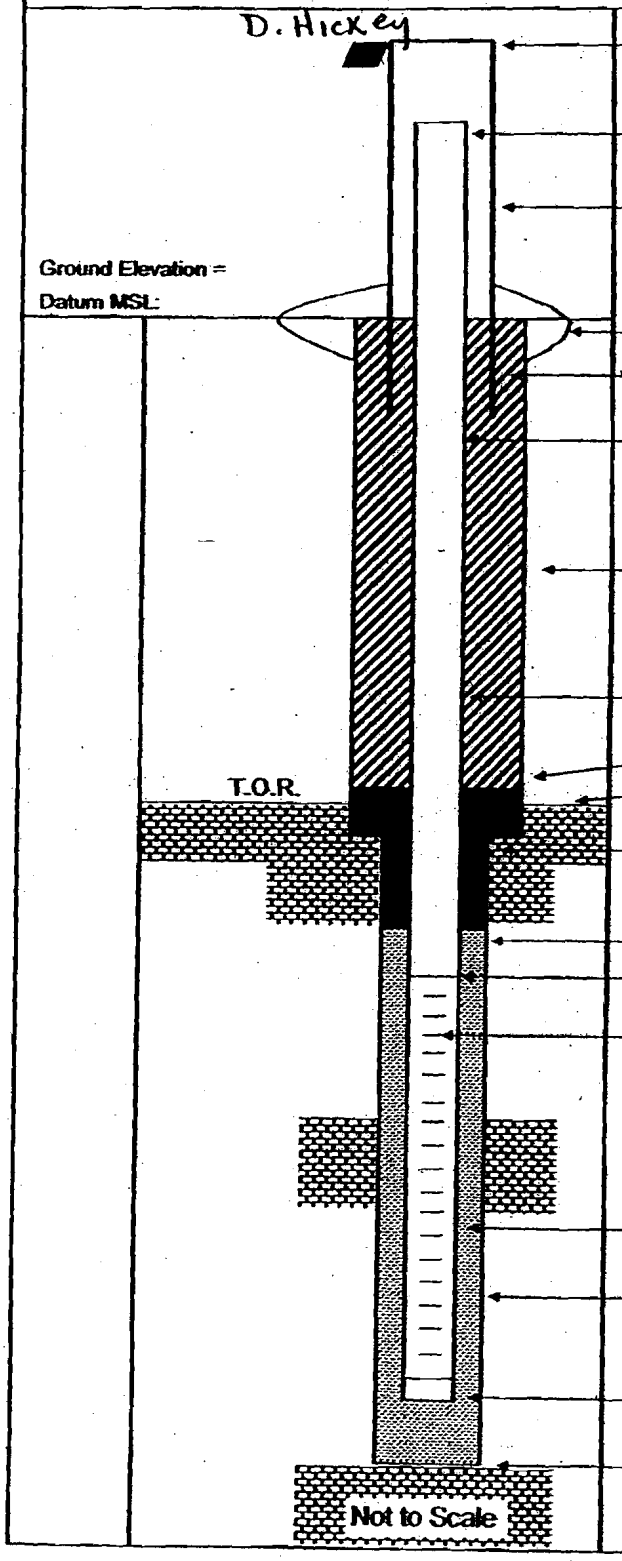
Elevation / Total Depth of Borehole: 1 22.0'

Tetra Tech NUS, Inc.

BEDROCK MONITORING WELL SHEET

WELL No.: 09T11
PERMIT No.: 09MWT11

PROJECT:	NSW CRANE	DRILLING Co.:	Bowser Morner	BORING No.:	09T11
PROJECT No.:	~~9060 CTO 0279~~ 00092	DRILLER:	J. Walsh	DATE COMPLETED:	10-21-05
SITE:	SWMU 13 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEG~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing:

Stick Up of Casing Above Ground Surface:

Elevation of Top of Riser:

I.D. of Surface Casing:

Type of Surface Casing:

Type of Surface Seal:

I.D. of Permanent Casing:

I.D. of Riser: 2"

Type of Riser: Sch 40 PVC

Borehole Diameter: ~9.0"

Type of Backfill:

Elevation / Depth Top of Seal: 13.0'

Elevation / Depth Top of Bedrock: 16.5'

Type of Seal: Bentonite Chips (med)

Elevation / Depth of Top of Fine Sand: — / —

Elevation / Depth of Top of Filter Pack: 110.5'

Elevation / Depth of Top of Screen: 112.0'

Type of Screen: Sch 40 PVC

Slot Size x Length: 0.02" x 10'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: ~2.5" / ~6.0"

Elevation / Depth of Bottom of Screen: 122.0'

Elevation / Total Depth of Borehole: 122.0'

Temp Casing Set to 9.0' BGS

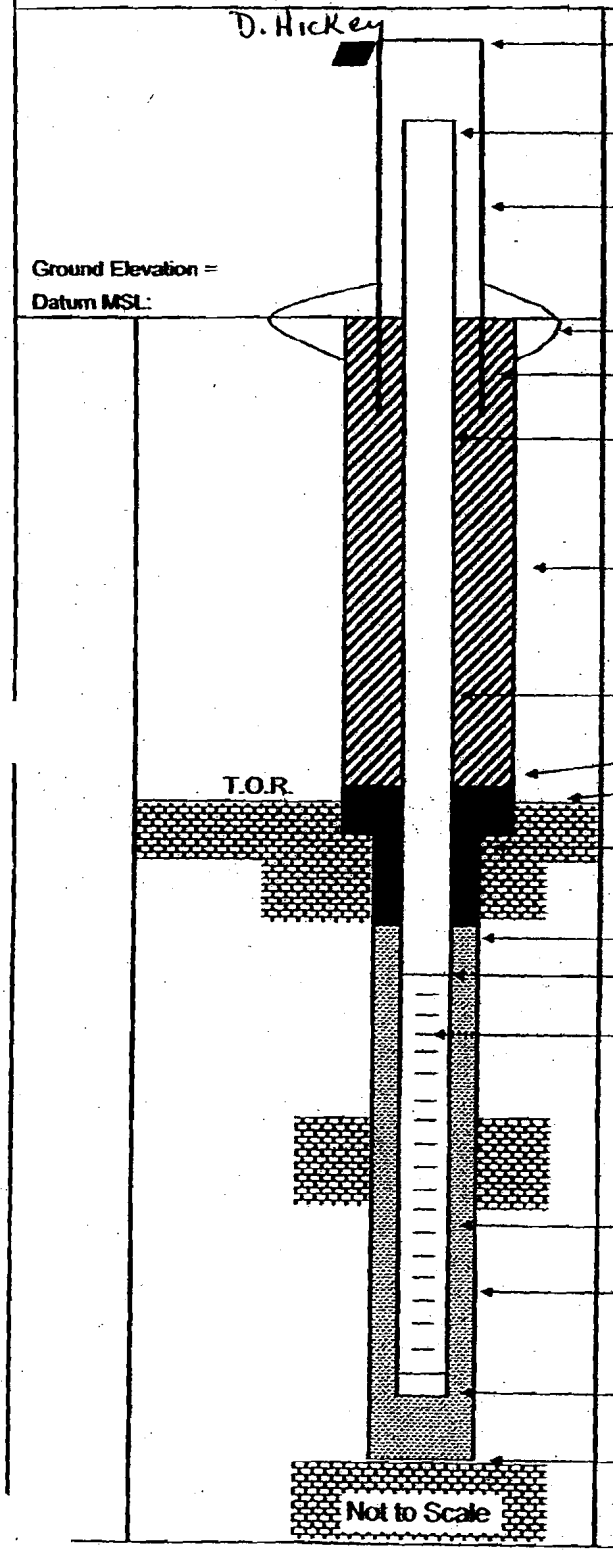
Tetra Tech NUS, Inc.

BEDROCK MONITORING WELL SHEET

WELL No.: 09T12

PERMIT No.: 09MWT12

PROJECT:	NSW CRANE	DRILLING Co.:	Bowser Morner	BORING No.:	
PROJECT No.:	~~0060 GTO 0279~~ 62912	DRILLER:	J. Walsh	DATE COMPLETED:	10/21/05
SITE:	SWMU ~~18~~ 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEG~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing:

Stick Up of Casing Above Ground Surface:

Elevation of Top of Riser:

I.D. of Surface Casing:

Type of Surface Casing:

Type of Surface Seal:

I.D. of Permanent Casing:

I.D. of Riser: 2"

Type of Riser: Sch 40 PVC

Borehole Diameter: ~9"

Type of Backfill:

Elevation / Depth Top of Seal: 13.6'

Elevation / Depth Top of Bedrock: 16.5'

Type of Seal: Bentonite Chips (med)

Elevation / Depth of Top of Fine Sand: — / —

Elevation / Depth of Top of Filter Pack: 10.8'

Elevation / Depth of Top of Screen: 12'

Type of Screen: Sch 40 PVC

Slot Size x Length: 0.02" x 30'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: ~2.5" / ~6"

Elevation / Depth of Bottom of Screen: 42'

Elevation / Total Depth of Borehole: 42'

* Temp Casing set to 9.0' BGS.

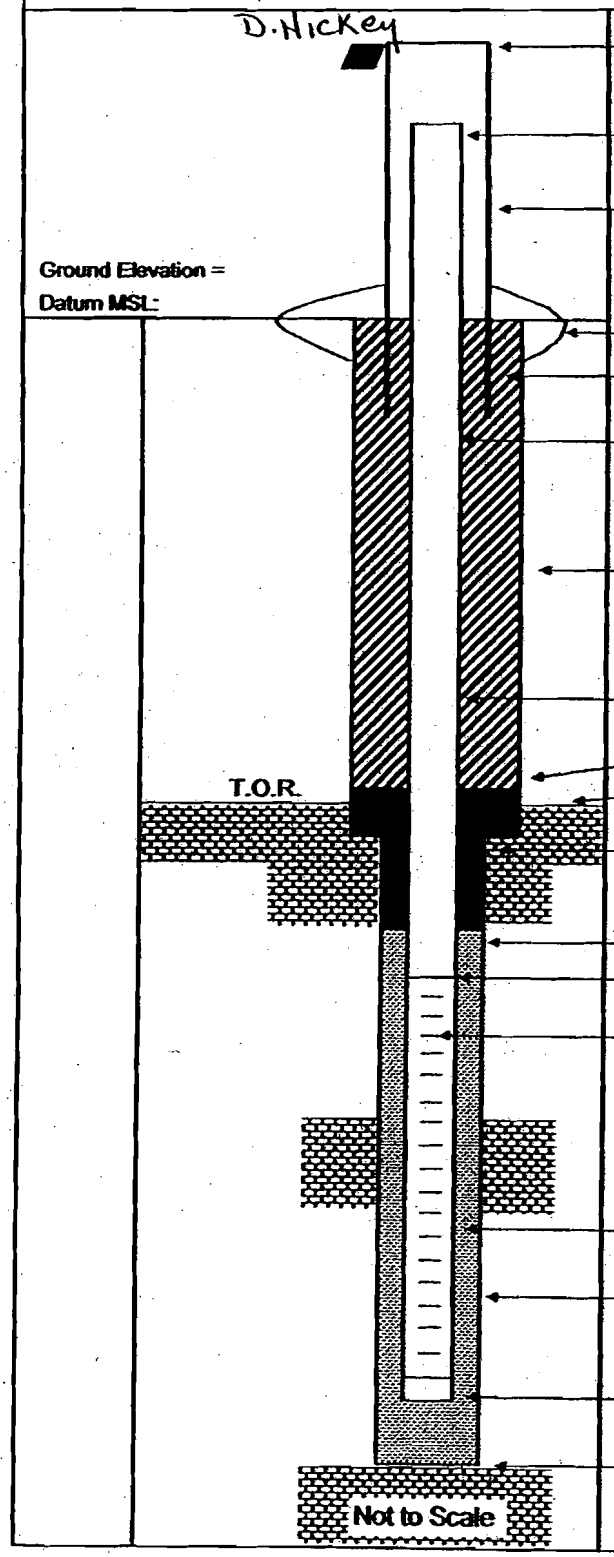
Tetra Tech NUS, Inc.

BEDROCK MONITORING WELL SHEET

WELL No.: 09T13

PERMIT No: 09MWT13

PROJECT:	NSW CRANE	DRILLING Co.:	Bowser Morner	BORING No.:	
PROJECT No.:	~~9960 CTO 0279~~ 00042	DRILLER:	J. Walsh	DATE COMPLETED:	10/19/05
SITE:	SWMU ~~18~~ 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEC~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing: _____

Stick Up of Casing Above Ground Surface: _____

Elevation of Top of Riser: _____

I.D. of Surface Casing: _____

Type of Surface Casing: _____

Type of Surface Seal: _____

I.D. of Permanent Casing: _____

I.D. of Riser: 2"

Type of Riser: Sch 40 flush Thread PVC

Borehole Diameter: 9"

Type of Backfill: _____

Elevation / Depth Top of Seal: 15.0'

Elevation / Depth Top of Bedrock: 19.0'

Type of Seal: Bentonit Chips (med)

Elevation / Depth of Top of Fine Sand: —/—

Elevation / Depth of Top of Filter Pack: 111.5'

Elevation / Depth of Top of Screen: 112.5'

Type of Screen: Sch 40 flush Thread PVC

Slot Size x Length: 0.02" x 10'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: ~2.5" / ~6" (NX Core)

Elevation / Depth of Bottom of Screen: 132.5'

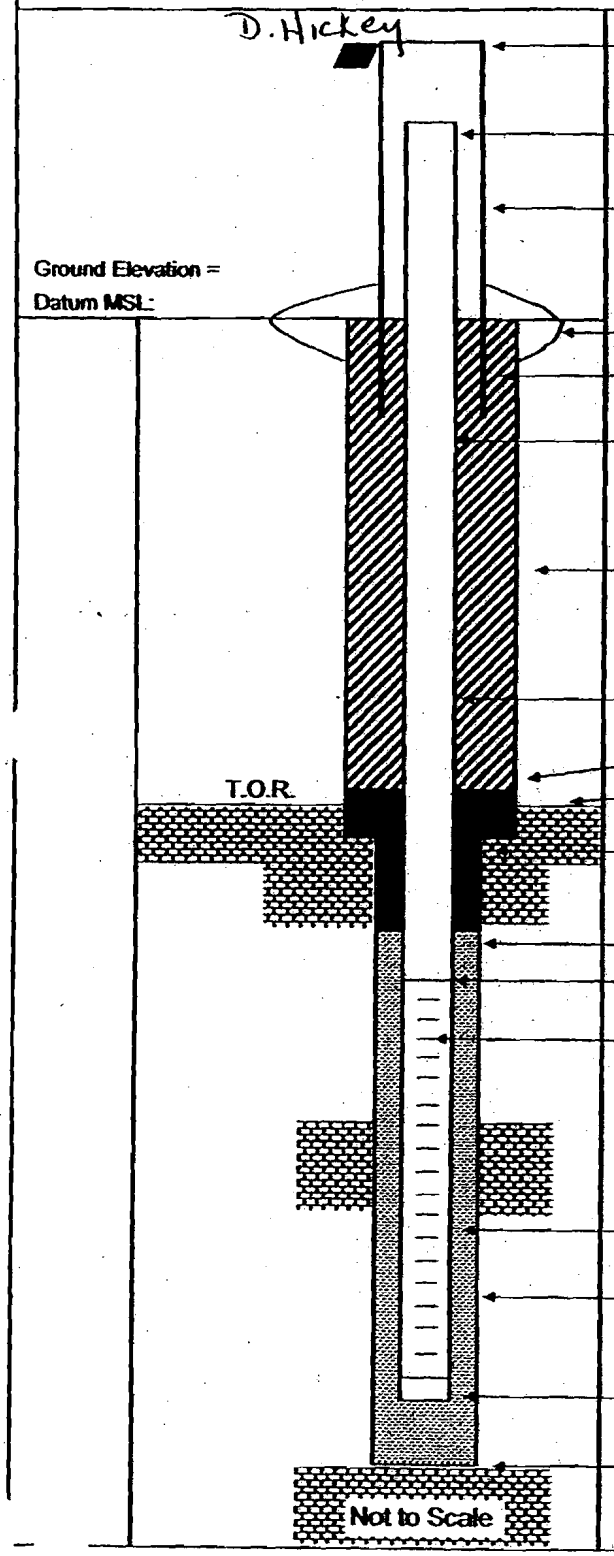
Elevation / Total Depth of Borehole: 132.5'

Tetra Tech NUS, Inc.

BEDROCK
MONITORING WELL SHEET

WELL No.: 09T14
PERMIT No.: 09MWT14

PROJECT:	NSW CRANE	DRILLING Co.:	Bowser Morner	BORING No.:	09T14
PROJECT No.:	~~9000 CTO 0279~~ 00042	DRILLER:	J. Walsh	DATE COMPLETED:	10/18/05
SITE:	SWMU ~~15~~ 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEC~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing:

Stick Up of Casing Above Ground Surface:

Elevation of Top of Riser:

I.D. of Surface Casing:

Type of Surface Casing:

Type of Surface Seal:

I.D. of Permanent Casing:

I.D. of Riser: 2"

Type of Riser: Sch 40, flush thread PVC

Borehole Diameter: ~9.0"

Type of Backfill:

Elevation / Depth Top of Seal: 1 6.0'

Elevation / Depth Top of Bedrock: 1 10'

Type of Seal: Bentonite Chips (med)

Elevation / Depth of Top of Fine Sand: — 1 —

Elevation / Depth of Top of Filter Pack: 1 15.0

Elevation / Depth of Top of Screen: 1 17.0

Type of Screen: Sch 40, flush thread PVC

Slot Size x Length: 0.02" / 10'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: ~2.5 / 6.0

Elevation / Depth of Bottom of Screen: 1 27.0

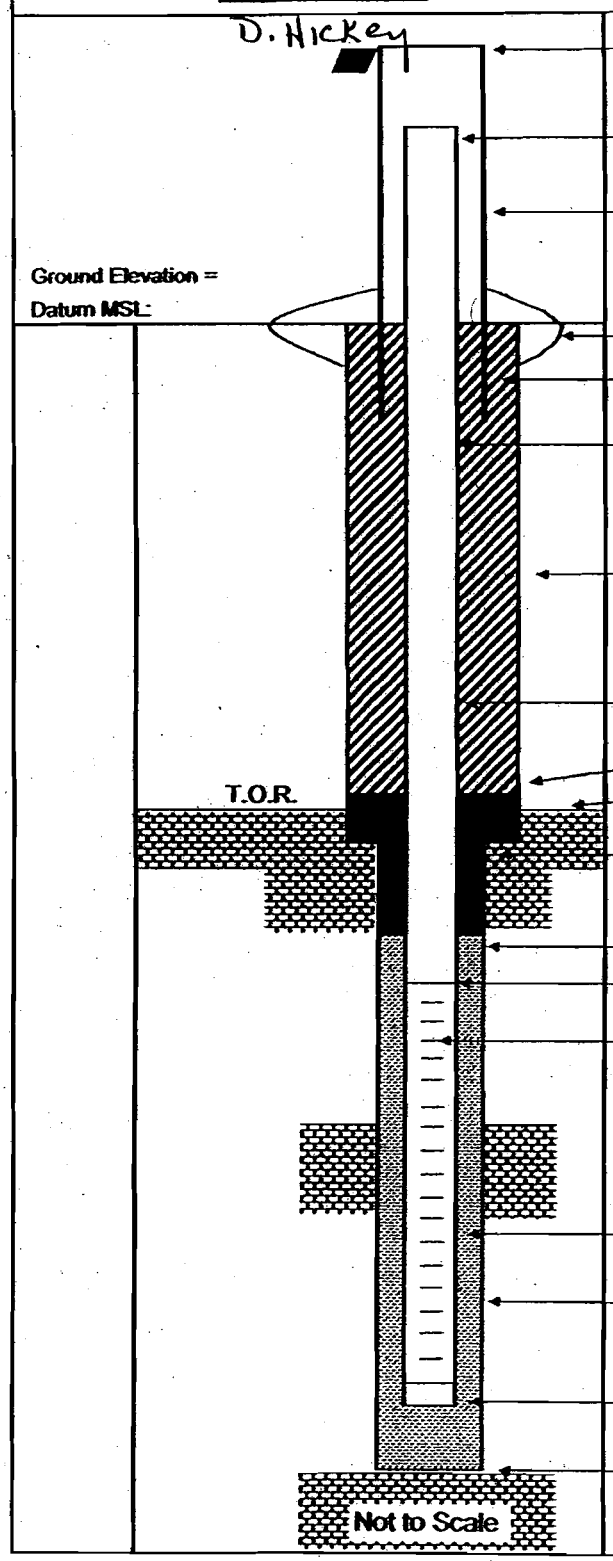
Elevation / Total Depth of Borehole: 1 32.5

Tetra Tech NUS, Inc.

BEDROCK
MONITORING WELL SHEET

WELL No.: 09T15
PERMIT No.: 09MWT15

PROJECT:	NSW CRANE	DRILLING Co.:	Bowser Morner	BORING No.:	09T15
PROJECT No.:	~~9060 CTO 0279~~ 00042	DRILLER:	J. Walsh	DATE COMPLETED:	10/18/05
SITE:	SWMU ~~13~~ 9	DRILLING METHOD:	Core	NORTHING:	
GEOLOGIST:	~~B. BAALKOVEG~~ D. Hickey	DEV. METHOD:		EASTING:	



Elevation of Top of Casing:

Stick Up of Casing Above Ground Surface:

Elevation of Top of Riser:

I.D. of Surface Casing:

Type of Surface Casing:

Type of Surface Seal:

I.D. of Permanent Casing:

I.D. of Riser: 2"

Type of Riser: Sch 40 PVC

Borehole Diameter: 9-inch

Type of Backfill:

Elevation / Depth Top of Seal: 15.0

Elevation / Depth Top of Bedrock: 19.0

Type of Seal: Bentonite Chips (med)

Elevation / Depth of Top of Fine Sand: —/—

Elevation / Depth of Top of Filter Pack: 19.0

Elevation / Depth of Top of Screen: 21.0

Type of Screen: Sch 40 PVC

Slot Size x Length: 10-Slot / 10'

I.D. of Screen: 2"

Type of Filter Pack: No. 10-20 SAND

Diameter of Hole in Bedrock:
Core / Ream: ~2.5"/6" (NX Core)

Elevation / Depth of Bottom of Screen: 31.0

Elevation / Total Depth of Borehole: 32.5

APPENDIX B

EXCAVATION VOLUME CALCULATIONS

CLIENT:	NAVAL SURFACE WARFARE CENTER, CRANE	JOB NUMBER:	112G00477 - 14.116
SUBJECT:	SWMU 9 - PESTICIDE CONTROL AREA - VOLUME CALCULATION		
BASED ON:	Limits of Excavation Drawings	DRAWING NUMBER:	IMWP Figures 3-1, 3-2, and 3-3
BY: TWS Date: 9-9-08	CHECKED BY: TJR Date: 8/9/08	APPROVED BY:	DATE:

OBJECTIVE:

The purpose of this calculation is to estimate the volume of soil to be excavated from the SWMU 9 surface and subsurface soil excavation areas identified in the SWMU 9 Interim Measures Work Plan. Following the calculation of excavation, this calculations determines the amount of backfill materials needed to restore SWMU 9 to pre-construction conditions.

APPROACH:

1. Using the historic surface and subsurface soil sample information from the previous investigations, the size of the surface soil excavation area near the former Building 55 will be estimated. Using the estimated surface area and required excavation depth, and the required excavation side slopes, the volume of contaminated surface and subsurface soil south and west of former Building 55 will be calculated.

2. Using the historic surface and subsurface soil sample information from the previous investigations the size of the surface soil excavation area near the former Fire Training Area will be estimated. Using the estimated surface area, the required excavation depth, and the required exaction side slopes, the volume of contaminated surface and subsurface soil at the former fire training area will be calculated.

3. Using the historic surface and subsurface soil sample information from the previous investigations the size of the surface soil excavation area near Building 150 will be estimated. Using the estimated surface area and the required excavation depth the volume of contaminated surface soil on the southern end of Building 150 will be calculated.

REFERENCES:

TtNUS (Tetra Tech NUS, Inc.), 2007. Interim Measures Work Plan SWMU 9 - Pesticide Control Area, NSWC Crane, Crane, Indiana.

CALCULATIONS

1. Former Building 55 Area

Historic surface and subsurface soil sampling results were used to perform a preliminary human health and ecological risk assessment. Based on average concentrations across the former Building 55 area, several chemicals of concern were identified as causing unacceptable risk to human and ecological receptors. The results of the preliminary risk assessment identified surface soil sampling locations were soil must be removed to reduce the human and ecological risks to acceptable levels. Figure 3-1 of the IMWP for SWMU 9 identifies the limits of surface soil excavation required to reduce the risk levels at the former Building 55 area to acceptable levels.

CLIENT:	NAVAL SURFACE WARFARE CENTER, CRANE	JOB NUMBER:	112G00477 - 14.116
SUBJECT:	SWMU 9 - PESTICIDE CONTROL AREA - VOLUME CALCULATION		
BASED ON:	Limits of Excavation Drawings	DRAWING NUMBER:	IMWP Figures 3-1, 3-2, and 3-3
BY: TWS Date: 9-9-08	CHECKED BY: TJR Date: 9/9/08	APPROVED BY:	DATE:

Areas presented in the following calculations were obtained through GIS.

Surface Soil Contaminant Volume

Area of Excavation =	9,090 sf	(Figure 3-1 from IMWP)
Depth of Excavation =	2 ft	(depth of surface soil excavation)
Excavation Volume =	18,180 cf	
Excavation Volume =	**673 cy**	

Subsurface Soil Contaminant Volume

Area of Excavation =	750 sf	(Figure 3-1 from IMWP)
Depth of Excavation =	4 ft	(depth of subsurface soil excavation)
Excavation Volume =	3,000 cf	
Excavation Volume =	**111 cy**	

Additional Volume for Side Slopes

Because the excavation west of former Building 55 extends to a depth of 6 feet below ground surface side slopes will need to be excavated to create a safe excavation. The side walls will be excavated back to create 1 foot horizontal to 1 foot vertical excavation side slopes.

Excavation area at 7 feet bgs =	750 sf	(Figure 3-1 from IMWP)
Excavation area at 2 feet bgs =	1,886 sf	(Figure 3-1 from IMWP)
Depth of Excavation =	4 ft	(depth of subsurface excavation)
Volume of Excavation =	5,272 cf	(average of areas times depth)
Volume of Excavation =	195 cy	(1,968 / 27)
Volume of Side Wall Excavation =	84 cy	(73 cy - 44 cy)
Total Volume Excavated for Side Slopes =	**84 cy**	

Total Volume Excavated from the Former Building 55 Area = 868 cy

2. Former Fire Training Area

Historic surface and subsurface soil sampling results were used to perform a preliminary human health and ecological risk assessment. Based on average concentrations across the former Fire Training Area, several chemicals of concern were identified as causing unacceptable risk to human and ecological receptors. The results of the preliminary risk assessment identified surface and subsurface soil sampling locations were soil must be removed to reduce the human and ecological risks to acceptable levels. Figure 3-2 of the IMWP for SWMU 9 identifies the limits of surface and subsurface soil excavation required to reduce the risk levels at the former Fire Training Area to acceptable levels.

CLIENT:	NAVAL SURFACE WARFARE CENTER, CRANE	JOB NUMBER:	112G00477 - 14.116
SUBJECT:	SWMU 9 - PESTICIDE CONTROL AREA - VOLUME CALCULATION		
BASED ON:	Limits of Excavation Drawings	DRAWING NUMBER:	IMWP Figures 3-1, 3-2, and 3-3
BY: TWS Date: 9-9-08	CHECKED BY: TJR Date: 9/9/08	APPROVED BY:	DATE:

Areas presented in the following calculations were obtained through GIS.

Surface Soil Contaminant Volume

Area of Excavation =	3,011 sf	(Figure 3-2 from IMWP)
Depth of Excavation =	2 ft	(depth of surface soil excavation)
Excavation Volume =	6,022 cf	
Excavation Volume =	**223 cy**	

Within the limits of surface soil excavation, PCBs were detected at concentrations greater than 50 mg/kg. This material must be excavated separately to the extent possible and disposed of as TSCA regulated waste material. The following is a calculation to determine the amount of TSCA regulated material within the former Fire Training Area surface soil excavation.

Area of Excavation =	526 sf	(Figure 3-2 from IMWP)
Depth of Excavation =	2 ft	(depth of PCBs greater than 50 mg/kg)
Excavation Volume =	1,052 cf	
Excavation Volume =	**39 cy**	TSCA Regulated Material in Surface Soil

Based on the total surface soil excavation volume, after removing the TSCA regulated component the remaining soil will be disposed of as non-TSCA material. The volume of non-TSCA regulated material is expected to be:

Excavation Volume =	**184 cy**	Non-TSCA Regulated Material in Surface Soil

Subsurface Soil Contaminant Volume

Area of Excavation =	2,344 sf	(Figure 3-2 from IMWP)
Depth of Excavation =	5 ft	(depth of subsurface soil excavation)
Excavation Volume =	11,720 cf	
Excavation Volume =	**434 cy**	

There is no TSCA Regulated Material within the volume of subsurface soil excavation.

Additional Volume for Side Slopes

Because the excavation at the former Fire Training Area extends to a depth of 7 feet below ground surface side slopes will need to be excavated to create a safe excavation. The side walls will be excavated back to create 1 foot horizontal to 1 foot vertical excavation side slopes.

Excavation area at 7 feet bgs =	2,344 sf	(Figure 3-2 from IMWP)
Excavation area at 0 feet bgs =	3,412 sf	(Figure 3-2 from IMWP)
Depth of Excavation =	7 ft	(depth of subsurface excavation)
Volume of Excavation =	20,146 cf	(average of areas times depth)
Volume of Excavation =	746 cy	(20,146 / 27)

CLIENT:	NAVAL SURFACE WARFARE CENTER, CRANE	JOB NUMBER:	112G00477 - 14.116
SUBJECT:	SWMU 9 - PESTICIDE CONTROL AREA - VOLUME CALCULATION		
BASED ON:	Limits of Excavation Drawings	DRAWING NUMBER:	IMWP Figures 3-1, 3-2, and 3-3
BY: TWS Date: 9-9-08	CHECKED BY: TJR Date: 9/9/08	APPROVED BY:	DATE:

Volume of Side Wall Excavation = 312 cy (746 cy - 434 cy)

Total Volume Excavated for Side Slopes = **312 cy**

Total Volume Excavated from the Former Fire Training Area = 969 cy

3. Building 150 Area

Historic surface and subsurface soil sampling results were used to perform a preliminary human health and ecological risk assessment. Based on average concentrations across the Building 150 Area, DRO was identified as a chemical of concern that is causing unacceptable risk to human and ecological receptors. The results of the preliminary risk assessment identified a single surface soil sampling location that must be removed to reduce the human and ecological risks to acceptable levels. Figure 3-1 of the IMWP for SWMU 9 identifies the limits of surface soil excavation required to reduce the risk levels at the Building 150 Area to acceptable levels.

Areas presented in the following calculations were obtained through GIS.

Surface Soil Contaminant Volume

Area of Excavation =	350 sf	(Figure 3-2 from IMWP)
Depth of Excavation =	2 ft	(depth of surface soil excavation)
Excavation Volume =	700 cf	
Excavation Volume =	**26 cy**	

Subsurface Soil Contaminant Volume

Excavation Volume = **0 cy**

Total Volume Excavated from the Building 150 Area = 26 cy

4. Total Volume of Material Removed from SWMU 9

The total volume of material removed from SWMU 9 includes the soil excavated from the Former Building 55 Area, the Former Fire Training Area, the Building 150 Area, the volume of material excavated from side slopes to create a safe excavation, and the material found in the debris pile found near the Former Fire Training Area.

Volume Excavated from the Former Building 55 Area (include slopes) =	868 cy
Volume Excavated from the Former Fire Training Area (include slopes) =	969 cy
Volume Excavated from the Building 150 Area =	26 cy
Volume of material located in the debris pile (estimated volume) =	10 cy
Total Volume of Material Removed from SWMU 9 =	**1,873 cy**

5. Required Backfill Material Volumes

CLIENT:	NAVAL SURFACE WARFARE CENTER, CRANE	JOB NUMBER:	112G00477 - 14.116
SUBJECT:	SWMU 9 - PESTICIDE CONTROL AREA - VOLUME CALCULATION		
BASED ON:	Limits of Excavation Drawings	DRAWING NUMBER:	IMWP Figures 3-1, 3-2, and 3-3
BY: TWS Date: 9-9-08	CHECKED BY: TJR Date: 9/9/08	APPROVED BY:	DATE:

Based on the excavation, the required backfill volume will be equal to the excavation volume, which equals the Total Volume of Material Removed from SWMU 9 minus the volume of material in the Debris pile.

Backfill Volume Required = 1,863 cy

The uppermost 6 inches of the excavations will be backfilled with either topsoil or gravel. The remaining backfill material will be common fill material (see Section 3 of the IMWP for common fill, topsoil, and gravel material requirements). The following volumes of backfill material are based on the restoration plan presented as Figure 3-3 in the IMWP.

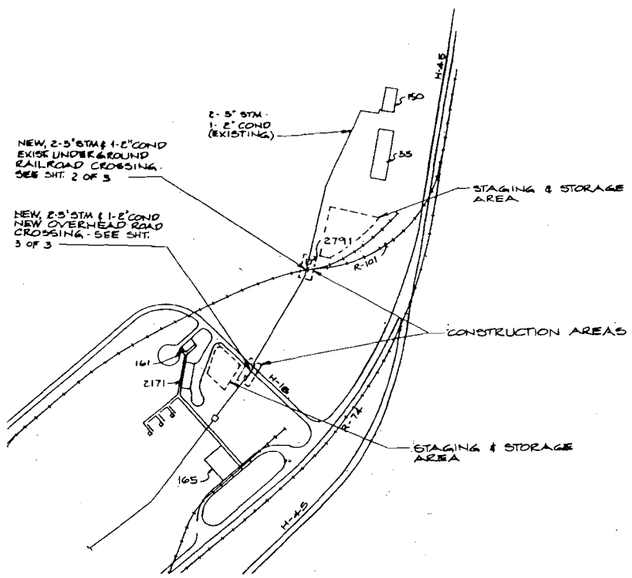
Area of Former Fire Training Area Excavation =	6,054 sf	
Area of Former Building 55 Excavation =	9,090 sf	
Area of Building 150 Excavation =	350 sf	
Total Area of Excavation =	15,494 sf	
Depth of Topsoil or Gravel =	0.5 ft	
Total Volume of Topsoil and Gravel Needed =	287 cy	
Gravel Paved Area (Former Fire Training Area) =	3,069 sf	
Gravel Paved Area (Building 150 Area) =	350 sf	
Area within Excavation Limits to be Gravel Paved =	3,419 sf	
Depth of Gravel for Gravel Pavement =	0.5 ft	
Volume of Gravel Needed =	**63 cy**	
Volume of Topsoil Needed =	**224 cy**	(285 cy - 63 cy)
Volume of Common Fill Needed =	**1,576 cy**	(1,734 cy - 285 cy)

APPENDIX C

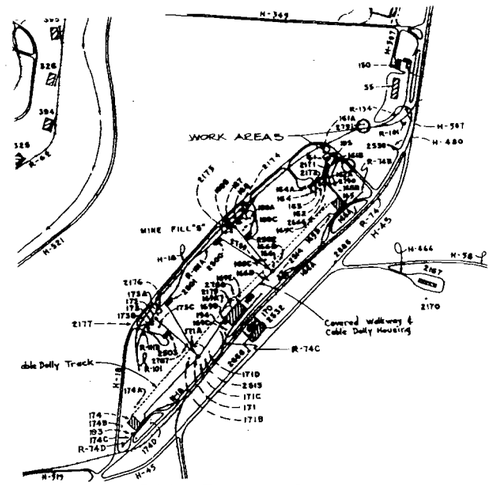
STEAM LINE CONSTRUCTION DRAWINGS

REVISIONS				
LTR	DESCRIPTION	PREPD. BY	DATE	APPROVED

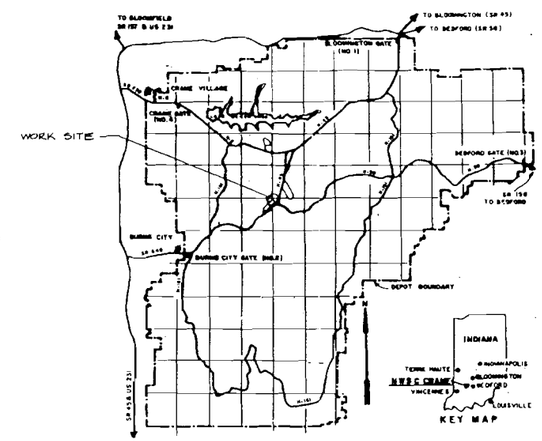
REPLACE STEAM DISTRIBUTION LINES
BOILER HOUSE 150 AREA
NAVAL WEAPONS SUPPORT CENTER
CRANE INDIANA



PLOT PLAN
NO SCALE

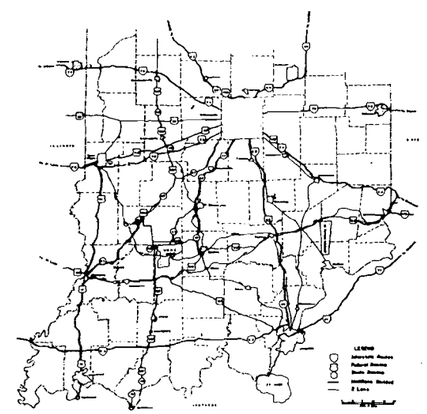


SITE PLAN
NO SCALE



LOCATION PLAN
SCALE: GRID LINES FORM MILE SQUARES

DRAWING INDEX			
PWO DWG. NO.	NAVFAC DWG. NO.	SHT. NO.	TITLE
5416	2115862	1 OF 3	COVER SHEET
5416	2115863	2 OF 3	RAILROAD CROSSING
5416	2115864	3 OF 3	ROAD CROSSING



VICINITY MAP

WASON & MANGER ENGINEERING INC.
ARCHITECTS - ENGINEERS
LEXINGTON, KENTUCKY

REGISTERED PROFESSIONAL ENGINEER — STATE OF INDIANA

SATISFACTORY TO: OPNAV R. Amuda 4-26-88
DATE
SATISFACTORY TO: OY Ray C. Rasch
DATE 4/3/88
SATISFACTORY TO: 10F James R. Hagan
DATE 5/9/88

PWO DWG REF
PWO DRAWING NO. 5416
DESIGN JSC
DRAWN JSC
CHECKED P.C./G.E.L.
SUPV. PETER CORSO
APPROVED DATE
PUBLIC WORKS OFFICER 5/31/88
WR:# 7-093072

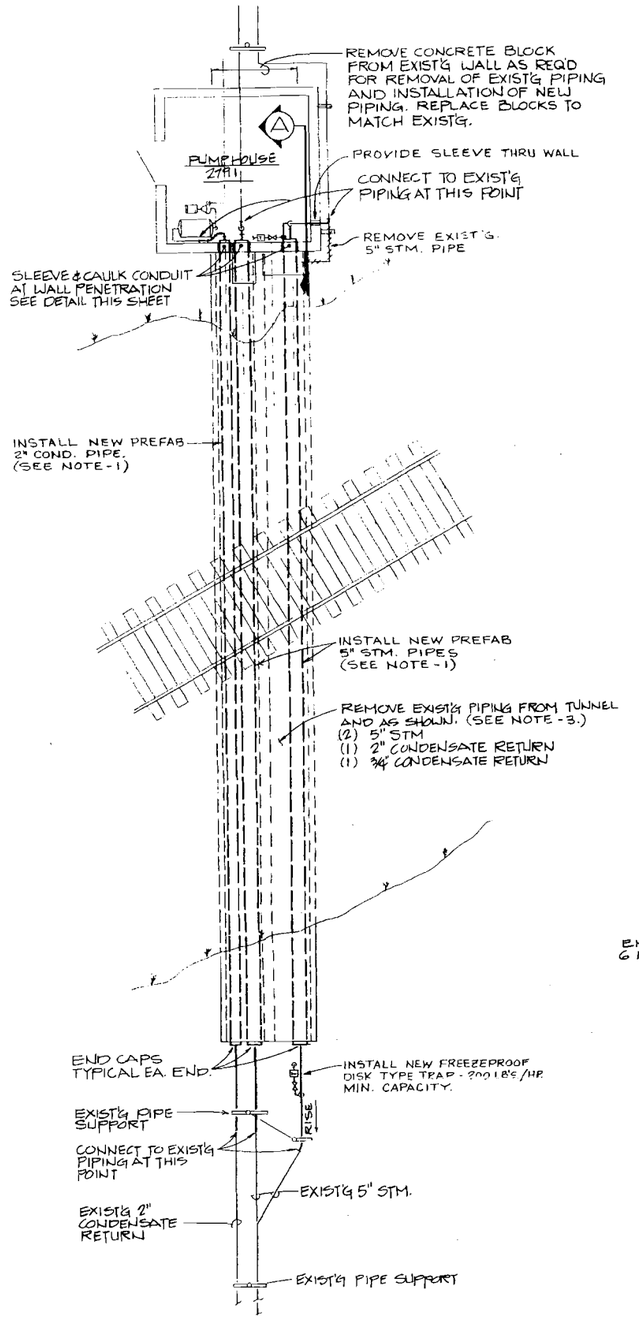
DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
NAVAL WEAPONS SUPPORT CENTER
CRANE, INDIANA

REPLACE STEAM DISTRIBUTION LINES
BOILER HOUSE 150 AREA
COVER SHEET

SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	88094	2115862
		CONTR. CONTR. NO. [redacted] -2-7001

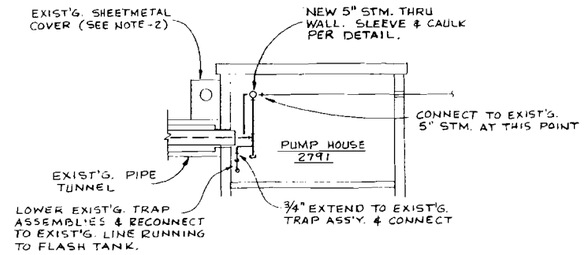
SCALE AS NOTED | SPEC. NO. 84-[redacted] | SHEET 1 OF 3

REVISIONS				
LTR	DESCRIPTION	PREP'D BY	DATE	APPROVED



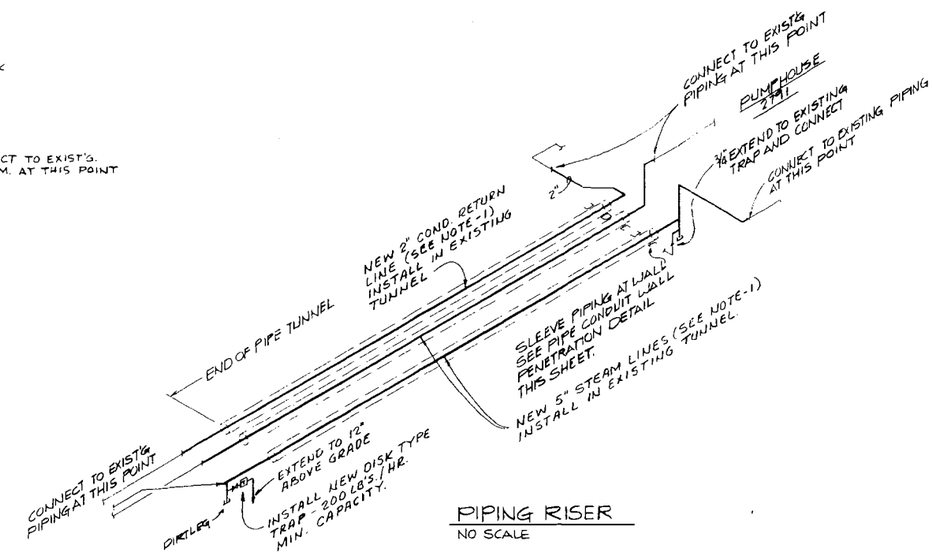
NEW PIPE INSTALLATION DETAIL

SCALE: 1/4" = 1'-0"



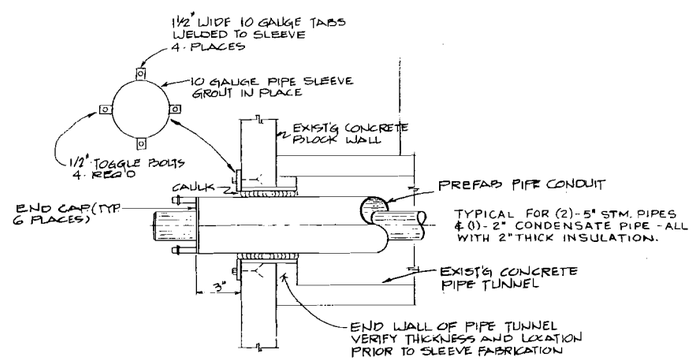
SECTION A-1

SCALE: 1/4" = 1'-0"



PIPING RISER

NO SCALE



PIPE CONDUIT WALL PENETRATION DETAIL

NO SCALE

NOTES:

1. THE 2 NEW 5" STEAM AND 1 NEW 2" CONDENSATE RETURN LINES SHALL BE PREFABRICATED INSULATED PIPE IN CONDUIT SYSTEMS AS SPECIFIED. DUE TO RESTRICTIONS CAUSED BY THE HEIGHT OF EXISTING UNDERGROUND PIPING TUNNELS, THE NEW PIPING SYSTEMS SHALL BE AS FOLLOWS:
   a. 5" STM. – 2" TH'K. INSUL. – 10 3/4" CONDUIT.
   b. 2" COND. – 2" TH'K. INSUL. – 8 5/8" CONDUIT.
2. REMOVE EXISTING SHEETMETAL COVERS FOR CONSTRUCTION ACTIVITIES AND RETAIN. REPLACE COVERS AFTER COMPLETION OF CONSTRUCTION. COVER EXISTING HOLE IN COVER WITH 14 GAGE (MIN.) PLATE WITH NEOPRENE GASKET AND SHEET METAL SCREWS AT APPROX. 2" CENTERS.
3. REMOVE EXISTING PIPES AND INSTALL NEW THRU PUMP HOUSE 2791 AS INDICATED. IF EXCAVATION AND REMOVAL OF TUNNEL CONCRETE COVERS IS REQUIRED, EXCAVATE AND REMOVE ONLY THOSE PORTIONS WHICH WILL NOT CAUSE RAILROAD SERVICE INTERRUPTION.
4. EXISTING PIPE INSULATION CONTAINS ASBESTOS.

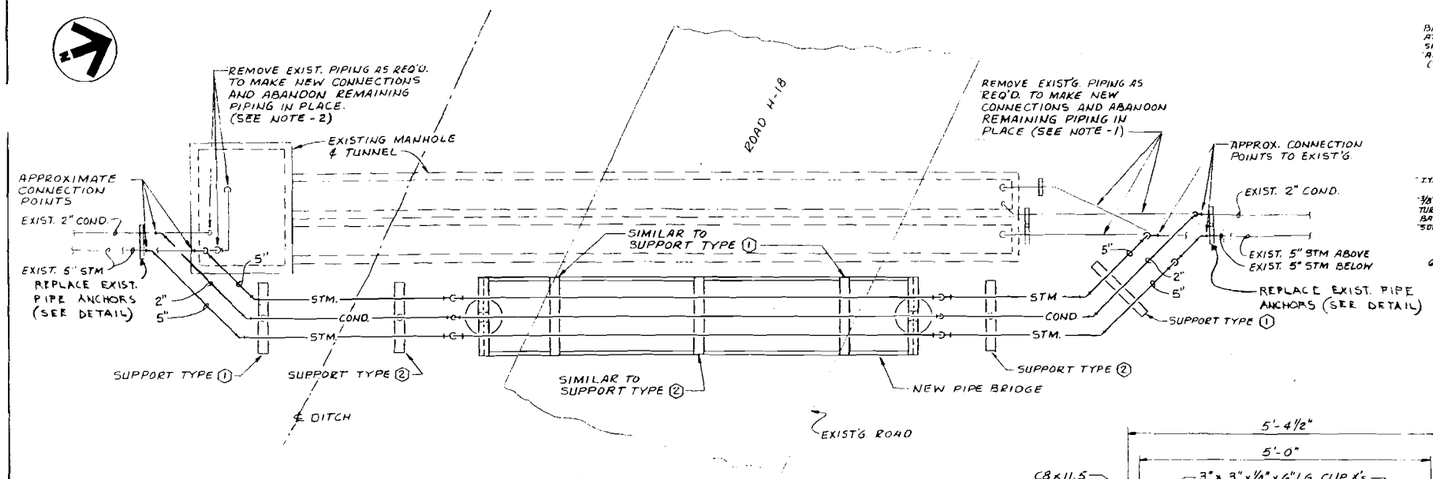
SATISFACTORY TO Roger R. Hrovec 4-26-88 DATE	PWO DWG REF	DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
	PWO DRAWING NO. 5416	NAVAL WEAPONS SUPPORT CENTER CRANE, INDIANA
SATISFACTORY TO Ray C. Rack DATE 5/3/88	DESIGN MDB; DRAWN MB; CHECKED GEL/PC; SUPV. PETER CORSO	REPLACE STEAM DISTRIBUTION LINES BOILER HOUSE 150 AREA RAILROAD CROSSING
SATISFACTORY TO John R. Hoyer DATE 5/9/88	APPROVED DATE — FACILITIES ENGINEER	SIZE F; CODE IDENT. NO. 80091; NAVFAC DRAWING NO. 2115863; CONSTR. CONTR. NO. N62... 72-88-C-7001; SCALE NOTED; SPEC. NO. 04-88-7001; SHEET 2 OF 3

WR/# 7-093072

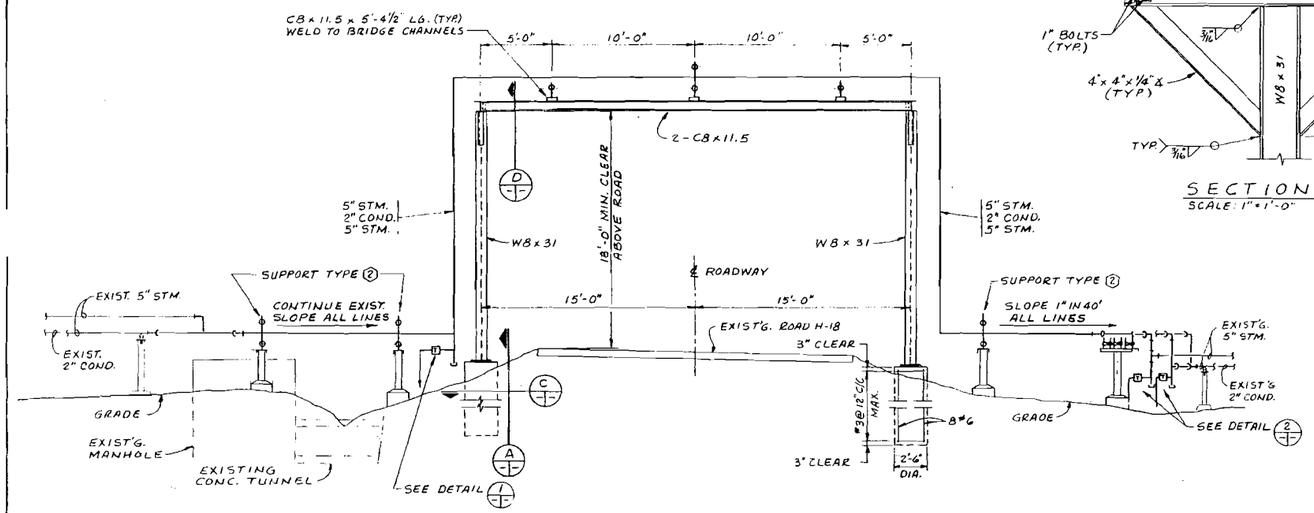
NAVFAC 1060012-827

U.S. GOVERNMENT PRINTING OFFICE: 1987-743-328

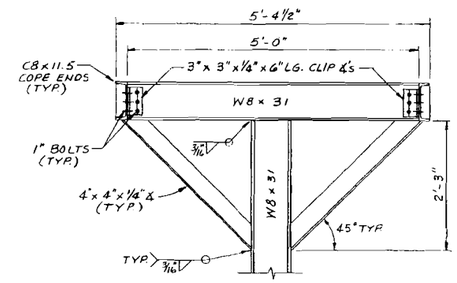
REVISIONS				
LTR	DESCRIPTION	PREP'D BY	DATE	APPROVED



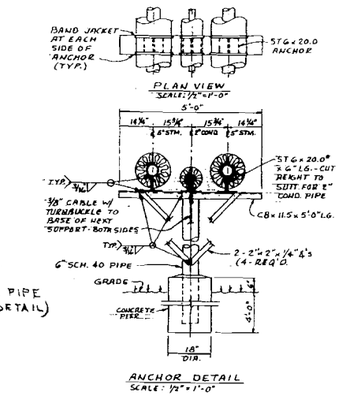
PIPE BRIDGE PLAN
SCALE: 1/4" = 1'-0"



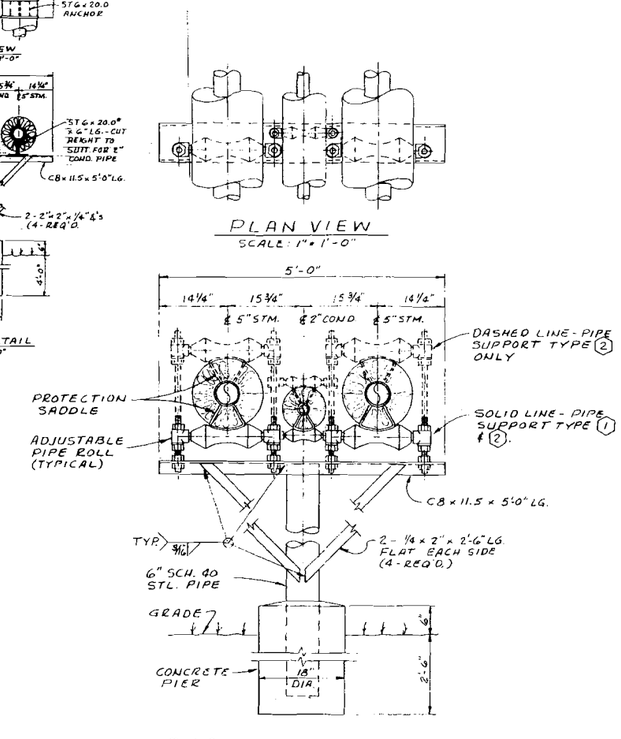
PIPE BRIDGE ELEVATION
SCALE: 1/4" = 1'-0"



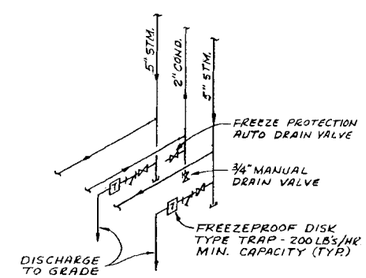
SECTION
SCALE: 1" = 1'-0"



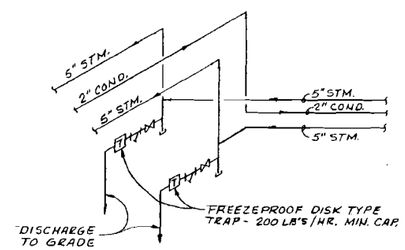
ANCHOR DETAIL
SCALE: 1/2" = 1'-0"



TYPE 1 & 2 PIPE SUPPORT DETAIL
SCALE: 1" = 1'-0"



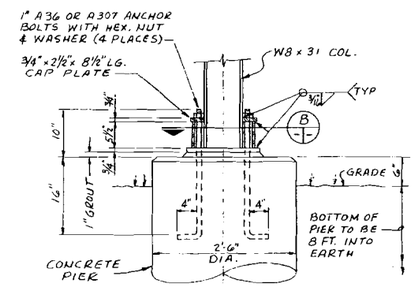
DRIP & TRAP DETAIL 1
SCALE: NONE



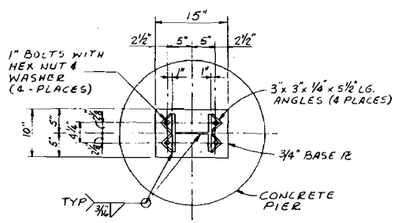
DRIP & TRAP DETAIL 2
SCALE: NONE

NOTES:

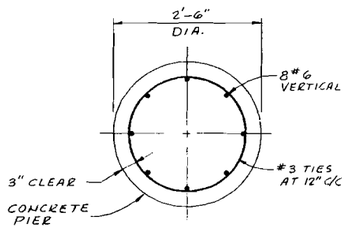
1. REMOVE PIPES TO 12" BELOW GRADE. COVER WITH 2" THICK TREATED BOARDS AND REPLACE DIRT TO GRADE LEVEL.
2. REMOVE EXISTING PIPES FLUSH OR BELOW TOP OF MANHOLE. COVER OPENINGS WITH 1/4" GALV. STEEL PLATES ATTACHED TO TOP OF MANHOLE WITH 2 - 5/8" EXPANSION BOLTS EACH PLATE.
3. SOME OF THE EXISTING PIPE INSULATION MAY CONTAIN ASBESTOS.



SECTION A
SCALE: 1" = 1'-0"



SECTION B
SCALE: 1" = 1'-0"



SECTION C
SCALE: 1" = 1'-0"

SATISFACTORY TO: ABE R. Kramer 4-26-88	PWO DWG REF	DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
DATE	PWO DRAWING NO. 5416	NAVAL WEAPONS SUPPORT CENTER CRANE, INDIANA
SATISFACTORY TO: of Ray C. Rock	DESIGN JSC/GEL; DRAWN GEL; CHECKED GEL/PC; SUPV. PETER CORSON	REPLACE STEAM DISTRIBUTION LINES BOILER HOUSE 150 AREA ROAD CROSSING
DATE 5/3/88	APPROVED	SIZE F; CODE IDENT. NO. 80091; NAVFAC DRAWING NO. 2115864
SATISFACTORY TO: 104 Jon R. Hoyer	PUBLIC WORKS OFFICER 5/31/88	CONSTR. CONTR. NO. N62472-88-C-7001
DATE 5/9/88		SCALE NOTED; SPEC. NO. 04-88-7001; SHEET 3 OF 3

WR # 7-093072

NAVFAC 1960013-1-R21

U.S. GOVERNMENT PRINTING OFFICE - 1987 - 743-358

APPENDIX D

SUPPLEMENTAL SPECIFICATIONS

SUPPLEMENTAL SPECIFICATIONS
INTERIM MEASURES WORK PLAN
SWMU 9
NSWC CRANE
CRANE, INDIANA

EMAC Contractor Requirements

The Environmental Multiple Award Contract (EMAC) contractor will be responsible for performing the following work:

1. Attend pre-IMWP implementation conference.
2. Submit documentation in accordance with the EMAC 'Basic Contract' 30 days prior to beginning work to allow the Navy sufficient time to review and comment. The EMAC contractor will then incorporate Navy comments into the documents. These documents include the following:
    - Work Plan
        - Excavation and Handling Plan
        - Hazardous/Waste Management Plan
        - Environmental Protection Plan
        - Erosion and Sediment Control Plan
        - Stormwater Pollution Prevention Plan
        - Transportation and Disposal Plan
        - Steam Line Support/Reconstruction Plan
    - Site Specific Health and Safety Plan (SSHSP) and Activity Hazard Analysis
    - Project Quality Control Plan (QCP)
3. Acquire Facility-specific permits, including but not limited to the following:
    - Safety & Building Availability Permit (ESO 8020/11)
    - Digging Permit (NWSCC 11000/3)
    - Flame Tool/Hot Work Permit (NWSCC 11320)
    - Hazards of Electromagnetic Radiation to Ordnance (HERO) (approval for portable radios)
4. Mobilize required equipment and personnel to excavate the indicated contaminated surface soil and sediments.
5. Construct and maintain the required erosion and sediment control devices for the duration of the project.
6. Construct required support facilities including, but not limited to, temporary gravel construction entrance, temporary access trails, dewatering pad, decontamination pad(s), and material storage areas.
7. Establish NSWC Crane-approved steam line support system.
8. Excavate, transport, and dispose contaminated surface and subsurface soils.
9. Restore surface soil excavation area to pre-construction elevations meeting surrounding grades.
10. Construct new NSWC Crane-approved steam line support structures (if needed).
11. Remove all temporary support facilities, leaving perimeter erosion and sediment controls in place until revegetation is complete and as instructed by the Navy.
12. Restore areas used for temporary support facilities (regrading and revegetation).
13. Demobilize equipment and personnel.

In addition to the QC submittals and Safety and Health submittals required by the NSWC Crane Contractor's Operations Manual and the Basic Contract, the EMAC contractor shall submit the following to the Navy:

- Field work reports in accordance with Part 6.4 Section C of the Basic Contract.
- Contractor 40 CFR 1910.120 Employee Training Certificates for all Contractor employees scheduled to be on-site.
- Erosion and Sediment Control installation and inspection logs.
- Copies of NSWC Crane specific permits.
- Certification and sampling results for backfill material and topsoil. A minimum of one sample per borrow source is required.

- Waste transportation subcontractor name, address, contact name, telephone number, and USDOT number.
- Hazardous waste disposal facility name, address, contact name, telephone number, and USEPA and State identification numbers, if required.
- Solid waste disposal facility name, address, contact name, telephone number, USEPA and State identification numbers.
- Copies of Treatment/Disposal Facility Permits.
- Waste profiles, complete waste characterization results, and any waste disposal facility pre-approval or approval documentation.
- Work Site Decontamination Certificates (verification that all vehicles equipment and containers were properly decontaminated prior to leaving the work site).
- Disposal Site Decontamination Certificates (verification that vehicles and containers were decontaminated prior to leaving the disposal facility).
- Shipment Manifests (manifests and other documents required to ship waste).
- Delivery Certificates (verification that waste was received at identified waste disposal facility).
- Treatment and Disposal Certificates (verification that waste was successfully received and disposed).
- Decontamination Log.

The EMAC contractor-provided information will be compiled in the Construction Completion Report and the project CTO Closure Report to be prepared by the Navy. The EMAC contractor shall provide the Navy, or their representative, all documentation within 30 days of Demobilization from the Site.

Supplemental Specifications

In addition to the performance specifications presented in the NSWC Crane Contractor's Operation Manual and in the Basic Contract, the EMAC contractor shall perform the activities in accordance with the supplemental specifications provided below.

General Requirements

The EMAC contractor is advised that this project is subject to Federal, State, and local regulatory agency inspections and review for compliance with environmental laws and regulations. The EMAC contractor shall fully cooperate with any representative from any Federal, State, or local regulatory agency who may visit the job site and shall provide immediate notification to the Officer in Charge of Construction (OICC), who shall accompany them on any subsequent site inspections. The EMAC contractor shall complete, maintain, and make available to the OICC, Facility, or regulatory agency personnel all documentation relating to environmental compliance under applicable Federal, State, and local laws and regulations. The EMAC contractor shall immediately notify the OICC if a Notice of Violation, Notice of Deficiency, or similar regulatory notice is issued to the EMAC contractor.

The EMAC contractor shall be responsible for all damages to persons or property resulting from EMAC contractor fault or negligence as well as for the payment of any civil fines or penalties which may be assessed by any Federal, State, or local regulatory agency as a result of the EMAC contractor's or any subcontractor's violation of an applicable Federal, State, or local environmental law or regulation. Should a Notice of Violation, Notice of Noncompliance, Notice of Deficiency, or similar regulatory agency notice be issued to the Government or Facility owner/operator on account of the actions or inactions of the EMAC contractor or one if its subcontractors in the performance of work under this contract, the EMAC contractor shall fully cooperate with the Government in defending against regulatory assessment of any civil fines or penalties arising out of such actions or inactions.

After approval of the EMAC contractor's Work Plan and before commencement of work the EMAC contractor shall submit to the OICC the required certifications. As requested by the OICC, the Navy Representative for this project may review and provide surveillance for the OICC to determine if EMAC contractor's submittals comply with the contract requirements.

The EMAC contractor shall be required to commence work on the approved EMAC contractor's Work Plan within 5 calendar days after receiving the notice to proceed and to prosecute the work diligently after receiving the notice to proceed.

NSWC Crane will remain in operation during the entire construction period. The EMAC contractor shall schedule the work as to cause the least amount of interference with the Facility. Work schedules shall be subject to the approval of the OICC. Permission to interrupt Facility road services shall be requested in writing a minimum of 15 calendar days prior to the desired date of interruption. The OICC shall be notified 48 hours prior to starting excavation activities.

Regular work hours shall consist of an 8-1/2 hour daily period established by the OICC, Monday through Friday, excluding Government holidays. The EMAC contractor should assume an 8-1/2 hour daily period. Working outside of the 8-1/2 hour daily period will require approval by the OICC. Work hours shall be established during the pre-IMWP implementation conference.

On-site storage, laydown, material handling, and decontamination activities shall be limited to areas approved by the OICC.

During the progress of construction activities, the work area and adjacent areas shall be kept clean and free of rubbish, surplus materials, and unneeded construction equipment. No material or debris shall be allowed to flow or wash into watercourses, ditches, gutters, drains, or pipes. Upon completion of the work, the EMAC contractor shall sweep paved areas and rake clean landscaped areas, and remove waste and surplus materials, rubbish, and construction facilities from the site.

Work Restrictions

EMAC contractor personnel employed at the Facility shall become familiar with and obey Facility regulations and keep within the limits of the work and avenues of ingress and egress as directed. EMAC contractor and subcontractor personnel shall not enter any restricted areas unless required to do so and until cleared for such entry. The EMAC contractor's equipment shall be clearly marked for identification.

The EMAC contractor shall indicate on the construction schedule any activity that could potentially interrupt Facility operations. The EMAC contractor shall notify the OICC in writing 15 calendar days prior to the required interruption.

Facilities and Services

The EMAC contractor shall provide utility permits in accordance with Part 4.13 Section C of the Basic Contract.

NSWC Crane shall make all reasonably required amounts of utilities available to the EMAC Contractor from existing outlets and supplies, as indicated. The amount of each utility service consumed shall be charged to or paid for by the EMAC Contractor at the prevailing rates charged to NSWC Crane or shall be furnished at no charge at the discretion of the Facility. The EMAC Contractor shall carefully conserve any utilities furnished.

The location(s) at which NSWC Crane will deliver such utilities or services and the quantity available will be identified by NSWC Crane.

The EMAC contractor, at its expense and in a workmanlike manner satisfactory to the OICC, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the EMAC Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

Electric – Electrical power available: primary voltage is 2400 volt, 3 phase, 3 wire, 60 cycle AC; secondary voltages may be 120/208 or 120/240 volts. Final taps and tie-ins to the NSWC Crane utility grid will be made by the NSWC Crane electric shop.

Potable Water – Potable water shall be made available to the EMAC contractor at the discretion of the Facility. The EMAC contractor shall provide backflow preventor devices on connections to potable water supplies. Under no circumstances will taps to NSWC Crane fire hydrants be allowed for obtaining water. The OICC shall identify available potable water supply locations.

Telephone – Facility telephone service is not available to the EMAC contractor.

Sanitary Facilities – The EMAC contractor shall provide temporary sanitary facilities for use by all personnel in accordance with Part 3.10 Section C of the Basic Contract.

Municipal Waste – Facility municipal waste storage and disposal is not available to the EMAC contractor.

Sewer – Wastewater resulting from personnel and equipment decontamination, excavation dewatering, and water collected in the materials handling pad(s) may be discharged to the NSWC Crane sanitary sewer system, subject to the approval of NSWC Crane based on characterization of the water to be discharged.

Site Personnel Qualifications

Site Superintendent - The EMAC contractor shall designate a Site Superintendent who shall have responsibility and authority to direct work performed. The Site Superintendent shall be responsible for the management and execution of all site activities in accordance with the IMWP, approved EMAC contractor's Work Plan, and all Federal, State, and local laws and regulations. The Site Superintendent may not also serve as the Project Quality Control (QC) Manager or Site Health and Safety Specialist (SHSS). The Site Superintendent shall have, as a minimum, the following qualifications:

- A minimum of six years site superintendent experience.
- A minimum of three years experience on hazardous, toxic, and radioactive waste (HTRW) projects.
- Familiar with the requirements of the U.S. Army Corps of Engineers Safety and Health Requirements (EM 385-1-1).
- Experience in the areas of hazard identification and safety compliance.

Project Quality Control Manager - The EMAC contractor shall designate a Project QC Manager who shall assist and represent the QC Program Manager in continued implementation and enforcement of the approved Project QC Plan. The QC Program Manager or Project QC Manager shall be physically present at the project site whenever work is in progress. The Project QC Manager may also serve as the SHSS, if qualified. The Project QC Manager shall have, as a minimum, the following qualifications:

- A minimum two years experience as a Project QC Manager.
- A minimum of ten years combined experience in the following positions: project superintendent, QC manager, project manager, project engineer or construction manager on similar size and type of construction contracts that included the major trades that are part of this IM.
- Alternatively, the above ten year combined experience requirement may be satisfied by a professional engineer registered in the State of Indiana that has at least two years experience as a Project QC Manager.
- Familiarity with the requirements of the U.S. Army Corps of Engineers Safety and Health Requirements (EM 385-1-1).
- Experience in the areas of hazard identification and safety compliance.

Site Health and Safety Specialist - The EMAC contractor shall designate a SHSS who shall assist and represent the EMAC contractor's Health and Safety (H/S) Manager in continued implementation and enforcement of the approved Site Health and Safety Plan (SSHSP). The SHSS shall have the on-site responsibility and authority to modify and stop work, or remove personnel from the site if working conditions change which may affect on-site and off-site health and safety. The SHSS shall be physically present at the project site at all times. The SHSS may be dual hatted with the Project QC Manager. The SHSS shall have, as a minimum, the following qualifications:

- A minimum of five years safety work experience on similar projects.

- A 30-hour OSHA construction safety class or equivalent within the last five years.
- An average of at least 24 hours of formal safety training each year for the last five years.
- Competent person status for at least the following:
    - excavation
    - health hazard recognition, evaluation and control of chemical, physical and biological agents
    - personal protective equipment and clothing to include selection, use, and maintenance
- First aid and cardiopulmonary resuscitation (CPR) qualified.

Quality Control

Approval of the QC Plan is required prior to the start of construction. The OICC reserves the right to require changes in the QC Plan and operations as necessary to ensure the specified quality of work. The IOCC reserves the right to interview the QC Manager at any time in order to verify his/her submitted qualifications.

The OICC shall be notified in writing of any proposed changes to the QC Plan, at a minimum of seven calendar days prior to the implementation of the proposed change. Proposed changes must be approved by the OICC.

Combined Contractor Production Report/Contractor Quality Control Report (CPR/CQCR) is required for each day that work is performed. CPR/CQCRs are to be prepared, signed, and dated by the Project QC Manager.

Safety and Occupational Health Requirements

The SHSS and EMAC contractor representatives who have a responsibility or significant role in accident prevention shall attend the pre-IMWP implementation conference. The purpose of the conference is for the EMAC contractor and the OICC to become acquainted and explain the functions and operating procedures of their respective organizations and to reach mutual understanding relative to the administration of the overall project before the initiation of work. The EMAC contractor shall discuss the details of the work identified in the approved EMAC contractor's Work Plan and discuss which construction phases will require significant or additional activity hazard analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of additional hazard analysis shall be established to preclude project delays. Lastly, deficiencies in the submitted accident prevention report will be brought to the attention of the EMAC contractor at the conference. The EMAC contractor shall revise the plan to correct deficiencies and resubmit the plan for acceptance.

New project employees (prime or subcontractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

If unforeseen materials hazardous to human health are encountered during operations, that portion of the work shall be stopped and the OICC shall be notified immediately. Within 14 days, the Navy will determine if the material is hazardous. If the material is not hazardous or poses no danger, the OICC will direct the EMAC contractor to proceed without change. If the material is determined to be hazardous or to pose danger, and handling of the material is necessary to accomplish the work, the Contracting Officer will issue modifications to the proposed work.

Equipment shall be operated by designated qualified operators. Proof of qualifications shall be kept on the project site for review. Manufacturer's specifications or owner's manual for the equipment shall be on site and reviewed for additional safety precautions or requirements. Such additional safety precautions or requirements shall be incorporated into the activity hazard analysis. Mechanized equipment shall be inspected in accordance with manufacturer's recommendations for safe operations by a competent person prior to being placed into use. Daily checks or tests shall be conducted and documented on mechanized equipment by designated competent persons.

The competent person for excavations performed as a result of contract work shall be on-site when excavation work is being performed, and shall inspect and document the excavations daily prior to entry

by workers. The competent person must evaluate all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly.

Environmental Controls

An Erosion and Sediment Control Plan is included in the IMWP. The Erosion and Sediment Control Plan describes the location and description of all erosion and sediment control measures, a sequence of construction to be followed, graphic details of all erosion and sediment control measures to be used, and an approval sign-off block containing the names of the Facility and EMAC contractor contacts, whose signatures indicate plan acceptance/approval.

The EMAC contractor shall strictly follow the Erosion and Sediment Control Plan and maintain all measures used during construction. Modifications to the Erosion and Sediment Control Plan shall be submitted to the OICC and the Indiana Department of Environmental Management (IDEM) for approval. No modifications to the Erosion and Sediment Control Plan will be allowed until these changes have been approved by the OICC and IDEM and three copies of the approved modifications have been submitted to the OICC and one copy of the approved modifications have been submitted to IDEM.

Transportation and Disposal of Contaminated Material

The EMAC contractor shall be solely responsible for complying with all Federal, State, and local requirements for decontamination of vehicles, equipment, and containers and shall bear all responsibility and cost for any noncompliance. In addition to these requirements, the EMAC contractor shall perform the following:

- Visually inspect all vehicles, equipment, and containers leaving the work site for proper decontamination.
- Prepare and maintain a written decontamination log.

The EMAC contractor shall be solely responsible for complying with all Federal, State, and local requirements for transporting contaminated materials through the applicable jurisdictions and shall bear all responsibility and cost for any noncompliance. In addition to these requirements, the EMAC contractor shall perform the following:

- Inspect and document all vehicles and containers for proper operation and covering.
- Inspect all vehicles and containers for proper markings, manifest documents, and other requirements for waste shipment.

All contaminated materials removed from the site shall be disposed in a treatment/disposal facility permitted to accept such material and with the approval of the OICC.

The EMAC contractor shall properly dispose of investigation derived waste, personnel protective equipment, and miscellaneous wastes associated with implementation of the IMWP, including sampling and analysis wastes that are generated by the Navy representatives.

APPENDIX E

IDEM STABILIZATION SPECIFICATIONS

Practice 3.11
Temporary Seeding

Purpose
(Exhibit 3.11-A)

* To reduce erosion and sedimentation damage by stabilizing disturbed areas where additional work (e.g., grading) is not scheduled for a period of 2 mo. to 1 yr.
* To reduce problems associated with mud or dust from bare soil surfaces during construction.
* To reduce sediment runoff to downstream areas.
* To improve visual aesthetics of the construction areas.

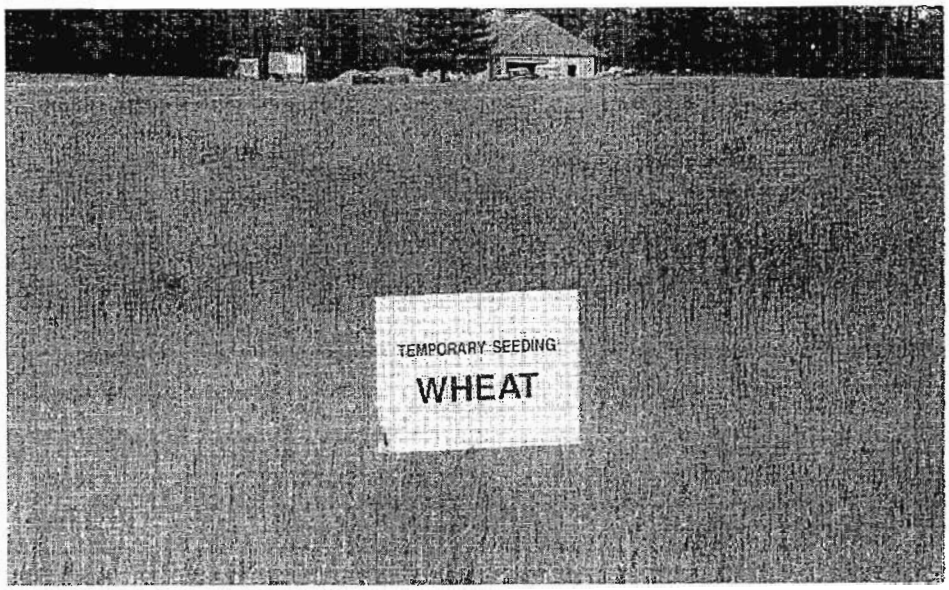


Exhibit 3.11-A. A temporary seeding of wheat to reduce erosion on a future home lot.

Requirements

Site and seedbed preparation: Graded and fertilizer applied.
Plant species: Selected on the basis of quick germination, growth, and time of year to be seeded (see *Exhibit 3.11-B*).
Mulch: Clean grain straw, hay, wood fibre, etc., to protect seedbed and encourage plant growth.
Seeding frequency: As often as possible following construction activity. Daily seeding of rough graded areas when the soil is loose and moist is usually most effective.

Application
(Exhibit 3.11-B)

SITE PREPARATION:

1. Install practices needed to control erosion, sedimentation, and water runoff, such as temporary and permanent diversions, sediment traps or basins, silt fences, and straw bale dams (Practices 3.21, 3.22, 3.72, 3.73, 3.74, and 3.75).
2. Grade the site as specified in the construction plan.

SEEDBED PREPARATION:

1. Test soil to determine its nutrient levels. (Contact your county SWCD or Cooperative Extension office for assistance and soils information, including available soil testing services.)
2. Fertilize as recommended by the soil test. If testing is not done, consider applying 400-600 lbs./acre of 12-12-12 analysis, or equivalent, fertilizer.
3. Work the fertilizer into the soil 2-4 in. deep with a disk or rake operated across the slope.

SEEDING:

1. Select a seeding mixture and rate from *Exhibit 3.11-B*, and plant at depth and on dates shown.
2. Apply seed uniformly with a drill or cultipacker-seeder or by broadcasting, and cover to the depth shown in *Exhibit 3.11-B*.

3. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
4. Mulch seeded areas to increase seeding success. Anchor all mulch by crimping or tackifying. Use of netting or erosion control blankets is possible, but may not be cost-effective for temporary seedings.

Exhibit 3.11-B. Temporary Seeding Recommendations.

Seed species*	Rate/acre	Planting depth	Optimum dates**
Wheat or rye	150 lbs.	1 to 1½ in.	9/15 to 10/30
Spring oats	100 lbs.	1 in.	3/1 to 4/15
Annual ryegrass	40 lbs.	1/4 in.	3/1 to 5/1 8/1 to 9/1
German millet	40 lbs.	1 to 2 in.	5/1 to 6/1
Sudangrass	35 lbs.	1 to 2 in.	5/1 to 7/30

* Perennial species may be used as a temporary cover, especially if the area to be seeded will remain idle for more than a year (Practice 3.12).

** Seeding done outside the optimum dates increases the chances of seeding failure.

Maintenance

* Inspect periodically after planting to see that vegetative stands are adequately established; re-seed if necessary.
* Check for erosion damage after storm events and repair; reseed and mulch if necessary.
* Topdress fall seeded wheat or rye seedings with 50 lbs./acre of nitrogen in February or March if nitrogen deficiency is apparent. (*Exhibit 3.11-B* shows only wheat/rye fall seeded.)

Common concern

Fertilizer not incorporated at least 2 in. deep—may be lost in runoff or remain concentrated near the surface to inhibit germination.

Mulch rate inadequate—results in poor germination and failure.

Seeding uneven or rate too low—results in patchy growth and erosion.

Practice 3.12
Permanent Seeding

Purposes
(Exhibit 3.12-A)

* To reduce erosion and sedimentation damage by stabilizing exposed areas where additional work (e.g., grading) is not scheduled for a period of more than a year or areas where final grading has been completed.
* To reduce problems associated with mud or dust from bare soil surfaces during construction.
* To reduce sediment runoff to downstream areas.
* To improve the visual aesthetics of the construction area.

Exhibit 3.12-A. A road right-of-way (left) newly permanent seeded and mulched and (right) 6 mo. later.

Requirements

Site and seedbed preparation: Graded, and lime and fertilizer applied.

Plant species: Selected on the basis of soil type, soil pH, region of the state, time of year, and planned use of the area to be seeded *(see Exhibit 3.12-C)*.

Mulch: Clean grain straw, hay, wood fibre, etc., to protect seedbed and encourage plant growth. The mulch may need to be anchored to reduce removal by wind or water, or erosion control blankets may be considered.

Application
(Exhibits 3.12-B, C, and D)

Permanently seed all final grade areas (e.g., landscape berms, drainage swales, erosion control structures, etc.) as each is completed and all areas where additional work is not scheduled for a period of more than a year.

SITE PREPARATION:

1. Install practices needed to control erosion, sedimentation, and runoff prior to seeding. These include temporary and permanent diversions, sediment traps and basins, silt fences, and straw bale dams (Practices 3.21, 3.22, 3.72, 3.73, 3.74, and 3.75).
2. Grade the site and fill in depressions that can collect water.
3. Add topsoil to achieve needed depth for establishment of vegetation (Practice 3.02).

SEEDBED PREPARATION:

1. Test soil to determine pH and nutrient levels. (Contact your county SWCD or Cooperative Extension office for assistance and soils information, including available testing services.)
2. If soil pH is unsuitable for the species to be seeded, apply lime according to test recommendations.

3. Fertilize as recommended by the soil test. If testing was not done, consider applying 400-600 lbs./acre of 12-12-12 analysis, or equivalent, fertilizer.
4. Till the soil to obtain a uniform seedbed, working the fertilizer and lime into the soil 2-4 in. deep with a disk or rake operated across the slope *(Exhibit 3.12-B)*.

SEEDING:

Optimum seeding dates are Mar. 1-May 10 and Aug. 10-Sept. 30. Permanent seeding done between May 10 and Aug. 10 may need to be irrigated. As an alternative, use temporary seeding (Practice 3.11) until the preferred date for permanent seeding.

1. Select a seeding mixture and rate from *Exhibit 3.12-C*, based on site conditions, soil pH, intended land use, and expected level of maintenance.
2. Apply seed uniformly with a drill or cultipacker-seeder *(Exhibit 3.12-D)* or by broadcasting, and cover to a depth of 1/4-1/2 in.
3. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
4. Mulch all seeded areas (Practice 3.15). Consider using erosion control blankets on sloping areas (Practice 3.17). (NOTE: If seeding is done with a hydroseeder, fertilizer and mulch can be applied with the seed in a slurry mixture.)

Exhibit 3.12-B. Preparing the seedbed with a combination roto-tiller and cultipacker.

Exhibit 3.12-C. Permanent Seeding Recommendations.

This table provides several seeding options. Additional seed species and mixtures are available commercially. When selecting a mixture, consider site conditions, including soil properties (e.g., soil pH and drainage), slope aspect and the tolerance of each species to shade and droughtiness.

Seed species and mixtures	Rate per acre	Optimum soil pH
OPEN AND DISTURBED AREAS (REMAINING IDLE MORE THAN 1 YR.)		
1. Perennial ryegrass	35 to 50 lbs.	5.6 to 7.0
+ white or ladino clover*	1 to 2 lbs.	
2. Kentucky bluegrass	20 lbs.	5.5 to 7.5
+ smooth bromegrass	10 lbs.	
+ switchgrass	3 lbs.	
+ timothy	4 lbs.	
+ perennial ryegrass	10 lbs.	
+ white or ladino clover*	1 to 2 lbs.	

Exhibit 3.12-C. Continued.

Seed species and mixtures	Rate per acre	Optimum soil pH
3. Perennial ryegrass	15 to 30 lbs.	5.6 to 7.0
+ tall fescue**	15 to 30 lbs.	
4. Tall fescue**	35 to 50 lbs.	5.5 to 7.5
+ ladino or white clover*	1 to 2 lbs.	
STEEP BANKS AND CUTS, LOW MAINTENANCE AREAS (NOT MOWED)		
1. Smooth bromegrass	25 to 35 lbs.	5.5 to 7.5
+ red clover*	10 to 20 lbs.	
2. Tall fescue**	35 to 50 lbs.	5.5 to 7.5
+ white or ladino clover*	1 to 2 lbs.	
3. Tall fescue**	35 to 50 lbs.	5.5 to 7.5
+ red clover*	10 to 20 lbs.	
(Recommended north of US 40)		
4. Orchardgrass	20 to 30 lbs.	5.6 to 7.0
+ red clover*	10 to 20 lbs.	
+ ladino clover*	1 to 2 lbs.	
5. Crownvetch*	10 to 12 lbs.	5.6 to 7.0
+ tall fescue**	20 to 30 lbs.	
(Recommended south of US 40)		
LAWNS AND HIGH MAINTENANCE AREAS		
1. Bluegrass	105 to 140 lbs.	5.5 to 7.0
2. Perennial ryegrass (turf-type)	45 to 60 lbs.	5.6 to 7.0
+ bluegrass	70 to 90 lbs.	
3. Tall fescue (turf-type)**	130 to 170 lbs.	5.6 to 7.5
+ bluegrass	20 to 30 lbs.	
CHANNELS AND AREAS OF CONCENTRATED FLOW		
1. Perennial ryegrass	100 to 150 lbs.	5.6 to 7.0
+ white or ladino clover*	1 to 2 lbs.	
2. Kentucky bluegrass	20 lbs.	5.5 to 7.5
+ smooth bromegrass	10 lbs.	
+ switchgrass	3 lbs.	
+ timothy	4 lbs.	
+ perennial ryegrass	10 lbs.	
+ white or ladino clover*	1 to 2 lbs.	
3. Tall fescue**	100 to 150 lbs.	5.5 to 7.5
+ ladino or white clover*	1 to 2 lbs.	
4. Tall fescue**	100 to 150 lbs.	5.5 to 7.5
+ Perennial ryegrass	15 to 20 lbs.	
+ Kentucky bluegrass	15 to 20 lbs.	

* For best results: (a) legume seed should be inoculated; (b) seeding mixtures containing legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded (Practice 3.13); and (c) if legumes are fall-seeded, do so in early fall.

** Tall fescue provides little cover for, and may be toxic to, some species of wildlife. The IDNR rec-ognizes the need for additional research on alternatives to tall fescue, such as buffalograss, orchard-grass, smooth bromegrass, and switch-grass. This research, in conjunction with demonstration areas, should focus on erosion control characteristics, wildlife toxicity, turf durability, and drought resistance.

NOTE: An oat or wheat companion or nurse crop may be used with any of the above permanent seeding mixtures. If so, it is best to seed during the fall seeding period, especially after Sept. 15, and at the following rates: spring oats--1/4 to 3/4 bu./acre; wheat--no more than 1/2 bu./acre.

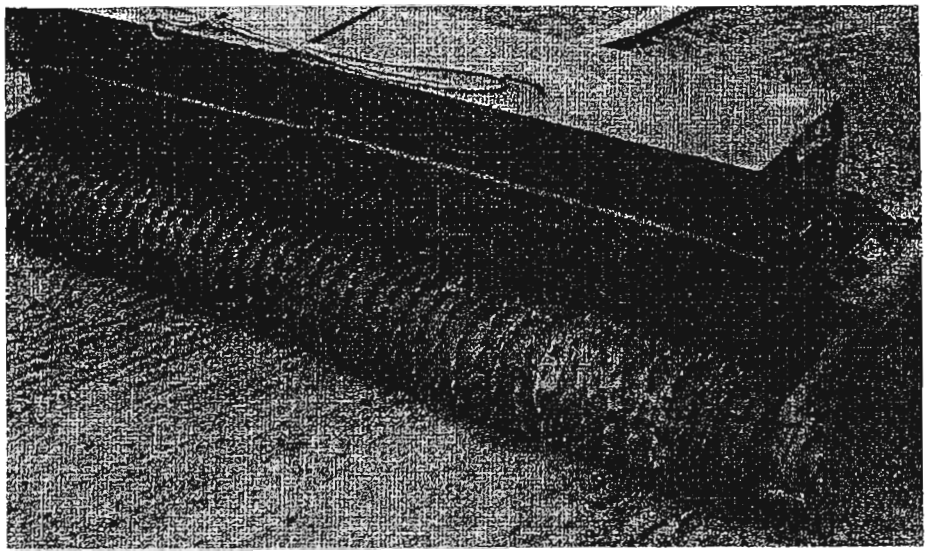


Exhibit 3.12-D. A cultipacker-seeder.

Maintenance

* Inspect periodically, especially after storm events, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green or bluish-green seedlings; uniform density with nurse plants, legumes, and grasses well inter-mixed; green leaves; and the perennials remaining green throughout the summer, at least at the plant base.)
* Plan to add fertilizer the following growing season according to soil test recommendations.
* Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or re-seeding, and mulching.
* If plant cover is sparse or patchy, review the plant materials chosen, soil fertility, moisture condition, and mulching; then repair the affected area either by over-seeding or by re-seeding and mulching after re-preparing the seedbed.
* If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
* If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.

Common concerns

Insufficient topsoil or inadequately tilled, limed, and/or fertilized seedbed—results in poor establishment of vegetation.

Unsuitable species or seeding mixture—results in poor establishment of vegetation.

Nurse crop rate too high in the mixture—results in competition with the perennials.

Seeding done at the wrong time of year—results in poor establishment of vegetation, also plant hardiness is significantly decreased.

Mulch rate inadequate—results in poor germination and failure.

Practice 3.13
Dormant and Frost Seeding

Dormant seeding is a temporary or permanent seeding application at a time when soil temperatures are too low for germination to occur (less than 50°F). *Frost seeding* is a temporary or permanent seeding application in early spring when soils are in the freeze-thaw stage. (This practice can be used to repair or enhance areas having thin or declining cover or to re-vegetate an area.)

Purposes
(Exhibit 3.13-A)

* To provide early germination and soil stabilization in the spring.
* To reduce sediment runoff to downstream areas.
* To improve the visual aesthetics of the construction area.
* To repair previous seedings.

Exhibit 3.13-A. Use of dormant seeding could have reduced excessive early spring erosion on this site.

Requirements

Site and seedbed preparation: Graded as needed, and lime and fertilizer applied.

Plant species: Selected on the basis of soil type, adaptability to the region, and planned use of the area (see *Exhibits 3.13-B* and *3.13-C*).

Application
(Exhibits 3.13-B and C)

SITE PREPARATION:

1. Grade the area to be seeded.
2. Install needed erosion/water runoff control practices, such as temporary or permanent diversions, sediment basins, silt fences, or straw bale dams (Practices 3.21, 3.22, 3.72, 3.74, or 3.75).

FOR DORMANT SEEDING:

Site and seedbed preparation and mulching can be done months ahead of actual seeding; or if the existing ground cover is adequate, seeding can be done directly into it.

Seeding dates: Dec. 1-Feb. 28 (north of U.S. 40), Dec. 10-Jan. 15 (south of U.S. 40).

1. Broadcast fertilizer as recommended by a soil test; or if testing was not done, consider applying 400-600 lbs./acre of 12-12-12 analysis, or equivalent, fertilizer.
2. Apply mulch upon completion of grading (Practice 3.15).
3. Select an appropriate seed species or mixture from *Exhibit 3.13-B* for temporary seeding or *Exhibit 3.13-C* for permanent seeding, and broadcast on top of the mulch and/or into existing ground cover at the rate shown. (If site preparation occurs within the recommended dates, fertilize and lime, seed, and mulch at that time.)

FOR FROST SEEDING:

Seed is broadcast over the prepared seedbed and incorporated into the soil by natural freeze-thaw action.

Seeding dates: Feb. 28-Mar. 28 (north of U.S. 40), Feb. 15-Mar. 15 (south of U.S. 40).

1. Broadcast fertilizer as recommended by a soil test; or if testing was not done, consider applying 400-600 lbs./acre of 12-12-12 analysis, or equivalent, fertilizer.
2. Select an appropriate seed species or mixture from *Exhibit 3.13-B* for temporary seeding or *Exhibit 3.13-C* for permanent seeding, and broadcast on to the seedbed or into the existing ground cover at the rate shown. (Do not work the seed into the soil.)

Exhibit 3.13-B. Temporary Dormant or Frost Seeding Recommendations.

Seed species*	Rate per acre
Wheat or rye	150 lbs.
Spring oats	150 lbs.
Annual ryegrass	60 lbs.

* Perennial species may be used as a temporary cover, especially if the area to be seeded will remain idle for more than a year (Practice 3.12).

Exhibit 3.13-C. Permanent Dormant or Frost Seeding Recommendations.

This table provides several seeding options. Additional seed species and mixtures are available commercially. When selecting a mixture, consider site conditions, including soil properties (e.g., soil pH and drainage), slope aspect and the tolerance of each species to shade and droughtiness.

Seed species and mixtures	Rate per acre	Optimum soil pH
OPEN AND DISTURBED AREAS (REMAINING IDLE MORE THAN 1 YR.)		
1. Perennial ryegrass	50 to 75 lbs.	5.6 to 7.0
+ white or ladino clover*	1½ to 3 lbs.	
2. Kentucky bluegrass	30 lbs.	5.5 to 7.5
+ smooth bromegrass	15 lbs.	
+ switchgrass	5 lbs.	
+ timothy	6 lbs.	
+ perennial ryegrass	15 lbs.	
+ white or ladino clover*	1½ to 3 lbs.	
3. Perennial ryegrass	22 to 45 lbs.	5.6 to 7.0
+ tall fescue**	22 to 45 lbs.	
4. Tall fescue**	50 to 75 lbs.	5.5 to 7.5
+ ladino or white clover*	1½ to 3 lbs.	
STEEP BANKS AND CUTS, LOW MAINTENANCE AREAS (NOT MOWED)		
1. Smooth bromegrass	35 to 50 lbs.	5.5 to 7.5
+ red clover*	15 to 30 lbs.	
2. Tall fescue**	50 to 75 lbs.	5.5 to 7.5
+ white or ladine clover*	1½ to 3 lbs.	
3. Tall fescue**	50 to 75 lbs.	5.5 to 7.5
+ red clover*	15 to 30 lbs.	
(Recommended north of US 40)		
4. Orchardgrass	30 to 45 lbs.	5.6 to 7.0
+ red clover*	15 to 30 lbs.	
+ ladino clover*	1½ to 3 lbs.	
5. Crownvetch*	15 to 18 lbs.	5.6 to 7.0
+ tall fescue**	30 to 45 lbs.	
(Recommended south of US 40)		

Exhibit 3.13-C. Continued.

Seed species and mixtures	Rate per acre	Optimum soil pH
LAWNS AND HIGH MAINTENANCE AREAS		
1. Bluegrass	160 to 210 lbs.	5.5 to 7.0
2. Perennial ryegrass (turf-type)	70 to 90 lbs.	5.6 to 7.0
+ bluegrass	105 to 135 lbs.	
3. Tall fescue (turf-type)**	195 to 250 lbs.	5.6 to 7.5
+ bluegrass	30 to 45 lbs.	
CHANNELS AND AREAS OF CONCENTRATED FLOW		
1. Perennial ryegrass	150 to 225 lbs.	5.6 to 7.0
+ white or ladino clover*	1½ to 3 lbs.	
2. Kentucky bluegrass	30 lbs.	5.5 to 7.5
+ smooth bromegrass	15 lbs.	
+ switchgrass	5 lbs.	
+ timothy	6 lbs.	
+ perennial ryegrass	15 lbs.	
+ white or ladino clover*	1½ to 3 lbs.	
3. Tall fescue**	150 to 225 lbs.	5.5 to 7.5
+ ladino or white clover*	1½ to 3 lbs.	
4. Tall fescue**	150 to 225 lbs.	5.5 to 7.5
+ Perennial bluegrass	22 to 30 lbs.	
+ Kentucky bluegrass	22 to 30 lbs.	

* For best results: (a) legume seed should be inoculated; (b) seeding mixtures containing legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded; and (c) if legumes are fall-seeded, do so in early fall.

** Tall fescue provides little cover for, and may be toxic to, some species of wildlife. The IDNR recognizes the need for additional research on alternatives to tall fescue, such as buffalograss, orchardgrass, smooth bromegrass, and switch-grass. This research, in conjunction with demonstration areas, should focus on erosion control characteristics, wildlife toxicity, turf durability, and drought resistance.

NOTE: If using mixtures other than those listed here, increase the seeding rate by 50% over the conventional rate.

Maintenance

* Apply 200-300 lbs./acre of 12-12-12 or equivalent fertilizer between Apr. 15 and May 10 or during periods of vigorous growth.
* Re-seed and mulch any areas that have inadequate cover by mid- to late-April. For best results, re-seed within the recommended dates shown in Practices 3.11 for temporary seeding or 3.12 for permanent seeding.

Common concerns

Seeding done at wrong time of year--results in poor seed germination and vegetative stands.
Seeding on too steep a slope--results in seed loss and poor stands.
Seeding failure due to late freeze, killing germinated seedlings.
Mulch rate inadequate--results in poor germination and failure of dormant seeding.
Unsuitable choice of seed species or seeding mixture--results in poor vegetative stands or vegetation that does not serve the intended purpose.
Poor soil and seed contact--results in poor seed germination and vegetative stands.
Dormant seeding over mulch or frost seeding in concentrated flow areas--can result in seed being washed away before seed-soil contact and germination can occur.

Practice 3.15
Mulching

Purposes
(Exhibit 3.15-A)

* To prevent erosion by protecting the soil from wind and water impact.
* To provide temporary surface stabilization.
* To prevent soil from crusting.
* To conserve moisture thereby promoting seed germination and seedling growth.

Exhibit 3.15-A. Applying straw mulch with a chopper-blower on freshly seeded soil adjacent to a road.

Requirements
(Exhibits 3.15-B and C)

Material: Straw, hay, wood fiber, cellulose, or excelsior (see *Exhibit 3.15-B*), or erosion control blankets or turf reinforcement mats (Practices 3.17 and 3.18), as specified in the erosion and sediment control plan.

Coverage: At least 75% of the soil surface.

Anchoring: Required for straw or hay mulch and sometimes excelsior to prevent displacement by wind and/or water (see *Exhibit 3.15-C*).

Exhibit 3.15-B. Mulch Materials, Rates, and Comments.

Material	Rate	Comments
Straw or hay	1½-2 tons/acre	Should be dry, unchopped, free of undesirable seeds. Spread by hand or machine. Must be crimped or anchored (see *Exhibit 3.15-D*).
Wood fiber or cellulose	1 ton /acre	Apply with a hydromulcher and use with tacking agent.
Long fiber wood (excelsior)	1/2-3/4 ton/acre	Anchor in areas subject to wind.

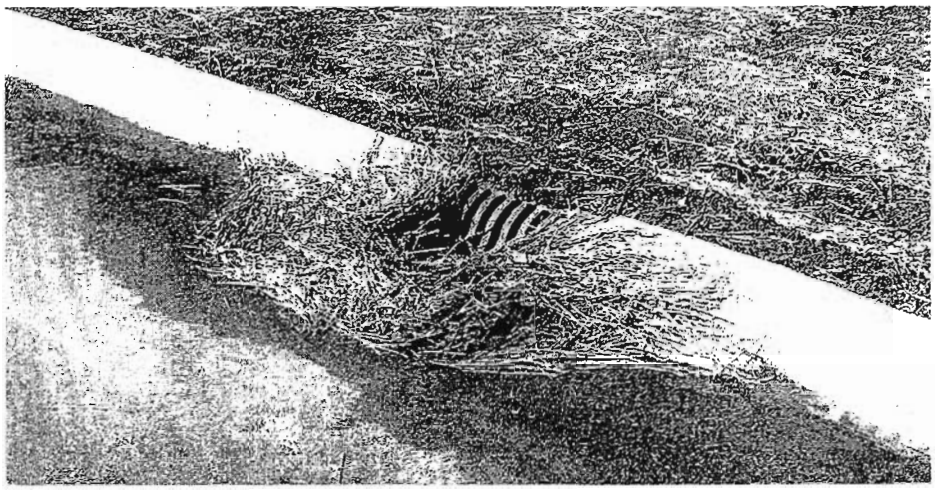


Exhibit 3.15-C. This unanchored straw mulch flowed with runoff to the storm drain. While acting somewhat as an inlet protection filter, it would have been more effective keeping soil from eroding off the site.

Application and anchoring

(Exhibits 3.15-D, E, and F)

1. Apply mulch at the recommended rate.
2. Spread uniformly by hand, hay fork, mulch blower, or hydromulcher. After spreading, no more than 25% of the ground surface should be visible.
3. If straw or hay is used, anchor it immediately one of the following ways (see *Exhibit 3.15-D*):
   - Crimp with a mulch anchoring tool, a weighted farm disk with dull serrated blades set straight (see *Exhibit 3.15-E*), or track cleats of a bulldozer; OR
   - Hydromulch with short cellulose fibers (see *Exhibit 3.15-F*); OR
   - Apply a liquid tackifier; OR
   - Cover with netting secured by metal staples.

Exhibit 3.15-D. Mulch Anchoring Methods.

Anchoring method	How to apply
Mulch anchoring tool OR Farm disk (dull, serrated, and set straight)	Crimp or punch the straw or hay into the soil 2-4 in. Operate machinery on the contour of the slope.
Cleating with dozer tracks	Operate dozer up and down slope, not across, or else the tracks will form rills.
Wood hydromulch fibers	Apply 1-2 tons/acre using a hydromulcher at a rate of 750 lbs./acre with a tacking agent (or according to contractor specifications). Do not use in areas of concentrated flow.
Asphalt emulsion	Emulsified asphalt should conform to the requirements of ASTM Spec. #977. Apply with suitable equipment at a rate of 0.05 gal./sq. yd. Do not use in areas of concentrated flow.
Synthetic tackifier, binder or soil stabilizer	Apply according to manufacturer's recommendation.
Biodegradable netting (polypropylene or similar material)*	Apply over mulch and staple with 6-8 in. wire staples. Follow manufacturer's recommendations for installation. Best suited to slope application.

* Install the netting immediately after applying the mulch. In areas of concentrated water flow, lay it parallel to the direction of flow; on other slopes, lay it either parallel or perpendicular to direction of flow. Edges of adjacent netting strips should overlap 4-6 in., with the strip on the upgrade side of any lateral water flow on top. Installation details are site specific, so follow manufacturer's directions.

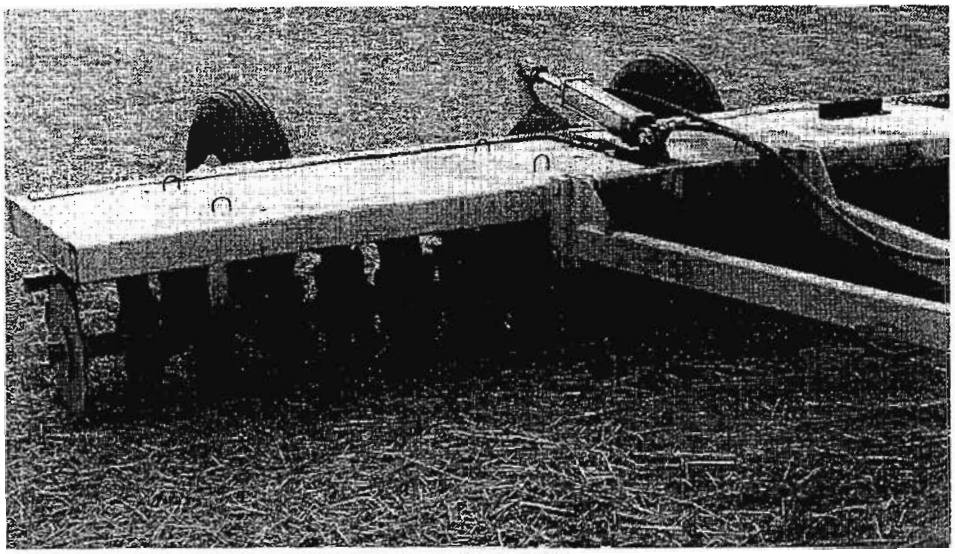


Exhibit 3.15-E. A crimper can be used to anchor mulch into the soil more securely.

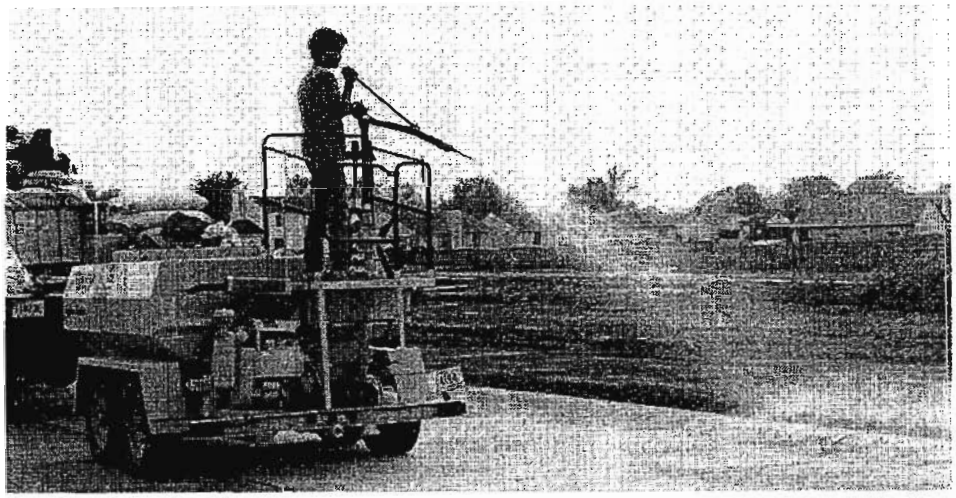


Exhibit 3.15-F. Hydroseeding the roadside in a new subdivision.

Maintenance

* Inspect after storm events to check for movement of mulch or for erosion.
* If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch and, if applicable, install new netting.
* Continue inspections until vegetation is firmly established.

Common concerns

Inadequate coverage—results in erosion, washout, and poor plant establishment.

Appropriate tacking agent not applied or applied in insufficient amount—results in mulch being lost to wind and runoff.

Flow too concentrated to use straw mulch—results in erosion in channel; consider use of erosion control blankets and/or a diversion until vegetation is established.

Hydromulch applied in winter—results in deterioration of mulch before plants can become established.

Netting washed away—because insufficient number of staples used.