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NAS WHITING FIELD
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FINAL REMEDIAL INVESTIGATION AND FEASIBILITY STUDY AND TECHNICAL MEMORANDUM 4 SURFACE WATER AND SEDIMENTS ASSESSMENT NAS WHITING FIELD FL

5/1/1992

ABB ENVIRONMENTAL

FINAL

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

TECHNICAL MEMORANDUM NO. 4 SURFACE WATER AND SEDIMENTS

NAVAL AIR STATION WHITING FIELD MILTON, FLORIDA

MAY 1992

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SOUTH CAROLINA
29411-0068

ID 00227

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

PHASE I

NAVAL AIR STATION, WHITING FIELD
MILTON, FLORIDA

Technical Memorandum No. 4
Surface Water and Sediment Assessment

UIC: N60508

Contract No. N62467-88-C-0382

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May 1992

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AVGAS	aviation gasoline
AWQC	ambient water quality criteria
BEHP	bis(2-ethylhexyl)phthalate
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
°C	degrees Celsius
DCE	dichloroethylene
DQOs	data quality objectives
FDER	Florida Department of Environmental Regulation
ft/sec	feet per second
ft^3/sec	cubic feet per second
GC/MS	gas chromatography/mass spectroscopy
HRS	Hazard Ranking System
IAS	Initial Assessment Study
ID	inside diameter
IDP	inductively coupled argon plasma
IND	insufficient data
IR	Installation Restoration
LOEL	lowest observed effect concentration
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
MS/MSD	matrix spike/matrix spike duplicates
$\mu g/kg$	micrograms per kilograms
$\mu g/\ell$	micrograms per liter
mg/kg	milligrams per kilograms
umhos/cm	micromhos per centimeter
NAS	Naval Air Station
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEESA	Naval Energy and Environmental Support Activity
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
PA	Preliminary Assessment
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
QC	quality control

GLOSSARY (Continued)

RI/FS	Remedial Investigation and Feasibility Study
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
SVOCs	semivolatile organic compounds
TAL	target analyte list
TRAWING FIVE	Training Air Wing Five
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tanks
VOCs	volatile organic compounds
WWTP	Wastewater Treatment Plant

1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Department of Navy, is submitting Technical Memorandum No. 4 for the Phase I Remedial Investigation and Feasibility Study (RI/FS) for Naval Air Station (NAS) Whiting Field located in Milton, Florida, to the Department of Navy, Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM). The RI/FS is being conducted under contract number N62467-88-C-0382.

Technical Memorandum No. 4, Surface Water and Sediment Assessment, is the fourth in a series of six technical memoranda that summarizes the results and transmits data gathered during the Phase I RI. The Phase I RI field program was carried out during the period December 1990 to May 1991. These technical memoranda form the supporting basis for scoping a Phase II RI Sampling and Analysis Plan for NAS Whiting Field.

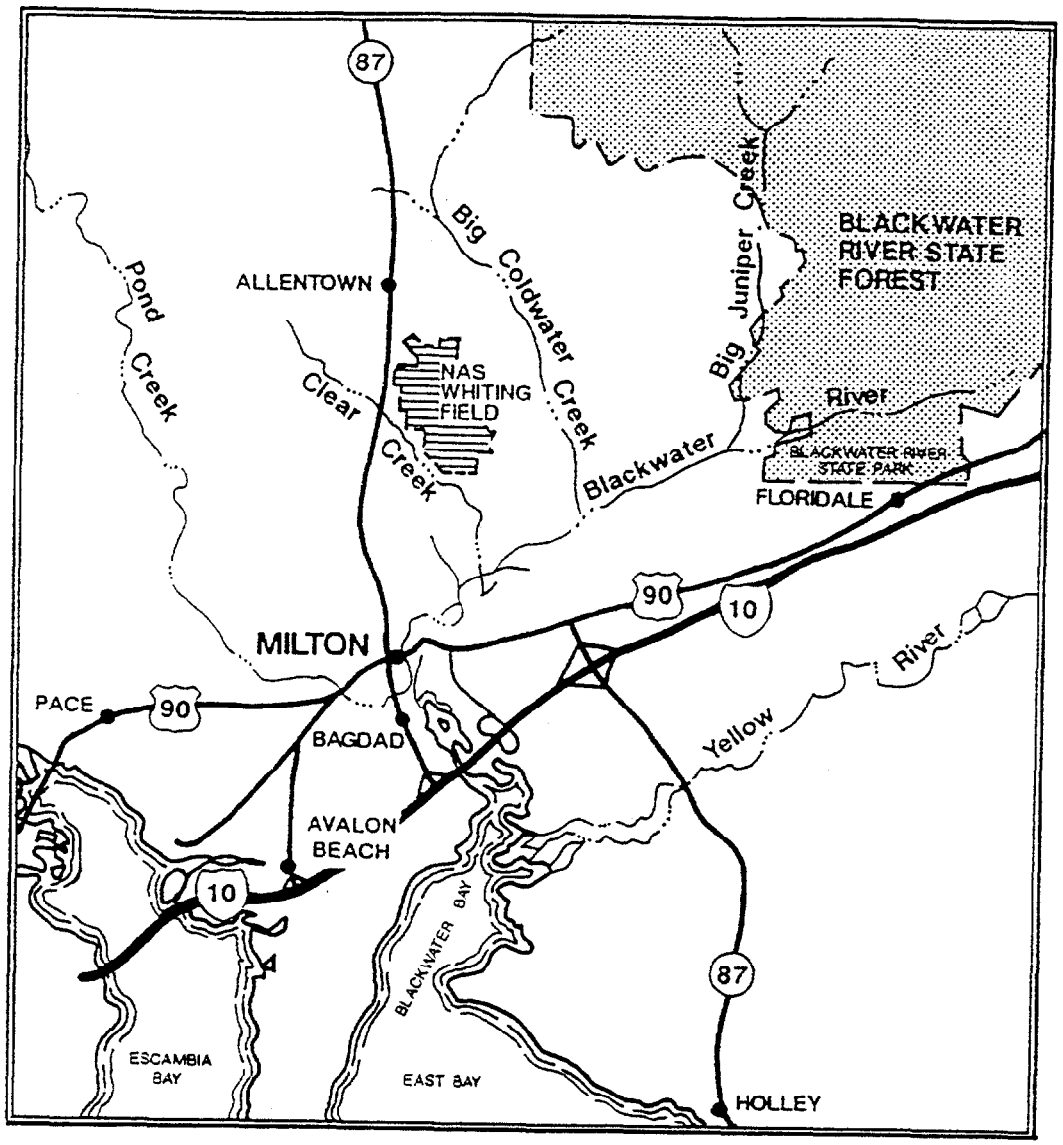
NAS Whiting Field is located in Florida's northwest coastal area approximately 7 miles north of Milton and 20 miles northeast of Pensacola (Figure 1-1). NAS Whiting Field presently consists of two air fields separated by an industrial area and covers approximately 2,560 acres in Santa Rosa County. Figure 1-2 presents the installation layout.

NAS Whiting Field, home of Training Air Wing Five (TRAWING FIVE), was constructed in the early 1940's. It was commissioned as the Naval Auxiliary Air Station Whiting Field in July 1943 and has served as a naval aviation training facility ever since. The field's mission has been to train student naval aviators in basic instruments, formation and tactic phases of fixed-wing, and propeller-driven aircraft, and in the basic and advanced portions of helicopter training.

NAS Whiting Field lies within the Western Highlands physiographic division of Santa Rosa County in the Coastal Plain Province. The Western Highlands are characterized by a well drained, southward sloping, plateau with numerous streams. Land surrounding NAS Whiting Field primarily consists of agricultural land to the northwest, residential and forested areas to the south and southwest, and forested land around the remaining boundaries. This land use distribution is shown in Figure 1-3.

Located on an upland area, elevations at Whiting Field range from 150 to 190 feet above sea level. The facility is bounded by low-lying receiving waters; Clear Creek to the west and south and Big Coldwater Creek to the east. These two streams are tributaries of the Blackwater River, which discharges to the estuarine waters of the East Bay of the Escambia Bay coastal system.

1.1 PURPOSE AND BACKGROUND. The purpose of the NAS Whiting Field RI/FS is to identify a range of remedial alternatives to address any identified risks to public health and the environment posed by toxic or hazardous chemicals present as a result of past waste disposal practices or spills. To achieve this objective, the RI must collect data sufficient to assess the nature and distribution of chemicals associated with each site. The data collected in the RI will be used in the FS to screen, evaluate, and select remedial alternatives to provide permanent, feasible solutions to environmental contamination problems at NAS Whiting Field.



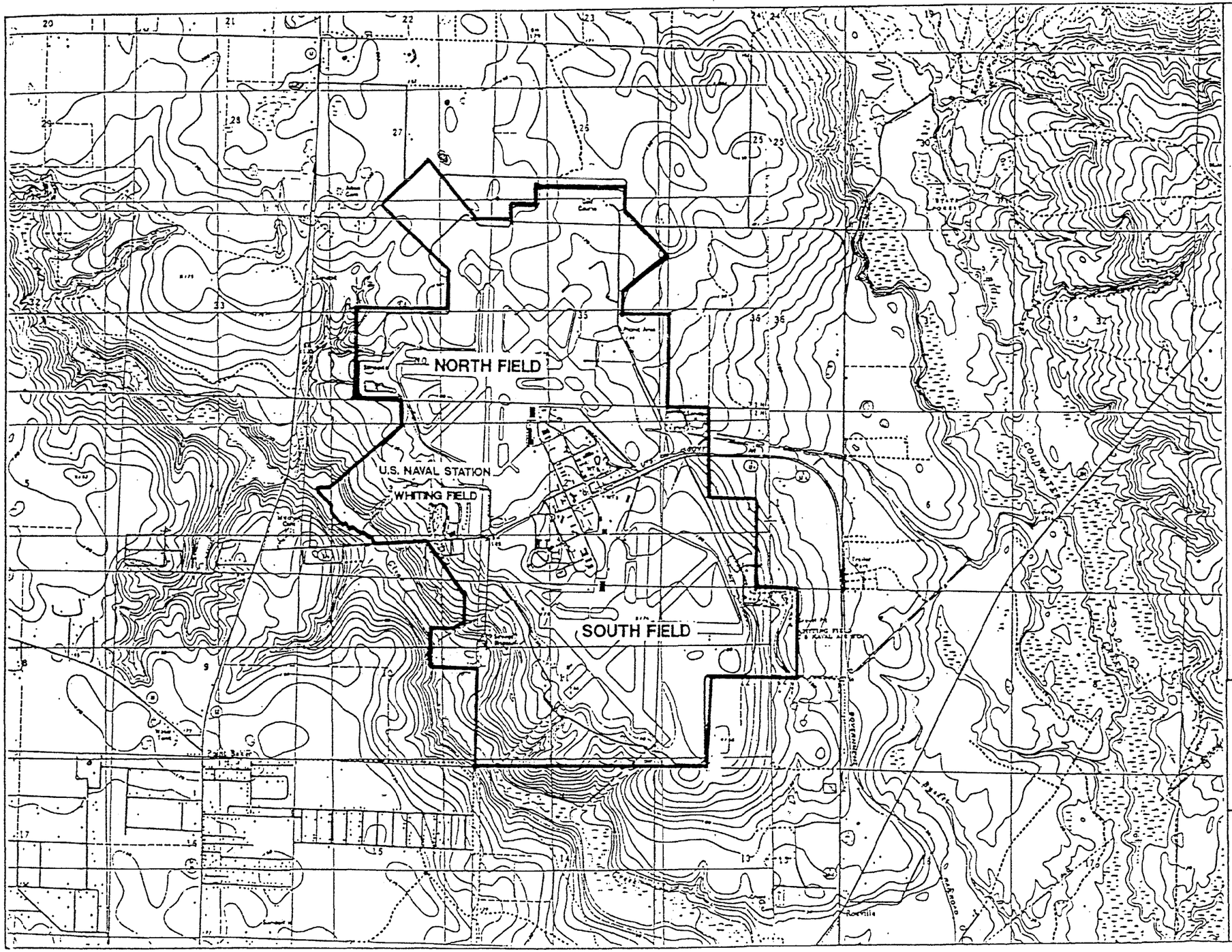
SOURCE: ABB ENVIRONMENTAL SERVICES, INC., 1991

FIGURE 1-1

FACILITY LOCATION MAP

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA



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SCALE IN FEET

0 3000 6000

SOURCE:
USGS QUADRANGLE MILTON NORTH, FLORIDA
PHOTOREVISED 1987
AND USGS QUADRANGLE HAROLD, FLORIDA 1973.

FIGURE 1-2

NAS WHITING FIELD

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA

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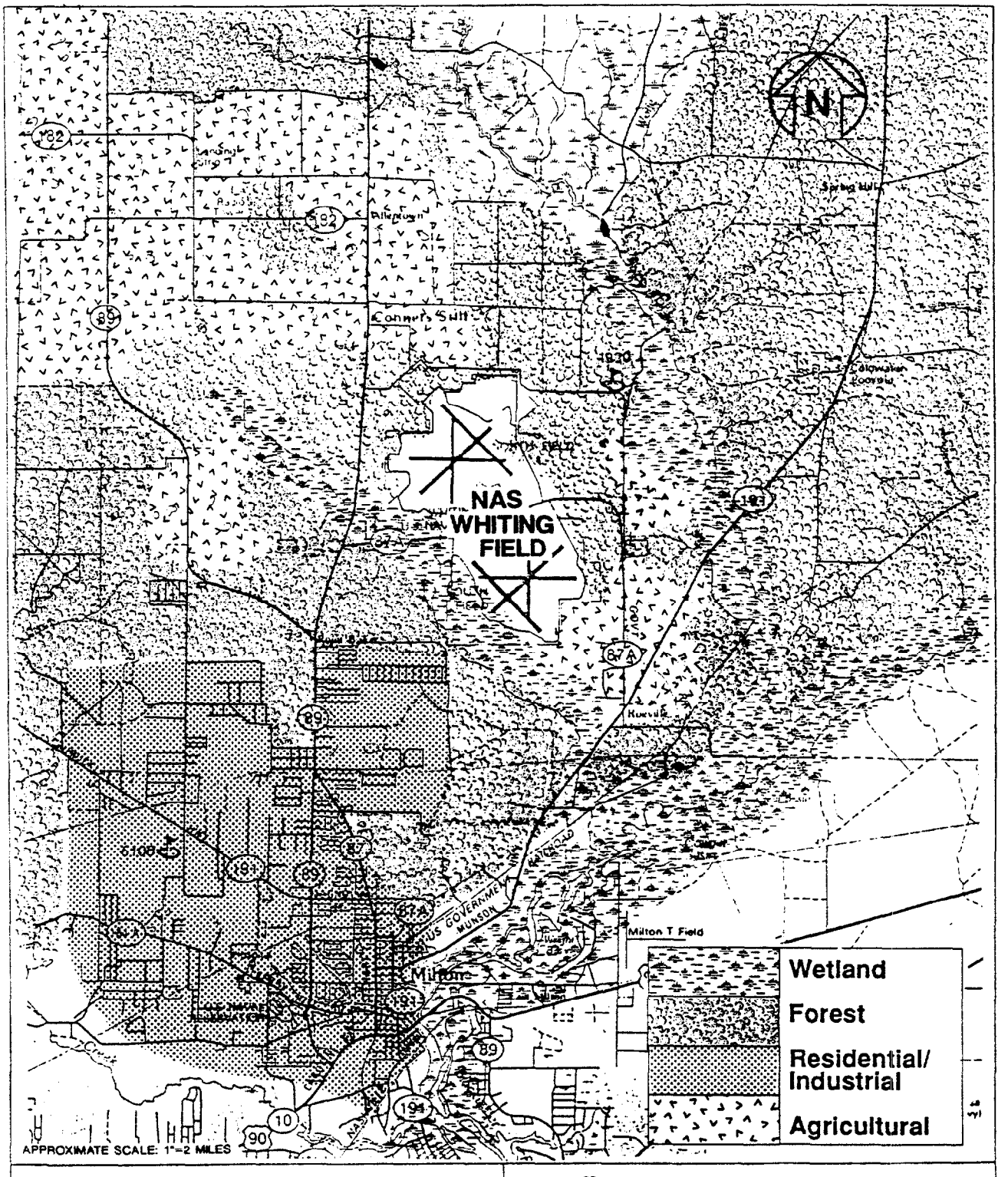


FIGURE 1-3

Land Use Distribution in the Vicinity of NAS Whiting Field

FLORIDA ATLAS & GAZETTEER, DeLORME MAPING COMPANY, 1987

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA

The Navy Installation Restoration (IR) program was designed to identify and abate or control contaminant migration resulting from past operations at Naval installations. The IR program is the Navy response authority under Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 and Executive Order 12580. CERCLA requires that Federal facilities comply with the act, both procedurally and substantively. SOUTHNAV-FACENGCOM is the agency responsible for the Navy IR program in the Southeastern United States. Therefore, SOUTHNAVFACENGCOM has the responsibility to process NAS Whiting Field through Preliminary Assessment (PA), Site Inspection (SI), priority listing, RI/FS, and remedial response selection in compliance with the guidelines of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) [40 Code of Federal Regulations (CFR) 300].

Section 105(a)(8)(A) of SARA required the U.S. Environmental Protection Agency (USEPA) to develop criteria in order to set priorities for remedial action based on relative risk to public health and the environment. To meet this requirement, USEPA has established the Hazard Ranking System (HRS) as Appendix A to the NCP. The HRS is a scoring system designed to assess relative threat due to documented or potential releases at a site. First promulgated in 1982, the HRS was amended in December 1990, effective March 14, 1991 (55 Federal Register No. 241:51532-51667), to comply with requirements of Section 105(c)(1) of SARA to increase the accuracy of the assessment of relative risk. The newly promulgated HRS II has been substantially revised and is designed to prioritize sites after the SI phase of the CERCLA process. The SI or extended SI is used to present the required data to expeditiously perform an HRS II ranking. At NAS Whiting Field, the SI was conducted as a Contamination Study, Verification Phase.

The RI/FS conducted at NAS Whiting Field is a component of the Navy IR program. The preliminary HRS score for NAS Whiting Field indicates that it may qualify for the National Priorities List (NPL). As such, the RI/FS for NAS Whiting Field follows the requirements of the NCP, as amended by SARA, and guidance for conducting Remedial Investigations and Feasibility Studies under CERCLA (USEPA, October 1988).

Prior to the implementation of the Phase I RI/FS Program, a PA and two sampling and analysis programs had been conducted at NAS Whiting Field. The PA, conducted as an Initial Assessment Study (IAS), was performed by Envirodyne Engineers in 1984 and published in 1985 (Envirodyne Engineers, 1985). Based on historical data, aerial photographs, field inspections, and personnel interviews, 16 disposal or spill sites of potential contamination and/or contaminant migration were initially identified at NAS Whiting Field by the IAS team. These are sites where waste disposal or accidents have occurred in the past.

The May 1985 IAS concluded that 15 of the 16 sites warranted further investigation, under the Navy's IR Program, to assess potential long-term impacts. Only Site 2, the Northwest Open Disposal Area, was judged to not warrant further consideration. A Confirmation Study, including sampling and monitoring of the sites, was recommended to confirm or deny the existence of the suspected contamination and to quantify the extent of any problems that may exist. The results of the Confirmation-Verification Study would then be used to evaluate the necessity of conducting mitigating actions or cleanup operations.

In November 1985, Geraghty & Miller, Inc., prepared for the Navy a plan of action entitled *Naval Assessment and Control of Installation Pollutants; Verification Study, NAS Whiting Field* (Geraghty and Miller, 1985b), which was subsequently submitted to the Florida Department of Environmental Regulation (FDER). This plan contained details of the proposed scope of work for the Verification Study. During discussion with FDER in December 1985, two additional sites (17 and 18) were added to the Verification Study. Both were active sites at that time where waste oils and fuels were burned in firefighting training exercises.

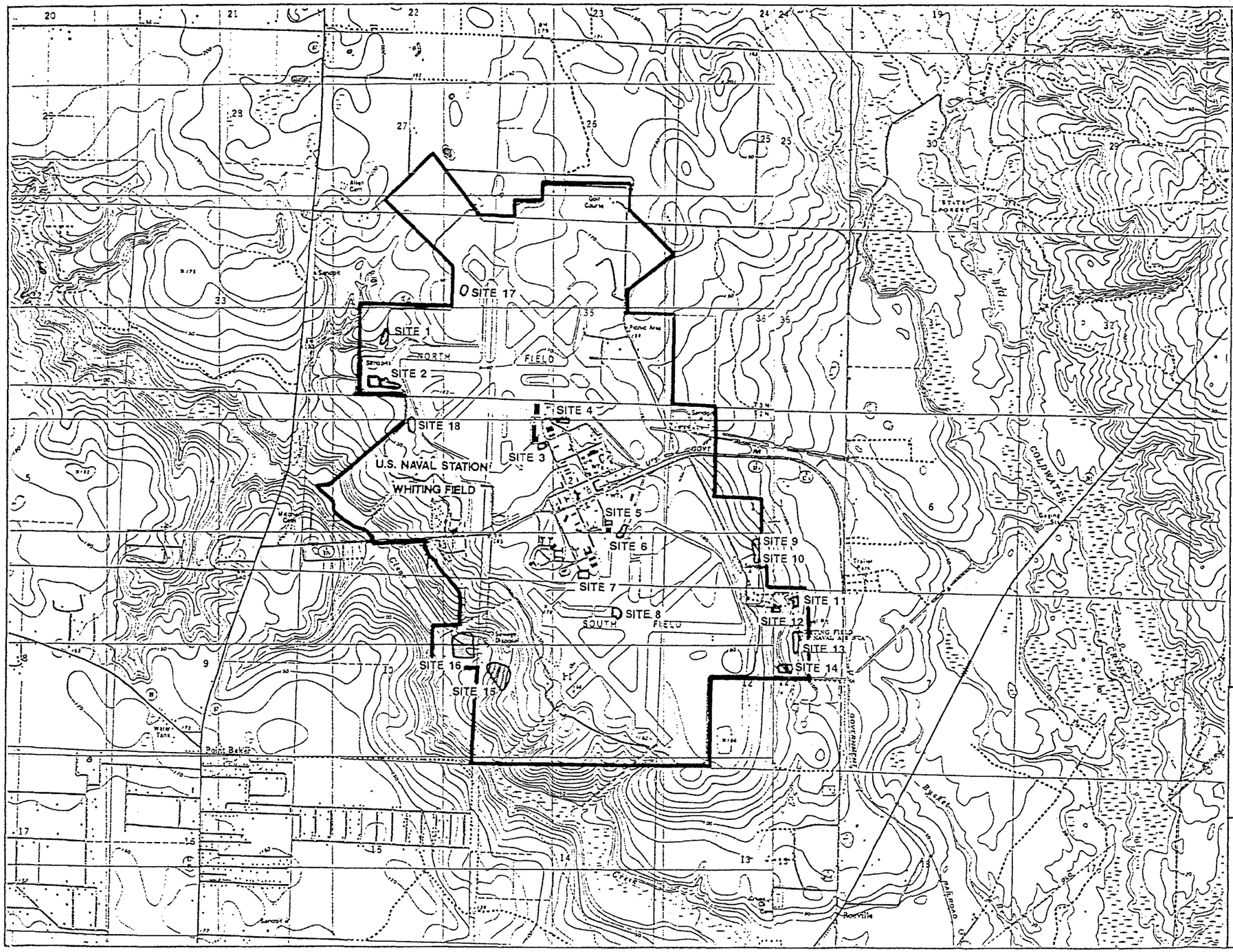
In addition, during 1985 one of the sites (Site 5, Battery Acid Seepage Pit) was investigated under a Consent Order with the FDER. Data from this investigation has been compiled in a report entitled *Detection and Monitoring Program, Battery Shop Site, NAS Whiting Field, Florida* (Geraghty & Miller, November 1985a).

The location of the 18 sites are shown in Figure 1-4. Each of the sites was evaluated with regard to contamination characteristics, migration pathways, and pollutant receptors. Table 1-1 summarizes the information collected on these sites.

Work conducted during the course of the Verification Study began with the collection and assimilation of existing data and literature pertinent to the project and included the findings from the IAS. The field work was performed in May and June of 1986. Sixteen monitor wells were installed at locations around the facility. One surface water, 16 groundwater, and 46 soil samples were then collected for chemical analyses.

Historical records indicate that throughout the years of operation, NAS Whiting Field has generated a variety of wastes related to pilot training, the operation and maintenance of aircraft along with ground support equipment, and the station's facility maintenance activities. Prior to the establishment of hazardous waste management programs and programs to recycle waste oil, most of the hazardous wastes were reportedly disposed of onsite. Waste materials were disposed either in dumpsters that were emptied into onsite disposal areas or they went into waste oil bowsers, which probably were used for firefighting training. Envirodyne Engineers (1985) estimated that thousands of gallons of wastes including waste paints, paint thinners, solvents, waste oils, waste gasoline, hydraulic fluids, aviation gasoline (AVGAS), tank bottom sludges, polychlorinated biphenyls (PCBs) transformer fluids, and paint stripping wastewater were potentially dumped into onsite disposal areas. These disposal areas consisted of natural or man-made depressions located within the confines of the air station. In addition to the waste materials routinely disposed of onsite in the disposal areas, additional materials were reportedly released onsite as the result of accidents or equipment failure.

The results of the Verification Study reported to SOUTHNAVFACENGCOM by Geraghty & Miller (*Verification Study: Assessment of Potential Ground-Water Pollution at Naval Air Station Whiting Field*, December 1986) provided an incomplete assessment of the physical as well as the chemical conditions currently existing at NAS Whiting Field. Groundwater contamination was detected at some sites and not at others. The study concluded that many of the monitoring wells were not located downgradient of the intended study site and that additional work was needed to characterize the hydrogeologic conditions and the chemical contamination condi-



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SCALE IN FEET

0 3000 6000

SOURCE:
USGS QUADRANGLE MILTON NORTH, FLORIDA
PHOTOREVISED 1987
AND USGS QUADRANGLE HAROLD, FLORIDA 1973.

FIGURE 1-4

Location of Sites at NAS Whiting Field

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA

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Table 1-1
Summary of Potential Disposal Sites

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Site No.	Site Name and Type	Location	Period of Operation	Types of Material Disposed	Comments
1	Northwest Disposal Area (landfill)	North Field, west side	1943-1965	Refuse, waste paints, thinners, solvents, waste oils, and hydraulic fluids.	Secondary disposal area during this period; site covers 5 acres.
2	Northwest Open Disposal Area (landfill)	North Field, west side	1976-1984	Construction and demolition debris, tires, and furniture.	Former borrow pit location, commonly referred to as the "Wood Dump."
3	Underground Waste Solvent Storage Area (tank)	North Field, south of Building 2941	1980-1984	Waste solvents, paint stripping residue, and 120-gallon spill.	Wastes generated by paint stripping operations.
4	North AVGAS Tank Sludge Disposal Area	North Field, north of Tow Lane	1943-1968	Tank bottom sludge containing tetraethyl lead.	Sludge disposal in shallow holes near tanks.
5	Battery Acid Seepage Pit (contaminated soil)	South Field, near Building 1478	1964-1984	Waste electrolyte solution containing heavy metals and waste battery acid.	Pits located 110 feet from potable supply well (W-S2).
6	South Transformer Oil Disposal Area (contaminated soil)	South Field, Building 1478	1940's-1960's	PCB-contaminated dielectric fluid.	Disposal in "0-2" drainage ditch.
7	South AVGAS Tank Sludge Disposal Area (landfill and tanks)	South Field, west of Building 1406	1943-1968	Tank bottom sludge containing tetraethyl lead.	Sludge disposed in shallow holes near tanks.
8	AVGAS Fuel Spill Area (contaminated soil)	South Field, south of Building 1406	Summer 1972	AVGAS containing tetraethyl lead.	Fuel spill of about 25,000 gallons on an area of about 2 acres.
9	Waste Fuel Disposal Pit (landfill)	South Field, east side	1950's-1960's	Waste AVGAS containing tetraethyl lead.	Fuel disposed in former borrow pit.
10	Southeast Open Disposal Area (A) (landfill)	South Field, southeast area	1965-1973	Construction and demolition debris, waste solvents, paint, oils, hydraulic fluid, PCBs, pesticides, and herbicides.	Secondary disposal area during this period; site covers about 4 acres.

See notes at end of table.

Table 1-1 (Continued)
Summary of Potential Disposal Sites

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Site No.	Site Name and Type	Location	Period of Operation	Types of Material Disposed	Comments
11	Southeast Open Disposal Area (B) (landfill)	South Field, southeast area	1943-1970	Construction and demolition debris, waste solvents, paint, oils, hydraulic fluid, and PCBs.	Secondary disposal area during this period; site covers about 3 acres.
12	Tetraethyl Lead Disposal Area (waste pile)	South Field, southeast area	May 1, 1968	Tank bottom sludge and fuel filters contaminated with tetraethyl lead.	Disposal area posted with warning; site consists of two earth covered mounds; 25 foot by 25 foot area.
13	Sanitary Landfill (landfill)	South Field, southeast area	1979-1984	Refuse, waste solvents, paint, hydraulic fluids, and asbestos.	Primary sanitary landfill, potentially received hazardous wastes the first year of operation.
14	Short-Term Sanitary Landfill (landfill)	South Field, southeast area	1978-1979	Refuse, waste solvents, oils, paint, and hydraulic fluids.	Primary sanitary landfill for brief period; relocated due to drainage problems.
15	Southwest Landfill (landfill)	South Field, southwest area	1965-1979	Refuse, waste paints, oils, solvents, thinners, asbestos, and hydraulic fluid.	Primary landfill for this time period; covers about 15 acres.
16	Open Disposal and Burning Area (landfill)	South Field, southwest area	1943-1965	Refuse, waste paints, oils, solvents, thinners, PCBs, and hydraulic fluid.	Primary disposal area for this time period; covers about 10 acres.
17	Crash Crew Training Area (contaminated soil)	North Field, west side	1951-Present	JP-4.	Waste fuels and some solvents ignited, then extinguished.
18	Crash Crew Training Area (contaminated soil)	North Field, west side	1951-Present	JP-4.	Waste fuels and some solvents ignited, then extinguished.

Notes: AVGAS = aviation gasoline.
PCB = polychlorinated biphenyls.

tions that exist at NAS Whiting Field. The Verification Study is the former IR program counterpart to the SI.

Of the 18 sites identified to date, 13 are scheduled for further study under the Navy's IR program. Due to the fact that it only received construction and demolition debris, Site 2, the Northwest Open Disposal Area, was judged to warrant no further consideration early in the IR program. Site 5, the Battery Acid Seepage Pit, was extensively studied in 1985 (Geraghty & Miller, 1985) in response to an FDER Consent Order (84-0253). Results indicated no significant contamination resulting from past activities at the Battery Acid Shop and the Consent Order was recommended to be rescinded on April 15, 1987. However, the presence of benzene in the existing monitoring wells surrounding the seepage pit warrants further consideration. As such, the investigation of benzene contamination around Site 5 is coupled with the field and laboratory investigation proposed for production well W-S2. Sites 4, 7, and 8 are slated for investigation and remediation, if necessary, under the Navy's Underground Storage Tank (UST) program and, therefore, are not incorporated in the Navy's IR program. Table 1-2 presents a summary of past and projected investigative programs for the 18 sites within the RI/FS and UST programs.

The Jordan Phase I RI Workplan (June 1990) provides a summary of the regional and installation-specific environmental setting, current and historical industrial operations, and summary of the verification study, and the Site 5, Battery Shop data, which will not be repeated in the technical memorandum. As appropriate, data from these sources has been incorporated into the assessment.

1.2 OBJECTIVES OF THE SURFACE WATER AND SEDIMENT INVESTIGATION. Stormwater drainage from the industrial, support, and runway areas of NAS Whiting Field is routed to Clear Creek and to Big Coldwater Creek. In addition, based on the hydrogeologic setting, groundwater from parts of the installation appears to discharge to Clear Creek. The secondary-treated sewage effluent from the NAS Whiting Field Sanitary Wastewater Treatment Plant (WWTP) is discharged onto the floodplain of Clear Creek. The preliminary public health evaluation and preliminary environmental assessment identified Clear Creek and Big Coldwater Creek as potential receiving waters for toxic and hazardous materials migrating via overland flow or groundwater discharge. Human exposure could occur as a result of either recreational body-contact water use or ingestion of aquatic organisms taken from the receiving waters. Aquatic and adjoining wetland biological communities may also be affected by contaminants.

The objective of the Phase I RI surface water and sediment program was to evaluate whether evidence of contamination exists in either stream as a result of NAS Whiting Field past or current operations. Data derived from the program will be used in the Public Health Evaluation and Environmental Risk Assessment to be performed during the Phase II RI.

Table 1-2
Summary of Site Investigations

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Site Number	Site Name	Previous Studies			Ongoing RI/FS	Navy's UST Program
		IAS	Verification Study	Consent Order		
1	Northwest Disposal Area	*	*		*	
2	Northwest Open Disposal Area	*				
3	Underground Waste Solvent Storage Area	*	*		*	
4	North AVGAS Tank Sludge Disposal Area	*	*			*
5	Battery Acid Seepage Pit	*		*		
6	South Transformer Oil Disposal Area	*	*		*	
7	South AVGAS Tank Sludge Disposal Area	*	*			*
8	AVGAS Fuel Spill Area	*	*			*
9	Waste Fuel Disposal Pit	*	*		*	
10	Southeast Open Disposal Area (A)	*	*		*	
11	Southeast Open Disposal Area (B)	*	*		*	
12	Tetraethyl Lead Disposal Area	*	*		*	
13	Sanitary Landfill	*	*		*	
14	Short-Term Sanitary Landfill	*	*		*	
15	Southwest Landfill	*	*		*	
16	Open Disposal and Burning Area	*	*		*	
17	Crash Crew Training Area		*		*	
18	Crash Crew Training Area		*		*	

Notes: IAS = Initial Assessment Study.
RI/FS = Remedial Investigation/Feasibility Study.
UST = underground storage tank.
AVGAS = aviation gasoline.

Table 1-3 (Continued)
Summary of Available Data on Observed Hazardous Substances in Soils from the Verification Study

Technical Memorandum No. 3
NAS Whiting Field
Milton, Florida

Site Number	Site Name	Materials Disposed	Soil Chemical	Frequency of Detection[1]	Maximum Concentrations Detected (mg/kg)	Soil Sampling Program	
						Sampling Program	Analytes Tested
14	Short-Term Sanitary Landfill	Refuse, waste solvents, paint, oils, and hydraulic fluid.	NT			NT	
15	Southwest Landfill	Refuse, waste, paint, oils, solvents, thinners, and asbestos, and hydraulic fluid.	NT			NT	
16	Open Disposal and Burning Area	Refuse, waste paints, oils, solvents, thinners, PCBs, and hydraulic fluids.	NT or ND			NT or ND	
17, 18	Crash Crew Training Areas	JP-4 fuel.	NT			NT	

[1](1/2) = number of samples with detectable levels of contaminant per total number of samples analyzed.

[2]Fuel chemicals = benzene, toluene, ethyl benzene, xylenes, and ethylene dibromide.

Notes: mg/kg = milligram per kilogram.
NT = not tested.
VOCs = volatile organic compounds.
AVGAS = aviation gas.
PCB = polychlorinated biphenyls.
ND = not detected.
TCLP = Resource Conservation and Recovery Act (RCRA) Toxicity Characteristics Leaching Procedure.

- Site 15, Southwest Landfill, and Site 16, Open Disposal and Burning Area. Surface soil samples were collected to determine whether sandy, erodible surface soils at these locations are contaminated. This objective was to determine potential for migration toward Clear Creek of soil-bound contaminants. At site 15 an additional objective was to evaluate the surface soil contamination status at an area formerly used as a Boy Scout camping area.

- Stormwater Drainage Swales. The old "A" Ditch is at Site 15. The surface soil of this former drainage ditch has been sampled to evaluate whether soils from site 15 have migrated to the ditch. "Y" Ditch at site 12 collects all stormwater from the eastern runways and sites 12 and 14. Water and sediment from this ditch are transported off installation toward Big Coldwater Creek. The objective of surface soil sampling in this drainway is to evaluate the potential for particulate transport of contaminates off installation with stormwater.

This technical memorandum reports the results of the Phase I RI soils program. Historical data, summarized in Table 1-3, have been discussed in the Phase I Workplan (E.C. Jordan, 1990).

2.0 FIELD PROGRAM SUMMARY

The surface water and sediment program at NAS Whiting Field consisted of three components:

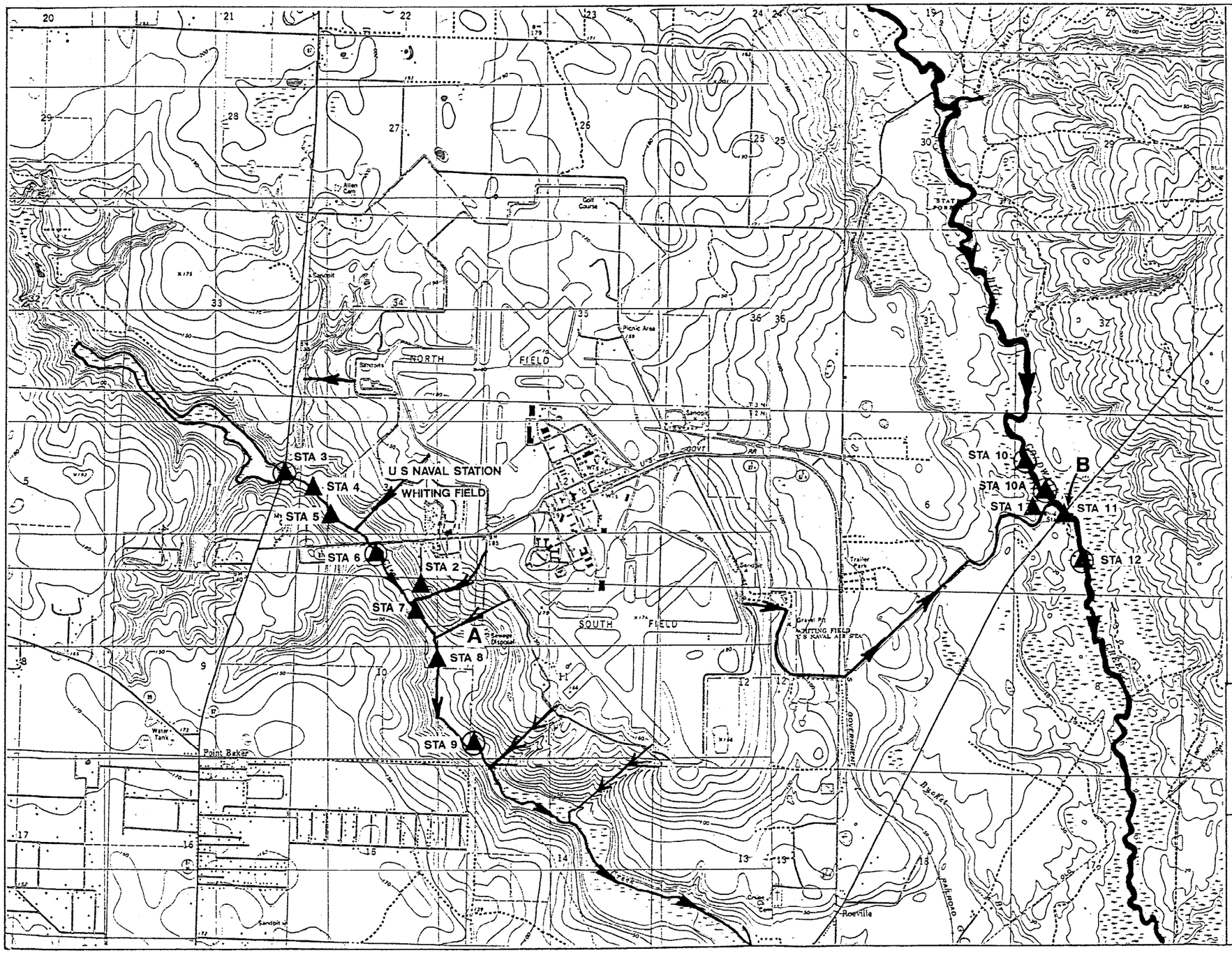
- collection of surface water and sediment samples at 12 sampling locations,
- measurement of general water quality parameters (pH and specific conductance) and physical description of each location, and
- instantaneous streamflow measurements and channel cross-section measurements at three locations in Clear Creek and two in Big Coldwater Creek.

2.1 SAMPLING AND ANALYSIS. Twelve surface water and sediment samples were collected from 12 locations along Clear Creek and Big Coldwater Creek, as shown in Figure 2-1. Sampling stations were situated both upstream and downstream of major drainage ditch discharge points that may have received impact from the identified disposal sites at NAS Whiting Field. The intent has been to determine the impact of discharge from NAS Whiting field on creek water and sediment quality. All samples were sent to Savannah Laboratories and Environmental Services (Savannah), Tallahassee, Florida, for analyses of the constituents as listed in Section 3.9 of Volume II of the Workplan (the Sampling and Analysis Plan).

All samples were collected in accordance with procedures discussed in Sections 6.7.3 and 6.6.5 of the Quality Assurance Project Plan, volume II, Appendix B. Surface water samples were collected by dipping the sampler container directly into the water. Sediment samples were collected using a stainless-steel scoop, mixed in a stainless-steel pan, and placed into the sample container. Volatile organic compounds (VOCs) analysis samples were removed from the stream and placed directly into sample containers without mixing. All data generated during surface water and sediment sampling were recorded in bound field log books.

All surface water and sediment samples were analyzed for VOCs, semivolatile organic compounds (SVOCs), pesticides and PCBs, and CERCLA target analyte list (TAL) inorganic elements. The latter consists of total cyanide and the following 23 metals: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, total chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc. Specific conductance, pH, and water temperature were measured at each station location.

Water and sediment chemical analyses were performed in accordance with Naval Energy and Environmental Support Activity (NEESA) level C Quality Control (QC) with 10 percent (including all field quality control samples) analyzed at NEESA level D QC. Data review and validation were performed by ABB-ES. Review of monthly quality control reports and data were performed by Martin Marietta, Oak Ridge, Tennessee.



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LEGEND

- ▲ SURFACE WATER/SEDIMENT SAMPLING LOCATION
- ◭ SAMPLING AND STREAMFLOW MEASUREMENT STATION
- ← FLOW DIRECTION
- A LOCATION OF WWTP DISCHARGE OUTFALL
- B USGS GAUGING STATION NO. 02370500

SCALE IN FEET

0 3000 6000

SOURCE:
USGS QUADRANGLE MILTON NORTH, FLORIDA
PHOTOREVISED 1987
AND USGS QUADRANGLE HAROLD, FLORIDA 1973.

FIGURE 2-1
PHASE I
SURFACE WATER, SEDIMENT, AND STREAMFLOW SAMPLING STATIONS

SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA

00227I03Z

Reconnaissance of the surface water and sampling locations was performed on November 29 and 30, 1990. The site reconnaissance report is appended as Appendix A. As a result of the reconnaissance, two sample locations were shifted to increase the effectiveness of the program.

Station 1, originally located in an impoundment upstream of NAS Whiting Field and Florida Route 87, was considered to be non-representative of the flowing water system of Clear Creek. This sampling location was moved 100 meters upstream of the mouth of the drainage ditch from NAS Whiting Field to Big Coldwater Creek.

No flowing water exists at the location of Station 2. Severe erosion of the banks of this drainage channel has formed a sand delta with steeply cut banks of up to 30 feet relief. Any stormwater runoff reaching this channel would be sorbed into the sands. Sediment would be mixed and diluted by the shifting sands. At the mouth of this gully, where it joins Clear Creek, the sand delta is approximately 150 feet wide. Because of this, meaningful samples cannot be collected in the reach sampled by Station 2. During the reconnaissance, a rusted barrel and a hint of a sulfur and petroleum odor were observed in the wetland approximately 100 feet from Station 7 on Clear Creek within the braided channel leading from a major storm drain outfall. Station 2 was therefore relocated in this wetland.

These sampling locations are shown in Figure 2-1. Surface water and sediment sampling was conducted during the period December 5 through 7, 1990. Weather was clear with moderate temperatures on December 5 and 6. A steady rain began in the early morning (prior to daylight) on December 7. Rain continued throughout the day, December 7, with intermittent periods of heavy rain and drizzle. Analytical results are summarized and presented in Appendix B for surface water data, and Appendix C for sediments.

2.2 INSTANTANEOUS DISCHARGE MEASUREMENTS. Instantaneous discharge and stream cross-section measurements were made at Stations 3, 6, and 9 on Clear Creek and at Stations 10 and 12 on Big Coldwater Creek at the same time as the water quality and sediment sampling episode. The streamflow measurements were made immediately following sampling. The locations of the gangways is shown on Figure 2-1. Cross-sectional area of the stream and instantaneous discharge were measured in accordance with the U.S. Geological Survey (USGS) *National Handbook of Recommended Methods for Water Data Acquisition* (1977), Section 1.B.2, "Open Channel Flow." Based on the flow, channel geometry, and water depth, the "six-tenths depth" method was chosen for estimating average vertical velocity at each channel vertical. Channel cross sections were measured by stretching a 200-foot tape perpendicular to flow across the channel at each location. Vertical depth measurements to the nearest 0.01 foot were made at cross-section intervals of 2 to 5 feet using a rod with a tape attached. Velocity was measured using a calibrated propeller-driven current meter with digital velocity readout. Summarized cross section and velocity data are tabulated in Appendix D.

2.3 QUALITY ASSURANCE PROGRAM AND DATA QUALITY ASSESSMENT.

2.3.1 Sample Handling, Delivery, and Chain-of-Custody Collection of sediment and surface water samples was performed in accordance with the procedures outlined in the Site-Specific Quality Assurance Plan Addendum and Quality Assurance Plan Field Program of June 1990.

All samples were properly preserved, placed in coolers, and packed with bagged ice immediately after their collection and remained in the custody of the field operations leader until shipment to the laboratory. All samples were shipped, complete with chain-of-custody forms, to Savannah Laboratories in Tallahassee, Florida, for analysis. Upon arrival at Savannah, the chain-of-custody form and preservation was checked with the contents of each cooler by Savannah personnel. After verification, the chain-of-custody form was signed by Savannah personnel and the samples accepted for analysis.

Review of the field notebooks and chain-of-custody forms did not indicate any nonconformance relative to field instrument calibration or sample handling. Table 2-1 tabulates the field QC samples collected for analysis. These include field duplicate, equipment rinsate blanks, and VOC trip blanks for each VOC water sample shipment. All required field QC samples were collected in conformance with the requirements of the USEPA, NEESA, and FDER-approved Jordan Quality Assurance Plans and the June 1988 NEESA *Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program* (NEESA Document 20.2-047B).

Review of the field duplicate results showed adequate agreement for surface water and sediment inorganic chemicals, SVOCs, polynuclear aromatic hydrocarbons (PAHs), pesticides, and PCBs.

Methylene chloride was detected in the duplicates of surface water sample WHF-STA9-SW-01 (0.7 microgram per liter [$\mu g/\ell$]) and sediment sample WHF-STA12-SD) (0.05)-01 (2.0 $\mu g/\ell$) but not in either of the replicate samples. Methylene chloride was also found in trip blank WHF-SD/SW-TB-01 (cooler No. 3) at a concentration of 0.7 $\mu g/\ell$. Because of the overall presence of methylene chloride in the duplicate sample and the trip blank and the lack of presence in any surface water sample suggests that the methylene chloride detected in the QC samples was due to an analytical artifact. Further evidence to support this conclusions is that methylene chloride was also detected in one of the sediment VOC method blanks. Field quality control samples and results are presented in Table 2-1.

Acetone was detected in the duplicates of sediment samples WHF-STA9-SD(0-0.5)-01 (670 micrograms per kilogram [$\mu g/kg$]) and WHF-STA12-SD(0-0.5)-01 (13 $\mu g/kg$). Acetone was detected at relatively high concentration sporadically in sediment samples and appears to be an artifact of the decontamination procedure for soils and sediment. Acetone appears to be transformed from pesticide grade isopropanol after being transferred into non-colored Teflon™ containers.

2.3.2 Chemical Analysis Data Quality Assessment The analytical results presented in Appendices B and C were evaluated relative to meeting NEESA Level C and D QC criteria. These criteria are outlined in Table 2-2 and described in Section 7.3.2 of NEESA (1988) document 20.2-047B. Data review indicated that the laboratory met all analytical QC criteria for organic and inorganic analyses, pesticides, PCBs, and SVOCs. Holding times were met for all sample lots.

Table 2-1
Field Quality Control Samples and Results

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Sampling Event	Control Sample	Results	
Surface water of Clear Creek	Field Duplicates	Inorganics (µg/ℓ)	
	WHF-STA9-SW-01/01A	Barium	15.1/15.1
		Calcium	734/744
		Iron	737/706
		Magnesium	631/604
		Manganese	18.6/16.3
		Sodium	2,500/2,340
		Organics (µg/ℓ)	
		Methylene chloride	ND/0.7
		No SVOCs detected	
		No pesticides or PCBs detected	
	WHF-STA12-SW-01/01A	Inorganics (µg/ℓ)	
		Barium	31.5/31.5
		Calcium	1,180/1,180
		Iron	219/230
		Magnesium	1,080/1,080
		Manganese	14.0/14.0
		Sodium	1,990/1,930
		No VOCs detected	
		No SVOCs detected	
		No pesticides or PCBs detected	
	Rinsate Blanks	Inorganics (µg/ℓ)	
	WHF-SW/SD-RB-01	Iron	
	WHF-SW/SD-RB-02	No inorganics detected	
	WHF-SW/SD-RB-03	No inorganics detected	
	Trip Blanks	Organics (µg/ℓ)	
	WHF-SD/SW-TB-01(coolers #1 and #2)	No organics detected	
	WHF-SD/SW-TB-01 (cooler #3)	Methylene chloride	0.7
	WHF-SW/SD-TB-01 (coolers #1 and #2)	No organics detected	
	WHF-SW/SD-TB-01 (cooler #1)	No organics detected	
	WHF-SW/SD-TB-01 (coolers #2)	No organics detected	
	Matrix Spike and Matrix Spike Duplicate	Inorganics (µg/ℓ)	
	WHF-STA9-SW-01MS/01MSD	Calcium	861/756
		Magnesium	613/610
		Sodium	2,430/2390

See notes at end of table.

Table 2-1 (Continued)
Field Quality Control Samples and Results

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Sampling Event	Control Sample	Results	
Sediments of Clear Creek	Field Duplicates	Inorganics (mg/kg)	
	WHF-STA9-SD(0-0.5)-01/01A	Aluminum	388/573
		Iron	1,030/1,040
		Lead	0.85/2.2
		Organics (µg/kg)	
		Acetone	790/670
		No SVOCs detected	
		No pesticides or PCBs detected	
	WHF-STA12-SD(0-0.5)-01/01A	Inorganics (mg/kg)	
		Aluminum	242/249
		Iron	552/349
		Manganese	4.9/3.2
		Organics (µg/kg)	
		Methylene chloride	ND/2.0
		Acetone	ND/13
		No SVOCs detected	
		No pesticides or PCBs detected	
	Rinsate Blanks		
	See surface water		
	Trip Blanks		
	See surface water		

See notes at end of table.

Table 2-1 (Continued)
Field Quality Control Samples and Results

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Sampling Event	Control Sample	Results	
	MS and MSD	Inorganics (mg/kg)	
	WHF-STA9-SD(0-0.5)-01MS/01MSD	Aluminum	865/846
		Antimony	91.0/93.4
		Barium	387/389
		Arsenic	9.3/9.4
		Beryllium	9.6/9.8
		Cadmium	8.6/9.0
		Chromium	40.0/41.0
		Cobalt	94.7/97.4
		Cooper	47.5/48.0
		Iron	1,160/1,140
		Lead	4.8/4.5
		Manganese	96.9/98.4
		Mercury	0.05/0.06
		Nickel	96.51
		Selenium	2.0
		Silver	9.5/9.1
		Sodium	100/100
		Vanadium	98.2/100
		Zinc	91.9/94.0
		Organics (µg/kg)	
		Acetone	57/610
	Method Blanks	Methylene chloride	0.5 µg/kg
	VBLK-S2		

Notes: µg/ℓ = micrograms per liter.
ND = not detected.
SVOCs = semivolatile organic compounds.
PCBs = polychlorinated biphenyls.
VOCs = volatile organic compounds.
mg/kg = milligrams per kilogram.
µg/kg = micrograms per kilogram.
MS = matrix spike.
MSD = matrix spike duplicate.

Table 2-2
Laboratory Quality Control Criteria

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Analytes	Quality Control Criteria
Organic analytes	1. Surrogate recovery limits for VOC, SVOCs, pesticides, and PCBs 2. Matrix spike/matrix spike duplicate (MS/MSD) 3. Method blanks and method blank spikes 4. GC/MS tuning results 5. Initial and continuing calibration 6. Internal standard area (VOCs and SVOCs) 7. Second column confirmation results for gas chromatography 8. Holding times
Metals and elements	1. Initial and continuing calibration 2. Blanks 3. Digestion method blanks 4. ICP interference checks 5. MS/MSD recovery and agreement 6. Post digestion spike recovery ICP 7. Post digestion spike recovery graphite furnace atomic absorption 8. Duplicate agreement 9. Method blanks spike recovery 10. Holding times
Cyanide	1. Blanks spike 2. Method blanks 3. MS/MSD 4. Calibration check percent RSD for initial and continuing calibration 5. Holding time

Notes: VOCs = volatile organic chemicals.
SVOCs = semivolatile organic chemicals.
PCBs = polychlorinated biphenyls.
MS/MSD = matrix spike/matrix spike duplicate.
GC/MS = gas chromatography/mass spectroscopy.
ICP = inductively coupled argon plasma.
RSD = relative standard deviation.

2.3.3 Data Quality Objectives (DQOs) Assessment The quality and completeness of the field sampling data generated during the field program met the established field QC criteria and were traceable to sample location. The data generated, therefore, meets the Level I field screening and Level C and D DQOs established for the RI and is adequate for use in site characterization and evaluation.

No loss of analytical data due to rejection occurred in the RI analytical program. Detection of the VOC methylene chloride in the duplicate sample of WHF-STA9-SW-01, in one of the trip blanks, and in nonenvironmental samples suggests the presence of an analytical artifact. Detection of acetone in sediment samples from stations 9 and 12 appears to be an artifact of the decontamination procedure. Based on the assessment of the analytical data, the data are acceptable for use in the RI characterization.

3.0 RESULTS AND INTERPRETATION

The purpose of this section is to present the results of the Phase I RI surface water and sediment program. Prior to this episode only a single water quality analysis and no sediment data had been collected in Clear Creek or in the potential area of NAS Whiting Field impact in Big Coldwater Creek. Section 3.1 presents a summary discussion of the surface water hydrology of the two creeks draining NAS Whiting field. Sections 3.2 and 3.3 describe and interpret water quality and sediment status of Clear Creek and Big Coldwater Creek, respectively.

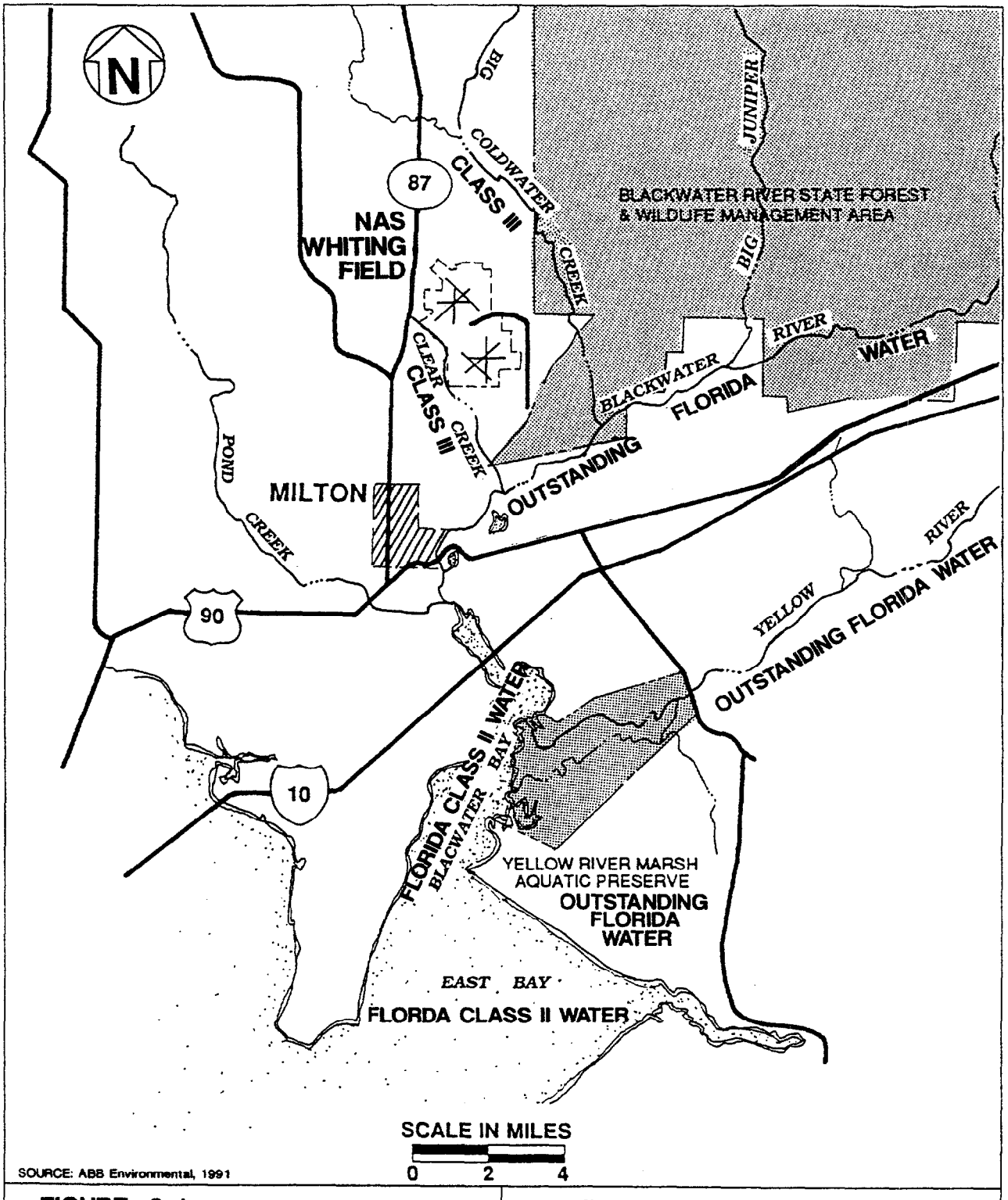
3.1 SURFACE HYDROLOGY. As indicated in Section 1.0, NAS Whiting Field is located on a plateau that is bounded on the west and southwest by Clear Creek and to the northeast by Big Coldwater Creek. These streams are tributaries of the Blackwater River. The Blackwater River is classified as an Outstanding Florida Water. Figure 3-1 shows the location and Water Quality Classification of these streams. Clear Creek is classified as Class III by FDER. Florida Class III water is suitable for propagation of fish and aquatic life and for body-contact recreation. Big Coldwater Creek is classified Class III except that within the Blackwater River State Forest it is classified an Outstanding Florida Water. No drinking water intakes exist downstream of NAS Whiting Field on either stream or in the Blackwater River. Because of the flat open nature of the airfield and the installation facilities, NAS Whiting Field is drained by an extensive storm drainage system. Surface drainage is shown in Figure 3-2. As a consequence of the drainage, none of the 18 disposal sites have an upstream drainage area of greater than 50 acres, the minimum area scored in HRS II pathway consideration. Figure 3-3 shows the outline of the 100- and 500-year floodplains adjacent to NAS Whiting Field. None of the identified disposal sites lies within the 100- or 500-year floodplain.

Distance to the nearest surface water for each of the 18 sites is tabulated in Table 3-1. These were measured from the U.S. Geological Survey, 7.5-minute quadrangle map.

As taken from the U.S. Department of Commerce Rainfall Intensity Map, 210-VI-TR-55, June 1986, the 2-year, 24-hour rainfall total is 6 inches.

Big Coldwater Creek is gauged by the U.S. Geological Survey at Santa Rosa County Road 191, located 1.7 miles east of the NAS Whiting Field eastern boundary. This location has been gauged for 53 years. Average annual discharge for Big Coldwater Creek ranges between 500 and 600 cubic feet per second (U.S. Geological Survey, 1989). Annual discharge per square mile ranges from 2.40 to 3.13 cubic feet per second. The drainage area for Big Coldwater Creek is 237 square miles above the gauge.

Clear Creek has been partially gauged south of NAS Whiting Field and flood discharge was measured during the period 1984 through 1987. Clear Creek has a drainage area of 24 square miles according to the U.S. Geological Survey (1989). Average annual areal discharge of the upper Blackwater River near Baker, Florida, is 1.67 cubic feet per second per square mile. Average annual discharge for Clear Creek has been estimated at from 40 to 66 cubic feet per second. This estimate is based on the average discharge of the upper Blackwater River and the



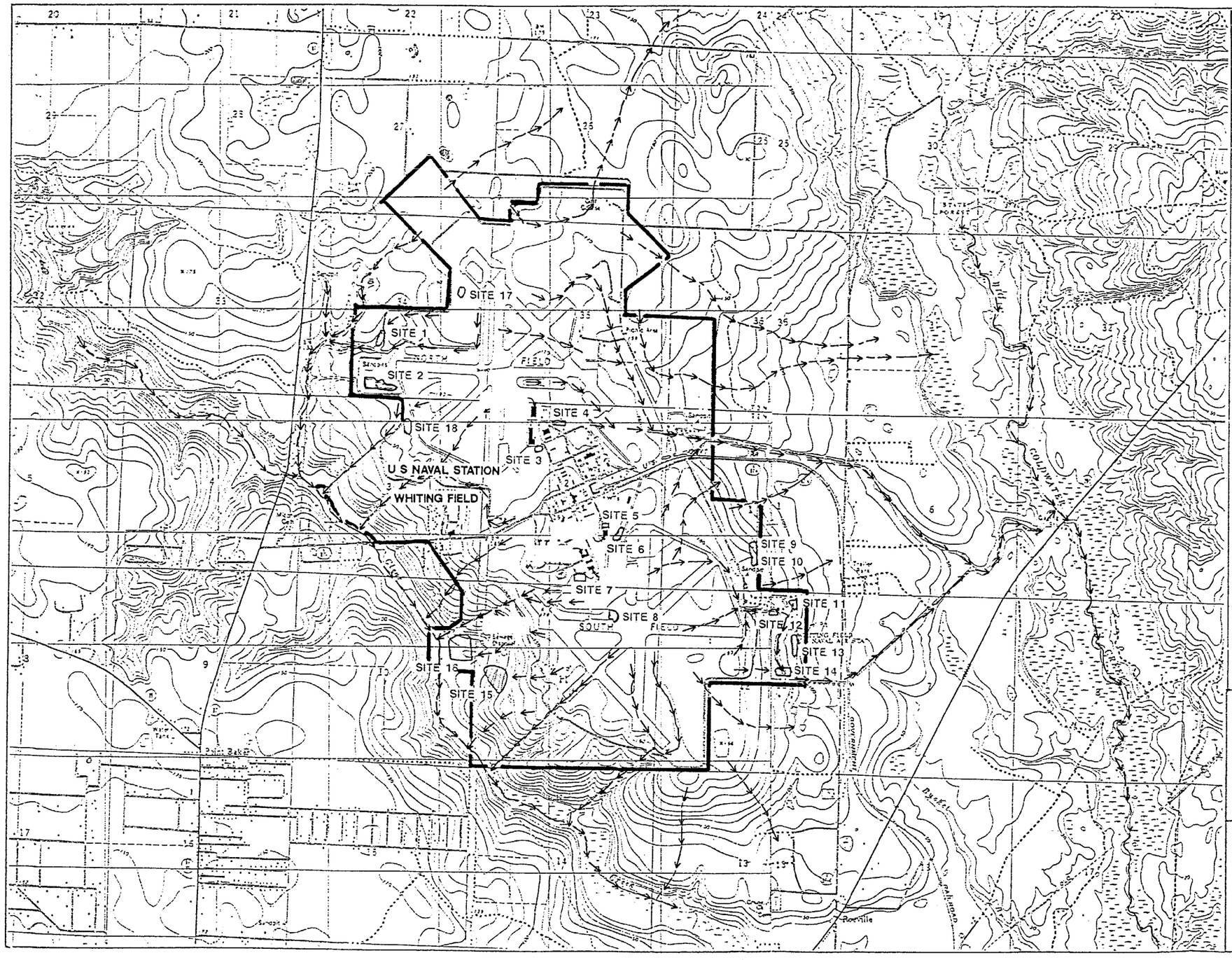
SOURCE: ABB Environmental, 1991

FIGURE 3-1

Surface Water Classification in the Vicinity of NAS Whiting Field

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA



N

SCALE IN FEET

0 3000 6000

LEGEND

← — ← — **DIRECTION OF SURFACE DRAINAGE FLOW**

SOURCE:
USGS QUADRANGLE MILTON NORTH, FLORIDA
PHOTOREVISED 1987
AND USGS QUADRANGLE HAROLD, FLORIDA 1973.

FIGURE 3-2

Surface Drainage at
NAS Whiting Field

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA

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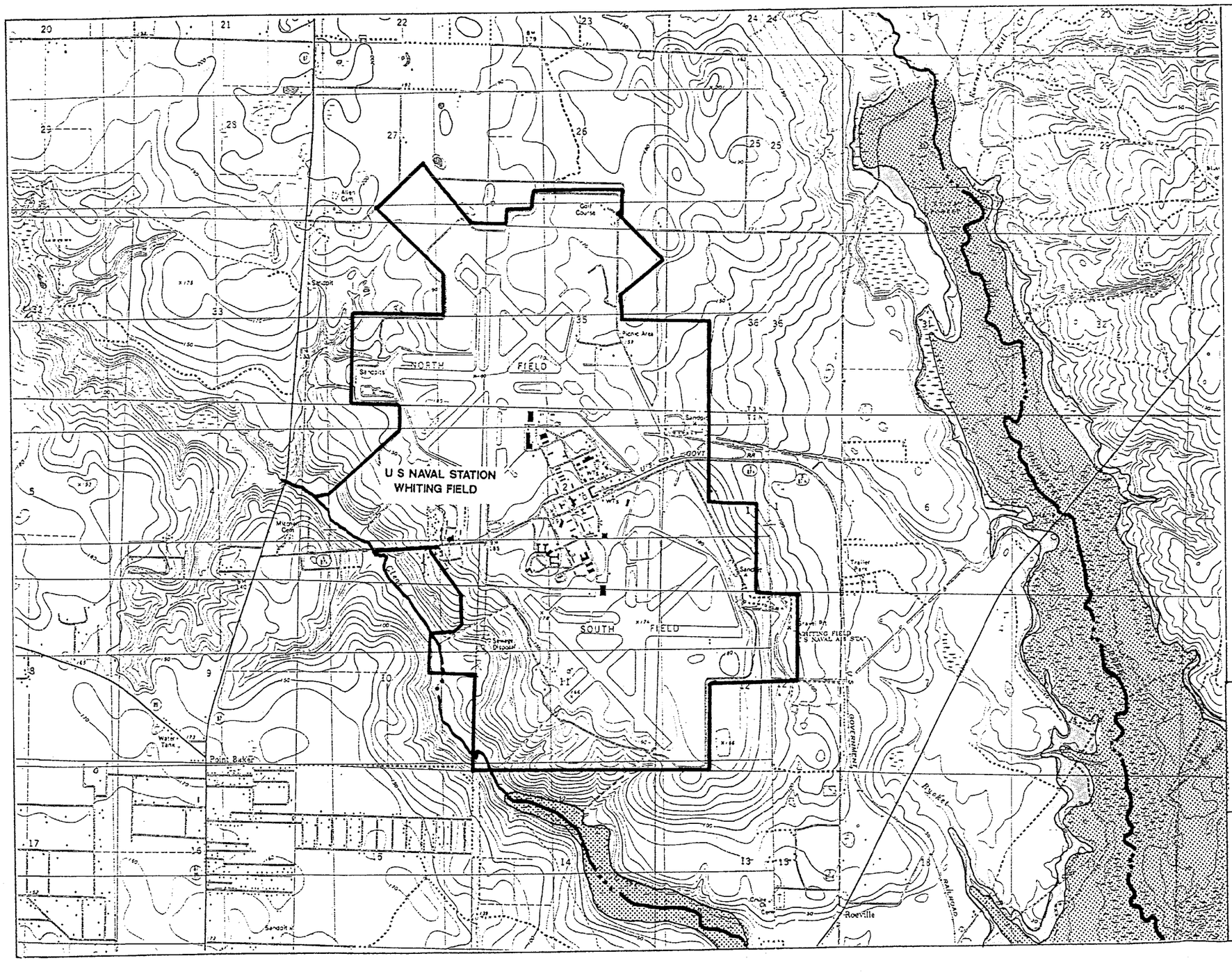


N

100 YEAR FLOODPLAIN
500 YEAR FLOODPLAIN

SCALE IN FEET
0 3000 6000

SOURCE:
USGS QUADRANGLE MILTON NORTH, FLORIDA
PHOTOREVISED 1987
AND USGS QUADRANGLE HAROLD, FLORIDA 1973.

FIGURE 3-3

Flood Prone Areas in the Vicinity of NAS Whiting Field

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA

Table 3-1
Distance to Surface Water
from NAS Whiting Field Disposal Sites

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Site[1]	Overland Distance Segment (feet)	Concrete Drainage Ditch Segment (feet)	Total Distance To Surface Water (feet)	Receiving Surface Water Body
1	5,000	0	5,000	Clear Creek
2	4,500	0	4,500	Clear Creek
3	12,000	4,000	16,000	Big Coldwater Creek
4	11,000	4,000	15,000	Big Coldwater Creek
5	8,000	8,000	16,000	Big Coldwater Creek
6	8,000	8,000	16,000	Big Coldwater Creek
7	1,500	3,000	4,500	Clear Creek
8	2,000	3,000	5,000	Clear Creek
9	10,000	0	10,000	Big Coldwater Creek
10	10,000	0	10,000	Big Coldwater Creek
11	7,000	1,000	8,000	Big Coldwater Creek
12	7,500	1,000	8,500	Big Coldwater Creek
13	6,000	3,000	9,000	Big Coldwater Creek
14	4,500	5,000	9,500	Big Coldwater Creek
15	300	0	300	Clear Creek
16	1,300	0	1,300	Clear Creek
17	8,000	0	8,000	Clear Creek
18	3,000	0	3,000	Clear Creek

[1]See Table 1-1 for disposal site descriptions.

average discharge for Big Coldwater Creek in cubic feet per second per square mile.

Instantaneous discharge measurements taken December 5, 6, and 7, 1990, were calculated from cross-section measurements and current velocity data. These are tabulated in Table 3-2. Figure 3-4 shows the cross-section configurations for Clear Creek and Big Coldwater Creek in downstream order.

Table 3-2
Instantaneous Discharge and Current Velocity in Clear Creek and Big Coldwater Creek

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

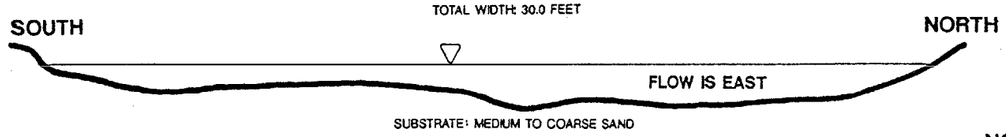
Gauging Station Location (see Figure 3-4)	Date Measured	Cross-section		Maximum Current Velocity (ft/sec)	Instantaneous Streamflow (ft^3/sec)
		Maximum Depth (feet)	Width (feet)		
Clear Creek					
Station 3	12/06/91	1.50	30.0	2.60	43.1
Station 6	12/06/91	3.70	12.0	1.4	44.2
Station 9	12/05/91	2.50	26.5	1.81	61.6
Big Coldwater Creek					
Station 10A	12/07/91	36.5	110.0	2.06	378
Station 12	12/07/91	2.80	118.2	2.15	325

Note: Station 10A was relocated downstream of Station 10 due to rising water encountered during the sampling and gauging program.
ft/sec = feet per second.
ft^3/sec = cubic feet per second.

Clear Creek flow measurements were near the average annual flow predicted from other systems; however, Clear Creek has a small drainage area compared to the reference gauges. Flow extrapolations may not predict actual annual flows accurately. Flow in Clear Creek, especially from Station 6 downstream, is largely stabilized by groundwater discharge into the wide floodplain that exists on the east bank of the stream. Downstream of Station 5, the east bank marsh and hardwood swamp contain numerous seeps where significant discharge is apparent. Little floodplain area exists to the west of the creek because the land rises rapidly along the west creek throughout its length. Flow in the upstream reach of Clear Creek is also stabilized by the impoundment located immediately west of route 87. The influence of groundwater discharge from the built-up area of NAS Whiting Field is readily apparent from the 16 cubic feet per second increase between stations 6 and 9. These measurements were made after more than a week with no significant antecedent rainfall to sustain overland flow.

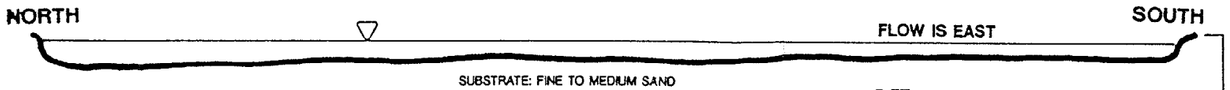
Big Coldwater Creek was measured at approximately 50 percent of its average annual flow rate at the gauge located at Santa Rosa County Route 197. Big Coldwater Creek has a large drainage area (237 square miles) and is sensitive to

STATION 3
CLEAR CREEK
TOTAL WIDTH: 30.0 FEET

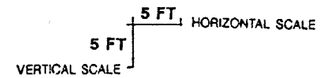


SUBSTRATE: MEDIUM TO COARSE SAND

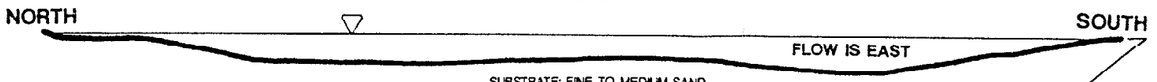
STATION 12
BIG COLDWATER CREEK
TOTAL WIDTH: 118.2 FEET



SUBSTRATE: FINE TO MEDIUM SAND

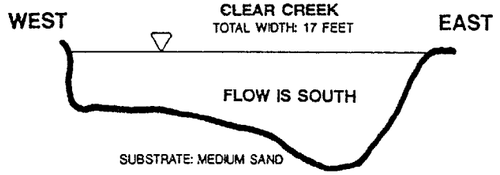


STATION 10A
BIG COLDWATER CREEK
TOTAL WIDTH: 110 FEET

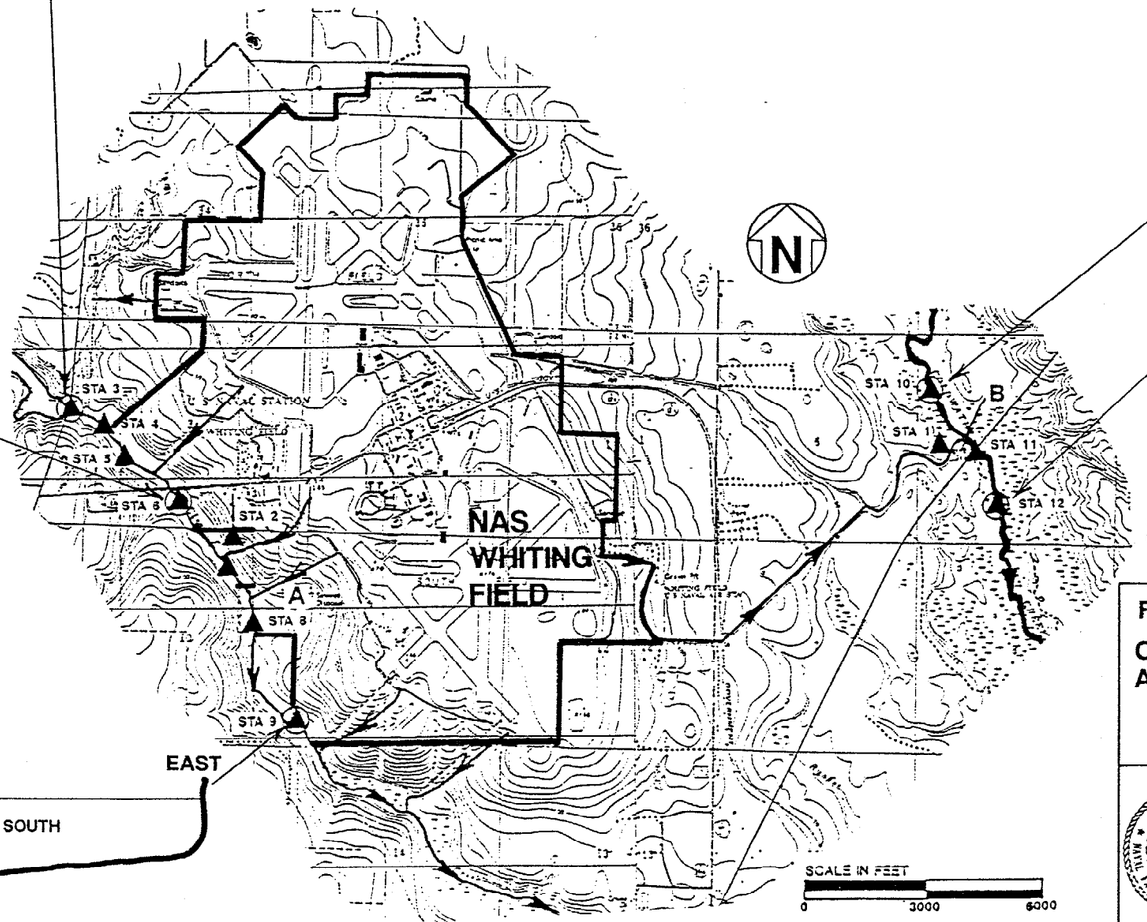


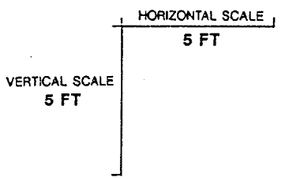
SUBSTRATE: FINE TO MEDIUM SAND

STATION 6
CLEAR CREEK
TOTAL WIDTH: 17 FEET

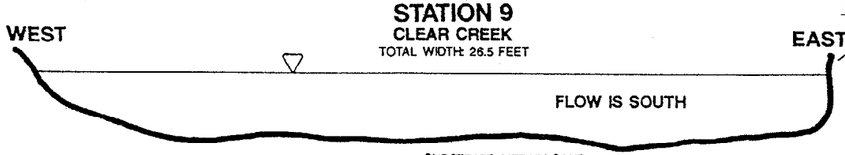


SUBSTRATE: MEDIUM SAND





STATION 9
CLEAR CREEK
TOTAL WIDTH: 26.5 FEET



SUBSTRATE: MEDIUM SAND

SOURCE:
USGS QUADRANGLE MILTON NORTH, FLORIDA
PHOTOREVISED 1987
AND USGS QUADRANGLE HAROLD, FLORIDA 1973.

FIGURE 3-4

CROSS SECTIONS OF CLEAR CREEK AND BIG COLDWATER CREEK

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA

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runoff in its lower reaches. Its flow is not stabilized (like Clear Creek's) by a large component of groundwater discharge or pond overflow. The results observed during the December 7, 1990, measurements indicate that the stream was beginning a rapid rise due to the rainfall that had begun approximately 4 hours prior to the gauging at Station 12. Gauging at Station 10 could not be completed due to rising water and increased flow. Station 10A, immediately upstream of the confluence of the drainage ditch from NAS Whiting Field, was gauged instead. The river increased its flow by 53 cubic feet per second within a 3.5-hour period.

3.2 SURFACE WATER QUALITY. This section presents the results of the surface water sampling and analysis of 12 sampling locations. Seven of these sampling locations are located in Clear Creek; one in the floodplain of Clear Creek, three in Big Coldwater Creek, and one in the stormwater drainage ditch leading from NAS Whiting Field to Big Coldwater Creek. This latter station, Station 1, was located 200 feet upstream of the confluence of this ditch with Big Coldwater Creek. As indicated in Figure 3-2 and Table 3-1, this ditch collects all of the stormwater from the eastern part of NAS Whiting Field and conveys it 3,500 feet to discharge to Big Coldwater Creek. Soil samples collected on the installation in this ditch system did not show evidence of contamination by toxic and hazardous materials as described in Technical Memorandum No. 3, Soils Assessment. Sampling locations in Big Coldwater Creek were placed upstream, immediately downstream, and 300 meters downstream of the confluence of the ditch. These locations are shown in Figure 2-1.

Clear Creek sampling stations were also located upstream and downstream of major stormwater drainages and the WWTP outfall as shown in Figure 2-1. Station 3 was located just downstream of Route 87 and serves as an upstream reference. Station 4 is located downstream of groundwater discharge and overland flow paths from Sites 1 and 17, whereas station 5 is downstream of these and the stormwater drainage ditch that intercepts water from Site 18 and Site 2. Station 6, located 100 feet upstream of the bridge on Route 87A (the main entrance road to NAS Whiting Field) picks up stormwater drainage from the North Field Maintenance Area. Station 7 and 8 are located downstream of stormwater drainage ditches from the industrial support, administration, and South Field maintenance areas. In addition, Station 8 is also located downstream from the point where overland flow from the WWTP outfall enters Clear Creek. The WWTP outfall discharges into a ditch located on the steep slope of the hill leading to the Clear Creek floodplain as shown in Figure 2-1. Effluent flows overland through the floodplain approximately 200 feet to Clear Creek. Station 9 is located approximately 3,000 feet downstream of Station 8 and downstream of any discharge of stormwater from the built-up areas of NAS Whiting Field. Stormwater drainage is illustrated in Figure 3-2. Distances from each of the 18 potential contaminant sites are tabulated in Table 3-1.

Stormwater and treated wastewater discharged to the receiving waters are permitted by USEPA and FDER. NAS Whiting Field monitored the stormwater and wastewater treatment facility until 1984 under a National Pollution Discharge Elimination System (NPDES) permit and is currently in the process of reapproval

of the permit. The wastewater treatment facility also operates under a permit with the State of Florida. These permits are as follows.

Type	Use	Permit Number
NPDES	Wastewater Treatment Plant	FL 0021211
	Stormwater Discharge	FL 0002569
State of Florida	Domestic Wastewater	D057-160158

Station 9 is located in the interpreted flowpath of groundwater migrating from the southern half of the industrial area, especially the South Fuel Farm and South Field Maintenance Hangar. The interpreted flow paths and seepage velocities are presented in Technical Memorandum No. 2, Hydrogeological Assessment, and discussed in the Groundwater Contamination Assessment (Technical Memorandum No. 5). Based on the gradient and hydraulic conductivity as calculated from the pumping test data from the industrial area, it is estimated to take approximately 10 to 15 years for groundwater to migrate the 4,500-foot groundwater flow distance from Site 7 (South Avgas Sludge Disposal Area) to the point at which the gradient toward Clear Creek increases sharply. It is possible, therefore, that any contaminants reaching groundwater in the industrial areas of NAS Whiting Field would have had time to reach Station 9 to discharge as contaminated groundwater. Station 9, therefore, provides an adequate downstream control location to detect contamination migrating to Clear Creek from NAS Whiting Field.

At the time of the sampling program, Clear Creek flow conditions represented probable base flow due to groundwater discharge, discharge from the impoundment upstream, and seepage from the floodplain swamps and marshes. Stormwater flow would, therefore, not be expected to dilute contaminants discharging from the wetlands or from groundwater to a great extent. Stormwater from moderate to small storm events discharges into the floodplain wetlands rather than Clear Creek. Because of this factor, contaminant migration, if any, would be most likely detected when groundwater and wetland seepage make up major flow components.

3.2.1 Clear Creek At the time of the sampling episode, flow conditions in Clear Creek were highly favorable for detection of any contaminants migrating either from the wetlands lining the creek or from groundwater discharge to the creek or wetlands. Only traces of rainfall had occurred in the weeks prior to sampling. No contaminants attributable to NAS Whiting Field were detected in the surface waters of Clear Creek. At Station 9, an estimated 0.7 $\mu g/\ell$ of methylene chloride were detected in one replicate of the field duplicate sample. The associated trip blank also contained 0.7 $\mu g/\ell$ (estimated) methylene chloride. The quantitation limit for methylene chloride is 10 $\mu g/\ell$. No other VOCs, SVOCs, pesticides, or PCBs were detected in any of the Clear Creek surface water samples or in the floodplain surface water samples (Station 7). Sediments at Station 2, however, are contaminated by organic and inorganic chemicals, as discussed in Section 3.3. No SVOCs or tentatively identified compounds were observed in surface water samples even below the quantitation limit as discussed in Section 2.3, SVOC detection limits are qualified because of the sample size taken for extraction. The impact of the reduced sample size on data quality is that estimated concentration identification limits may be slightly higher than for a

larger sample size. In the case of the NAS Whiting Field samples, the reduced sample size would not compromise detecting any of the SVOCs at levels in excess of either human health or aquatic life criteria, Florida, or Federal maximum concentration limits (MCL). Table 3-3 presents current water quality criteria and standards including the newly promulgated Federal drinking water MCLs and maximum concentration level goals (MCLGs), which went into effect in March 1992. Florida drinking water standards are not specifically applicable as numerical standards in Class III surface waters.

Results of inorganic chemical analysis and field measurements in Clear Creek are tabulated in Table 3-4. None of the TAL inorganic analytes except the major cations calcium, magnesium, sodium, and traces of barium were detected. Trace levels of each of these were detected in laboratory reagent blanks. Calcium, magnesium, and sodium are cations, naturally occurring in all surface waters. The concentrations observed are consistent with an extremely "soft" water. The specific conductance of Clear Creek of 10 to 22 micromhos per centimeter (μmhos/cm) is indicative of a water occurring in a non-calcareous sandy watershed. Barium is also a naturally occurring element. The barium concentrations observed were greater than five times those observed in method blanks, which suggests that barium is present; however, at concentrations near the detection limit of 10 mg/ℓ the presence of barium in the samples may also be a laboratory artifact. The presence of barium at the levels observed has no public health or environmental significance.

Sediments of Clear Creek consist of shifting medium-grained sands with the exception of Station 3, where the particle size ranges from coarse- to medium-grained sand with small amounts of gravel. This sandy substrate does not have a strong affinity for sorbing or trapping organic or inorganic chemicals. In addition, shifting sand substrates also tend to have relatively small benthic populations with limited biological diversity.

In general, the sediments of Clear Creek itself were free from toxic or hazardous chemicals attributable to NAS Whiting Field activities. No pesticides or PCBs were detected at any of the sampling locations. Traces of the PAH pyrene and the phthalate ester bis(2-ethylhexyl) phthalate (BEHP) were detected at station 5 in Clear Creek. As described in Section 3.2.3, these chemicals were also detected in Big Coldwater Creek, far from NAS Whiting Field. BEHP is a common plasticizer and is one of the most frequently occurring artifacts of sampling and analysis. Its presence at a concentration estimated as 360 μg/kg, which is below the quantitation limit (flagged "J" in Appendix C) and finding it in the samples remote from any manufacturing operation or landfill from which it may be released, indicates that BEHP is a probable artifact of sample handling. Pyrene, a non-carcinogenic PAH, may be attributed to either weathered petroleum products such as kerosene or heavier oils but is also a common byproduct of the combustion of fossil fuels and vegetative material. Appreciable background concentrations of PAH are frequently observed in soil where either frequent wild fires occur or in controlled burning areas. Pyrene was detected in both Clear Creek and Big Coldwater Creek. All pyrene concentrations were estimated because they were below the quantitation limit. The presence of pyrene at 36 μg/kg (estimated) has no public health or environmental significance and may be a component of background conditions. Station 2, located in the floodplain downstream of a major stormwater drainage, was contaminated by VOCs and metals.

Table 3-3
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

Technical Memorandum 4
NAS Whiting Field
Milton, Florida

	Federal Primary Drinking Water MCL[1] (µg/ℓ)	Federal Primary Drinking Water MCLG[1] (µg/ℓ)	Federal AWQC Aquatic Organisms[2] (µg/ℓ)	Federal AWQC Human Health[3] (µg/ℓ)	Federal Secondary Drinking Water MCL[6] (µg/ℓ)	Florida Surface Water Quality Standards Class III, Freshwater (µg/ℓ)[8]	Florida Drinking Water MCL[9] (µg/ℓ)
Volatile organic compounds							
Chloromethane				0(0.19)			
Bromomethane				0(0.19)			
Vinyl chloride	2	0		0(2.0)			1
Chloroethane			IND	IND			
Methylene chloride			11,000[a]	0(0.19)			
Acetone							
Carbon disulfide							
1,1-Dichloroethene	7	7	11,600[a]	0(0.003)			
1,1-Dichloroethane							
cis-1,2-Dichloroethene	[4]70	70	IND	IND			
trans-1,2-Dichloroethene	[4]100	100					
Chloroform	[5]100		1,240[b]	0(0.19)			
1,2-Dichloroethane	5	0	20,000	0(0.94)			3
2-Butanone							
1,1,1-Trichloroethane	200	200	18,000	18,400			200
Carbon tetrachloride	5	0	35,200[a]	0(0.4)			3
Vinyl acetate							
Bromodichloromethane	[5]100		11,000[a]				

See notes at end of table.

Table 3-3 (Continued)
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

Technical Memorandum 4
NAS Whiting Field
Milton, Florida

	Federal Primary Drinking Water MCL[1] (µg/ℓ)	Federal Primary Drinking Water MCLG[1] (µg/ℓ)	Federal AWQC Aquatic Organisms[2] (µg/ℓ)	Federal AWQC Human Health[3] (µg/ℓ)	Federal Secondary Drinking Water MCL[6] (µg/ℓ)	Florida Surface Water Quality Standards Class III, Freshwater (µg/ℓ)[8]	Florida Drinking Water MCL[9] (µg/ℓ)
Volatile organic compounds–continued							
1,2-Dichloropropane	5	0	5,700[b]	IND			
trans-1,3-Dichloropropene			244[b]	87			
Trichloroethene	5	0	21,900[b]	0(2.78)			3
Dibromochloromethane	100		11,000[a]	0(0.19)			
1,1,2-Trichloroethane			9,400[b]	0(0.6)			
Benzene	5	0	5,300[a]	0(0.66)			1
cis-1,3-Dichloropropene			244[b]	87			
2-Chloroethylvinyl ether							
Bromoform	[5]100		11,000[a]				
4-Methyl-2-Pentanone							
2-Hexanone							
Tetrachloroethene	[5]5	0	840[b]	0(0.80)			3
1,1,2,2-Tetrachloroethane			9,320[a]	0(0.17)			
Toluene	[4]1,000	1,000	17,500[a]	18,3000			
Ethyl benzene	[4]700	700	3,200[a]	14,000			
Chlorobenzene	[4]100	100	50[b]	488			
Styrene	[4]100	100					
Xylenes (total)	[4]10,000	10,000					

See notes at end of table.

Table 3-3 (Continued)
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

Technical Memorandum 4
NAS Whiting Field
Milton, Florida

	Federal Primary Drinking Water MCL[1] (µg/ℓ)	Federal Primary Drinking Water MCLG[1] (µg/ℓ)	Federal AWQC Aquatic Organisms[2] (µg/ℓ)	Federal AWQC Human Health[3] (µg/ℓ)	Federal Secondary Drinking Water MCL[6] (µg/ℓ)	Florida Surface Water Quality Standards Class III, Freshwater (µg/ℓ)[8]	Florida Drinking Water MCL[9] (µg/ℓ)
Inorganic compounds							
Aluminum			87[a]	146	50 to 200		
Antimony			1,600[b]				
Arsenic	50	50	190[a]	0.0022		50	50
Asbestos	[6]7 × 10 (f/ℓ)[7]	[6]7 × 10 (f/ℓ)[7]					
Barium	[4]1,000	[4]1,000		1,000			1,000
Beryllium			5.3[b]	0(0.0068)		11	
Cadmium	[4]5	5	1.1[c]	10		5	10
Calcium							
Chromium (total)	[4]100	100				50	50
Chromium VI	50	12	11	50			
Chromium III			210[c]	170,000			
Cobalt							
Copper		1,300	12[c]	1,000[f]	1,000	15	1,000
Cyanide, total						5	
Fluoride	4,000	4,000			2,000		4,000
Iron			1,000	200	3,000	1,000	300
Lead	[4]5	0	3.2[c]			30	50
Magnesium				50			

See notes at end of table.

Table 3-3 (Continued)
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

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Inorganic compounds–continued							
Manganese				50	50		
Mercury	[4]2	2	0.012[e]	0.144		0.2	2
Nitrate (as N)	10,000						10,000
Nitrite (as N)	[4]1,000						10,000
Total nitrate + nitrite	[4]10,000						
Nickel			160[e]	13.4		100	
Potassium							
Selenium	[4]50	50	5[e]	10		25	10
Silver	50		0.12[e]	50	100	70	50
Sodium							
Thallium			40[b]	13			
Vanadium							
Zinc			110[e]	5,000[f]	5,000	30	5,000
Semivolatile organic compounds							
3-Nitroaniline				0.0028			
Acenaphthene			520[b]	70			
2,4-Dinitrophenol							
4-Nitrophenol							

See notes at end of table.

Table 3-3 (Continued)
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

Technical Memorandum 4
NAS Whiting Field
Milton, Florida

	Federal Primary Drinking Water MCL[1] (µg/ℓ)	Federal Primary Drinking Water MCLG[1] (µg/ℓ)	Federal AWQC Aquatic Organisms[2] (µg/ℓ)	Federal AWQC Human Health[3] (µg/ℓ)	Federal Secondary Drinking Water MCL[6] (µg/ℓ)	Florida Surface Water Quality Standards Class III, Freshwater (µg/ℓ)[8]	Florida Drinking Water MCL[9] (µg/ℓ)
Semivolatile organic compounds--continued							
Dibenzofuran							
2,4-Dinitrotoluene				0(0.11)			
Diethylphthalate				434,000		3	
4-Chlorophenyl-phenylether							
Fluorene				0.0028			
4-Nitroaniline							
4,6-Dinitro-2-methylphenol							
N-Nitrosodiphenylamine				0(4.9)			
4-Bromophenyl-phenylether							
Hexachlorobenzene			50[b]	0.021			
Pentachlorophenol	1	0	13[e]	1,010			
Phenanthrene				0.0031			
Anthracene			6.3[d]	0.0031			
Di-n-butylphthalate				34,000		3	
Fluoranthene			3,980[e]	42			
Pyrene				0.0028			
Butylbenzylphthalate						3	
3,3'-Dichlorobenzidine				470			

See notes at end of table.

Table 3-3 (Continued)
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

Technical Memorandum 4
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	Federal Primary Drinking Water MCL[1] (µg/ℓ)	Federal Primary Drinking Water MCLG[1] (µg/ℓ)	Federal AWQC Aquatic Organisms[2] (µg/ℓ)	Federal AWQC Human Health[3] (µg/ℓ)	Federal Secondary Drinking Water MCL[6] (µg/ℓ)	Florida Surface Water Quality Standards Class III, Freshwater (µg/ℓ)[8]	Florida Drinking Water MCL[9] (µg/ℓ)
Semivolatile organic compounds--continued							
Benzo(a)Anthracene				0.0028			
Chrysene				0.0028			
bis(2-Ethylhexyl)phthalate			3[b]			3	
Di-n-octylphthalate						3	
Benzo(b)fluoranthene				0(0.0028)			
Benzo(k)fluoranthene				0(0.0028)			
Benzo(a)pyrene				0(0.0028)			
Indeno(1,2,3-cd)pyrene				0(0.0028)			
Dibenz(a,h)anthracene				0(0.0028)			
Benzo(g,h,i)perylene				0(0.0028)			
Phenol			2,560[b]	3,500		1	
bis(2-Chloroethyl)ether				0(30)			
2-Chlorophenol			2,000[b]	0.1[f]			
1,3-Dichlorobenzene	[4]600	650	763[b]	400			
1,2-Dichlorobenzene	[4]600	600	730[b]	400			
1,4-Dichlorobenzene	[4]600	600	763[b]	400			
Benzyl alcohol							
2-Methylphenol							

See notes at end of table.

Table 3-3 (Continued)
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

Technical Memorandum 4
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	Federal Primary Drinking Water MCL[1] (µg/ℓ)	Federal Primary Drinking Water MCLG[1] (µg/ℓ)	Federal AWQC Aquatic Organisms[2] (µg/ℓ)	Federal AWQC Human Health[3] (µg/ℓ)	Federal Secondary Drinking Water MCL[6] (µg/ℓ)	Florida Surface Water Quality Standards Class III, Freshwater (µg/ℓ)[8]	Florida Drinking Water MCL[9] (µg/ℓ)
Semivolatile organic compounds--continued							
bis(2-Chloroisopropyl)ether				34.7			
4-Methylphenol							
N-Nitroso-di-n-propylamine							
Hexachloroethane			5,850[b]	0(1.9)			
Nitrobenzene			27,000	19,800			
Isophorone			117,500[a]	5,200			
2-Nitrophenol							
2,4-Dimethylphenol			2,120[a]	400[f]			
Benzoic acid							
bis(2-Chloroethoxy)methane							
2,4-Dichlorobenzene			763[b]	3,090			
Naphthalene			920[b]	IND			
4-Chloroaniline							
Hexacholorobutadiene			9.3[b]	0(0.45)			
4-Chloro-3-Methylphenol			30[a]	3,000			
2-Methylnaphthalene				0.0028			
Hexachlorocyclopentadiene			5.2[b]	206			
2,4,6-Trichlorophenol			970[b]	0(1.8)			

See notes at end of table.

Table 3-3 (Continued)
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

Technical Memorandum 4
NAS Whiting Field
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	Federal Primary Drinking Water MCL[1] (µg/ℓ)	Federal Primary Drinking Water MCLG[1] (µg/ℓ)	Federal AWQC Aquatic Organisms[2] (µg/ℓ)	Federal AWQC Human Health[3] (µg/ℓ)	Federal Secondary Drinking Water MCL[6] (µg/ℓ)	Florida Surface Water Quality Standards Class III, Freshwater (µg/ℓ)[8]	Florida Drinking Water MCL[9] (µg/ℓ)
Semivolatile organic compounds--continued							
2,4,5-Trichlorophenol				2,600			
2-Chloronaphthalene			IND	IND			
2-Nitroaniline							
Dimethylphthalate				350,000			
Acenaphthylene				0.0028			
2,6-Dinitrotoluene							
Pesticides and PCB compounds							
Alachlor	[4]2	0					
Atrazine	[4]3	3					
Carbonfuran	[4]40	40					
Dibromochloropropane	[4]0.2	0					
2,4-D	[4]70	70					
Ethylene dibromide	[4]0.05	0					
2,4,5-TP	[4]50	50					
alpha-BHC			100[a]	0.073			
beta-BHC				0.0233			
delta-BHC	0.2	0	IND	IND			
gamma-BHC (lindane)	[4]0.2	0.2		0.0174		0.010	4

See notes at end of table.

Table 3-3 (Continued)
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

Technical Memorandum 4
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	Federal Primary Drinking Water MCL[1] (µg/ℓ)	Federal Primary Drinking Water MCLG[1] (µg/ℓ)	Federal AWQC Aquatic Organisms[2] (µg/ℓ)	Federal AWQC Human Health[3] (µg/ℓ)	Federal Secondary Drinking Water MCL[6] (µg/ℓ)	Florida Surface Water Quality Standards Class III, Freshwater (µg/ℓ)[8]	Florida Drinking Water MCL[9] (µg/ℓ)
Pesticides and PCB compounds--continued							
Heptachlor	0.4[4]	0	0.0038[e]	0.0011		0.001	
Aldrin			3.0[d]			0.003[g]	
Heptachlor epoxide	0.2[4]	0					
Endosulfan I		0.056[d]	138			0.001	
Dieldrin		0.0019[d]	0(1.1)			0.001[g]	
4,4'-DDE		1,050[e]					
Endrin	0.2	0.0023[d]	1	1		0.004	0.2
Endosulfan II						0.001	
4,4'-DDD							
Endrin Aldehyde		0.001[d]					
Endosulfan sulfate							
4,4'-DDT			0.001[d]	0(1.2)		0.001	
Methoxychlor	40	40				0.030	100
Endrin ketone							
Chlordane	[4]2	0	0.0043[d]	0(0.022)		0.004	5
Toxaphene	[4]3	0	0.0002[e]	0(0.026)		0.005	
Aroclor-1016				0(>0.0126)			
Aroclor-1221				0(>0.0126)			

See notes at end of table.

Table 3-3 (Continued)
Federal Water Quality Standards and Criteria,
U.S. Environmental Protection Agency and Florida Surface Water Quality Regulations

Technical Memorandum 4
NAS Whiting Field
Milton, Florida

	Federal Primary Drinking Water MCL[1] (µg/ℓ)	Federal Primary Drinking Water MCLG[1] (µg/ℓ)	Federal AWQC Aquatic Organisms[2] (µg/ℓ)	Federal AWQC Human Health[3] (µg/ℓ)	Federal Secondary Drinking Water MCL[6] (µg/ℓ)	Florida Surface Water Quality Standards Class III, Freshwater (µg/ℓ)[8]	Florida Drinking Water MCL[9] (µg/ℓ)
Pesticides/PCB compounds--continued							
Aroclor-1232				0(>0.0126)			
Aroclor-1242				0(>0.0126)			
Aroclor-1248				0(>0.0126)			
Aroclor-1254				0(>0.0126)			
Aroclor-1260				0(>0.0126)			
PCBs (total)	0.5[4]	0	0.014[e]			0.001	

[1]From 40 Code of Federal Regulations (CFR) 161, revised by 56 Federal Register 3578, January 30, 1991.
[2]Abandoned wastewater treatment plant (AWTP) for the protection of aquatic life - lowest available number is presented (USEPA, May 1986).
[3]Ambient water quality criteria (AWQC) for the protection of human health, from effects through ingestion and contaminated aquatic organisms (USEPA, May 1986).
[4]Effective July 30, 1992.
[5]Maximum contaminant limit (MCL) for total trihalomethanes (sum of concentrations of bromodichloromethane, dibromochloromethane, tribromomethane [bromoform], and trichloromethane) = 100 micrograms per liter (µg/ℓ).
[6]Secondary MCLs from 40 CFR 143, revised by 56 Federal Register 3595, January 30, 1991. Secondary MCLs are not federally enforceable, they are guidelines to control aesthetic qualities of drinking water.
[7]Units for asbestos MCLs are million fibers per liter for fibers longer than 10 micrometers (um).
[8]Chapter 17-302-530 Florida Administrative Code, Recreation and Propagation of Freshwater Fish and Wildlife.
[9]Chapter 17-550 Florida Administrative, Code Recreation and Propagation of Freshwater Fish and Wildlife.
[e]Acute lowest observed effect level (LOEL).
[b]Chronic LOEL.
[c]Hardness based criteria (based on 100 milligrams per liter (mg/ℓ) as calcium carbonate [CaCO3]).
[d]Acute criteria.
[f]Chronic criteria.
[i]Organoleptic, criteria based on odor and taste, not health. No health-based criteria available.
[g]Aldrin plus dieldrin sum.

Notes: MCL = Maximum Contaminant Level.
µg/ℓ = microgram per liter.
MCLG = Maximum Contaminant Level Goal.
AWQC = Ambient Water Quality Criteria.
IND = Insufficient data.
f/ℓ = fibers per liter.
PCB = polychlorinated biphenyls.

Table 3-4
Surface Water Inorganic Chemicals, Clear Creek

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Parameter/Units		Station Number (Downstream Order)							
		3	4	5	6	7	8	9	(2) Flood-plain at 7
Aluminum	µg/ℓ	<200	<200	<200	<200	<200	<200	<200	<200
Antimony	µg/ℓ	<50	<50	<50	<50	<50	<50	<50	<50
Barium	µg/ℓ	16.8B	16.8B	16.5B	16.5B	15.1B	15.1B	15.1B/15.1B	10.5B
Arsenic	µg/ℓ	<10	<10	<10	<10	<10	<10	<10	<10
Beryllium	µg/ℓ	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	µg/ℓ	<5	<5	<5	<5	<5	<5	<5	<5
Calcium	µg/ℓ	777	789	742	759	680B	727	744B/727B	500B
Chromium	µg/ℓ	<10	<10	<10	<10	<10	<10	<10	<10
Cobalt	µg/ℓ	<10	<10	<10	<10	<10	<10	<10	<10
Copper	µg/ℓ	<25	<25	<25	<25	<25	<25	<25	<25
Iron	µg/ℓ	614	626	584	607	568	591	706/737	1,050
Lead	µg/ℓ	<3							
Magnesium	µg/ℓ	707B	707B	681B	673B	612B	619B	631B/604B	569B
Manganese	µg/ℓ	17.3	18.6	16.3	16.3	16.3	16.3	18.6/16.3	11.1B
Mercury	µg/ℓ	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	µg/ℓ	<40	<40	<40	<40	<40	<40	<40	<40
Selenium	µg/ℓ	<5 w	<5 w	<5 w	<5 w	<5 w	<5 w	<5 w	<5 w
Silver	µg/ℓ	<10	<10	<10	<10	<10	<10	<10	<10
Sodium	µg/ℓ	2,130B	2,110B	2,050B	1,990B	1,970B	2,400B	2,500B/2,340B	2,430B
Titanium	µg/ℓ	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium	µg/ℓ	<10	<10	<10	<10	<10	<10	<10	<10
Zinc	µg/ℓ	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide	µg/ℓ	<10	<10	<10	<10	<10	<10	<10	<10
Potassium	µg/ℓ	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
pH standard units		4.5	4.3	4.5	4.5	4.5	4.7	4.4	4.5
Specific conductance µmhos/cm		18	20	20	20	10	20	22	20
Temperature °C		12.5	13	13	12	16	15	14	16

Note: Sample results for Station 9 represent replicate field duplicate.

ug/ℓ = microgram per liter.
B = method blanks contained traces of chemical
umhos/cm = micromhos per centimeter.
°C = degrees Celsius.

As described in Section 2.3, sediment and soil samples contained sporadic instances of relatively high concentrations of acetone. This VOC appears to be transformed from pesticide grade isopropanol after being transferred into non-colored glass or Teflon containers. Because of this factor, the sporadic nature of its presence, and the lack of a major contaminant source to account for the findings, acetone has been interpreted as an artifact of the decontamination procedure. Acetone was detected at sampling stations 1, 3, 8, and 9 at concentrations ranging from 140 to 2,600 μg/kg. Methylene chloride was detected in sediments at Station 5 at 20 μg/kg. (This is estimated because it is below the quantitation limit.) This single finding is probably attributable to sample handling because of the reasons previously stated relative to its common presence as an artifact. It was not, however, detected in the associated method, rinsate, or trip blanks. Its presence or absence at Station 5 should be confirmed by a second sampling. Benzene was detected at Station 7 at 25 μg/kg. Station 7 is located immediately downstream of the location where discharge of a major storm drainage enters Clear Creek. In addition, sediments at Station 2, the floodplain station located in this stormwater flow path, were contaminated by the halogenated VOCs, cis-1,2-dichloroethylene (DCE), trans-1,2-DCE, and 1,1-dichloroethane. Metals at concentrations greater than those found in the remaining sediments were also observed at Station 2. Cis-1,2-DCE was detected at 290 μg/kg, trans-1,2-DCE at 83 μg/kg, and 1,1-dichloroethane at 24 μg/kg. The latter concentration is below the quantitation limit and is therefore estimated. No aromatics were detected at Station 2. Although the data are not totally consistent, the pattern indicates that sediment contamination exists in the floodplain at this location and it is possible that migration into the creek is ongoing. Station 2 is located in the part of the floodplain that receives discharge from Sites 15 and 16. As described in Technical Memorandum No. 5, groundwater at Sites 15 and 16 is contaminated by aromatic VOCs and by chlorinated solvent transformation products.

Sediment metals concentrations were not in excess of uncontaminated sandy soils with the exception of Station 2. Soils background metal concentrations taken from the published literature are presented in Technical Memorandum No. 3. At Station 2, concentrations of seven metals were substantially greater than either expected soils background or the remaining Clear Creek samples. The sediments of the floodplain are highly organic in gross constituency and would be expected to trap metals as well as organic chemicals to a much greater degree than sands. These chemicals are listed below along with background ranges in organic soils.

Metal	Concentration at Station 2 (μg/kg)	Expected Background (μg/kg)	
		Mean	Range
Chromium	36.9	7	1.8 to 10
Copper	37.5	15	1 to 100
Lead	327	24	10 to 50
Manganese	24	260	7 to 1,500
Mercury	0.15	0.28	0.01 to 4.60
Vanadium	55.7	--	19 to 22
Zinc	58	34	25 to 108

The source of expected background concentrations is Kabata-Pendias and Pendias (1984). With the exception of manganese, the metals observed may be associated with military industrial and maintenance operations.

3.2.2 **Big Coldwater Creek** Inorganic chemical results and field measurements in Big Coldwater Creek and the drainage ditch leading from NAS Whiting Field are tabulated in Table 3-5. No evidence of organic or inorganic toxic or hazardous chemicals was detected in the surface waters of this system. Big Coldwater Creek also exhibits similar water quality characteristics to Clear Creek as described previously. Big Coldwater Creek is low in mineral content (specific conductance ≤20 μmhos/cm) and is slightly acidic.

No significant sediment contamination was observed in Big Coldwater Creek. The presence of traces of BEHP and pyrene was discussed in reference to Clear Creek in section 3.2.1. Interpretation of these chemicals as artifacts and naturally present, respectively, follows similar rationale to that presented in Section 3.2.1. No inorganic chemicals in excess of expected backgrounds were detected nor were pesticides or PCBs. Toluene was detected at an estimated 24 μg/kg at Station 10. This location is upstream of potential impact from Santa Rosa County Route 197 or the drainage ditch. Toluene at the concentrations estimated is below the reported quantitation limit. Toluene is a common laboratory solvent as well as a constituent of motor fuels and is interpreted as being an artifact in Station 10 sediment due to the undeveloped nature of the watershed upstream (Blackwater River State Forest). Based on its upstream location, toluene, if truly present, is not attributable to NAS Whiting Field. Big Coldwater Creek is navigable by small motor-powered boats; however, no immediate explanation for its presence is apparent.

3.3 **SURFACE WATER AND SEDIMENT ASSESSMENT**. Surface water and sediment sampling locations in Clear Creek and Big Coldwater Creek appear to be located appropriately to detect any contaminant migration to receiving waters that may be attributable to NAS Whiting Field. Both streams may be characterized as slightly acidic waters with extremely low concentrations of cations and anions. This is typical of streams in a sandy undeveloped watershed.

No significant environmental contamination was detected migrating in Clear Creek or Big Coldwater Creek surface waters. No environmental contamination was detected in the sediments of either stream.

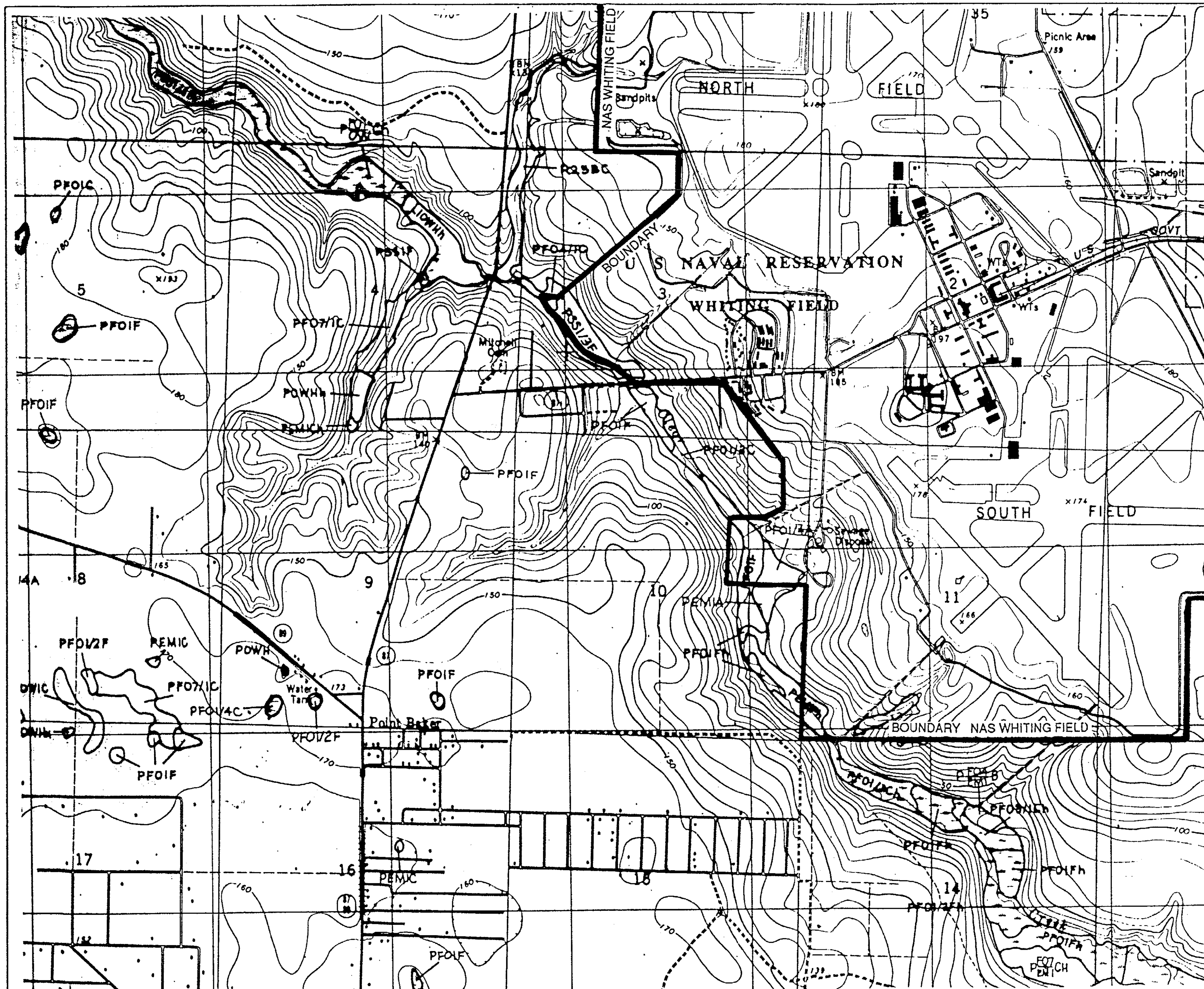
The sediments of the Clear Creek Floodplain at Station 2, however, contain halogenated VOCs, and also metals concentrations in excess of background. The VOCs, and likely some if not all of the metals (especially lead), are likely due to release of chemicals attributable to NAS Whiting Field. The halogenated VOCs observed, cis-1,2-DCE, trans-1,2-DCE, and 1,1-dichloroethane are frequently observed as transformation products or solvents in military and industrial use. Detection of these chemicals, but not tri-chlorinated or tetra-chlorinated solvents, suggests that the release occurred fairly long ago. Further exploration to evaluate the nature and extent of contamination in the floodplain and its potential to cause migration in Clear Creek is required. Such data are necessary also to estimate risks to human or environmental receptors. The floodplain of Clear Creek adjacent to NAS Whiting Field consists of marsh, shrub swamp, and swamp forest as shown in Figure 3-5.

Table 3-5
Surface Water Inorganic Chemicals, Big Coldwater Creek

Technical Memorandum No. 4
NAS Whiting Field
Milton, Florida

Parameter/Units		Station Number (Downstream Order)			
		Stormwater Ditch (1)	10	11	12
Aluminum	µg/ℓ	<200	<200	<200	<200
Antimony	µg/ℓ	<50	<50	<50	<50
Barium	µg/ℓ	14.1B	31.8B	31.8B	31.5B/31.5B
Arsenic	µg/ℓ	<10	<10	<10	<10
Beryllium	µg/ℓ	<5	<5	<5	<5
Cadmium	µg/ℓ	<5	<5	<5	<5
Calcium	µg/ℓ	918B	1,180B	1,170B	1,180B/1,180B
Chromium	µg/ℓ	<10	<10	<10	<10
Cobalt	µg/ℓ	<10	<10	<10	<10
Copper	µg/ℓ	<25	<25	<25	<25
Iron	µg/ℓ	131	214	209	230/219
Lead	µg/ℓ	<3	<3	<3	<3
Magnesium	µg/ℓ	569B	<3	<3	<3/<3
Manganese	µg/ℓ	11.1B	15.1	14.0B	14.0B/14.0B
Mercury	µg/ℓ	<0.2	<0.2	<0.2	<0.2
Nickel	µg/ℓ	<40	<40	<40	<40
Selenium	µg/ℓ	<5	<5	<5	<5
Silver	µg/ℓ	<10	<10	<10	<10
Sodium	µg/ℓ	2,130B	1,450B	1,450B	1960B/1990B
Titanium	µg/ℓ	<10	<10	<10	<10
Vanadium	µg/ℓ	<10	<10	<10	<10
Zinc	µg/ℓ	<20	<20	<20	<20
Cyanide	µg/ℓ	<10	<10	<10	<10
Potassium	µg/ℓ	<1,000	<1,000	<1,000	<1,000
pH standard units		--	5.2	5.1	5.2
Specific conductance (µmhos/cm)		18	20	18	18
Temperature °C		15	12.5	12.5	12.5

Note: ug/ℓ = microgram per liter.
B = method blanks contained traces of the chemical.
umhos/cm = micromhos per centimeter.
°C = degrees Celsius.



DEFINITIONS

P - Palustrine
- SS — Scrub/Shrub
  - 1 - Broad-Leaved Deciduous
- OW — Open Water
- EM — Emergent
  - 1 - persistent
  - h - Diked/Impounded
- FO — Forested
  - 1 - Persistent
  - 3 - Broad Leaved Evergreen
  - 4 - Needle Leaved Evergreen
  - 7 - Evergreen
    - C - Seasonal
    - h - Diked/Impounded

R - Riverine
- 2 — Lower Perennial
  - 3 - Mud
    - B - Saturated
    - C - Seasonal

L - Lacustrine
- 1 — Limnetic
  - OW - Open Water
    - H - Permanent
    - h - Diked/Impounded

Source: National Wetlands Inventory Map
United States Department of the Interior
Milton North, Florida, 11/79

FIGURE 3-5

WETLAND TYPES IN THE FLOODPLAIN OF CLEAR CREEK

RI/FS PROGRAM

NAS WHITING FIELD
MILTON, FLORIDA

00227I062

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APPENDIX A

SURFACE WATER AND SEDIMENT RECONNAISSANCE REPORT, NOVEMBER 29 AND 30, 1990

Naval Air Station - Whiting Field

November 29, 1990
Surface Water Sediment and Soil Sampling Reconnaissance
By M.A. Keirn

Station # 9

8:37 a.m. Central Standard Time.

Proceeding to Surface Water and Sediment Station # 9 downstream Most Station on Clear Creek.

Clear Creek at station location # 9, physical description of the stream, sample location and flow measurement cross section. At the cross section Clear Creek is 26 feet wide maximum depth 2.3 feet approximately a rectangular channel cross section. Flow appears to be approximately 1/2 to 1 foot per second at this location. Stream bed is a fairly solid sand bottom with little or no vegetation or deposition of organic material along the stream bottom. The stream banks are entrenched in sand. Along the edge of the stream is brush shrubs and emergent grassy vegetation. At Station # 9 the stream makes a slight bend to the west where the storm drain enters. Where the storm drains enters there is a scour area where water depth may be over 5 feet. At that location numerous small fish fry or minnows in the scour pool were observed.

Sampling location will be at mid cross section approximately 50 feet upstream of the confluence of the storm drain. Due to the channel bending at that location, the cross section will be taken approximately 50 feet upstream of the sample location or approximately 100 feet upstream of the confluence of the storm drain. This will be approximately 20 feet beyond a pair of fallen trees which cross the stream.

Photographs were taken (1) downstream and (2) upstream from the sample location. Additional photographs (3) and (4) were shot of the confluence of the stream with the storm drain and upstream from the cross section location respectively. The HNu was calibrated and no evidence of organic vapors were present at this sampling location, therefore no further requirement for measuring organic vapor during sampling is necessary.

Station # 7

11:40 a.m. Central Time.

This station is located just downstream of the confluence of a storm drain which drains the runway area to the west of the sewage treatment plant at the approximate locations shown in the sampling analysis plan.

This location has extremely difficult access at the end of the trail to the storm drainage discharge structure. Beyond that there is approximately 150 meters of

marsh and floodplain forest. Clear Creek has a braided configuration. A channel of the stream flows through the marsh and meets with the storm drain channel upstream of their confluence with the main flow of Clear Creek. The marsh and much of the left or southeasterly bank of the stream is marshy/swampy with numerous patches of very soft muck, silt, or quicksand. A trail was cut to the sample location and flagged. It is necessary to follow the trail very closely and stay as near as possible to the hard sand which has been pushed up by the force of water from the storm drain.

In the braided channel several schools of minnows were observed. Several schools were inhabiting the main channel of the creek. The creek at Location # 7 turns from a flow to the southeast to a flow to the southwest and makes approximately a 90 degree bend. The sample location is just downstream of the bend and the confluence with the storm drain. The channel is approximately V-shaped, 23 feet across. Three measurements were taken at the left bank, right bank, and mid stream facing upstream. The left bank - 0.7 depth; mid stream - 11 feet from the left bank - 1.6 feet; at the right bank (the most easterly or southern bank) - 4 feet water depth. Most of the flow is on that side of the stream. Channel bottom is a shifting but fairly firm sand substraight with very entrenched banks. Photograph (5) was taken facing downstream from the sample location.

A rusted out barrel was observed in the flood plain approximately 100 feet from the creek. In one instance when the observer went into some soft silt there appeared to be a hint of a petroleum type odor as well as sulfur.

Station # 8

2:50 p.m. Central Time.

This station is located just at the confluence of the location where the old "A" ditch drainage meets the Clear Creek. The old "A" ditch drainage flattens out into a wood-swamp, flood-plain forest type situation where overland flow from the Installation boundary fence migrates to Clear Creek.

At this location, the stream is moderately clear, same type of bottom as before (sandy material). Flow is relatively rapid (1.5 to 2 fps). The stream has defined banks. At a location approximately 50 feet upstream of the sampling point a cross section was measured 28 feet wide. It has a sand bar in the middle of it. At the west bank (looking upstream the left bank) the water depth was 2.3 feet; at 20 feet from the east bank, 2.3 feet; current about 1 1/2 foot per second. The sand bar extends from 15 feet to 7 feet. The depth of the water there is approximately 0.2 feet. From 7 feet to the right, or east bank, the water depth averages approximately 1.5 feet. The flow is about 1 foot per second on that side.

Sample location is going to be in a depositional area just downstream of the sand bar. The HNu reading was negative here - no evidence of organic vapors. Shot (6) was taken from the sampling point looking upstream.

Lost pen, therefore no hard copy of the notes from this site.

Site Location # 6

4:30 p.m. Central Time.

This station is located at the bridge on Route 87A which is the main entrance to the installation. The best sampling point appears to be slightly upstream of the bridge due to confluence of a storm drain which is on the north side of 87A and exits diagonally into the floodplain of the stream.

Photographs (7) and (8) are looking upstream and downstream respectively from the bridge. Station # 6 has a wide and marshy, swampy floodplain upstream - can't access to the upstream side of the road, at least not by going in through the woods. Checked on HNu reading again, at this location no detectable organic vapors. Tip recalibrated reading was 55 as opposed to a calibration of 62 this morning, therefore calibration no problem with the tip. Put away for the night.

Sampling location will be approximately 100 feet up from the bridge. Can be accessed by going down the bridge embankment and walking upstream in the moderately deep water. At this location because the stream is relatively constricted, the water flow appears to be more than 2 feet per second and with the additional energy the sand bottom has veins of coarse sand and small gravel pebbles lining the bottom. At the cross section the stream appears to be somewhat wedge-shaped as shown in the notes. It is 15 feet across, maximum depth - 3.7 feet at the east bank, tapering back to 1.5 feet at the west. The majority of the flow is constricted in the eastern most 5 feet of the stream. At this location a lot of storm drainage comes in from both the east, and discharges onto the floodplain which is strewn with numerous waste articles (styrofoam and bits of other roadway trash).

November 30, 1990
Observed and Reconnaissanced by Ted Campbell (South Div.)
and Michael Keirn (ABB-ES)

Sample Location # 3

Sample location is approximately 75 feet downstream of the bridge on Route 87. Clear Creek at this location is flowing rapidly, perhaps as much as 3 feet per second in a 15 foot channel. The bottom type is sand with small bits of gravel and filamentous algae and littoral vegetation. Water is slightly turbid. A rough cross section was measured and the results are in the field notebook. The location is immediately upstream of a large sandy delta deposit of washed in sand, which extends north from the north bank of the stream and it looks like it is approximately 100 - 200 feet wide. The worth extent of this sand deposit is unknown (later discovered to extend up to the north boundary of NAS Whiting Field). This will be a location for both sampling and the upstream gaging.

Station Location # 4

9:00 a.m. Central Time.

This station is located in a shrub swamp, approximately 500 meters downstream from Route 87. The cross section here is relatively rectangular. Same bottom type as Station # 4 with fairly high-energy flow - 2 feet per second in the main

channel which leaves small gravel and sand bottom. Cross section was taken and in the field notes, and Photograph (12) was taken looking upstream.

At the location where the intermittent drainage from the north end of the runways joins Clear Creek, there is no real evidence of a drainage channel. It is just a swale with the scrubby liveoak and bay shrubs and large and apparent rapid deposition of sand. Station # 2 to be placed in the intermittent channel, therefore, will have to be relocated.

Access to Station # 4 will be by proceeding downstream, wading the stream which is only 1 - 2 feet deep from Station # 3.

Sampling Location # 11

11:00 a.m. Central Time.

On Big Coldwater Creek - 100 meters upstream of the Route 191 bridge and USGS gaging station. This location is also approximately 100 feet downstream of the confluence between the easterly storm drainage discharge ditch and Big Coldwater Creek.

The river at this location is approximately 130 feet wide. Rough measurements were taken across the stream. It is a shifting sand bottom stream of 1 - 2 foot depth, flowing at between 1/2 - 1 foot per second. This sample location is at a canoe launching point for recreational canoes. Creek water quality appears to be clear, slightly colored. A few minnows were noted in the edges. It is entrenched in the banks and is surrounded by a fringe of pine trees and unknown vegetation behind it.

Station # 1

Station # 1 programmed for Clear Creek upstream of Route 8 has been moved and will be collected in the drainage ditch approximately 150 feet upstream of its confluence with Big Coldwater Creek.

At this location the drainage ditch is in a ditch approximately 50 feet wide and 8 feet deep (3 days after a light rain) is approximately 2 inches deep and 6 feet wide in the center of the channel, moving at about 1 foot per second. The channel is sand and gravel, with bits of detritus in it. At this location the sediment sample, instead of being the surficial sediments, will be collected from the depth of approximately 1 - 1 1/2 feet. This is due to the very active depositional nature of this and in order to get a sample of what might of been deposited more than 5 years ago.

Station # 10

Station # 10 is located at approximately 1,000 feet upstream of the bridge across Route 191. At that point the river is approximately 110 feet wide. It is in a bend to the left as you move downstream, therefore the north bank is a depositional area and sandbar. The right bank is eroding. Water level is fairly shallow across to approximately 80 feet and then gets deeper with a very deep zone to the immediately south bank. This location we will sample surface water sediment and provide a cross-sectional measurement and flow measurement.

Station # 12

12:15 p.m. Central Time.

Approximately 1,000 feet downstream of Route 191 at a location where a sand road comes down from the highway.

The river at this point is approximately 130 feet wide, showing at a gentle bend to the right as moves downstream, meaning that the north bank is eroding the south bank depositing. It is a shallow sand and gravel flat for most of its width with a sharp, deep zone which looks like over 6 feet, immediately adjacent to the north bank. The rest of the river very shallow. Rough cross section measured. Bottom type here is, as for the other stations in Big Coldwater Creek, shifting fairly soft sands to small pieces of gravel in the harder packed areas.

Weather today, on November 30, is approximately 60 degrees F. Clear, very light wind.

Photograph (17) is taken at Station location # 12 looking down river.

December 4, 1990

The Locating of Soil Sample in Landfills # 15 and # 16
Located and Staged by M. Keirn (ABB-ES), Ted Campbell (South Div.),
and Danny Locklear (NAS Whiting Public Works Dept.)

The three of us went to the two landfill areas where Mr. Locklear pointed out the areas which had been in the actual fill during operations. He had been on station at that time.

Three sample locations were staged in Landfill # 16. Three samples were staked in the woods, in the center part of the fill, one of the samples being located in a shallow runoff ditch, which was located at the south end of that site.

At sample site # 15 which is located along the hill in the area where former Boy Scout camping activities occurred. The samples were located to be within the boundary of the former fill, and also in areas which appeared to have actually been used for camping.

End of notes for this activity.

December 3, 1990

Site # 5

10:00 a.m. Central Time.

Site is located just downstream of the confluence of a storm drainage channel from the north field runways as shown in the woods plan. At this location a wide flood plain of marsh and swamp makes access extremely difficult. Photograph # 18 taken looking upstream. Stream is 17 feet wide at this location. Flow is approximately 2 feet per second.

At 5 feet from the east bank, depth is 7.2 feet; at 10 feet - 3.6 feet; at 15 feet - 2.2 feet.

December 4, 1990
General Observation relative to the Surface Water and Sediment Samples Program

Yesterday, 12/03/90, a significant, but not major rainfall event occurred. An all day rain event occurred consisting of light rain with brief periods of heavy rainfall which caused a flow in the storm drainage for short periods up to an inch deep. It was an event which will render the sampling of surface water appropriate for documenting contamination in the surface waters. Prior to the rainfall event, there was a period of dry weather and the estimated flow in Coldwater Creek has been significantly below the December average according to the USGS records and our rough estimates. Therefore, with that kind of flow conditions, one would expect to, find contaminants migrating in groundwater to show up here in the streams due to the fact the streams are largely made up of the groundwater base flow. Secondly, the small rain event would mobilize contaminants in runoff. However the rainfall event was not sufficient to have diluted contaminants either in the overland flow or the groundwater discharge to the extent that they would not be detachable. Therefore, samplings of the surface water and sediments during the period December 5th, 6th, and 7th, should provide a very appropriate picture, if any contamination is present.

Relocation of Sample Site # 2

During the reconnaissance of the intermittent stream, which runs north and south parallel to the west installation boundary, between the boundary and Route 87, it was determined that the area is basically unsamplable.

At this location, there used to be sand pits, and the intermittent drainage goes through the sand pits. There are 10 foot to 30 foot vertical cut banks which have large amounts of sandy-clay, clay, and sand deposits, which are eroding into the channel of the former stream. This results in a very thick, washed-sand delta. It appears that during extreme rainfall events, water flows in this channel for a short distance.

The surface drainage from Sites # 1, # 17 and # 18 or groundwater discharge from the Sites # 1, # 17, and # 18, appear to get into this channel. However due to the massive quantities of eroding sand, it would be impossible to determine either the depth site contaminant would enter or be lodged, or would it be likely that would be detected since they would have been diluted by massive quantities of clean sediment. Therefore Sample Site # 2 has been moved to a different location.

The approach for looking for contaminant migration from these Sites # 1, # 17, and # 18, would be to work from the source outward, in the surface soils. There is some evidence at the two crash training pits of overland migration of oil contaminated water towards small culverts, which go under the road and off installation. These would be sampled during Phase II.

Secondly, if groundwater contamination is documented at Sites # 1, # 17, and # 18, it may be necessary to put downgradient wells near the base boundary in the flow path to the intermittent stream, or put in temporary wells to sample the

stream banks where groundwater discharge would enter the flow.

During the notes on Station # 7, the observation was made, that there was a barrel found in the wetland, and that the location, the sediments appear to have a much more sulfurus odor than in the general part of the wetlands. Possibly, there was a hint of petroleum odor. Therefore, Surface Water Location # 2 will be relocated in the vicinity of this old barrel. We will collect sufficial sediments of the wetlands as well as any standing water that can be collected from that area.

APPENDIX B

SUMMARIZED AND QUALIFIED SURFACE WATER CHEMICAL ANALYSIS RESULTS

Sample Delivery Group: T0005

QC Level D

Sample No.:	09SWA			12SWA			09SWA			VBLK-W2			VBLK-W3		
Locator:	STA09SW01A			STA12SW01A			STA09SW01A			VBLK-W2			VBLK-W3		
Date Sampled:	12-5-90			12-7-90			12-5-90			12-11-90			12-12-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Chloromethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromomethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Vinyl Chloride	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Chloroethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Methylene Chloride	5.0	U	µg/l	5.0	U	µg/l	.7	J	µg/l	5.0	U	µg/l	5.0	U	µg/l
Acetone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Carbon Disulfide	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chloroform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethane	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
2-Butanone	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l
1,1,1-Trichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Carbon Tetrachloride	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Vinyl Acetate	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l
Bromodichloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloropropane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
cis-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Trichloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Dibromochloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,12-Trichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Benzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level D

Sample No.:	09SWA			12SWA			09SWA			VBLK-W2			VBLK-W3		
Locator:	STA9SW01A			STA12SW01A			STA9SW01A			VBLK-W2			VBLK-W3		
Date Sampled:	12-5-90			12-7-90			12-5-90			12-11-90			12-12-90		
Volatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
trans-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Bromoform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
4-Methyl-2-Pentanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Hexanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Tetrachloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1,2,2-Tetrachloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Toluene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chlorobenzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Ethylbenzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Styrene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Xylene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level D

Sample No.:	VBLK-W2			VBLK-W3			09SWAMS			09SWAMSD			SDSWRB01			SDSWRB02			SDSWRB03		
Locator:	VBLK-W2			VBLK-W3			STA9SW01MS			STA9SW01MSD			SWSDRB01			SWSDRB02			SWSDRB03		
Date Sampled:	12-11-90			12-12-90			12-06-90			12-06-90			12-6-90			12-6-90			12-6-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Chloromethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromomethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Vinyl Chloride	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Chloroethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Methylene Chloride	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Acetone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Carbon Disulfide	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethene	5.0	U	µg/l	5.0	U	µg/l							5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chloroform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethane	5.0	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
2-Butanone	10	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,1,1-Trichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Carbon Tetrachloride	5.0	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Vinyl Acetate	10	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromodichloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloropropane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
cis-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Trichloroethene	5.0	U	µg/l	5.0	U	µg/l							5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Dibromochloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,12-Trichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Benzene	5.0	U	µg/l	5.0	U	µg/l							5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level D

Sample No.:	VBLK-W2			VBLK-W3			09SWAMS			09SWAMSD			SDSWRB01			SDSWRB02			SDSWRB03		
Locator:	VBLK-W2			VBLK-W3			STA09SW01MS			STA09SW01MSD			SWSDRB01			SWSDRB02			SWSDRB03		
Date Sampled:	12-11-90			12-12-90			12-06-90			12-06-90			12-6-90			12-6-90			12-6-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
trans-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Bromoform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
4-Methyl-2-Pentanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Hexanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Tetrachloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1,2,2-Tetrachloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Toluene	5.0	U	µg/l	5.0	U	µg/l							5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chlorobenzene	5.0	U	µg/l	5.0	U	µg/l							5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Ethylbenzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Styrene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Xylene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level D

Sample No.:	SDWTB03			SDWTB04			SDWTB05			SDWTB06			SDWTB07			SDWTB08			SDWTB09		
Locator:	SDSWTB01 #1			SDSWTB01 #2			SDSWTB01 #3			SWSDTB01 #1			SWSDTB01 #2			SWSDTB01 #1			SDSWTB01 #2		
Date Sampled:	12-5-90			12-5-90			12-5-90			12-7-90			12-7-90			12-7-90			12-7-90		
Volatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
Chloromethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromomethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Vinyl Chloride	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Chloroethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Methylene Chlorice	5.0	U	µg/l	5.0	U	µg/l	.7	J	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Acetone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Carbon Disulfide	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chloroform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethane	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
2-Butanone	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,1,1-Trichloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Carbon Tetrachloride	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Vinyl Acetate	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromodichloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloropropane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
cis-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Trichloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Dibromochloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,12-Trichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Benzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level D

Sample No.:	SDWTB03			SDWTB04			SDWTB05			SDWTB06			SDWTB07			SDWTB08			SDWTB09		
Locator:	SDSWTB01 #1			SDSWTB01 #2			SDSWTB01 #3			SWSDTB01 #1			SWSDTB01 #2			SWSDTB01 #1			SDSWTB01 #2		
Date Sampled:	12-5-90			12-5-90			12-5-90			12-7-90			12-7-90			12-7-90			12-7-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
trans-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Bromoform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
4-Methyl-2-Pentanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Hexanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Tetrachloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1,2,2-Tetrachloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Toluene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chlorobenzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Ethylbenzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Styrene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Xylene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST01SW			ST02SW			ST03SW			ST04SW			ST05SW			ST06SW			ST07SW		
Locator:	STA1SW01			STA2SW01			STA3SW01			STA4SW01			STA5SW01			STA6SW01			STA7SW01		
Date Sampled:	12-6-90			12-5-90			12-5-90			12-5-90			12-6-90			12-5-90			12-5-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Chloromethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromomethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Vinyl Chloride	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Chloroethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Methylene Chloride	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Acetone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Carbon Disulfide	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chloroform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethane	5.0	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
2-Butanone	10	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,1,1-Trichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Carbon Tetrachloride	5.0	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Vinyl Acetate	10	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromodichloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloropropane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
cis-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Trichloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Dibromochloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,12-Trichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Benzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST01SW			ST02SW			ST03SW			ST04SW			ST05SW			ST06SW			ST07SW		
Locator:	STA1SW01			STA2SW01			STA3SW01			STA4SW01			STA5SW01			STA6SW01			STA7SW01		
Date Sampled:	12-6-90			12-5-90			12-5-90			12-5-90			12-6-90			12-5-90			12-5-90		
Volatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
trans-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Bromoform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
4-Methyl-2-Pentanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Hexanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Tetrachloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1,2,2-Tetrachloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Toluene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chlorobenzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Ethylbenzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Styrene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Xylene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST08SW			ST09SW			ST10SW			ST11SW			ST12SW			VBLK-W1			VBLK-W2		
Locator:	STA8SW01			STA9SW01			STA10SW01			STA11SW01			STA12SW01			VBLKW1			VBLKW2		
Date Sampled:	12-5-90			12-5-90			12-7-90			12-7-90			12-7-90			12-10-90			12-11-90		
Volatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
Chloromethane	10	UJ	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromomethane	10	UJ	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Vinyl Chloride	10	UJ	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Chloroethane	10	UJ	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Methylene Chloride	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Acetone	10	UJ	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Carbon Disulfide	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethane	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethene (total)	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chloroform	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethane	5.0	UJ	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
2-Butanone	10	UJ	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,1,1-Trichloroethane	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Carbon Tetrachloride	5.0	UJ	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Vinyl Acetate	10	UJ	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromodichloromethane	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloropropane	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
cis-1,3-Dichloropropene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Trichloroethene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Dibromochloromethane	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,12-Trichloroethane	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Benzene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST08SW			ST09SW			ST10SW			ST11SW			ST12SW			VBLK-W1			VBLK-W2		
Locator:	STA8SW01			STA9SW01			STA10SW01			STA11SW01			STA12SW01			VBLKW1			VBLKW2		
Date Sampled:	12-5-90			12-5-90			12-7-90			12-7-90			12-7-90			12-10-90			12-11-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
trans-1,3-Dichloropropene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Bromoform	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
4-Methyl-2-Pentanone	10	UJ	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Hexanone	10	UJ	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Tetrachloroethene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1,2,2-Tetrachloroethane	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Toluene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chlorobenzene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Ethylbenzene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Styrene	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Xylene (total)	5.0	UJ	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level D

Sample No.:	VBLK-03			VBLK-W4			ST09SWMS			ST09SWMSD		
Locator:	VBLKW3			VBLKW4			ST8SW01MS			ST09SWM01MSD		
Date Sampled:	12-12-90			12-14-90			12-5-90			12-5-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Chloromethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Bromomethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Vinyl Chloride	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Chloroethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Methylene Chloride	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Acetone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Carbon Disulfide	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1-Dichloroethene	5.0	U	µg/l	5.0	U	µg/l						
1,1-Dichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Chloroform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloroethane	5.0	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
2-Butanone	10	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l
1,1,1-Trichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Carbon Tetrachloride	5.0	U	µg/l	10	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Vinyl Acetate	10	U	µg/l	5.0	U	µg/l	10	U	µg/l	10	U	µg/l
Bromodichloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,2-Dichloropropane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
cis-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Trichloroethene	5.0	U	µg/l	5.0	U	µg/l						
Dibromochloromethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,12-Trichloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Benzene	5.0	U	µg/l	5.0	U	µg/l						

Sample Delivery Group: T0005

QC Level D

Sample No.:	VBLK-03			VBLK-W4			ST09SWMS			ST09SWMSD		
Locator:	VBLKW3			VBLKW4			ST09SW01MS			ST09SWM01MSD		
Date Sampled:	12-12-90			12-14-90			12-5-90			12-5-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
trans-1,3-Dichloropropene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Bromoform	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
4-Methyl-2-Pentanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Hexanone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Tetrachloroethene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
1,1,2,2-Tetrachloroethane	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Toluene	5.0	U	µg/l	5.0	U	µg/l						
Chlorobenzene	5.0	U	µg/l	5.0	U	µg/l						
Ethylbenzene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Styrene	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l
Xylene (total)	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l	5.0	U	µg/l

Sample Delivery Group: T0005

QC Level D

Sample No.:	09SWA			12SWA			SBLK01			09SWAMS		
Locator:	STA9SW01A			STA12SW01A			SBLK01			STA9SW01MS		
Date Sampled:	12-5-90			12-5-90			2-11-90			12-5-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Phenol	10	U	µg/l	10	U	µg/l	10	U	µg/l			
bis(2-Chloroethyl)ether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Chlorophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l			
1,3-Dichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,4-Dichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l			
Benzyl alcohol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,2-Dichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Methylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
bis(2-chloroisopropyl)ether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Methylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
N-Nitroso-Di-n-propylamine	10	U	µg/l	10	U	µg/l	10	U	µg/l			
Hexachloroethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Nitrobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Isophorone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Nitrophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dimethylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzoic acid	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
bis(2-Chloroethoxy)methane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dichlorophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,2,4-Trichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l			
Naphthalene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Chloroaniline	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Hexachlorobutadiene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005

QC Level 0

Sample No.:	09SWA			12SWA			SBLK01			09SWAMS		
Locator:	STA9SW01A			STA12SW01A			SBLK01			STA9SW01MS		
Date Sampled:	12-5-90			12-5-90			2-11-90			12-5-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
4-Chloro-3-methylphenol	10	U	µg/L	10	U	µg/L	10	U	µg/L			
2-Methylnaphthalene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Hexachlorocyclopentadiene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2,4,6-Trichlorophenol	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2,4,6-Trichlorophenol	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
2-Chloronaphthalene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2-Nitroaniline	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
Dimethylphthalate	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Acenaphthylene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2,6-Dinitrotoluene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
3-Nitroaniline	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
Acenaphthene	10	U	µg/L	10	U	µg/L	10	U	µg/L			
2,4-Dinitrophenol	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
4-Nitrophenol	50	U	µg/L	50	U	µg/L	50	U	µg/L			
Dibenzofuran	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2,4-Dinitrotoluene	10	U	µg/L	10	U	µg/L	10	U	µg/L			
Diethylphthalate	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
4-Chlorophenyl-phenylether	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Fluorene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
4-Nitroaniline	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
4,6-Dinitro-2-methylphenol	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
N-Nitrosodiphenylamine (1)	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
4-Bromophenyl-phenylether	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L

Sample Delivery Group: T0005

QC Level D

Sample No.:	09SWA			12SWA			SBLK01			09SWAMS		
Locator:	STA9SW01A			STA12SW01A			SBLK01			STA9SW01MS		
Date Sampled:	12-5-90			12-5-90			2-11-90			12-5-90		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
Hexachlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Pentachlorophenol	50	U	µg/l	50	U	µg/l	50	U	µg/l			
Phenanthrene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	
Anthracene	10	U	µg/l	10	U	µg/l	10	U	µg/l			
Di-n-butylphthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	83		µg/l
Fluoranthene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Pyrene	10	U	µg/l	10	U	µg/l	10	U	µg/l			
Butylbenzylphthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
3,3'-Dichlorobenzidine	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l
Benzo(a)anthracene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Chrysene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
bis(2-Ethylhexyl)phthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Di-n-octylphthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(b)fluoranthene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(k)fluoranthene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(a)pyrene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Indeno(1,2,3-cd)pyrene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Dibenz(a,h)anthracene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(g,h,i)perylene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

* = Di-N-butylphthelate and bis (2-ethylhexyl)phthalate - are suspected to be laboratory contemiannts and are not associated with site characteristics.

Sample Delivery Group: T0005

QC Level C/D

Sample No.:	SBLK01			09SWAMSD			SDSWRB01			SDSWRB02			SDSWRB03			ST01SW			ST02SW		
Locator:	SBLK01			STA9SW01MSD			SWSDRB01			SWSDRB01			SWSDRB01			STA1SW01			STA2SW01		
Date Sampled:	12-11-90			12-5-90			12-6-90			12-7-90			12-6-90			12-6-90			12-5-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Phenol	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
bis(2-Chloroethyl)ether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Chlorophenol	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,3-Dichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,4-Dichlorobenzene	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzyl alcohol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,2-Dichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Methylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
bis(2-chloroisopropyl)ether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Methylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
N-Nitroso-Di-n-propylamine	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Hexachloroethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Nitrobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Isophorone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Nitrophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dimethylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzoic acid	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
bis(2-Chloroethoxy)methane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dichlorophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,2,4-Trichlorobenzene	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Naphthalene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Chloroaniline	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Hexachlorobutadiene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005

QC Level C/D

Sample No.:	SBLK01			09SWAMSD			SDSWRB01			SDSWRB02			SDSWRB03			ST01SW			ST02SW		
Locator:	SBLK01			STA5SW01MSD			SWSDRB01			SWSDRB01			SWSDRB01			STA1SW01			STA2SW01		
Date Sampled:	12-11-90			12-5-90			12-6-90			12-7-90			12-6-90			12-6-90			12-5-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
4-Chloro-3-methylphenol	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Methylnaphthalene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Hexachlorocyclopentadiene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4,6-Trichlorophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4,5-Trichlorophenol	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
2-Chloronaphthalene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Nitroaniline	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
Dimethylphthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Acenaphthylene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,6-Dinitrotoluene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
3-Nitroaniline	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
Acenaphthene	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dinitrophenol	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
4-Nitrophenol	50	U	µg/l				50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
Dibenzofuran	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dinitrotoluene	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Diethylphthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Chlorophenyl-phenylether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Fluorene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Nitroaniline	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
4,6-Dinitro-2-methylphenol	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
N-Nitrosodiphenylamine (1)	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Bromophenyl-phenylether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005

QC Level C/D

Sample No.:	SBLK01			09SWAMSD			SDSWRB01			SDSWRB02			SDSWRB03			ST01SW			ST02SW		
Locator:	SBLK01			STA9SW01MSD			SWSDRB01			SWSDRB01			SWSDRB01			STA1SW01			STA2SW01		
Date Sampled:	12-11-90			12-5-90			12-6-90			12-7-90			12-6-90			12-5-90			12-5-90		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
Hexachlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Pentachlorophenol	50	U	µg/l				50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
Phenanthrene	10	U	µg/l	10	U		10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Anthracene	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Di-n-butylphthalate	10	U	µg/l	110		µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Fluoranthene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Pyrene	10	U	µg/l				10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Butylbenzylphthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
3,3'-Dichlorobenzidine	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l
Benzo(a)anthracene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Chrysene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
bis(2-Ethylhexyl)phthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Di-n-octylphthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(b)fluoranthene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(k)fluoranthene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(e)pyrene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Indeno(1,2,3-cd)pyrene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Dibenz(a,h)anthracene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(g,h,i)perylene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST03SW			ST04SW			ST05SW			ST06SW			ST07SW			ST08SW			ST09SW		
Locator:	STA3SW01			STA4SW01			STA5SW01			STA6SW01			STA7SW01			STA8SW01			STA9SW01		
Date Sampled:	12-5-90			12-5-90			12-5-90			12-5-90			12-5-90			12-5-90			12-5-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Phenol	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
bis(2-Chloroethyl)ether	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Chlorophenol	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,3-Dichlorobenzene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,4-Dichlorobenzene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzyl alcohol	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,2-Dichlorobenzene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Methylphenol	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
bis(2-chloroisopropyl)ether	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Methylphenol	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
N-Nitroso-Di-n-propylamine	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Hexachloroethane	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Nitrobenzene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Isophorone	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Nitrophenol	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dimethylphenol	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzoic acid	50	U	µg/l	65	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
bis(2-Chloroethoxy)methane	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dichlorophenol	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,2,4-Trichlorobenzene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Naphthalene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Chloroaniline	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Hexachlorobutadiene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST03SW			ST04SW			ST05SW			ST06SW			ST07SW			ST08SW			ST09SW		
Locator:	STA3SW01			STA4SW01			STA5SW01			STA6SW01			STA7SW01			STA8SW01			STA9SW01		
Date Sampled:	12-5-90			12-5-90			12-6-90			12-5-90			12-5-90			12-5-90			12-5-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
4-Chloro-3-methylphenol	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2-Methylnaphthalene	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Hexachlorocyclopentadiene	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2,4,6-Trichlorophenol	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2,4,5-Trichlorophenol	50	U	µg/L	65	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
2-Chloronaphthalene	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2-Nitroaniline	50	U	µg/L	65	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
Dimethylphthalate	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Acenaphthylene	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2,6-Dinitrotoluene	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
3-Nitroaniline	50	U	µg/L	65	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
Acenaphthene	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2,4-Dinitrophenol	50	U	µg/L	65	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
4-Nitrophenol	50	U	µg/L	65	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
Dibenzofuran	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
2,4-Dinitrotoluene	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Diethylphthalate	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
4-Chlorophenyl-phenylether	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Fluorene	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
4-Nitroaniline	50	U	µg/L	65	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
4,6-Dinitro-2-methylphenol	50	U	µg/L	65	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L
N-Nitrosodiphenylamine (1)	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
4-Bromophenyl-phenylether	10	U	µg/L	13	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST03SW			ST04SW			ST05SW			ST06SW			ST07SW			ST08SW			ST09SW		
Locator:	STA3SW01			STA4SW01			STA5SW01			STA6SW01			STA7SW01			STA8SW01			STA9SW01		
Date Sampled:	12-5-90			12-5-90			12-6-90			12-5-90			12-5-90			12-5-90			12-5-90		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
Hexachlorobenzene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Pentachlorophenol	50	U	µg/l	65	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
Phenanthrene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Anthracene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Di-n-butylphthalate	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Fluoranthene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Pyrene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Butylbenzylphthalate	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
3,3'-Dichlorobenzidine	20	U	µg/l	26	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l
Benzo(a)anthracene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Chrysene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
bis(2-Ethylhexyl)phthalate	10	U	µg/l	2	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Di-n-octylphthalate	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(b)fluoranthene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(k)fluoranthene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(e)pyrene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Indeno(1,2,3-cd)pyrene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Dibenz(a,h)anthracene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzo(g,h,i)perylene	10	U	µg/l	13	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST10SW			ST11SW			ST12SW			SBLK01			SBLK02			ST09SWMS			ST09SWMSD		
Locator:	STA10SW01			STA11SW01			STA12SW01			SBLK01			SBLK02			STA9SW01MS			STA9SW01MSD		
Date Sampled:	12-7-90			12-7-90			12-7-90			12-11-90			1-4-91			12-5-90			12-5-91		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Phenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l						
bis(2-Chloroethyl)ether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Chlorophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l						
1,3-Dichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,4-Dichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l						
Benzyl alcohol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,2-Dichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Methylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
bis(2-chloroisopropyl)ether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Methylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
N-Nitroso-Di-n-propylamine	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l						
Hexachloroethane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Nitrobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Isophorone	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Nitrophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dimethylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Benzoic acid	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
bis(2-Chloroethoxy)methane	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dichlorophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
1,2,4-Trichlorobenzene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l						
Naphthalene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Chloroaniline	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Hexachlorobutadiene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST10SW			ST11SW			ST12SW			SBLK01			SBLK02			ST09SWMS			ST09SWMSD		
Locator:	STA10SW01			STA11SW01			STA12SW01			SBLK01			SBLK02			STA9SW01MS			STA9SW01MSD		
Date Sampled:	12-7-90			12-7-90			12-7-90			12-11-90			1-4-91			12-5-90			12-5-91		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
4-Chloro-3-methylphenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l						
2-Methylnaphthalene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Hexachlorocyclopentadiene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4,6-Trichlorophenol	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4,5-Trichlorophenol	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
2-Chloronaphthalene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2-Nitroaniline	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
Dimethylphthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Acenaphthylene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,6-Dinitrotoluene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
3-Nitroaniline	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
Acenaphthene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l						
2,4-Dinitrophenol	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
4-Nitrophenol	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l						
Dibenzofuran	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
2,4-Dinitrotoluene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l						
Diethylphthalate	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Chlorophenyl-phenylether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Fluorene	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Nitroaniline	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
4,6-Dinitro-2-methylphenol	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
N-Nitrosodiphenylamine (1)	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
4-Bromophenyl-phenylether	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST10SW			ST11SW			ST12SW			SBLK01			SBLK02			ST09SWMS			ST09SWMSD		
Locator:	STA10SW01			STA11SW01			STA12SW01			SBLK01			SBLK02			STA9SW01MS			STA9SW01MSD		
Date Sampled:	12-7-90			12-7-90			12-7-90			12-11-90			1-4-91			12-5-90			12-5-91		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
Hexachlorobenzene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Pentachlorophenol	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L	50	U	µg/L						
Phenanthrene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Anthracene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L						
Di-n-butylphthalate	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	83*	U	µg/L	110*	U	µg/L
Fluoranthene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Pyrene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L						
Butylbenzylphthalate	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
3,3'-Dichlorobenzidine	20	U	µg/L	20	U	µg/L	20	U	µg/L	20	U	µg/L	20	U	µg/L	20	U	µg/L	20	U	µg/L
Benzo(a)anthracene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Chrysene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
bis(2-Ethylhexyl)phthalate	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	4.0	U	µg/L	10	U	µg/L	10	U	µg/L
Di-n-octylphthalate	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Benzo(b)fluoranthene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Benzo(k)fluoranthene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Benzo(a)pyrene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Indeno(1,2,3-cd)pyrene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Dibenz(a,h)anthracene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L
Benzo(g,h,i)perylene	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L	10	U	µg/L

* - Di-N-butylphthalate and bis (2-ethylhexyl)phthalate - are suspected to be laboratory contemiannts and are not associated with site characteristics.

Sample Delivery Group: T0005

QC Level D

Sample No.:	ST09SWD			ST09SWS			ST9SWSD			ST12SWD			SDSWRB01			SDSWRB02			SDSWRB03		
Locator:													SDSWRB01			SWSDRB01			SWSDRB01		
Date Sampled:													12-6-90			12-7-90			12-8-90		
Inorganic	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Aluminum	200	U	µg/l	2,100		µg/l	2,090		µg/l	200	U	µg/l	200	U	µg/l	200	U	mg/kg	200	U	µg/l
Antimony	50.1	U	µg/l	499		µg/l	507		µg/l	50	U	µg/l	50	U	µg/l	50	U	mg/kg	50	U	µg/l
Barium	15.1	J	µg/l	2,000		µg/l	2,000		µg/l	31.5	J	µg/l	10	U	µg/l	10	U	mg/kg	10	U	µg/l
Arsenic	10	U	µg/l	39.7		µg/l	41.9		µg/l	10	U	µg/l	10	U	µg/l	10	U	mg/kg	10	U	µg/l
Beryllium	5	U	µg/l	50.4		µg/l	49.9		µg/l	5	U	µg/l	5	U	µg/l	5	U	mg/kg	5	U	µg/l
Cadmium	5	U	µg/l	48.2		µg/l	47.5		µg/l	5	U	µg/l	5	U	µg/l	5	U	mg/kg	5	U	µg/l
Calcium	744	J	µg/l	861	J	µg/l	756	J	µg/l	1,180	J	µg/l	500	U	µg/l	500	U	mg/kg	500	U	µg/l
Chromium	10	U	µg/l	204		µg/l	205		µg/l	10	U	µg/l	10	U	µg/l	10	U	mg/kg	10	U	µg/l
Cobalt	10	U	µg/l	506		µg/l	511		µg/l	10	U	µg/l	10	U	µg/l	10	U	mg/kg	10	U	µg/l
Copper	25	U	µg/l	256		µg/l	256		µg/l	25	U	µg/l	25	U	µg/l	25	U	mg/kg	25	U	µg/l
Iron	706		µg/l	1,770		µg/l	1,740		µg/l	230		µg/l	50	U	µg/l	55.5	J	mg/kg	50	U	µg/l
Lead	3	U	µg/l	21.8		µg/l	21.8		µg/l	3	U	µg/l	3	U	µg/l	3	U	mg/kg	3	U	µg/l
Magnesium	604	J	µg/l	613	J	µg/l	610	J	µg/l	1,080	J	µg/l	500	U	µg/l	500	U	mg/kg	500	U	µg/l
Manganese	16.3		µg/l	525		µg/l	529		µg/l	14	J	µg/l	10	U	µg/l	10	U	mg/kg	10	U	µg/l
Mercury	0.20	U	µg/l	1.1		µg/l	1.1		µg/l	0.20	U	µg/l	0.20	U	µg/l	0.20	U	mg/kg	0.20	U	µg/l
Nickel	40	U	µg/l	507		µg/l	506		µg/l	40	U	µg/l	40	U	µg/l	40	U	mg/kg	40	U	µg/l
Potassium	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l	1,000	U	mg/kg	1,000	U	µg/l
Selenium	5	U	µg/l	11.5	J	µg/l	7.5		µg/l	5	U	µg/l	5	U	µg/l	5	U	mg/kg	5	U	µg/l
Silver	10	U	µg/l	46.9		µg/l	47.7		µg/l	10	U	µg/l	10	U	µg/l	10	U	mg/kg	10	U	µg/l
Sodium	2,340	J	µg/l	2,430	J	µg/l	2,390	J	µg/l	1,930	B	µg/l	500	U	µg/l	5000	U	mg/kg	500	U	µg/l
Thallium	10	U	µg/l	48.9		µg/l	55.1		µg/l	10	U	µg/l	10	U	µg/l	10	U	mg/kg	10	U	µg/l
Vanadium	10	U	µg/l	501		µg/l	504		µg/l	10	U	µg/l	10	U	µg/l	10	U	mg/kg	10	U	µg/l
Zinc	20	U	µg/l	507		µg/l	505		µg/l	20	U	µg/l	20	U	µg/l	20	U	mg/kg	20	U	µg/l
Cyanide	10	U	µg/l	101		µg/l	89.0		µg/l	10	U	µg/l	10	U	µg/l	10	U	mg/kg	10	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST01SW			ST02SW			ST03SW			ST04SW			ST05SW			ST06SW			ST07SW		
Locator:	STA1SW01			STA2SW01			STA3SW01			STA4SW01			STA5SW01			STA6SW01			STA7SW01		
Date Sampled:	12-6-90			12-5-90			12-5-90			12-5-90			12-6-90			12-5-90			12-5-90		
Inorganic	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Aluminum	200	U	µg/l	200	U	µg/l	200	U	µg/l	200	U	µg/l	200	U	µg/l	200	U	µg/l	200	U	µg/l
Antimony	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
Barium	14.1	J	µg/l	10.5	J	µg/l	16.8	J	µg/l	16.8	J	µg/l	16.5	J	µg/l	16.5	J	µg/l	15.1	J	µg/l
Arsenic	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Beryllium	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l
Cadmium	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l
Calcium	918	J	µg/l	500	J	µg/l	777	J	µg/l	789	J	µg/l	742	J	µg/l	759	J	µg/l	680	J	µg/l
Chromium	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Cobalt	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Copper	25	U	µg/l	25	U	µg/l	25	U	µg/l	25	U	µg/l	25	U	µg/l	25	U	µg/l	25	U	µg/l
Iron	131		µg/l	1,050		µg/l	614		µg/l	626		µg/l	584		µg/l	607		µg/l	568		µg/l
Lead	3	U	µg/l	3	U	µg/l	3	U	µg/l	3	U	µg/l	3	U	µg/l	3	U	µg/l	3	U	µg/l
Magnesium	569	J	µg/l	500	U	µg/l	707	J	µg/l	707	J	µg/l	681	J	µg/l	683	J	µg/l	612	J	µg/l
Manganese	11.1	J	µg/l	10	U	µg/l	17.3		µg/l	18.6		µg/l	16.3		µg/l	16.3		µg/l	16.3		µg/l
Mercury	0.20	U	µg/l	0.20	U	µg/l	0.20	U	µg/l	0.20	U	µg/l	0.20	U	µg/l	0.20	U	µg/l	0.20	U	µg/l
Nickel	40	U	µg/l	40	U	µg/l	40	U	µg/l	40	U	µg/l	40	U	µg/l	40	U	µg/l	40	U	µg/l
Potassium	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l
Selenium	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l
Silver	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Sodium	2,130	J	µg/l	2,430	J	µg/l	2,110	J	µg/l	2,080	J	µg/l	1,990	J	µg/l	1,970	J	µg/l	2,000	J	µg/l
Thallium	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Vanadium	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Zinc	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l
Cyanide	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005

QC Level C

Sample No.:	ST08SW			ST09SW			ST10SW			ST11SW			ST12SW		
Locator:	STA8SW01			STA9SW01			STA10SW01			STA11SW01			STA12SW01		
Date Sampled:	12-5-90			12-5-90			12-7-90			12-7-90			12-7-90		
Inorganic	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Aluminum	200	U	µg/l	200	U	µg/l	200	U	µg/l	200	U	µg/l	200	U	µg/l
Antimony	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l	50	U	µg/l
Barium	15.1	J	µg/l	15.1	J	µg/l	32	J	µg/l	31.8	J	µg/l	31.5	J	µg/l
Arsenic	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Beryllium	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l
Cadmium	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l
Calcium	727	J	µg/l	734	J	µg/l	1,180	J	µg/l	1,170	J	µg/l	1,180	J	µg/l
Chromium	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Cobalt	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Copper	25	U	µg/l	25	U	µg/l	25	U	µg/l	25	U	µg/l	25	U	µg/l
Iron	591		µg/l	737		µg/l	214		µg/l	209		µg/l	219		µg/l
Lead	3	U	µg/l	3	U	µg/l	3	U	µg/l	3	U/W	µg/l	3	U/W	µg/l
Magnesium	619	J	µg/l	631	J	µg/l	1,060	J	µg/l	1,100	J	µg/l	1,080	J	µg/l
Manganese	16.3		µg/l	18.6		µg/l	15.1		µg/l	14	J	µg/l	14.0	J	µg/l
Mercury	0.20	U	µg/l	0.20	U	µg/l	0.20	U	µg/l	0.20	U	µg/l	0.20	U	µg/l
Nickel	40	U	µg/l	40	U	µg/l	40	U	µg/l	40	U	µg/l	40	U	µg/l
Potassium	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l	1,000	U	µg/l
Selenium	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l	5	U	µg/l
Silver	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Sodium	2,410	J	µg/l	2,500	J	µg/l	1,950	J	µg/l	1,960	J	µg/l	1,990	J	µg/l
Thallium	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Vanadium	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l
Zinc	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l	20	U	µg/l
Cyanide	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l	10	U	µg/l

Sample Delivery Group: T0005 QC Level D

Sample No.:	09SWA			12SWA			PBLK-W1			12SWA			PBLK-W1			09SWAMS			09SWAMSD		
Locator:	STA9SW01A			STA12SW12A			PBLKW1			STA12SW01A			PBLKW1			STA9SW01MS			STA9SW01MSD		
Date Sampled:	12-5-90			12-7-90			12-11-90			12-7-90			12-11-90			12-5-90			12-5-90		
Pesticide Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
alpha-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
beta-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
delta-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
gamma-BHC (Lindane)	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l						
Heptachlor	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l						
Aldrin	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l						
Heptachlor epoxide	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Endosulfan I	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Dieldrin	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l						
4,4'-DDE	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endrin	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l						
Endosulfan II	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDD	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endosulfan sulfate	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDT	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l						
Methoxychlor	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Endrin ketone	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
alpha-Chlordane	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
gamma-Chlordane	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Toxaphene	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l
Aroclor-1016	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1221	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1232	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1242	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1248	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1254	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l
Aroclor-1260	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l

Sample Delivery Group: T0005 QC Level C

Sample No.:	SDSWRB01			SDSWRB02			SDSWRB03			ST01SW			ST02SW			ST03SW			ST04SW		
Locator:	SDSWRB01			SWSDRB01			SWSDRB01			STA1SW01			STA2SW01			STA3SW01			STA4SW01		
Date Sampled:	12-6-90			12-7-90			12-7-90			12-6-90			12-5-90			12-5-90			12-5-90		
Pesticide Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
alpha-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
beta-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
delta-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
gamma-BHC (Lindane)	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Heptachlor	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Aldrin	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Heptachlor epoxide	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Endosulfan I	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Dieldrin	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDE	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endrin	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endosulfan II	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDD	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endosulfan sulfate	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDT	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Methoxychlor	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Endrin ketone	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
alpha-Chlordane	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
gamma-Chlordane	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Toxaphene	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l
Aroclor-1016	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1221	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1232	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1242	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1248	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1254	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l
Aroclor-1260	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l

Sample Delivery Group: T0005 QC Level D

Sample No.:	ST05SW			ST06SW			SD07SW			ST08SW			ST09SW			ST10SW			ST11SW		
Locator:	STA5SW01			STA6SW01			STA7SW01			STA8SW01			STA9SW01			STA10SW01			STA11SW01		
Date Sampled:	12-6-90			12-5-90			12-5-90			12-5-90			12-7-90			12-7-90			12-7-90		
Pesticide Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
alpha-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
beta-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
delta-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
gamma-BHC (Lindane)	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Heptachlor	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Aldrin	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Heptachlor epoxide	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Endosulfan I	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Dieldrin	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDE	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endrin	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endosulfan II	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDD	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endosulfan sulfate	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDT	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Methoxychlor	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Endrin ketone	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
alpha-Chlordane	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
gamma-Chlordane	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Toxaphene	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l
Aroclor-1016	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1221	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1232	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1242	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1248	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1254	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l
Aroclor-1260	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l

Sample Delivery Group: T0005 QC Level C

Sample No.:	ST12SW			PBLK-W1			PBLK-W2			PBLK-W3			ST09SWMS			ST09SWMSD		
Locator:	STA12SW01			PBLKW1			PBLKW2			PBLKW3			STA9SW01MS			STA9SD01MSD		
Date Sampled:	12-7-90			12-11-90			12-13-90			12-15-90			12-5-90			12-5-90		
Pesticide Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
alpha-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
beta-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
delta-BHC	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
gamma-BHC (Lindane)	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l						
Heptachlor	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l						
Aldrin	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l						
Heptachlor epoxide	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Endosulfan I	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l	0.050	U	µg/l
Dieldrin	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l						
4,4'-DDE	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endrin	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l						
Endosulfan II	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDD	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
Endosulfan sulfate	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
4,4'-DDT	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l						
Methoxychlor	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Endrin ketone	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l	0.10	U	µg/l
alpha-Chlordane	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
gamma-Chlordane	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Toxaphene	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l
Aroclor-1016	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1221	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1232	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1242	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1248	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l	0.50	U	µg/l
Aroclor-1254	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l
Aroclor-1260	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l	1.0	U	µg/l

APPENDIX C

SUMMARIZED AND QUALIFIED SEDIMENT CHEMICAL ANALYSIS RESULTS

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST01SD			ST02SD			ST02SDRE			ST03SD			ST04SD			ST05SD		
Locator:	STA1SD(1.0-1.5)01			STA2SD(0.5-1.0)01			STA2SD(0.5-1.0)01			STA3SD(0-0.5)01			STA4SD(0-0.5)01			STA5SD(0-0.5)01		
Date Sampled:	12-7-90			12-6-90			12-6-90			12-7-90			12-8-90			12-8-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Chloromethane	29	U	µg/kg	100	U	µg/kg	100	U	µg/kg	12	U	µg/kg	12	U	µg/kg	14	U	µg/kg
Bromomethane	29	U	µg/kg	100	U	µg/kg	100	U	µg/kg	12	U	µg/kg	12	U	µg/kg	14	U	µg/kg
Vinyl Chloride	29	U	µg/kg	100	U	µg/kg	100	U	µg/kg	12	U	µg/kg	12	U	µg/kg	14	U	µg/kg
Chloroethane	29	U	µg/kg	100	U	µg/kg	100	U	µg/kg	12	U	µg/kg	12	U	µg/kg	14	U	µg/kg
Methylene Chloride	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	2.0	J	µg/kg
Acetone	950		µg/kg	100	U	µg/kg	100	U	µg/kg	140		µg/kg	12	U	µg/kg	14	U	µg/kg
Carbon Disulfide	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
1,1-Dichloroethene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
1,1-Dichloroethane	15	U	µg/kg	24	J	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
1,2-Dichloroethene (total)	15	U	µg/kg	290		µg/kg	290		µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Chloroform	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
1,2-Dichloroethane	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
2-Butanone	29	U	µg/kg	100	U	µg/kg	100	U	µg/kg	12	U	µg/kg	12	U	µg/kg	14	U	µg/kg
1,1,1-Trichloroethane	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Carbon Tetrachloride	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Vinyl Acetate	29	U	µg/kg	100	U	µg/kg	100	U	µg/kg	12	U	µg/kg	12	U	µg/kg	14	U	µg/kg
Bromodichloromethane	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
1,2-Dichloropropane	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
cis-1,3-Dichloropropene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Trichloroethene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Dibromochloromethane	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
1,12-Trichloroethane	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Benzene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST01SD			ST02SD			ST02SDRE			ST03SD			ST04SD			ST05SD		
Locator:	STA1SD(1.0-1.5)01			STA2SD(0.5-1.0)01			STA2SD(0.5-1.0)01			STA3SD(0-0.5)01			STA4SD(0-0.5)01			STA5SD(0-0.5)01		
Date Sampled:	12-7-90			12-6-90			12-6-90			12-7-90			12-8-90			12-8-90		
Volatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
trans-1,3-Dichloropropene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Bromoform	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
4-Methyl-2-Pentanone	29	U	µg/kg	100	U	µg/kg	100	U	µg/kg	12	U	µg/kg	12	U	µg/kg	14	U	µg/kg
2-Hexanone	29	U	µg/kg	100	U	µg/kg	100	U	µg/kg	12	U	µg/kg	12	U	µg/kg	14	U	µg/kg
Tetrachloroethene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
1,1,2,2-Tetrachloroethane	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Toluene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Chlorobenzene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Ethylbenzene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Styrene	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg
Xylene (total)	15	U	µg/kg	50	U	µg/kg	50	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	7.0	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST06SD			ST07SD			ST08SD			ST09SD			ST10SD		
Locator:	STA6SD(0-0.5)01			STA7SD(0.5-1.0)01			STA8SD(0-0.5)01			STA9SD(0-0.5)01			STA10SD(0-0.5)01		
Date Sampled:	12-6-90			12-6-90			12-6-90			12-6-90			12-6-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Chloromethane	13	U	µg/kg	13	U	µg/kg	68	U	µg/kg	12	U	µg/kg	13	U	µg/kg
Bromomethane	13	U	µg/kg	13	U	µg/kg	68	U	µg/kg	12	U	µg/kg	13	U	µg/kg
Vinyl Chloride	13	U	µg/kg	13	U	µg/kg	68	U	µg/kg	12	U	µg/kg	13	U	µg/kg
Chloroethane	13	U	µg/kg	13	U	µg/kg	68	U	µg/kg	12	U	µg/kg	13	U	µg/kg
Methylene Chloride	2.7	J	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Acetone	13	U	µg/kg	13	U	µg/kg	2,600		µg/kg	790		µg/kg	13	U	µg/kg
Carbon Disulfide	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,1-Dichloroethene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,1-Dichloroethane	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,2-Dichloroethene (total)	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Chloroform	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,2-Dichloroethane	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
2-Butanone	13	U	µg/kg	13	U	µg/kg	68	U	µg/kg	12	U	µg/kg	13	U	µg/kg
1,1,1-Trichloroethane	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Carbon Tetrachloride	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Vinyl Acetate	13	U	µg/kg	13	U	µg/kg	68	U	µg/kg	12	U	µg/kg	13	U	µg/kg
Bromodichloromethane	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,2-Dichloropropane	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
cis-1,3-Dichloropropene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Trichloroethene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	1.9	J	µg/kg
Dibromochloromethane	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,12-Trichloroethane	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Benzene	6.0	U	µg/kg	25		µg/kg	34	U	µg/kg	6.0	U	µg/kg	2.3	J	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST06SD			ST07SD			ST08SD			ST09SD			ST10SD		
Locator:	STA6SD(0-0.5)01			STA7SD(0.5-1.0)01			STA8SD(0-0.5)01			STA9SD(0-0.5)01			STA10SD(0-0.5)01		
Date Sampled:	12-6-90			12-6-90			12-6-90			12-6-90			12-6-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
trans-1,3-Dichloropropene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Bromoform	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
4-Methyl-2-Pentanone	13	U	µg/kg	13	U	µg/kg	38	U	µg/kg	12	U	µg/kg	13	U	µg/kg
2-Hexanone	13	U	µg/kg	13	U	µg/kg	68	U	µg/kg	12	U	µg/kg	13	U	µg/kg
Tetrachloroethene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,1,2,2-Tetrachloroethene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Toluene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	24	J	µg/kg
Chlorobenzene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Ethylbenzene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Styrene	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Xylene (total)	6.0	U	µg/kg	6.0	U	µg/kg	34	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST11SD			ST12SD			VBLK-S1			VBLK-S2			VBLK-S3			VBLK-S4			ST08SDMS		
Locator:	STA11SD(0-05)01			STA12SD(0-0.5)01			VBLK-S1			VBLK-S2			VBLK-S3			VBLK-S4			ST08SDMS		
Date Sampled:	12-6-90			12-6-90			12-13-90			12-13-90			12-13-90			12-14-90			12-6-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Chloromethane	13	U	µg/kg	13	U	µg/kg	10	U	µg/kg	10	U	µg/kg	1,300	U	µg/kg	11	U	µg/kg	1,700	U	µg/kg
Bromomethane	13	U	µg/kg	13	U	µg/kg	10	U	µg/kg	10	U	µg/kg	1,300	U	µg/kg	11	U	µg/kg	1,700	U	µg/kg
Vinyl Chloride	13	U	µg/kg	13	U	µg/kg	10	U	µg/kg	10	U	µg/kg	1,300	U	µg/kg	11	U	µg/kg	1,700	U	µg/kg
Chloroethane	13	U	µg/kg	13	U	µg/kg	10	U	µg/kg	10	U	µg/kg	1,300	U	µg/kg	11	U	µg/kg	1,700	U	µg/kg
Methylene Chloride	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	0.5	J	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Acetone	13	U	µg/kg	13	U	µg/kg	10	U	µg/kg	10	U	µg/kg	1,300	U	µg/kg	11	U	µg/kg	1,700	U	µg/kg
Carbon Disulfide	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
1,1-Dichloroethene	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg			
1,1-Dichloroethane	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
1,2-Dichloroethene (total)	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Chloroform	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
1,2-Dichloroethane	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
2-Butanone	13	U	µg/kg	13	U	µg/kg	10	U	µg/kg	10	U	µg/kg	1,300	U	µg/kg	11	U	µg/kg	1,700	U	µg/kg
1,1,1-Trichloroethane	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Carbon Tetrachloride	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Vinyl Acetate	13	U	µg/kg	13	U	µg/kg	10	U	µg/kg	10	U	µg/kg	1,300	U	µg/kg	11	U	µg/kg	1,700	U	µg/kg
Bromodichloromethane	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
1,2-Dichloropropane	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
cis-1,3-Dichloropropene	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Trichloroethene	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg			
Dibromochloromethane	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
1,12-Trichloroethane	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Benzene	6.0	U	µg/kg	6.0		µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	870	U	µg/kg	5.0	U	µg/kg			

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST11SD			ST12SD			VBLK-S1			VBLK-S2			VBLK-S3			VBLK-S4			ST08SDMS		
Locator:	STA11SD(0-05)01			STA12SD(0-0.5)01			VBLK-S1			VBLK-S2			VBLK-S3			VBLK-S4			ST08SDMS		
Date Sampled:	12-8-90			12-8-90			12-13-90			12-13-90			12-13-90			12-14-90			12-6-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
trans-1,3-Dichloropropene	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	670	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Bromoform	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	670	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
4-Methyl-2-Pentanone	13	U	µg/kg	13	U	µg/kg	10	U	µg/kg	10	U	µg/kg	1,300	U	µg/kg	11	U	µg/kg	1,700	U	µg/kg
2-Hexanone	13	U	µg/kg	13	U	µg/kg	10	U	µg/kg	10	U	µg/kg	1,300	U	µg/kg	11	U	µg/kg	1,700	U	µg/kg
Tetrachloroethene	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	670	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
1,1,2,2-Tetrachloroethane	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	670	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Toluene	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	670	U	µg/kg	5.0	U	µg/kg			
Chlorobenzene	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	670	U	µg/kg	5.0	U	µg/kg			
Ethylbenzene	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	670	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Styrene	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	670	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg
Xylene (total)	6.0	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	5.0	U	µg/kg	670	U	µg/kg	5.0	U	µg/kg	840	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST08SDMSD			09SDAMS			09SDAMSD			09SDA			12SDA			VBLK-S1		
Locator:	ST08SDMSD			STA9SD(0-0.5)01MS			STA9SD(0-0.5)01MSD			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			VBLK-S1		
Date Sampled:	12-6-90			12-6-90			12-6-90			12-6-90			12-6-90			12-13-90		
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Chloromethane	1,700	U	µg/kg	13	U	µg/kg	12	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg
Bromomethane	1,700	U	µg/kg	13	U	µg/kg	12	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg
Vinyl Chloride	1,700	U	µg/kg	13	U	µg/kg	12	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg
Chloroethane	1,700	U	µg/kg	13	U	µg/kg	12	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg
Methylene Chloride	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	2.0	J	µg/kg	5.0	U	µg/kg
Acetone	1,700	U	µg/kg	57		µg/kg	610	J	µg/kg	670		µg/kg	13	U	µg/kg	10	U	µg/kg
Carbon Disulfide	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
1,1-Dichloroethene										12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
1,1-Dichloroethane	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
1,2-Dichloroethene (total)	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Chloroform	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
1,2-Dichloroethane	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
2-Butanone	1,700	U	µg/kg	13	U	µg/kg	12	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg
1,1,1-Trichloroethane	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Carbon Tetrachloride	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Vinyl Acetate	1,700	U	µg/kg	13	U	µg/kg	12	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg
Bromodichloromethane	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
1,2-Dichloropropane	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
cis-1,3-Dichloropropene	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Trichloroethene										12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Dibromochloromethane	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
1,12-Trichloroethane	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Benzene										12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST08SDMSD			09SDAMS			09SDAMSD			09SDA			12SDA			VBLK-S1		
Locator:	ST08SDMSD			STA9SD(0-0.5)01MS			STA9SD(0-0.5)01MSD			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			VBLK-S1		
Date Sampled:	12-6-90			12-6-90			12-6-90			12-6-90			12-6-90			12-13-90		
Volatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
trans-1,3-Dichloropropene	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Bromoform	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
4-Methyl-2-Pentanone	1,700	U	µg/kg	13	U	µg/kg	12	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg
2-Hexanone	1,700	U	µg/kg	13	U	µg/kg	12	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg
Tetrachloroethene	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
1,1,2,2-Tetrachloroethane	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Toluene										12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Chlorobenzene										12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Ethylbenzene	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Styrene	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg
Xylene (total)	840	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	VBLK-S2			09SDA			12SDA			VBLK-S1			09SDAMS			09SDAMSD		
Locator:	VBLK-S2			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			VBLK-S1			STA9SD(0-0.5)01MS			STA9SD(0-0.5)01MSD		
Date Sampled:	12-13-90			12-6-90			12-6-90			12-13-90			12-6-90					
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Chloromethane	10	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg	12	U	µg/kg	12	U	µg/kg
Bromomethane	10	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg	12	U	µg/kg	12	U	µg/kg
Vinyl Chloride	10	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg	12	U	µg/kg	12	U	µg/kg
Chloroethane	10	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg	12	U	µg/kg	12	U	µg/kg
Methylene Chloride	0.5	J	µg/kg	12	U	µg/kg	2.0	J	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Acetone	10	U	µg/kg	1,300	J	µg/kg	13	U	µg/kg	10	U	µg/kg	57	U	µg/kg	610	J	µg/kg
Carbon Disulfide	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,1-Dichloroethene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg						
1,1-Dichloroethane	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,2-Dichloroethene (total)	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Chloroform	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,2-Dichloroethane	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
2-Butanone	10	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg	12	U	µg/kg	12	U	µg/kg
1,1,1-Trichloroethane	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Carbon Tetrachloride	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Vinyl Acetate	10	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg	12	U	µg/kg	12	U	µg/kg
Bromodichloromethane	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,2-Dichloropropane	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
cis-1,3-Dichloropropene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Trichloroethene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg						
Dibromochloromethane	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,12-Trichloroethane	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Benzene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg						

Sample Delivery Group: T0004

QC Level D

Sample No.:	VBLK-S2			89SDA			12SDA			VBLK-S1			89SDAMS			89SDAMSD		
Locator:	VBLK-S2			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			VBLK-S1			STA9SD(0-0.5)01MS			STA9SD(0-0.5)01MSD		
Date Sampled:	12-13-90			12-6-90			12-6-90			12-13-90			12-6-90					
Volatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
trans-1,3-Dichloropropene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Bromoform	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
4-Methyl-2-Pentanone	10	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg	12	U	µg/kg	12	U	µg/kg
2-Hexanone	10	U	µg/kg	25	U	µg/kg	13	U	µg/kg	10	U	µg/kg	12	U	µg/kg	12	U	µg/kg
Tetrachloroethene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
1,1,2,2-Tetrachloroethane	6.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Toluene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg						
Chlorobenzene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg						
Ethylbenzene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Styrene	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg
Xylene (total)	5.0	U	µg/kg	12	U	µg/kg	6.0	U	µg/kg	5.0	U	µg/kg	6.0	U	µg/kg	6.0	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST01SD			ST02SD			ST03SD			ST04SD			ST05SD			ST06SD			ST07SD		
Locator:	STA1SD(1.0-1.5)01			STA2SD(0.5-1.0)01			STA3SD(0-0.5)01			STA4SD(0-0.5)01			STA5SD(0-0.5)01			STA6SD(0-0.5)01			STA7SD(0.5-1.0)01		
Date Sampled:	12-6-90			12-5-90			12-5-90			12-5-90			12-6-90			12-5-90			12-5-90		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
Phenol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
bis(2-Chloroethyl)ether	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2-Chlorophenol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
1,3-Dichlorobenzene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
1,4-Dichlorobenzene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Benzyl alcohol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
1,2-Dichlorobenzene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2-Methylphenol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
bis(2-chloroisopropyl)ether	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
4-Methylphenol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
N-Nitroso-Di-n-propylamine	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Hexachloroethane	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Nitrobenzene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Isophorone	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2-Nitrophenol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2,4-Dimethylphenol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Benzoic acid	1,900	U	µg/kg	8,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
bis(2-Chloroethoxy)methane	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2,4-Dichlorophenol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
1,2,4-Trichlorobenzene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Naphthalene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
4-Chloroaniline	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Hexachlorobutadiene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST01SD			ST02SD			ST03SD			ST04SD			ST05SD			ST06SD			ST07SD		
Locator:	STA1SD(1.0-1.5)01			STA2SD(0.5-1.0)01			STA3SD(0-0.5)01			STA4SD(0-0.5)01			STA5SD(0-0.5)01			STA6SD(0-0.5)01			STA7SD(0.5-1.0)01		
Date Sampled:	12-6-90			12-5-90			12-5-90			12-5-90			12-6-90			12-5-90			12-5-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
4-Chloro-3-methylphenol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2-Methylnaphthalene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Hexachlorocyclopentadiene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2,4,6-Trichlorophenol	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2,4,5-Trichlorophenol	1,900	U	µg/kg	8,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
2-Chloronaphthalene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2-Nitroaniline	1,900	U	µg/kg	8,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Dimethylphthalate	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Acenaphthylene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2,6-Dinitrotoluene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
3-Nitroaniline	1,900	U	µg/kg	8,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Acenaphthene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2,4-Dinitrophenol	1,900	U	µg/kg	8,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
4-Nitrophenol	1,900	U	µg/kg	8,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Dibenzofuran	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
2,4-Dinitrotoluene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Diethylphthalate	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
4-Chlorophenyl-phenylether	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Fluorene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
4-Nitroaniline	1,900	U	µg/kg	8,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
4,6-Dinitro-2-methylphenol	1,900	U	µg/kg	8,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
N-Nitrosodiphenylamine (1)	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
4-Bromophenyl-phenylether	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST01SD			ST02SD			ST03SD			ST04SD			ST05SD			ST06SD			ST07SD		
Locator:	STA1SD(1.0-1.5)01			STA2SD(0.5-1.0)01			STA3SD(0-0.5)01			STA4SD(0-0.5)01			STA5SD(0-0.5)01			STA6SD(0-0.5)01			STA7SD(0.5-1.0)01		
Date Sampled:	12-6-90			12-5-90			12-5-90			12-5-90			12-6-90			12-5-90			12-5-90		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
Hexachlorobenzene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Pentachlorophenol	1,900	U	µg/kg	8,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	1,900	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Phenanthrene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Anthracene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Di-n-butylphthalate	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Fluoranthene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Pyrene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	38	J	µg/kg	410	U	µg/kg	420	U	µg/kg
Butylbenzylphthalate	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
3,3'-Dichlorobenzidine	790	U	µg/kg	3,300	U	µg/kg	790	U	µg/kg	800	U	µg/kg	780	U	µg/kg	820	U	µg/kg	840	U	µg/kg
Benzo(a)anthracene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Chrysene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	390	U	µg/kg	410	U	µg/kg	420	U	µg/kg
bis(2-Ethylhexyl)phthalate	390	U	µg/kg	1,700	U	µg/kg	339	U	µg/kg	400	U	µg/kg	360	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Di-n-octylphthalate	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	360	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Benzo(b)fluoranthene	390	U	µg/kg	17,00	U	µg/kg	390	U	µg/kg	400	U	µg/kg	360	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Benzo(k)fluoranthene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	360	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Benzo(e)pyrene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	360	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Indeno(1,2,3-cd)pyrene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	360	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Dibenz(a,h)anthracene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	360	U	µg/kg	410	U	µg/kg	420	U	µg/kg
Benzo(g,h,i)perylene	390	U	µg/kg	1,700	U	µg/kg	390	U	µg/kg	400	U	µg/kg	360	U	µg/kg	410	U	µg/kg	420	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST08SD			ST09SD			ST10SD			ST11SD			ST12SD			SBLK01			ST09SDMS		
Locator:	STA8SD(0-0.5)01			STA9SD(0-0.5)01			STA10SD(0-0.5)01			STA11SD(0-0.5)01			STA12SD(0-0.5)01			SBLK01			42620MS		
Date Sampled:	12-5-90			12-5-90			12-7-90			12-7-90			12-7-90			12-14-90			12-6-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Phenol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg			
bis(2-Chloroethyl)ether	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2-Chlorophenol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg			
1,3-Dichlorobenzene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
1,4-Dichlorobenzene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg			
Benzyl alcohol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
1,2-Dichlorobenzene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2-Methylphenol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
bis(2-chloroisopropyl)ether	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
4-Methylphenol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
N-Nitroso-Di-n-propylamine	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg			
Hexachloroethane	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Nitrobenzene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Isophorone	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2-Nitrophenol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2,4-Dimethylphenol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Benzoic acid	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg
bis(2-Chloroethoxy)methane	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2,4-Dichlorophenol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
1,2,4-Trichlorobenzene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg			
Naphthalene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
4-Chloroaniline	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Hexachlorobutadiene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg

Sample Delivery Group: T9004

QC Level D

Sample No.:	ST08SD			ST09SD			ST10SD			ST11SD			ST12SD			SBLK01			ST09SDMS		
Locator:	STA8SD(0-0.5)01			STA9SD(0-0.5)01			STA10SD(0-0.5)01			STA11SD(0-0.5)01			STA12SD(0-0.5)01			SBLK01			42620MS		
Date Sampled:	12-5-90			12-5-90			12-7-90			12-7-90			12-7-90			12-14-90			12-6-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
4-Chloro-3-methylphenol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg			
2-Methylnaphthalene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Hexachlorocyclopentadiene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2,4,6-Trichlorophenol	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2,4,5-Trichlorophenol	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg
2-Chloronaphthalene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2-Nitroaniline	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg
Dimethylphthalate	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Acenaphthylene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2,6-Dinitrotoluene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
3-Nitroaniline	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg
Acenaphthene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg			
2,4-Dinitrophenol	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg
4-Nitrophenol	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg			
Dibenzofuran	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
2,4-Dinitrotoluene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg			
Diethylphthalate	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
4-Chlorophenyl-phenylether	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Fluorene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
4-Nitroaniline	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg
4,6-Dinitro-2-methylphenol	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg
N-Nitrosodiphenylamine (1)	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
4-Bromophenyl-phenylether	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST08SD			ST09SD			ST10SD			ST11SD			ST12SD			SBLK01			ST09SDMS		
Locator:	STA8SD(0-0.5)01			STA9SD(0-0.5)01			STA10SD(0-0.5)01			STA11SD(0-0.5)01			STA12SD(0-0.5)01			SBLK01			42620MS		
Date Sampled:	12-5-90			12-5-90			12-7-90			12-7-90			12-7-90			12-14-90			12-6-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Hexachlorobenzene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Pentachlorophenol	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg			
Phenanthrene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Anthracene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Di-n-butylphthalate	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	3,500	U	µg/kg
Fluoranthene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Pyrene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	J	µg/kg	330	U	µg/kg			
Butylbenzylphthalate	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
3,3'-Dichlorobenzidine	840	U	µg/kg	820	U	µg/kg	810	U	µg/kg	820	U	µg/kg	820	U	µg/kg	670	U	µg/kg	820	U	µg/kg
Benzo(a)anthracene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Chrysene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
bis(2-Ethylhexyl)phthalate	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	82	J	µg/kg	71	J	µg/kg	330	U	µg/kg	410	U	µg/kg
Di-n-octylphthalate	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Benzo(b)fluoranthene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Benzo(k)fluoranthene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Benzo(a)pyrene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Indeno(1,2,3-cd)pyrene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Dibenz(a,h)anthracene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg
Benzo(g,h,i)perylene	420	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST09SDMSD			09SDA			12SDA			S8LK01			09SDA			12SDA			09SDAMS		
Locator:	42620MSD			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			S8LK01			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			STA9SD(0-0.5)01MS		
Date Sampled:	12-6-90			12-6-90			12-6-90			12-14-90			12-6-90			12-6-90			12-6-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Phenol				410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg			
bis(2-Chloroethyl)ether	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2-Chlorophenol				410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg			
1,3-Dichlorobenzene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
1,4-Dichlorobenzene				410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg			
Benzyl alcohol	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
1,2-Dichlorobenzene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2-Methylphenol	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
bis(2-chloroisopropyl)ether	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
4-Methylphenol	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
N-Nitroso-Di-n-propylamine				410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg			
Hexachloroethane	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Nitrobenzene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Isophorone	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2-Nitrophenol	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2,4-Dimethylphenol	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Benzoic acid	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
bis(2-Chloroethoxy)methane	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2,4-Dichlorophenol	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
1,2,4-Trichlorobenzene				410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg			
Naphthalene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
4-Chloroaniline	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Hexachlorobutadiene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST09SDMSD			09SDA			12SDA			SBLK01			09SDA			12SDA			09SDAMS		
Locator:	42520MSD			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			SBLK01			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			STA9SD(0-0.5)01MS		
Date Sampled:	12-6-90			12-6-90			12-6-90			12-14-90			12-6-90			12-6-90			12-6-90		
Semivolatile Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
4-Chloro-3-methylphenol				410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg			
2-Methylnaphthalene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Hexachlorocyclopentadiene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2,4,6-Trichlorophenol	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2,4,6-Trichlorophenol	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
2-Chloronaphthalene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2-Nitroaniline	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Dimethylphthalate	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Acenaphthylene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2,6-Dinitrotoluene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
3-Nitroaniline	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Acenaphthene				410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg			
2,4-Dinitrophenol	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
4-Nitrophenol				2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg			
Dibenzofuran	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
2,4-Dinitrotoluene				410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg			
Diethylphthalate	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
4-Chlorophenyl-phenylether	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Fluorene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
4-Nitroaniline	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
4,6-Dinitro-2-methylphenol	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
N-Nitrosodiphenylamine (1)	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
4-Bromophenyl-phenylether	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST09SDMSD			09SDA			12SDA			S8LK01			09SDA			12SDA			09SDAMS		
Locater:	42620MSD			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			S8LK01			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			STA9SD(0-0.5)01MS		
Date Sampled:	12-6-90			12-6-90			12-6-90			12-14-90			12-6-90			12-6-90			12-6-90		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
Hexachlorobenzene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Pentachlorophenol				2,000	U	µg/kg	2,000	U	µg/kg	1,600	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg			
Phenanthrene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Anthracene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Di-n-butylphthalate	3,500		µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	3,500		µg/kg
Fluoranthene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Pyrene				410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg			
Butylbenzylphthalate	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
3,3'-Dichlorobenzidine	820	U	µg/kg	820	U	µg/kg	820	U	µg/kg	670	U	µg/kg	820	U	µg/kg	820	U	µg/kg	820	U	µg/kg
Benzo(a)anthracene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Chrysene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
bis(2-Ethylhexyl)phthalate	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Di-n-octylphthalate	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Benzo(b)fluoranthene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Benzo(k)fluoranthene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Benzo(a)pyrene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Indeno(1,2,3-cd)pyrene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Dibenz(a,h)anthracene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg
Benzo(g,h,i)perylene	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg	330	U	µg/kg	410	U	µg/kg	410	U	µg/kg	410	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	09SDAMSD		
Locator:	STA9SD(0-0.5)01MSD		
Date Sampled:	12-6-90		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**
Phenol	410	U	µg/kg
bis(2-Chloroethyl)ether	410	U	µg/kg
2-Chlorophenol	410	U	µg/kg
1,3-Dichlorobenzene	410	U	µg/kg
1,4-Dichlorobenzene	410	U	µg/kg
Benzyl alcohol	410	U	µg/kg
1,2-Dichlorobenzene	410	U	µg/kg
2-Methylphenol	410	U	µg/kg
bis(2-chloroisopropyl)ether	410	U	µg/kg
4-Methylphenol	410	U	µg/kg
N-Nitroso-Di-n-propylamine	410	U	µg/kg
Hexachloroethane	410	U	µg/kg
Nitrobenzene	410	U	µg/kg
Isophorone	410	U	µg/kg
2-Nitrophenol	410	U	µg/kg
2,4-Dimethylphenol	410	U	µg/kg
Benzoic acid	2,000	U	µg/kg
bis(2-Chloroethoxy)methane	410	U	µg/kg
2,4-Dichlorophenol	410	U	µg/kg
1,2,4-Trichlorobenzene	410	U	µg/kg
Naphthalene	410	U	µg/kg
4-Chloroaniline	410	U	µg/kg
Hexachlorobutadiene	410	U	µg/kg
4-Chloro-3-methylphenol	410	U	µg/kg
2-Methylnaphthalene	410	U	µg/kg
Hexachlorocyclopentadiene	410	U	µg/kg
2,4,6-Trichlorophenol	410	U	µg/kg
2,4,5-Trichlorophenol	2,000	U	µg/kg
2-Chloronaphthalene	410	U	µg/kg
2-Nitroaniline	2,000	U	µg/kg
Dimethylphthalate	410	U	µg/kg
Acenaphthylene	410	U	µg/kg
2,6-Dinitrotoluene	410	U	µg/kg
3-Nitroaniline	2,000	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	09SDAMSD		
Locator:	STA9SD(0-0.5)01MSD		
Date Sampled:	12-6-90		
Semivolatile Organics	**Conc.**	**Qual.**	**Units**
Acenaphthene			
2,4-Dinitrophenol	2,000	U	µg/kg
4-Nitrophenol			
Dibenzofuran	410	U	µg/kg
2,4-Dinitrotoluene			
Diethylphthalate	410	U	µg/kg
4-Chlorophenyl-phenylether	410	U	µg/kg
Fluorene	410	U	µg/kg
4-Nitroaniline	2,000	U	µg/kg
4,6-Dinitro-2-methylphenol	2,000	U	µg/kg
N-Nitrosodiphenylamine (1)	410	U	µg/kg
4-Bromophenyl-phenylether	410	U	µg/kg
Hexachlorobenzene	410	U	µg/kg
Pentachlorophenol			
Phenanthrene	410	U	µg/kg
Anthracene	410	U	µg/kg
Di-n-butylphthalate	3,300	U	µg/kg
Fluoranthene	410	U	µg/kg
Pyrene			
Butylbenzylphthalate	410	U	µg/kg
3,3'-Dichlorobenzidine	820	U	µg/kg
Benzo(a)anthracene	410	U	µg/kg
Chrysene	410	U	µg/kg
bis(2-Ethylhexyl)phthalate	410	U	µg/kg
Di-n-octylphthalate	410	U	µg/kg
Benzo(b)fluoranthene	410	U	µg/kg
Benzo(k)fluoranthene	410	U	µg/kg
Benzo(a)pyrene	410	U	µg/kg
Indeno(1,2,3-cd)pyrene	410	U	µg/kg
Dibenz(a,h)anthracene	410	U	µg/kg
Benzo(g,h,i)perylene	410	U	µg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST01SD			ST02SD			ST03SD			ST04SD			ST05SD			ST06SD			ST07SD		
Locator:	STA1SD(1.0-1.5)01			STA2SD(0.5-1.0)01			STA3SD(0.5-1.0)01			STA4SD(0-0.5)01			STA5SD(0-0.5)01			STA6SD(0-0.5)01			STA7SD(0.5-1.0)01		
Date Sampled:	12-7-90			12-6-90			12-6-90			12-8-90			12-8-90			12-8-90			12-6-90		
Inorganic	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Aluminum	414		mg/kg	24,600		mg/kg	455		mg/kg	1,300		mg/kg	1,350		mg/kg	523		mg/kg	540		mg/kg
Antimony	9.4		mg/kg	57.1	U	mg/kg	9.4	U	mg/kg	9.8	U	mg/kg	11.1	U	mg/kg	10.3		mg/kg	9.4	U	mg/kg
Barium	1.9	U	mg/kg	88.3	J	mg/kg	1.9	U	mg/kg	2.0	U	mg/kg	2.2	U	mg/kg	2.1	U	mg/kg	1.9	U	mg/kg
Arsenic	1.8	U	mg/kg	13.6	U	mg/kg	1.7	U	mg/kg	2.0	U	mg/kg	2.1	U	mg/kg	2.1	U	mg/kg	2.1	U	mg/kg
Beryllium	0.94	U	mg/kg	5.7	U	mg/kg	0.94	U	mg/kg	0.98	U	mg/kg	1.1	U	mg/kg	1.0	U	mg/kg	0.94	U	mg/kg
Cadmium	0.94	U	mg/kg	5.7	U	mg/kg	0.94	U	mg/kg	0.98	U	mg/kg	1.1	U	mg/kg	1.0	U	mg/kg	0.94	U	mg/kg
Calcium	94	U	mg/kg	1,000	J	mg/kg	94	U	mg/kg	97.9	U	mg/kg	112	U	mg/kg	103	U	mg/kg	93.5	U	mg/kg
Chromium	1.9	U	mg/kg	36.9		mg/kg	2.7		mg/kg	2.4		mg/kg	2.7		mg/kg	2.1	U	mg/kg	1.9	U	mg/kg
Cobalt	1.9	U	mg/kg	11.4	U	mg/kg	1.9	U	mg/kg	2.0	U	mg/kg	2.2	U	mg/kg	2.1	U	mg/kg	1.9	U	mg/kg
Copper	4.7	U	mg/kg	37.5		mg/kg	4.7	U	mg/kg	4.9	U	mg/kg	5.5	U	mg/kg	5.2	U	mg/kg	4.7	U	mg/kg
Iron	338		mg/kg	9,560		mg/kg	1,100		mg/kg	997		mg/kg	1,160		mg/kg	883		mg/kg	681		mg/kg
Lead	1.1		mg/kg	327		mg/kg	3.0		mg/kg	6.2		mg/kg	6.5		mg/kg	1.2		mg/kg	0.62	U	mg/kg
Magnesium	94	U	mg/kg	571	U	mg/kg	94	U	mg/kg	97.9	U	mg/kg	112	U	mg/kg	103	U	mg/kg	93.5	U	mg/kg
Manganese	1.9	U	mg/kg	24.0		mg/kg	1.9	U	mg/kg	4.0		mg/kg	9.9		mg/kg	2.1	U	mg/kg	1.9	U	mg/kg
Mercury	0.01	U	mg/kg	0.15		mg/kg	0.01	U	mg/kg	0.02		mg/kg	0.01		mg/kg	0.01	U	mg/kg	0.01	U	mg/kg
Nickel	7.5	U	mg/kg	45.7	U	mg/kg	7.5	U	mg/kg	7.8	U	mg/kg	9.0	U	mg/kg	8.3	U	mg/kg	7.5	U	mg/kg
Potassium	188	U	mg/kg	1,140	U	mg/kg	188	U	mg/kg	196	U	mg/kg	224	U	mg/kg	207	U	mg/kg	187	U	mg/kg
Selenium	0.90	U	mg/kg	6.8	U	mg/kg	0.87	U	mg/kg	1.0	U	mg/kg	1.1	U	mg/kg	1.0	U	mg/kg	1.0	U	mg/kg
Silver	1.9	U	mg/kg	11.4	U	mg/kg	1.9	U	mg/kg	2.0	U	mg/kg	2.2	U	mg/kg	2.1	U	mg/kg	1.9	U	mg/kg
Sodium	94	U	mg/kg	571	U	mg/kg	94.0	U	mg/kg	97.9	U	mg/kg	112	U	mg/kg	103	U	mg/kg	93.5	U	mg/kg
Thallium	1.8	UJ	mg/kg	13.6	UJ	mg/kg	1.7	UJ	mg/kg	2.0	U	mg/kg	2.1	U	mg/kg	2.1	UJ	mg/kg	2.1	UJ	mg/kg
Vanadium	1.9	U	mg/kg	55.7	J	mg/kg	2.7	J	mg/kg	3.5	J	mg/kg	3.5	J	mg/kg	2.1	U	mg/kg	1.9	U	mg/kg
Zinc	3.7	U	mg/kg	58.0		mg/kg	3.7	U	mg/kg	3.9	U	mg/kg	4.5	U	mg/kg	4.0	U	mg/kg	3.7	U	mg/kg
Cyanide	0.29	UJ	mg/kg	0.21	UJ	mg/kg	0.29	UJ	mg/kg	0.33	UJ	mg/kg	0.33	UJ	mg/kg	0.31	UJ	mg/kg	0.31	UJ	mg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST08SD			ST09SD			ST10SD			ST11SD			ST12SD			ST09SDD			ST09SDS		
Locator:	STA8SD(0-0.5)01			STA9SD(0-0.5)01			STA10SD(0-0.5)01			STA11SD(0-0.5)01			STA12SD(0-0.5)01			STA9SD(0-0.5)01A			STA9SD(0-0.5)01MS		
Date Sampled:	12-6-90			12-6-90			12-8-90			12-8-90			12-8-90			12-6-90			12-6-90		
Inorganic	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Aluminum	561		mg/kg	388		mg/kg	211		mg/kg	173		mg/kg	242		mg/kg	573		mg/kg	865		mg/kg
Antimony	10.1	U	mg/kg	10.1	U	mg/kg	10.6	U	mg/kg	8.8	U	mg/kg	9.4	U	mg/kg	10.0	U	mg/kg	91.0		mg/kg
Barium	2.0	U	mg/kg	2.0	U	mg/kg	2.1	U	mg/kg	1.8	U	mg/kg	3.0	U	mg/kg	2.0	U	mg/kg	387		mg/kg
Arsenic	2.0	U	mg/kg	2.0	U	mg/kg	2.2	U	mg/kg	2.1	U	mg/kg	2.0	U	mg/kg	2.0	U	mg/kg	9.3		mg/kg
Beryllium	1.0	U	mg/kg	1.0	U	mg/kg	1.1	U	mg/kg	0.88	U	mg/kg	0.94	U	mg/kg	1.0	U	mg/kg	9.6		mg/kg
Cadmium	1.0	U	mg/kg	1.0	U	mg/kg	1.1	U	mg/kg	0.88	U	mg/kg	0.94	U	mg/kg	1.0	U	mg/kg	8.6		mg/kg
Calcium	101	U	mg/kg	101	U	mg/kg	107	U	mg/kg	87.8	U	mg/kg	94.5	U	mg/kg	100	U	mg/kg	100	U	mg/kg
Chromium	2.0	U	mg/kg	2.0	U	mg/kg	2.1	U	mg/kg	1.8	U	mg/kg	1.9	U	mg/kg	2.0	U	mg/kg	40.0		mg/kg
Cobalt	2.0	U	mg/kg	2.0	U	mg/kg	2.1	U	mg/kg	1.8	U	mg/kg	1.9	U	mg/kg	2.0	U	mg/kg	94.7		mg/kg
Copper	5.0	U	mg/kg	5.0	U	mg/kg	5.4	U	mg/kg	4.4	U	mg/kg	4.7	U	mg/kg	5.0	U	mg/kg	47.5		mg/kg
Iron	737		mg/kg	1,030		mg/kg	612		mg/kg	409		mg/kg	552		mg/kg	1,040		mg/kg	1,160		mg/kg
Lead	0.61	U	mg/kg	0.85		mg/kg	0.65	U	mg/kg	0.63	U	mg/kg	0.60	U	mg/kg	2.2	S	mg/kg	4.8		mg/kg
Magnesium	101	U	mg/kg	101	U	mg/kg	107	U	mg/kg	87.7	U	mg/kg	94.5	U	mg/kg	100	U	mg/kg	100	U	mg/kg
Manganese	2.0	U	mg/kg	2.0	U	mg/kg	5.7		mg/kg	4.0		mg/kg	4.9		mg/kg	2.0	U	mg/kg	96.9		mg/kg
Mercury	0.01		mg/kg	0.01	U	mg/kg	0.01	U	mg/kg	0.01	U	mg/kg	0.01	U	mg/kg	0.01	U	mg/kg	0.05		mg/kg
Nickel	8.1	U	mg/kg	8.1	U	mg/kg	8.6	U	mg/kg	7.0	U	mg/kg	7.5	U	mg/kg	8.0	U	mg/kg	96.5		mg/kg
Potassium	203	U	mg/kg	202	U	mg/kg	215	U	mg/kg	175	U	mg/kg	189	U	mg/kg	201	U	mg/kg	201	U	mg/kg
Selenium	1.0	U	mg/kg	1.0	U	mg/kg	1.1	U	mg/kg	1.0	U	mg/kg	0.99	U	mg/kg	1.0	U	mg/kg	2.0		mg/kg
Silver	2.0	U	mg/kg	2.0	U	mg/kg	2.1	U	mg/kg	1.8	U	mg/kg	1.9	U	mg/kg	2.0	U	mg/kg	9.5		mg/kg
Sodium	101	U	mg/kg	101	U	mg/kg	107	U	mg/kg	87.7	U	mg/kg	94.5	U	mg/kg	100	U	mg/kg	100	U	mg/kg
Thallium	2.0	UJ	mg/kg	2.0	UJ	mg/kg	2.2	UJ	mg/kg	2.1	UJ	mg/kg	2.0	J	mg/kg	2.0	UJ	mg/kg	10.6	J	mg/kg
Vanadium	2.0	U	mg/kg	2.0	U	mg/kg	2.1	U	mg/kg	1.8	U	mg/kg	1.9	UJ	mg/kg	2.0	U	mg/kg	98.2		mg/kg
Zinc	4.0	U	mg/kg	4.0	U	mg/kg	4.3	U	mg/kg	3.5	U	mg/kg	3.7	U	mg/kg	4.0	U	mg/kg	91.9		mg/kg
Cyanide	0.31	UJ	mg/kg	0.30	UJ	mg/kg	0.31	UJ	mg/kg	0.30	UJ	mg/kg	0.30	UJ	mg/kg	0.30	UJ	mg/kg	2.2	J	mg/kg

Sample Delivery Group: T0004

QC Level D

Sample No.:	ST9SDSD			ST12SDD		
Locator:	STA9SD(0-0.5)01MSD			STA12SD(0-0.5)01A		
Date Sampled:	12-6-90			12-8-90		
Inorganic	Conc.	Qual.	Units	Conc.	Qual.	Units
Aluminum	649		mg/kg	249		mg/kg
Antimony	93.4		mg/kg	9.4	U	mg/kg
Barium	389		mg/kg	1.9	U	mg/kg
Arsenic	9.4		mg/kg	2.0	U	mg/kg
Beryllium	9.8		mg/kg	0.94	U	mg/kg
Cadmium	9.0		mg/kg	0.94	U	mg/kg
Calcium	100	U	mg/kg	94.5	U	mg/kg
Chromium	41.0		mg/kg	1.9	U	mg/kg
Cobalt	97.4		mg/kg	1.9	U	mg/kg
Copper	48.0		mg/kg	4.7	U	mg/kg
Iron	1,140		mg/kg	394		mg/kg
Lead	4.5		mg/kg	0.60	U	mg/kg
Magnesium	100	U	mg/kg	94.5	U	mg/kg
Manganese	98.4		mg/kg	3.2		mg/kg
Mercury	0.06		mg/kg	0.01	U	mg/kg
Nickel	98.0	U	mg/kg	7.5	U	mg/kg
Potassium	201	U	mg/kg	189	U	mg/kg
Selenium	2.0		mg/kg	0.99	U	mg/kg
Silver	9.1		mg/kg	1.9	U	mg/kg
Sodium	100		mg/kg	94.5	U	mg/kg
Thallium	12.6	J	mg/kg	2.0	UJ	mg/kg
Vanadium	100		mg/kg	1.9	U	mg/kg
Zinc	94.0		mg/kg	3.7	U	mg/kg
Cyanide	2.7	J	mg/kg	0.30	UJ	mg/kg

Sample Delivery Group: T0004 QC Level C

Sample No.:	ST01SD			ST02SD			ST03SD			ST04SD			ST05SD			ST06SD			ST07SD		
Locator:	STA1SD(1.0-1.5)01			STA2SD(0.5-1.0)			STA3SD(0-0.5)01			STA4SD(0-0.5)01			STA5SD(0-0.5)01			STA6SD(0-0.5)01			STA7SD(0.5-1.0)01		
Date Sampled:	12-5-90			12-5-90			12-5-90			12-5-90			12-5-90			12-5-90			12-5-90		
Pesticide Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
alpha-BHC	9.5	U	µg/kg	40	U	µg/kg	9.5	U	µg/kg	9.8	U	µg/kg	9.4	U	µg/kg	10	U	µg/kg	10	U	µg/kg
beta-BHC	9.5	U	µg/kg	40	U	µg/kg	9.5	U	µg/kg	9.8	U	µg/kg	9.4	U	µg/kg	10	U	µg/kg	10	U	µg/kg
delta-BHC	9.5	U	µg/kg	40	U	µg/kg	9.5	U	µg/kg	9.8	U	µg/kg	9.4	U	µg/kg	10	U	µg/kg	10	U	µg/kg
gamma-BHC (Lindane)	9.5	U	µg/kg	40	U	µg/kg	9.5	U	µg/kg	9.8	U	µg/kg	9.4	U	µg/kg	10	U	µg/kg	10	U	µg/kg
Heptachlor	9.5	U	µg/kg	40	U	µg/kg	9.5	U	µg/kg	9.8	U	µg/kg	9.4	U	µg/kg	10	U	µg/kg	10	U	µg/kg
Aldrin	9.5	U	µg/kg	40	U	µg/kg	9.5	U	µg/kg	9.8	U	µg/kg	9.4	U	µg/kg	10	U	µg/kg	10	U	µg/kg
Heptachlor epoxide	9.5	U	µg/kg	40	U	µg/kg	9.5	U	µg/kg	9.8	U	µg/kg	9.4	U	µg/kg	10	U	µg/kg	10	U	µg/kg
Endosulfan I	9.5	U	µg/kg	40	U	µg/kg	9.5	U	µg/kg	9.8	U	µg/kg	9.4	U	µg/kg	10	U	µg/kg	10	U	µg/kg
Dieldrin	19	U	µg/kg	80	U	µg/kg	19	U	µg/kg	20	U	µg/kg	19	U	µg/kg	20	U	µg/kg	20	U	µg/kg
4,4'-DDE	19	U	µg/kg	80	U	µg/kg	19	U	µg/kg	20	U	µg/kg	19	U	µg/kg	20	U	µg/kg	20	U	µg/kg
Endrin	19	U	µg/kg	80	U	µg/kg	19	U	µg/kg	20	U	µg/kg	19	U	µg/kg	20	U	µg/kg	20	U	µg/kg
Endosulfan II	19	U	µg/kg	80	U	µg/kg	19	U	µg/kg	20	U	µg/kg	19	U	µg/kg	20	U	µg/kg	20	U	µg/kg
4,4'-DDD	19	U	µg/kg	80	U	µg/kg	19	U	µg/kg	20	U	µg/kg	19	U	µg/kg	20	U	µg/kg	20	U	µg/kg
Endosulfan sulfate	19	U	µg/kg	80	U	µg/kg	19	U	µg/kg	20	U	µg/kg	19	U	µg/kg	20	U	µg/kg	20	U	µg/kg
4,4'-DDT	19	U	µg/kg	80	U	µg/kg	19	U	µg/kg	20	U	µg/kg	19	U	µg/kg	20	U	µg/kg	20	U	µg/kg
Methoxychlor	95	U	µg/kg	400	U	µg/kg	95	U	µg/kg	98	U	µg/kg	94	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Endrin ketone	19	U	µg/kg	80	U	µg/kg	19	U	µg/kg	20	U	µg/kg	19	U	µg/kg	20	U	µg/kg	20	U	µg/kg
alpha-Chlordane	95	U	µg/kg	400	U	µg/kg	95	U	µg/kg	98	U	µg/kg	94	U	µg/kg	100	U	µg/kg	100	U	µg/kg
gamma-Chlordane	95	U	µg/kg	400	U	µg/kg	95	U	µg/kg	98	U	µg/kg	94	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Toxaphene	190	U	µg/kg	800	U	µg/kg	190	U	µg/kg	200	U	µg/kg	190	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Aroclor-1016	95	U	µg/kg	400	U	µg/kg	95	U	µg/kg	98	U	µg/kg	94	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Aroclor-1221	95	U	µg/kg	400	U	µg/kg	95	U	µg/kg	98	U	µg/kg	94	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Aroclor-1232	95	U	µg/kg	400	U	µg/kg	95	U	µg/kg	98	U	µg/kg	94	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Aroclor-1242	95	U	µg/kg	400	U	µg/kg	95	U	µg/kg	98	U	µg/kg	94	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Aroclor-1248	95	U	µg/kg	400	U	µg/kg	95	U	µg/kg	98	U	µg/kg	94	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Aroclor-1254	190	U	µg/kg	800	U	µg/kg	190	U	µg/kg	200	U	µg/kg	190	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Aroclor-1260	190	U	µg/kg	800	U	µg/kg	190	U	µg/kg	200	U	µg/kg	190	U	µg/kg	200	U	µg/kg	200	U	µg/kg

Sample Delivery Group: T0004 QC Level C

Sample No.:	ST08SD			ST09SD			ST10SD			ST11SD			ST12SD			PBLK-S			ST09SDAMSDL		
Locator:	STA8SD(0-0.5)01			STA9SD(0-0.5)01			STA10SD(0-0.5)01			STA11SD(0-0.5)01			STA12SD(0-0.5)01			PBLK-S			426206		
Date Sampled:	12-5-90			12-5-90			12-5-90			12-5-90			12-5-90			12-13-90			12-6-90		
Pesticide Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
alpha-BHC	10	U	µg/kg	10	U	µg/kg	9.9	U	µg/kg	10	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg
beta-BHC	10	U	µg/kg	10	U	µg/kg	9.9	U	µg/kg	10	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg
delta-BHC	10	U	µg/kg	10	U	µg/kg	9.9	U	µg/kg	10	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg
gamma-BHC (Lindane)	10	U	µg/kg	10	U	µg/kg	9.9	U	µg/kg	10	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg			
Heptachlor	10	U	µg/kg	10	U	µg/kg	9.9	U	µg/kg	10	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg			
Aldrin	10	U	µg/kg	10	U	µg/kg	9.9	U	µg/kg	10	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg			
Heptachlor epoxide	10	U	µg/kg	10	U	µg/kg	9.9	U	µg/kg	10	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg
Endosulfan I	10	U	µg/kg	10	U	µg/kg	9.9	U	µg/kg	10	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg
Dieldrin	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	16	U	µg/kg			
4,4'-DDE	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg
Endrin	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	16	U	µg/kg			
Endosulfan II	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg
4,4'-DDD	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg
Endosulfan sulfate	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg
4,4'-DDT	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	16	U	µg/kg			
Methoxychlor	100	U	µg/kg	100	U	µg/kg	99	U	µg/kg	100	U	µg/kg	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg
Endrin ketone	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg
alpha-Chlordane	100	U	µg/kg	100	U	µg/kg	99	U	µg/kg	100	U	µg/kg	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg
gamma-Chlordane	100	U	µg/kg	100	U	µg/kg	99	U	µg/kg	100	U	µg/kg	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg
Toxaphene	200	U	µg/kg	200	U	µg/kg	200	U	µg/kg	200	U	µg/kg	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg
Aroclor-1016	100	U	µg/kg	100	U	µg/kg	99	U	µg/kg	100	U	µg/kg	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg
Aroclor-1221	100	U	µg/kg	100	U	µg/kg	99	U	µg/kg	100	U	µg/kg	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg
Aroclor-1232	100	U	µg/kg	100	U	µg/kg	99	U	µg/kg	100	U	µg/kg	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg
Aroclor-1242	100	U	µg/kg	100	U	µg/kg	99	U	µg/kg	100	U	µg/kg	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg
Aroclor-1248	100	U	µg/kg	100	U	µg/kg	99	U	µg/kg	100	U	µg/kg	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg
Aroclor-1254	200	U	µg/kg	200	U	µg/kg	200	U	µg/kg	200	U	µg/kg	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg
Aroclor-1260	200	U	µg/kg	200	U	µg/kg	200	U	µg/kg	200	U	µg/kg	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg

Sample Delivery Group: T0004 QC Level C

Sample No.:	ST09SDMSDDL			09SDA			09SDADL			12SDA			PBLK-S			09SDA			09SDADL		
Locator:	STA9SD(0-0.5)01			STA9SD(0-0.5)01A			STA9SD(0-0.5)01A			STA12SD(0-0.5)01A			PBLK-S			STA9SD(0-0.5)01A			STA9SD(0-0.5)01A		
Date Sampled:	12-5-90			12-5-90			12-5-90			12-5-90			12-13-90			12-5-90			12-5-90		
Pesticide Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
alpha-BHC	100	U	µg/kg	10	U	µg/kg	100	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	10	U	µg/kg	100	U	µg/kg
beta-BHC	100	U	µg/kg	10	U	µg/kg	100	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	10	U	µg/kg	100	U	µg/kg
delta-BHC	100	U	µg/kg	10	U	µg/kg	100	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	10	U	µg/kg	100	U	µg/kg
gamma-BHC (Lindane)				10	U	µg/kg	100	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	10	U	µg/kg	100	U	µg/kg
Heptachlor				10	U	µg/kg	100	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	10	U	µg/kg	100	U	µg/kg
Aldrin				10	U	µg/kg	100	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	10	U	µg/kg	100	U	µg/kg
Heptachlor epoxide	100	U	µg/kg	10	U	µg/kg	100	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	10	U	µg/kg	100	U	µg/kg
Endosulfan I	100	U	µg/kg	10	U	µg/kg	100	U	µg/kg	10	U	µg/kg	8.0	U	µg/kg	10	U	µg/kg	100	U	µg/kg
Dieldrin				20	U	µg/kg	200	U	µg/kg	20	U	µg/kg	16	U	µg/kg	20	U	µg/kg	200	U	µg/kg
4,4'-DDE	200	U	µg/kg	20	U	µg/kg	200	U	µg/kg	20	U	µg/kg	16	U	µg/kg	20	U	µg/kg	200	U	µg/kg
Endrin				20	U	µg/kg	200	U	µg/kg	20	U	µg/kg	16	U	µg/kg	20	U	µg/kg	200	U	µg/kg
Endosulfan II	200	U	µg/kg	20	U	µg/kg	200	U	µg/kg	20	U	µg/kg	16	U	µg/kg	20	U	µg/kg	200	U	µg/kg
4,4'-DDD	200	U	µg/kg	20	U	µg/kg	200	U	µg/kg	20	U	µg/kg	16	U	µg/kg	20	U	µg/kg	200	U	µg/kg
Endosulfan sulfate	200	U	µg/kg	20	U	µg/kg	200	U	µg/kg	20	U	µg/kg	16	U	µg/kg	20	U	µg/kg	200	U	µg/kg
4,4'-DDT				20	U	µg/kg	200	U	µg/kg	20	U	µg/kg	16	U	µg/kg	20	U	µg/kg	200	U	µg/kg
Methoxychlor	1,000	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg	100	U	µg/kg	80	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg
Endrin ketone	200	U	µg/kg	20	U	µg/kg	200	U	µg/kg	20	U	µg/kg	16	U	µg/kg	20	U	µg/kg	200	U	µg/kg
alpha-Chlordane	1,000	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg	100	U	µg/kg	80	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg
gamma-Chlordane	1,000	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg	100	U	µg/kg	80	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg
Toxaphene	2,000	U	µg/kg	200	U	µg/kg	2,000	U	µg/kg	200	U	µg/kg	160	U	µg/kg	200	U	µg/kg	2,000	U	µg/kg
Aroclor-1016	1,000	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg	100	U	µg/kg	80	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg
Aroclor-1221	1,000	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg	100	U	µg/kg	80	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg
Aroclor-1232	1,000	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg	100	U	µg/kg	80	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg
Aroclor-1242	1,000	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg	100	U	µg/kg	80	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg
Aroclor-1248	1,000	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg	100	U	µg/kg	80	U	µg/kg	100	U	µg/kg	1,000	U	µg/kg
Aroclor-1254	2,000	U	µg/kg	200	U	µg/kg	2,000	U	µg/kg	200	U	µg/kg	160	U	µg/kg	200	U	µg/kg	2,000	U	µg/kg
Aroclor-1260	2,000	U	µg/kg	200	U	µg/kg	2,000	U	µg/kg	200	U	µg/kg	160	U	µg/kg	200	U	µg/kg	2,000	U	µg/kg

Sample Delivery Group: T0004 QC Level C

Sample No.:	12SDA			PBLK-S			ST09SDAMSDL			ST09SDAMSDDL		
Locator:	STA12SDI0-0.5I01A			PBLK S			426206			426207		
Date Sampled:	12-6-90			12-13-90			12-6-90			12-6-90		
Pesticide Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
alpha-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
beta-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
delta-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
gamma-BHC (Lindane)	10	U	µg/kg	8.0	U	µg/kg						
Heptachlor	10	U	µg/kg	8.0	U	µg/kg						
Aldrin	10	U	µg/kg	8.0	U	µg/kg						
Heptachlor epoxide	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Endosulfan I	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Dieldrin	20	U	µg/kg	16	U	µg/kg						
4,4'-DDE	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Endrin	20	U	µg/kg	16	U	µg/kg						
Endosulfan II	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
4,4'-DDD	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Endosulfan sulfate	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
4,4'-DDT	20	U	µg/kg	16	U	µg/kg						
Methoxychlor	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Endrin ketone	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
alpha-Chlordane	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
gamma-Chlordane	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Toxaphene	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Aroclor-1016	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1221	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1232	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1242	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1248	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1254	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Aroclor-1260	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg

Sample Delivery Group: T0004 QC Level C

Sample No.:	12SDA			PBLK-S			ST09SDAMSDL			ST09SDAMSDDL		
Locator:	STA12SD(0-0.5)01A			PBLK S			426206			426207		
Date Sampled:	12-6-90			12-13-90			12-6-90			12-6-90		
Pesticide Organics	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
alpha-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
beta-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
delta-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
gamma-BHC (Lindane)	10	U	µg/kg	8.0	U	µg/kg						
Heptachlor	10	U	µg/kg	8.0	U	µg/kg						
Aldrin	10	U	µg/kg	8.0	U	µg/kg						
Heptachlor epoxide	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Endosulfan I	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Dieldrin	20	U	µg/kg	16	U	µg/kg						
4,4'-DDE	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Endrin	20	U	µg/kg	16	U	µg/kg						
Endosulfan II	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
4,4'-DDD	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Endosulfan sulfate	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
4,4'-DDT	20	U	µg/kg	16	U	µg/kg						
Methoxychlor	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Endrin ketone	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
alpha-Chlordane	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
gamma-Chlordane	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Toxaphene	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Aroclor-1016	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1221	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1232	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1242	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1248	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1254	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Aroclor-1260	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg

Sample Delivery Group: T0004 QC Level C

Sample No.:	12SDA			PBLK-S			ST09SDAMSDL			ST09SDAMSDDL		
Locator:	STA12SD(0-0.5)01A			PBLK-S			426206			426207		
Date Sampled:	12-6-90			12-13-90			12-6-90			12-6-90		
Pesticide Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
alpha-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
beta-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
delta-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
gamma-BHC (Lindane)	10	U	µg/kg	8.0	U	µg/kg						
Heptachlor	10	U	µg/kg	8.0	U	µg/kg						
Aldrin	10	U	µg/kg	8.0	U	µg/kg						
Heptachlor epoxide	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Endosulfan I	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Dieldrin	20	U	µg/kg	16	U	µg/kg						
4,4'-DDE	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Endrin	20	U	µg/kg	16	U	µg/kg						
Endosulfan II	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
4,4'-DDD	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Endosulfan sulfate	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
4,4'-DDT	20	U	µg/kg	16	U	µg/kg						
Methoxychlor	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Endrin ketone	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
alpha-Chlordane	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
gamma-Chlordane	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Toxaphene	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Aroclor-1016	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1221	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1232	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1242	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1248	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1254	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Aroclor-1260	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg

Sample Delivery Group: T0004 QC Level C

Sample No.:	12SDA			PBLK-S			ST09SDAMSDL			ST09SDAMSDDL		
Locator:	STA 12SD(0-0.5)01A			PBLK-S			426206			426207		
Date Sampled:	12-6-90			12-13-90			12-6-90			12-6-90		
Pesticide Organics	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**	**Conc.**	**Qual.**	**Units**
alpha-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
beta-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
delta-BHC	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
gamma-BHC (Lindane)	10	U	µg/kg	8.0	U	µg/kg						
Heptachlor	10	U	µg/kg	8.0	U	µg/kg						
Aldrin	10	U	µg/kg	8.0	U	µg/kg						
Heptachlor epoxide	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Endosulfan I	10	U	µg/kg	8.0	U	µg/kg	100	U	µg/kg	100	U	µg/kg
Dieldrin	20	U	µg/kg	16	U	µg/kg						
4,4'-DDE	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Endrin	20	U	µg/kg	16	U	µg/kg						
Endosulfan II	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
4,4'-DDD	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
Endosulfan sulfate	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
4,4'-DDT	20	U	µg/kg	16	U	µg/kg						
Methoxychlor	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Endrin ketone	20	U	µg/kg	16	U	µg/kg	200	U	µg/kg	200	U	µg/kg
alpha-Chlordane	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
gamma-Chlordane	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Toxaphene	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Aroclor-1016	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1221	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1232	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1242	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1248	100	U	µg/kg	80	U	µg/kg	1,000	U	µg/kg	1,000	U	µg/kg
Aroclor-1254	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg
Aroclor-1260	200	U	µg/kg	160	U	µg/kg	2,000	U	µg/kg	2,000	U	µg/kg

APPENDIX D

DISCHARGE CALCULATIONS AND CROSS SECTIONS

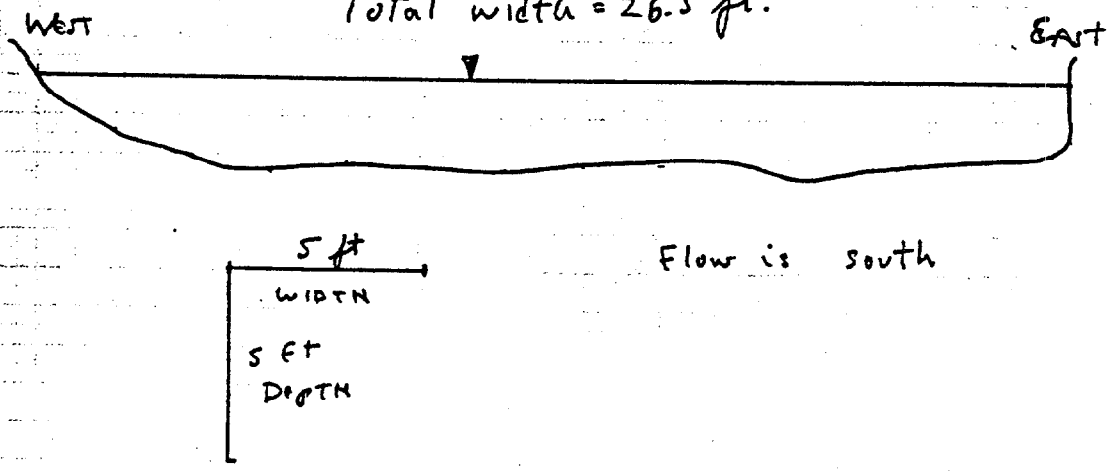
PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculations	MAK	6500-01
	CHK. BY	DATE
	[illegible]	12/19/90

Calculation of Discharge
Station 9 Clear Creek
12/5/90

1. Gauging Data from Field Note book.

Tape Reading (ft)	Depth Ft.	Velocity at 0.6 Depth (FPS)	Verif. at 0.6 D
1.5 (East Bank)	1.75	—	
2.0	1.90	0.56	✓
4.0	2.05	0.69	✓
6.0	2.22	1.12	✓
8.0	2.50	1.24	✓
10.0	2.15	1.65	✓
12.0	2.20	1.81	✓
14.0	2.20	1.61	✓
16.0	2.25	1.41 (1.45)	✓
18.0	2.22	1.39	✓
20.0	2.15	1.21	✓
22.0	2.40	0.84	✓
24.0	2.05	0.49	✓
26.0	1.40	0.06	✓
28.0 (West Bank)	0	—	

2. Cross Section Sketch



For depths of 0.3 & 2.5 or 30' the mean velocity is best approximated as the velocity 0.6 of the distance from water surface to bottom

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculations	MAL	6500-01
	CHK. BY	DATE
	[illegible]	12/19/90

3. Discharge computation.

Source: National Handbooks of Recommended Methods for Water-Data Acquisition.
Office of Water Data Coordination
Geological Survey
U.S. Dept of Interior 1977
Reston, VA.
Revised 8/80

From equations 1-19a, 1-19b, and 1-20a

$$\text{Volume of Flow (total Flow)} = \int Q\,dt = A\int V\,dt \qquad (1\text{-}19a)$$

Q = rate of flow
V = mean velocity
A = cross-sectional area
t = time

where flow does not vary over the measuring period

$$\text{Volume of total Flow} = Qt$$

and

$$Q = AV$$

This can be approximated by

$$Q = \sum_{1}^{x} (a_x v_x) = \sum_{1}^{x} q_x$$

and

$$q_x = \frac{1}{2}\left[\frac{(b_x - b_{x-1})}{2} + \frac{(b_{x+1} - b_x)}{2}\right] d_x \qquad (1\text{-}20a)$$

$$= v_x\left[\frac{b_{x+1} - b_{x-1}}{2}\right] d_x$$

q_x = discharge through incremental x-c x (CFS)
v_x = mean velocity at location x (FPS)
b_x = distance from initial point to x (Ft)
b_{x-1} = distance from initial point to preceding location (Ft)
b_{x+1} = distance from initial point to next location (Ft)
d_x = depth at location x (Ft)

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculations	MAK	6500-01
	CHK. BY	DATE
	EJG	12/19/90

For end sections:

initial point $q_1 = V_1 \left(\frac{b_2 - b_1}{2}\right) d_1$

end point $q_N = V_n \left(\frac{b_n - b_{n-1}}{2}\right) d_n$

4. Discharge calculations for Station 9 (see 1. for data)

Examples:

$q_{1.5} = (0\ FPS)\left(\frac{2.0\ Ft - 1.5\ Ft}{2}\right)(1.75\ Ft) = 0\ CFS \sim 0$

$q_{2.0} = (0.56\ FPS)\left(\frac{4.0\ Ft - 1.5\ Ft}{2}\right)(1.90\ Ft) = 1.33\ CFS \sim 1.3\ CFS$

$q_{4.0} = (0.69)\left(\frac{6.0 - 2.0}{2}\right)(2.05) = 2.83\ CFS \sim 2.8\ CFS$

$q_{6.0} = (1.12)\left(\frac{8.0 - 4.0}{2}\right)(2.22) = 4.97\ CFS \sim 5.0\ CFS$

$q_{26} = (0.06)\left(\frac{28 - 24}{2}\right)1.40 = 0.17\ CFS \sim 0.2\ CFS$

$q_{28} = (0)\left(\frac{28 - 26}{2}\right)0 = 0\ CFS \sim 0\ CFS$

(Velocity and length estimates are accurate to 0.05 Ft and 0.05 FPS)

5. Discharge Calculation and Estimate (round to nearest 0.1 CFS)

Distance from IP on East Bank (Ft)	q_x (CFS)	Distance from IP on East Bank (Ft)	q_x (CFS)
1.5	0	20.0	5.2
2.0	1.3	22.0	4.0
4.0	2.8	24.0	2.0
6.0	5.0	26.0	0.2
8.0	6.2	28.0	0
10.0	7.1		
12.0	8.0		
14.0	7.1		
16.0	6.4 (6.5)		
18.0	6.2		

TOTAL Discharge $= \sum_{1.5}^{28} q_x = 61.5\ CFS$ (61.6)

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculations	MAR	6500-01
	CHK. BY EBB	DATE 12/20/90

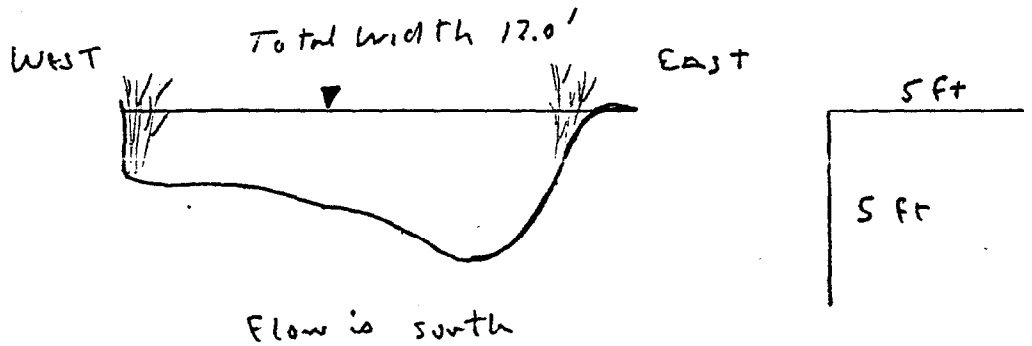
Calculation of Discharge
Station 6 Clear Creek
12/6/90

1. Gauging data from field note book

Tape reading (Ft)	Depth Ft	Velocity (FPS)	Verified 0.6d
EAST BANK 0	—	—	✓
1.0	0	0	✓
2.0	1.95'	— NOT measurable*	✓
~~4~~ 3.0	3.70'	1.57'	✓
~~5~~ 5.0	3.10'	1.84'	✓
8.0	2.45'	1.68'	✓
10.0	2.22'	1.53'	✓
12.0	2.00'	0.94'	✓
13.0 WEST BANK	1.80'	*	✓

* due to weeds

2. Cross Section Sketch



Flow is south

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculations	MAK	6500-01
	CHK. BY EDB	DATE 12/20/90

3. Discharge Computation for Station 6

Distance from IP on East Bank (Ft.)	q_x (CFS)		
1.0	0		
2.0	2.9	(a)	Estimated velocity 1.0 FPS based on visual observation.
4.0	11.6		Velocity at 4.0 & slowing effect of weeds & banks
6.0	11.4		
8.0	8.2		
10.0	6.8		
12.0	2.8		
13.0	0.5	(b)	Estimated velocity at 0.5 FPS based on visual observation velocity at 12.0 and showing effect of weeds and banks.
Σq_x	44.2 CFS		

TOTAL Discharge at Stn. 6 = 44.2 CFS

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculations	NAK	6500-01
	CHK. BY EDG	DATE 12/20/90

Calculation of Discharge
Station 3 Clear Creek
12/6/90

1. Gauging data from field note books

Tape Reading (Ft)	Depth (FT)	Velocity at 0.6 depth (FPS)	Verif. ☐QAD
North Bank	—	—	—
2.0	0	0	—
4.0	0.8	1.38	✓
6.0	1.05	1.49	✓
8.0	1.35	1.93	✓
10.0	1.35	1.54	✓
12.0	1.30	1.59	✓
14.0	1.20	1.57	✓
16.0	1.50	1.12	✓
18.0	0.90	1.70	✓
20.0	0.80	2.22	✓
22.0	0.65	2.10	✓
24.0	0.65	2.11	✓
26.0	0.75	1.32 corr to 1.47	✓*
28.0	0.95	0.30	✓
30.0	0.5	1.50	✓
32.0 (South Bank)	0	0	—

* $d = 0.75'$

$0.6D = 0.45$

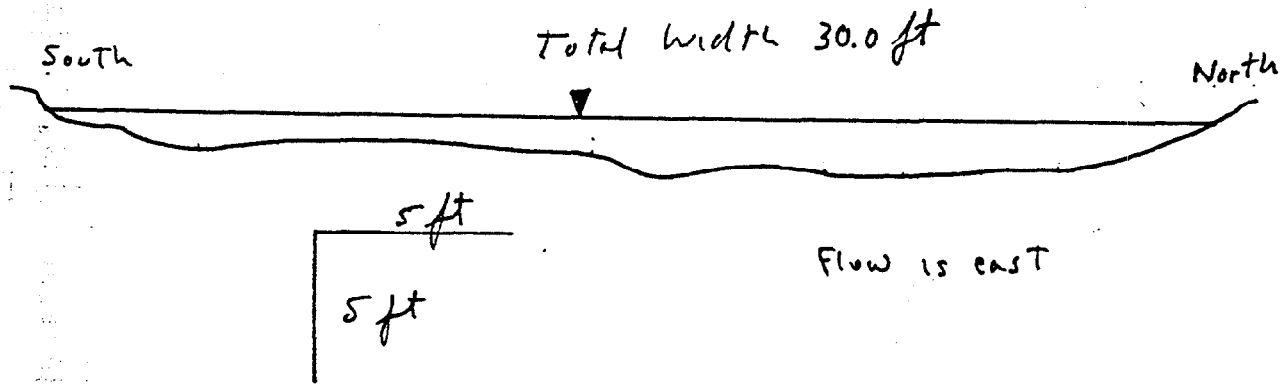
$0.5-7' = 0.75d$ ∴ From Eq. 1-8 of USGS 1977 revised 8/80

measured flow velocity at $0.75d$ = 0.9 x average

so correct by $1.32^{fps} \div 0.9 = 1.47$ fps

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculations	MAK	65-00-01
	CHK. BY EDS	DATE 12/20/90

2. Cross section Sketch



3. Discharge computation for Station 3

Distance from IP on North Bk. (Ft)	q_x (CFS)	Distance from IP on North Bk (Ft)	q_x CFS
2.0	0	22.0	3.4
4.0	2.2	24.0	2.7
6.0	3.1	26.0	2.2
8.0	5.2	28.0	0.6
10.0	4.2	30.0	1.5
12.0	4.1	32.0	0
14.0	3.8		
16.0	3.4		
18.0	3.1		
20.0	3.6		

$\sum_{1}^{32} q_x = 43.1$ CFS

Total discharge = 43.1 CFS.

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculations	MAK	6500-01
	CHK. BY	DATE
	[illegible]	12/20/90

Calculation of Discharge

Station 12 Big Coldwater Creek

12/7/90

1. Gauging data from field notebooks

Tape reading (Ft)	Depth (Ft)	Velocity (FPS)	0.6 d very.
0.5 (North Bank)	0	0	–
3.0	2.70	0.61	✓
10.0	2.70	1.04	✓
15.0	2.70		
20.0	2.80	1.09	✓
25.0	2.15		
30.0	2.55	1.66	✓
35.0	2.15		
40.0	2.00	1.74	✓
45.0	2.00		
50.0	1.90	2.15	✓
55.0	2.05		
60.0	1.75	1.78	✓
65.0	1.65		
70.0	1.45	1.02	✓
75.0	1.40		
80.0	1.45	1.79	✓
85.0	1.55		
90.0	1.50	1.54	✓
95.0	1.75		
100.0	1.55	1.88	✓
105.0	1.45		
110.0	1.25	1.56	✓
115.0	1.35 /	0.81 /	✓
116.7 (South Bank)	0	0	–

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculations	MAK	6500-01
	CHK. BY	DATE
	[illegible]	12/20/90

2. Cross section sketch

See attached oversized sketch.

3. Discharge Computation

Distance from IP on North Bank (FT)	q_x (CFS)
3.0	7.8
10.0	23.9
20.0	30.5
30.0	42.3
40.0	34.8
50.0	40.9
60.0	31.2
70.0	14.8
80.0	26.0
90.0	23.1
100.0	29.1
110.0	14.6
115.0	5.9

$\Sigma q_x = 324.9$ CFS

Total Discharge = 324.9 CFS

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculation	MAK	6500-01
	CHK BY	DATE 12/20/90

Calculation of Discharge
Station 10A Big Coldwater Creek
12/7/90

1. Gauging data from field notebook

Tape Reading (FT)	Depth (ft)	Velocity (FPS)	0.6 D verif.
0 South Bank	0	0	–
8.0	0.65	Too Shallow to measure	
10.0	1.4	0.44	✓
20.0	2.9	1.79	✓
25.0	3.65	–	
30.0	3.50	1.96	✓
40.0	2.9	2.06	✓
50.0	2.5	1.93	✓
60.0	3.0	1.82	✓
70.0	2.8	1.79	✓
80.0	2.6	1.60	✓
90.0	1.8	0.71	✓
101.0	0.7	0.51	✓
110.0 North Bank	0	0	–

2. Cross Section Sketch
See attached oversized sketch

PROJECT	COMP. BY	JOB NO.
NAS Whiting Field Stream Discharge Calculation	MAK	6J00-01
	CHK. BY EAB	DATE 12/20/90

3. Discharge Computation

Distance from IP on South Bank (FT)	q_x (CFS)	
0	0	
8.0	1.1 *	Based on visual observation Flow at 8' was only slightly lower velocity than 10 ft ∴ estimate 0.35 FPS for 8.0 V_x
10.0	3.7	
20.0	34.5	
30.0	68.6	
40.0	59.7	
50.0	48.3	
60.0	54.6	
70.0	50.1	
80.0	41.6	
90.0	12.8	
100.0	3.6	
110.0	0	

$\Sigma q_x = 378.6$ CFS

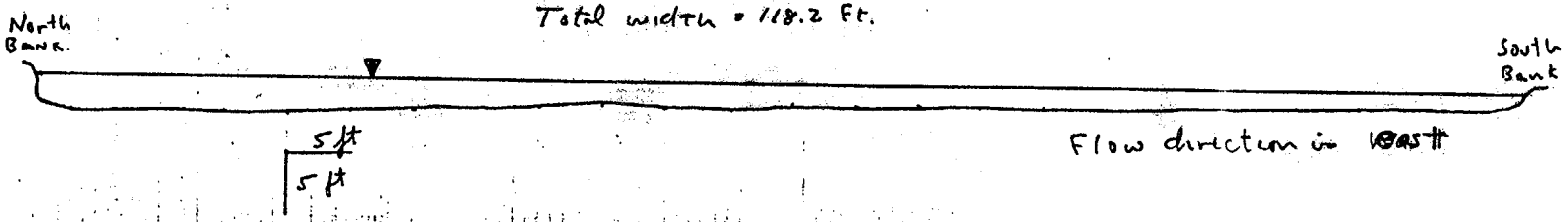
Total discharge = 378.6 CFS

Note: Measurements made at 1330 12/7/90 at STATION 10A

Measurements made at 1015 12/7/90 at STATION 12

Steady light rain interspersed with periods of heavy rain during previous 12 hours and from 1015 – 1330. Flow in Big Cold Water Creek noticeably increased during the sampling period.

Cross Section Sketch Station 12 Big Coldwater Creek



Cross Section Sketch Station 10A Big Coldwater Creek