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# FINAL PRELIMINARY SITE CHARACTERIZATION REPORT SITE 14 NAVAL AIR STATION PENSACOLA, FLORIDA

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NAS PENSACOLA
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NAVAL AIR STATION
PENSACOLA, FLORIDA

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November 17, 1995

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19. Abstract

[A] Preliminary Site Characterization was conductad for Site 14 " the Dredge Spoil Fill Area at NAS Pensacola. The purpose of this investigation was to delineate the nature and extent of contaminants in soil, sediment, surface water and groundwater at the site. [Analytical data w o n tomparod to standard. agreed to previously by tho Tier 1 Partnoring Team. Under these specific Preliminary Remediation Goak (PRGs), soil data w o n compared to USEPA Region III risk based concentrations (RBCs), and FDEP Cleanup Goals (CGs) for Florida military sites. Because tho dredge spoil basins are periodically dry and represent a potential soil pathway, sediment data w o n tomparod to soil PRO., as well as USEPA Region IV Sediment Screening Values, and FDEP Sediment Quality Assessment Guide (SQUAG) Threshold Effective Limit (TEL) values. Groundwater data were compared to USEPA Maximum Contaminant Levels/Secondary Maximum Contaminant Levels (MCLs/SMCLs), FDEP Primary/Secondary Drinking Water Standards (FPDWS/FSDWS), and Florida Groundwater Guidance Concentrations (FGGCs). Surface water data were compand to USEPA Water Quality Standard. and Florida Surface Water Quality Standard.].

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Several inorganics were detected in the basin sediments including [aluminum,] arsenic, [beryllium,] chromium, copper. lead, [manganese,] mercury, [nickel,] silver, [vanadium,] and zinc exceeding [PRG]. Sediment samples collected in Pensacola Bay adjacent to outfalls extending from basins did not have any detected inorganics [above standard.]. Detected organics included poly[cyclic] aromatic hydrocarbons (PAHs), pesticides and polychlorinated biphenyls (PCBs). Arsenic was the only parameter detected in soil samples exceeding a PRG. No organic compounds were detected in soil samples.

Lead, mercury, and iron were detected in surface water samples exceeding their PRGs. Mercury was detected in only one sample. Pesticides and PAHs were detected in surface water samples; however, none exceeded the PRGs.

Aluminum, iron, manganese, and sodium were detected in site groundwater at concentrations exceeding a PRG. Concentrations of these parameters are comparable with NAS reference concentrations or those for ambient groundwater quality in the Sand and Gravel Aquifer in this area. Concentrations of calcium, magnesium, and potassium, for which there is no PRG, exceeded the NAS Pensacola RC in both samples. These elements; however, are major constituents of seawater and likely elevated as a result of the site's proximity to Pensacola Bay. No organics were detected in groundwater samples.

Groundwater at the site contains iron and aluminum exceeding FSDWS and does not appear to be suitable for a potable water supply. Groundwater flow is toward Pensacola Bay at a velocity of 0.71 ft/day during low tide, and 0.43 ft/day during high tide

No further action is warranted based on the datected contaminant concentrations and the recommended removal of site sediment and soil. The preliminary risk evaluation and ecological risk assessment did not identify any significant human-health or ecological risks [given tho future of tho material at tho site]. [Based on the Tier I Partnoring Team discussions, tho sediment in tho basins and the soil of tho surrounding berms are suitable as fill matorial under tho following circumstances:

1. As tho basin sediment exceeds tho surface soil PRO.. it can only bo used as fill material if it is covered by at least 2-feet of clean soil, and placed in areas not subject to erosion.

2. The berm soil can bo used as fill material anywhere on tho b u e as it does not pose a risk.

For tho site to bo adequately managed under these conditions. any plans for use or alteration of tho site sediment or soil must bo submitted for approval by tho Tier I Partnoring Team. Prevention of migration of contaminated sediment to the adjacent wetland. and Pensacola Bay must be part of any reuse plans.]

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## List of Acronyms

| | |
|---|---|
| µg/kg | Micrograms per kilogram |
| µg/L | Micrograms per liter |
| ARARS | Applicable or Relevant and Appropriate Requirements |
| ASTM | American Society for Testing and Materials |
| bls | Below land surface |
| BOD | Biochemical Oxygen Demand |
| BRA | Baseline Risk Assessment |
| °C | Degrees Celsius |
| CEC | Cation Exchange Capacity |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act of 1980 |
| CG | Cleanup goal |
| CLEAN | Comprehensive Long-term Environmental Action Navy |
| CLP | Contract Laboratory Program |
| COC | chain of custody |
| COD | Chemical Oxygen Demand |
| CSAP | Comprehensive Sampling and Analysis Plan |
| CSS | Contaminant Source Survey |
| E/A&H | EnSafe/Allen & Hoshall |
| E&E | Ecology and Environment, Inc. |
| FDEP | Florida Department of Environmental Protection formerly the Florida Department of Environmental Regulation (FDER) |
| FDWS | Florida Drinking Water Standard |
| FGGC | Florida Groundwater Guidance Concentrations |
| FNAI | Florida Natural Areas Inventory |
| FPDWS | Florida Primary Drinking Water Standard |
| FSDWS | Florida Secondary Drinking Water Standard |
| ftlday | Feet per day |
| G&M | Geraghty & Miller, Inc. |
| GS | Grain size |
| $H_2SO_4$ | Sulfuric Acid |
| HCL | Hydrochloric Acid |
| $HNO_3$ | Nitric Acid |
| IAS | Initial Assessment Study |
| ID | Inside Diameter |
| IDW | Investigation-Derived Waste |
| IRP | Installation Restoration Program |
| IWTP | Industrial Wastewater Treatment Plant |
| K | Hydraulic Conductivity |
| MCL | Maximum Contaminant Level |
| mg/kg | Milligrams per kilogram |
| MS/MSD | Matrix Spike/Matrix Spike Duplicate |

| | |
|---|---|
| msl | Mean sea level |
| NADEP | Naval Aviation Depot |
| NaOH | Sodium Hydroxide |
| NAS | Naval Air Station |
| NAVAIREWORKFAC | Naval Air Rework Facility |
| NEESA | Naval Energy and Environmental Support Activity |
| NPL | National Priorities List |
| OD | Outside Diameter |
| OSWER | Office of Solid Waste and Emergency Response |
| PAH | Polycyclic Aromatic Hydrocarbon |
| PCBs | Polychlorinated Biphenyls |
| PID | Photoionization Detector |
| ppb | Parts per billion |
| PPE | Personal Protective Equipment |
| ppm | Parts per million |
| PPS | Physical parameters, soil |
| PPW | Physical parameters, water |
| PVC | Polyvinyl Chloride |
| PWC | Public Works Center |
| QA/QC | Quality Assurance/Quality Control |
| RBC | Risk-based Concentration |
| RC | Reference Concentration |
| RI | Remedial Investigation |
| SAP | Sampling and Analysis Plan |
| SDG | Sample Delivery Group |
| SMCL | Secondary Maximum Contaminant Levels |
| SOP/QAM | Standard Operating Procedures and Quality Assurance Manual (USEPA Region IV Environmental Compliance Branch) |
| SOUTHNAVFACENGCOM | Southern Division Naval Facilities Engineering Command |
| svocs | Semivolatile Organic Compounds |
| TA | Total Alkalinity |
| TAL | Target Analyte List |
| TCL | Target Compound List |
| TCLP | Toxicity Characteristic Leaching Procedure |
| TKN | Total Kjeldahl Nitrogen |
| TQC | Total Organic Carbon |
| TP | Total Phosphorus |
| TSS | Total Suspended Solids |
| TRPHs | Total Recoverable Petroleum Hydrocarbons |
| USEPA | United States Environmental Protection Agency |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |
| VOA | Volatile Organic Analysis |
| VOCs | Volatile Organic Compounds |

# EXECUTIVE SUMMARY

[A Preliminary Site Characterization was conducted for Site 14 — the Dredge Spoil Fill Area at NAS Pensacola. The purpose of this investigation was to delineate the nature and extent of contaminants in soil, sediment, surface water and groundwater at the site. Analytical data were compared to standards agreed to previously by the Tier 1 Partnering Team. Under these specific Preliminary Remediation Goals (PRGs), soil data were compared to USEPA Region III risk based concentrations (RBCs), and FDEP Cleanup Goals (CGs) for Florida military sites. Because the dredge spoil basins are periodically dry and represent a potential soil pathway, sediment data were compared to soil PRGs, as well as USEPA Region IV Sediment Screening Values, and FDEP Sediment Quality Assessment Guide (SQUAG) Threshold Effective Limit (TEL) values. Groundwater data were compared to USEPA Maximum Contaminant Levels/Secondary Maximum Contaminant Levels (MCLs/SMCLs), FDEP Primary/Secondary Drinking Water Standards (FPDWS/FSDWS), and Florida Groundwater Guidance Concentrations (FGGCs). Surface water data were compared to USEPA Water Quality Standards and Florida Surface Water Quality Standards.

Site 14 has been historically used for disposal of dredge material for navigable channels surrounding NAS Pensacola, including the aircraft carrier turning basin at NAS Pensacola's Allegheny Pier. The site is currently being used for dredge spoil disposal. Previous investigations at the site identified metals, volatile organic compounds (VOCs), total recoverable petroleum hydrocarbons (TRPHs), polynuclear aromatic hydrocarbons (PAHs), and phenols in sediment and soil samples. Groundwater samples contained metals and phenols.

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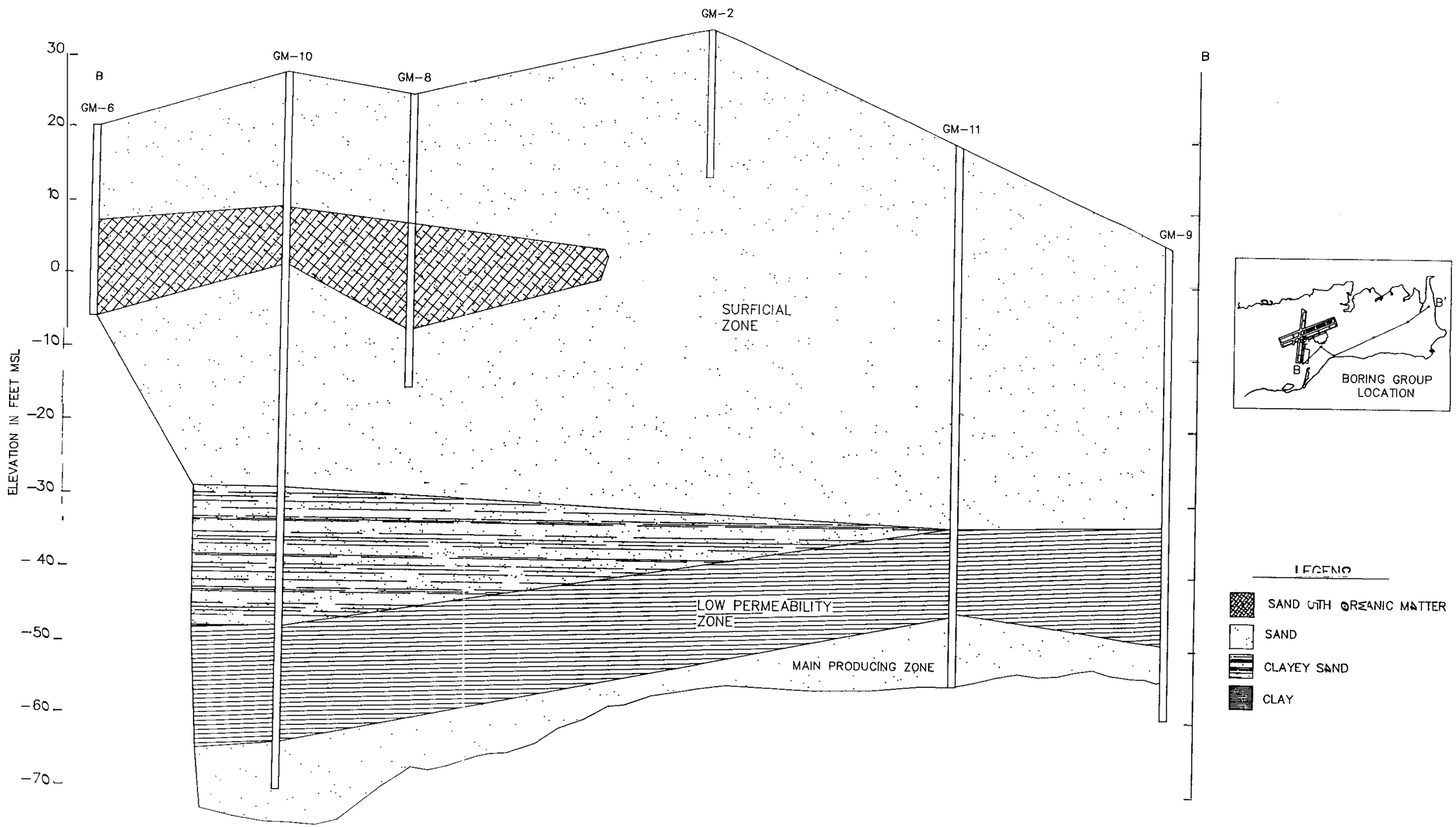
1. As the basin sediment exceeds the surface soil PRGs, it can only be used as fill material if it is covered by at least 2-feet of clean soil, and placed in areas not subject to erosion.

2. The berm soil can be used as fill material anywhere on the base as it does not pose a risk.

For the site to be adequately managed under these conditions, any plans for use or alteration of the site sediment or soil must be submitted for approval by the Tier I Partnering Team. Prevention of migration of contaminated sediment to the adjacent wetlands and Pensacola Bay must be part of any reuse plans.]




SOURCE: GERAGHTY & MILLER, 1986

PRELIMINARY
SITE CHARACTERIZATION
REPORT-SITE 14
NAS PENSACOLA

FIGURE 3-2
GEOLOGICAL CROSS-SECTION
OF THE SURFICIAL AQUIFER
AT NAS PENSACOLA

DATE: 04/24/95 | DWG NAME: 70PSC14G

# 1.0 INTRODUCTION

Incident with the U.S. Navy Comprehensive Long-Tern Environmental Action Navy .(CLEAN) program, a preliminary site characterization (PSC) study has been completed at Site 14 — the Dredge Spoil Fill Area, Naval Air Station (NAS) Pensacola. Site 14 is located along the Pensacola Bay waterfront, immediately east of Chevalier Field.

The investigation was undertaken by EnSafe/Allen & Hoshall (E/A&H) to meet the requirements of the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) program, which administers the investigation and cleanup of former hazardous waste sites. The PSC report summarizes investigation activities and presents findings and conclusions.

## Investigation Objectives

The objectives of this investigation were to deternine the source, nature, magnitude, and extent of potential soil, sediment, surface water, and groundwater contamination, and use validated sample data to address contamination and recommend appropriate action.

The investigation included:

- A review of the site's history and background, and previous investigations.
- A preliminary field survey/habitat and biota survey to characterize the study area.
- The advancement of soil borings, installation of monitoring wells, and collection of soil, groundwater, sediment, and surface water sampling for chemical analyses.
- A hydrologic assessment.

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## 2.0 SITE DESCRIPTION AND HISTORY

### Contaminant Source Survey

A Contaminant Source Survey (CSS) to determine past and present site activities was completed for Site 14 before fieldwork commenced. The CSS reviewed previous investigations, aerial photographs, maps, information on underground utilities, as well as interviews with NAS Pensacola personnel. Its purpose was to establish information relevant to past and present sources of contamination. The CSS findings are included with the discussion of the site description and history.

### 2.1 Site Description

Site 14 is the location of dredge spoils deposited along the Pensacola Bay waterfront immediately east of Chevalier Field (Figure 2-1). The site has no buildings, paved areas, or previously installed permanent monitoring wells. The area is encircled by a sand berm, approximately 15 to 20 feet high, constructed to contain the spoils. In its current configuration, two large (roughly oval shaped) settling basins are separated by a central berm. The larger western basin (Basin 1), receives dredge spoils pumped into the site; and the smaller eastern basin (Basin 2), receives water and fine sediments overflow from Basin 1, and contains conduits to drain water from the site into Pensacola Bay. The settling basins contain an unknown thickness of fine-grained, silty-clayey sediment. Four drainage-control structures consisting of 36-inch diameter steel culverts are emplaced onsite. Two culverts channel surface drainage through the central berm from Basin 1 to the Basin 2. The other two drainage culverts channel runoff through the eastern berm from Basin 2 into Pensacola Bay. Crushed rock (riprap) was recently placed along the eastern berm's outer margin to stabilize its slope against erosion from wave action.

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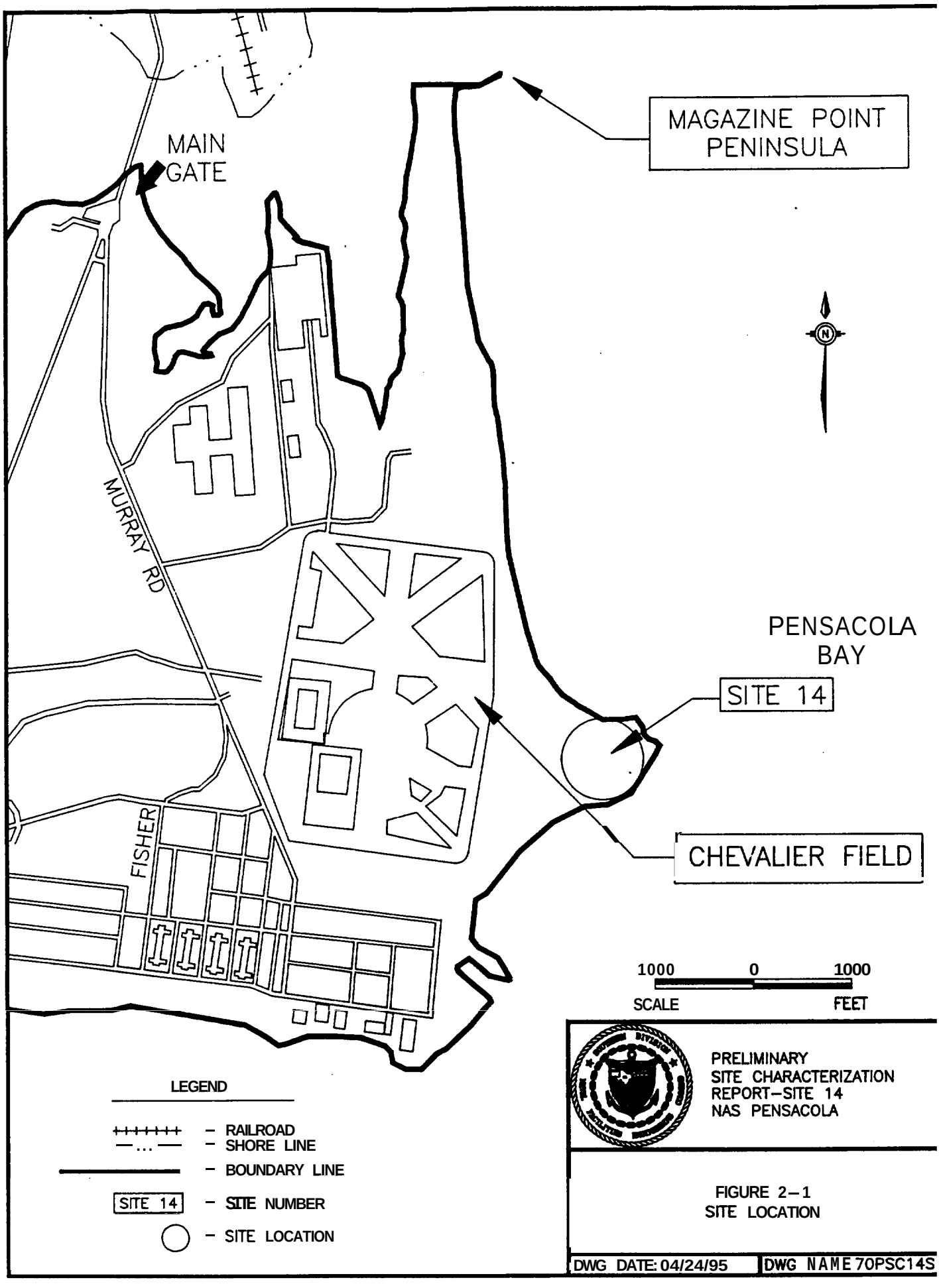
MAGAZINE POINT PENINSULA
MAIN GATE
MURRAY RD
FISHER
PENSACOLA BAY
SITE 14
CHEVALIER FIELD
N
1000 0 1000
SCALE FEET
LEGEND
RAILROAD
SHORE LINE
BOUNDARY LINE
SITE 14 - SITE NUMBER
SITE LOCATION
PRELIMINARY
SITE CHARACTERIZATION
REPORT-SITE 14
NAS PENSACOLA
FIGURE 2-1
SITE LOCATION
DWG DATE: 04/24/95
DWG NAME 70PSC14S

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## 2.2 Site History

Aerial photographs indicate dredge spoils from Pensacola Bay have been deposited'at Site 14 since the late 1950s. Photographs from January 1958 depict the site as a shallow bay with a narrow linear beach parallel to Chevalier Field's eastern edge. During 1958 and 1959, dredging operations deposited approximately 10 million cubic yards of sediment onsite, creating a 63-acre area. This area is visible on 1961 aerial photographs as a broad sand spit projecting approximately 1,900 feet into the bay. Photographs taken between 1961 and 1968, show shrubby vegetation establishing across the spit, along with tidal ponds in the northern and southern portions.

During the mid-to-late 1970s, dredge spoils were deposited onsite from efforts to create an aircraft carrier turning basin off the base's southeastern coast. Spoils were added when the channel and basin were cleared after Hurricane Frederick in 1979. Photographs from 1981 show a single berm had been constructed encircling the spit to contain the spoils. Wetland areas formed along the site's northern and southern portions, outside of the berm. Mid-1980s photographs show the eastern half of the spit being heavily covered with shrub vegetation; the western half was composed of bare sand, presumably dredge spoil. Six linear features of unknown purpose or origin are evident, extending approximately 100 feet into the spoil from Chevalier Field.

A 1989 photograph shows a widened (and probably heightened) berm encircling the spit and the addition of a central berm dividing the spoil area into two settling basins, much like the site's current configuration. Both settling basins contained water. Trees and vegetation had been removed from the eastern half of the spit. Two water control structures were evident on the central berm. Large trees populated the northern and southern wetland areas, with the berm being sparsely vegetated.

Additional dredge spoils from various sources were disposed of at the site between the mid-1980s and the early 1990s. These include sediments dredged from the Pensacola Municipal Pier area in 1989, before the U.S.S. Lexington was docked there, and additional dredging of the NAS turning basin in 1991 to prepare for the U.S.S. Forrestal's arrival.

### Previous Investigations

Previous investigations on Site 14 included:

- An initial assessment study performed by the Naval Energy and Environmental Support Activity (NEESA). The report stated that the sediments of Pensacola Bay are suspected to contain contaminants from industrial operations, referring to the untreated industrial wastes discharged by the Naval Air Rework Facility (NAVAIREWORKFAC) Pensacola into nearshore bay waters before 1973. The report suspected that the dredged sediments deposited on Site 14 may contain contaminants discharged into the bay from these sources (NEESA 1983).

- Ecology and Environment (E&E) performed a Phase I screening investigation of Site 14 to identify areas and potential chemicals of concern (COCs). The investigation results are contained in the E&E Interim Data Report (E&E 1992a). Sediment and soil samples from the site contained metals, volatile organic compounds (VOCs), total recoverable petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAHs), and phenols. Groundwater samples contained metals and phenols. The report recommended additional assessment for Site 14.

# 3.0 ENVIRONMENTAL SETTING

## 3.1 Physiography

NAS Pensacola is in the Gulf Coast lowlands on a peninsula bounded by Pensacola Bay to the south and east and Bayou Grande to the north. The main topographic feature is a bluff paralleling the southern and eastern shorelines of the peninsula. Landward of the bluff is a gently rolling upland with elevations up to 40 feet above mean sea level (msl) (USGS 1970a and 1970b). In the eastern part of the base, a low and nearly level marine terrace lies east of the bluff with elevations of approximately 5 feet or less above msl, comprising the areas of Chevalier Field and Magazine Point.

Sandy soils typify the NAS Pensacola area. Consequently, most rainfall infiltrates directly into the subsurface, resulting in few natural streams. Streams on base generally are man-made and channelized. Numerous natural wetlands occur in low-lying areas.

## 3.2 Stratigraphy and Hydrogeology

Stratigraphy beneath the Florida Panhandle generally consists of Quaternary marine terrace and fluvial deposits, underlain by a thick sequence of interlayered fine-grained clastic deposits and carbonate strata of Tertiary age (SEGS 1986). Three main regional hydrogeologic units have been described within this stratigraphic column (in descending order): the Surficial/Sand-and-Gravel Aquifer, the Intermediate System, and the Floridan Aquifer System. Figure 3-1 provides a generalized cross section of these hydrogeologic units in northwest Florida.

### Surficial/Sand-and-Gravel Aquifer

The Surficial Aquifer, comprising primarily unconsolidated siliciclastic sediments, is approximately 300 feet thick at NAS Pensacola. These sediments belong to undifferentiated Pleistocene-Holocene terrace deposits, the Pliocene Citronelle formation, and underlying Miocene coarse clastics (Wilkins et al., 1985). West of the Choctawhatchee River in northwest

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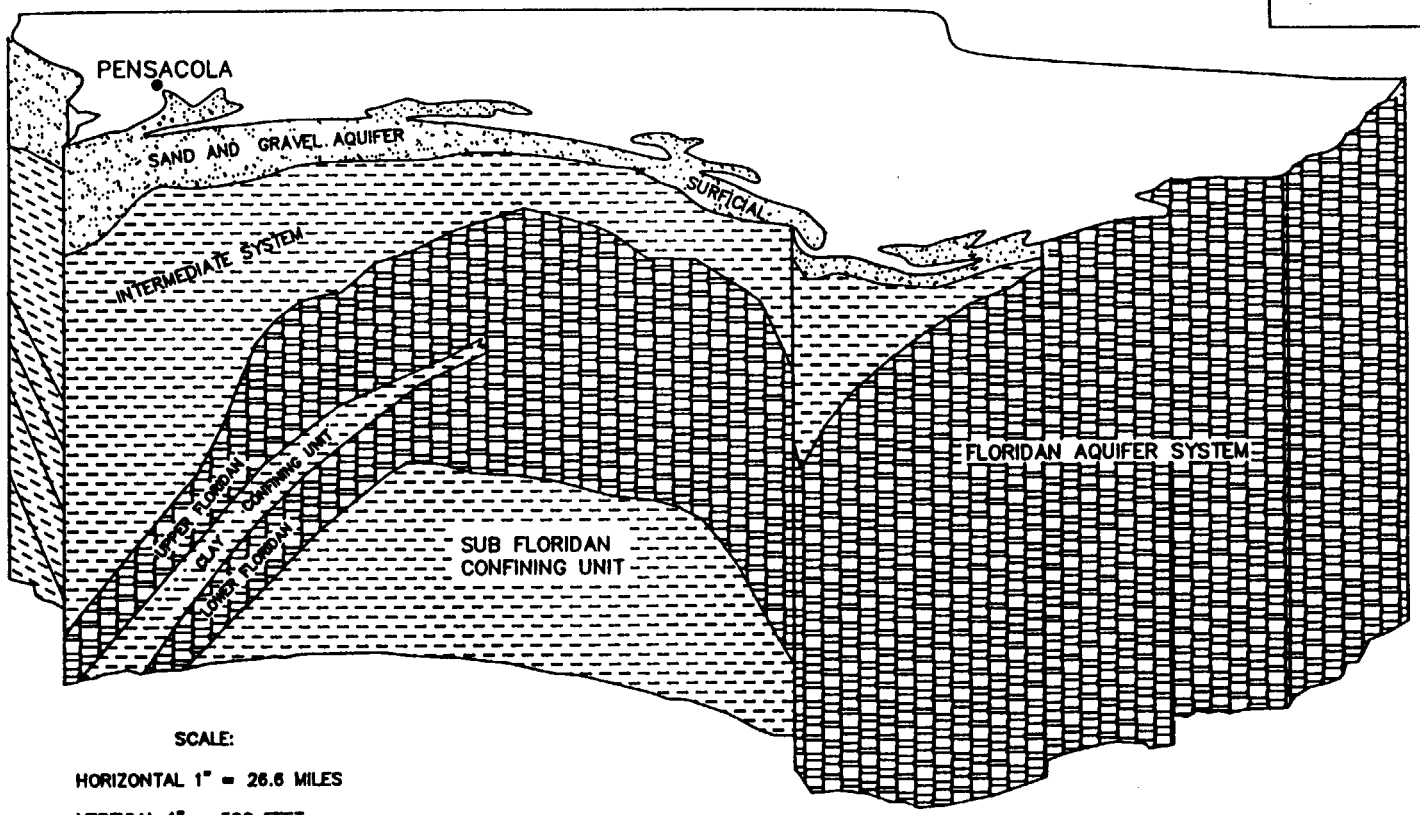


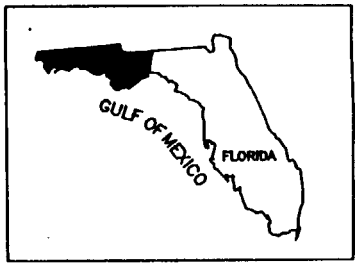


SCALE:

HORIZONTAL 1" = 26.6 MILES

VERTICAL 1" = 500 FEET

VERTICAL EXAGGERATION = 20

SOURCE: EAE 1992c.

PRELIMINARY
SITE CHARACTERIZATION
REPORT-SITE 14
NAS PENSACOLA

FIGURE 3-1
GENERALIZED GEOLOGIC CROSS-SECTION OF
HYDROGEOLOGIC UNITS IN
NORTHWEST FLORIDA

DATE: 05/08/95 | DWG NAME: 70PSC14H

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Florida, the Surficial Aquifer is referred to as the Sand-and-Gravel Aquifer, and is a major source of drinking water (SEGS 1986). The Florida Department of Environmental Protection (FDEP) classification of the surficial aquifer is G-1 with a U.S. Environmental Protection Agency (USEPA) classification of IIA. Because the Sand-and-Gravel Aquifer is the uppermost unit contiguous with land surface and receives recharge through direct infiltration, it is susceptible to contamination from surface activities. Near NAS Pensacola, the unit has been subdivided into three distinct zones based on hydrogeologic differences (in descending order): ***the surficial zone, the low permeability zone,*** and ***the main producing zone*** (Wilkins et al., 1985). This investigation focuses on the upper (shallow depth) and basal (intermediate depth) portions of the surficial zone. A generalized cross section of the Sand-and-Gravel Aquifer produced by Geraghty & Miller (G&M 1984), as shown in Figure 3-2, illustrates the stratigraphic relationship of these zones.

*Surficial Zone*

The surficial zone is contiguous with land surface and contains groundwater under water table or perched conditions. At NAS Pensacola, the surficial zone is approximately 40 to 60 feet thick and is generally composed of a poorly graded quartz sand (G&M 1984, 1986). Beneath the western side of the base, a substantial stratum of sand with abundant organic matter occurs within the zone and pinches out to the east. Depth to groundwater ranges from 0 to 20 feet depending on ground surface elevation. Aquifer tests have yielded high hydraulic conductivities, on the order of $10^{+1}$ to $10^{+2}$ feet/day (E&E 1990). The lower contact with the low permeability zone is transitional, resulting in a fining downward sequence in the lower portion of the surficial zone proper. Generally, the low permeability zone is thicker to the west, and thins to the east. This increased clay content in the transition from surficial to the low permeability zone is responsible for lower hydraulic conductivities that have been measured in the base of the surficial zone.

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Shallow groundwater flow in the surficial zone is generally influenced by topography, usually flowing toward and discharging to the nearest surface water body.

### *Low Permeability Zone*

The low permeability zone underlies the surficial zone and is characterized by clay and silt-sized sediments. At NAS Pensacola, this zone is composed of gray to blue, gray sandy and silty marine clay with some shell fragments and clayey sands, with total thickness ranging from 8 to 40 feet (G&M 1984, 1986). The upper contact is transitional with the overlying surficial zone; however, the top of the low permeability zone is marked by the first Occurrence of a stiff blue-gray clay. Studies at NAS Pensacola indicate the low permeability zone is continuous beneath the air station. Hydraulic conductivities of the low permeability zone are much lower than the overlying surficial zone, ranging between the orders of $10^{-4}$ feet/day for clays and $10^{+0}$ feet/day for clayey sands (G&M 1986). Hence, the low permeability zone acts as a confining or semiconfining layer to inhibit groundwater flow between the overlying surficial and underlying main producing zone.

### *Main Producing Zone*

The main producing zone underlies the low permeability zone and comprises the bottom portion of the Sand-and-Gravel Aquifer. Regionally, depth to the top of the zone ranges from 60 to 120 feet. The zone is composed of sand and gravel with thin beds of silt and clay, and is estimated to be approximately 300 feet thick at NAS Pensacola. Of the three zones in the Sand-and-Gravel Aquifer, this one is generally the most permeable and is the principal source of water supply for the Pensacola area (Wilkins et al., 1985). Groundwater in this zone generally is confined. It recharges primarily north of southern Escambia County and is supplemented by leakage in the northern parts of the county where it is present at the surface. Regional groundwater flows generally east toward Pensacola Bay and south toward the Gulf of Mexico. Three supply wells at NAS Pensacola produce water from this zone; however, they are used only as an emergency supplement to the base water supply, to supply irrigation to the

base golf course, and fire protection due to the water's high iron content (G&M 1984, 1986). For potable water, NAS Pensacola depends on an offsite water source provided from main producing zone wells at Corry Field, approximately three miles to the north.

Intermediate System

The Intermediate System, a regionally and vertically extensive, laterally persistent hydrologic unit, underlies the Surficial/Sand-and-Gravel Aquifer. The system is comprised of fine-grained clastic units of Miocene age (Pensacola Clay, Alum Bluff Group) that lie beneath coarse clastics of the overlying Sand-&-Gravel Aquifer. In the NAS Pensacola vicinity, depth to the top of the unit is approximately 300 feet, with a thickness of approximately 1,100 feet (Wilkins et al., 1985, SEGS 1986). The system is regionally characterized by poor to non-water-bearing conditions. Permeabilities are much lower than those of the overlying Sand-and-Gravel Aquifer and the underlying Floridan Aquifer System, and consequently the system functions as a confining unit for the underlying Floridan Aquifer System (SEGS 1986).

Floridan Aquifer System

The Floridan Aquifer System underlies the Intermediate System at an approximate depth of 1,400 feet in the NAS Pensacola area. The unit is composed predominantly of limestone, but is separated into upper and lower units by a significant clay layer called the Bucatunna Clay (see Figure 3-1). Groundwater within the Floridan System is highly mineralized in the area of NAS Pensacola and is not used for water supply (Wagner et al., 1984). However, groundwater from the Upper Floridan Aquifer is used for water supply as close as approximately 25 miles east of NAS Pensacola.

## 3.3 Ecological setting

### 3.3.1 Regional Ecological Setting

According to Wolfe et al., 1988, the Florida Panhandle has a wide variety of surface waters and physiographic regions, leading to an ecological diversity found in few other areas of the

United States. Watersheds of the panhandle support a diverse array of habitats and vegetative communities. Bottom land hardwoods predominate in river floodplains and pines, mixed with a variety of other shrubs, prevail in upland areas. Wetlands are prevalent along the coastal fringe and river floodplains. Barrier islands support dune vegetation communities and salt marshes. Bays supporting seagrass meadows and oyster reefs are present in intertidal and subtidal areas.

Seven major rivers in the region discharge into seven bar-built estuaries formed at the mouths of the rivers. The Florida Panhandle is a crossroads where animals and plants from the Gulf Coastal Plain reach their eastward distributional limits, and where many northern species reach their southern limits. Many peninsular Florida species are also distributed there. Due to the wet temperate climate of the region, the panhandle area may support the highest diversity of species of any other similar-size territory in the U.S.

The high annual rainfall and low, gently sloping terrain creates numerous wetlands in the region. Bogs, swamps, marshes, wet prairies, and wet flatwoods provide a diversity of wetland types supporting a wide variety of flora and fauna. Terrestrial vegetation includes open pine woods and hardwood forests; most are second-growth forests of pines and encroaching hardwoods.

The Florida Panhandle's estuaries and nearshore marine habitats are some of the greatest natural and economic assets of the region. Important commercial organisms (such as oysters and fish) abound in these areas and contribute to the economy of the region. Coastal saltmarsh habitats provide critical nursery, feeding, and refuge for these important commercial species. Seagrass beds within estuaries also are vital to the seafood industry.

### 3.3.2 Ecological Setting at NAS Pensacola

NAS Pensacola, which occupies approximately 5,800 acres, is bounded by Bayou Grande to the north and Pensacola Bay to the east and south. To the west, the installation transitions to less

developed swampy lowlands. NAS Pensacola's eastern portion is largely developed, with military and industrial facilities and historical/cultural sites. Most of the installation's activities are on the eastern side of the base. The less developed west side of the base has approximately 3,500 acres of natural or seminatural beach areas, forests, and wetlands.

NAS Pensacola is the setting for numerous aquatic and terrestrial habitats, from coastal strand and estuarine environments along the bay and bayou to inland pine flatwoods communities. Wetland environments include a broad spectrum of both estuarine and palustrine wetlands, as well as various disturbed habitats, many in states of recovery as they undergo reforestation or return to their natural condition.

### Vegetation Communities

NAS Pensacola natural vegetation communities fall into several broad categories: (1) coastal dune scrub communities, (2) pine flatwoods communities, (3) hardwood/pine communities, (4) sand pine scrub communities, (5) bay swamps, (6) freshwater marshes, and (7) estuarine coastal marshes (USFWS 1987). Coastal dune scrub communities are associated with shorelines subject to high-energy waves. The vegetation consists of salt-tolerant plants able to establish themselves in shifting sands. Pine flatwood communities in coastal lowlands are characterized by trees that can tolerate various soil moisture conditions. Tree species in flatwoods communities are short, with a wide variety of small shrubs and herbaceous plants in the understory. Hardwood/pine communities are a highly diverse mixture of hardwood trees and pines. Sand pine scrub communities on well-drained sandy soils contain sand pines, oaks, and various shrubs. Bay swamps are wetlands with titi and cypress swamps known to contain permanent standing water and high accumulations of organic peat. Freshwater marshes occur as grass/sedge/rush/herb communities in areas with high soil saturation or standing water. Estuarine coastal marshes, including salt marshes, occur along low-energy shorelines and in tidal bayous (USFWS 1987).

Wildlife

NAS Pensacola habitats provide potential ranges for a wide variety of animal life such as deer, squirrel, opossum, raccoon, fox; beaver, and bobcat. The station's beaches serve as resting, feeding, and nesting areas for various shorebirds. Ospreys have been observed nesting along undeveloped shoreline areas of the Big Lagoon, southeast of the Forrest Sherman Airfield, Numerous small mammals, amphibians, and reptiles also inhabit the base. The coastal marsh, submerged grass bed, and shallow water habitats at NAS Pensacola help support fishery communities within the Pensacola Bay estuarine complex. Approximately 180 species of bony fishes form the basis of the Pensacola Bay fish community (USFWS 1987).

Threatened and Endangered Species

Appendix A of the ***Comprehensive Natural Resources Management Plan for NAS Pensacola and Outlying Field Bronson*** lists the rare, threatened, and endangered species that may be found within NAS Pensacola boundaries (USFWS 1987). E/A&H investigations of different areas of NAS Pensacola have identified osprey, great blue heron (as well as other shorebirds), alligator snapping turtle, Godfrey's golden aster, Carolina lilaeopsis, white-top pitcher plant, and narrow-leaved sundew. All are considered rare or endangered for Escambia County, Florida, by the Florida Natural Areas Inventory (FNAI 1994).

### 3.3.3 Site-Specific Setting

Habitat and Biota Survey

A Phase I habitat/biota survey for Site 14 was conducted by an E/A&H biologist following procedures outlined in Section *8* of the ***Comprehensive Sampling*** and ***Analysis Plan*** (CSAP [E/A&H 1994a]). The primary objective of the survey was to describe site habitats and support the development of a preliminary risk evaluation. The survey consisted of a site walk-over, and a cursory investigation of the water column and benthic substrates in each settlement basin. A fine-meshed sieve bucket was used to filter water and sediments to determine the types of flora and fauna present in the basins.

Site 14 is an area that has undergone near continuous human alteration throughout the history of its existence. The site *can* be characterized as containing large, shallow, freshwater impoundments that are surrounded by earthen berms containing an early successional waste area plant community. "Wetland" type areas north and south of the site also contain early successional waste area plant communities.

The settling basins collect water and sediments during dredging operations, causing water to temporarily pond there. Rainfall and surface runoff also cause the water level in these impoundments to rise and fall seasonally. As such, they *can* be flooded as much as 2 feet deep, or they *can* be completely *dry,* in accordance with local precipitation. Salinity in both impoundments was noted at less than 1 part per thousand, while pH was slightly above neutral. Turbidity was high (160 to 300 nephelometric turbidity units [NTUs]) from suspended solids (site hydrology is discussed in detail in Section 5.2). Substrates consist of very fine-grained sediments; they form a thick layer of mud beneath the standing water column in each basin.

The limnology associated with the basin impoundments would be characteristic of other freshwater ecosystems if left undisturbed over time. However, because of continued human disturbance, certain ecological niches are unfilled onsite. No submerged aquatic vegetation was observed growing in littoral or pelagic areas in either pond. High turbidity of standing water and seasonal drying within the basins contribute to this phenomenon. Small stands of common reed *(Phragmites australis)* have extended from the shoreline into the littoral zone along the southwest shore of the western pond, and the southeast shoreline of the eastern pond. No fish were noted in either pond, however a large population of aquatic insects (Hemiptera) were sieved from pelagic areas of both ponds. *Cursory* examinati'on of substrate muds revealed the presence of marine polychaetes (bloodworms) of a type found in the nearby offshore benthos. These were obviously pumped into the settlement basins with dredged material during recent dredging operations. Smaller macrozooplankton within the ponds would include limnetic crustaceans (cladocerans and *copepods),* as well as benthic crustaceans (ostracods). Amphipods

*(Hyalella sp.)* were found in the mud and under stones along the eulittoral zone of Basin 1. Shorebirds frequent the shallow mudflats within the impoundments.

The wetlands to the north and south of Site 14 (Wetland 63A/B) [(CD/A&H 1995a)] are also highly disturbed areas. These have developed over time on fill material deposited in the area. The sandy substrates contain various construction debris and broken concrete. It appears that the wetlands developed around surface water drainage pathways extending to the east from Chevalier Field. Wetland 63B (south of Site 14) contains the remnants of a tile-lined shallow drainage ditch leading from the former airfield. Both wetlands have tidally influenced drainage channels that discharge into Pensacola Bay. Vegetation within both wetlands is characteristic of other disturbed areas at NAS Pensacola. Trees include longleaf pine *(Pinus palustris)*, and china berry *(Melia azedarach)*. Shrubs include wax myrtle *(Myrica cerifera)*. Both areas contain dense entanglements of catbrier *(Smilax bona-nox)*, and dewberry *(Rubus trivialis)* vines. Moister areas within the wetlands contain stands of black needlerush *(Juncus roemerianus)*, and saw grass *(Cladium jamaicense)*.

No rare or endangered plants or animals were found onsite.

## 3.4 Area Climate

The Pensacola area has a mild, subtropical climate, with average annual temperature ranging from 55°F in the winter to 81°F in the summer. Daily temperatures *can* be more extreme, ranging from less than 7°F in the winter to more than 102°F in the summer. Thunderstorms, which occur on approximately half the summer days, can cause a precipitous drop in temperature of 10 to 20 degrees in a matter of minutes (E&E 1992b).

November is the driest month of the year, with an average rainfall of 3.2 inches, based on climatological data from 1962 to 1991. Rainfall averages approximately 60 inches a year, with the highest amounts in July and August when thunderstorms occur almost daily. Thunderstorms

resulting in 3 to 4 inches of rain in an hour are common. Rainfall is lowest during spring and fall (4 inches average per month). In general, spring and fall rains are less intense, last longer, and produce less d a c e runoff, but higher rates of infiltration and net recharge (E&E 1992b).

Winds, which prevail from the north *during* the winter and the south during the summer, are generally moderate in velocity, except during thunderstorms. A difference in the ocean-land temperature produces the sea-breeze effect, a daily clockwise rotation in the surface wind direction near the *coast.* Hurricanes and tornadoes *can* substantially damage the nearshore environment. Since 1980, eight hurricanes have passed within 50 miles of Pensacola.

## 4.0 FIELD INVESTIGATION AND METHODS

The field investigation was divided into two phases. The Phase I investigation took place during January and February 1994, and included installing two permanent shallow monitoring wells, and collecting soil, sediment, and groundwater samples. The Phase I fieldwork was conducted in conjunction with preliminary work on the other Category V sites at NAS Pensacola, in accordance with the Sampling and Analysis Plan for Site 14 (E/A&H 1994b). The results of the Phase I investigation were summarized in a technical memorandum (E/A&H 1994c). The Phase II investigation occurred during December 1994, and included extensive surface water and sediment sampling within the site area. The Phase 11 work addressed items agreed upon by the Tier 1 Partnering Team, reflecting concerns that a complete characterization effort include this additional fieldwork.

Phase I and Phase II field methods followed guidelines set forth in the *Sampling and Analysis Plan for NAS Pensacola* (E/A&H 1994a).

All Phase I samples were analyzed for the full Target Analyte List/Target Compound List (TAL/TCL) in accordance with Contract Laboratory Program (CLP). Phase II samples were likewise analyzed for TAL/TCL, with additional samples collected for Physical Parameters Soil (PPS), Physical Parameters Water (PPW) and Grain Size (GS) analyses. Phase I samples were analyzed by Pace Laboratories, Inc. of Hampton, NH. Phase 11 CLP samples were analyzed by CompuChem Laboratories, Inc., of Research Triangle Park, NC. Phase 11 PPS, PPW, and GS samples were analyzed by Savannah Laboratories and Thompson Engineering and Testing, Inc., both of Mobile, AL.

## 4.1 Phase I Investigation

### 4.1.1 Phase I Soil Sampling

Thirty-six soil samples, plus four duplicate samples were collected from six soil borings advanced during the Phase I investigation. Boring logs are presented in Appendix A. These borings were advanced as follows:

- Two borings were advanced from the top of the central and eastern containment berms. Twenty-two samples, plus three duplicate samples were collected, and the boreholes were constructed into permanent monitoring wells.

- Two borings were advanced along the eastern and northern shorelines inside Basin 1. Seven samples, plus one duplicate sample, were collected from these brings.

- Two borings were advanced along the eastern and northeastern shorelines inside Basin 2. Seven samples were collected from these borings.

The samples collected from the borings within the basins were originally considered to be soil samples. These samples were collected in the same manner as the soil samples (as described below) and designated with an "S" in the sample identification code. However, because the material within the basins originated as marine sediment and the basins are periodically flooded with water during rain events, the samples collected from borings within the basins are considered sediment samples for this discussion (see Section 6). These include samples from borings 14S03, 14S04, 14S05, and 14S06.

The water table depth varied from approximately 19 feet below land surface (bls) at boring 14S02 (eastern berm) to approximately 23 feet bls at boring 14S01 (central berm). The water table within the settlement basins varied from approximately 14 feet bls at boring 14S03 (northern portion of Basin 1), to approximately 7 feet bls at boring 14S05 (southern portion of

Basin 2). Soil samples on the berms were collected using either a stainless-steel hand auger or a 24-inch, stainless-steel split-barrel sampler (without stainless-steel liners) as described in Section 4 of the CSAP. Since the Site 14 settling basins were areas of difficult access, borings were advanced using a cable tool method. This method involved emplacing a portable tripod over the borehole location and repeatedly raising and lowering a 4-foot long/3-inch inner diameter (ID) steel bailer to evacuate the borehole between sample intervals. A decontaminated, 4-inch ID polyvinyl chloride (PVC) surface casing was advanced along with the boring to keep the borehole open.

Soil samples were collected continuously from land surface to the water table from the borings on the berms. A 0- to 1-foot surface sample was collected, and samples were collected from every 2-foot interval thereafter until saturated soil was reached. From the borings in the settling basins, a 0- to 1-foot surface sample was collected, and thereafter, a single 2-foot interval was sampled per 5-foot depth interval advanced until the base of the dredge spoil was reached. Because deposited dredge spoils in the basins extended generally to the water table, only a limited sandy soil interval (about 1 foot) beneath the basins was sampled.

### 4.1.2 Phase I Sediment Sampling

Two sediment samples, plus one duplicate sample, were collected during the Phase I investigation. One sample was collected from the end of each of the two culverts that drain collected surface water from Basin 2 into Pensacola Bay. The 0- to 0.5-foot depth interval was sampled at each location. Sediment samples were collected using a stainless-steel hand auger as described in Section 4 of the CSAP.

Figure 4-1 details the Phase I soil, sediment, and groundwater sampling locations. Table 4-1 provides describes the Phase I soil/sediment samples and analytical parameters.

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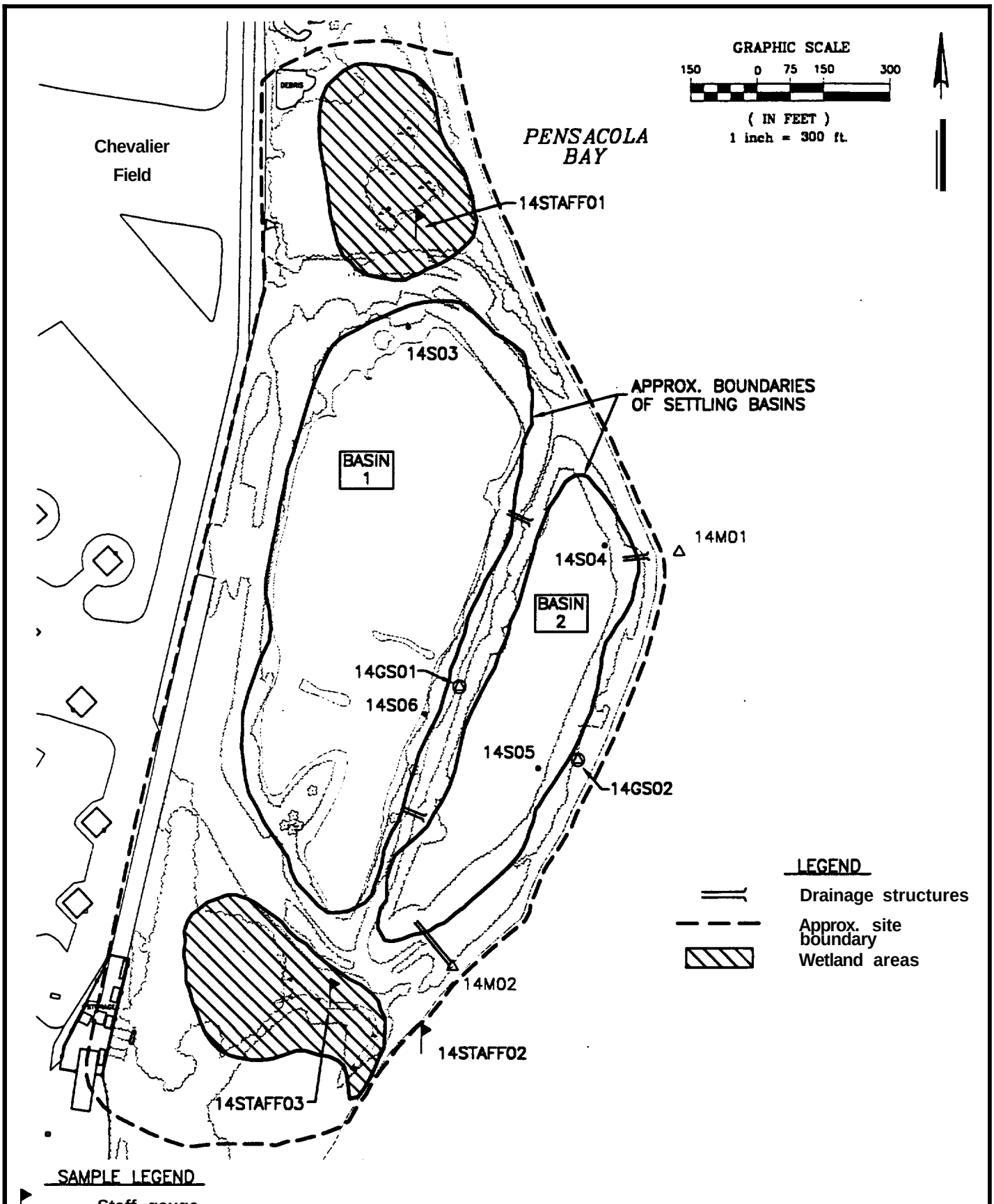


SAMPLE LEGEND

- Staff gauge
- Surface water sample
- Sediment sample
- Soil Boring only
- Soil Boring and shallow well

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 4–1
PHASE I – SOIL, SEDIMENT, AND GROUNDWATER SAMPLING LOCATIONS

DWG DATE: 4/11/95 | DWG NAME: 14FIG4–1

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**Table 4-1**
**Site 14 Phase I Soil/Sediment Samples and Analytical Parameters**

| Boring Location | Sample Identifier | Sample Interval | Date Sampled | Sample Analysis | Remarks |
|---|---|---|---|---|---|
| 14S01 | 14S0101 | 0-1 ft. | 2/11/94 | CLP TAL/TCL | Permanent Well Location |
| | 14S0103 | 1-3 ft. | | | |
| | 14S0103D[a] | | | | |
| | 14S0105 | 3-5 ft. | | | |
| | 14S0107 | 5-7 ft. | | | |
| | 14S0109 | 7-9 ft. | | | |
| | 14S0111 | 9-11 ft. | | | |
| | 14S0113 | 11-13 ft. | | | |
| | 14S0115 | 13-15 ft. | | | |
| | 14S0117 | 15-17 ft. | | | |
| | 14S0119 | 17-19 ft. | | | |
| | 14S0121 | 19-21 ft. | | | |
| | 14S0123 | 21-23 ft. | | | |
| 14S02 | 1450201 | 0-1 ft. | 2/21/94 | CLP TALITCL | Permanent Well Location |
| | 14S0201D[a] | | | | |
| | 14S0203 | 1-3 ft. | | | |
| | 1480205 | 3-5 ft. | | | |
| | 14S0207 | 5-7 ft. | | | |
| | 1480209 | 7-9 ft. | | | |
| | 14S0211 | 9-11 ft. | | | |
| | 14S0213 | 11-13 ft. | | | |
| | 14S0215 | 13-15 ft. | | | |
| | 14S0217 | 15-17 ft. | | | |
| | 14S0219 | 17-19 ft. | | | |
| 14S03 | 14S0301 | 0-1 ft. | 2/22/94 | CLP TAL/TCL | Soil Boring Only |
| | 1480305 | 3-5 ft. | | | |
| | 14S0305D[a] | | | | |
| | 14S0310 | 8-10 ft. | | | |
| | 14S0314 | 12-14 ft | | | |
| 14S04 | 14S0401 | 0-1 ft. | 2/24/94 | CLP TALITCL | Soil Boring Only |
| | 14S0401D[a] | | | | |
| | 1480405 | 3-5 ft. | | | |
| | 14S0410 | 8-10 ft. | | | |
| | 14S0411 | 9-11 ft. | | | |
| 14S05 | 14S0501 | 0-1 ft. | 2/24/94 | CLP TAL/TCL | Soil Boring Only |
| | 1480505 | 3-5 ft. | | | |
| | 1480507 | 6-7 ft. | | | |

**Table 4-1**
**Site 14 Phase I Soil/Sediment Samples and Analytical Parameters**

| Boring Location | Sample Identifier | Sample Interval | Date Sampled | Sample Analysis | Remarks |
|---|---|---|---|---|---|
| 14S06 | 14S0601<br>14S0605<br>14S0609 | 0-1 ft.<br>3-5 ft.<br>7-9 ft. | 2/25/94 | CLP TAL/TCL | Soil Boring Only |
| 14M01 | 14M0101<br>14M0101D[a] | 0-0.5 ft. | 2/17/94 | CLP TAL/TCL<br>GS/TOC | Sediment Sample |
| 14M02 | 14M02101 | 0-0.5 ft. | 2/17/94 | CLP TAL/TCL<br>GS/TOC | Sediment Sample |

Notes:
a = Duplicate Sample
TOC = Total Organic Carbon

### Sample Handling

Soil/sediment aliquots for VOC analysis were collected immediately after retrieving the split-barrel sampler/hand auger to avoid degassing. Samples were directly collected from the sampler with little agitation using a stainless-steel spoon, and placed in appropriate containers with no headspace. The remaining sample was transferred to a stainless-steel bowl, homogenized, then collected into appropriate containers. Sample depth, lithologic descriptions, organic vapor concentrations, and other relevant observations were noted in field logbooks and boring logs as appropriate.

## 4.1.3 Phase I Groundwater Monitoring

### Monitoring Well Construction

The two borings advanced on the berms were constructed into permanent monitoring wells. The Site 14 wells were constructed in accordance with procedures outlined in Section 5.3 of the CSAP. Following collection of all appropriate soil samples, boreholes were advanced using hollow-stem auger techniques with decontaminated 4.25-inch ID hollow-stem augers. Boreholes

were advanced deep enough for the screened interval to bracket the water table. Each well was constructed of flush-threaded 2-inch diameter Schedule 40 PVC casing, terminating with a 10-foot length of 0.01-inch continuous slotted well screen. A filter pack of 20/30 silica sand was installed to approximately 2 feet above the top of the screen. A 2-foot bentonite seal was emplaced above the filter pack, and the remainder of the borehole was grouted with Portland cement. Risers were terminated at ground surface and wells were completed with bolt-down, water-tight covers anchored in concrete pads.

Table 4-2 lists construction details/groundwater elevations for the Site 14 wells.

**Monitoring Well Development**

Monitoring wells were developed no sooner than 24 hours after well completion. A 5-horsepower centrifugal pump/decontaminated 0.75-inch PVC hose and footvalve assembly were used to develop the wells. Wells were first surged for 10 minutes with a decontaminated 2-inch PVC surge block/extension assembly to loosen fines within the filter pack before development.

After surging, the development hose was carefully inserted in the well **to [the** bottom], and the pump started **[to remove aug sediment that may have settled in the well point during installation. After 30 seconds to one minute, the hose was retrieved to about mid-screen level and the pump speed reduced.]** Development continued until turbidity, conductivity, pH, and temperature stabilized. In many cases, to realize lower turbidity, development continued after the other parameters had stabilized. Once turbidity had stabilized under 20 NTUs, the well was considered developed. At least ***55*** gallons (12 well volumes) were purged from each well during development.

Table 4-2
Construction Details/Groundwater Elevations for Site 14 Permanent Monitoring Wells

| | | | | Low Tide | | High Tide | |
|---|---|---|---|---|---|---|---|
| Location | Well Depth (ft/bls) | Screened Interval (ft/bls) | Top of Casing Elevation (ft) | (ft/BTOC) | Water Level Elevation (ft) | Depth to Water (ft/BTOC) | Water Level Elevation (ft) |
| 14GS01 | 29.60 | 18.90 - 28.90 | 23.77 | 22.50 | 1.27 | 22.45 | 1.32 |
| 14GS02 | 26.80 | 16.10 - 26.10 | 19.57 | 19.16 | 0.41 | 18.78 | 0.79 |

Notes:
Datum = feet above mean seal level
bls = Below land surface
BTOC = Below top of casing
Total well depth includes an approximate .7-foot well point.
Low- and high-tide water level measurements taken at 0600 hours on 3/8/94 and 1900 hours on 3/7/94, respectively.

## Groundwater Contamination Assessment Sampling

Two groundwater samples, plus one duplicate sample, were collected from the Site 14 wells. Wells were purged and sampled using a previously untried "quiescent" sampling method. Before well purging, 2-mil plastic sheeting was laid on the ground around the well to be sampled and equipment was set up. The well cap was removed and a photoionization detector reading recorded. The water level was measured and compared to total depth to calculate the appropriate purge volume. Wells were purged with a peristaltic pump and dedicated, decontaminated, 0.25-inch outside diameter Teflon tubing at a slow, controlled, pumping rate (varying from 0.04 to 0.25 gallons per minute). The depth of the inserted end of the Teflon purge tubing was adjusted inside the well in order to draw groundwater from the upper 6 inches of the water column. Temperature, conductivity, pH, turbidity, and purge volume were monitored and recorded. Purging continued until at least three well volumes were obtained and terminated when field parameters and turbidity stabilized to within ± 10 percent over three consecutive readings. If high turbidity was encountered, additional water was purged until turbidity fell within acceptable limits (20 NTUs or less).

Groundwater samples were collected immediately after wells were purged. Using the dedicated Teflon tubing, groundwater was collected under a low-vacuum pressure via an in-line collection and transfer device. This device consists of a decontaminated, two-aperture Teflon transfer cap, attached to a 300 series, laboratory-certified, 80 ounce glass jug ("transfer bottle"). The Teflon purge tubing was disconnected from the peristaltic pump and inserted into one aperture, while a 10-inch piece of decontaminated Teflon tubing was inserted into the second aperture. This 10-inch stem was then reconnected to the peristaltic pump. The transfer cap and aperture fittings were adjusted to minimize air leaks, and the peristaltic pump restarted. It took approximately 2 to 3 minutes for the pump to evacuate the air from the transfer bottle before it began to slowly fill. This technique allowed groundwater with minimal turbidity to be collected for sampling. When the transfer bottle was filled, the pump was shut off, the transfer cap removed, and the sample was carefully decanted into the appropriate sample bottles. The order of sampling from

the transfer bottle was metals, cyanides, and semivolatiles/pesticides/polychlorinated biphenyls (PCBs). Volatiles were collected directly from the Teflon purge tubing. Water was run through the tubing until its volume was filled. The tubing was then disconnected from the peristaltic pump and unagitated groundwater was allowed to flow backward into 40-mi VOC vials. Table 4-3 outlines Site 14 groundwater samples and analytical parameters.

**Table 4-3**
**Site 14 Groundwater Samples and Analytical Parameters**

| Well No. | Sample No. | 'Date Sampled | Analytical Parameters |
|---|---|---|---|
| 14GS01 | 14GS01 | 2/24/94 | CLP TAL/TCL |
| 14GS02 | 14GS02<br>14GS02D[a] | 2/23/94 | CLP TAL/TCL |

**Note:**
**a = Duplicate Sample**

## 4.2 Phase II Investigation

### 4.2.1 Phase II Sediment Sampling

Extensive additional sediment sampling was included in the Phase 11 investigation for Site 14. Ten sediment samples (eight CLP/two PPS-GS), plus one duplicate sample (CLP), were collected during the Phase II investigation. These samples were collected as follows:

- A five-point composite sample was collected at each of the two outfalls that drain surface water from Basin 2 into Pensacola Bay (vicinity of Phase I sediment samples).

- Five sediment samples, plus one duplicate, were collected from Basin 1 for TAL/TCL analysis. One sample/duplicate was collected in the center of the basin. Two samples were collected from along the western shore of the basin, covering an area that was

exposed mudflats during the Phase I investigation (the area was submerged during Phase 11, possibly as a result of increased local rainfall later in 1994, and/or the pumping of additional dredge spoil into the western basin during the spring/summer of 1994). Two samples were collected near the southern end of the basin, where the additional dredged materials were pumped in. One PPS/GS sample was also collected from Basin 1.

- One sediment sample was collected from the center of Basin 2 for TAL/TCL analysis. A second sample was collected for PPS/PPW and GS analyses.

Samples were collected using stainless-steel hand-auger techniques, and collected materials were processed and transferred to appropriate containers as described in the Phase I investigation. The composite samples at the drainage outfalls were collected by wading to the outfall during low tide. Since both settling basins were periodically flooded with water that averaged 1 to 2 feet deep, all but one sample was collected from a shallow draft boat. Wading to the sample locations was not contemplated due to the fluid nature of the underlying substrates. A single sample location in the southern end of Basin 1 was unable to be reached by boat. This location was accessed by laying a line of wooden pallets across the mud-flats so field personnel could walk to the location.

Figure 4-2 details the Site 14 Phase II sediment sampling locations. Table 4-4 describes the Phase II sediment samples and analytical parameters.

### 4.2.2 Phase II Surface Water Investigation

Eight surface water samples (six CLP/two PPW), plus one duplicate sample, were collected during the Phase II investigation. Three! CLP samples were collected from each settlement

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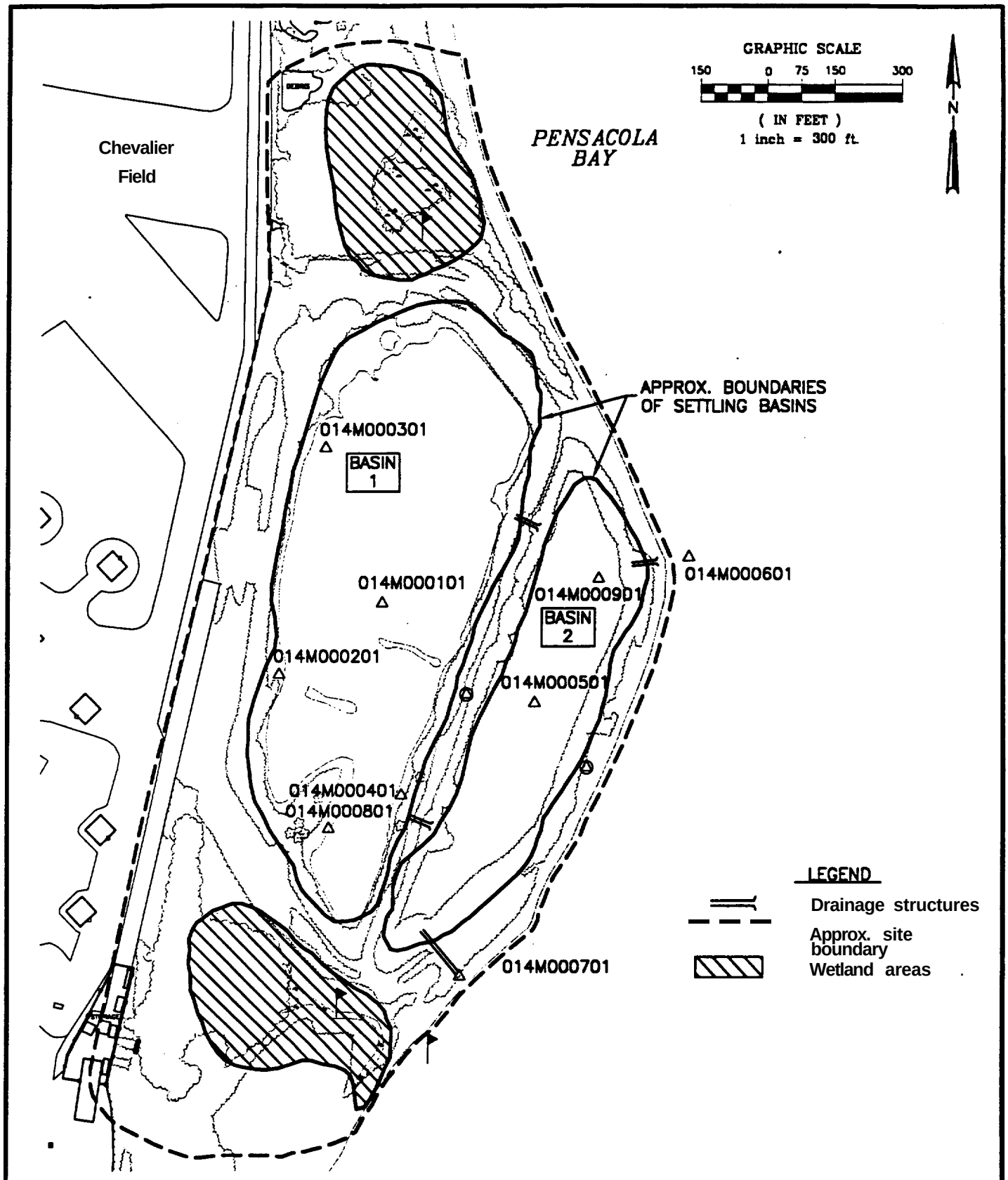


SAMPLE LEGEND

- Staff gauge
- Surface water sample
- Sediment sample
- Soil Boring only
- Soil Boring and shallow well

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 4-2
PHASE II - SEDIMENT SAMPLING LOCATIONS

DWG DATE: 4/11/95 | DWG NAME: 14FIG4-2

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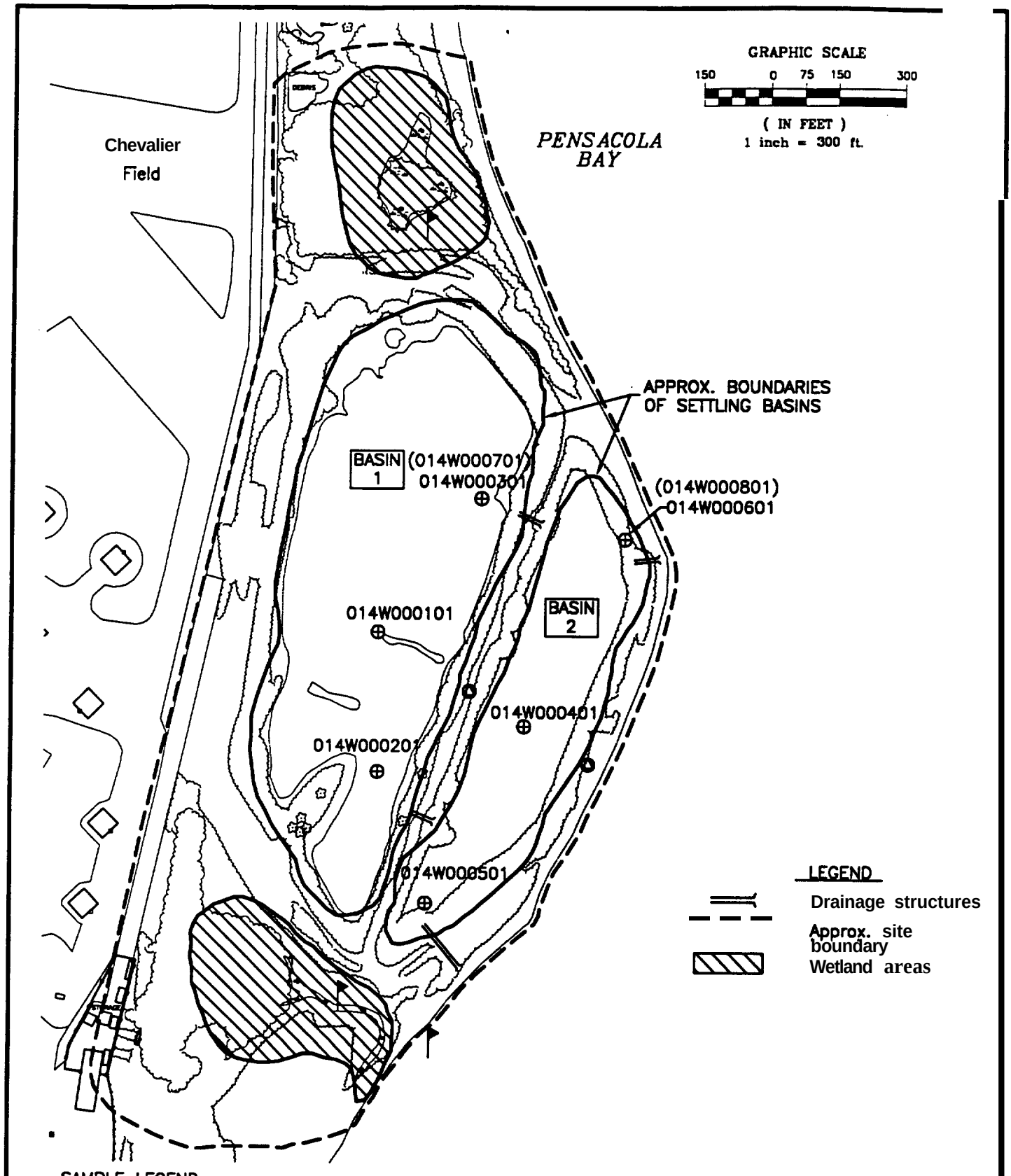
**Table 4-4**
**Site 14 Phase II Sediment Samples and Analytical Parameters**

| Sample Location | Sample Identifier | Sample Interval | Date Sampled | Sample Analysis | Remarks |
|---|---|---|---|---|---|
| 14M01 | 014M000101<br>014N000101[a] | 0-0.5 ft. | 12/5/94 | CLP TALKCL | Center of Basin 1 |
| 14M02 | 014M000201 | 0-0.5 ft. | 12/5/94 | CLP TALKCL; PPS/GS | Southwest shoreline of mudflats area in Basin 1 |
| 14M03 | 014M000301 | 0-0.5 ft. | 1215194 | CLP TALKCL | Northwest shoreline of mudflrts area in Basin 1 |
| 14M04 | 014M000401 | 0-0.5 ft. | 12/5/94 | CLP TAVTCL | Southeast shoreline of Basin 1 |
| 14M05 | 014M000501 | 0-0.5 ft. | 12/5/94 | CLP TALKCL | Center of Basin 2 |
| 14M06 | 014M000601 | 0-0.5 ft. | 12/5/94 | CLP TAVTCL | 5-point composite sample; northern outfall from Basin 2 (vicinity of Phase I sample 14M01) |
| 14M07 | 014M000701 | 0-0.5 ft. | 12/5/94 | CLP TALKCL | 5-point composite sample: southern outfall from Basin 2 (vicinity of Phase I sample 14M02) |
| 14M08 | 014M000801 | 0-0.5 ft. | 12/5/94 | CLP TALKCL | Southernmost sample in Basin 1 |
| 14M09 | 014M000901 | 0-0.5 ft. | 12/5/94 | PPS/GS | Northern part of Basin 2 |

Note:
a = Duplicate Sample

basin. Samples were collected from the center of each basin, and from locations upgradient from the two drainage structures in each basin. These samples were submitted for full TAL/TCL analysis. Surface water samples were collected by floating to the requisite sampling location in a boat and carefully anchoring in position. Eighty-ounce glass bottles (the same as those used for groundwater sampling transfer bottles) were used to collect surface water. These were uncapped, submerged, and carefully filled with water. Water was then decanted into the appropriate sample containers. As with the sediment sampling, the southernmost sample location in Basin 1 could not be reached by boat, and so was sampled from the same platform of pallets

used to collect that sediment sample. Physical parameters, such as pH, conductivity, temperature, turbidity, and salinity were also measured and recorded at each surface water sampling location. Figure 4-3 details the Site 14 Phase 11 surface water sampling locations. Table 4-5 outlines the Phase 11 surface water samples and analytical parameters.




SAMPLE LEGEND

- Staff gauge
- Surface water sample
- Sediment sample
- Soil Boring only
- Soil Boring and shallow well

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 4-3

PHASE II – SURFACE WATER SAMPLING LOCATIONS

DWG DATE: 4/11/95 | DWG NAME: 14FIG4-3

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**Table 4-5**
Site 14 Phase II Surface Water Samples and Analytical Parameters

| Sample Location | Sample Identifier | Date Sampled | Sample Analysis | Remarks |
|---|---|---|---|---|
| 14W01 | 014W000101<br>014R000501[a] | 12/13/94 | CLP TAL/TCL | Center of Basin 1 |
| 14W02 | 014W000201 | 12/15/94 | CLP TAL/TCL | Upgradient of southern drainage structure in Basin 1 |
| 14W03 | 014W000301 | 12/13/94 | CLP TAUTCL | Upgradient of northern drainage structure in Basin 1 |
| 14W04 | 014W000401 | 12/12/94 | CLP TAUTCL | Center of Basin 2 |
| 14W05 | 014W000501[c] | 12/12/94 | CLP TAUTCL | Upgradient of southern drainage structure in Basin 2 |
| 14W06 | 014W000601 | 12/12/94 | CLP TAL/TCL | Upgradient of northern drainage structure in Basin 2 |
| 14W07 | 014W000701 | 12/13/94 | PPW | Basin 1 |
| 14W08 | 014W000801 | 12/13/94 | PPW | Basin 2 |

Note:
a = Duplicate Sample

# 5.0 GEOLOGIC AND HYDROLOGIC ASSESSMENT RESULTS

## 5.1 Site-Specific Geologic Interpretation

Lithologies observed from borings advanced on the berms generally consisted of light tan, fine- to medium-grained quartz sand, with a varied distribution of shell fragments, interspersed with thin lenses of silty organic material. Lithologies observed from borings advanced in the basins generally consisted of medium to dark gray, silty-clayey sediment, often highly plastic in nature, with varying amounts of sand. The thickness of the clayey dredge spoil sediments along the margins of the basins varied from approximately 6 feet (boring 14S05) to 14 feet (boring 14S03), depending on location. Immediately underlying the clayey sediments was moist to saturated, light tan, fine- to medium-grained quartz sand, commonly containing shell fragments. The water table was encountered either immediately below or within 1 foot of the clayey sediment at all four basin borings.

Physical tests were conducted on sediment samples collected from the settlement basins. Sediments in the western basin contained total phosphorus (TP) at 620 milligrams per kilogram (mg/kg), nitrate at less than 5.0 mg/kg, total kjeldahl nitrogen (TKN) at 2,300 mg/kg, total organic carbon (TOC) at 3,200 mg/kg, and a cation exchange capacity (CEC) of 27 milliequivalents (meq)/100 g. Sediments in the eastern basin revealed TP at 890 mg/kg, nitrate at 6.2 mg/kg, TKN at 3,100 mg/kg, TOC at 3,400 mg/kg, and a CEC of 42 meq/100 g. The complete analytical report for PPS samples is included as Appendix B.

## 5.2 Site Hydrogeology

The site groundwater hydrologic assessment consisted of water level measurements from the two monitoring wells onsite, and from three surface water body staff gauges emplaced outside the site area. Figures 5-1 and 5-2 present low- and high-tide piezometric information for Site 14. Groundwater hydrologic data are presented in Table 5-1. Groundwater flows eastward across Site 14 toward Pensacola Bay during both high and low tide. Tidal influence over the water

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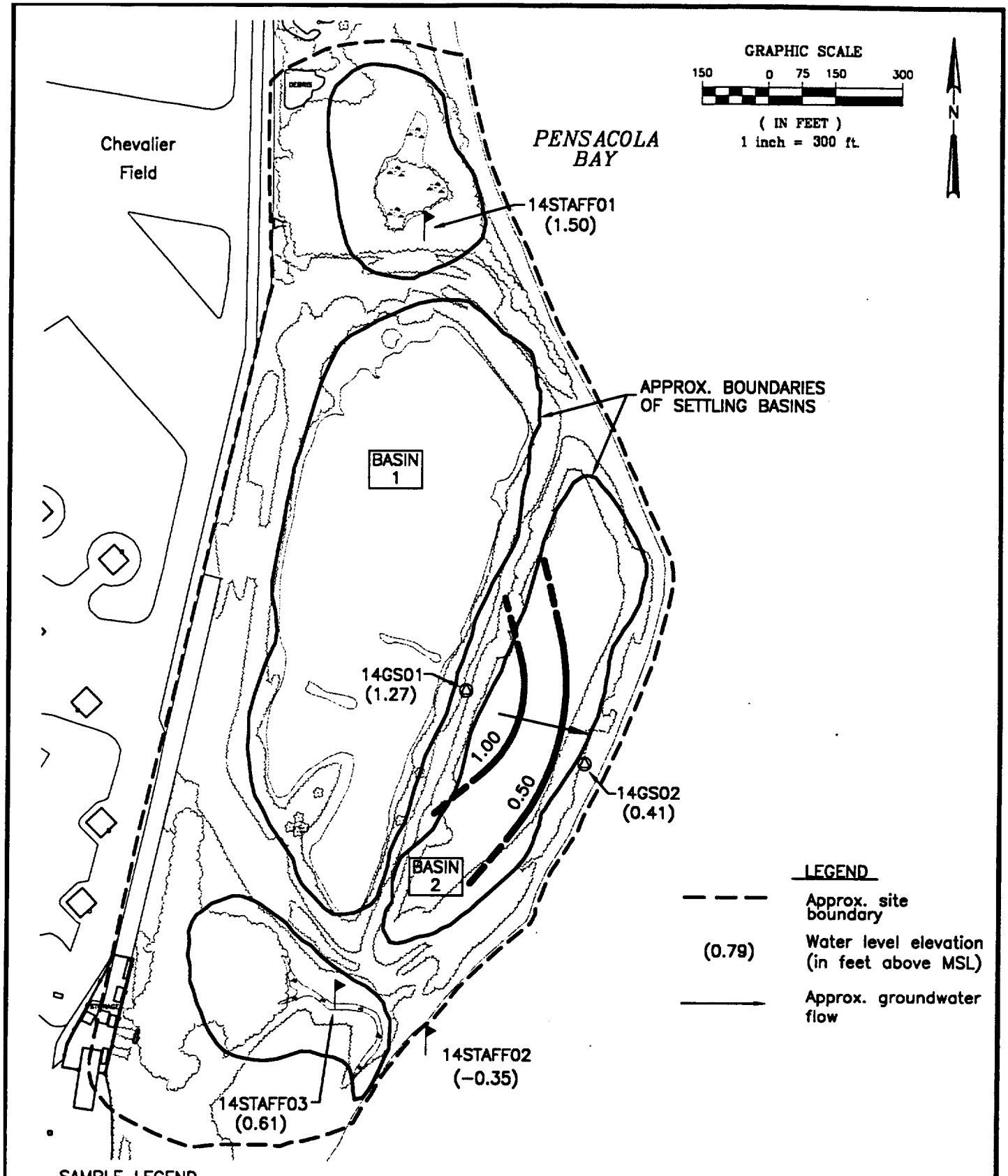


PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 5-1
LOW TIDE
WATER LEVEL ELEVATIONS

DWG DATE: 4/11/95 | DWG NAME: 14FIG5-1

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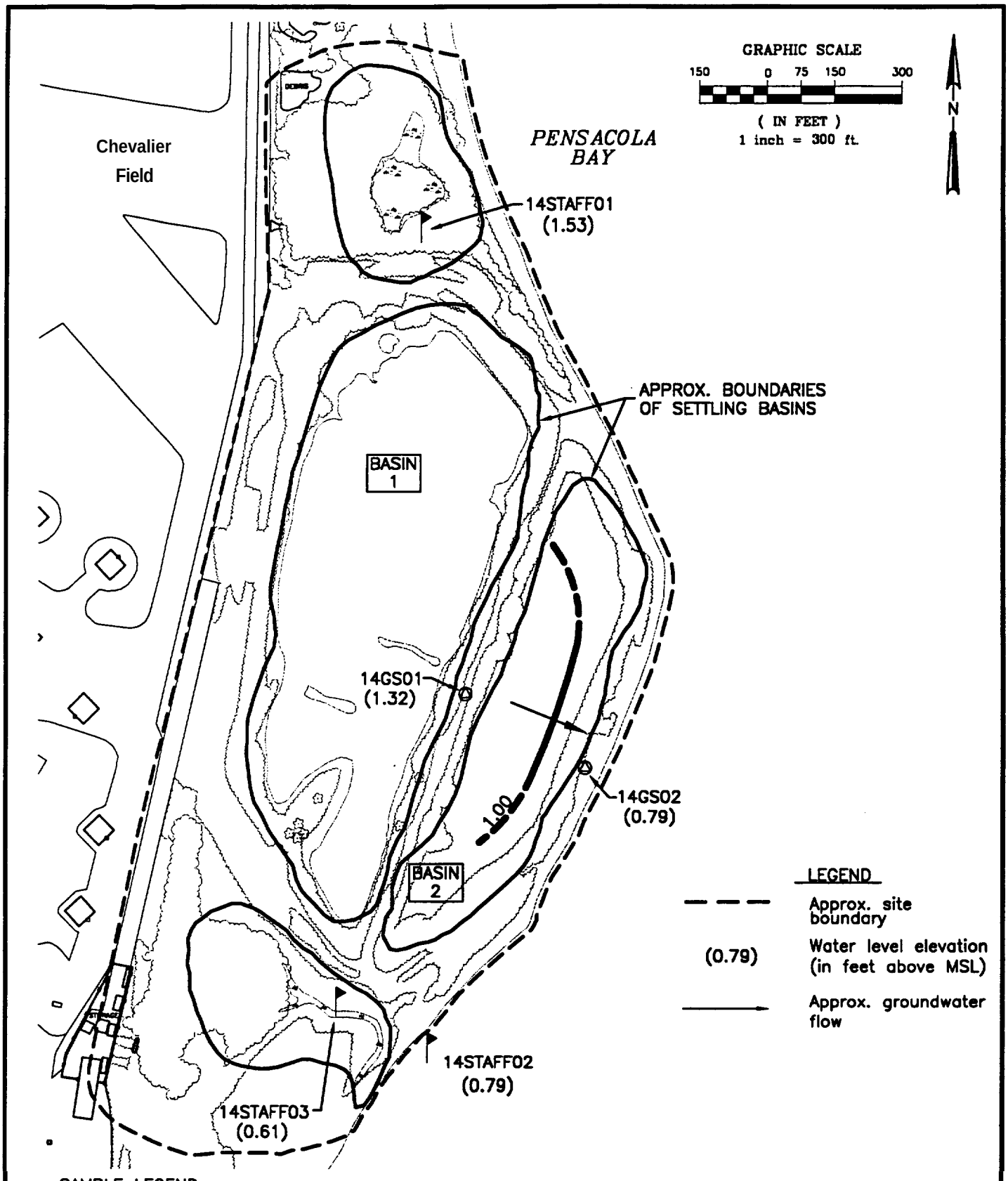


PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 5-2
HIGH TIDE
WATER LEVEL ELEVATIONS

DWG DATE: 4/11/95 | DWG NAME: 14FIG5-

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**Table 5-1**
**Site 14 Groundwater Hydrologic Assessment Data**

| Well Staff/Gauge Location | Low Tide | | High Tide | |
|---|---|---|---|---|
| | Depth to Water (BTOC) | Water Level Elevation | Depth to Water (BTOC) | Water Level Elevation |
| 14GS01 (Berm) | 22.50 | 1.27 | 22.45 | 1.32 |
| 14GS02 (Berm) | 19.16 | 0.41 | 18.78 | 0.79 |
| SG-1 (North of Site) | NA | 1.50 | NA | 1.53 |
| SG-2 (Pensacola Bay) | NA | -0.35 | NA | 0.79 |
| SG-3 (South of Site) | NA | 0.61 . | NA | 0.61 |

Notes:
Datum = feet/msl.
BTOC = Below top of casing.
NAS = Not applicable.
Low and high tide water level measurements were taken at 0600 hours on 3/8/94 and 1900 hours on 3/7/94, respectively.

table beneath the site was evident as groundwater elevations fluctuated in concert with tidal water level change of +.38 feet in monitoring well 14GS02, which is located approximately 50 feet from the shoreline, and +.05 feet in well 14GS01, which is located approximately 350 feet inland (to the west) of the shoreline. A small, measurable change in surface water elevation (+0.03 feet) was noted during high tide in the pond/wetland area north of the site. When the tide is sufficiently high, this pond is connected to the bay. No change in water level was observed in the wetland creek south of the site, indicating it is not connected to the bay or underlying water table (a sand berm was noted at the creek's outlet, blocking discharge to the bay). The horizontal flow gradient across Site 14 is moderate. Gradients calculated between the site's monitoring wells for low and high tide are .0028 and .0017, respectively. Based on these gradients, an average hydraulic conductivity of 63.1 feet per day (ft/day) for the shallow zone (obtained from Operable Unit 10 pumping tests), and an effective porosity estimate of 25 percent, calculated horizontal velocities for groundwater flow across the site toward Pensacola Bay are 0.71 ft/day during low tide, and 0.43 ft/day during high tide.

Physical tests were conducted on surface water samples collected from each settlement basin. The western pond displayed biochemical oxygen demand (BOD) of 14 mg/L, total suspended solids (TSS) of 93 mg/L, total alkalinity (TA) of 150 mg/L, nitrate of 12 mg/L, chemical oxygen demand (COD) of 230 mg/L, TP of 0.93 mg/L, TKN of 5.7 mg/L, and hardness of 1100 mg/L. The eastern pond contained BOD of 44 mg/L, TSS of 80 mg/L, TA of 130 mg/L, nitrate of 0.31 mg/L, COD of 310 mg/L, TP of 3.3 mg/L, TKN of 6.1 mg/L, and hardness of 740 mg/L. The complete analytical report for PPW samples is included in Appendix B.

Surface water quality parameters were also monitored during the Phase 11 surface water sampling. Surface water data were gathered at each surface water sampling location within the settlement basins using a hand-held measurement device. Table 5-2 presents these surface water measurements.

**Table 5-2**
**Site 14 Surface Water Quality Data**

| Sample Location | pH | Specific Conductivity (mS/cm) | Turbidity (NTU) | Temperature (°C) | Salinity (%) |
|---|---|---|---|---|---|
| 14W01 | 9.01 | 15.1 | 140 | 14.6 | .87 |
| 14W03 | 8.96 | 15.1 | 163 | 14.1 | .87 |
| 14W04 | 8.74 | 12.3 | 380 | 9.2 | 0.68 |
| 14W05 | 8.75 | 12.2 | 370 | 10.5 | 0.68 |
| 14W06 | 8.55 | 12.3 | 354 | 8.7 | 0.68 |

**Note:**
mS/cm = microSiemens/centimeter

## 6.0 CONTAMINATION ASSESSMENT

Sections 6.1, 6.2, 6.3, and 6.4 discuss the analytical results for Site 14 sediment, surface water, soil, and groundwater samples, respectively collected during this investigation. The results of all phases of sampling are discussed in these sections. Tables 6-1 through 6-4 summarize analytical results for these samples, listing only positive detections for each analyzed parameter and can be found at the end of this section. The analytical results have been validated and the full analytical data report is included as Appendix C. A preliminary health risk evaluation and preliminary ecological risk assessment were completed for the site to support this discussion and can be found in Appendices D and E, respectively.

### Establishment of Preliminary Remediation Goals

State of Florida and/or USEPA risk-based concentrations, general guidance concentrations, and promulgated standards have been defined as Preliminary Remediation Goals (PRGs) for this investigation. Resultingly, PRGs have been used to evaluate Site 14 analytical results for contaminant distribution and risk assessment purposes. Discussions of the analytical results specifically address the relationships between detected parameters and the PRGs listed below.

### Sediment

- USEPA Region IV (Draft) Sediment Screening Values (SSVs) for Hazardous Waste Sites, February 16, 1994.

- [FDEP Sediment Quality Assessment Guide (SQAG) Threshold Effective Level (TEL) values, November 1994;

- Risk-Based Concentrations (RBCs) from USEPA Region III Contaminants of Concern Screening Table for residential soil, March 18, 1994;

- **FDEP Cleanup Goals (CGs) for Department of Defense Sites, most stringent of either aggregate resident or child resident scenario, July 5,1994; and**

- **USEPA Office of Solid Waste and Emergency Response (OSWER) draft Revised Interim Soil Lead Guidance, May 27, 1994.]**

**soil**

- **[USEPA Region III RBCs;**
- **FDEP CGs; and**
- **USEPA (OSWER)** *draft* **Revised Interim Soil Lead Guidance.]**

**Groundwater**

- **USEPA** Maximum Contaminant Levels (MCLs);

- Florida Primary **and** ***Secondary*** Drinking Water **Standards** (FPDWS and FSDWS, respectively); **and**

- Florida Groundwater Guidance Concentrations including systemic **toxicants, carcinogens,** and organoleptic concentrations, **June 2,** 1994 (update).

**Surface Water**

- **USEPA** Water Quality **Standards, 1993** (Freshwater, Chronic)
- Florida Surface Water Quality **Standards, 1993** (Freshwater)

All listed PRGs **are** presented in **Appendix F. Parameters** detected at concentrations below PRGs **are** not discussed.

**Establishment** of Background

***Summary*** analytical results for background soil and groundwater samples used to determine ambient conditions (inorganic parameters only) at **NAS** Pensacola ***are*** presented in Appendix G. Background sample locations are shown on Figure 6-1. Soil samples were collected while 1installing background wells 01GS67, 01GI68, 01GS69, and 01GI70 during the 1993 Site 1 Remedial Investigation (RI). These shallow and intermediate wells (01GS67 and 01GS69, 01GI68 and 01GI70, respectively) were sampled in 1993 (using Teflon bailers) and, due to sample turbidity, were resampled in July of 1994 using low flow rate quiescent sampling techniques.

Deep supply wells 01DSW50 and 01DSW51 were also sampled during **the** 1993 Site 1 RI to obtain the remaining deep zone background data (because supply wells contained operable turbine pumps, these wells were sampled directly **from** a valve at the wellhead without the use of a bailer; these samples exhibited low turbidities comparable to those collected from the shallow wells using low-flow techniques). For comparison, background sample (1993 soil samples, 1994 shallow and intermediate groundwater samples, and 1993 deep groundwater samples) results have been used to define a range of concentrations for each detected inorganic parameter considered representative of ambient conditions. Furthermore, a "reference concentration" (RC) has been calculated for each inorganic parameter, equal to two times the parameter's mean concentration. In instances where an analyzed parameter was not detected above the quantitation limit, a value of one-half the reported detection limit was **used** to calculate the mean concentration for the RC. Calculated RCs for detected inorganic parameters are presented in Appendix G.

Inorganic parameters detected in site samples will **be** discussed in the following sections relative to RCs only when a specific parameter exceeds PRG or when no PRG is available for **a** parameter. As noted in Appendix G, concentrations of aluminum and **iron** detected in

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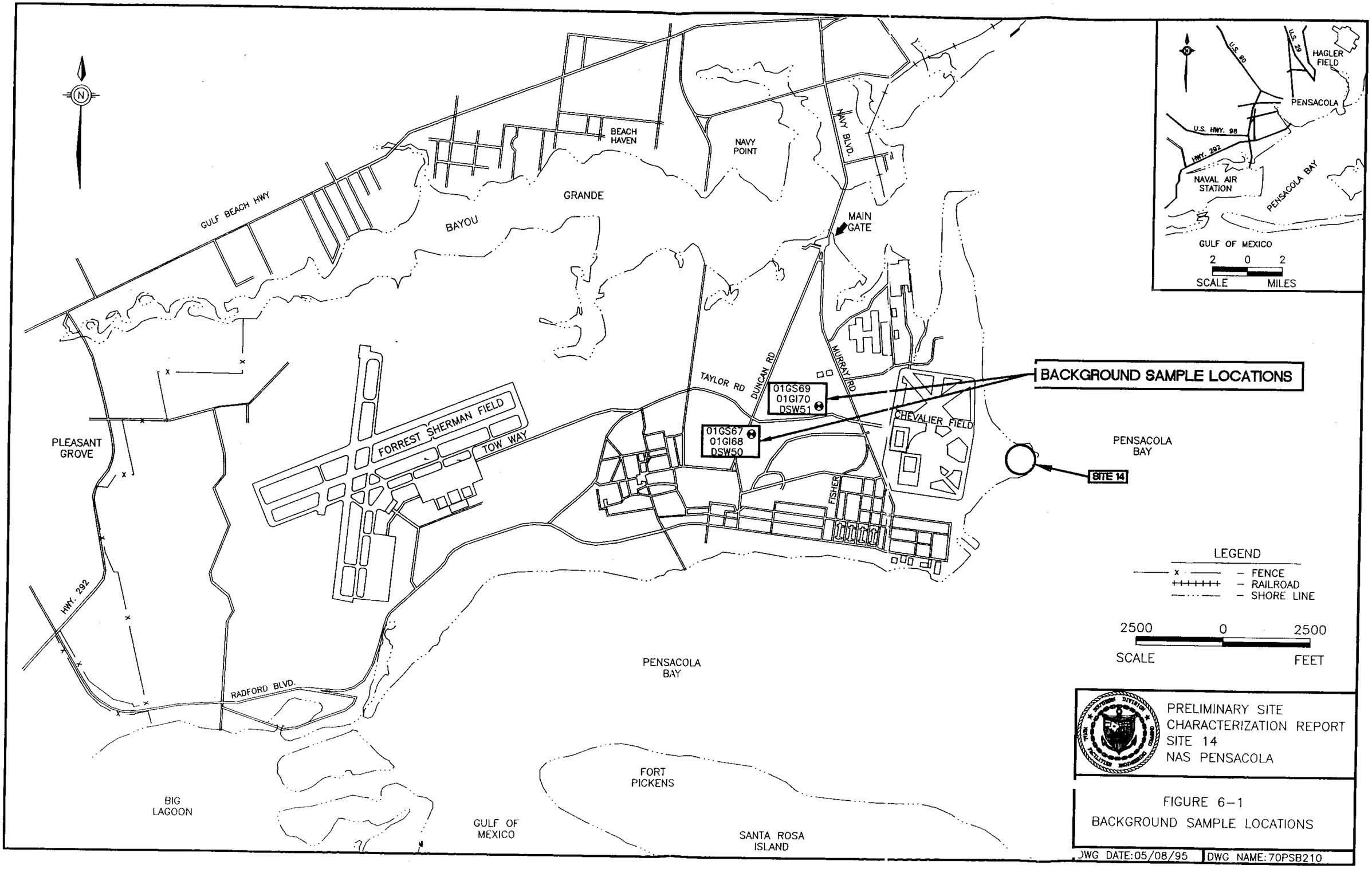

N
GULF BEACH HWY
BAYOU
GRANDE
BEACH HAVEN
NAVY POINT
NAVY BLVD.
MAIN GATE
PLEASANT GROVE
FORREST SHERMAN FIELD
TOW WAY
TAYLOR RD
DUNCAN RD
MURRAY RD
FISHER
CHEVALIER FIELD
01GS69
01GI70
DSW51
01GS67
01GI68
DSW50
BACKGROUND SAMPLE LOCATIONS
SITE 14
PENSACOLA BAY
HWY. 292
RADFORD BLVD.
BIG LAGOON
GULF OF MEXICO
FORT PICKENS
SANTA ROSA ISLAND
U.S. 90
U.S. 29
HAGLER FIELD
PENSACOLA
U.S. HWY. 98
HWY. 292
NAVAL AIR STATION
PENSACOLA BAY
GULF OF MEXICO
2 0 2
SCALE MILES
LEGEND
FENCE
RAILROAD
SHORE LINE
2500 0 2500
SCALE FEET
PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA
FIGURE 6-1
BACKGROUND SAMPLE LOCATIONS
DWG DATE:05/08/95
DWG NAME:70PSB210

background groundwater samples exceeded secondary drinking water standards for all wells, indicating that these metals naturally occur at relatively high concentrations in the groundwater at NAS Pensacola. Specifically, the lithology of the surficial zone of the Sand and Gravel Aquifer can locally contain high percentages of ferrous/manganese hydroxides, clays, and detrital shell material, so the abundance of Al, Fe, Mn, and Ca is not unexpected. In addition to comparisons to site-specific background, comparisons for some inorganics in groundwater are occasionally made utilizing data presented by the Northwest Florida Water Management District (Clemens et al. 1989). This publication presents ambient water quality data for all of the district but comparisons are limited to the Sand and Gravel Aquifer in Southern Escambia County.

## 6.1 Sediment

During the Phase I field work, borings were completed within each of the basins and samples were collected throughout the thickness of the dredge spoil material. Originally, this material was [sampled as soil. Because samples were collected throughout the entire thickness of the dredge spoil, the Phase I sediment samples were divided into surficial and subsurface elements. Surficial samples considered the 0 to 1-foot bls interval, while subsurface samples were collected from specific intervals down to the base or slightly below the base of the dredge spoil. Phase 11 sediment samples were collected across the 0- to- 0.5-foot depth interval. Because of the characteristics of the basin materials (i.e., its origin as marine sediment and subaqueous nature after flooding due to rain events), both Phase I/II samples are considered sediment for this discussion.] The preliminary health risk evaluation considered the material as soil and sediment during equal parts of the year because the basins are periodically dry and represent a potential soil pathway (Appendix D). [Because of this, sediment PRGs for the basin sediments include both soil and sediment agency criteria.] Sediment data from samples collected in Pensacola Bay proper were compared to the sediment PRGs only.

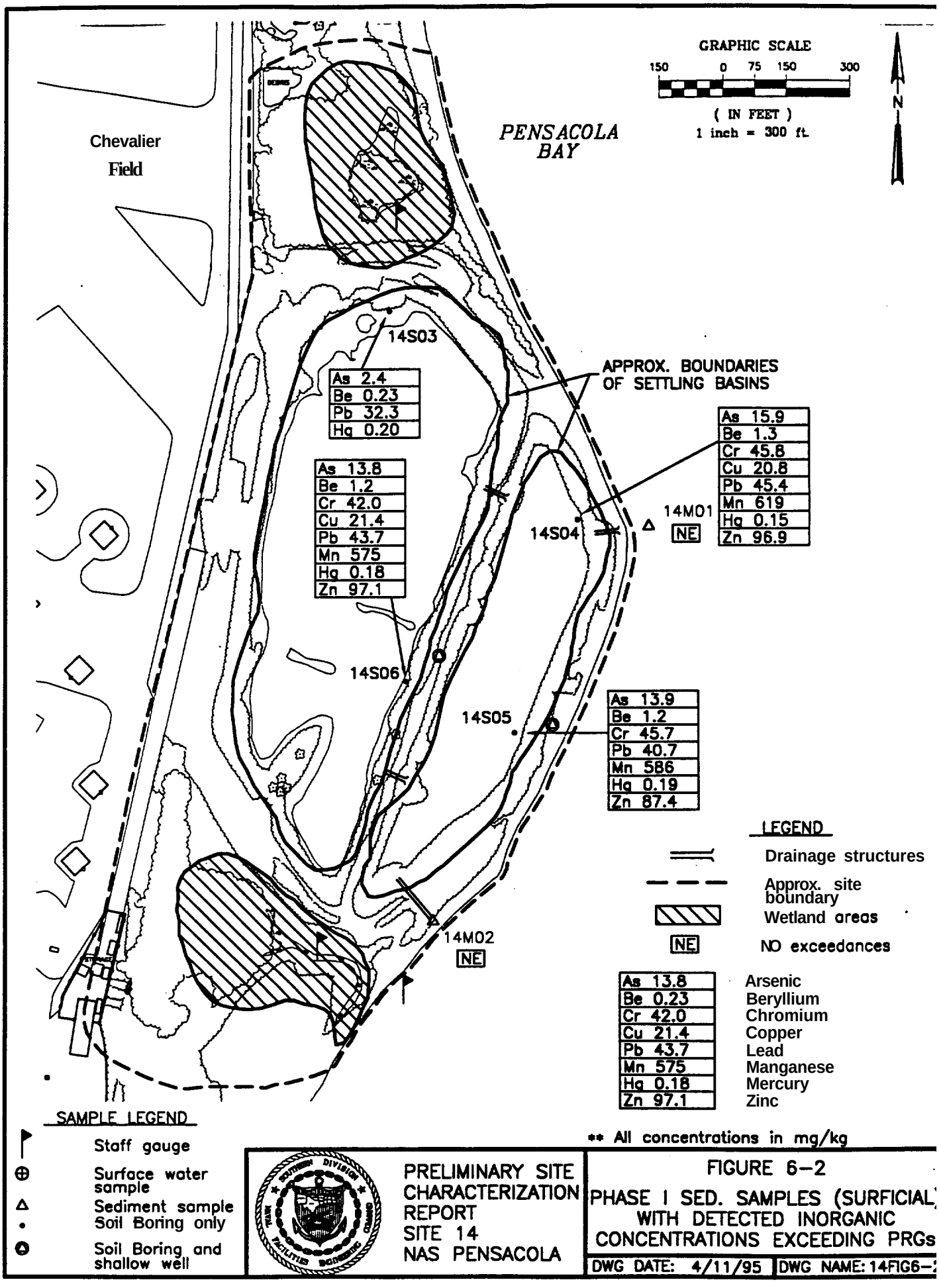
**Inorganics**

As shown in Table 6-1, several inorganics were detected in Phase I sediment samples that exceeded [PRGs]. Figure 6-2 presents the detected inorganic parameters exceeding the [PRGs] in surficial sediments (0 to 1 foot). These include [aluminum] arsenic, [beryllium] chromium, [copper], lead, [manganese], mercury, [nickel, vanadium] and zinc. Similar concentrations of inorganics were detected at depth throughout the thickness of the dredge spoil. Table 6-1 presents the detected concentrations of inorganics in subsurface sediment samples. Figure 6-3 presents detected inorganics exceeding the [PRGs] in subsurface sediments. Sediment samples collected in Pensacola Bay adjacent to outfalls extending from basins had no detected inorganics exceeding [PRGs] (Figure 6-2).

Inorganic parameters and concentrations detected in Phase II sediment samples were comparable with those exhibited in Phase I samples (Table 6-2). Figure 6-4 presents the detected inorganics in Phase II samples exceeding [PRGs]. Again, sediment samples (composites) collected during Phase II sampling in Pensacola Bay adjacent to the outfalls did not contain any inorganics exceeding [PRGs].

The consistency of detected inorganic parameters and concentrations suggests that the sediment within the two basins is both areally and stratigraphically homogeneous. Arsenic, [beryllium,] chromium, lead, [manganese,] mercury, and zinc were detected at almost all sample locations exceeding the [PRGs]. Ranges of detected concentrations of these parameters were as follows in parts per million (ppm):

| | |
|---|---|
| Arsenic | 0.88 to 19.6 ppm |
| [Beryllium | 0.06 to 2.0 ppm] |
| Chromium | 0.83 to 88.1 ppm |
| Lead | 0.59 to 299.0 ppm |
| [Manganese | 2.2 to 1300 ppm] |


GRAPHIC SCALE
150 0 75 150 300
( IN FEET )
1 inch = 300 ft.
N
Chevalier Field
PENSACOLA BAY
APPROX. BOUNDARIES OF SETTLING BASINS
14S03
As 2.4
Be 0.23
Pb 32.3
Hg 0.20
As 13.8
Be 1.2
Cr 42.0
Cu 21.4
Pb 43.7
Mn 575
Hg 0.18
Zn 97.1
14S04
14M01
NE
As 15.9
Be 1.3
Cr 45.8
Cu 20.8
Pb 45.4
Mn 619
Hg 0.15
Zn 96.9
14S06
14S05
As 13.9
Be 1.2
Cr 45.7
Pb 40.7
Mn 586
Hg 0.19
Zn 87.4
14M02
NE
LEGEND
Drainage structures
Approx. site boundary
Wetland areas
NE NO exceedances
As 13.8 Arsenic
Be 0.23 Beryllium
Cr 42.0 Chromium
Cu 21.4 Copper
Pb 43.7 Lead
Mn 575 Manganese
Hg 0.18 Mercury
Zn 97.1 Zinc
** All concentrations in mg/kg
SAMPLE LEGEND
Staff gauge
Surface water sample
Sediment sample
Soil Boring only
Soil Boring and shallow well
PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA
FIGURE 6-2
PHASE I SED. SAMPLES (SURFICIAL) WITH DETECTED INORGANIC CONCENTRATIONS EXCEEDING PRGs
DWG DATE: 4/11/95
DWG NAME: 14FIG6-2

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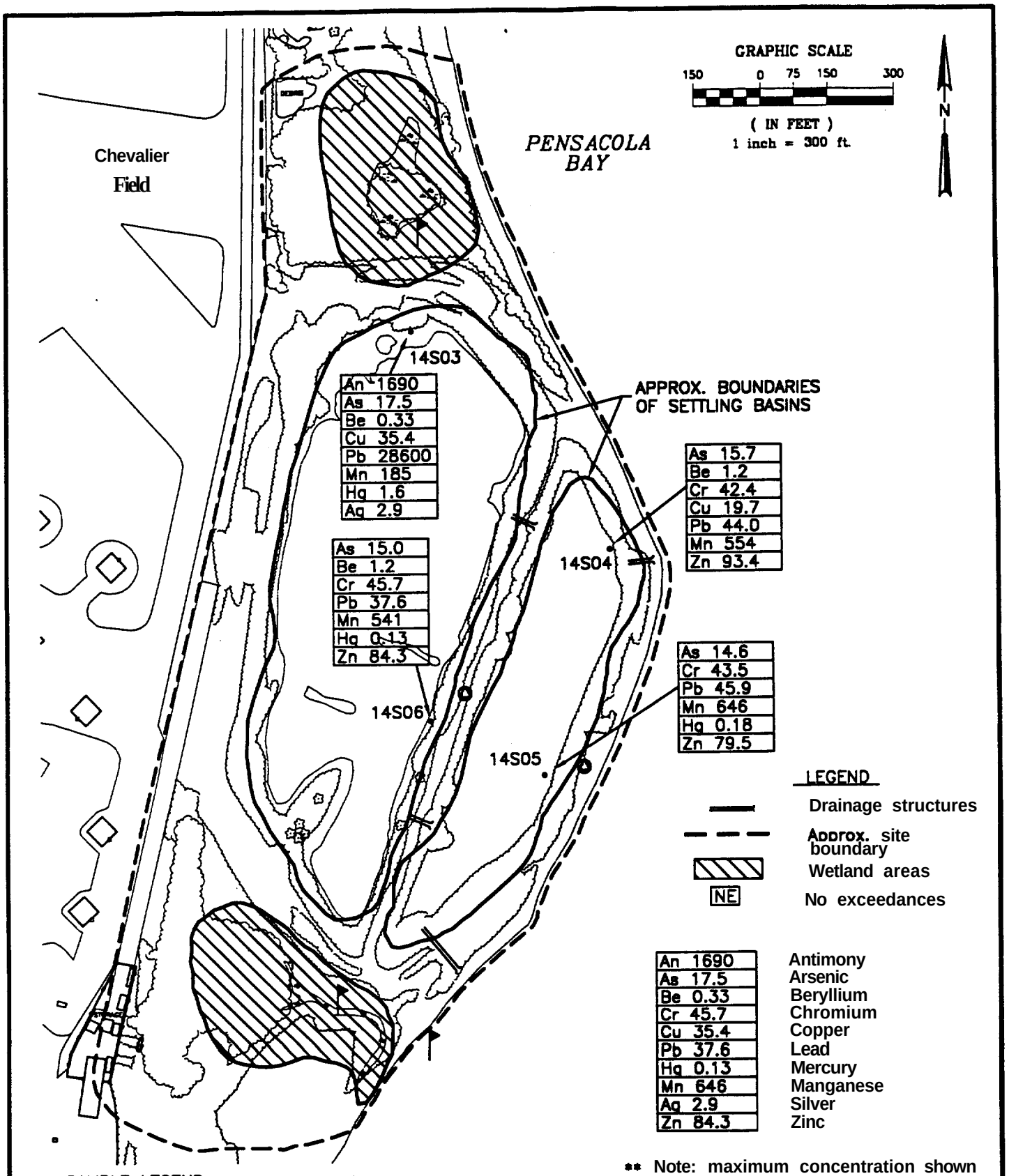


PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-3
PHASE I SED. SAMPLES (SUB-SURFACE) WITH DETECTED INORGANIC CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 4/11/95 | DWG NAME: 14FIG6-3

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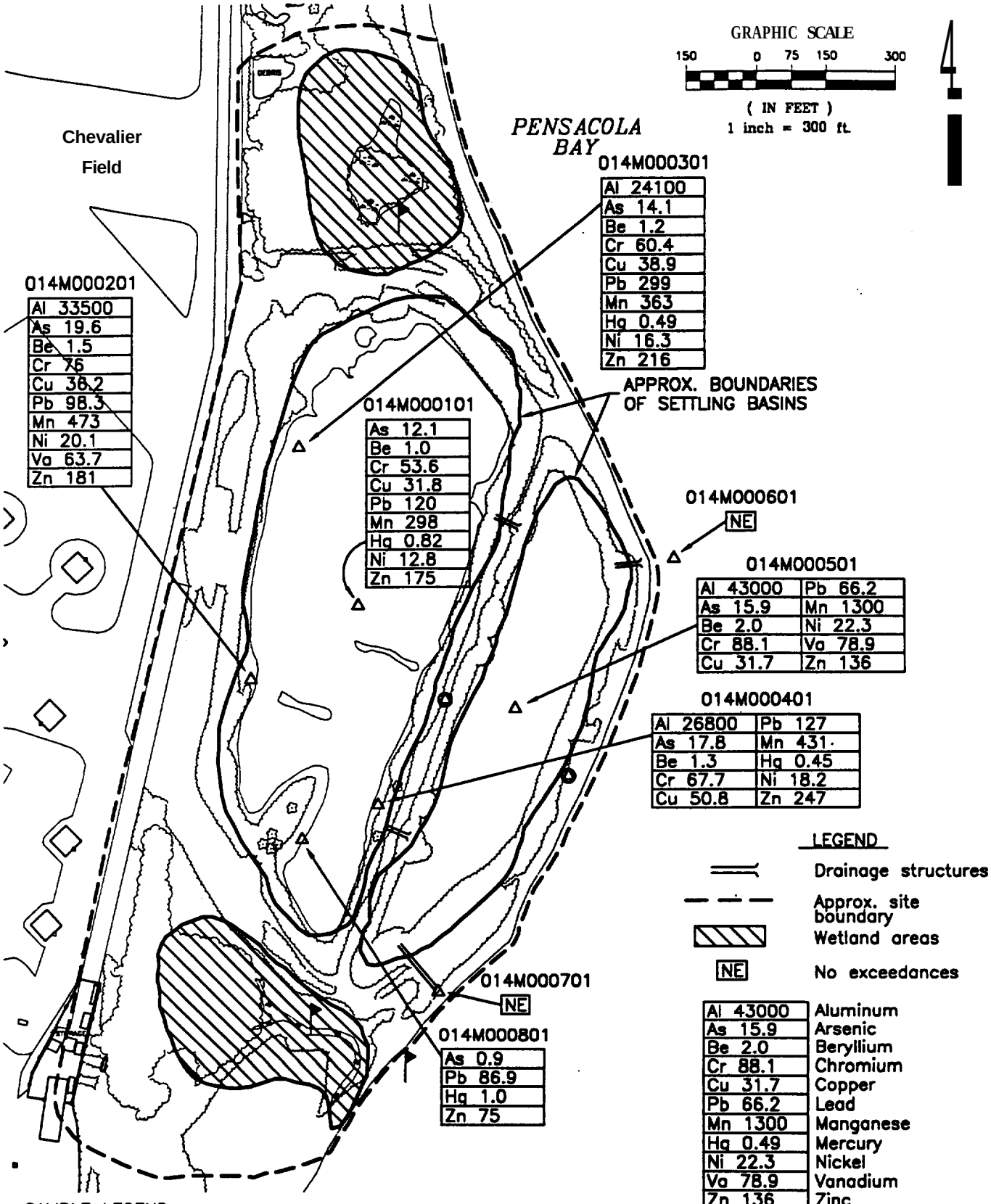


PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-4

PHASE II SEDIMENT SAMPLES WITH DETECTED INORGANIC CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 4/11/95 | DWG NAME: 14FIG6-

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| | |
|---|---|
| Mercury | 0.04 to 1.6 ppm |
| Zinc | 8.8 to 247.0 ppm |

Anomalously high [antimony (1690 ppm) and] lead (28600 ppm) [concentrations were] detected in the 3- to 5-foot interval in boring 14S03. The lowest detections of inorganics were typically found in the samples collected within Pensacola Bay or in the samples collected at the greatest depth in the Phase I borings (Tables 6-1 and 6-2). Samples collected at these depths, ranging from 7 to 14 feet, typically represented the base of the dredge spoil, and in many cases were collected partially from the underlying native soil. As would be expected, parameter concentrations in the underlying sandy soil are significantly lower than those of the dredge material. Inorganic parameters detected in the dredge spoil are also comparable with those found in the fine-grained sediments of Pensacola Bay at Site 2, [a representative source of the dredge material found in the Site 14 basins (E/A&H 1995b)].

**Organics**

Organic compounds detected in Phase I and Phase II sediment samples included PAHs, pesticides and PCBs. The detected concentrations of these parameters are presented in Tables 6-1 and 6-2. Only PAHs and Total PCBs were detected exceeding [PRGs] in Phase I samples. The PAH exceedances [occurring] in Phase I [surface] samples [are presented] in Figure 6-5. [PAH exceedances in subsurface samples are presented in Figure 6-6. PAHs above PRGs] included [benzo(a)anthracene,] benzo(a)pyrene, [benzo(k)flouranthene,] chrysene, fluoranthene, and pyrene. These PAHs[, (minus benzo(k)flouranthene),] along with [acenaphthene, acenaphthylene, anthracene, benzo(b)flouranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene,] phenanthrene, were detected in Phase II sediment samples exceeding [PRGs]. Figure 6-7 presents the PAH exceedances for Phase II samples. [Total Phase I PAH concentrations above PRGs included two samples from Basin 2 (Figure 6-8).] Total PAH concentrations [exceeding standards] for Phase II samples were considerably higher than the [PRG (1684 ppb)] and ranged from 9137 to 28200 ppb (Figure 6-[9]).

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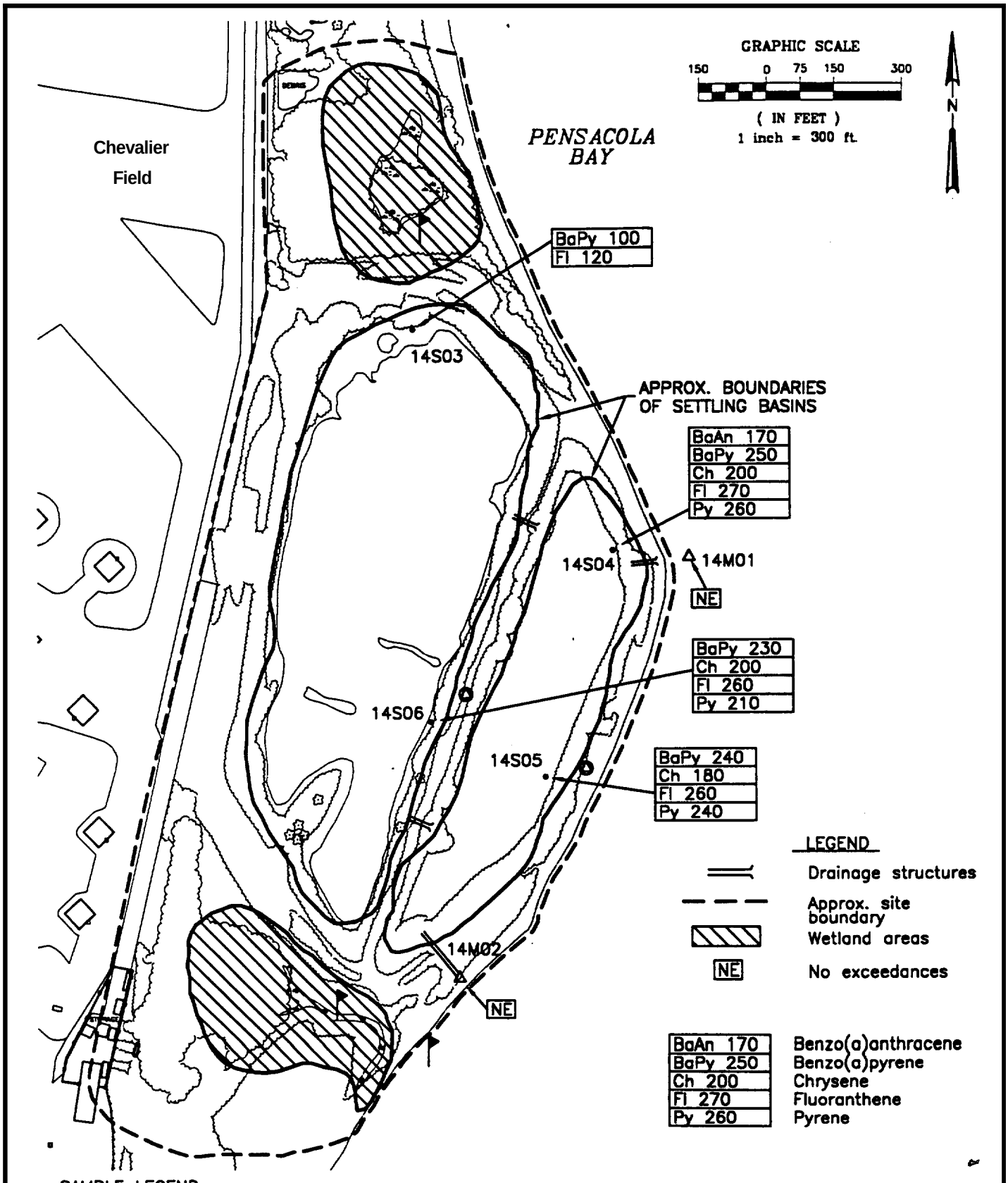


SAMPLE LEGEND

- Staff gauge
- Surface water sample
- A Sediment sample
- Soil boring only
- Soil boring and shallow well

** All concentrations in µg/kg

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-5

PHASE I SEDIMENT SAMPLES (SURFACE) WITH DETECTED PAH CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 4/11/95 | DWG NAME: 14FIG6-

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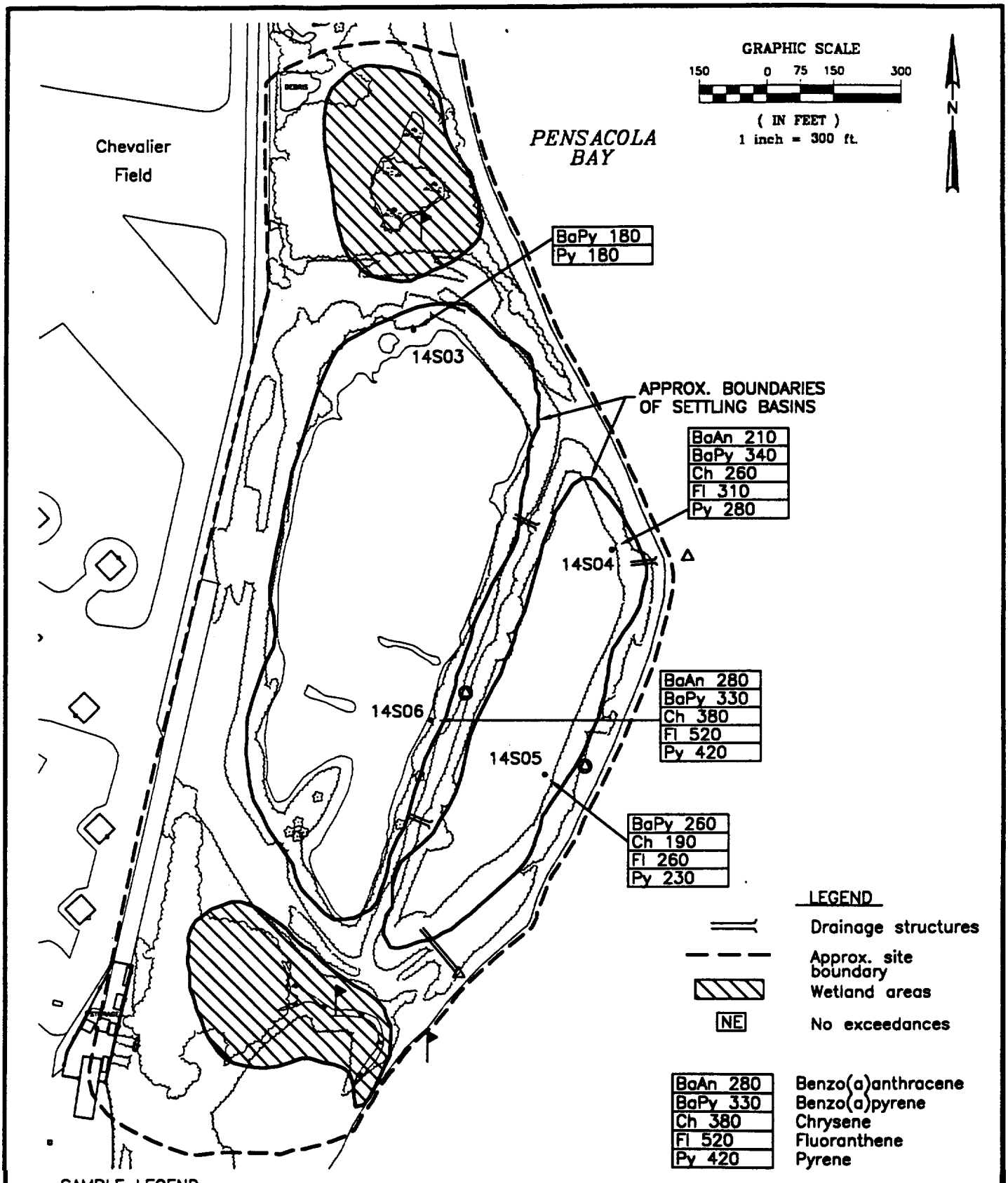


SAMPLE LEGEND

- t Staff gauge
- ⊕ Surface water sample
- △ Sediment sample
- • Soil boring only
- ⊙ Soil boring and shallow well

** All concentrations in μg/kg

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-6
PHASE I SEDIMENT SAMPLES (SUB-SURFACE) WITH DETECTED PAH CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 4/11/95 | DWG NAME: 14FIG6-6

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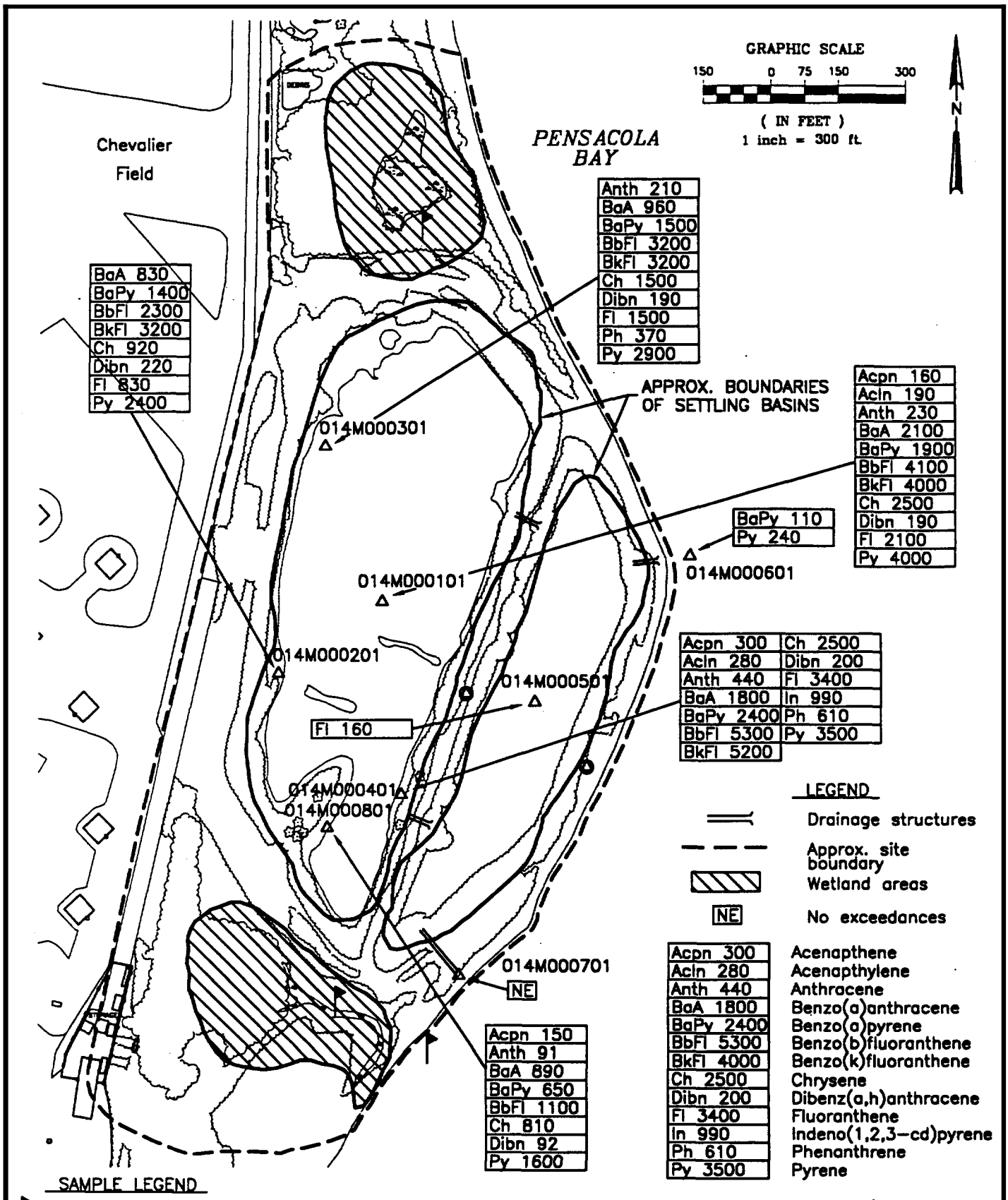


PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-7
PHASE II SEDIMENT SAMPLES WITH DETECTED PAH CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 4/11/95 | DWG NAME: 14FIG6-7

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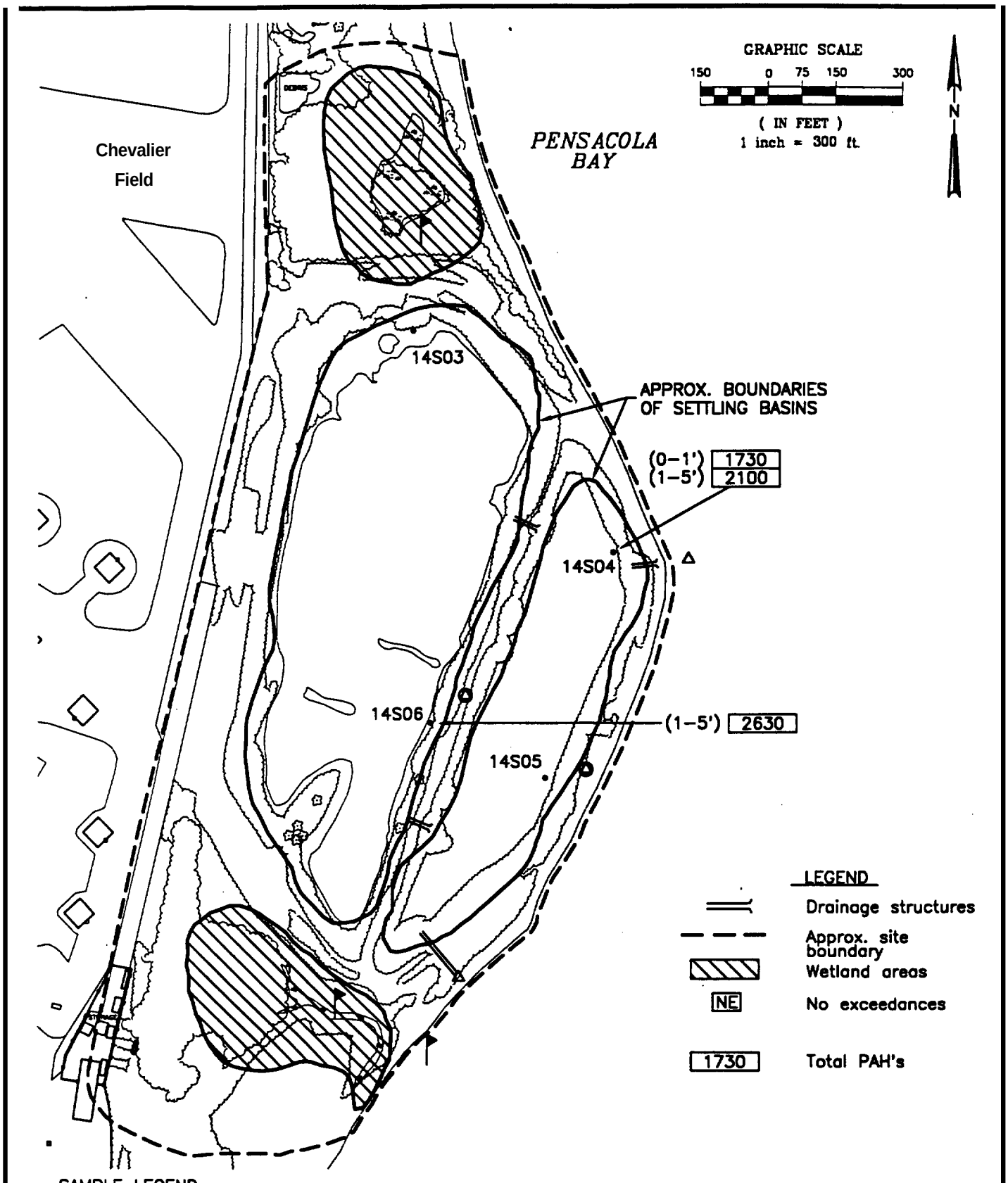


SAMPLE LEGEND

- Staff gauge
- Surface water sample
- Sediment sample
- Soil boring only
- Soil boring and shallow well

** All concentrations in µg/kg

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-8

PHASE I SEDIMENT SAMPLES WITH DETECTED TOTAL PAH CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 4/11/95 | DWG NAME: 14FIG6-8

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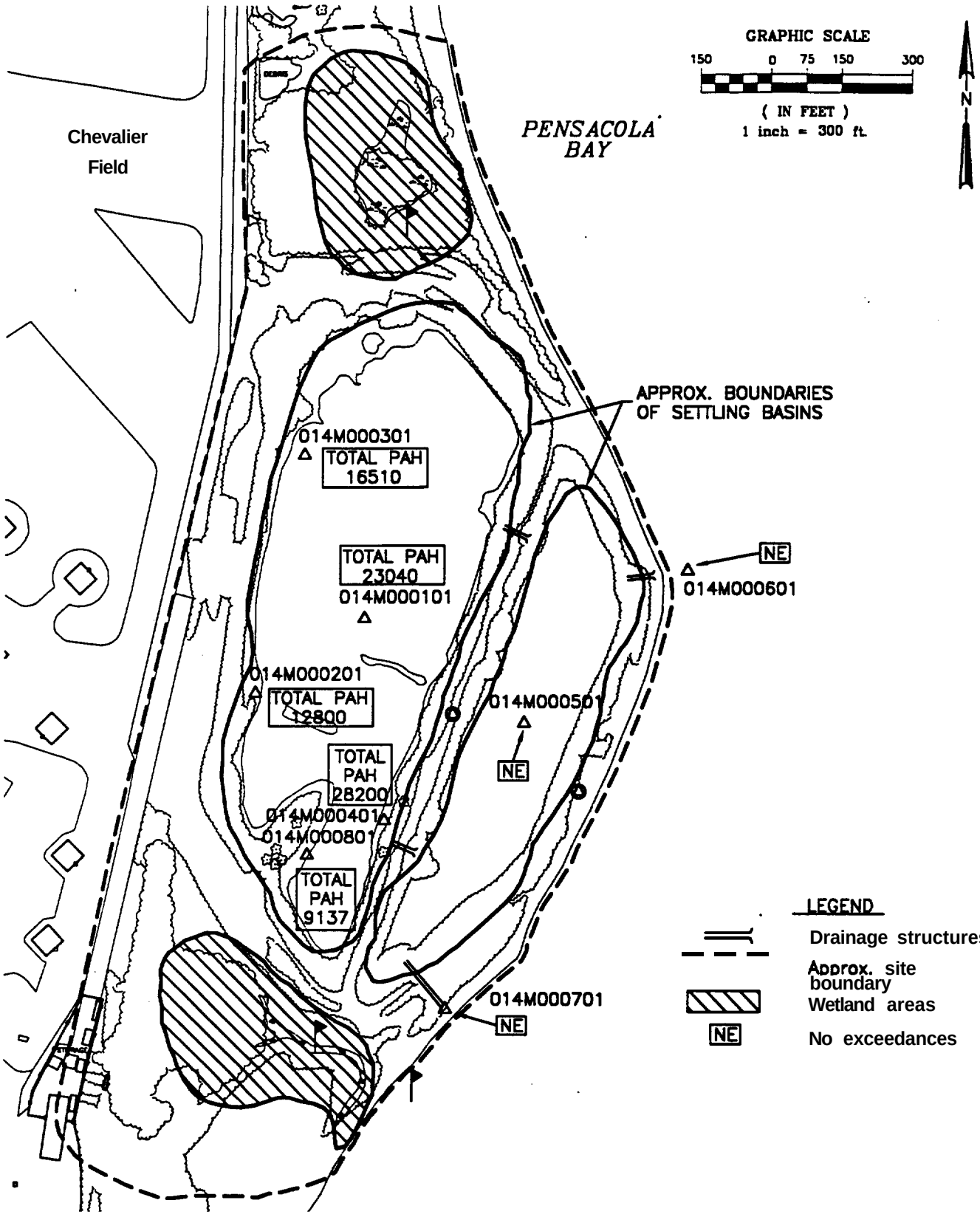


SAMPLE LEGEND

- Staff gauge
- Surface water sample
- Sediment sample
- Soil boring only
- 3 Soil boring and shallow well

** All concentrations in µg/kg

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-9

PHASE II SEDIMENT SAMPLES WITH DETECTED TOTAL PAH CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 4/11/95 | DWG NAME: 14FIG6-9

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Pesticides and PCBs were also detected in Phase I and Phase II samples. Total PCBs exceedances in Phase I sediments are presented in Figure 6-[10]. Subsurface exceedances were exhibited only in samples from boring 14S03. Total [pesticide/]PCB exceedances in Phase II samples are presented in Figure 6-[11]. Dieldrin, [gamma-BHC(Lindane),] DDD, DDE, and DDT exceeded the [PRGs] in Phase II samples collected in Basin 1. Aroclor 1254 was detected in only one Phase II sample, which exceeded the [PRG].

Inorganic and organic parameters detected in the sediments at Site 14 are comparable with those identified in sediments at Site 2. The similarity of the analysis of the basin sediments to parameters identified in the sediments at Site 2 suggests that these parameters are present in bay sediments, [resulting from commercial, industrial, and recreational boating activities]. Typically, sediments within Basin 1 contained higher concentrations of organics than Basin 2 or Pensacola Bay sediments. This likely reflects the design of the basins, which allows the primary dredge spoil to be discharged to Basin 1, then decants to Basin 2 for further settling before the water evaporates or is discharged to Pensacola Bay.

## 6.2 Surface Water

Surface water samples were collected during Phase II sampling to identify the potential of contaminants being introduced to the water from the sediments. Standing water was present within both basins throughout the field investigation; however, the basins have been observed without standing water. The water is primarily a result of perched rainwater but may also result from the dredge spoil slurry discharged to the basins during dredging operations.

### Inorganics

Inorganics detected in surface water samples were comparable with those found in the sediments. As shown in Table 6-3 and Figure [6-12], only lead, mercury, and iron were detected exceeding their respective PRGs. Lead was detected in five of the six sample locations with concentrations

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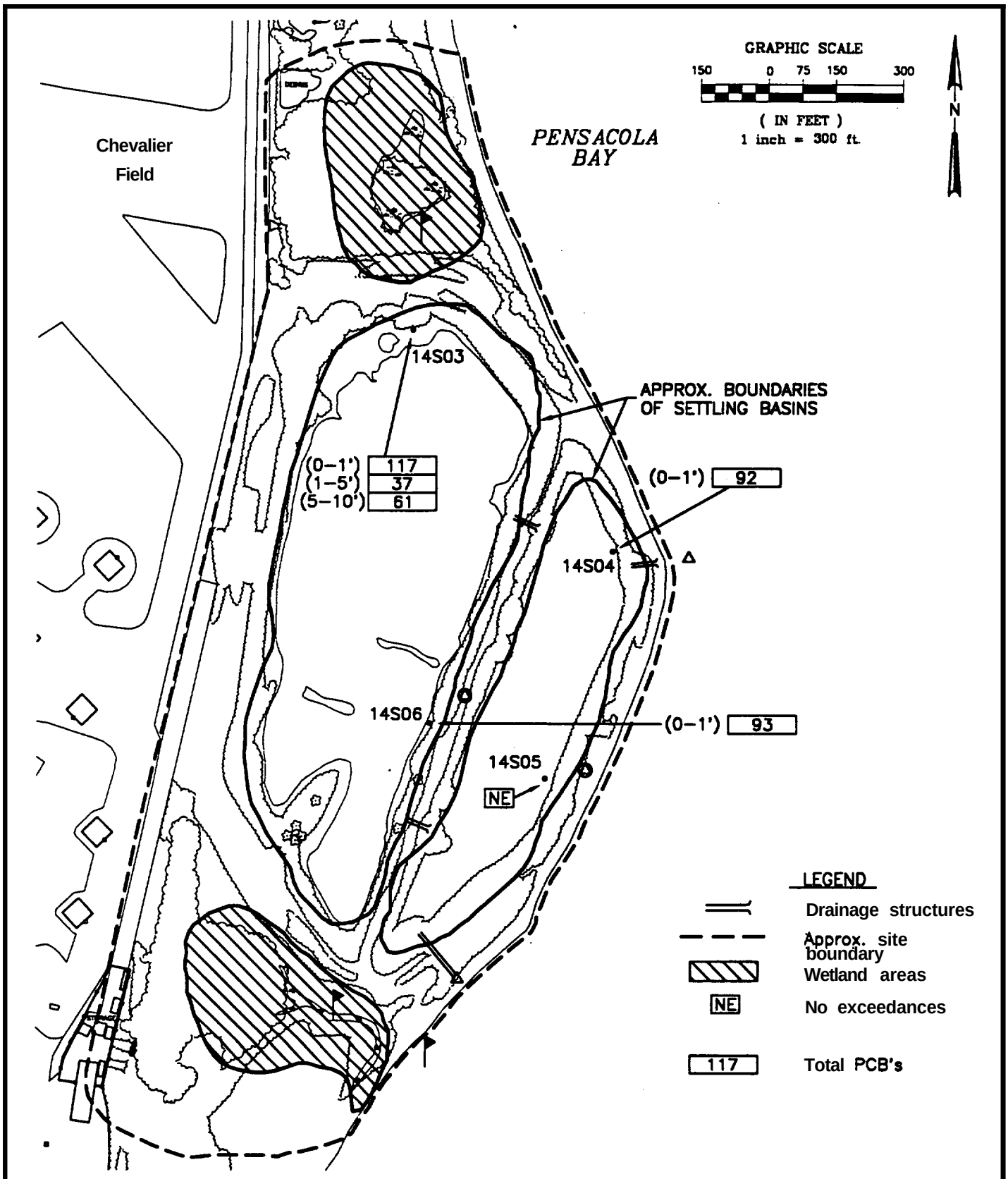


SAMPLE LEGEND

- Staff gauge
- 3 Surface water sample
- Δ Sediment sample
- • Soil boring only
- Soil boring and shallow well

** All concentrations in µg/kg

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6–10
PHASE I SEDIMENT SAMPLES (TOTAL) WITH DETECTED PCB CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 4/11/95 | DWG NAME: 14FIG610

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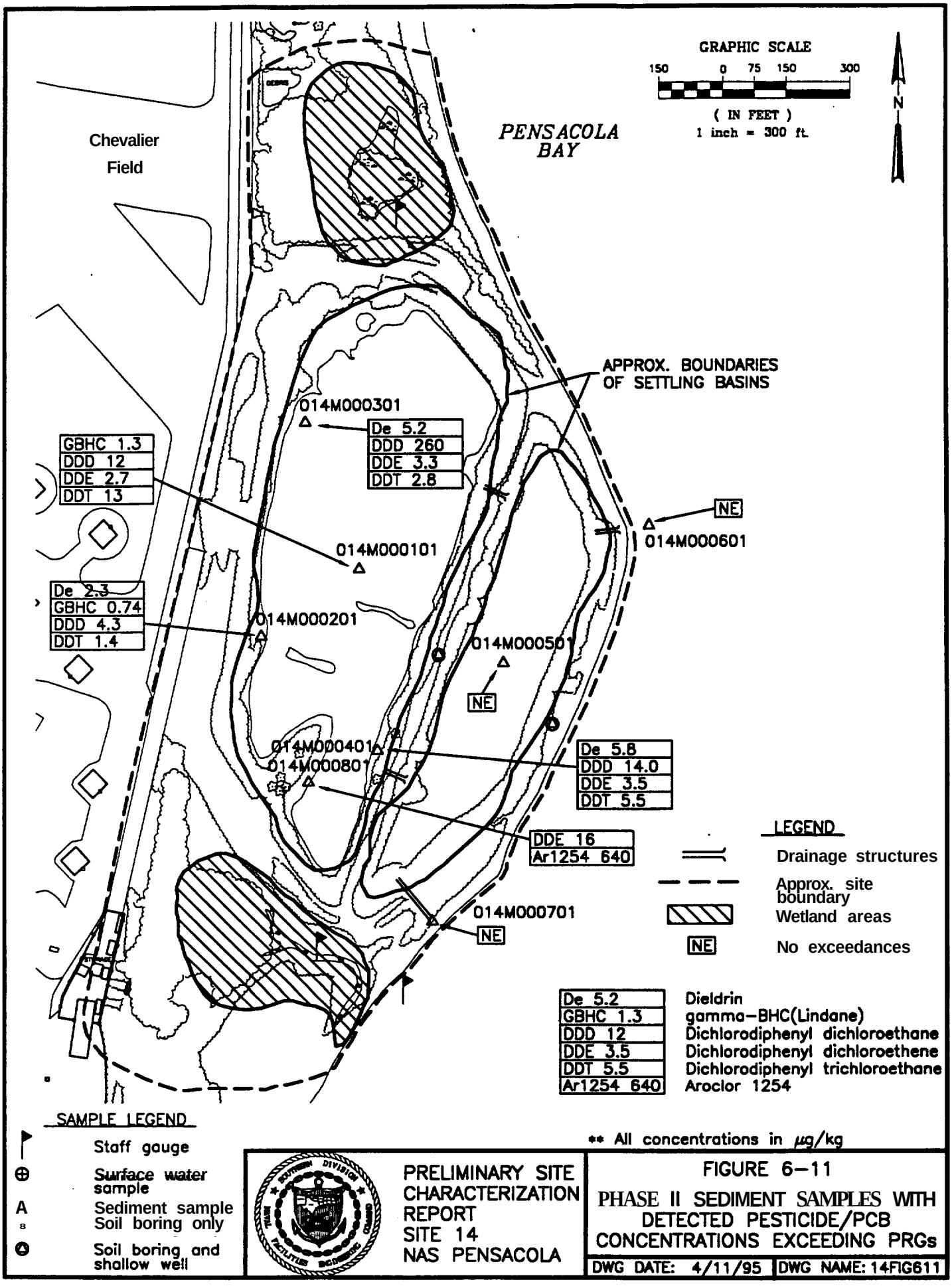
GRAPHIC SCALE
150 0 75 150 300
( IN FEET )
1 inch = 300 ft.
N
PENSACOLA BAY
Chevalier Field
APPROX. BOUNDARIES OF SETTLING BASINS
014M000301
De 5.2
DDD 260
DDE 3.3
DDT 2.8
GBHC 1.3
DDD 12
DDE 2.7
DDT 13
014M000101
NE
014M000601
De 2.3
GBHC 0.74
DDD 4.3
DDT 1.4
014M000201
014M000501
NE
014M000401
014M000801
De 5.8
DDD 14.0
DDE 3.5
DDT 5.5
DDE 16
Ar1254 640
014M000701
NE
LEGEND
Drainage structures
Approx. site boundary
Wetland areas
NE
No exceedances
De 5.2 Dieldrin
GBHC 1.3 gamma-BHC(Lindane)
DDD 12 Dichlorodiphenyl dichloroethane
DDE 3.5 Dichlorodiphenyl dichloroethene
DDT 5.5 Dichlorodiphenyl trichloroethane
Ar1254 640 Aroclor 1254
SAMPLE LEGEND
Staff gauge
Surface water sample
A Sediment sample
B Soil boring only
Soil boring and shallow well
** All concentrations in µg/kg
PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA
FIGURE 6-11
PHASE II SEDIMENT SAMPLES WITH DETECTED PESTICIDE/PCB CONCENTRATIONS EXCEEDING PRGs
DWG DATE: 4/11/95
DWG NAME: 14FIG611

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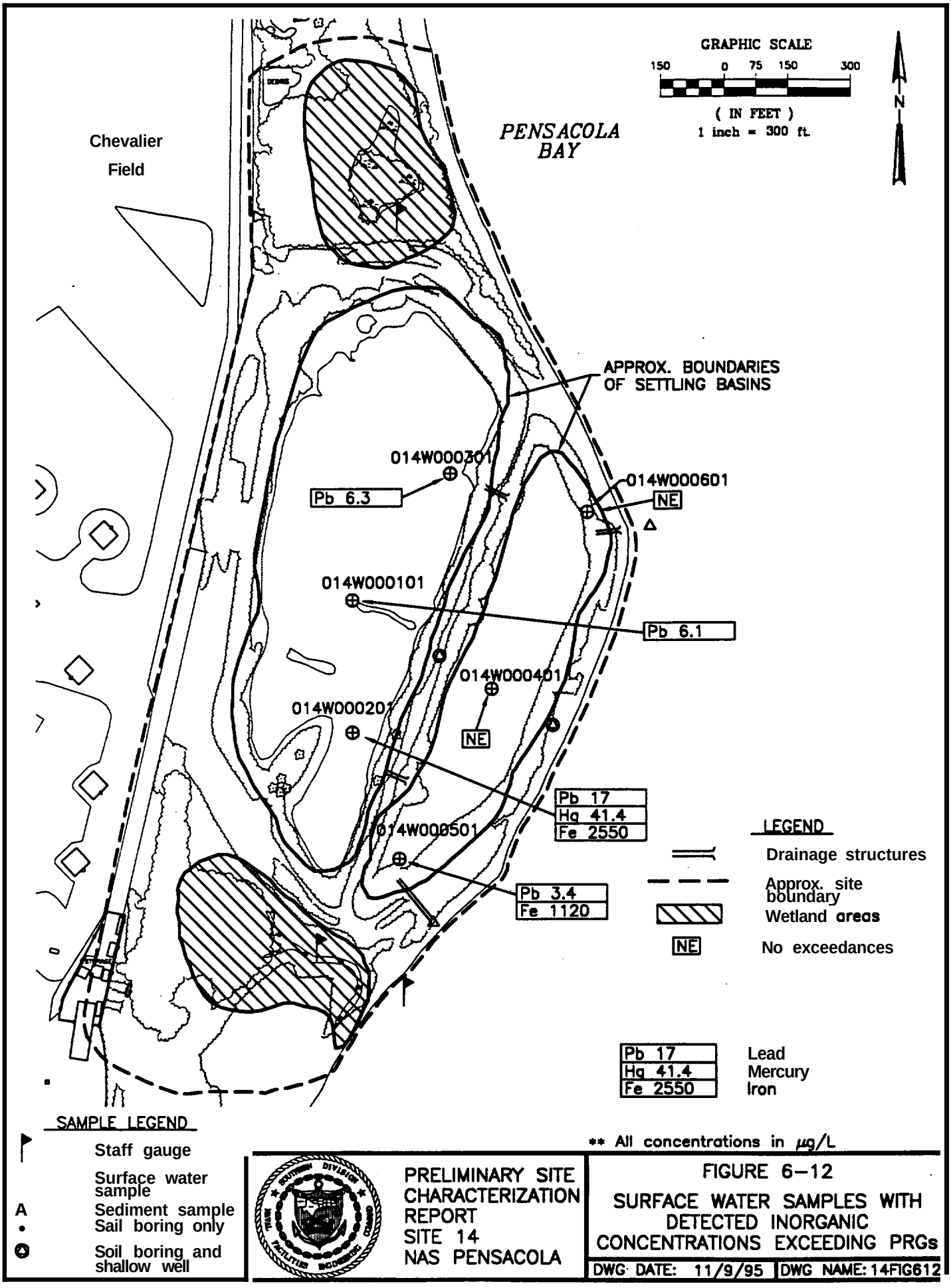


PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-12
SURFACE WATER SAMPLES WITH DETECTED INORGANIC CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 11/9/95 | DWG NAME: 14FIG612

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ranging from 2.2 to 17 ppb. An anomalously high mercury concentration, 41.4 ppb, was detected in sample 014W000201. Mercury was not detected in any of the other samples. Iron was detected in all of the samples, and exceeding the PRG in two.

Organics

The only organics detected in surface water samples were pesticides and PAHs (Table 6-3). None of the detections exceeded their respective PRGs.

## 6.3 Soil

Inorganics

Several inorganic parameters were detected in site soil; however, only arsenic exceeded a PRG (Table 6-4). Arsenic concentrations exceeding the PRG are presented on Figure [6-13]. Only two of the 22 samples collected exhibited detections of arsenic. These arsenic concentrations are within the range detected in background soil samples at NAS Pensacola.

Organics

No organic parameters were detected in site soil samples.

## 6.4 Groundwater

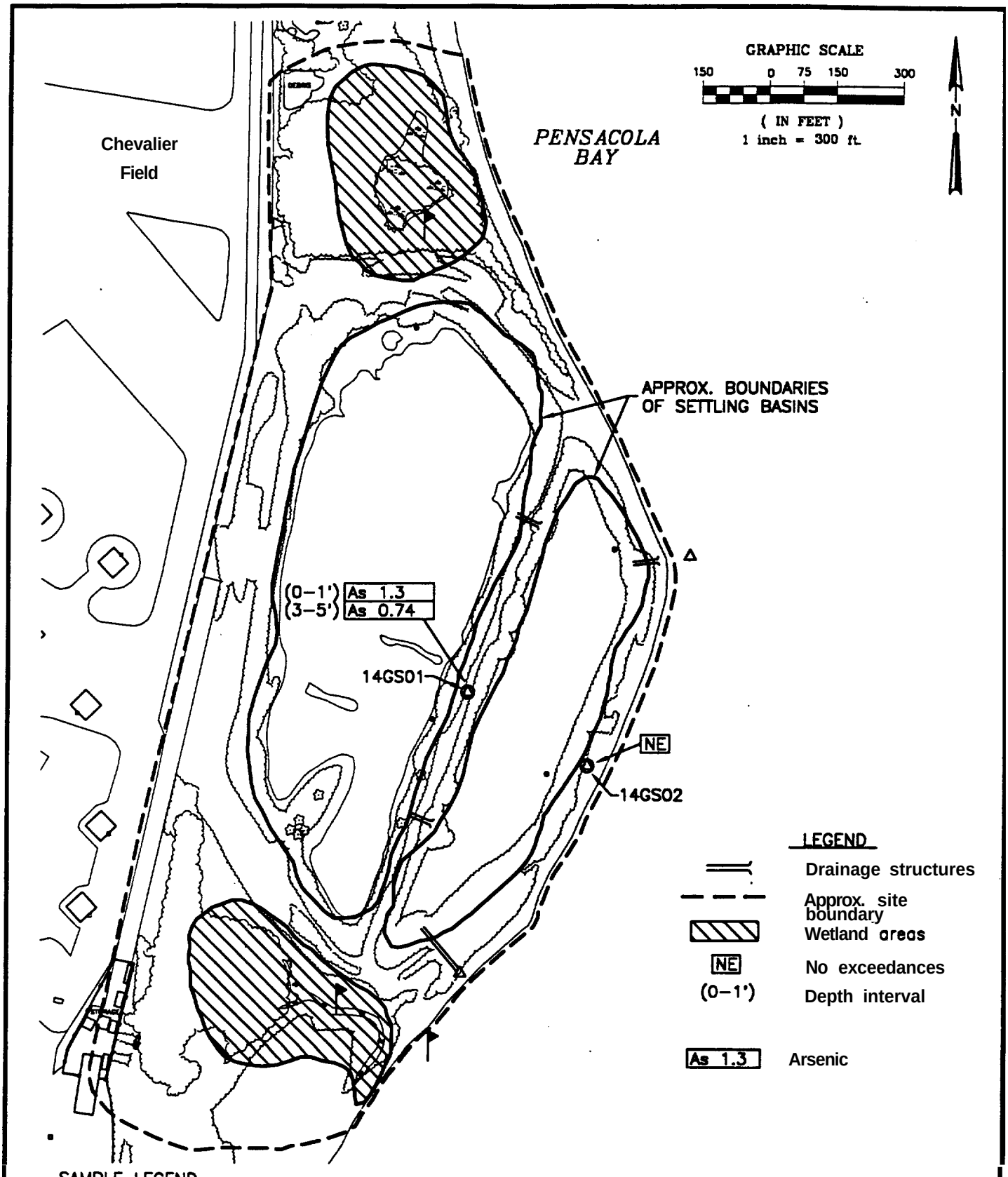
Inorganics

Inorganics detected in site groundwater samples are presented in Table 6-5. Detected inorganics exceeding PRGs are common metals found in the surficial aquifer at NAS Pensacola and are a reflection of site's proximity to Pensacola Bay. Aluminum, iron, manganese, and sodium were detected at concentrations exceeding PRGs, and are shown on Figure [6-14]. Concentrations of these parameters are comparable with NAS Pensacola RCs or those for ambient groundwater quality in the Sand and Gravel Aquifer in this area. Concentrations of calcium, magnesium, and potassium, for which there are no PRGs, exceeded the NAS Pensacola RC in both samples.

These elements, however, are major constituents of seawater and likely elevated as a result of the site's proximity to Pensacola Bay.

### Organics

No organics were detected in site groundwater samples.




SAMPLE LEGEND

- Staff gauge
- 3 Surface water sample
- Δ Sediment sample
- • Soil boring only
- Soil boring and shallow well

** All concentrations in mg/kg

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-13
SOIL SAMPLES WITH DETECTED INORGANIC CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 11/9/95 | DWG NAME: 14FIG613

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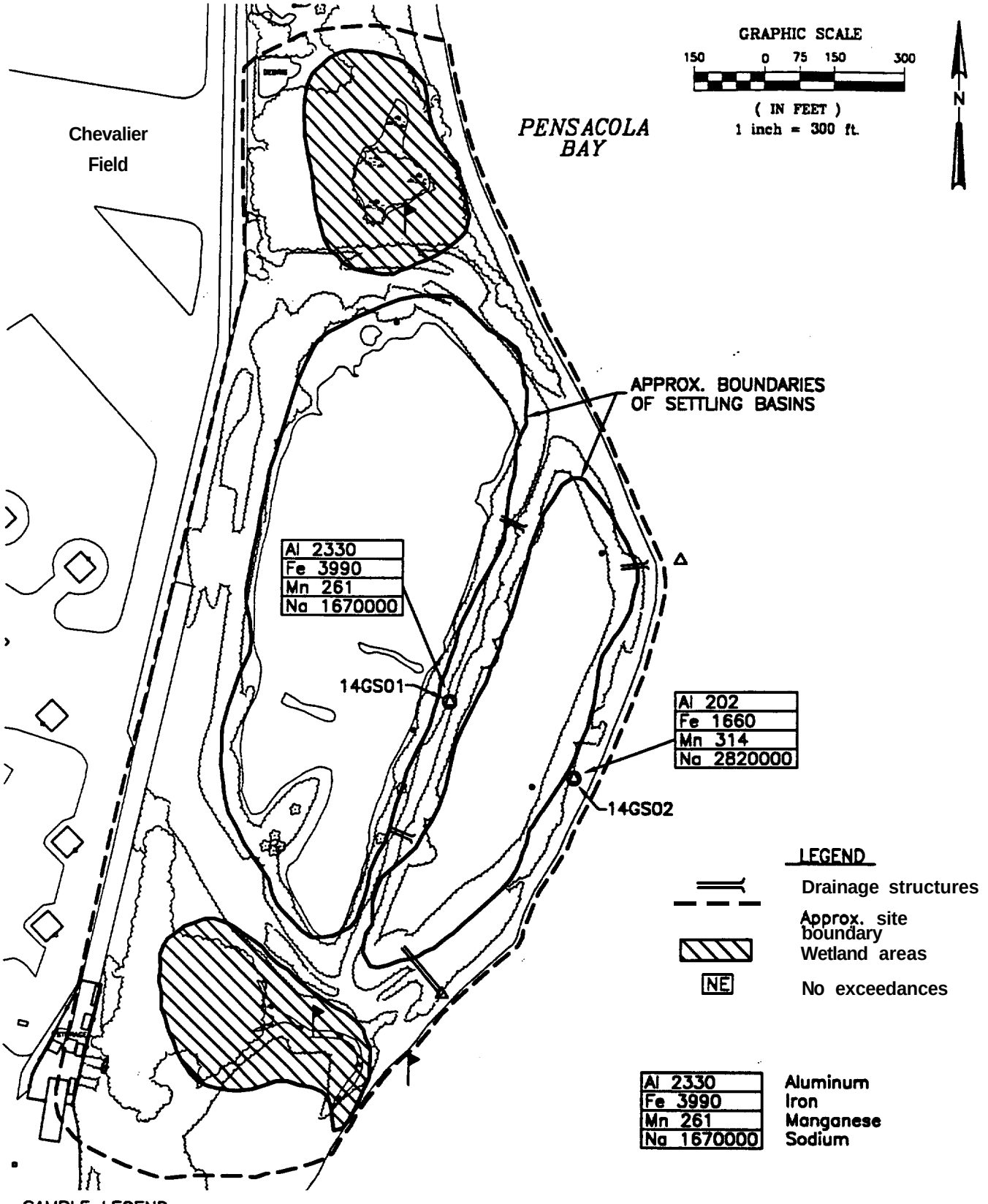


SAMPLE LEGEND

- Staff gauge
- Surface water sample
- Sediment sample
- Soil boring only
- Soil boring and shallow well

** All concentrations in µg/L

PRELIMINARY SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA

FIGURE 6-14
GROUNDWATER SAMPLES WITH DETECTED INORGANIC CONCENTRATIONS EXCEEDING PRGs

DWG DATE: 11/9/95 | DWG NAME: 14FIG614

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| | | | | | | |
|---|---|---|---|---|---|---|
| Aluminum | None | 23000[c] | 51.500 | 80.300 | 3770.000 J | 1730.000 |
| Antimony | 12[a] | 3.1[c] | ND | ND | ND | *1690.000* |
| Arsenic | 7.24[b] | 0.37[c] | ND | ND | *2.400 J* | *17.500* |
| Barium | None | 550[c] | ND | ND | 20.900 | 11.600 J |
| Beryllium | None | .10[d] | ND | ND | *0.230* | 0.130 |
| Calcium | None | None | 9240.000 | 3010.000 | 20600.000 | 16100.000 |
| Chromium | 33' | 7800[c] | 0.930 J | 0.830 J | 8.300 J | 6.000 |
| Cobalt | None | 4700' | ND | ND | 1.200 | ND |
| Copper | 18.7[b] | 290[c] | ND | ND | 14.100 | 35.400 |
| Iron | None | None | 464.000 J | 221.000 J | 6670.000 | 4920.000 |
| Lead | 21[a] | 400[e] | 0.590 | 1.300 | 32.300 | 28600.000 J |
| Magnesium | None | None | 209.000 | 162.000 | 2060.000 | 1840.000 |
| Manganese | None | 39' | 2.900 J | 2.700 J | *52.600* | *48.300* |
| Mercury | 0.1[a] | 2.3' | ND | ND | 0.200 J | 1.600 J |

**Table 6-1**
**Site 14**
Summary **Analytical Results for Sediment Samples**
**Phase I**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | 14M0101 | 14M0201 | 14S0301 | 14S0305 |
|---|---|---|---|---|---|---|
| Nickel | 15.9[b] | 160[c] | ND | ND | 3.500 | ND |
| Potassium | None | None | ND | ND | 360.000 J | 257.000 |
| Silver | 0.73[b] | 39[c] | ND | ND | ND | 2.900 |
| Sodium | None | None | 1220.000 | 1020.000 | 829.000 | 2110.000 |
| Vanadium | None | 55[c] | ND | ND | 10.600 J | 4.800 J |
| Zinc | 68[a] | 23000[c] | ND | 28.300 | 36.800 J | 29.500 |
| **Pesticide/PCBs - ppb (µg/kg)** | | | | | | |
| Aldrin | None | 38[c] | ND | ND | 8.400 J | ND |
| Aroclor 1248 | None | None | ND | ND | 49.000 J | ND |
| Aroclor 1264 | None | None | ND | ND | 68.000 J | 37.000 J |
| Aroclor 1260 | None | None | ND | ND | ND | ND |
| Total PCBs | 21.6[b] | None | ND | ND | 117.0 | 37.0 |
| **Semivolatile - ppb (µg/kg)** | | | | | | |
| Benzo(a)anthracene | 74.8[b] | 880[c] | ND | ND | 62.000 J | ND |
| Benzo(a)pyrene | 88.8[b] | 88[c] | ND | ND | *100.000 J* | ND |

Table 6-1
Site 14
Summary Analytical Results for Sediment Samples
Phase I

| Parameter | lowest Sediment PRO | lowest Soil PRO | 14M0101 | 14M0201 | 14S0301 | 1450305 |
|---|---|---|---|---|---|---|
| Benzo(b)fluoranthene | None | 880[c] | ND | ND | 100.000 J | ND |
| Benzo(k)fluoranthene | None | 8800[c] | ND | ND | 110.000 J | ND |
| Benzo(g,h,i)perylene | None | 14000[d] | ND | ND | 69.000 J | ND |
| Chrysene | 108[b] | 88000' | ND | ND | 74.000 J | ND |
| Fluoranthene | 113[b] | 310000[c] | ND | ND | 120.000 J | ND |
| Indeno(1,2,3-cd)pyrene | None | 880[c] | ND | ND | 63.000 J | ND |
| Pyrene | 153[b] | 230000[c] | ND | ND | 120.000 J | 85.000 J |
| Total PAHs | 1684[b] | None | ND | ND | 818 | 85 |

**Table 6-1**
Site 14
**Summary Analytical Results for Sediment** Sampler
**Phase I**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | 14S0310 | 14S0314 | 14S0401 | 14S0405 |
|---|---|---|---|---|---|---|
| **Inorganics - ppm (mg/kg)** | | | | | | |
| Aluminum | None | 23000' | 4420.000 | 4670.000 | 17100.000 J | 14800.000 J |
| Antimony | 12' | 3.1' | ND | ND | ND | ND |
| **Arsenic** | 7.24[b] | 0.37' | *4.600* | *4.800* | *15.900* | *16.700* |
| Barium | None | 550[c] | 12.700 J | ND | 26.200 | 24.900 |
| **Beryllium** | None | .10[d] | *0.330* | 0.320 | *1.300* | *1.200* |
| Calcium | None | Norm | 33000.000 | 6070.000 | 13900.000 | 11700.000 |
| Chromium | 33' | 7800[c] | 17.000 | 17.300 | 45.800 J | 42.400 J |
| **Cobalt** | None | 4700' | 1.600 | 1.900 | 6.700 | 6.000 |
| Copper | 18.7[b] | 290' | 17.700 | 5.700 J | 20.800 | 19.700 |
| Iron | None | None | 10900.000 | 10100.000 J | 34000.000 | *32200.000* |
| Lead | 21' | 400' | 100.000 J | 32.500 | 46.400 | 44.000 |
| Magnesium | None | Norm | 3970.000 | 2870.000 | 9090.000 | 9200.000 |
| Manganese | None | 39[c] | *146.000* | *185.000* | *619.000* | *554.000* |
| Mercury | 0.1[a] | 2.3' | 0.190 J | 0.040 J | 0.150 J | ND |

Table 6-1
Site 14
Summary Analytical Results for Sediment Sampler
Phase I

| Parameter | lowest sediment PRO | Lowest Soil PRG | 14S0310 | 14S0314 | 14S0401 | 1480406 |
|---|---|---|---|---|---|---|
| Nickel | 15.9[b] | 160[c] | ND | ND | 11.400 | 9.700 |
| Potassium | None | None | 742.000 | 841.000 | 2650.000 | 2980.000 |
| Silver | 0.73[b] | 39c | ND | ND | ND | ND |
| Sodium | None | None | ND | 5190.000 | 6690.000 | 18100.000 |
| Vanadium | None | 55c | 13.100 | 11.900 | 43.300 J | 40.600 J |
| Zinc | 68[a] | 23000[c] | 58.900 | 27.500 | 96.900 J | 93.400 J |
| **Pesticide/PCBs - ppb (µg/kg)** | | | | | | |
| Aldrin | None | 38[c] | ND | ND | ND | ND |
| Aroclor 1248 | None | None | ND | ND | 50.000 J | ND |
| Aroclor 1254 | None | None | 61.000 J | ND | 42.000 J | ND |
| Aroclor 1260 | None | None | ND | ND | ND | ND |
| Total PCBs | 21.6[b] | None | 61.0 | ND | 92.0 | ND |
| **Semivolatile - ppb (µg/kg)** | | | | | | |
| Benzo(a)anthracene | 74.8[b] | 880[c] | ND | ND | 170.000 J | 210.000 J |
| Benzo(a)pyrene | 88.8[b] | 88[c] | *180.000 J* | ND | 250.000 J | *340.000 J* |

**Table 6-1**
**Site 14**
**Summary Analytical Results for Sediment Samples**
**Phase I**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | 14S0310 | 14S0314 | 14S0401 | 14S0405 |
|---|---|---|---|---|---|---|
| Benzo(b)fluoranthene | None | 880[c] | ND | ND | 320.000 J | 360.000 J |
| Benzo(k)fluoranthene | None | 8800[c] | ND | ND | 260.000 J | 350.000 J |
| Benzo(g,h,i)perylene | None | 14000[d] | ND | ND | ND | ND |
| Chrysene | 108[b] | 88000[c] | ND | ND | 200.000 J | 260.000 J |
| Fluoranthene | 113[b] | 310000[c] | ND | ND | 270.000 J | 310.000 J |
| Indeno(1,2,3-cd)pyrene | None | 880[c] | ND | ND | ND | ND |
| Pyrene | 153[b] | 230000[c] | 180.000 J | ND | 260.000 J | 280.000 J |
| Total PAHs | 1684[b] | None | 360 | ND | 1730.000 | 2110.000 |

**Table 6-1**
**Site 14**
**Summary Analytical Results for Sediment Samples**
**Phase I**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | 14S0410 | 14S0411 | 14S0501 | 14S0505 |
|---|---|---|---|---|---|---|
| **Inorganics - ppm (mg/kg)** | | | | | | |
| Aluminum | None | 23000[c] | 2650.000 J | 214.000 J | 19400.000 J | 15000.000 |
| Antimony | 12[a] | 3.1[c] | ND | ND | ND | ND |
| Arsenic | 7.24[b] | 0.37[c] | *4.900 J* | ND | *13.900* | *14.600* |
| Barium | None | 550[c] | ND | ND | 27.500 | 19.700 |
| Beryllium | None | .10[d] | *0.250* | ND | *1.200* | *1.300* |
| Calcium | None | None | 25900.000 | 24900.000 | 11500.000 | 13500.000 |
| Chromium | 33[a] | 7800[c] | 14.100 J | 0.880 J | 45.700 J | 43.500 J |
| Cobalt | None | 4700[c] | 1.700 | ND | 5.900 | 6.500 |
| Copper | 18.7[b] | 290[c] | ND | ND | 17.800 | 17.500 |
| Iron | None | None | 7400.000 | 534.000 | 31400.000 | 31400.000 |
| Lead | 21[a] | 400[e] | 9.100 | 0.690 | 40.700 | 45.900 |
| Magnesium | None | None | 1500.000 | 385.000 | 9530.000 | 9480.000 |
| Manganese | None | 39[c] | *77.900* | 8.300 | *586.000* | *646.000* |
| Mercury | 0.1[a] | 2.3[c] | 0.040 J | ND | 0.190 J | 0.180 J |

**Table 6-1**
Site 14
**Summary Analytical Results for Sediment** Samples
**Phase I**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | 14S0410 | 14S0411 | 14S0501 | 14S0505 |
|---|---|---|---|---|---|---|
| Nickel | 15.9[b] | 160[c] | 3.800 | ND | 11.300 | 11.400 |
| Potassium | None | None | 386.000 J | ND | 2710.000 | 3080.000 |
| Silver | 0.73[b] | 39c | ND | ND | ND | ND |
| Sodium | None | None | 1930.000 | 1230.000 | 11200.000 | 19100.000 |
| Vanadium | None | 55[c] | 13.600 J | ND | 42.000 J | 41.900 J |
| Zinc | 68[a] | 23000[c] | 15.000 J | ND | 87.400 J | 79.500 J |
| **Pesticide/PCBs - ppb (µg/kg)** | | | | | | |
| Aldrin | None | 38[c] | ND | ND | ND | ND |
| Aroclor 1248 | None | None | ND | ND | ND | ND |
| Aroclor 1254 | None | None | ND | ND | ND | ND |
| Aroclor 1260 | None | None | ND | ND | ND | ND |
| Total PCBs | 21.6[b] | None | ND | ND | ND | ND |
| **Semivolatile - ppb (µg/kg)** | | | | | | |
| Benzo(a)anthracene | 74.7[b] | 880[c] | ND | ND | ND | ND |
| Benzo(a)pyrene | 88.8[b] | 88[c] | ND | ND | *240.000 J* | *260.000 J* |

Table 6-1
Site 14
Summary Analytical Results for Sediment Sampler
Phase I

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | 14S0410 | 14S0411 | 14S0501 | 14S0505 |
|---|---|---|---|---|---|---|
| Benzo(b)fluoranthene | None | 880[c] | ND | ND | 330.000 J | 300.000 J |
| Benzo(k)fluoranthene | None | 8800[c] | ND | ND | 210.000 J | 270.000 J |
| Benzo(g,h,i)perylene | None | 14000[d] | ND | ND | ND | ND |
| Chrysene | 108[b] | 88000[c] | ND | ND | 180.000 J | 190.000 J |
| Fluoranthene | 113[b] | 310000[c] | ND | ND | 260.000 J | 260.000 J |
| Indeno(1,2,3-cd)pyrene | None | 880[c] | ND | ND | ND | ND |
| Pyrene | 153[b] | 230000[c] | ND | ND | 240.000 J | 230.000 J |
| Total PAHs | 1684[b] | Nons | ND | ND | 1460.000 | 1510.000 |

**Table 6-1**
Site 14
Summary **Analytical Results for Sediment Samples**
**Phase I**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | 14S0507 | 14S0601 | 14S0605 | 14S0609 |
|---|---|---|---|---|---|---|
| **Inorganics - ppm (mg/kg)** | | | | | | |
| Aluminum | None | 23000[f] | 575.000 J | 14100.000 J | 2040.000 J | 1870.000J |
| Antimony | 12[f] | 3.1[c] | ND | ND | ND | ND |
| Arsenic | 7.24[b] | 0.37[f] | 0.880 J | *13.800* | ***15.000*** | ***1.300 J*** |
| Barium | None | 550[c] | ND | 26.300 | 26.300 | ND |
| Beryllium | None | .10[d] | *0.060* | ***1.200*** | ***1.200*** | ***0.100*** |
| Calcium | None | None | 14900.000 | 10800.000 | 14200.000 | 10900.000 |
| Chromium | 33[f] | 7800[f] | 2.400 J | 42.000 J | 46.700 J | 5.000 J |
| Cobalt | None | 4700[c] | ND | 6.800 | 6.800 | ND |
| Copper | 18.7[b] | 290[f] | ND | 21.400 | 16.500 | ND |
| Iron | None | None | 1560.000 | 30000.000 | 32300.000 | 3450.000 |
| Lead | 21[f] | 400[f] | 2.100 | 43.700 | 37.600 | 4.900 |
| Magnesium | None | None | 576.000 | 7910.000 | 9100.000 | 871.000 |
| Manganese | None | 39c | 15.100 | *575.000* | ***541.000*** | ***52.700*** |
| Mercury | 0.1[f] | 2.3[c] | ND | 0.180 J | 0.130 J | ND |

**Table 6-1**
Site 14
Summary Analytical Results for Sediment Samples
**Phase I**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | 14S0507 | 14S0601 | 14S0605 | 14S0609 |
|---|---|---|---|---|---|---|
| Nickel | 15.9[b] | 160[c] | ND | 11.200 | 12.500 | ND |
| Potassium | None | None | 116.000 J | 2480.000 | 3170.000 | 257.000 J |
| Silver | 0.73[b] | 39[c] | ND | ND | ND | ND |
| Sodium | None | None | 1580.000 | 7430.000 | 18900.000 | 1710.000 |
| Vanadium | None | 55[c] | ND | 39.100 J | 43.400 J | ND |
| Zinc | 68[a] | 23000[c] | ND | 97.100 J | 84.300 J | 8.800 J |
| **Pesticide/PCBs - ppb (µg/kg)** | | | | | | |
| Aldrin | None | 38[c] | ND | ND | ND | ND |
| Aroclor 1248 | None | None | ND | 44.000 J | ND | ND |
| Aroclor 1254 | None | None | ND | ND | ND | ND |
| Aroclor 1260 | None | None | ND | 49.000 J | ND | ND |
| Total PCBs | 21.6[b] | None | ND | 93.0 | ND | ND |
| **Semivolatile - ppb (µg/kg)** | | | | | | |
| Benzo(a)anthracene | 74.8[b] | 880[c] | ND | ND | 280.000 J | ND |
| Benzo(a)pyrene | 88.8[b] | 88[c] | ND | 230.000 J | 330.000 J | 170.000 J |

**Table 6-1**
**Site 14**
**Summary Analytical Results for Sediment Samples**
**Phase I**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | 14S0507 | 14S0601 | 14S0605 | 14S0609 |
|---|---|---|---|---|---|---|
| **Benzo(b)fluoranthene** | None | 880[c] | ND | 280.000 J | **380.000** J | 170.000 J |
| **Benzo(k)fluoranthene** | None | 8800[c] | ND | 220.000 J | **350.000** J | 220.000 J |
| Benzo(g,h,i)perylene | None | 14000[d] | ND | ND | ND | ND |
| **Chrysene** | 108[b] | 88000[c] | ND | **200.000** J | **380.000 J** | 100.000 J |
| Fluoranthene | **113[b]** | 310000[c] | ND | **260.000** J | **520.000 J** | **120.000 J** |
| **Indeno(1,2,3-cd)pyrene** | None | 880[c] | ND | ND | ND | ND |
| | 153[b] | 230000[c] | ND | **210.000** J | **390.000 J** | **420.000 J** |
| Total PAHs | **1684[b]** | None | ND | 1400.000 J | **2630.000** | **1200.000** |

**Notes:**

| | | |
|---|---|---|
| a | = | USEPA Region VI (Draft) SSV for Hazardous Waste Sites. |
| b | = | FDEP Sediment Quality Assessment Guide (SQAG) TEL value. |
| c | = | USEPA RBC. |
| d | = | FDEP CG. |
| e | = | EPA (OSWER) draft Revised Interim Lead Guidance. |
| Bold | = | Parameter exceeded lowest sediment PRG. |
| Italic | = | Parameter exceeded lowest roil PRG. |
| • | = | Concentration in duplicate sample. |
| ppm | = | Parts per million. |
| ppb | = | Parts per billion. |
| mg/kg | = | Milligrams per kilogram. |
| µg/kg | = | Micrograms per kilogram. |
| J | = | Parameter positively detected: however reported concentration is approximate. |
| ND | = | Not detected. |
| Lowest PRG | = | Lowest agency PRG value. |

**Table 6-2**
Summary Analytical Results for Sediments Samples - Phase II
Site 14

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | Sample Interval | | | |
|---|---|---|---|---|---|---|
| | | | 14M000101 | 14M000201 | 14M000301 | 14M000401 |
| **Inorganics mg/kg (ppm)** | | | | | | |
| Aluminum | None | 23000[c] | 19200.00 J | *33500.00 J* | *24100.00 J* | *26800.00 J* |
| Antimony | 12[a] | 3.1[c] | ND | ND | 6.20 | 2.60 |
| Arsenic | 7.24[b] | 0.37[c] | *12.10*/21.4* | *19.60* | *14.10* | *17.80* |
| Barium | None | 550[c] | 45.10 | 56.40 | 52.00 | 56.00 |
| Beryllium | None | .10[c] | *1.00* | *1.50* | *1.20* | *1.30 J* |
| Calcium | None | None | 22700.00 | 30300.00 | 26900.00 | 28400.00 |
| Chromium | 33[a] | 7800[c] | 53.60 J | 76.0 J | 60.40 J | 67.70 J |
| Cobalt | None | 4700[c] | 4.60 | 7.60 | 6.00 | 6.80 |
| Copper | 18.7[b] | 290[c] | 31.80 J | 36.20 J | 38.90 J | 50.80 J |
| Iron | None | None | 24800.00 J | 35100.00 J | 30400.00 J | 33300.00 J |
| Lead | 21' | 400[e] | 120.00 J | 98.30 J | 299.00 J | 127.00 J |
| Magnesium | None | None | 9350.00 | 13400.00 | 10800.00 | 10600.00 |
| Manganese | None | 39c | *298.00 J* | *473.00 J* | *363.00 J* | *431.00 J* |
| Mercury | 0.1[a] | 2.3[c] | 0.82 J | ND | 0.49 J | 0.45 J |

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**Table 6-2**
Summary Analytical Results for Sediments Sampler - Phase II
Site 14

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | Sample Interval | | | |
|---|---|---|---|---|---|---|
| | | | 14M000101 | 14M000201 | 14M000301 | 14M000401 |
| Nickel | 15.9[b] | 160[c] | 12.80 | 20.10 | 10.30 | 18.20 |
| Potrrrium | None | None | 3880.00 | 6220.00 | 4850.00 | 4090.00 |
| Selenium | None | 39c | ND | 4.10 | ND | 4.10 |
| Sodium | None | None | 19500.00 | 27800.00 | 22400.00 | 11000.00 |
| Venadium | None | 55[c] | 45.50 | 63.70 | 60.60 | 54.10 |
| **Zinc** | **68[a]** | **23000[c]** | **175.00J** | **181.00 J** | **216.00 J** | **247.00 J** |
| **Semivolatiles (ppb)** | | | | | | |
| Acenaphthene | 6.71[b] | 2000000[d] | 160.00 J | ND | ND | 300.00 J |
| Acenaphthylene | 5.87[b] | 320000[d] | 190.00 J | ND | ND | 280.00 J |
| Anthracene | 16.9[b] | 16000000[d] | 230.00 J | ND | 210.00 J | 440.00 J |
| Benzo(a)anthracene | 74.8[b] | 880[c] | *2100.00* | 830.00 J | *960.00 J* | *1800.00* |
| Benzo(a)pyrene | 88.8[b] | 88[c] | *1900.00* | *1400.00 J* | *1500.00* | *2400.00* |
| Benzo(b)flouranthene | None | 880[c] | *4100.00 J* | *2300.00 J* | *3200.00 J* | *5300.00 J* |
| Benzo(k)fluoranthene | None | 8800[c] | *4000.00 J* | *2400.00 J* | *3200.00 J* | *5200.00 J* |
| Benzo(g,h,i)perylene | None | 14000[d] | 600.00 J | 720.00 J | 490.00 J | 820.00 J |

Table 6-2
Summary Analytical Results for Sediments Samples - Phase II
Site 14

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | Sample Interval | | | |
|---|---|---|---|---|---|---|
| | | | 14M000101 | 14M000201 | 14M000301 | 14M000401 |
| Carbazole | None | 32000[c] | ND | ND | ND | 120.00 J |
| Chrysene | 108[b] | 88000[c] | 2500.00 | 920.00 J | 1600.00 | 2500.00 |
| Dibenzofuran | None | 200000[d] | ND | ND | ND | 110.00 J |
| Dibenz(a,h)anthracene | 330' | 88[c] | 190.00 J | 220.00 J | 190.00 J | 200.00 J |
| Flouranthene | 113[b] | 310000[c] | 2100.00 | 830.00 J | 1500.00 | 3400.00 |
| Flourene | 330' | 310000[c] | ND | ND | ND | 230.00 J |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| **Pesticides/PCBs (ppb)** | | | | | | |
| 4,4'-DDD | 1.22[b] | 2700[c] | 12.00 J | 4.30 J | 260.00 J | 14.00 J |
| 4,4'-DDE | 2.07[b] | 1900[c] | 2.70 J | 1.80 J | 3.30 J | 3.50 J |
| 4,4'-DDT | 1.19[b] | 1900[c] | 13.00 J | 1.40 J | 2.80 J | 5.50 J |
| Aldrin | None | 38[c] | ND | 0.52 J | 0.55 J | 0.64 J |

**Table 6-2**
**Summary Analytical Results for Sediments Samples - Phase II**
**Site 14**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | Sample Interval | | | |
|---|---|---|---|---|---|---|
| | | | 14M000101 | 14M000201 | 14M000301 | 14M000401 |
| Aroclor-1254 | 33[a] | None | ND | ND | ND | ND |
| Dieldrin | 0.715[b] | 40[c] | ND | 2.30 J | 5.20 J | 5.80 J |
| Endosulfan I. | None | 340000[d] | ND | ND | 0.47 J | 0.41 J |
| Endosulfan Sulfate | None | None | 1.70 J | 1.80 J | 2.30 J | 1.80 J |
| Endrin Ketone | None | None | 0.62 J | 1.60 J | 3.10 J | 1.90 J |
| Methoxychlor | None | 3900[c] | 7.80 J | ND | 3.00 J | 20.00 J |
| alpha-BHC | None | 100[c] | ND | ND | ND | ND |
| alpha-Chlordane | None | 800[d] | ND | ND | ND | ND |
| beta-BHC | None | 350[c] | ND | 3.1 J | ND | ND |
| gamma-BHC (Lindane) | 0.32[b] | 490[c] | 1.30 J | 0.74 J | ND | ND |

| Parameter | Lowest Sediment PRO | Lowest Soil PRO | Sample Interval | | | |
|---|---|---|---|---|---|---|
| | | | 14M000501 | 14M000601 | 14M000701 | 14M000801 |
| Aluminum | None | 23000' | ***43000.00*** J | ND | ND | 1570.00 J |
| Antimony | 12 | 3.1' | ND | ND | **ND** | 0.93 |
| Arsenic | **7.24**[b] | 0.37[c] | 15.90 | ND | ND | 0.90 |
| Barium | None | 550' | 58.40 | 1.30 | 3.50 | 7.00 |
| Beryllium | None | .10[d] | ***2.00*** | ND | **ND** | ND |
| Calcium | None | None | 12200.00 | 12800.00 | 35500.00 | 7270.00 |
| Chromium | **3** | 7800[c] | 88.10 J | 0.98 | 1.20 J | **8.60** J |
| Cobalt | None | 4700[c] | 10.80 | ND | ND | 0.43 |
| Copper | **18.7**[b] | 290[c] | 31.70 J | ND | ND | 9.20 J |
| **Iron** | None | None | 43700.00 J | 247.00 J | 442.00 J | 2940.00 J |
| Lead | 21[a] | 400'' | **66.20** J | 0.78 **J** | ND | **86.90** J |
| Magnesium | None | None | 25700.00 | 236.00 | 355.00 | 1240.00 |
| Manganese | None | 39c | ***1300.00*** J | 2.20 J | 11.40 J | 33.00 J |
| Mercury | 0.1[a] | 2.3[c] | ND | ND | ND | 1.00 J |

**Table 6-2**
**Summary Analytical Results for Sediments Samples - Phase II**
**Site 14**

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | Sample Interval | | | |
|---|---|---|---|---|---|---|
| | | | 14M000501 | 14M000601 | 14M000701 | 14M000801 |
| Nickel | 15.9[b] | 160[c] | 22.30 | ND | ND | 2.10 |
| Potassium | None | None | 5360.00 | ND | ND | 497.00 |
| Selenium | None | 39[c] | 2.80 | ND | ND | ND |
| Sodium | None | None | 9460.00 | 1710.00 | 1740.00 | 4130.00 |
| Vanadium | None | 55[c] | *78.90* | 0.57 | 0.85 | 3.70 |
| Zinc | 68[a] | 23000[c] | 136.00 J | ND | ND | 75.00 J |
| **Semivolatiles (ppb)** | | | | | | |
| Acenaphthene | 6.71[b] | 2000000[d] | ND | ND | ND | 150.00 J |
| Acenaphthylene | 5.87[b] | 320000[d] | ND | ND | ND | ND |
| Anthracene | 16.9[b] | 16000000[d] | ND | ND | ND | 91.00 J |
| Benzo(a)anthracene | 74.8[b] | 880[c] | ND | 55.00 J | ND | *890.00* |
| Benzo(a)pyrene | 88.8[b] | 88[c] | ND | *110.00 J* | ND | *650.00* |
| Benzo(b)flouranthene | Nons | 880[c] | 270.00 J | 220.00 J | ND | *1100.00* |
| Benzo(k)fluoranthene | None | 8800[c] | 290.00 J | 220.00 J | ND | 1200.00 |
| Benzo(g,h,i)perylene | None | 14000[d] | 130.00 J | ND | ND | 360.00 J |

Table 6-2
Summary Analytical Results for Sediments Sampler - Phase II
Site 14

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | Sample Interval | | | |
|---|---|---|---|---|---|---|
| | | | 14M000501 | 14M000601 | 14M000701 | 14M000801 |
| Carbazole | None | 32000[c] | ND | ND | ND | ND |
| Chrysene | 108[b] | 88000[c] | ND | 81.00 J | ND | 810.00 |
| Dibenzofuran | None | 200000[d] | ND | ND | ND | ND |
| Dibenzo(a,h)anthracene | 330[a] | 88[c] | ND | ND | ND | *92.00 J* |
| Flouranthene | 113[b] | 310000[c] | 160.00 J | 90.00 J | ND | 1400.00 |
| Flourene | 330[a] | 310000[c] | ND | ND | ND | 84.00 J |
| Indeno(1,2,3-cd)pyrene | None | 880[c] | ND | ND | ND | 400.00 J |
| Phenanthrene | 330[a] | 1200000[d] | ND | ND | ND | 310.00 J |
| Pyrene | 153[b] | 230000[c] | 150.00 J | 240.00 J | ND | 1600.00 |
| Total PAHs | 1684[b] | None | 1000.00 | 1016.00 | ND | 9137.00 |
| **Pesticides/PCBs (ppb)** | | | | | | |
| 4,4'-DDD | 1.22[b] | 2700[c] | ND | ND | ND | ND |
| 4,4'-DDE | 2.07[b] | 1900[c] | ND | ND | ND | 16.00 |
| 4,4'-DDT | 1.19[b] | 1900[c] | ND | ND | ND | ND |
| Aldrin | None | 38[c] | 4.10 J | 0.58 J | ND | ND |

**Table 6-2**
**Summary Analytical** Results for **Sediments Samples -Phase II**
Site 14

| Parameter | Lowest Sediment PRG | Lowest Soil PRG | Sample Interval | | | |
|---|---|---|---|---|---|---|
| | | | 14M000501 | 14M000601 | 14M000701 | 14M000801 |
| Dieldrin | 0.715[b] | 40[c] | ND | ND | ND | ND |
| Endosulfan I | None | 340000[d] | ND | ND | ND | ND |
| Endosulfan Sulfate | None | 340000[d] | 6.90 J | ND | 0.25 J | 1.80 J |
| Endrin Ketone | None | None | ND | ND | ND | 7.10 |
| Methoxychlor | None | 3900[c] | ND | ND | ND | 36.00 |
| alpha-BHC | None | 100[c] | ND | ND | ND | 0.13 J |
| alpha-Chlordane | None | 800[d] | ND | ND | ND | 13.00 |
| beta-BHC | None | 350[c] | ND | ND | ND | 0.61 J |
| gamma-BHC (Lindane) | 0.32[b] | 490[c] | ND | ND | ND | ND |
| Aroclor-1254 | 33[a] | None | ND | ND | ND | 640.00 J |

Not:

| | | |
|---|---|---|
| a | = | USEPA Region VI (Draft) SSV for Hazardous Waste Sites. |
| b | = | FDEP Sediment Quality Assessment Guide (SQAG) TEL value. |
| c | = | USEPA RBC. |
| d | = | FDEP CG. |
| Bold | = | EPA (OSWER) draft Revised Interim Lead Guidance. |
| Italic | = | Parameter exceeded lowest sediment PRG. |
| g | = | Parameter exceeded lowest soil PRG. |
| • | = | Concentration in duplicate sample. |
| ppm | = | Parts per million. |
| ppb | = | Parts per billion. |
| mg/kg | = | Milligrams per kilogram. |
| µg/kg | = | Micrograms per kilogram. |
| J | = | Parameter positively detected; however reported concentration is approximate. |
| ND | = | Not detected. |
| Lowest PRG | = | Lowest agency PRG value. |

Table 6-3
Summary of Analytical Results for Surface Waters
Site 14

| Parameter | PRG[1] | Sample Interval | | | | | |
|---|---|---|---|---|---|---|---|
| | | 14W000101 | 14W000201 | 14W000301 | 14W000401 | 14W000501 | 14W000601 |
| **Inorganics µg/L (ppb)** | | | | | | | |
| Aluminum | — | ND | 1850.0 J | ND | ND | 706.0 J | ND |
| Arsenic | 50[b] | 4.0 | 6.4 | 6.8 | 11.3 | 11.1 | 10.5 |
| Barium | — | 43.3 J | 52.1 J | 43.1 | 19.2 J | 19.6 J | 19.0 J |
| Calcium | — | 99500.0 | 111000.0 | 101000.0 | 76800.0 | 76500.0 | 75900.0 |
| Chromium | 210[a] | 3.4 | 7.3 | 2.4 | 3.5 | 3.8 | 2.4 |
| Cobalt | — | 0.53 | 0.72 | ND | ND | 0.81 | ND |
| Copper | 12[a] | ND | 7.0 | ND | ND | ND | ND |
| Iron | 1,000[b] | 790 | 2550.0 | 471.0 | 710.0 | *1120.0* | 519.0 |
| Lead | 3.2' | 6.7 | *17* | 6.3 | 2.2 | *3.4* | ND |
| Magnesium | — | 232000.0 | 246000.0 | 237000.0 | 124000.0 | 124000.0 | 124000.0 |
| Manganese | — | 22.2 | 41.1 | 18.7 | 83.0 | 90.8 | 63.6 |
| Mercury | .012[a,b] | ND | *41.4* | ND | ND | ND | ND |
| Nickel | 160' | 2.6 | 4.0 | 2.5 | 2.0 | ND | 1.8 |
| Potassium | — | 160000.0 | 179000.0 | 163000.0 | 122000.0 | 123000.0 | 124000.0 |
| Selenium | 5[a,b] | ND | ND | ND | 4.7 | ND | ND |
| Sodium | — | 2040000.0 J | 2180000.0 J | 2060000.0 J | 1650000.0 J | 1640000.0 J | 1650000.0 J |

**Table 6-3**
**Summary of Analytical Results for Surface Waters**
**Site 14**

| Parameter | PRG[1] | Sample Interval | | | | | |
|---|---|---|---|---|---|---|---|
| | | 14W000101 | 14W000201 | 14W000301 | 14W000401 | 14W000501 | 14W000601 |
| Thallium | 48[b] | 6.0 | 8.0 | 10.9 | 6.6 | 5.8 | 10.2 |
| Vanadium | — | 11.8 | 18.1 | 11.4 | 5.8 | 6.9 | 5.6 |
| Zinc | 110[a] | ND | ND | ND | 23.4 | ND | ND |
| **Pesticides µg/L (ppb)** | | | | | | | |
| 4,4'-DDD | — | ND | ND | ND | ND | ND | ND |
| 4,4'-DDE | — | ND | ND | ND | ND | ND | ND |
| Dieldrin | .0019[a,b] | ND | ND | ND | ND | .0007 J | ND |
| Endosulfan Sulfate | — | ND | ND | ND | ND | ND | ND |
| Endrin | .0023[a,b] | ND | ND | ND | ND | ND | ND |
| Endrin Ketone | — | ND | ND | ND | ND | ND | ND |
| Heptachlor | .0038[a,b] | ND | ND | ND | ND | ND | ND |
| alpha-Chlordane | — | ND | ND | ND | ND | .0007 J | ND |
| **Semivolatiles (ppb)** | | | | | | | |
| Flouranthene | — | ND | 0.5 J | ND | ND | ND | ND |
| Pyrene | 11[b] | ND | 0.8 J | ND | ND | ND | ND |

**Notes:**

| | | |
|---|---|---|
| a | = | USEPA WQC. |
| b | = | FDEP WQS. |
| — | = | No PRG reported for this parameter. |
| ND | = | Not detected. |
| J | = | Parameter positively detected; however reported concentration is approximate. |
| ppb | = | Parts per billion or micrograms per liter (µg/L). |
| PRG' | = | Preliminary Remediation Goal (value is most stringent standard for listed parameter). |
| Bold Italics | = | Indicates parameter concentration exceeded USEPA Water Quality Criteria or FDEP Water Quality Standards. |

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**Table 6-4**
**Site 14**
**Summary Analytical Results for Soil Samples**

| Parameter | PRG[a] | 14S0101 | 14S0103 | 14S0105 | 14S0107 | 14S0109 | 14S0111 | 14S0113 | 14S0113 |
|---|---|---|---|---|---|---|---|---|---|
| **Inorganics - ppm(mg/kg)** | | | | | | | | | |
| Aluminum | 23000[b] | 724.000 J | 68.500 J | 208.000 J | 103.000 J | 116.000 J | 60.800 J | 62.800 J | 73.600 J |
| Arsenic | .37[b] | 1.300 * | ND | 0.740 * | ND | ND | ND | ND | ND |
| Cadmium | 3.9[b] | ND | ND | ND | ND | ND | ND | ND | ND |
| Calcium | — | ***1090.000 J*** | ***3120.000 J*** | ***2680.000 J*** | ***3540.000 J*** | ***4580.000 J*** | ***4440.000 J*** | ***8860.000 J*** | ***3650.000 J*** |
| Chromium | 7800[b] | 2.000 J | 0.920 J | 1.800 J | 3.500 J | 4.500 J | 0.790 J | 3.600 J | 2.300 J |
| Cyanide | 160[b] | ND | ND | ND | ND | ND | ND | ND | ND |
| Iron | — | 770.000 J | 188.000 J | 439.000 J | 328.000 J | 372.000 J | 199.000 J | 209.000 J | 198.000 J |
| Lead | 400[d] | ND | ND | ND | ND | ND | ND | ND | ND |
| Magnesium | — | 30.300 J | 30.200 J | 69.300 J | 85.500 J | 64.400 J | 55.100 J | 97.600 J | 73.000 J |
| Manganese | 39[b] | 3.200 | ND | 4.100 | ND | 3.300 | ND | ND | ND |
| Nickel | 160[b] | ND | ND | ND | ND | ND | ND | ND | ND |
| Sodium | — | ND | ND | ND | ND | 50.700 J | 55.700 J | 96.100 J | 41.500 J |
| Vanadium | 55[b] | 1.600 J | ND | 0.910 J | 0.720 J | 1.200 J | 0.670 J | ND | 0.950 J |

Table 6-4
Site 14
Summary Analytical Results for Sdl Samples

| Parameter | PRG[a] | 14S0117 | 14S0119 | 14S0121 | 14S0123 | 14S0201 | 1480203 | 14S0205 | 1450207 |
|---|---|---|---|---|---|---|---|---|---|
| **Inorganics - ppm (mg/kg)** | | | | | | | | | |
| Aluminum | 23000[b] | 81.700 J | ND | 39.400 J | 150.000 J | 338.000 | 214.000 | 554.000 | 173.000 |
| Arsenic | .37[b] | ND | ND | ND | ND | ND | ND | | |
| Cadmium | 3.9[b] | ND | ND | ND | ND | ND | 0.380 | — | — |
| [illegible] | | [illegible] | [illegible] | [illegible] | [illegible] | *2780.000* | *3740.000* | *7040.000* | *6200.000* |
| [illegible] | | [illegible] | [illegible] | [illegible] | [illegible] | 2.000 J | 2.000 J | 3.300 J | 1.900 J |
| [illegible] | | [illegible] | [illegible] | [illegible] | [illegible] | ND | ND | — | — |
| [illegible] | | [illegible] | [illegible] | [illegible] | [illegible] | 808.000 | 534.000 | 1620.000 | 448.000 |
| [illegible] | | [illegible] | [illegible] | [illegible] | [illegible] | 1.400 | 1.100 | 3.200 | 0.050 |
| Magnesium | — | 50.200 J | .000 J | 58.200 J | *205.000 J* | *178.000* | *137.000* | *369.000* | *138.000* |
| Manganese | 39[b] | ND | 2.900 | ND | 3.000 | 13.800 J | 9.400 J | *33.100* | 6.800 J |
| Nickel | 160[b] | ND | ND | ND | ND | ND | ND | ND | ND |
| Sodium | — | 45.500 J | *113.000 J* | 81.400 J | *247.000 J* | 58.400 J | 65.300 J | 74.600 J | 71.300 J |
| Vanadium | 55[b] | ND | 0.640 J | ND | 1.000 J | ND | ND | — | — |

| Site 14 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **PRG[a]** | **14S0209** | **14S0211** | **14S0213** | **14S0215** | **14S0217** | **14S0219** | | |
| **Inorganics - ppm (mg/kg)** | | | | | | | | | |
| Aluminum | 23000[b] | 553.000 | 318.000 | 151.000 | 99.300 | 221.000 | 138.000 | | |
| Arsenic | .37[b] | ND | ND | ND | ND | ND | ND | | |
| Cadmium | 3.9[b] | ND | ND | ND | ND | ND | ND | | |
| Calcium | — | *7540.000* | *6930.000* | *6050.000* | *19100.000* | *5520.000* | *12600.000* | | |
| Chromium | 7800[b] | 2.900 J | 3.300 | 3.600 | 4.700 | 2.900 J | 9.400 | | |
| Cyanide | 160' | ND | 0.130 J | ND | ND | ND | ND | | |
| Iron | — | 1830.000 | 988.000 | 330.000 | 344.000 | 481.000 | 384.000 | | |
| Lead | 400[d] | 4.300 | 1.500 | 0.580 | 0.650 | 0.820 | 0.750 | | |
| Magnesium | — | *475.000* | *215.000* | 87.200 | *170.000* | 97.700 | 98.200 | | |
| Manganese | 39b | *37.700* | 11.600 J | 4.300 J | 4.800 J | 6.000 J | 3.700 J | | |
| Nickel | 160[b] | ND | ND | ND | ND | ND | 4.200 J | | |
| Sodium | — | 95.300 J | 76.000 J | 66.700 J | *210.000* | 66.100 J | *132.000 J* | | |
| Vanadium | 55[b] | ND | ND | ND | ND | ND | ND | | |

**Notes:**

| | | |
|---|---|---|
| a | = | Preliminary Remediation Goal (value is most stringent standard for listed parameters). |
| b | = | USEPA RBC. |
| c | = | FDEP CG. |
| d | = | USEPA Revised Interim Soil Lead Guidance Concentration. |
| ppm | = | Parts per million. |
| ppb | = | Parts per billion. |
| mg/kg | = | Milligrams per kilogram. |
| µg/kg | = | Micrograms per kilogram. |
| J | = | Parameter positively detected; however reported concentration is approximate. |
| Bold* | = | Indicates concentration exceeds FDEP CG. |
| Bold Italic | = | Indicator concentration exceeds NAS Pensacola RC. |
| Bold Underline | = | Indicates concentration exceeds USEPA RBC. |
| ND | = | Not detected. |
| — | = | No PRG reported for this parameter. |

**Table 6-5**
**Site 14**
**Summary Analytical Results for Groundwater Samples**

| Parameter | PRG[a] | 14GS01 | 14GS02 |
|---|---|---|---|
| **Inorganics - ppb (µg/L)** | | | |
| Aluminum | 50[b] | **2330.000 J*** | 202.000 **J*** |
| Arsenic | 50[d] | ***18.800 J*** | ***6.700 J*** |
| Calcium | — | *105000.000* | *176000.000* |
| Chromium | 100[c] | 10.000 | ND |
| Iron | 300[b] | ***3990.000 J**** | **1660.000 J*** |
| Magnesium | — | *158000.000* | ***283000.000*** |
| Manganese | 50[b] | ***261.000 J**** | ***314.000 J**** |
| Potassium | — | ***62100.000*** | *105000.000* |
| Sodium | 160000[c] | ***1670000.000*** | ***2820000.000 J*** |

Notes:

| | | |
|---|---|---|
| ppb | = | Parts per billion. |
| µg/L | = | Micrograms per liter. |
| PRG | = | Preliminary Remediation Goal. |
| — | = | No PRG reported for this parameter. |
| a | = | Value is most stringent standard for listed parameter. |
| b | = | USEPA SMCL and/or FSDWS. |
| c | = | USEPA MCL and/or FPDWS. |
| d | = | Florida Groundwater Guidance Concentration. |
| J | = | Parameter positively detected; however reported concentration is approximate. |
| Bold* | = | Indicates concentration exceeds SMCL and/or FSDWS. |
| Bold italic | = | Indicates concentration exceeds NAS Pensacola RC. |
| Bold Underline | = | Indicates concentration exceeds MCL and/or FPDWS. |
| ND | = | Not detected. |

## 7.0 DATA VALIDATION

Data has been validated for analytical data collected in the Site 14 investigation at NAS Pensacola. The initial analytical work was conducted by Pace Laboratories, Inc., 1 Lafayette Road, Hampton, New Hampshire, and 1710 Douglas Drive North, Minneapolis, Minnesota. Secondary sample analyses were performed by CompuChem Laboratories, Inc., Research Triangle Park, North Carolina. The analytical protocols were performed in accordance with the following guidance documents:

- USEPA Contract Laboratory Program, *Statement of Work (SOW) for Organic Analyses (CLP 3/90).*

- USEPA Contract Laboratory Program, *Statement of Work for Low Concentration Water for Organic Analyses (CLP 10/92).*

- USEPA Contract Laboratory Program, *Statement of Work for Inorganic Analyses (CLP 3/90).*

- Determination of *Total Organic Carbon* in Soil, Sediment, Sludge and Aqueous Samples based on *EPA Method 505,* contained in *Standard Methods for Examination of Water and Wastewater (17th Edition, 1989).*

- Determination of the mobility of both Organic and Inorganic analytes in liquid, solid and multiphasic waste samples, by using the *Toxicity Characteristic* to identify hazardous waste based on the *Toxicity Characteristic Leaching Procedure (TCLP) EPA Method 1311* contained in *Test Methods for Evaluating Solid Wastes (SW-846, 3rd Edition).*

- Determination of the mobility of both Organic and Inorganic analytes in liquid, solid and multiphasic waste samples, by using the *Toxicity Characteristic* to identify hazardous waste based on the *Synthetic Precipitation Leaching Procedure (SPLP) EPA Method 1312* contained in *Test Methods for Evaluating Solid Wastes (SW-846, 3rd Edition).*

- NEESA Level D Quality Assurance/Quality Control guidelines as stated in the *Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation and Restoration Program (NEESA 20.2-047B).*

- Data validation was performed in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines For Organic and Inorganic Data Review,* February 1994, Office of Solid Waste and Emergency Response.

## 7.1 Data Quality

The overall quality of the investigational data received for Site 14 for site remediation and risk assessment was evaluated and validated with the appropriate data qualifiers based on data useability and CLP contractual satisfaction. Samples were collected and analyzed under four organic and four inorganic CLP Sample Delivery Groups (SDGs). Secondary sample collection and analysis were performed under three organic and three inorganic SDGs. All Phase I organic and inorganic case numbers were designated with the name PENSA, an abbreviation used to designate Pensacola. All Phase 11 samples designated by SDG numbers.

## 7.2 Organic Analysis

Each SDG was received by the laboratory in good condition with the proper chain-of-custody documents and seals intact. All other technical and contractual holding times from the time of sample collection and Verified Time of Sample Receipt (VTSR) until the time of sample extraction and/or analysis, complied with technical and contractual requirements.

### 7.2.1 Blanks

Laboratory and field blanks assist in determining the presence and magnitude of any contamination resulting from the laboratory or field errors. All associated data were evaluated to determine whether inherent variability in the data exists, or if the problem is an isolated occurrence that does not affect the data. The laboratory and field blank data provided for the Site 14 investigation indicated various concentrations of toluene, methylene chloride, and acetone for volatiles and several phthalate esters for semivolatiles. These compounds, considered common laboratory artifacts, were evaluated and qualified based on the action levels found for each SDG.

Action levels are based on the highest positive sample concentration of any laboratory artifact found in each method blank(s) or QC sample above the Contract Required Quantitation Limit (CRQL). Basically, positive sample result for a common laboratory artifact are not reported unless its concentration exceeds the action level of ten times (10X) the amount found in any blank(s). For compounds not considered common laboratory artifacts, the action level is five times (5X) the amount found in any blank or QA/QC sample.

One equipment rinsate sample, 14SE01, exhibited contamination during its initial analysis. The reanalysis occurred 11 days after sample collection, exceeding the maximum holding time of seven days for extractables. No positive sample detections were found in the semivolatile fraction, no action was deemed necessary.

Instrument and method blanks are created in the laboratory during preparation and sample analysis. Method blanks are identified by the laboratory using the first letter of the analysis fraction performed followed by the abbreviation BLK for "Blank." For example, the third volatile method blank would be designated "VBLK03."

Examples

VBLK — Volatile Method Blank

SBLK — Semivolatile Method Blank

PBLK — Pesticide/PCB Method Blank

The laboratory uses these blanks to determine the concentrations of contamination associated with sample processing and analysis.

The laboratory uses an instrument blank to determine if any contamination is present before, during or after pesticide/PCB sample analysis that can be attributed to the gas chromatography instrumentation. Instrument blanks are only used during pesticide/PCB analysis and are identified by the laboratory using the first letter of the analysis fraction performed followed by the abbreviation IBLK for "Blank." For example, the third pesticide/PCB instrument blank would be designated "PIBLK03."

Examples

PIBLK — Pesticide/PCB Instrument Blank

***SDG 514*** Volatile ***Organic Analyses***

In SDG 514, the compounds methylene chloride, acetone, and 2-butanone were detected at concentrations of 3 µg/kg, 16 µg/kg, 8 µg/kg, respectively, in method blank VBLKCD analyzed on February 17, 1994. Acetone was detected in associated samples 14S0101, 14S0103, 14S0109, 14S0111, 14S0113 and 14S0115 below 10X the blank value and was flagged as undetected. Methylene chloride was detected at 4 µg/kg in method blank VBLKCF analyzed on February 18, 1994. Methylene chloride was also detected in trip blank 14ST01 at 4 µg/kg, which was used to qualify this compound in SDG 514. 2-Butanone was not detected in any field sample. Methylene chloride was detected at 3 µg/kg in equipment rinsate blank 14SE01. A higher concentration of methylene chloride at 4 µg/kg was found in trip blank 14ST01.

Methylene chloride was detected in all associated samples below 10X this amount. Sample concentrations below the CRQL were raised to the CRQL in all samples and were qualified as undetected with a U-flag for this compound.

Nontarget compounds identified by analysis are labeled as Tentatively Identified Compounds (TICs). In CLP analyses these compounds are reported for volatiles and semivolatiles. The compound 2-propanol was reported as a TIC at a concentration of 8 µg/L in equipment rinsate blank 10ST02. Detections of this compound in the associated samples below 5X this amount were flagged as undetected with a U-flag. *(Note:* 2-propanol is used during field sampling activities as a intermediate rinse during the decontamination procedure with deionized water. Therefore, 2-propanol is not considered to be a sample constituent at this site.)

### *SDG 514 Semivolatile Organic Analyses*

During semivolatile sample analyses, the TIC compound heptadecane was detected at 66 µg/kg in water method blank SBLKFY. The TIC compound cyclopentasiloxane was detected at 67 µg/kg in soil method blank SBLKFZ. Associated sample results less than 5X the blank concentration of the TICs were flagged as undetected. Equipment blank 14SE01 was analyzed on February 24, 1994 and reanalyzed on February 28, 1994 due to poor initial surrogate recoveries. No compounds were detected in the associated samples, therefore no action was taken.

### *SDG 516 Volatile Organic Analyses*

Methylene chloride was detected in all method blanks at the following contamination concentrations:

| Method Blank | **Concentration** |
|---|---|
| VBLKCP | 6 µg/L |
| VBLKCQ | 4 µg/kg |

| Method Blank | Concentration |
|---|---|
| VBLKCR | 6 µg/kg |
| VBLKCS | 7 µg/kg |
| VBLKCT | 3 µg/kg |

Methylene chloride detections in the associated samples below 10X the blank amount were flagged as undetected, with the detection limit being raised to the concentration of contamination in each sample. Methylene chloride was detected at 4 µg/L in equipment rinsate blank 14SE02. Detections of this compound in the associated samples below 10X the blank amount were flagged as undetected, with the quantitation limit being raised to the concentration of contamination in each sample. Methylene chloride and acetone were detected in equipment blank 14SE03 at 6 µg/L. Detections of these compounds in the associated Samples below 10X the blank amount were flagged as undetected, with the quantitation limit being raised to the concentration of contamination in each sample.

Methylene chloride and acetone were detected in trip blank 14ST02 at 5 µg/L and 11 µg/L, respectively. Detections of these compounds in the associated samples below 10X the blank amount were flagged as undetected, with the quantitation limit being raised to the concentration of contamination in each sample. Methylene chloride was detected in trip blanks 14ST03 and 14ST04 at 7 µg/L and 8 µg/L, respectively. Detections of this compound in the associated samples below 10X the blank amount were flagged as undetected, with the detection limit being raised to the concentration of contamination in each sample.

### *SDG 516 Semivolatile Organic Analyses*

In SDG 516 no TCL compounds were detected in the method blanks. However, six TICs were detected in method blank SBLKFF. Detections of these TICs in the associated samples below 5X the blank amount were flagged as undetected, with the detection limit being raised to the concentration of contamination in each sample.

*SDG 518* Volatile Organic Analyses

Methylene chloride was detected in all method blanks. The contamination concentrations are as follows:

| Method Blank | Concentration |
|---|---|
| VBLKCS | 7 µg/L |
| VBLKCT | 3 µg/L |

Detections of this compound in the associated samples below 10X the blank amount were flagged as undetected, with the detection limit being raised to the concentration of contamination in each sample. Methylene chloride was also detected in the equipment blanks at the following concentrations:

| Equipment Blank | Concentration |
|---|---|
| 14SE04 | 6 µg/L |
| 14GE06 | 6 µg/L |

Detections of this compound in the associated samples below 10X the blank amount were flagged as undetected, with the detection limit being raised to the concentration of contamination in each sample. Methylene chloride was detected in all trip blanks at the contamination concentrations listed below:

| Trip Blank | Concentration |
|---|---|
| 14ST05 | 7 µg/L |
| 14ST06 | 3 µg/L |
| 14ST07 | 8 µg/L |

Detections of this compound in the associated samples below 10X the blank amount found in trip blank 14ST07 were qualified as undetected, with the detection limit being raised to the concentration of contamination in each sample.

### *SDG 518 Semivolatile Organic Analyses*

No TCL compounds were detected in the equipment blanks. However, several low concentration TICs were detected in method blanks SBLKHR, SBLKHS, and SBLKHT. Detections of these TICs in the associated samples below 5X the blank amount were flagged as undetected, with the detection limit being raised to the concentration of contamination in each sample. However, several low-concentration TICs detected in equipment blanks 14SE04, 14SE05, and 14GE06. Detections of these TIC's in the associated samples below 5X the blank amount were flagged as undetected, with the detection limit being raised to the concentration of contamination in each sample.

### *SDG 518 Pesticide/PCB Organic Analyses*

All criteria were met, therefore no action was required.

### *SDG 519 Volatile Organic Analyses*

Methylene chloride was detected at 3 µg/L and 2 µg/L, respectively, in water method blanks VBLKGM and VBLKGI. There were no positive detections of methylene chloride in the associated samples, therefore no action was taken. Acetone was detected at 28 µg/L in field blank 70FB15. Detections of acetone in associated samples 14GS02 and 14GS02D below 10X this amount were flagged as undetected with the detection limit being raised to the concentration of contamination in each sample.

Methoxytrimethyl silane was detected at 14 µg/L in field blank 70FB15. Using the 5X rule this concentration was sufficient to eliminate the positive result for this compound in associated sample 14GS02D, and the result was flagged as Undetected. Ethylbenzene and xylene (total)

were detected at 8 µg/L and 290 µg/L, respectively, in rinsate blank 14GE01. Since there were no positive detections of these compounds in the associated samples, no action was necessary. Also, in the trip blanks methylene chloride was detected at 8 µg/L in trip blank 14GE01. Since there were no positive detections of this compound in the associated samples, no action was necessary.

*SDG 519 Semivolatile* Organic *Analyses*

There were no positive detections in the method blanks, equipment rinsate blanks, or trip blanks for this SDG. Therefore, no action was necessary.

In evaluating the data provided by these QC samples, all frequencies and compliance requirements were satisfactory. E/A&H believes that these common laboratory artifacts and other blank contaminants are partially, if not all, a result of laboratory conditions at the time of sample analysis.

### 7.2.2 Calibration

Instrument calibration requirements were established to ensure acceptable data qualification and quantitation. The initial calibration measures the instrument's stability, which gives an indication of its measurement bias. The continuing calibration indicates the instrument's performance throughout and at the end of each subsequent analytical run. Historical performance data indicate poor response and/or erratic behavior by those compounds known as common laboratory artifacts. Since no contractual criteria for these compounds exist, for review and data validation purposes, all compounds including the common laboratory artifacts were considered for qualification when the following criteria were <u>not</u> met.

- Initial/continuing calibration standard relative response factors (RRFs) for all target compounds and surrogates must be equal to or greater than 0.05.

- Percent relative standard deviation (ZRSD) must not exceed ± 30 percent in the initial calibration.

- Percent difference (%D) not exceeding ± 25 percent in the continuing calibration.

### *SDG 514 Volatile Organic Analyses*

All initial calibration criteria were met, no action was necessary. The volatile compounds chloroethane and acetone failed ZD criteria during the continuing calibration analysis for SDG 514. The Percent Differences for chloroethane and acetone were 27.6 percent and 27.3 percent, respectively, for the continuing calibration blank analyzed on February 18, 1994 which exceeded the upper QC limit of 25 percent. All positive results for these compounds in the associated samples were flagged as estimated.

### *SDG 514 Semivolatile Organic Analyses*

In the case of semivolatile analysis, the compounds 2,4-dinitrophenol, benzo(k)fluoranthene, 2,4,6-tribromophenol, benzo(g,h,i)perylene, and hexachlorocyclopentadiene failed %D criteria due to poor response and/or frequent intervals of erratic behavior. Although this was a systematic occurrence, these poor responders represent the large majority of compounds that failed both %D and/or ZRSD in SDG 514. If the ZRSD was greater than 30 percent and eliminating either the high point or the low point on the initial calibration curve and recalculating did not restore the %RSD result to a value less than or equal to 30 percent, all associated positive sample results outside the linear portion of the initial calibration curve were qualified with a J flag. However, if this action did restore the %RSD result to a value below 30 percent, no action is necessary based on CLP QC protocols. All initial calibration semivolatile standards were within CLP criteria, no action was necessary. However, the %D exceeded the 25 percent QC limit for the continuing calibration standard analyzed on February 24, 1994, for the following compounds.

| Compound | %D |
|---|---|
| Hexachlorocyclopentadiene | 56.4 |
| 2,$-dinitrophenol | 28.0 |
| Benzo(k)fluoranthene | 34.6 |
| Benzo(g,h,i)perylene | 28.5 |

Because there were no positive detections of these compounds in the associated samples, no data qualification was required. Also, the %Ds exceeded the 25 percent QC limit for the continuing calibration standard analysis on February 25, 1994, for the following compounds.

| Compound | %D |
|---|---|
| Hexachlorocyclopentadiene | 26.5 |
| Pentachlorophenol | 26.7 |
| 2,4,6-tribromophenol | 26.6 |

Because there were no positive detections of these compounds in the associated samples, no data qualification was necessary. The percent differences exceeded the 25 percent QC limit for the calibration standard analyzed on February 28, 1994, for the following compounds.

| Compound | %D |
|---|---|
| Hexachlorocyclopentadiene | 32.8% |
| Pentachlorophenol | 26.0% |

Because there were no positive detections of these compounds in the associated samples, no data qualification was required.

### *SDG 514 Pesticide/PCB Organic Analyses*

Problems associated with this SDG fraction were limited to retention time and %RSD. Several compounds seen in the table below were outside the retention time windows established by the initial calibration. Also, 4,4-DDT had a retention time of 25.29 minutes in Performance Mixture PEMGD on column 2 (secondary column) analyzed on February 22, 1994, which was outside the retention time window of 21.18 to 21.28 minutes established by the initial calibration. No extraneous peaks were present on the chromatogram for either column, therefore no action was taken.

PRIMARY COLUMN 2/23/94

| Compounds | Mixture | Retention Time (Min.) | Retention Time Window (Min.) |
|---|---|---|---|
| 4,4-DDT | A | 21.38 | 21.39 - 21.49 |
| Methoxychlor | A | 30.70 | 30.71 - 30.81 |
| Endosulfan II | B | 19.00 | 19.02 - 19.12 |
| Endosulfan sulfate | B | 28.35 | 28.37 - 38.47 |
| Endrin Ketone | B | 31.59 | 31.60 - 31.70 |
| Endrin Aldehyde | B | 23.95 | 23.96 - 24.06 |

The retention times of the following compounds in Individual Mixtures A or B (primary column) analyzed on February 24, 1994, were outside the retention time windows established by the initial calibration.

| Compound | Mixture | Retention T i i (Min.) | Retention Time Window (Min.) |
|---|---|---|---|
| 4,4'-DDT | A | 21.37 | 21.39 - 21.49 |
| Methoxychlor | A | 30.69 | 30.71 - 30.81 |
| Endosulfan II | B | 19.01 | 19.02 - 19.12 |

| Compound | Mixture | Retention Time (Min.) | Retention Time Window (Min.) |
|---|---|---|---|
| Endosulfan Sulfate | B | 28.35 | 28.37 - 31.70 |
| Endrin Ketone | B | 31.50 | 31.60 - 31.70 |
| Endrin Aldehyde | B | 23.94 | 23.96 - 24.06 |

The %RSD between the calibration factors for alpha-BHC and gamma-BHC were 29.3 percent and 22.1 percent, respectively, for the initial calibration (primary column), and the %RSD for methoxychlor was 23.3 percent for the initial calibration (secondary column) analyzed on February 8, 1994, exceeding the 20 percent QC limit. Since two single component pesticides are permitted to have %RSDs within 20 to 30 percent per column, no action was required. The retention times of the following compounds in individual mixtures A or B (primary column) analyzed on February 22, 1994, were outside the retention time windows established by the initial calibration.

All secondary column criteria were met. No compounds were detected in any of the samples on either column, and no extraneous peaks were present on the chromatogram for the primary column, therefore no action was taken.

***SDG 516*** Volatile Organic Analyses

The %RSD of acetone was 33.9 percent for the initial standard analysis on February 28, 1994 on instrument CMS-HP, which exceeded the 30 percent QC limit. All positive results for this compound in associated samples 14S0305, 14S0305D, 14S0310, 14S0310RE, and 1430314 were flagged as estimated. The %D for chloroethane was 32.1 percent for the continuing calibration analysis on March 1, 1994 on instrument CMS-HP, which exceeded the 25 percent QC limit. There were no positive results for this compound in the associated samples, therefore no action was taken. The %Ds for the continuing calibration standard analyzed on March 2, 1994 on instrument CMS-HP exceeded the 25 percent QC limit for the following compounds:

| Compound | %D |
|---|---|
| Acetone | 32.5 |
| 2-Butanone | 35.8 |

All positive results for these compounds in associated samples 14S0305, 14S0305D, 1430314, and 14S0310 were qualified as estimated with a J-flag. The %D of chloroethane was 26.8 percent for the continuing calibration *standard* analyzed on March 3, 1994 on instrument *CMS-HP*, which exceeded the 25 percent QC limit. Since there were no positive results for this compound in the associated samples, no action was taken. The %D of chloroethane was 25.5 percent for the calibration *standard* analyzed on March 4, 1994 on instrument CMS-HP, which exceeded the 25 percent QC limit. There were no positive results for this compound in the associated samples, therefore no action was taken.

***SDG 516 Semivolatile Organic** Analyses*

All the initial calibration CLP QC criteria were met for SDG 506, therefore no action was deemed necessary. However, the XD for the continuing calibration standard analyzed on February 25, 1994, exceeded the 25 percent QC limit on instrument FMS-HP for the following compounds:

| Compound | %D |
|---|---|
| Hexachlorocyclopentadiene | 26.5 |
| Pentachlorophenol | 26.7 |

Because there no positive detections of these compounds in the associated samples, no data qualification was required. Also, the 96D for hexachlorocyclopentadiene was *46* percent for the standard analyzed on March 7, 1994 on instrument FMS-HP, which exceeded the 25 percent QC limit. Because there were no positive detections of this compound in the associated samples, no data qualification was deemed necessary.

### *SDG 516 Pesticides/PCB Organic Andyses*

The %RSDs for the standard analyses on February 16, 1994, on instrument GC15 (column SPB-1701) exceeded the 20 percent QC limit for the following compounds:

| Compounds | %RSD |
|---|---|
| alpha-BHC | 30.2 |
| gamma-BHC | 22.2 |

The %RSD for gamma-BHC exceeded the 20 percent QC limit but was within the 30 percent limit, no action was required. The %RSD for alpha-BHC exceeded the 30 percent limit; all associated positive and non-detect results were qualified as estimated. Also in SDG 516, the retention times for endosulfan 11 and endosulfan sulfate were 0.01 minutes out of their retention time windows, and endrin aldehyde was 0.02 minutes out of its retention time window for standard INDBAMH8 analyzed on March 6, 1994 on instrument GC15 (column SPB-1701). There were no positive results in the associated samples, no action was required. The %Ds for the continuing calibration standard analyzed on March 8, 1994 on instrument GC15 (column SPB-1701) exceeded the 25 percent QC limit for the following compounds.

| Compound | %D |
|---|---|
| alpha-BHC | 27.5 |
| gamma-BHC | 26.5 |

All positive and non-detect results for associated samples 14M0101, 14M0101D, 14M0201, 14M0201MS, and 14M0201MSD were flagged as estimated.

### *SDG 516 Volatile Organic Analyses*

In the initial calibration for SDG 516 the %RSD of acetone was 33.9 percent for the initial calibration standard analyzed on February 28, 1994, on instrument CMS-HP, which exceeded

the 30 percent QC limit. All positive results for this compound in associated samples 14S0301, 14S0401, 14S0401D, 14S0405, 14S0410, 14S0411, 14S0501, 14S0505, 14S0507, 14S0601, 14S0605, and 14GE06 were qualified as estimated. In the continuing calibration the %D of chloromethane was 26.8 percent for the continuing calibration standard analyzed on March 3, 1994 on instrument CMS-HP, which exceeded the 25 percent QC limit. There were no positive results for this compound in the associated samples, therefore no action was taken. The %D of chloromethane was 25.5 percent for the continuing calibration standard analyzed on March 4, 1994 on instrument CMS-HP, which exceeded the 25 percent QC limit. There were no positive results for this compound in the associated samples, no action was required.

*SDG 518 Semivolatile Organic Analyses*

The %RSD exceeded the 30 percent QC limit for the initial calibration standard analyzed on March 7, 1994 on instrument HMS-HP for the following compounds:

| Compound | %D |
|---|---|
| 4-Chloropheny l-pheny lether | 33.4 |
| Benzo(k)fluoranthene | 36.8 |

All positive results for these compounds in associated samples 14S0301, 14S0401, 14S0401D, 14S0405, 14S0501, 14S0505, 14S0601, 14S0605, and 14S0609 were qualified as estimated. The %D for benzo(k)fluoranthene was 38.3 percent for the continuing calibration standard analyzed on March 8, 1994 on instrument HMS-HP, which exceeded the 25 percent QC limit. Since the positive results for this compound were previously qualified as estimated based on the initial calibration, no further action was required. The %D exceeded the 25 percent QC limit for the continuing calibration standard analyzed on March 9, 1994, on instrument HMS-HP for the following compounds.

| Compound | %D |
|---|---|
| 2,2'-Oxybis(1-chloropropane) | 26.8 |
| Hexachlorocyclopentadiene | 29.0 |
| 2,4-Dinitrophenol | 29.3 |

There were no positive results for these compounds in the associated samples, therefore no action was taken.

### *SDG 518 Pesticides/PCB Organic Analyses*

The %RSD for alpha-BHC was 30.7 percent for the initial calibration analyzed on March 9, 1994, on instrument GC-15 (secondary column), exceeding the 30 percent QC limit. All associated positive and non-detect results were flagged as estimated.

### *SDG 519 Volatile Organic Analyses*

All initial calibration criteria were met, no action was deemed necessary. However, the %D for acetone for the continuing calibration analyses on March 3, 1994, was 26.6 percent, exceeding the 25 percent QC limit. The positive result for acetone in associated sample 70FB15 was qualified as estimated.

### *SDG 519 Semivolatile Organic Analyses*

All initial calibration criteria for the method were met, no action was necessary. In the continuing calibration the %D's exceeded the 25 percent QC limit for the standard analyzed on March 3, 1994, for the following compounds:

| Compound | %D |
|---|---|
| Hexachlorocyclopentadiene | 27.9 |
| pentachlorophenol | 26.0 |

Since there were no positive detections of these compounds in the associated samples, no data qualification was required.

***SDG 519 Pesticide/PCB Organic Analyses***

The %RSD's for alpha-BHC and gamma-BHC were 30.2 percent and 22.2 percent, respectively, for the initial calibration analyzed on February 26, 1994, on column 1, which exceeded the 20 percent QC limit. Alpha-BHC exceeded the 30 percent QC limit and all results for this compound in the associated samples, mostly non-detects, were qualified as estimated with a UJ-flag. In the continuing calibration, the RPDs for alpha-BHC and gamma-BHC were 31.0 percent and 28.5 percent, respectively, for the standard analyzed on March 4, 1994 on column 1, which exceeded the 25 percent QC limit. The results for these compounds in associated sample 14GS01, only non-detects, were flagged as estimated. The RPD for gamma-BHC was 30 percent for the standard run on March 4, 1994 on column 1, which exceeded the 25 percent QC limit. The results for these compounds in associated samples 14GS02, 14GS02D, 70FB14, 14GE01 and 70FB15, exclusively non-detects, were flagged as estimated.

### 7.2.3 Precision

Within each analytical method, there are variations in the reported results possibly due to the random differences in the handling and analysis of that matrix. These variations are referred to as the *precision* or *reproducibility*. To demonstrate reproducibility, the CLP SOW specifies the addition of known quantities of several compounds to two separate aliquots of each sample matrix type. The "spiked" aliquots are referred to as the matrix spike (MS) and the matrix spike duplicate (MSD). These samples are analyzed applying the same preparation techniques and analytical methods used for all the samples of similar matrices. This enables the MS and MSD to be used to detect matrix effects caused by contamination during analysis. These effects could also interfere and/or cover up target compounds present within the sample.

***SDG 516 Volatile Organic Analyses***

The %RPDs for 1,1-dichloroethene was **24%** for spiked samples 14M0201MS and 14M0201MSD, which slightly exceeded the **22%** QC limit. Since all other RPDs and all spike recoveries were within the **QC** limits, therefore no action was taken.

***SDG 518 Volatile Organic Analyses***

Field Duplicate **Analyses**

| **Samples** | **Analytes** | **Sample Amt. (µg/kg)** | **Duplicate Amt. (µg/kg)** | **RPD** |
|---|---|---|---|---|
| 14S0401/14S0401D | Acetone | 160 | 39 | **122** |

**This** result was outside the 60 percent **QC** limit for field duplicates 14S0401 and 14S0401D. All associated positive results were flagged as estimated. E/A&H believes the MS/MSD results indicate the effect of sample matrix on the associated sample data, including the MS/MSD samples themselves. This can be determined by consistent high percent recoveries when deionized water is analyzed and the inconsistent percent recoveries and %RPDs reported when soil samples were analyzed. As a general rule, no action is taken on MS/MSD data alone. However, the **MS** and MSD results are **used** in conjunction with other **QC** criteria such **as** surrogate recoveries, internal standard area **QC** requirements **and** the comparison of %RSD results of non-spiked compounds with the original sample results to determine the need to qualify some of the associated positive sample results as estimated or unusable.

### 7.2.4 Accuracy

Accuracy is the degree to which **a** given result agrees with **the** ***true*** value. To check the accuracy in a volatile, semivolatile, pesticide and/or **PCB** analysis, the **CLP SOW** adding known amounts of ***surrogate compounds*** and ***internal standard compounds*** which are not likely to be found in the actual samples. If the percent recovered for the surrogate and/or internal **standard**

compounds are accurate, that is, close to the known concentrations as defined within the limits set by the CLP, then the reported target compound concentrations are assumed to be accurate.

The accuracy of the overall measurement system is an indication of measurement bias. Possible sources of error may include the sampling process, field and/or laboratory contamination, preservation, and handling or the sample matrix itself. Other methods used to determine field error include trip blanks and the preparation and analysis of field blanks, potable water blanks, and equipment rinsate blanks.

***Pesticide/PCB Organic Analyses SDG 514***

The % Recoveries of tetrachloro-m-xylene (TCX) and decachlorobiphenyl (DCB) for the following samples were below the 60-150% QC limits.

| Samples | TCX 9bR Both columns | DCB %R Both Columns |
|---|---|---|
| 14S0101 | 52/49 | All within QA/QC criteria |
| 14S0101MS | 55/51 | |
| 14S0101MSD | 54/51 | |
| 14S0103 | 50/47 | |
| 14S0103D | 56/52 | |
| 14S0105 | 49/46 | |
| 14S0107 | 44/42 | |
| 14S0109 | 56/52 | |
| 14S0111 | 56/45 | |
| 14S0113 | 10/11 | 21/20 |
| 14S0115 | 52/50 | |
| 14S0115D | 52/52 | |
| 14S0117 | 43/43 | |

| Samples | TCX %R Both Columns | DCB %R Both Columns |
|---|---|---|
| 14S0119 | 58/56 | |
| 14SE01 | | 31/28 |
| PBLK45 | | 21/20 |
| PBLK46 | 47/48 | |
| LCSG79MS | 58/54 | |
| LCSG79MSD | In/49 | |

All associated data for the above samples, which consisted entirely of non-detects, were qualified as estimated with a UJ flag.

### *SDG 516 Semivolatile Organic Analyses*

The internal standard area count for bromochloromethane was below 50 percent of the daily calibration standard QC limit for sample 14S0305D. All associated positive and non-detect results were qualified with a J-flag for positive results and a UJ-flag for non-detects. The internal standard area counts for bromochloromethane, fluorobenzene, and chlorobenzene-d5 were below the 50% daily calibration standard QC limit for sample 14S0310RE. All associated positive and non-detect results were qualified as estimated. The surrogate recoveries of TCX and DCB exceeded the 60 to 150 percent QC limits for the following samples and blanks.

| Sample | TCX %R Both Columns | DCB %R Both Columns |
|---|---|---|
| PBLK55 | | 46/43 |
| PBLK56 | | 15/14 |
| 14SE02 | | 42/39 |
| 14S0213 | | 24/23 |
| 14M0101 | Id57 | |

| Sample | TCX %R Both Columns | DCB %R Both Columns |
|---|---|---|
| 14M0101D | In/53 | |
| 14M0201 | In/56 | |
| 14S0203 | 54/52 | In/58 |
| 14S03 14 | In/56 | |
| 14M0201MS | 54/52 | |
| 14M0201MSD | w 5 3 | |
| LCSH86M9 | 54/47 | |
| LCSH86MSD | w 5 3 | |

Low surrogate recoveries (10 percent to 60 percent) were observed for these samples. All associated positive and non-detect results were flagged as estimated. Because the water blank surrogates were comparable to surrogate recoveries in the samples, no additional data qualification was necessary. Also, the percent difference for Aroclor-1254 between the two columns was 26.2 percent, which exceeded the 25 percent QC limit. This result was qualified as estimated.

***SDG 518 Pesticide/PCB Organic** Analyses*

The surrogate recoveries of DCB exceeded the 60 to 150 percent QC limits for the following samples and blanks:

| Sample | TCX %R | DCB %R |
|---|---|---|
| PBLK62 | | 15/13 |
| PBLK64 | | 58/52 |
| 4SE04 | 20/19 | |
| 14SE05 | | 53/50 |
| 14GE06 | | In/56 |

| | |
|---|---|
| Soil | |
| 14S0301 | 151/199 |

Low surrogate recoveries (10 - 60 percent) were observed for these method and field blanks. All associated positive results were flagged as estimated. High surrogate recoveries (greater than 150 percent) were observed for soil sample 14S0301. All associated positive results were flagged as estimated. The reported concentrations may be significantly higher than the actual concentrations for this sample. All associated data from the above samples consisted entirely of non-detects and were qualified as estimated

***SDG 518 TCL Compound*** Identification and ***Quantitation***

The %D between GC columns 1 and 2 exceeded the 25 percent QC limit for the following samples:

| Sample | Analyte | %D |
|---|---|---|
| 14S0301 | Aldrin | 94.7 |
| | Aroclor-1248 | 51.0 |
| | Aroclor-1254 | 208.8 |
| 14S0301MSD | Aldrin | 999.9 |
| | Aroclor-1248 | 361.5 |
| | Aroclor-1254 | 80.6 |
| 14S0401 | Aroclor-1248 | 36.0 |
| 14S0601 | Aroclor-1248 | 68.2 |

These results were flagged as estimated. Therefore all MS/MSD criteria were met, no action was taken based on the exceeded %D results for 14S0301MSD.

### *SDG 519 Pesticide/PCB Organic Analyses*

The percent recoveries of TCX and DCB were below the 60 to 150 percent QC limits for the following samples:

| Samples | TCX %R | DCB %R |
|---|---|---|
| 14GS02 | | 56/52 |
| 14GS02D | In/54 | 52/49 |
| 70FB13 | | 47/44 |
| 70FB14 | | 59/56 |
| 14GE01 | | 52/48 |
| 14GT01 | | W56 |
| 70FB15 | | W58 |

Associated sample data, which consisted entirely of non-detects, were flagged as estimated. However, the pesticide/PCB analytical data within each SDG was determined to be reliable and useable with the appropriate data qualifiers based on the associated QC (initial and continuing calibrations, retention time criteria, and %D and %RSD criteria). Because CLP QC limits are advisory, no action is provided for samples with failing surrogate recoveries.

### 7.2.5 Representativeness

Representativeness expresses the accuracy and precision representing the a population, parameter variations at a sampling point, or an environmental condition. The duplicate samples give an indication of matrix homogeneity and overall field and laboratory repeatability. A greater variance should be expected for the soil sample duplicates than for water sample duplicates due to the differences in matrix. In all cases, the duplicate results were found to be in close agreement with the original results since most variations are due to laboratory artifacts.

In SDG 516, three sets of field duplicates 14M0101/14M0101D, 14M0201/14M0201D, and 14S0305/14S0305D were analyzed. The RPDs for results greater than the CRQL are the following.

| Samples | Analyte | Sample (µg/kg) | Duplicate (µg/kg) | RPD |
|---|---|---|---|---|
| 14M0101/14M0101D | Acetone | 88 | 57 | 42.8% |
| 14M0201/14M0201D | Acetone | 24 | 14 | 52.6% |
| 14S0305/14S0305D | Acetone | 210 | 42 | 133.3% |

Acetone results were outside the 60 percent QC limit for duplicates 14S0305/14S0305D; all associated positive results for samples 14S0305, 14S0305D, 14S0310RE, and 14S0314 were flagged as estimated.

### 7.2.6 Completeness

Completeness is defined as the percentage of measurements made that are valid measurements. One-hundred and thirty samples were analyzed for full CLP TCL investigation of Site 14. All positive organic sample results were determined to be valid with some qualification. Therefore, the data meets the 90 percent completeness level.

### 7.2.7 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. All samples for Site 14 were collected using the USEPA Region IV standard operating procedures and analyzed according to CLP SOW protocol.

## 7.3 Inorganic Analysis

The analytical methods were performed in accordance with the EPA CLP SOW for Inorganics Analyses (3/90) guidelines. However, for hexavalent chromium analysis the laboratory employed Method 7196A while TCLP method 1311 was used to characterized contaminants in

hazardous waste leachate. Each method is listed in the EPA's Test *Methods for Evaluating Solid Wastes, SW-846,* 3rd *Edition.* Results were reported according to CLP format outlined, including forms, but were not limited to those listed under NEESA Level IV guidelines.

### 7.3.1 Holding Times

All inorganic SDGs were received by the laboratory in good condition with the proper custody documents and seals intact. From the date of collection to the date of sample digestion/preparation, sample holding times were within technical and contractual requirements.

### 7.3.2 Calibration

The purpose of initial and continuing calibration is to ensure the instrument is capable of acceptable and quantitative performance at the beginning and throughout each analytical run. Initial and continuing calibrations were performed for the inorganics analysis within the criteria established by the USEPA CLP Inorganics SOW.

### 7.3.3 Blanks

Blank results are used to determine the presence and magnitude of any contamination problems. In review of the data, the following blank results represent the highest detections associated with the samples and were used for data qualification.

*Inorganic Analyses SDG 514*

| Blank | Element | *Max.* Conc. (mg/kg) | Action Level (mg/kg) |
|---|---|---|---|
| CCB2 | Barium | 2.0 | 10.0 |
| PBW | Calcium | 17.7 | 88.5 |
| CCB3 | Cobalt | 0.8 | 4.0 |
| PBS | Copper | 1.4 | 7.0 |
| CCB2 | Iron | 6.9 | 34.5 |

| Blank | Element | Max. Conc. (mg/kg) | Action Level (mg/kg) |
|---|---|---|---|
| PBS | Lead | 0.3 | 1.5 |
| PBW | Magnesium | 4.8 | 24.0 |
| CCB3 | Manganese | 0.5 | 2.5 |
| Equip Blk | Mercury | 0.5 | 0.25 |
| PBW | Sodium | 6.8 | 34.0 |
| CCB2 | Zinc | 1.3 | 6.5 |

CCB = Continuing Calibration Blank
ICB = Initial Calibration Blank
PBW = Water Preparation Blank
PBS = Soil Preparation Blank
Equip Blk = Equipment Rinsate Blank

All results greater than the instrument detection limit (IDL) but less than 5X the blank amount (Action Level, mg/kg for soil samples) for which the contaminated blank is an associated calibration or field/equipment blank were flagged as undetected.

*Inorganic* Analyses *SDG 516*

The following blank results represent the highest detections associated with the samples and were used for data qualification.

| Blank | Element | Max. Conc. (µg/L) | Action Level (µg/L) |
|---|---|---|---|
| CCB | Aluminum | 21.1 | 105.5 |
| CCB | Antimony | 21.4 | 107 |
| CCB | Arsenic | -3.9 | 19.5 |

| Blank | Element | *Max.* Conc. (µg/L) | Action Level (µg/L) |
|---|---|---|---|
| CCB | Barium | 9.0 | 45 |
| PBW | Calcium | 86.4 | 432 |
| | | (mg/kg) | (mg/kg) |
| PBS | Calcium | 7.5 | 37.5 |
| CCB | Copper | 4.5 | 22.5 |
| CCB | Iron | 31.9 | 159.5 |
| CCB | Magnesium | 28.5 | 142.5 |
| CCB | Manganese | 1.8 | 9.0 |
| PBW | Mercury | 0.28 | 1.4 |
| CCB | Mercury | -0.1 | 0.5 |
| ICB | Nickel | -16.5 | 82.5 |
| PBW | Sodium | 42.9 | 214.5 |
| ICB | Sodium | 30.6 | 153 |
| CCB | Vanadium | 5.2 | 26 |
| CCB | Zinc | 6.2 | 31 |
| CCB | Cyanide | -2.9 | 14.5 |

CCB = Continuing Calibration Blank
ICB = Initial Calibration Blank
PBW = Water Preparation Blank
PBS = Soil Preparation Blank

All results greater than the IDL but less than 5X the blank amount (Action Level, µg/L for water samples, mg/kg for soil samples before percent solids correction) for which the contaminated blank is an associated calibration or field/equipment blank were *flagged* as undetected with a U-flag, with the detection limit being raised to the concentration of contamination in each

sample. Several blanks had negative results with absolute values larger than the IDL. All associated positive results less than 5X the absolute value of the blank result and all non-detects were flagged as estimated.

*Inorganic Analyses For SDG 518*

| Blank | Element | Max. Conc. (µg/L) | Action Level (mg/kg) |
|---|---|---|---|
| CCB | Aluminum | 24.8 | 124.0 |
| CCB | Arsenic | 4.3 | 21.5 |
| CCB | Barium | 10.6 | 53.0 |
| Equip BLK | Calcium | 225 | 1125 |
| PBW | Calcium | 67.1 | 335.5 |
| CCB | Copper | 6.5 | 32.5 |
| CCB | Iron | 30.2 | 151.0 |
| CCB | Magnesium | 27.0 | 135.0 |
| CCB | Manganese | 2.4 | 12.0 |
| CCB | Mercury | -0.1 | -0.5 |
| PBS | Potassium | -141 | 705 |
| Equip Blk | Sodium | 35.6 | 178 |
| Equip Blk | Sodium | 46.1 | 230.5 |
| Equip Blk | Sodium | 39.5 | 197.5 |
| CCB | Vanadium | 5.2 | 26.0 |
| Equip Blk | zinc | 4.9 | 24.5 |
| CCB | Zinc | 3.8 | 19.0 |

All results greater than the IDL but less than 5X the blank amount (Action Level, µg/L for water samples and mg/kg for soil samples before percent solids correction) for which the contaminated blank is an associated blank were flagged as undetected, with the detection limit being raised to

the concentration of contamination in each sample. Several blanks had negative results with absolute values larger than the IDL. All associated positive results less than 5X the absolute value of the blank result and all nondetects were qualified as estimated.

### *Inorganic Analyses for SDG 519*

The following blank results represent the highest detections associated with the samples and were used for data qualification.

| Blank | Element | Max. Conc. (µg/L) | Action Level (µg/L) |
|---|---|---|---|
| CCB8 | Aluminum | 24.8 | 124 |
| CCB8 | Barium | 10.6 | 53.0 |
| Equip Blk | Calcium | 293 | 1465 |
| CCBS | Copper | 8.7 | 43.5 |
| CCB4 | Iron | 32.0 | 160 |
| FB | Lead | 3.0 | 15.0 |
| CCB3 | Manganese | 2.4 | 12.0 |
| FB | Magnesium | 67.5 | 338 |
| FB | Sodium | 508 | 2540 |
| CCB3 | Vanadium | 5.2 | 26.0 |
| FB | Zinc | 5.2 | 26.0 |

CCB = Continuing Calibration Blank
FB = Field Blank
Equip Blk = Equipment Rinsate Blank

All results greater than the IDL but less than 5X the blank amount (Action Level, µg/L for water samples, mg/kg for soil samples) for which the contaminated blank is an associated calibration

or field and equipment blank were flagged as undetected. Arsenic had a negative value (-3.9 μg/L) in continuing calibration blank CCB1. The absolute value of the negative blank contamination was greater than 2X IDL. All associated positive sample results less than 5X the absolute value of the negative blank result were flagged as estimated, and all non-detects were flagged as estimated with a UJ-flag.

### 7.3.4 ICP Interference Check Sample Analyses

The inductive coupled plasma (ICP) interference check sample analysis (ICSA) is performed to check the laboratory's instrument and the background correction factors. In SDG 514, positive results were observed for barium (11.4mg/kg), beryllium (0.2mg/kg), cobalt (2.4mg/kg), copper (1.8 mg/kg), sodium (49.0mg/kg), vanadium (2.4 mg/kg), and zinc (0.8 mg/kg) in ICS Solution A analyzed on February 21, 1994 at concentrations greater than 2X IDL. These analytes should not be present in the solution. Sample detections of these analytes less than 5X the detections in the ICP check sample were qualified as estimated with a J-flag. Negative results in ICS Solution A were observed for the following analytes:

*SDC 514*

| Analytes | Results |
|---|---|
| Antimony | -0.8 mg/kg |
| Potassium | -79 mg/kg |
| Thallium | -2.0mg/kg |

Negative results in ICS Solution AB were observed for the following analytes:

| Analytes | Results |
|---|---|
| Antimony | -19.4 mg/kg |
| potassium | -789.0 mg/kg |
| thallium | -0.4 mg/kg |

All associated positive sample results less than 5X the absolute value of the ICS result and all nondetects for these analytes were flagged as estimated.

### *SDG 516*

The following analytes were detected in ICS solution A at concentrations greater than IDL. These analytes should not present in the solution.

| Compounds | Conc. (µg/L) | Action Level (µg/L) |
|---|---|---|
| Barium | 28 | 140 |
| Chromium | 3 | 15 |
| Copper | 7 | 35 |
| Manganese | 14 | 70 |
| Nickel | 13 | 65 |
| Sodium | 195 | 975 |
| Vanadium | 5 | 25 |
| zinc | -10 | 50 |

All associated results greater than the IDL but less than 5X the interference amount (Action Level, µg/L for water samples and mg/kg for soil samples before percent solids correction) were flagged as estimated. Negative results were observed for zinc. All associated positive sample results less than 5X the absolute value of the negative results and all non-detects were qualified as estimated with a J-flag for positive results and a UJ-flag for negative results.

### *SDG 518*

The following analytes were detected in ICS Solution A at concentrations greater than IDL. These analytes should not present.

| Compounds | Conc. (µg/L) | IDL (µg/L) | Action Level (mg/kg) |
|---|---|---|---|
| Antimony | -18.0 | 15.6 | 18.0 |
| Barium | 11.0 | 2.4 | 11.0 |
| Copper | 4.0 | 2.6 | 4.0 |
| Manganese | 11.0 | 1.0 | 11.0 |
| Nickel | 13.0 | 10.4 | 13.0 |
| Sodium | 188 | 37.0 | 188.0 |
| Silver | -11.0 | 3.6 | 11.0 |
| Selenium | -4.8 | 1.7 | 4.8 |
| Zinc | -1.0 | 1.7 | 10.0 |

All associated results greater than the IDL but less than 5X the Interference amount (Action Level, µg/L for water samples and mg/kg for soil samples before percent solids correction) were qualified as estimated. Negative results were observed for antimony, silver, selenium, and zinc. All associated positive sample results less than 5X the absolute value of the negative results and all non-detects were qualified as estimated. Also, in the ICP Serial Dilution analysis for zinc was 13.6 percent, which exceeded the 30 percent QC limit. All zinc results were qualified as estimated.

### *SDG 519*

The % Recoveries criteria for the method were met, therefore no action was taken. Positive results greater than 2X IDL were observed for the following analytes in ICS Solution A.

| Analytes | Results |
|---|---|
| Barium | 11.0 µg/L |
| Manganese | 11.0 µg/L |
| Sodium | 188 µg/L |

These analytes should not be present in ICS Solution A. Positive results for these compounds in associated samples in which aluminum, calcium, iron, and/or magnesium were present at concentrations greater than 50 percent the amount in Solution A were flagged as estimated. Negative results greater than 2X IDL (absolute value) were observed for the following analytes in ICS solution A.

| Samples | Results |
|---|---|
| Selenium | -4.0 µg/L |
| Silver | -11.0 µg/L |
| Zinc | -11.0 µg/L |

All associated positive sample results less than 5X the absolute value of the ICS result and all non-detects were flagged as estimated.

### 7.3.5 Laboratory Control Sample Analyses

The Laboratory Control Sample (LCS) analysis is designed to monitor the efficiency of the overall performance in all steps of analysis, including the digestion procedures. In SDG *505*, the solid LCS Percent Recoveries (%Rs) were below the 80 to 120 percent QC limits for the following analytes.

***SDG 514***

| | %Recovery |
|---|---|
| Aluminum | 74.5% |
| Antimony | 47.5% |
| Chromium | 75.8% |
| Iron | 395.0% |
| Magnesium | 73.2% |
| Cyanide | 65.6% |

*SDG 518*

The LCS result for antimony was **10.8** mg/kg, which was below the **14.0** to **117.0** mg/kg QC limits. All associated positive and non-detect results were qualified as estimated.

### 7.3.6 Duplicate/Spike

Duplicate samples are used to determine the precision of analytical methods for each parameter. Spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. If the spike is added to the sample prior to any distillation steps, or **before** the digestion, it is referred to **as** a spiked sample, **a** predigestion/predistillation spike. If the spike is added to the sample after the completion of the distillation or digestion procedures, it is then referred to as a postdigestion/postdistillation spike.

*Sample Duplicate Analyses SDG 514*

The RPD's of the following analytes were outside the **35** percent QC limit for soil duplicate **14S0101**

| Compounds | **RPD** |
|---|---|
| Aluminum | **140.4%** |
| Calcium | **78.2%** |
| Chromium | **85.7%** |
| Iron | **87.3%** |
| Lead | **39.0%** |
| Sodium | ***97.6%*** |
| Zinc | **54.3%** |

*SDG 514 Field Duplicate Analyses*

In SDG 514, two sets of field duplicates, 14S0103/14S0103D, and 14S0115/14S0115D, were analyzed by the laboratory. The calculable RPDs are listed below.

| Analyte | 14S0103 (mg/kg) | 14S0103D (mg/kg) | RPD |
|---|---|---|---|
| Aluminum | 68.5 | 68.9 | 0.6 |
| Calcium | 3120 | 1820 | 52.6 |
| chromium | 0.92 | 1.1 | 17.8 |
| Iron | 188 | 187 | 0.5 |
| Lead | 0.54 | 2.1 | 118.2 |
| Magnesium | 30.2 | 24.3 | 21.3 |
| Manganese | 1.6 | 1.4 | 13.3 |
| Sodium | 36.3 | 23.0 | 44.8 |
| Zinc | 0.53 | 0.66 | 21.8 |

All RPDs were below the 60 percent QC limit for soil field duplicates, except for lead. All positive lead detections in all samples were flagged as estimated.

| Analyte | 14S0115 (mg/kg) | 14S0115D (mg/kg) | RPD |
|---|---|---|---|
| Aluminum | 73.6 | 58.3 | 23.2 |
| Calcium | 3650 | 2700 | 29.9 |
| chromium | 2.3 | 9.5 | 122.0 |
| Iron | 198 | 250 | 23.2 |
| Lead | 0.63 | 0.6 | 4.9 |
| Magnesium | 73.0 | 40.5 | 57.3 |
| Manganese | 1.4 | 1.8 | 25.0 |
| Sodium | 41.5 | 32.4 | 24.6 |

All RPDs were below the 60 percent QC limit for soil duplicates, except for chromium. All positive chromium results were flagged as estimated.

*SDG 516* Field Duplicate *Analysis*

Three sets of field duplicates 14M0101/14M0101D, 14S0201/14S0201D, and 14S0305/14S0305D were analyzed. The RPDs for results greater than contract required detection limits CRDL are:

| Samples | Analytes | Sample Amt. (µg/kg) | Duplicate Amt. (µg/kg) | RPD |
|---|---|---|---|---|
| 14M0101/14M0101D | Aluminum | 51.5 | 59.5 | 14.4 |
| | Calcium | 9240 | 5550 | 49.9 |
| | Iron | 464 | 185 | 86.0 |
| | Lead | 0.59 | 0.63 | 6.5 |
| | Sodium | 1220 | 1020 | 17.9 |
| 14S0201/14S0201D | Aluminum | 338 | 518 | 42.1 |
| | Calcium | 2780 | 3370 | 19.2 |
| | Iron | 808 | 1240 | 42.2 |
| | Lead | 1.4 | 2.0 | 35.3 |
| | Manganese | 13.8 | 19.2 | 32.7 |
| | Zinc | 4.0 | 5.7 | 35.1 |
| 14S0305/14S0305D | Aluminum | 1730 | 2140 | 21.1 |
| | Calcium | 16100 | 18400 | 13.3 |
| | Chromium | 6.0 | 5.8 | 3.4 |
| | Copper | 35.4 | 21.6 | 8.4 |
| | Iron | 4920 | 4360 | 12.1 |
| | Lead | 28600 | 47.0 | 199.3 |
| | Magnesium' | 1840 | 1710 | 7.3 |

| Samples | Analytes | Sample Amt. (µg/kg) | Duplicate Amt. (µg/kg) | RPD |
|---|---|---|---|---|
| | Manganese | 48.3 | 47.8 | 1.0 |
| | Mercury | 1.6 | 0.23 | 149.7 |
| | Sodium | 2110 | 2070 | 1.9 |
| | Zinc | 29.5 | 36.4 | 20.9 |

Iron results were outside the 60 percent QC limit for duplicates 14M0101/14M0101D; all associated positive results for samples 14M0101, 14M0101D and 14M0201 were qualified as estimated with a J-flag. Lead and mercury results were outside the 60% QC limit for duplicates 14S0305/14S0305D. All associated positive results for samples 14S0305, 14S0305D, 14S0310 and 14S0314 were qualified as estimated.

*SDG 518* Sample Duplicate *Analysis*

The RPD exceeded the 35 percent QC limit for the following analytes.

| Sample | Analyte | RPD |
|---|---|---|
| 14S0301 | Aluminum | 45.9 |
| | Chromium | 35.5 |
| | Vanadium | 94.4 |

All associated sample results were qualified as estimated. Also, the following spike percent recoveries for soil samples were outside the 75 to 125 percent QC limits.

| Soil samples | Analyte | RPD |
|---|---|---|
| 14S0301S | Arsenic | 36.5 |
| | Mercury | 165 |
| | Silver | 73.0 |

All associated positive and non-detect antimony and silver results were J-flagged as estimated. All associated positive mercury results were J-flagged as estimated. ICP postdigestion spikes were performed for sample 14S0301 with 86.7 percent recovery for antimony and 95.1 percent recovery for silver. Since the data were previously qualified based on MS recoveries, no further action was taken based on the postdigestion spike results. No water matrix spikes were analyzed. All water samples were blanks, therefore no action was taken.

*SDG 519 Field* Duplicate *Analyses*

One set of field duplicates, 14GS02/14GS02D, were analyzed by the laboratory. The calculable Relative Percent Differences are as follows.

| Analyte | 14GS02 (µg/L) | 14GS02D (µg/L) | RPD |
|---|---|---|---|
| Aluminum | 202 | 301 | 39 |
| Arsenic | 6.7 | 7.0 | 4.4 |
| Calcium | 176000 | 169000 | 4.1 |
| Iron | 1660 | 1640 | 1.2 |
| Magnesium | 283000 | 271000 | 4.3 |
| Manganese | 314 | 300 | 4.6 |
| Potassium | 105000 | 99600 | 5.3 |
| Sodium | 2820000 | 2670000 | 5.5 |

The RPD for aluminum exceeded the 20 percent QC limit for water samples. All positive and non-detect results for aluminum in the associated samples were flagged as estimated with a J-flag and a UJ-flag. Also, the percent recoveries of aluminum and iron were 53 percent and 56 percent, respectively, for water *spiked* sample 14GS01S, which were below the 75 to 125 percent QC limits. All positive and non-detect data for these analytes in the associated samples were flagged as estimated.

### 7.3.7 Validation Worksheets

In every E/A & H data validation project, worksheets are used which detail the evaluation of the analytical data. On certain sheets, the validation procedures will be equivalent to the SOPs provided by the ***USEPA CLP National Functional Guidelines for Organic and Inorganic Data Review.*** Other sections will cover those areas which are more subjective due to the complexities of the analytical methods, and will only provide documentation on the actions taken by the data evaluator. The worksheets will be provided upon *request* or and will be included in the NAS Pensacola Site 14—Final *Report.*

### 7.3.8 Data Assessment

The method blanks, trip blanks, potable water blanks, DI system blanks, equipment rinsate blanks and the equipment rinsate trip blanks contained several volatile target compounds which were reported by the laboratory as contamination introduced during preparation, handling, and/or analysis of the samples. In SDG 516, because there was only one internal standard outside the QC limit for sample 14S0305D and all internal standards were outside the QC limits for reanalyzed sample 14S0310RE, the data quality of the results for the original analysis of 14S0310 *are* preferable.

All volatile, semivolatile and pesticide/PCB sample data in SDG 518 were acceptable with qualification. In SDG 519 all volatile laboratory data were acceptable with minimal qualification. Ethylbenzene and toluene were detected at 8 $\mu$g/L and 290 $\mu$g/L, respectively, in rinsate blank 14GE01. These compounds were not found in the other samples or blanks associated with this SDG.

All soil samples in SDGs 514, 516, and 518 exhibit elevated quantitation limits due to the percent moisture content. The actual percent moisture in each *soil* sample varies with physical and chemical characteristics such as clay content, *surface* area (particle *size)* of the soil and/or bulk density, location of a particular *soil* boring in proximity to a water source, and the

permeability and porosity of the soil. Permeability and porosity are the two most important physical characteristics in determining the percent moisture content in soils. Permeability refers to the ease with which liquids and/or water penetrate or pass through bulk soil. The greater the permeability, the less resistant the soil becomes to infiltration by liquids and the dissolved chemicals they contain. As particle size decreases, which indicates a high clay content, permeability tends to decrease because of the proximity of the soil particles. This close proximity physically retards the movement of contaminants. Porosity refers to the amount of soil sample contamination between soil particles, and is interrelated with permeability. As porosity increases, permeability increases. The amount of liquids that can be held in the soil also, increases. Therefore, the vertical and lateral movement of the liquid may be retarded causing the soil to become saturated. This saturation of the soil by water and various concentrations of chemical contaminants leads to a combination of different percent moisture contents and matrix interferences. This combination of moisture content and matrix interferences contributes to the elevation of soil quantitation limits that also become even more magnified due to dilutions and/or medium level soil analyses. The primary purpose of the medium level soil analyses quantitation limits in the organic CLP SOW are to provide reference CRQLs for soils that show severe matrix interferences. Calculation of the soil quantitation limits based on percent moisture and dilution factor is shown by the following:

If a 1:10 dilution of an extract is necessary, the reported limit is 100 U based on a low-level soil quantitation limit of 10 U. For a soil sample, the value must also be adjusted for percent moisture. For example, if the sample had 24 percent moisture and a 1:10 dilution factor for low level analysis, then the sample quantitation limit for phenol (330 U) would be corrected to:

$$\frac{(330\ U) \times df}{D} \qquad \text{where } D = \frac{100 - \%\ \text{moisture}}{100}$$

df = dilution factor

Therefore at 24% moisture, $D = \frac{100 - 24}{100} = 0.76$

$\frac{(330\ U)}{0.76} \times 10 = 4300\ U$ Rounded to the appropriate number of significant figures

Example:

SDG 516

Sample 14S0314

Therefore at 25% moisture, $D = \frac{100 - 25}{100} = 0.75$

$\frac{(330\ U)}{0.75} = 440\ U$

Sample amount required: 30 *grams*

Sample amount analyzed: 30.5 *grams*

$\frac{30.0\ grams}{30.5\ grams} = 0.98$ Therefore, $440 \times 0.98 = 432.8$

Rounded to the appropriate number of significant digits and adjusted lower based on the actual amount of *soil* measured before sample analysis. Actual quantitation limit is 430 U.

In conclusion, the overall data quality of the analytical work done for Site 14 at NAS Pensacola, except for those sample results that were qualified as unusable, was considered to be satisfactory and usable for site remediation and risk assessment.

## DATA QUALIFIER DEFINITIONS

The following definitions provide a brief explanation of the data qualifiers used in the validation process.

**U —** The compound was analyzed for, but was not detected above the reported sample quantitation limit.

**J —** The compound was positively detected, however, the reported concentration is considered to approximate the concentration within the sample.

**UJ —** The compound was not detected above the reported sample quantitation limit. However, the reported quantitation limit is an approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the compound in the sample.

**R —** The sample results are rejected due to serious deficiencies in the laboratory's ability to analyze the sample and meet QC criteria. The presence or absence of the compound cannot be verified.

# 8.0 FATE AND TRANSPORT

## 8.1 Sources of Detected Parameters

Sediment samples collected from the settling basins contained metal, PAH, pesticide, and PCB concentrations exceeding PRGs. **[Only PAH concentrations exceeded the respective PRGs in sediments.]** Arsenic was the only parameter to exceed PRGs in soil samples, **[and only in one boring location along the sand berms.]** Metals were detected in groundwater and surface water samples exceeding PRGs.

Although basin surface water, site groundwater, and sand berm soil contained parameters exceeding PRGs, only the basin sediments contain notable contamination. Considering their origin and nature (very fine-grained material with high TOC content and CEC dredged from areas of frequent commercial boating activity), it is reasonable that these sediments have absorbed/adsorbed and retained the detected metals and organics. Parameters and concentrations exhibited by the dredge spoil material are comparable with those found in Site **2** sediments. While every attempt was made to prevent the possibility, the few metals concentrations detected in only some surface water samples exceeding PRGs may be related to turbidity from underlying fine-grained sediments disturbed during sample collection, given the shallow depth of standing water (less than **1.5** feet). In the case of groundwater, some of the elevated metals (calcium, potassium, and sodium) are likely associated with salt/fresh water mixing along the backshore area; the remaining metals (aluminum, iron, and manganese) occur naturally in the shallow Sand-and-Gravel Aquifer, both locally and regionally. The low arsenic concentrations in sand berm soil samples are also not likely associated with the basin sediment as a source, but rather fall within the range of concentrations detected in NAS Pensacola background samples.

## 8.2 Contaminant Migration

### Leaching of Sediment Parameters to Groundwater

Detected parameters in sediment potentially may be leached toward the water table by downward percolation of precipitation, or through direct continual contact with groundwater during periods

of elevated water table. However, the relative absence of most detected parameters in groundwater indicates partitioning of parameters from sediment to groundwater is not substantial. Physical parameter analyses indicate basin sediments possess relatively high TOC and CEC values (up to 3400 mg/kg and 42 meq/100 g, respectively), which inhibits their ability to leach detected parameters. Furthermore, when precipitation rates exceed evaporation, the fine-grained basin sediment apparently acts as a barrier, above which rainwater accumulates in shallow perched pools rather than percolating through to the water table. As was observed during February 1994 sampling, basin sediments are not excessively moist or saturated at depth. Additionally, once the sediment unit was penetrated, the underlying groundwater rose into basin boreholes. Based on these observations, it was concluded the low permeability sediments are resting on the water table and confining or depressing it, further supporting the concept that the sediments are relatively impermeable and significant downward percolation is not occurring.

### Surface Water Transport

The physical design of the basin structures prevents surface water flow from inside the basins. Given the high permeability of the sandy berm material, no substantial overland flow from the top of bermed areas outward is likely. All interberm drainage collects in the basins as perched surface water which evaporates over time. Drainage culverts installed in the sand berms between the basins and the bay are elevated a number of feet above the height of the sediment. Only during extended periods of excessively heavy rainfall would perched surface water levels be sufficiently high to allow discharge to Pensacola Bay via the drainage system. Surface water discharge from the basins to Pensacola Bay has not been observed during any fieldwork performed in 1994 nor noted in any of the previous studies. Furthermore, analysis of bay sediment collected at the culvert discharge points did not reveal any notable contaminant concentrations or impact to the bay.

Current and Potential Receptors

The primary receptors of Site 14 are [biota existing at and/or frequenting the site, living in adjacent waters of Pensacola Bay, and wetlands north and south of the site. Pathways include groundwater and surface water transport. Inorganic constituents above PRGs in Site 14 groundwater samples tend to be ubiquitous throughout the Chevalier Field area, as found in previous investigationsof sites near Site 14. Also, the partitioning of contaminants as groundwater moves through the aquifer matrix prior to reaching adjacent surface water bodies minimizes the potential impact to the bay and surrounding wetlands. Surface water transport of contaminants would be directed into Pensacola Bay via the on-site system of drainage culverts. Most surface waters are prevented from flowing from the basins, except during periods of heavy precipitation, due to the design of the basin drainage structures. Surface waters tend to collect and evaporate over time from the basins, minimizing their potential to affect the off-site environment. However, potential ecological impacts to the bay and wetlands will be further addressed in upcoming separate investigations for Sites 42 — Pensacola Bay, and 41 — NAS Wetlands].

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## 9.0 CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER ACTION

Several inorganics were detected in sediments, surface water, soil, and groundwater above the PRGs. Although exceedances occurred in surface water, soil, and groundwater, only the sediments exhibited notable **[concentrations]** of constituents with regard to PRGs. Organics, including PAHs, pesticides, and PCBs, were only detected in the basin sediments at concentrations exceeding PRGs. Many of the detected inorganic and organic parameters in basin sediments are comparable with those detected in the waterfront sediments during the Site 2 RI.

PAHs commonly detected in the settling basin samples are relatively stable and persistent hydrocarbon compounds. Specifically, benzo(a)pyrene is typically considered to be a coal tar derivative component or a product of incomplete fossil fuel combustion. Site 14's location frequently exposes the basins to aircraft emissions, specifically, low-altitude helicopter traffic from adjacent Chevalier Field. These emissions (i.e., incomplete combustion) may have impacted the dredge spoil material within the basins. Additionally, the bay sediments that constitute the spoils may have been impacted by marine fuel residues before and/or during dredging activities. TOC values for the fine-grained dredge material (3,200 to 3,400 mg/kg dry weight) are significantly higher than those for the sand berm material (260 mg/kg dry weight), indicating the spoils have a greater capacity to adsorb and retain the detected PAHs than the sandy berm material. Arsenic was the only parameter detected in soil samples exceeding PRGs**[, however]** these concentrations were within the range of detected concentrations in NAS Pensacola background samples. The source of the PCBs in basin sediments is unknown; however, similar PCBs were detected in the sediments at Site 2. Except for PCBs, analytical results indicate that the dredge material is generally homogeneous with respect to detected metals and organic concentrations. Sandy soil immediately beneath the dredge material generally contained lower concentrations of detected parameters. Because no detected parameters exceeding PRGs were in sediment samples collected in the bay, dredge material does not appear to be impacting Pensacola Bay.

Surface water samples contained lead, iron, and mercury exceeding PRGs. These parameters were also detected in sediments. Their presence in surface water is likely a result of leaching of these parameters from sediments and/or from turbidity of surface water during sample collection.

While no organic compounds detected in the basin sediments (specifically PAHs and PCBs) were detected in site groundwater, several metals concentrations detected in site groundwater exceeded PRGs. However, most of these may be attributed to factors other than dredge spoils. Calcium, potassium, and sodium groundwater concentrations are likely elevated (relative to background standards) due to some degree of salt water/fresh water mixing along the backshore area. These elements are common constituents in seawater. Aluminum and iron in shallow NAS Pensacola groundwater typically exceed FSDWS. Concentrations of iron, and manganese detected in site samples are common metals in the Sand and Gravel Aquifer in southern Escambia County.

Although these parameters exceeded the PRGs, they do not pose a significant human health risk based on the preliminary risk evaluation (Appendix D). [Based on the maximum reported concentrations in sediment, no chemicals exceeded the corresponding Site Use-Specific RBCs.] The preliminary risk evaluation determined that the only significant exposure route was the surface water pathway based on cumulative risk. With the exception of arsenic, no individual chemicals' hazard quotient or excess cancer risk exceeded 1E-6 excess risk based on the surface water exposure pathway. Arsenic would be identified as a chemical of potential concern based on the maximum reported concentration and the corresponding incremental lifetime excess carcinogenic risk (ILCR). However, the maximum concentration of arsenic reported in surface water is approximately five times less than the arsenic MCL. Therefore, arsenic concentrations are below the corresponding drinking water Applicable or Relevant and Appropriate Requirement *(ARAR)*, and no chemicals of concern have been identified at this site that would require further action.] Arsenic accounted for more than half of the predicted use scenario carcinogenic risk. However, based

on this investigation, no parameter was identified that would be considered a chemical of concern during a formal baseline risk assessment relative to carcinogenic risk. Furthermore, no individual chemical of concern would exceed its individual noncarcinogenic remedial goal option based on a hazard quotient of one.

Based on the preliminary ecological risk assessment, risk to biota in the area is insignificant (Appendix E). The primary exposure pathway is via water ingestion or passive sediment intake. The lack of a benthic community, along with the absence of nekton species, limits the transfer of contaminants to upper-level species. Risks to marine biota appears to be minimal as evidenced by the absence of contaminants in Pensacola Bay sediment samples collected adjacent to the outfalls.

**Recommended Action**

Based on lithologic and analytical information, it *can* be assumed that the basin's dredge material is generally homogeneous. Further delineation of the dredge material inside the basins should not be required given the unique structure of the site (i.e., dredge spoils contained within definable boundaries) and the apparent homogeneous nature of the dredge spoil. All COCs have been identified associated with this site; therefore, analytical data obtained during this investigation should be used as source characterization information. Further delineation of site groundwater or soil contaminants also appears unnecessary at this time given the absence of apparent site-related contamination.

[Based on **the Tier I Partnering Team discussions, the sediment in the basins and the soil of the surrounding berms are suitable as fill material under the following circumstances:**

1. **As the basin sediment exceeds the surface soil PRGs, it can only be used as fill material if it is covered by at least 2-feet of clean soil, and placed in areas not subject to erosion.**

2. The berm soil can be used as fill material anywhere on the base as it does not pose a risk.

For the site to be adequately managed under these conditions, any plans for use or alteration of the site sediment or soil must be submitted for approval by the Tier I Partnering Team. Prevention of migration of contaminated sediment to the adjacent wetlands and Pensacola Bay must be part of any reuse plans.]

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# Appendix A

## Soil Boring/Monitoring Well Construction Logs

# DESCRIPTION OF SUBSURFACE MATERIALS

BORING DATE: 02/11 /94

SURFACE CONDITIONS– SANDY SOIL BERM

| DEPTH (FEET) | SAMPLE TYPE | % RECOVERY | BLOWS/FT. | VAPOR CONC. (PPM) | |
|---|---|---|---|---|---|
| | SS | | | 0 | 0–1' BLS LIGHT TAN FINE MEDIUM GRAINED QUARTZ SAND WITH MINOR SHELL FRAGMENTS AND SMALL AMOUNTS OF SILTY ORGANICS (SP) |
| 5 | SS | | | 0 | 1–3' BLS S.A.A. WITHOUT SHELL FRAGMENTS |
| | SS | | | 0 | 3–5' BLS S.A.A. WITH THIN DARK GRAY ORGANIC SILT LENSES |
| | SS | | | 0 | 5–7' BLS SAA |
| 10 | SS | | | 0 | 7–9' BLS SAA AGAIN WITH SILT LENSES |
| | SS | | | 0 | 9–11' BLS S.A.A. WITH LESS SILT |
| | SS | | | 0 | 11–13' BLS S.A.A. |
| 15 | SS | | | 0 | 13–15' BLS S.A.A. WITH NO SILT |
| | SS | | | 0 | 15–17' BLS SAA WITH FEW SILT LENSES |
| 20 | SS | | | 0 | 17–19' BLS S.A.A. WITH NO SILT |
| | SS | | | 0 | 19–21' BLS S.A.A BECOMING MOIST |
| 25 | SS | | | 0 | 21–23' BLS SAME (SP) SAND AS ABOVE WITH DARK GRAY SILTY LENSES/SWIRL DEPOSIT AT 22' BLS WET AT 23' BLS |
| 30 | CUTTINGS RETURN | | | | 23–30' BLS SAME LIGHT TAN SAND–SATURATED 8.0.H. |
| 35 | | | | | |
| 40 | | | | | |
| 45 | | | | | |
| 50 | | | | | |

**KEY**

(SP) – UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOL
B.L.S. – BELOW LAND SURFACE
B.O.H. – BOTTOM OF HOLE
S.S. – SPLIT SPOON SAMPLE
S.A.A. – SAME AS ABOVE

SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA
PENSACOLA, FLORIDA

BORING
14S01

DATE: 04/17/95 | DWG NAME: 70BL141

# DESCRIPTION Of SUBSURFACE MATERIALS

BORING DATE: 02/21/94

SURFACE CONDITIONS– SANDY SOIL BERM

| DEPTH (FEET) | SAMPLE TYPE | % RECOVERY | BLOWS/FT. | VAPOR CONC. (PPM) | | |
|---|---|---|---|---|---|---|
| | SS | | | 0 | 0–1' BLS | LIGHT TAN FINE TO MEDIUM GRAINED QUARTZ SAND WITH APPROX. 2 CM LENSE OF CLAYM SILTY SAND – DARK GRAY, AT .5' BLS (SP) |
| 5 | SS | | | 0 | 1–3' BLS | S.A.A. WITH SMALL AMOUNT OF MEDIUM GRAY CLAYEE SILTY MATERIAL INTERMINGLED (SP/SC) |
| 10 | SS | | | 0 | 3–5' BLS | S.A.A. (SP/SC) |
| | SS | | | 0 | 5–7' BLS | S.A.A. WITH MEDIUM GRAY CLAYEY STRINGERS AND BLACK CRUSTY FRAGMENTS (COAL?) |
| 15 | SS | | | 0 | 7–9' BLS | S.A.A. |
| | SS | | | 0 | 9–11' BLS | SAA |
| 20 | SS | | | 0 | 11–13' BLS | TAN TO MEDIUM GRAY SILTY QUARTZ SAND WITH INFREQUENT THIN SILTY CLAYEY LENSE (SP/SC) |
| 25 | SS | | | 0 | 13–15' BLS | S.A.A. |
| | SS | | | 0 | 15–17' BLS | S.A.A. |
| 30 | SS | | | 0 | 17–19' BLS | S.A.A. |
| | SS | | | | 19–21' BLS | S.A.A. SAND BECOMING WET AT 20' BLS |
| 35 | SS | | | | 25–27' BLS | BROWNISH GRAY *QUARTZ* SAND WITH TRACE SHELL FRAGMENTS BECOMING BLUISH GRAY SAND AT 26' BLS SATURATED |
| 40 | | | | | | |
| 45 | | | | | | |
| 50 | | | | | | |

KEY

(SP) – UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOL
B.L.S. – BELOW LAND SURFACE
B.O.H. – BOTTOM OF HOLE
S.S. – SPLIT SPOON SAMPLE
S.A.A. – SAME AS ABOVE

SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOIA
PENSACOIA, FLORIDA

BORING
14S02

DATE: 04/17/95

DWG NAME: 70BL142

# DESCRIPTION OF SUBSURFACE MATERIALS

BORING DATE: 02/22/94

SURFACE CONDITIONS– SLUDGE PIT– MED–DK GRAIN SILTY SLUDGE CRUST

| DEPTH (FEET) | SAMPLE TYPE | % RECOVERY | BLOWS/FT. | VAPOR CONC. (PPM) | | |
|---|---|---|---|---|---|---|
| | SS | | | 0 | 0–1' BLS | MEDIUM DARK GRAY SILTY CLAYEY SLUDGE WITH ORANGE SILTY SANDS INTERMIXED (SM/SC) |
| 5 | SS | | | 0 | **3-5' BLS** | MEDIUM GRAY **SILTY CLAYEY** SLUDGE **WITH** FREQUENT SHELL FRAGS BECOMING SIGNIFICANTLY SANDY AT 4'BLS (SM/SC) |
| 10 | SS | | | 0 | **8–10'** BLS | S.A.A TO 9' BLS THEN FAT HIGHLY PLASTIC MEDIUM GRAY CLAY SLUDGE (CH) |
| 15 | SS | | | 0 | 12–14' BLS | SILTY SANDY CLAY SLUDGE TO 12.8' BLS POSSIBLY SLOUGH THEN FAT (CH) CLAY AGAIN TO 13.5' BLS ABRUPT CONTACT AT 13.5' TURNING INTO LIGHT TAN FINE TO MEDIUM GRAINED QUARTZ SAND **WITH** FEW FINES (NATIVE SOIL) AND SATURATED (SP) W.T AT 14' BLS |
| 20 | SS | | | 0 | 15–17' BLS | SAME SATURATED (SP) QUARTZ SAND **AS ABOVE** WATER TABLE BEGINS/IS COMPRESSED BELOW SLUDGES @ 14' BLS B.O.H. |
| 25 | | | | | | |
| 30 | | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |
| 50 | | | | | | |

KEY

**(SP)** – UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOL
B.L.S. – BELOW LAND SURFACE
B.O.H. – BOTTOM OF HOLE
S.S. – SPLIT SPOON SAMPLE
S.A.A. – SAME AS ABOVE

SITE CHARACTERIZATION REPORT
SITE **14**
NAS PENSACOLA
PENSACOLA, FLORIDA

BORING

14S03

DATE: 04/17/95

DWG NAME: 70BL143

# DESCRIPTION OF SUBSURFACE MATERIALS

BORING DATE: 02/24/94

| DEPTH (FEET) | SAMPLE TYPE | % RECOVERY | BLOWS/FT. | VAPOR CONC. (PPM) | | |
|---|---|---|---|---|---|---|
| | | | | | 0-.5' BLS | DRY CRUSTY CLAYEY SLUDGE |
| | SS | | | 1.2 | .5-1' BLS | MOIST PLASTIC FAT CLAYEY SLUDGE MEDIUM GRAY (CH) |
| 5 | SS | | | 0 | 3-5' BLS | S.A.A. |
| | SS | | | 0 | 8-10' BLS | S.A.A. WITH THIN LAYERED SEQUENCES OF SILTY SAND, LIGHT GRAY IN COLOR MAY BE RESULT OF BAILERDRILLING METHOD. (SM/CH) |
| 10 | SS | | | 0 | 9-11' BLS | LIGHT GRAY SILTY CLAYEY SAND WITH FREQUENT SHELL FRAGMENTS. SATURATED BELOW WATER TABLE. BOTTOM OF (CH) CLAY IS = 8-9' BLS. B.O.H. |
| 15 | | | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |
| 50 | | | | | | |

KEY

(CH) - UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOL
B.L.S. - BELOW LAND SURFACE
B.O.H. - BOTTOM OF HOLE
S.S. - SPLIT SPOON SAMPLE
S.A.A. - SAME AS ABOVE

SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOIA
PENSACOM, FLORIDA

BORING

14S04

DATE. 04/17/95

DWG NAME: 70BL144

# DESCRIPTION OF SUBSURFACE MATERIALS

BORING DATE: 02/24/94

SURFACE CONDITIONS– SLUDGE PIT– MED TO DARK GRAY SLUDGE CRUST

| | | | | |
|---|---|---|---|---|
| | | | 0–.5' BLS | DRY CRUSTY SLUDGE |
| | SS | 0 | .5–1' BLS | MEDIUM GRAY CLAYEY FAT CLAY SLUDGE (CH) |
| 5 | SS | 0 | 3-5' BLS | S.A.A. |
| | SS | 0 | 6–7' BLS | LIGHT MEDIUM GRAY SILTY SAND (SM) MOIST AT 6' BUT NOT SATURATED. CLAYEY SLUDGE ESTIMATED TO TERMINATE AT 5.9'BLS SAND IS WET AT 7' BLS (W. TABLE) |
| 10 | | | | |
| | SS | | 7–9' BLS | SATURATED LIGHT TAN TO GRAY QUARTZ SAND SLIGHTLY SILTY (SM) B.O.H. |
| 15 | | | | |
| 20 | | | | |
| 25 | | | | |
| 30 | | | | |
| 35 | | | | |
| 40 | | | | |
| 45 | | | | |
| 50 | | | | |

KEY

(SP) – UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOL
B.L.S. – BELOW LAND SURFACE
B.O.H. – BOTTOM OF HOLE
S.S. – SPLIT SPOON SAMPLE
S.A.A. – SAME AS ABOVE

SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA
PENSACOLA, FLORIDA

BORING

14S05

DATE: 04/17/95

DWG NAME: 70BL145

| DEPTH (FEET) | SAMPLE TYPE | % RECOVERY | BLOWS/FT. | VAPOR CONC. (PPM) | DESCRIPTION OF SUBSURFACE MATERIALS |
|---|---|---|---|---|---|
| | | | | | BORING DATE: 02/25/94 |

SURFACE CONDITIONS– SLUDGE PIT– MED TO DARK GRAY SLUDGE CRUST

| DEPTH (FEET) | SAMPLE TYPE | % RECOVERY | BLOWS/FT. | VAPOR CONC. (PPM) | DESCRIPTION OF SUBSURFACE MATERIALS |
|---|---|---|---|---|---|
| | SS | | | | 0–.2 BLS CRUSTY MEDIUM GRAY CLAYEY SLUDGE |
| | | | | | .2–1' BLS MOIST FAT. HIGHLY PLASTIC CLAYEY SLUDGE (CH) |
| 5 | SS | | | | 1–3' BLS SAA |
| | SS | | | | 3–5' BLS S.A.A. |
| 10 | SS | | | | 7.5–8' BLS MEDIUM TO STIFF GRAY CLAYEY SLUDGE (CH) |
| | SS | | | | 8–9' BLS LIGHT TAN TO LIGHT GRAY FINE TO MEDIUM GRAINED QUARTZ SAND WITH SHELL FRAGMENTS ORGANIC ODOR SATURATED. SHARP CONTACT/ TRANSITION AT 8' BLS WITH CLAY AND SAND W.TABLE EXISTS AT THIS CONTACT 9' B.O.H. |
| 15 | | | | | |
| 20 | | | | | |
| 25 | | | | | |
| 30 | | | | | |
| 35 | | | | | |
| 40 | | | | | |
| 45 | | | | | |
| 50 | | | | | |

**KEY**

(SP) – UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOL
B.L.S. – BELOW LAND SURFACE
B.O.H. – BOTTOM OF HOLE
S.S. – SPLIT SPOON SAMPLE
S.A.A. – SAME AS ABOVE

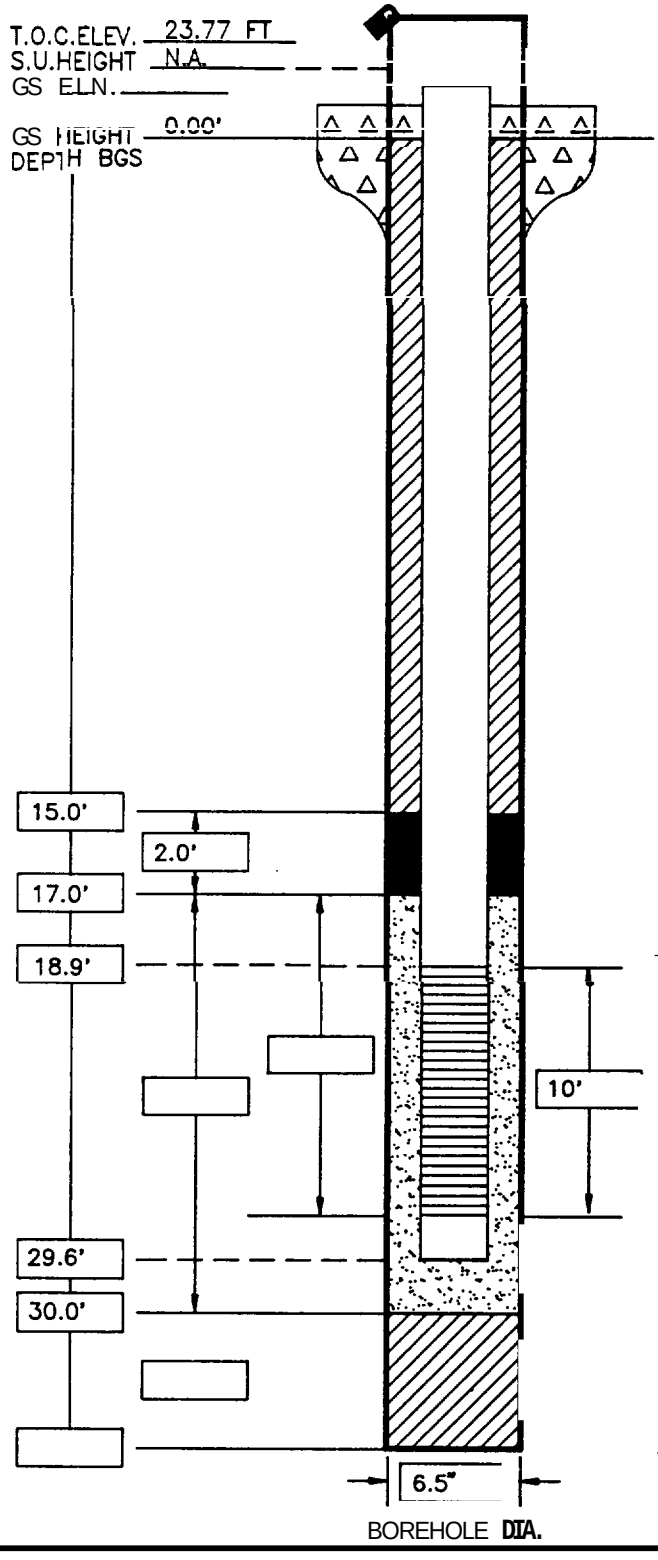
SITE CHARACTERIZATION REPORT
SITE 14
NAS PENSACOLA
PENSACOM, FLORIDA

BORING

14S06

DATE: 04/17/95 . DWG NAME: 70BL146

| | | |
|---|---|---|
| WELL NO.: 14GS01 | INSTALLATION: SHALLOW MW. | SITE: NASP SITE 14 |
| PROJECT NO.: 070-0030 | CLIENT/PROJECT: U.S. NAVY SOUTH DIVISION | |
| BUILT BY: J. FRYE / J. LUNCEFORD | WELL COORD.: NA | |




**PROTECTIVE CSG**
MATERIAL/TYPE BOLT DOWN, WATER TIGHT STEEL FLUSH MOUNT COVER
DIAMETER 10"
DEPTH BGS ____ WEEP HOLE(Y/N) ____

**GUARD POSTS** (Y/N)
NO. ____ MPE ____

**SURFACE PAD**
COMPOSITION & SIZE 3'X3'X6" CONCRETE

**RISER PIPE**
TYPE SCHEDULE 40 PVC
DIAMETER 2" ID
TOTAL LENGTH(TOC to TOS) 19'
VENTILATED CAP (Y/N)

**GROUT**
COMPOSITION & PROPORTIONS APPROX. 5-98LB BAGS TYPE I PORTLAND CEMENT - NEAT
TREMIED (Y/N)
INTERVAL BGS 0-15'

**CENTRALIZERS** (Y/N)
DEPTH(s) ____

**SEAL**
TYPE 1/4" BENT. PELLETS
SOURCE BAROID INC.
SETUP/HYDRATION TIME 1+ HOUR
VOL. FLUID ADDED APPROX.8 GAL DI WATER
TREMIED (Y/N) INSIDE AUGERS

**FILTER PACK**
TYPE SILICA QTZ SAND
AMT. USED 6-50 LB BAGS
TREMIED (Y/N) INSIDE AUGERS
SOURCE PEARL SAND CO. FILTERATION MEDIA
GR. SIZE DIST. 20-30 COUNT SIEVE SIZE

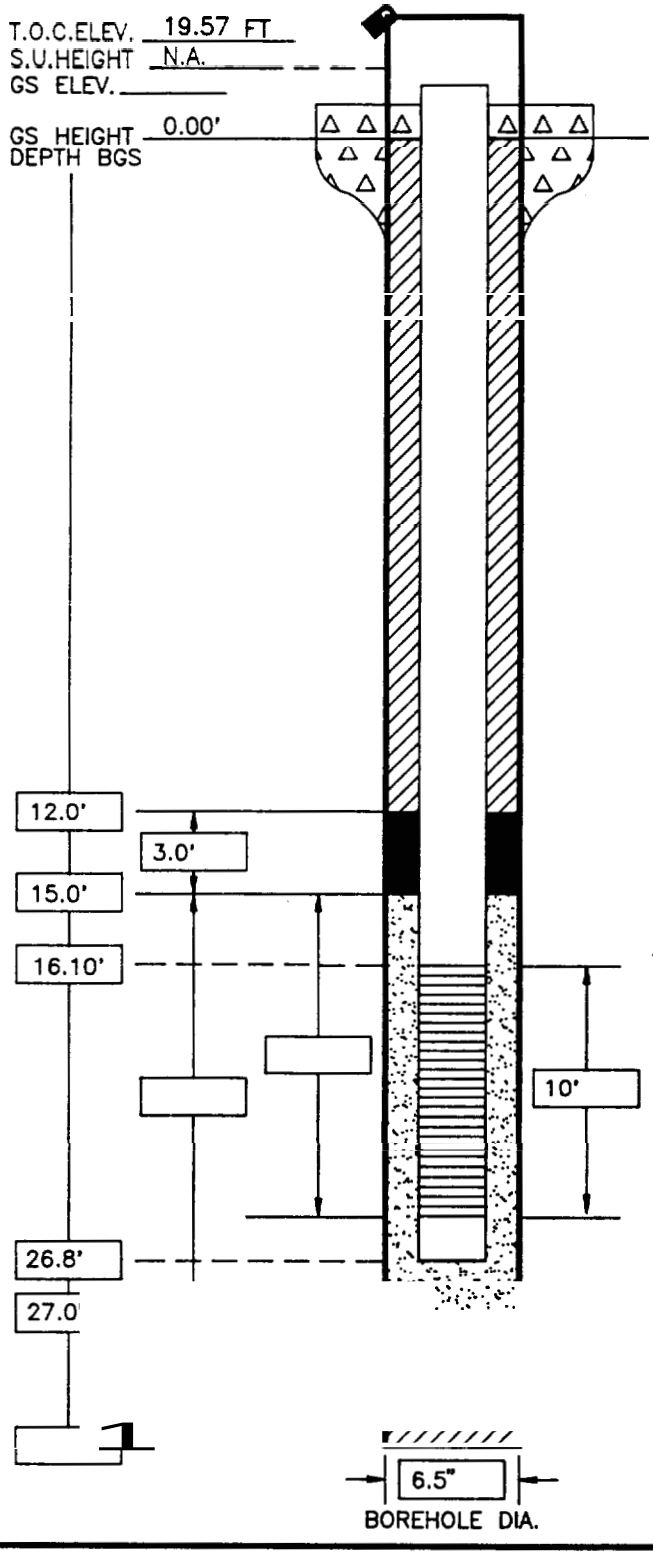
**SCREEN**
TYPE SCHEDULE 40 PVC
DIAMETER 2" ID
SLOT SIZE & TYPE 0.01" CONTINUOUS SLOTTED
INTERVAL BGS 18.9 - 28.9

**SUMP** (Y/N)
INTERVAL BGS 28.9'-29.6' LENGTH .7'
BOTTOM CAP (Y/N) INCLUDES BOTTOM CAP

**BACKFILL PLUG**
MATERIAL NATURAL SAND BACKFILL/COLLAPSE
SETUP/HYDRATION TIME N.A.
TREMIED (Y/N)

70MW141

| | | |
|---|---|---|
| WELL NO.: 14GS02 | INSTALLATION: SHALLOW M.W. | SITE: NASP SITE 14 |
| PROJECT NO.: 070-0030 | CLIENT/PROJECT: U.S. NAVY SOUTH DIVISION | |
| | DRIG. CONTRACTOR: LAYNE ENVIRON. INC. | |
| COMP. START: 02/21/94 | COMP. END: 02/21/94 | |
| BUILT BY: B. LEGGASI / J. LUNCEFORD | WELL COORD.: NA | |




**PROTECTIVE CSG**
MATERIAL/TYPE BOLT DOWN, WATER TIGHT STEEL FLUSH MOUNT COVER
DIAMETER
DEPTH BGS WEEP HOLE(Y/N)

**GUARD POSTS** (Y/N)
NO. TYPE

**SURFACE PAD**
COMPOSITION & SIZE 3'X3'X6" CONCRETE

**RISER PIPE**
TYPE SCHEDULE 40 PVC
DIAMETER 2" ID
TOTAL LENGTH(TOC to TOS) 16'
VENTILATED CAP (Y/N)

**GROUT**
COMPOSITION & PROPORTIONS APPROX.3-98LB BAGS
TYPE I PORTLAND CEMENT - NEAT
TREMIED (Y/N)
INTERVAL BGS 0-12'

**CENTRALIZERS** (Y/N)
DEPTH(s)

**SEAL**
TYPE 1/4" BENT. PELLETS
SOURCE BAROID INC.
SETUP/HYDRATION TIME 1 HOUR
VOL FLUID ADDED 7 GAL DI WATER
TREMIED (Y/N) INSIDE AUGERS

**FILTER PACK**
TYPE SILICA QTZ SAND
AMT. USED 5-50 LB BAGS
TREMIED (Y/N) INSIDE AUGERS
SOURCE 'PEARL SAND CO. FILTERATION MEDIA
GR. SIZE DIST. ~~20-30 COUNT SIEVE SIZE~~

**SCREEN**
TYPE SCHEDULE 40 PVC
DIAMETER 2" ID
SLOT SIZE & TYPE 0.01" CONTINUOUS SLOTTED
INTERVAL BGS 16.10 - 26.10

**SUMP** (Y/N)
INTERVAL BGS 26.1'-26.8' LENGTH .7'
BOTTOM CAP (Y/N) INCLUDES BOTTOM CAP

**BACKFILL PLUG**
MATERIAL NATURAL SAND BACKFILL/COLLAPSE
SETUP/HYDRATION TIME N.A.
TREMIED (Y/N)

70MW142

# Appendix B

## Physical Parameters Analytical Report

**SL** *SAVANNAH LABORATORIES*
*& ENVIRONMENTAL SERVICES. INC.*

900 Lakeside Drive • Mobile, Alabama 36693-5118 • (205)666-6633 • Fax (205)666-6696

LOG NO: M4-11331

Received: 09 MAR 94

Mr. Henry Biero
EnSafe/Allen & Hoshall
P.O. Box 341315
Memphis, TN 38134

Purchase Order: E-0148/94

Project: CTO-0070-00030
Sampled By: Client

REPORT OF RESULTS



| LOG NO | SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES | DATE SAMPLED | SDG# |
|---|---|---|---|
| 11331-11 | 03M1101 | 03-02-94 | EAH023 |
| 11331-12 | 03M1201 | 03-02-94 | EAH023 |
| 11331-13 | 03M1301 | 03-02-94 | EAH023 |
| 11331-14 | 14M0101 | 03-07-94 | EAH023 |
| 11331-15 | 14M0201 | 03-01-94 | EAH023 |

| PARAMETER | 11331-11 | 11331-12 | 11331-13 | 11331-14 | 11331-15 |
|---|---|---|---|---|---|
| Total Organic Carbon (EPA 415.1) | | | | | |
| Organic Carbon, mg/kg dw | 1000 | 2100 | 1000 | 260 | 220 |
| Sample Preparation | 03.28.94 | 03.28.94 | 03.28.94 | 03.28.94 | 03.28.94 |
| Date Analyzed | 03.29.94 | 03.29.94 | 03.29.94 | 03.29.94 | 03.29.94 |
| Analyst | SR | SR | SR | SR | SR |

## GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 14

e: 03/22/94
Project No.: P94008
Project: #007000030

### Sample Data

Location of Sample: 14M0101
Sample Description 1: MEDIUM TO FINE SAND,
Sample Description 2: TRACE GRAVEL
USCS Class: (SP) Liquid limit: - - - Plasticity index: - - -

### Notes

Remarks: CLIENT: ENSAFE / ALLEN & HOSHALL

Data Sheet No.:

### Mechanical Analysis Data

| | Initial | After wash |
|---|---|---|
| Dry sample and tare= | 100.00 | 98.32 |
| Tare = | 0.00 | 0.00 |
| Dry sample weight = | 100.00 | 98.32 |

us #200 from wash= 1.7 %
e for cumulative weight retained= 0

| Sieve | Cumul. Wt. retained | Percent finer |
|---|---|---|
| 0.375 inches | 0.00 | 100.0 |
| # 4 | 2.44 | 97.6 |
| # 10 | 7.48 | 92.5 |
| # 20 | 12.94 | 87.1 |
| # 40 | 34.35 | 65.7 |
| # 60 | 66.12 | 33.9 |
| # 100 | 95.31 | 4.7 |
| # 200 | 98.32 | 1.7 |

### Hydrometer Analysis Data

Separation sieve is number 200
Percent -#200 based on complete sample= 1.7
Weight of hydrometer sample: 100
Calculated biased weight= % 5952.38095238
Automatic temperature correction
Composite correction at 20 deg C =-6

Meniscus correction only= 0
Specific gravity of solids= 2.66
Specific gravity correction factor= 0.998

Hydrometer type: 152H  Effective depth L= 16.294964 - 0.164 X Rm

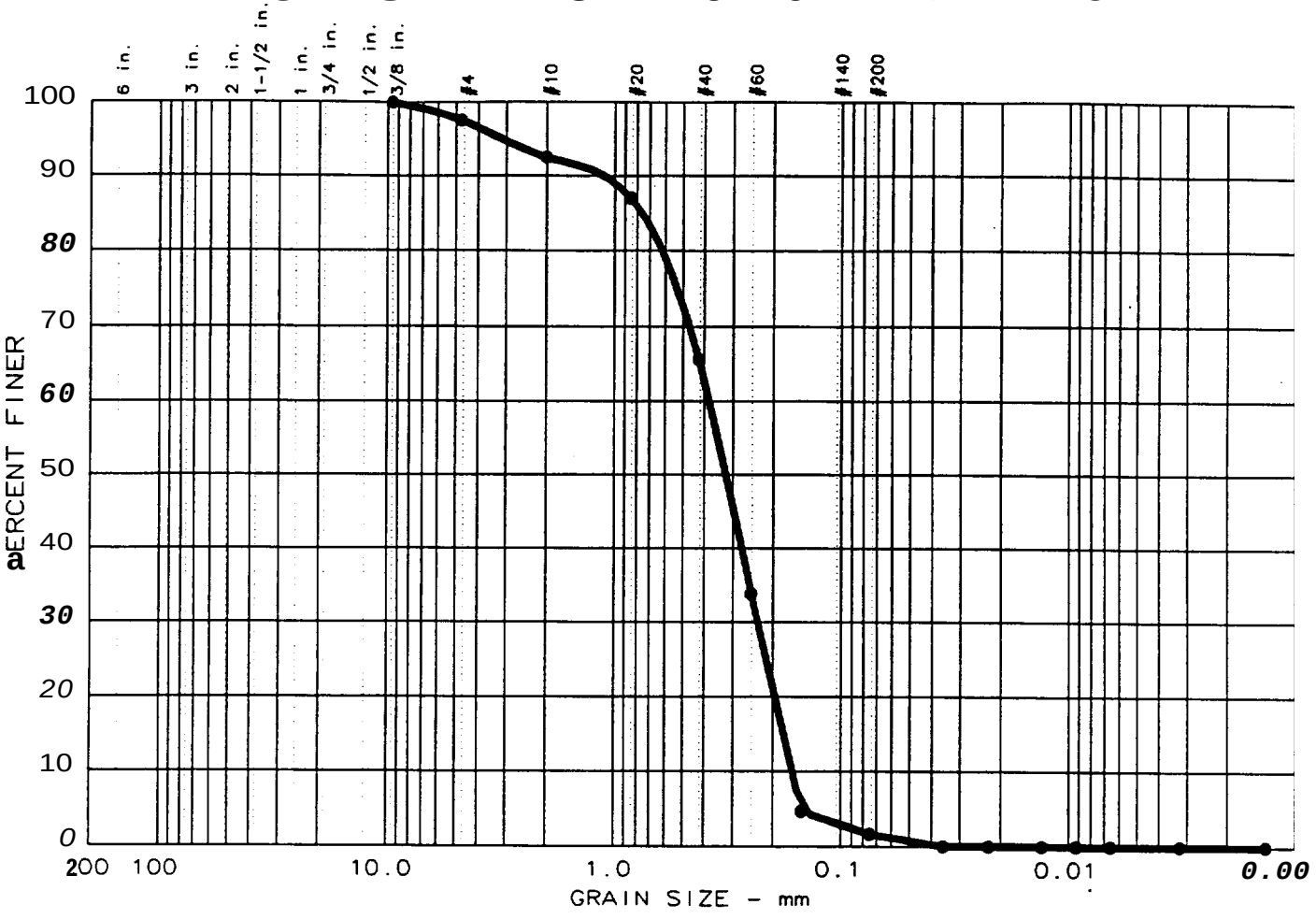
| Elapsed time, min | Temp, deg C | Actual reading | Corrected reading | K | Rm | Eff. depth | Diameter mm | Percent finer |
|---|---|---|---|---|---|---|---|---|
| 2.0 | 23.6 | 8.0 | 2.8 | 0.0130 | 8.0 | 15.0 | 0.0356 | 0.0 |
| 5.0 | 23.5 | 8.0 | 2.8 | 0.0130 | 8.0 | 15.0 | 0.0226 | 0.0 |
| 15.0 | 23.2 | 8.0 | 2.7 | 0.0131 | 8.0 | 15.0 | 0.0131 | 0.0 |
| 30.0 | 23.2 | 7.5 | 2.2 | 0.0131 | 7.5 | 15.1 | 0.0093 | 0.0 |
| 60.0 | 23.2 | 7.5 | 2.2 | 0.0131 | 7.5 | 15.1 | 0.0066 | 0.0 |
| 250.0 | 23.2 | 7.0 | 1.7 | 0.0131 | 7.0 | 15.1 | 0.0032 | 0.0 |
| 1440.0 | 22.9 | 7.0 | 1.6 | 0.0131 | 7.0 | 15.1 | 0.0013 | 0.0 |

Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0  % GRAVEL = 2.4  % SAND = 95.9
% FINES = 1.7

D85= 0.75  D60= 0.380  D50= 0.321
D30= 0.2328  D15= 0.17947  D10= 0.16444
Cc = 0.8670  Cu = 2.3121

# PARTICLE SIZE DISTRIBUTION TEST REPORT




| | % +3" | % GRAVEL | % SAND | % SILT | % CLAY | USCS | LL | PI |
|---|---|---|---|---|---|---|---|---|
| ● | 0.0 | 2.4 | 95.9 | 1.7 | | (SP) | - - - | - - - |
| | | | | | | | | |
| | | | | | | | | |

| SIEVE inches size | PERCENT FINER ● | | |
|---|---|---|---|
| 0.375 | 100.0 | | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.38 | | |
| $D_{30}$ | 0.23 | | |
| $D_{10}$ | 0.16 | | |
| | COEFFICIENTS | | |
| $C_c$ | 0.87 | | |
| $C_u$ | 2.3 | | |

| SIEVE number size | PERCENT F IER ● | | |
|---|---|---|---|
| 4 | 97.6 | | |
| 10 | 92.5 | | |
| 20 | 87.1 | | |
| 40 | 65.7 | | |
| 60 | 33.9 | | |
| 100 | 4.7 | | |
| 200 | 1.7 | | |

**Sample informotion:**

● 14M0101
MEDIUM TO FINE SAND, TRACE GRAVEL

**Remarks:**
CLIENT: ENSAFE / ALLEN & HOSHALL

**THOMPSON ENGINEERING**

Project No.: P94008
Project: #007000030

Dote: 03/22/94 Data Sheet No. ____

## GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 15

Date: 03/22/94
Project No.: P94008
Project: #007000030

### Sample Data

Location of Sample: 14M0201
Sample Description 1: MEDIUM TO FINE SAND
Sample Description 2:
USCS Class: (SP) Liquid limit: - - - Plasticity index: - - -

### Notes

Remarks: CLIENT: ENSAFE / ALLEN & HOSHALL

Data Sheet No. :

### Mechanical Analysis Data

| | Initial | After wash |
|---|---|---|
| Dry sample and tare= | 100.00 | 98.86 |
| Tare = | 0.00 | 0.00 |
| Dry sample weight = | 100.00 | 98.86 |

Minus #200 from wash= 1.1 %
Tare for cumulative weight retained= 0

| Sieve | Cumul. Wt. retained | Percent finer |
|---|---|---|
| 0.375 inches | 0.00 | 100.0 |
| # 4 | 0.00 | 100.0 |
| # 10 | 0.64 | 99.4 |
| # 20 | 1.51 | 98.5 |
| # 40 | 31.78 | 68.2 |
| # 60 | 85.77 | 14.2 |
| # 100 | 98.55 | 1.5 |
| # 200 | 98.86 | 1.1 |

### Hydrometer Analysis Data

Separation sieve is number 200
Percent -8200 based on complete sample= 1.1
Weight of hydrometer sample: 100
Calculated biased weight= % 8771.92982456
Automatic temperature correction
Composite correction at 20 deg C =-6

Meniscus correction only= 0
Specific gravity of solids= 2.66
Specific gravity correction factor= 0.998

Hydrometer type: 152H  Effective depth L= 16.294964 - 0.164 X Rm

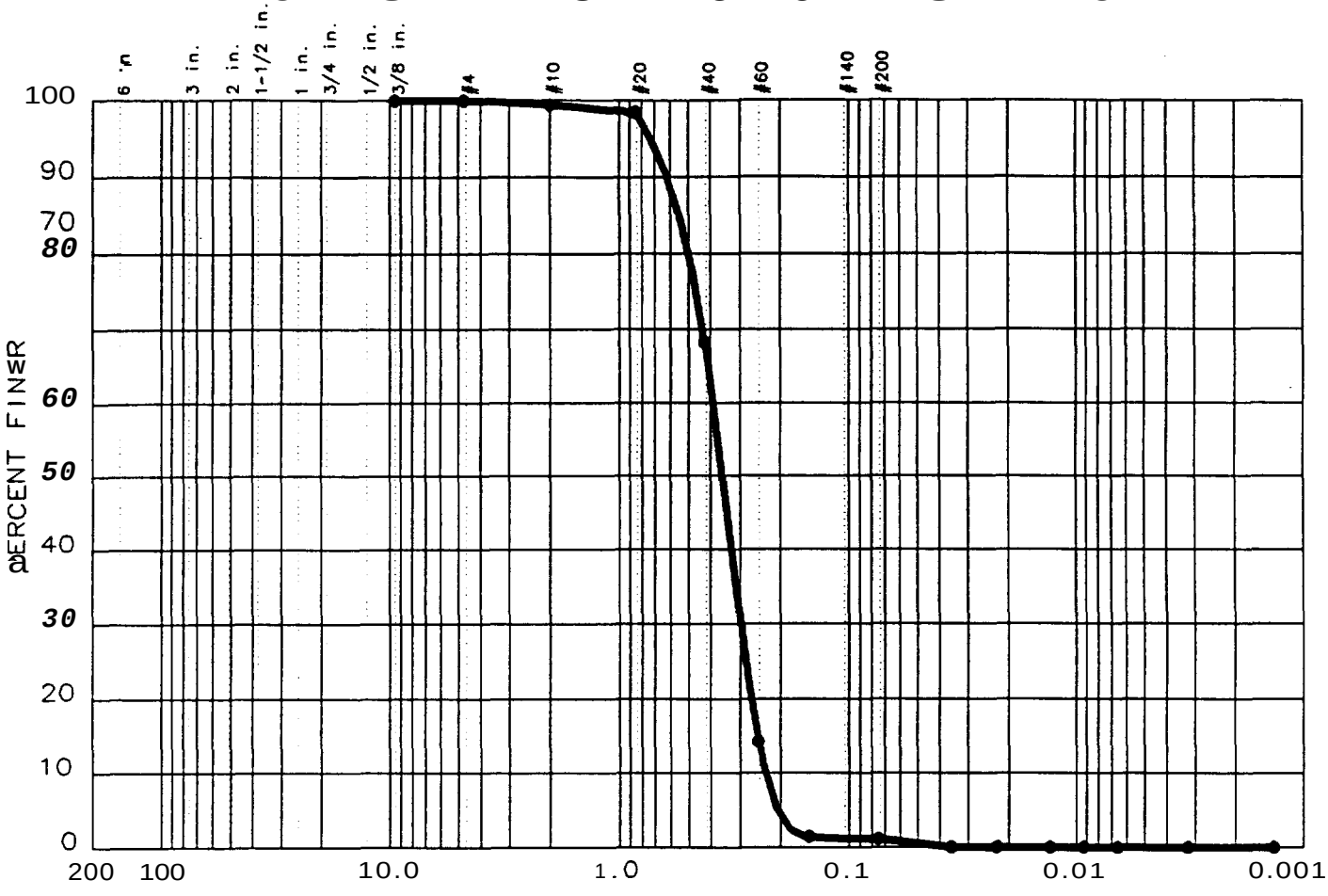
| Elapsed time, min | Temp, deg C | Actual reading | Corrected reading | K | Rm | Eff. depth | Diameter mm | Percent finer |
|---|---|---|---|---|---|---|---|---|
| 2.0 | 23.6 | 8.0 | 2.8 | 0.0130 | 8.0 | 15.0 | 0.0356 | 0.0 |
| 5.0 | 23.5 | 8.0 | 2.8 | 0.0130 | 8.0 | 15.0 | 0.0226 | 0.0 |
| 15.0 | 23.4 | 7.5 | 2.3 | 0.0131 | 7.5 | 15.1 | 0.0131 | 0.0 |
| 30.0 | 23.2 | 7.0 | 1.7 | 0.0131 | 7.0 | 15.1 | 0.0093 | 0.0 |
| 60.0 | 23.2 | 7.0 | 1.7 | 0.0131 | 7.0 | 15.1 | 0.0066 | 0.0 |
| 250.0 | 23.2 | 7.0 | 1.7 | 0.0131 | 7.0 | 15.1 | 0.0032 | 0.0 |
| 1440.0 | 22.9 | 7.0 | 1.6 | 0.0131 | 7.0 | 15.1 | 0.0013 | 0.0 |

Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0  % GRAVEL = 0.0  % SAND = 98.9
% FINES = 1.1

D85= 0.55  D60= 0.391  D50= 0.356
D30= 0.2975  D15= 0.25264  D10= 0.23308
Cc = 0.9716  Cu = 1.6769

# PARTICLE SIZE DISTRIBUTION TEST REPORT




| % +3" | % GRAVEL | % SAND | % SILT | % CLAY | USCS | LL | PI |
|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 98.9 | 1.1 | | (SP) | - - - | - - - |

| SIEVE inches size | PERCENT FINER |
|---|---|
| 0.375 | 100.0 |

| GRAIN SIZE |
|---|
| 0.391 |
| 0.30 |
| 0.23 |

| COEFFICIENTS | |
|---|---|
| $C_c$ | 0.97 |
| $C_u$ | 1.7 |

| SIEVE number size | PERCENT FINER |
|---|---|
| 4 | 100.0 |
| 10 | 99.4 |
| 20 | 98.5 |
| 40 | 68.2 |
| 60 | 14.2 |
| 100 | 1.5 |
| 200 | 1.1 |

Sample information:
14M020
MEDIUM TO FINE SAND

Remarks:
CLIENT: ENSAFE / ALLEN & HOSHALL

**THOMPSON ENGINEERING**

Project No.: P94008
Project: #007000030

Date: 03/22/94

Data Sheet No. ____

**SL SAVANNAH LABORATORIES**
**& ENVIRONMENTAL SERVICES. INC.**

900 Lakeside Drive • Mobile. Alabama 36693-5118 • (205) 666-6633 • Fax (205) 666-6696

LOG NO: M4-16763

Received: 06 DEC 94

Mr. Earl Austin
EnSafe/Allen & Hoshall
P.O. Box 341315
Memphis, TN 38134

Purchase Order: #E-0148/94

Project: N0070C0030
Sampled By: Client

REPORT OF RESULTS



| LOG NO | SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES | DATE SAMPLED | SDG# |
|---|---|---|---|
| 16763-1 | 014M000201 | 12-05-94 | EAH027 |

| PARAMETER | 16763-1 | | |
|---|---|---|---|
| Heterotrophic Plate Count (SM 907A) | | | |
| Standard Place Count, No/g | 17000 | | |
| Date Analyzed | 12·12.94 | | |
| Analyst | CE | | |
| Total Phosphorus (EPA 365.4) | | | |
| Phosphorus, Total, mg/kg dw | 620 | | |
| Sample Preparation | 12.15.94 | | |
| Date Analyzed | 12.16.94 | | |
| Analyst | BB | | |
| Nitrate as N (EPA 353.2) | | | |
| Nitrate-N, mg/kg dw | <5.0 | | |
| Sample Preparation | 12.09.94 | | |
| Date Analyzed | 12.09.94 | | |
| Analyst | BB | | |
| Total Kjeldahl Nitrogen as N (351.2) | | | |
| Kjeldahl Nitrogen-N, mg/kg dw | 2300 | | |
| Sample Preparation | 12.15.94 | | |
| Date Analyzed | 12.16.94 | | |
| Analyst | BB | | |
| Total Organic Carbon (EPA 615.1) | | | |
| Organic Carbon, mg/kg dw | 3200 | | |
| Sample Preparation | 12.13.94 | | |
| Date Analyzed | 12.14.94 | | |
| Analyst | AKC | | |

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

900 Lakeside Drive • Mobile, Alabama 36693.5118 • (205) 666.6633 • Fax (205) 666-6696

LOG NO: M4-16763

Received: 06 DEC 94

Mr. Earl Austin
EnSafe/Allen & Hoshall
P.O. Box 341315
Memphis, TN 36136

Purchase Order: #E-0148/94

Project: N0070C0030
Sampled By: Client

REPORT OF RESULTS



| LOG NO | SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES | DATE SAMPLED | SDG# |
|---|---|---|---|
| 16763-1 | 014M000201 | 12-05-94 | EAH027 |

| PARAMETER | 16763-1 |
|---|---|
| Cation Exchange Capacity (EPA 9081) | |
| Cation Exchange Capacity, mEq/100g | 27 |
| Date Extracted | 12.19.94 |
| Date Analyzed | 12.21.94 |
| Analyst | EO |

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES. INC.

900 Lakeside Drive • Mobile. Alabama 36693-5118 • (205) 666-6633 • fax (205) 666-6696

LOG NO: M4-16763A

Received:. 06 DEC 96

Mr. Earl Austin
EnSafe/Allen & Hoshall
P.O. Box 341315
Memphis, TN 38134

Purchase Order: #E-0148/94

Project: N0070C0030
Sampled By: Client

REPORT OF RESULTS



| LOG NO | SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES | DATE SAMPLED |
|---|---|---|
| 16763A-1 | 014M000201 | 12-05-94 |

| PARAMETER | 16763A-1 |
|---|---|
| Grain Size (ASTM D421/422/1140) | |
| % Passing sieve No.4 | * |

*See attached Thompson Engineering test report.

Michele H. Lersch

Michele H. Lersch

Final Page Of Report

## GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 1

ate: 12/15/94
oject No.: P94082
oject: SAVANNAH #: M4-16763A

### Sample Data

Location of Sample: 014 M000201
Sample Description 1: SILT, TRACE SAND
Sample Description 2: - - -
USCS Class: - - - Liquid limit: - - Plasticity index: - -

### Notes

Remarks: CLIENT: SAVANNAH LABORATORIES

Data Sheet No. : 1

### Mechanical Analysis Data

| | Initial | After wash |
|---|---|---|
| Dry sample and tare= | 62.37 | 2.42 |
| Tare = | 0.00 | 0.00 |
| Dry sample weight = | 62.37 | 2.42 |

Minus #200 from wash= 96.1 %
are for cumulative weight retained= 0

| Sieve | Cumul. Wt. retained | Percent finer |
|---|---|---|
| 0.375 inches | 0.00 | 100.0 |
| # 4 | 0.00 | 100.0 |
| # 10 | 0.00 | 100.0 |
| # 20 | 0.05 | 99.9 |
| # 40 | 0.18 | 99.7 |
| # 60 | 0.78 | 98.7 |
| # 100 | 1.56 | 97.5 |
| # 200 | 2.42 | 96.1 |

### Hydrometer Analysis Data

Separation sieve is number io
Percent -# 10 based on complete sample= 100.0
Weight of hydrometer sample: 62.37
Calculated biased weight= 62.37
Table of composite correction values:

| Temp, deg C: | 21.7 | 22.3 |
|---|---|---|
| Comp. corr: | - 7.0 | - 7.0 |

16763A

Meniscus correction only= 0
Specific gravity of solids= 2.66
Specific gravity correction factor= 0.998
Hydrometer type: 152H  Effective depth L= 16.294964 - 0.164 X Rm

| Elapsed time, min | Temp, deg C | Actual reading | Corrected reading | K | Rm | Eff. depth | Diameter mm | Percent finer |
|---|---|---|---|---|---|---|---|---|
| 2.0 | 22.3 | 38.0 | 31.0 | 0.0132 | 38.0 | 10.1 | 0.0297 | 49.6 |
| 5.0 | 22.3 | 35.0 | 20.0 | 0.0132 | 35.0 | 10.6 | 0.0192 | 44.8 |
| 15.0 | 22.3 | 16.0 | 9.0 | 0.0132 | 16.0 | 13.7 | 0.0126 | 14.4 |
| 30.0 | 22.3 | 14.0 | 7.0 | 0.0132 | 14.0' | 14.0 | 0.0090 | 11.2 |
| 60.0 | 22.3 | 14.0 | 7.0 | 0.0132 | 14.0 | 14.0 | 0.0064 | 11.2 |
| 250.0 | 21.7 | 13.5 | 6.5 | 0.0133 | 13.5 | 14.1 | 0.0032 | 10.4 |
| 1440.0 | 21.7 | 13.0 | 6.0 | 0.0133 | 13.0 | 14.2 | 0.0013 | 9.6 |

## Fractional Components

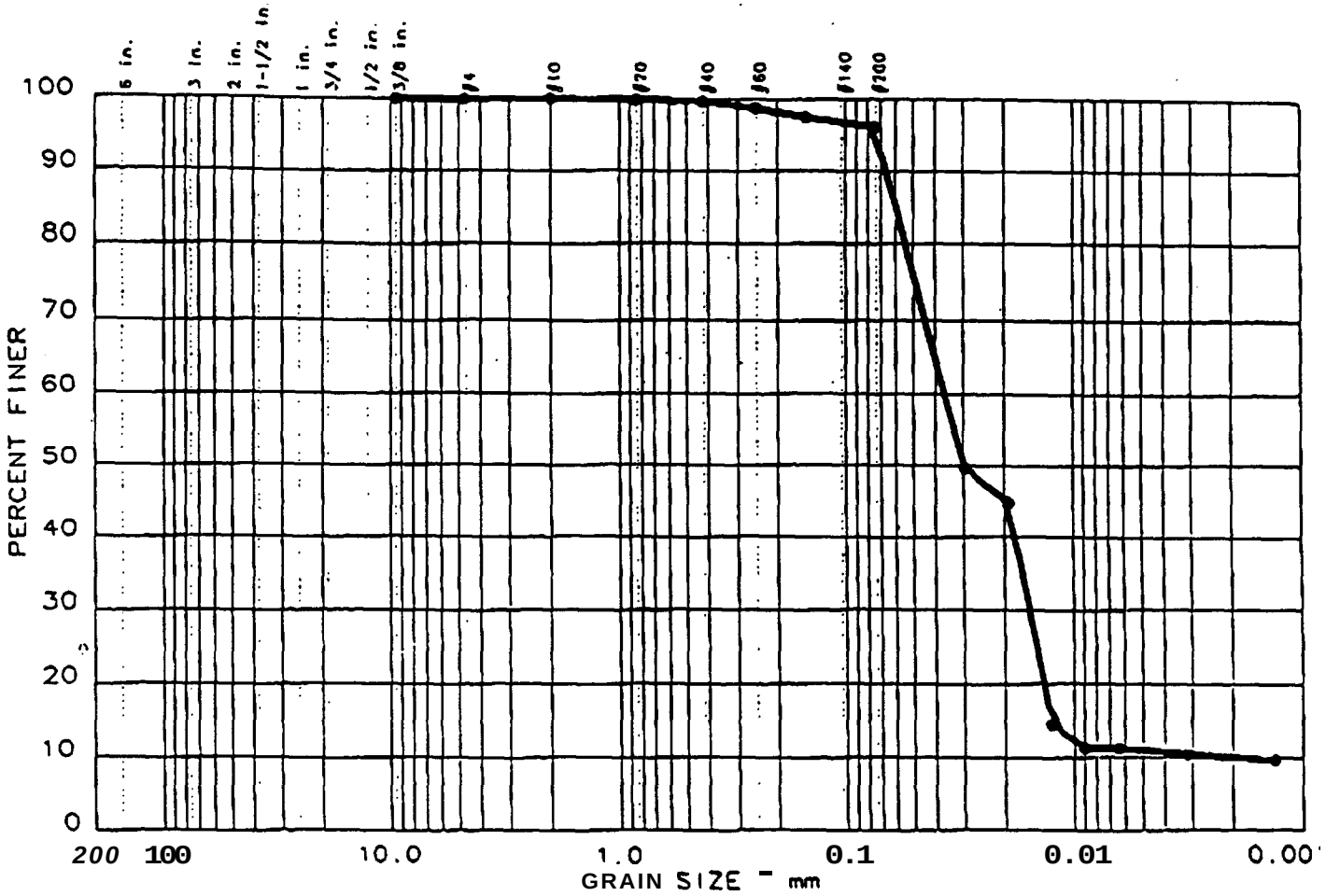
Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0  % GRAVEL = 0.0  % SAND = 3.9
% SILT = 86.1  % CLAY = 10.0

D85= 0.06  D60= 0.036  D50= 0.030
D30= 0.0157  D15= 0.01273  D10= 0.00178
Cc = 3.7820  Cu = 20.5246

Leroy Barber

THOMPSON ENGINEERING TESTING. INC.
MATERIALS ENGINEERING LABORATORY

# PARTICLE SIZE DISTRIBUTION TEST REPORT




| Test | % +3" | % GRAVEL | % SAND | % SILT | % CLAY | USCS | LL | PI |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.0 | 3.9 | 86.1 | 10.0 | - - - | - - | - - |
| | | | | | | | | |
| | | | | | | | | |

| SIEVE inches size | PERCENT FINER ● | | |
|---|---|---|---|
| 0.375 | 100.0 | | |
| | GRAIN SIZE | | |
| $D_{60}$ | | | |
| $D_{30}$ | 0.02 | | |
| $D_{10}$ | 0.00 | | |
| | COEFFICIENTS | | |
| $C_c$ | 3.78 | | |
| $C_u$ | 20.5 | | |

| SIEVE number size | PERCENT FINER ● |
|---|---|
| 4 | 100.0 |
| 10 | 100.0 |
| 20 | 99.9 |
| 40 | 99.7 |
| 60 | 98.7 |
| 100 | 97.5 |
| 200 | 96.1 |

Sample information:
● 014 M000201
SILT, TRACE SAND
- - -

Remarks:
CLIENT: SAVANNAH LABORATORIES

**THOMPSON ENGINEERING**

Project No.: P94082
Project: SAVANNAH #: M4-16763A
Date: 12/15/94 Oota Sheet No. 1

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

900 Lakeside Drive • Mobile, Alabama 36693-5118 • (205) 666-6633 • Fax (205) 666-6696

LOG NO: M4-16979

Received: 14 DEC 94

Mr. Earl Austin
EnSafe/Allen & Hoshall
P.O. Box 341315
Memphis, IN 38134

Purchase Order: E-0148/94

Project: N0070C0030
Sampled By: Client

REPORT OF RESULTS



| LOG NO | SAMPLE DESCRIPTION . SOLID OR SEMISOLID SAMPLES | DATE SAMPLED | SDG# |
|---|---|---|---|
| 16979-1 | 014M000901 | 12-13-94 | EAH027 |

| PARAMETER | 16979-1 |
|---|---|
| Heterotrophic Plate Count (SM 907A) | |
| Standard Plate Count, No/g | 4400000 |
| Date Analyzed | 12.14.94 |
| Analyst | CE |
| Total Phosphorus (EPA 365.4) | |
| Phosphorus, Total, mg/kg dw | 890 |
| Sample Preparation | 12.21.94 |
| Date Analyzed | 12.22.94 |
| Analyst | BB |
| Nitrate as N (EPA 353.2) | |
| Nitrate-N, mg/kg dw | 6.2 |
| Sample Preparation | 12.20.94 |
| Date Analyzed | 12.20.94 |
| Analyst | BB |
| Total Kjeldahl Nitrogen as N (351.2) | |
| Kjeldahl Nitrogen-N, mg/kg dw | 3100 |
| Sample Preparation | 12.21.94 |
| Date Analyzed | 12.22.94 |
| Analyst | BB |
| Total Organic Carbon (EPA 415.1) | |
| Organic Carbon, mg/kg dw | 3400 |
| Sample Preparation | 12.21.94 |
| Date Analyzed | 12.22.94 |
| Analyst | AKC |

SL SAVANNAH LABORATORIES
6 ENVIRONMENTAL SERVICES. INC.

900 Lakeside Drive • Mobile, Alabama 36693-5118 • (205) 666-6633 • Fax (205) 666-6696

LOG NO: M4-16979

Received: 14 DEC 94

Hr. Earl Austin
EnSafe/Allen & Hoshall
P.O. Box 341315
Memphis, TN 38134

Purchase Order: E-0148/94

Project: N0070C0030
Sampled By: Client

REPORT OF RESULTS



| LOG NO | SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES | DATE SAMPLED | SDG# |
|---|---|---|---|
| 16979-1 | 014M000901 | 12-13-94 | EAH027 |

| PARAMETER | 16979-1 |
|---|---|
| Cation Exchange Capacity (EPA 9081) | |
| Cation Exchange Capacity, mEq/100g | 42 |
| Date Extracted | 12.19.94 |
| Date Analyzed | 12.21.94 |
| Analyst | EO |

SL SAVANNAH LABORATORIES
6 ENVIRONMENTAL SERVICES, INC.

900 Lakeside Drive • Mobile, Alabama 36693-5118 • (205) 666-6633 • Fax (205) 666-6696

LOG NO: M4-16979A

Received: 14 DLC 94

Purchase Order: E-0148/94

Mr. Earl Austin
EnSafe/Allen & Hoshall
P.O. Box 341315
Memphis, TN 38134

Project: N0070C0030
Sampled By: Client

REPORT OF RESULTS



| LOG NO | SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES | DATE SAMPLED |
|---|---|---|
| 16979A-1 | 014M000901 | 12-13-94 |

| PARAMETER | 16979A-1 |
|---|---|
| Grain Size (ASTM D421/422/1140) | |
| % Passing sieve No.4 | * |

* see attached Thompson Engineering test report.

Michele H. Lersch

Michele H. Lersch

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 1

ate: 01/03/95
roject No.: P94085
.oject: SAVANNAH #: M4 - 16979A

## Sample Data

Location of Sample: 019M000901
Sample Description 1: CLAY, LITTLE SAND
Sample Description 2:
USCS Class: - - - Liquid limit: - - Plasticity index: - -

## Notes

Remarks: CLIENT: SAVANNAH LABORATORIES

Data Sheet No.: 1

## Mechanical Analysis Data

| | Initial | After wash |
|---|---|---|
| Dry sample and tare= | 52.19 | 6.46 |
| Tare = | 0.00 | 0.00 |
| Dry sample weight = | 52.19 | 6.46 |

Minus #200 from wash= 87.6 %
are for cumulative weight retained= 0

| Sieve | Cumul. Wt. retained | Percent finer |
|---|---|---|
| 0.375 inches | 0.00 | 100.0 |
| # 4 | 0.00 | 100.0 |
| # 10 | 0.00 | 100.0 |
| # 20 | 0.01 | 100.0 |
| # 40 | 0.33 | 99.4 |
| # 60 | 1.92 | 96.3 |
| # 100 | 5.28 | 89.9 |
| # 200 | 6.46 | 87.6 |

## Hydrometer Analysis Data

Separation sieve is number io
Percent -# 10 based on complete sample= 100.0
Weight of hydrometer sample: 52.19
Calculated biased weight= 52.19
Table of composite correction values:

| | | |
|---|---|---|
| Temp, deg C: | 21.4 | 22.8 |
| Comp. corr: | - 7.0 | - 7.0 |

M4-16979A

Meniscus correction only= 0
Specific gravity of solids= 2.66
Specific gravity correction factor= 0.998
Hydrometer type: 152H  Effective depth L= 16.294964 - 0.164 x Rm

| Elapsed time, min | Temp, deg C | Actual. reading | Corrected reading | K' | Rm | Eff. depth | Diameter mm | Percent finer |
|---|---|---|---|---|---|---|---|---|
| 2.0 | 22-2 | 44.0 | 32.0 | 0.0132 | 44.0 | 9.1 | 0.02.82 | 70.7 |
| 5.0 | 22.2 | 42.0' | 35.0 | 0.0132 | 42.0 | 9.4 | 0.0182 | 66.9 |
| 15.0 | 22.3 | 38.0 | 31.0 | 0.0132 | 38.0 | 10.1 | 0.0108 | 59.3 |
| 30.0 | 22.5 | 36.0 | 29.0 | 0.0132 | 36.0 | 10.4 | 0.0078' | 55.4 |
| 60.0 | 22.7 | 33.0 | 26.0 | 0.0132 | 33'.0 | 10.9 | 0.0056 | 49.7 |
| 250.0 | 22.8 | 28.0 | 21.0' | U.0131 | 28.0 | 11.7 | 0.0028 | 40.1 |
| 1440.0 | 21.4 | 23.0 | 16.0 | 0.0134 | 23-0 | 12.5 | 0.0012 | 30.6 |

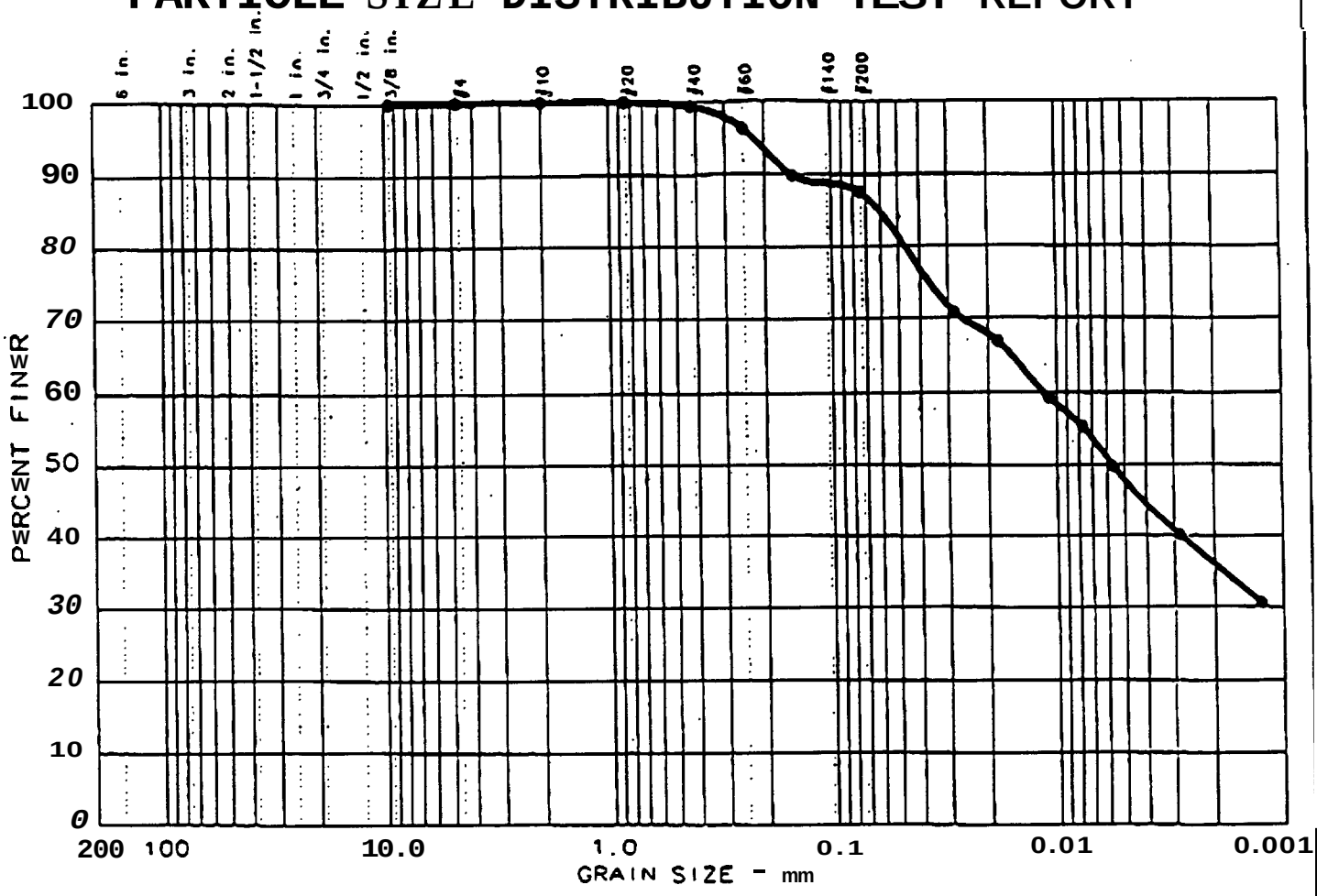
Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0  % GRAVEL = 0.0  % SAND = 12.4
% SILT = 39.9  % CLAY = 47.7

D85= 0.06  D60= 0.011  D50= 0.006

Leroy Bailey
THOMPSON ENGINEERING TESTING, INC.
MATERIALS ENGINEERING LABORATORY

# PARTICLE SIZE DISTRIBUTION TEST REPORT




| | Test | % +3" | % GRAVEL | % SAND | % SILT | % CLAY | USCS | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.0 | 0.0 | 12.4 | 39.9 | 47.7 | - - - | - - | - - |
| | | | | | | | | | |
| | | | | | | | | | |

| SIEVE inches size | PERCENT FINER ● | | |
|---|---|---|---|
| 0.375 | 100.0 | | |
| GRAIN SIZE | | | |
| $D_{60}$ | | | |
| $D_{30}$ | | | |
| $D_{10}$ | | | |
| COEFFICIENTS | | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ● | | |
|---|---|---|---|
| 4 | 100.0 | | |
| 10 | 100.0 | | |
| 20 | 100.0 | | |
| 40 | 99.4 | | |
| 60 | 96.3 | | |
| 100 | 89.9 | | |
| 200 | 67.6 | | |

Sample information:
● 01 M000901
CLAY. LITTLE SAND

Remarks:
CLIENT: SAVANNAH LABORATORIES

**THOMPSON ENGINEERING**

Project No.: P94085
Project: SAVANNAH #: M4 - 16979A

Date: 01/03/95 Data Sheet No. 1

**SL SAVANNAH LABORATORIES**
**& ENVIRONMENTAL SERVICES. INC.**

900 Lakeside Drive • Mobile, Alabama 36693-5118 • (205) 666-6633 • Fax (205) 666-6696

LOG NO: M4-16977

Received: 14 DEC 96

Mr. Earl Austin
EnSafe/Allen & Hoshall
P.O. Box 341315
Memphis, TN 38134

Purchase Order: E-0148/94

Project: N0070C0030
Sampled By: P. Hardy

REPORT OF RESULTS



| LOG NO | SAMPLE DESCRIPTION , LIQUID SAMPLES | DATE SAMPLED | SDG# |
|---|---|---|---|
| 16977-1 | 014W000701 | 12-13-94 | EAH028 |
| 16977-2 | 014W000801 | 12-13-94 | EAH028 |

| PARAMETER | 16977-1 | 16977-2 |
|---|---|---|
| Biochemical Oxygen Demand (SM507) | | |
| 5 Day BOD (SM 507), mg/l | 14 | 44 |
| Date Analyzed | 12.16.94 | 12.19.94* |
| Analyst | CC | CC |
| Total Suspended Solids (EPA 160.2) | | |
| TSS (EPA 160.2), mg/l | 93 | 80 |
| Date Analyzed | 12.19.94 | 12.19.94 |
| Analyst | CE | CE |
| Total Alkalinity as CaCO3 (EPA 310.1) | | |
| Alkalinity as CaCO3, mg/l | 150 | 130 |
| Date Analyzed | 12.16.94 | 12.16.94 |
| Analyst | JC | JC |
| Nitrate as N (EPA 353.2) | | |
| Nitrate-N, mg/l | 12 | 0.31 |
| Date Analyzed | 12.15.94 | 12.15.94 |
| Analyst | BB | BB |
| Chemical Oxygen Demand (SM508) | | |
| Chemical Oxygen Demand, mg/l | 230 | 310 |
| Date Analyzed | 12.lS.94 | 12.15.94 |
| Analyst | AKC | AKC |
| Total Phosphorus (EPA 365.4) | | |
| Phosphorus, Total, mg/l | 0.93 | 3.3 |
| Sample Preparation | 12.23..94 | 12.21.94 |
| Date Analyzed | 12.22.94 | 12.22.94 |
| Analyst | BB | BB |

SL SAVANNAH LABORATORIES
8 ENVIRONMENTAL SERVICES. INC.

900 Lakeside Drive • Mobile. Alabama 36693-5116 • (205) 666.6633 • Fax (205) 666-6696

LOG NO: M4-16977

Received: 14 DEC 96

Mr. Earl Austin
EnSafe/Allen & Hoshall
P.O. Box 3'41315
Memphis. TP 38134

Purchase Order: E-0148/94

Project: N0070C0030
Sampled By: P. Hardy

REPORT OF RESULTS



| LOG NO | SAMPLE DESCRIPTION , LIQUID SAMPLES | DATE SAMPLED | SDG# |
|---|---|---|---|
| 16977-1 | 014W000701 | 12-13-94 | EAH028 |
| 16977-2 | 014W000801 | 12-13-94 | EAH028 |

| PARAMETER | 16977-1 | 16977-2 |
|---|---|---|
| Total Kjeldahl Nitrogen as N (351.2) | | |
| Kjeldahl Nitrogen-N, mg/1 | 5.7 | 6.1 |
| Sample Preparation | 12.21.94 | 12.21.94 |
| Date Analyzed | 12.22.94 | 12.22.94 |
| Ana1yst | BB | BB |
| Hardness (SM314A) | | |
| Hardness, as CaCO3, mg/l | 1100 | 740 |
| Sample Preparation | 12.16.94 | 12.16.94 |
| Date Analyzed | 12.19.94 | 12.19.94 |
| Analyst | EO | EO |
| Heterotrophic Plate Count (SM 907A) | | |
| Standard Plate Count, No ml | 60 | 280 |
| Date Analyzed | 12.16.94 | 12.14.94 |
| Analyst | CE | CE |

*See enclosed non-conformance report.

# Appendix C

## TAL/TCL Analytical Report

**Site 14**

**Phase I Groundwater Samples**

DATALCP3
05/03/95

# NAS PENSACOLA SITE 14
## Groundwater Samples
## Phase I



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-G-0001-00 | | 014-G-0002-00 | | 014-H-0002-00 D | | | |
| | ORIGINAL ID → | 14GS01 | | 14GS02 | | 14GS02D | | | |
| | LAB SAMPLE ID → | 39431-003 | | 39419-006 | | 39419-007 | | | |
| | ID FROM REPORT → | 14GS01 | | 14GS02 | | 14GS02D | | | |
| | SAMPLE DATE → | 02/24/94 | | 02/23/94 | | 32/23/94 | | | |
| | DATE EXTRACTED → | | | | | | | | |
| | DATE ANALYZED → | | | | | | | | |
| | MATRIX → | Uater | | Uater | | Water | | | |
| | UNITS → | UG/L | | UG/L | | | | | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | CT519 | VAL | | |
| METAL | Aluminum | 2330. | J | 202. | J | 301. | J | | |
| METAL | Antimony | 15.6 | U | 15.6 | U | 15.6 | U | | |
| METAL | Arsenic | 18.8 | J | 6.7 | J | 7. | J | | |
| METAL | Barium | 8.6 | U | 16.2 | U | 15.5 | U | | |
| METAL | Beryllium | 0.4 | U | 0.4 | U | 0.4 | U | | |
| METAL | Cadmium | 2.1 | U | 2.1 | U | 2.1 | U | | |
| METAL | Calcium | 105000. | | 176000. | | 169000. | | | |
| METAL | Chromium | 10. | | 2.3 | U | 3.3 | | | |
| METAL | Cobalt | 3.2 | U | 3.2 | U | 3.2 | U | | |
| METAL | Copper | 2.6 | U | 2.6 | U | 2.6 | U | | |
| METAL | Cyanide | 1. | U | 1. | U | 1. | UJ | | |
| METAL | Iron | 3990. | J | 1660. | J | 1640. | J | | |
| METAL | Lead | 3.4 | U | 0.7 | U | 0.7 | U | | |
| METAL | Magnesium | 158000. | | 283000. | | 271000. | | | |
| METAL | Manganese | 261. | J | 314. | J | 300. | J | | |
| METAL | Mercury | 0.1 | U | 0.1 | U | 0.1 | U | | |
| METAL | Nickcl | 10.4 | U | 10.4 | U | 10.4 | U | | |
| METAL | Potassium | 62100. | | 105000. | | 99600. | | | |
| METAL | Selenium | 1.7 | UJ | 1.7 | UJ | 1.7 | UJ | | |
| METAL | Silvcr | 3.6 | UJ | 3.6 | UJ | 3.6 | UJ | | |
| METAL | sodium | 1670000. | J | 2820000. | J | 2670000. | J | | |
| METAL | Thallium | 2.8 | U | 2.8 | U | 3.1 | | | |
| METAL | Vanadium | 13.6 | U | 10.2 | U | 10.6 | U | | |
| METAL | Zinc | 6.7 | UJ | 1.7 | UJ | 1.7 | U | | |

# NAS PENSACOLA SITE 14
## Groundwater Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-G-0001-00 | | 014-G-0002-00 | | 014-H-0002-00 D | | | | | | | |
| | ORIGINAL ID → | 14GS01 | | 14GS02 | | 14GS02D | | | | | | | |
| | LAB SAMPLE ID → | 39431-1 | | 39419-1 | | 39419-2 | | | | | | | |
| | ID FROM REPORT → | 14GS01 | | 14GS02 | | 14GS02D | | | | | | | |
| | SAMPLE DATE → | 02/24/94 | | 02/23/94 | | 02/23/94 | | | | | | | |
| | DATE EXTRACTED → | 02/28/94 | | 02/28/94 | | 02/20/94 | | | | | | | |
| | DATE ANALYZED → | 03/04/94 | | 03/04/94 | | 03/04/94 | | | | | | | |
| | MATRIX → | Water | | Water | | Water | | | | | | | |
| | UNITS → | UG/L | | UG/L | | UG/L | | | | | | | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | CT519 | VAL | | | | | | |
| PEST | 4,4'-DDD | 0.12 | UJ | 0.12 | UJ | 0.12 | UJ | | | | | | |
| PEST | 4,4'-DDE | 0.12 | UJ | 0.12 | UJ | 0.12 | UJ | | | | | | |
| PEST | 4,4'-DDT | 0.12 | UJ | 0.12 | UJ | 0.12 | UJ | | | | | | |
| PEST | Aldrin | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |
| PEST | Aroclor-1016 | 1.2 | UJ | 1.2 | UJ | 1.2 | UJ | | | | | | |
| PEST | Aroclor-1221 | 2.4 | UJ | 2.5 | UJ | 2.5 | UJ | | | | | | |
| PEST | Aroclor-1232 | 1.2 | UJ | 1.2 | UJ | 1.2 | UJ | | | | | | |
| PEST | Aroclor-1242 | 1.2 | UJ | 1.2 | UJ | 1.2 | UJ | | | | | | |
| PEST | Aroclor-1248 | 1.2 | UJ | 1.2 | UJ | 1.2 | UJ | | | | | | |
| PEST | Aroclor-1254 | 1.2 | UJ | 1.2 | UJ | 1.2 | UJ | | | | | | |
| PEST | Aroclor-1260 | 1.2 | UJ | 1.2 | UJ | 1.2 | UJ | | | | | | |
| PEST | Dieldrin | 0.12 | UJ | 0.12 | UJ | 0.12 | UJ | | | | | | |
| PEST | Endosulfan I | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |
| PEST | Endosulfan II | 0.12 | UJ | 0.12 | UJ | 0.12 | UJ | | | | | | |
| PEST | Endosulfan sulfate | 0.12 | UJ | 0.12 | UJ | 0.12 | UJ | | | | | | |
| PEST | Endrin | 0.12 | UJ | 0.12 | UJ | 0.12 | UJ | | | | | | |
| PEST | Endrin aldehyde | 0.12 | UJ | 0.12 | UJ | 0.12 | UJ | | | | | | |
| PEST | Endrin ketone | 0.12 | UJ | 0.12 | UJ | 0.12 | UJ | | | | | | |
| PEST | Heptachlor | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |
| PEST | Heptachlor epoxide | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |
| PEST | Methoxychlor | 0.59 | UJ | 0.62 | UJ | 0.62 | UJ | | | | | | |
| PEST | Toxaphene | 5.9 | UJ | 6.2 | UJ | 6.2 | UJ | | | | | | |
| PEST | alpha-BHC | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |
| PEST | alpha-Chlordane | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |
| PEST | beta-BHC | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |
| PEST | delta-BHC | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |
| PEST | gamma-BHC (Lindane) | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |
| PEST | gamma-Chlordane | 0.059 | UJ | 0.062 | UJ | 0.062 | UJ | | | | | | |

# NAS PENSACOLA SITE 14
## Groundwater Samples
## Phase I



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-G-0001-00 | | 014-G-0002-00 | | 014-H-0002-00 D | | | |
| | ORIGINAL ID → | 14GS01 | | 14GS02 | | 14GS02D | | | |
| | LAB SAMPLE ID → | 39431-1 | | 39419-1 | | 39419-2 | | | |
| | ID FROM REPORT → | 14GS01 | | 14GS02 | | 14GS02D | | | |
| | SAMPLE DATE → | 02/24/94 | | 02/23/94 | | 02/23/94 | | | |
| | DATE EXTRACTED → | 02/25/94 | | 02/25/94 | | 02/25/94 | | | |
| | DATE ANALYZED → | 03/09/94 | | 03/09/94 | | 03/09/94 | | | |
| | MATRIX → | Water | | Water | | Water | | | |
| | UNITS → | UG/L | | UG/L | | UG/L | | | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | CT519 | VAL | | |
| SVOA | 1,2,4-Trichlorobenzene | 13. | U | 13. | U | 13. | U | | |
| SVOA | 1,2-Dichlorobenzene | 13. | U | 13. | U | 13. | U | | |
| SVOA | 1,3-Dichlorobenzene | 13. | U | 13. | U | 13. | U | | |
| SVOA | 1,4-Dichlorobenzene | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2,4,5-Trichlorophenol | 33. | U | 31. | U | 32. | U | | |
| SVOA | 2,4,6-Trichlorophenol | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2,4-Dichlorophenol | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2,4-Dimethylphenol | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2,4-Dinitrophenol | 33. | U | 31. | U | 32. | U | | |
| SVOA | 2,4-Dinitrotolume | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2,6-Dinitrotoluene | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2-Chloronaphthalene | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2-Chlorophenol | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2-Methylnaphthalene | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2-Methylphenol (o-Cresol) | 13. | U | 13. | U | 13. | U | | |
| SVOA | 2-Mitroaniline | 33. | U | 31. | U | 32. | U | | |
| SVOA | 2-Mitrophenol | 13. | U | 13. | U | 13. | U | | |
| SVOA | 3,3'-Dichlorobenzidine | 13. | U | 13. | U | 13. | U | | |
| SVOA | 3-Mitroaniline | 33. | U | 31. | U | 32. | U | | |
| SVOA | 4,6-Dinitro-2-methylphenol | 33. | U | 31. | U | 32. | U | | |
| SVOA | 4-Brampheny l-phenyl e ther | 13. | U | 13. | U | 13. | U | | |
| SVOA | 4-Chloro-3-methylphenol | 13. | U | 13. | U | 13. | U | | |
| SVOA | 4-Chloroaniline | 13. | U | 13. | U | 13. | U | | |
| SVOA | 4-Chloropheny 1-phenylether | 13. | U | 13. | U | 13. | U | | |
| SVOA | 4-Methylphenol (p-Cresol) | 13. | U | 13. | U | 13. | U | | |
| SVOA | 4-Nitroaniline | 33. | U | 31. | U | 32. | U | | |
| SVOA | 4-Mitrophenol | 33. | U | 31. | U | 32. | U | | |
| SVOA | Acenaphthene | 13. | U | 13. | U | 13. | U | | |
| SVOA | Acenaphthylene | 13. | U | 13. | U | 13. | U | | |
| SVOA | Anthracene | 13. | U | 13. | U | 13. | U | | |
| SVOA | Benzo(a)anthracene | 13. | U | 13. | U | 13. | U | | |
| SVOA | Benzo(a)pyrene | 13. | U | 13. | U | 13. | U | | |
| SVOA | Benzo(b)flwranthene | 13. | U | 13. | U | 13. | U | | |
| SVOA | Benzo(g,h,i)perylene | 13. | U | 13. | U | 13. | U | | |
| SVOA | Benzo(k)flwranthme | 13. | U | 13. | U | 13. | U | | |
| SVOA | Butylbenzylphthalate | 13. | U | 13. | U | 13. | U | | |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Groundwater Samples
## Phase I



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-G-0001-00 | | 014-G-0002-00 | | 014-H-0002-00 D | |
| | ORIGINAL ID → | 14GS01 | | 14GS02 | | 14GS02D | |
| | LAB SAMPLE ID → | 39431-1 | | 39419-1 | | 39419-2 | |
| | ID FROM REPORT → | 14GS01 | | 14GS02 | | 1465020 | |
| | SAMPLE DATE → | 02/24/94 | | 02/23/94 | | 02/23/94 | |
| | DATE EXTRACTED → | 02/25/94 | | 02/25/94 | | 02/25/94 | |
| | DATE ANALYZED → | 03/09/94 | | 03/09/94 | | 03/09/94 | |
| | MATRIX → | Water | | Water | | Water | |
| | UNITS → | UG/L | | UG/L | | UG/L | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | CT519 | VAL |
| SVOA | Carbazole | 13. | U | 13. | U | 13. | U |
| SVOA | Chryrcnc | 13. | U | 13. | U | 13. | U |
| SVOA | Di-n-butylphthalate | 13. | U | 13. | U | 13. | U |
| SVOA | Di-n-octylphthalatc | 13. | U | 13. | U | 13. | U |
| SVOA | Dibenzo(a, h)anthracenc | 13. | U | 13. | U | 13. | U |
| SVOA | Dibenzofuran | 13. | U | 13. | U | 13. | U |
| SVOA | Diethylphthalatc | 13. | U | 13. | U | 13. | U |
| SVOA | Dimethylphthalate | 13. | U | 13. | U | 13. | U |
| SVOA | Fluoranthene | 13. | U | 13. | U | 13. | U |
| SVOA | Fluorene | 13. | U | 13. | U | 13. | U |
| SVOA | Hexachlorobenzene | 13. | U | 13. | U | 13. | U |
| SVOA | Hexachlorobutadiene | 13. | U | 13. | U | 13. | U |
| SVOA | Hcxachlorocyclopentadiene | 13. | U | 13. | U | 13. | U |
| SVOA | Hexachloroethane | 13. | U | 13. | U | 13. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 13. | U | 13. | U | 13. | U |
| SVOA | Isophorone | 13. | U | 13. | U | 13. | U |
| SVOA | N-Nitroso-di-n-propylamine | 13. | U | 13. | U | 13. | U |
| SVOA | N-Nitrosodiphenyl a dne | 13. | U | 13. | U | 13. | U |
| SVOA | Naphthalene | 13. | U | 13. | U | 13. | U |
| SVOA | Nitrobenzene | 13. | U | 13. | U | 13. | U |
| SVOA | Pentachlorophenol | 33. | U | 31. | U | 32. | U |
| SVOA | Phenanthrene | 13. | U | 13. | U | 13. | U |
| SVOA | Phenol | 13. | U | 13. | U | 13. | U |
| SVOA | Pyrene | 13. | U | 13. | U | 13. | U |
| SVOA | bis(2-Chloroethoxy)methane | 13. | U | 13. | U | 13. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 13. | U | 13. | U | 13. | U |
| SVOA | bis(2-Chloroethyl)ether | 13. | U | 13. | U | 13. | U |
| SVOA | 22'-oxybis(1-Chloropropane) | 13. | U | 13. | U | 13. | U |

# NAS PENSACOLA SITE 14
## Groundwater Samples
## Phase I



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-G-0001-00 | | 014-G-0002-00 | | 014-H-0002-00 D | | | | | |
| | ORIGINAL ID → | 14GS01 | | 14GS02 | | 14GS02D | | | | | |
| | LAB SAMPLE ID → | 39431-7 | | 39419-16 | | 39419-17 | | | | | |
| | ID FROM REPORT → | 14GS01 | | 14GS02 | | 14GS02D | | | | | |
| | SAMPLE DATE → | 02/24/94 | | 02/23/94 | | 02/23/94 | | | | | |
| | DATE EXTRACTED → | | | | | | | | | | |
| | DATE ANALYZED → | 03/03/94 | | 02/28/94 | | 02/28/94 | | | | | |
| | MATRIX → | Uatcr | | Water | | Uatcr | | | | | |
| | UNITS → | UG/L | | UG/L | | UG/L | | | | | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | CT519 | VAL | | | | |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | 10. | U | | | | |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | | | | |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | | | | |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | 10. | U | | | | |
| VOA | 1,1-Dichloroethene | IO. | U | 10. | U | 10. | U | | | | |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | | | | |
| VOA | 1,2-Dichloroethene (total) | 10. | U | 10. | U | 10. | U | | | | |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | | | | |
| VOA | 2-Butanone (MEK) | 10. | U | 10. | U | 10. | U | | | | |
| VOA | 2-Hexanone | IO. | U | 10. | U | 10. | U | | | | |
| VOA | 4-Methyl-2-Pentanone (MIBK) | IO. | U | 10. | U | 10. | U | | | | |
| VOA | Acetone | 10. | U | 58. | U | 22. | U | | | | |
| VOA | Benzene | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Bromodichloromethane | 10. | U | IO. | U | 10. | U | | | | |
| VOA | Bromoform | IO. | U | 10. | U | 10. | U | | | | |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Carbon disulfidc | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Carbon tctrrchlorida | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Chloroethane | IO. | U | 10. | U | IO. | U | | | | |
| VOA | Chloroform | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Chloromethane | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Dibromochloromethane | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Ethylbenzene | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Methylene chloride | IO. | U | 10. | U | 10. | U | | | | |
| VOA | Styrene | 10. | U | 10. | U | 10. | U | | | | |
| VOA | letrachloroethene | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Toluene | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Trichloroethene | 10. | U | 10. | U | 10. | U | | | | |
| VOA | Vinyl chloride | IO. | U | IO. | U | 10. | U | | | | |
| VOA | m+p-Xylenes | 10. | U | 10. | U | 10. | U | | | | |
| VOA | cia-l,3-Dichloropropene | 10. | U | 10. | U | 10. | U | | | | |
| VOA | trans-l,3-Dichloropropene | 10. | U | 10. | U | 10. | U | | | | |

+++ Validation Complete ***

**Site 14**

**Phase I Soil Samples**

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0001-01 | | 014-C-0001-01 D | | 014-S-0001-03 | | 014-C-0001-03 D | | 014-S-0001-05 | | 014-S-0001-07 | |
| ORIGINAL ID → | | 14S0101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| LAB SAMPLE ID → | | 39304-015 | | 39364-005 | | 39304-016 | | 39304-017 | | 39304-018 | | 39304-019 | |
| ID FROM REPORT → | | 1450101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| SAMPLE DATE → | | 02/11/94 | | 02/17/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| DATE EXTRACTED → | | | | | | | | | | | | | |
| DATE ANALYZED → | | | | | | | | | | | | | |
| MATRIX → | | Soil | | Soil | | soil | | Soil | | Soil | | Soil | |
| UNITS → | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | CT514 | VAL | CT516 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| METAL | Aluminum | 724. | J | 59.5 | | 68.5 | J | 68.9 | J | 208. | J | 103. | J |
| METAL | Antimony | 3. | UJ | 3. | U | 2.9 | UJ | 2.9 | UJ | 3.8 | UJ | 2.8 | UJ |
| METAL | Arsenic | 1.3 | | 0.57 | UJ | 0.54 | U | 0.53 | U | 0.74 | | 0.51 | U |
| METAL | Barium | 0.76 | UJ | 0.47 | U | 0.45 | UJ | 0.44 | UJ | 1. | UJ | 0.42 | UJ |
| METAL | Beryllium | 0.08 | UJ | 0.08 | U | 0.07 | UJ | 0.07 | UJ | 0.1 | UJ | 0.07 | UJ |
| METAL | Cadmium | 0.4 | U | 0.41 | U | 0.39 | U | 0.39 | U | 0.51 | U | 0.37 | U |
| METAL | Calcium | 1090. | J | 5550. | | 3120. | J | 1820. | J | 2680. | J | 3540. | J |
| METAL | Chromium | 2. | J | 0.72 | J | 0.92 | J | 1.1 | J | 1.8 | J | 3.5 | J |
| METAL | Cobalt | 0.9 | UJ | 0.62 | U | 0.59 | UJ | 0.59 | UJ | 0.78 | UJ | 0.57 | UJ |
| METAL | Copper | 0.5 | UJ | 0.51 | U | 0.48 | UJ | 0.48 | UJ | 0.64 | UJ | 0.46 | UJ |
| METAL | Cyanide | 0.1 | UJ | 0.11 | UJ | 0.1 | UJ | 0.1 | UJ | 0.08 | UJ | 0.08 | UJ |
| METAL | Iron | 770. | J | 185. | J | 188. | J | 187. | J | 439. | J | 328. | J |
| METAL | Lead | 0.83 | UJ | 0.63 | | 0.54 | UJ | 2.1 | J | 1.3 | UJ | 0.86 | UJ |
| METAL | Magnesium | 30.3 | J | 192. | | 30.2 | J | 24.3 | UJ | 69.3 | J | 85.5 | J |
| METAL | Manganese | 3.2 | | 1.8 | U | 1.6 | U | 1.4 | U | 4.1 | | 3.1 | U |
| METAL | Mercury | 0.03 | U | 0.03 | UJ | 0.04 | U | 0.03 | U | 0.03 | U | 0.03 | U |
| METAL | Nickel | 2. | U | 2. | UJ | 1.9 | U | 1.9 | U | 2.5 | U | 1.8 | U |
| METAL | Potassium | 124. | UJ | 127. | U | 120. | UJ | 119. | UJ | 159. | UJ | 115. | UJ |
| METAL | Selenium | 0.33 | U | 0.33 | U | 0.32 | U | 0.31 | U | 0.42 | U | 0.3 | U |
| METAL | Silver | 0.69 | U | 0.7 | U | 0.67 | U | 0.66 | U | 0.88 | U | 0.64 | U |
| METAL | Sodium | 11.6 | UJ | 1020. | | 36.3 | UJ | 23. | UJ | 37. | UJ | 38.5 | UJ |
| METAL | Thallium | 0.54 | UJ | 0.55 | U | 0.52 | UJ | 0.52 | UJ | 0.69 | UJ | 0.5 | UJ |
| METAL | Vanadium | 1.6 | J | 0.64 | U | 0.61 | UJ | 0.61 | UJ | 0.91 | J | 0.72 | J |
| METAL | Zinc | 1.6 | UJ | 3. | | 0.53 | UJ | 0.66 | UJ | 1.6 | UJ | 0.52 | UJ |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0001-01 | | 014-C-WOI-01 D | | 014-S-OOO1-03 | | 014-C-0001-03 D | | 014-S-0001-05 | | 014-S-0001-07 | |
| ORIGINAL ID → | | 14S0101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| LAB SAMPLE ID → | | 39304-1 | | 39364-2 | | 39304-2 | | 59304-3 | | 39304-4 | | 39304-5 | |
| ID FROM REPORT → | | 14S0101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| SAMPLE DATE → | | 02/11/94 | | 02/17/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| DATE EXTRACTED → | | 02/17/94 | | 02/24/94 | | 02/17/94 | | 32/17/94 | | 02/17/94 | | 02/11/94 | |
| DATE ANALYZED → | | 02/22/94 | | 03/08/94 | | 02/22/94 | | 02/22/94 | | 02/23/94 | | 02/23/94 | |
| MATRIX → | | Soil | | Soil | | soil | | Soil | | Soil | | Soil | |
| WITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT516 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| PEST | 4,4'-DDD | 3.6 | UJ | 4. | UJ | 4. | UJ | 4. | UJ | 4.2 | UJ | 4.1 | UJ |
| PEST | 4,4'-DDE | 3.6 | UJ | 4. | UJ | 4. | UJ | 4. | UJ | 4.2 | UJ | 4.1 | UJ |
| PEST | 4,4'-DDT | 3.6 | UJ | 4. | UJ | 4. | UJ | 4. | UJ | 4.2 | UJ | 4.1 | UJ |
| PEST | Aldrin | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |
| PEST | Aroclor-1016 | 36. | UJ | 40. | UJ | 40. | UJ | 40. | UJ | 42. | UJ | 41. | UJ |
| PEST | Aroclor-1221 | 73. | UJ | 81. | UJ | 82. | UJ | 81. | UJ | 86. | UJ | a3. | UJ |
| PEST | Aroclor-1232 | 36. | UJ | 40. | UJ | 40. | UJ | 40. | UJ | 42. | UJ | 41. | UJ |
| PEST | Aroclor-1242 | 36. | UJ | 40. | UJ | 40. | UJ | 40. | UJ | 42. | UJ | 41. | UJ |
| PEST | Aroclor-1248 | 36. | UJ | 40. | UJ | 40. | UJ | 40. | UJ | 42. | UJ | 41. | UJ |
| PEST | Aroclor-1254 | 36. | UJ | 40. | UJ | 40. | UJ | 40. | UJ | 42. | UJ | 41. | UJ |
| PEST | Aroclor-1260 | 36. | UJ | 40. | UJ | 40. | UJ | 40. | UJ | 42. | UJ | 41. | .UJ |
| PEST | Dialdrin | 3.6 | UJ | 4. | UJ | 4. | UJ | 4. | UJ | 4.2 | UJ | 4.1 | UJ |
| PEST | Endosulfan I | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |
| PEST | Endosulfan II | 3.6 | UJ | 4. | UJ | 4. | UJ | 4. | UJ | 4.2 | UJ | 4.1 | UJ |
| PEST | Endosulfan sulfate | 3.6 | UJ | 4. | UJ | 4. | UJ | 4. | UJ | 4.2 | UJ | 4.1 | UJ |
| PEST | Endrin | 3.6 | UJ | 4. | UJ | 4. | UJ | 4. | UJ | 4.2 | UJ | 4.1 | UJ |
| PEST | Endrin aldehyde | 3.6 | UJ | 4. | UJ | 4. | UJ | 4. | UJ | 4.2 | UJ | 4.1 | UJ |
| PEST | Endrin ketone | 3.6 | UJ | 4. | UJ | 4. | UJ | 4. | UJ | 4.2 | UJ | 4.1 | UJ |
| PEST | Heptachlor | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |
| PEST | Heptachlor epoxide | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |
| PEST | Methoxychlor | 18. | UJ | 21. | UJ | 21. | UJ | 21. | UJ | 22. | UJ | 21. | UJ |
| PEST | Toxaphene | 180. | UJ | 210. | UJ | 210. | UJ | 210. | UJ | 220. | UJ | 210. | UJ |
| PEST | alpha-BHC | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |
| PEST | alpha-Chlordane | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |
| PEST | beta-BHC | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |
| PEST | delta-BHC | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |
| PEST | gamma-BHC (Lindane) | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |
| PEST | gamma-Chlordane | 1.8 | UJ | 2.1 | UJ | 2.1 | UJ | 2.1 | UJ | 2.2 | UJ | 2.1 | UJ |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID ——> | 014-S-0001-07 | | 014-C-0001-01 D | | 014-S-0001-03 | | 014-C-0001-03 D | | 014-S-0001-05 | | 014-S-0001-07 | |
| | ORIGINAL ID ——> | 14S0101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| | LAB SAMPLE ID ——> | 39304-1 | | 39364-2 | | 39304-2 | | 39304-3 | | 39304-4 | | 39304-5 | |
| | ID FROM REPORT ——> | 14S0101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| | SAMPLE DATE ——> | 02/11/94 | | 02/17/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| | DATE EXTRACTED ——> | 02/17/94 | | 02/25/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | |
| | DATE ANALYZED ——> | 02/25/96 | | 03/07/94 | | 02/25/96 | | 02/25/96 | | 02/24/94 | | 02/25/96 | |
| | MATRIX ——> | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ——> | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | 91513 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 360. | U | 400. | U | 400. | U | 400. | U | 620. | U | 410. | U |
| SVOA | 1,2-Dichlorobenzene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 1,3-Dichlorobenzene | 360. | U | 400. | U | 400. | U | 400. | U | 620. | U | 410. | U |
| SVOA | 1,4-Dichlorobenzene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 2,4,5-Trichlorophenol | 870. | U | 980. | U | 970. | U | 970. | U | 1000. | U | 1000. | U |
| SVOA | 2,4,6-Trichlorophenol | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 2,4-Dichlorophenol | 360. | U | 400. | U | 400. | U | 600. | U | 620. | U | 410. | U |
| SVOA | 2,4-Dimethylphenol | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 2,4-Dinitrophenol | 870. | U | 980. | U | 970. | U | 970. | U | 1000. | U | 1000. | U |
| SVOA | 2,4-Dinitrotoluene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 2,6-Dinitrotoluene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 2-Chloronaphthalene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 2-Chlorophenol | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 2-Methylnaphthalene | 360. | U | 400. | U | 400. | U | 400. | U | 620. | U | 410. | U |
| SVOA | 2-Methylphenol (o-Cresol) | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 2-Nitroaniline | 870. | U | 980. | U | 970. | U | 970. | U | 1000. | U | 1000. | U |
| SVOA | 2-Nitrophenol | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 3,3'-Dichlorobenzidine | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 3-Nitroaniline | 870. | U | 980. | U | 970. | U | 970. | U | 1000. | U | 1000. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 870. | U | 980. | U | 970. | U | 970. | U | 1000. | U | 1000. | U |
| SVOA | 4-Bromophenyl-phenylether | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 4-Chloro-3-methylphenol | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 4-Chloroaniline | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 4-Chlorophenyl-phenylether | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 4-Methylphenol (p-Cresol) | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 4-Nitroaniline | 870. | U | 980. | U | 970. | U | 970. | U | 1000. | U | 1000. | U |
| SVOA | 4-Nitrophenol | 870. | U | 980. | U | 970. | U | 970. | U | 1000. | U | 1000. | U |
| SVOA | Acenaphthene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Acenaphthylene | 360. | U | 400. | U | 400. | U | 400. | U | 620. | U | 410. | U |
| SVOA | Anthracene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Benzo(a)anthracene | 360. | U | 400. | U | 400. | U | 400. | U | 620. | U | 410. | U |
| SVOA | Benzo(a)pyrene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Benzo(b)fluoranthene | 360. | U | 400. | U | 400. | U | 400. | U | 620. | U | 410. | U |
| SVOA | Benzo(g,h,i)perylene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Benzo(k)fluoranthene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Butylbenzylphthalate | 360. | U | 400. | U | 400. | U | 600. | U | 620. | U | 410. | U |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-OOOI-01 | | 014-C-OOO1-01 D | | 014-S-0001-03 | | 014-C-0001-03 D | | 014-S-0001-05 | | 014-S-0001-07 | |
| ORIGINAL ID → | | 14S0101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| LAB SAMPLE ID → | | 39304-1 | | 39364-2 | | 39306-2 | | 39304-3 | | 39304-4 | | 39304-5 | |
| ID FROM REPORT → | | 14S0101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| SAMPLE DATE → | | 02/11/94 | | 02/17/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| DATE EXTRACTED → | | 02/17/94 | | 02/25/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | |
| DATE ANALYZED → | | 02/25/94 | | 03/07/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| MATRIX → | | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT516 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| SVOA | Carbazole | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Chrysene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Di-n-butylphthalate | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Di-n-octylphthalate | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Dibenzo(a,h)anthracene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Dibenzofuran | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Dicthylphthalatc | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Dimethylphthalatc | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Fluoranthenc | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Fluorene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Hexachlorobenzene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Hexachlorobutadiene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Hexachlorocyclopentadiene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Hexachloroethane | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Indeno(1,2,3-cdl pyrme | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Isophorone | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | N-Nitroso-di-n-propylamine | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | N-Nitrosodiphenylamine | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Naphthalene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Nitrobenzene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Pentachlorophenol | 870. | U | 980. | U | 970. | U | 970. | U | 1000. | U | 1000. | U |
| SVOA | Phenanthrene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Phenol | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | Pyrene | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | bis(2-Chloroethoxy)methane | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | bis(2-Ethylhexyl)phtklate (BEHP) | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | bis(2-Chloroethyl)ether | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 360. | U | 400. | U | 400. | U | 400. | U | 420. | U | 410. | U |

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-5-Oool-01 | | 014-c-0001-01 D | | 014-s-0001-03 | | 014-c-0001-03 D | | 014-s-0001-05 | | 014-s-0001-07 | |
| ORIGINAL ID → | | 14S0101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| LAB SAMPLE ID → | | 39304-29 | | 39364-8 | | 39304-30 | | 39304-31 | | 39304-32 | | 39304-33 | |
| ID FROM REPORT → | | 14S0101 | | 14M0101D | | 14S0103 | | 14S0103D | | 14S0105 | | 14S0107 | |
| SAMPLE DATE → | | 02/11/94 | | 02/17/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| DATE EXTRACTED → | | 02/17/94 | | | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | |
| DATE ANALYZED → | | 02/17/94 | | 03/10/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | |
| MATRIX → | | Soil | | soil | | soil | | Soil | | Soil | | soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT516 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| VOA | 1,1,1-Trichloroethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 1,1,2-Trichloroethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 1,1-Dichloroethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 1,1-Dichloroethene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 1,2-Dichloroethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 1,2-Dichloroethene (total) | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 1,2-Dichloropropane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 2-Butammc (MEK) | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 2-Hexme | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Acetone | 71. | U | 57. | U | 54. | U | 96. | U | 110. | U | 87. | U |
| VOA | Benzene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Bromodichloromethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Bromoform | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Bromomethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Carbon disulfide | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Carbon tetrachloride | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Chlorobenzene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Chloroethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Chloroform | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Chloromethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Dibromochloromethane | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Ethylbenzene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Methylene chloride | 10. | U | 12. | U | 13. | U | 9. | U | 12. | U | 12. | U |
| VOA | Styrene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Tetrachloroethene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Toluene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Trichloroethene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | Vinyl chtoride | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | m+p-Xylenes | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | cis-1,3-Dichloropropene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |
| VOA | trans-1,3-Dichloropropene | 10. | U | 12. | U | 13. | U | 12. | U | 12. | U | 12. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID ——> | | 014-S-0001-09 | | 014-S-Oool -11 | | 014-S-0001-13 | | 014-S-0001-15 | | 014-C-0001-15 D | | 014-S-0001-17 | |
| ORIGINAL ID ——> | | 14S0109 | | 14S0111 | | 14S0113 | | 1450115 | | 14S0115D | | 14S0117 | |
| LAB SAMPLE ID ——> | | 39304-020 | | 39304-021 | | 39304-022 | | 39304-023 | | 39304-024 | | 39304-025 | |
| ID FROM REPORT —> | | 14S0109 | | 14S0111 | | 14S0113 | | 14S0115 | | 14S0115D | | 14S0117 | |
| SAMPLE DATE ——> | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| DATE EXTRACTED —> | | | | | | | | | | | | | |
| DATE ANALYZED ——> | | | | | | | | | | | | | |
| MATRIX ——> | | Soi1 | | Soi1 | | Soi1 | | Soi1 | | Soi1 | | Soi1 | |
| UNITS ——> | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| METAL | Aluminun | 116. | J | 60.8 | J | 62.8 | J | 73.6 | J | 58.3 | J | 81.7 | J |
| METAL | Antimony | 2.8 | UJ | 2.5 | UJ | 3.1 | UJ | 2.9 | UJ | 2.8 | UJ | 3.3 | UJ |
| METAL | Arsenic | 0.53 | U | 0.47 | U | 0.57 | U | 0.53 | U | 0.52 | U | 0.62 | U |
| METAL | Barium | 0.44 | UJ | 0.39 | UJ | 0.47 | UJ | 0.44 | UJ | 0.43 | UJ | 0.51 | UJ |
| METAL | Beryl1ium | 0.07 | UJ | 0.07 | UJ | 0.08 | UJ | 0.07 | UJ | 0.07 | UJ | 0.09 | UJ |
| METAL | Cadmium | 0.38 | U | 0.34 | U | 0.41 | U | 0.38 | U | 0.38 | U | 0.45 | U |
| METAL | Calcium | 4580. | J | 4440. | J | 8860. | J | 3650. | J | 2700. | J | 4750. | J |
| METAL | Chromium | 4.5 | J | 0.79 | J | 3.6 | J | 2.3 | J | 9.5 | J | 2.6 | J |
| METAL | Cobalt | 0.58 | UJ | 0.52 | UJ | 0.63 | UJ | 0.59 | UJ | 0.57 | UJ | 0.68 | UJ |
| METAL | Copper | 0.47 | UJ | 0.42 | UJ | 0.51 | UJ | 0.48 | UJ | 0.46 | UJ | 0.55 | UJ |
| METAL | Cyanide | 0.09 | UJ | 0.08 | UJ | 0.09 | UJ | 0.09 | UJ | 0.09 | UJ | 0.1 | UJ |
| METAL | Iron | 372. | J | 199. | J | 209. | J | 198. | J | 250. | J | 210. | J |
| METAL | Lead | 0.77 | UJ | 0.64 | UJ | 0.65 | UJ | 0.63 | UJ | 0.6 | UJ | 0.73 | UJ |
| METAL | Magnesium | 64.4 | J | 55.1 | J | 97.6 | J | 73. | J | 40.5 | J | 50.2 | J |
| METAL | Manganese | 3.3 | | 2.1 | U | 2.4 | U | 1.4 | U | 1.8 | U | 1.4 | U |
| METAL | Mercury | 0.03 | U | 0.03 | U | 0.03 | U | 0.03 | U | 0.03 | U | 0.04 | U |
| METAL | Nickel | 1.9 | U | 1.7 | U | 2. | U | 1.9 | U | 1.9 | U | 2.2 | U |
| METAL | Potassium | 118. | UJ | 106. | UJ | 128. | UJ | 119. | UJ | 116. | UJ | 138. | UJ |
| METAL | Selenium | 0.31 | U | 0.28 | U | 0.33 | U | 0.31 | U | 0.3 | U | 0.36 | U |
| METAL | Silver | 0.65 | U | 0.59 | U | 0.71 | U | 0.66 | U | 0.64 | U | 0.77 | U |
| METAL | sodium | 50.7 | J | 55.7 | J | 96.1 | J | 41.5 | J | 32.4 | UJ | 45.5 | J |
| METAL | Thallium | 0.51 | UJ | 0.46 | UJ | 0.55 | UJ | 0.51 | UJ | 0.5 | UJ | 0.6 | UJ |
| METAL | Vanadium | 1.2 | J | 0.67 | J | 0.65 | UJ | 0.95 | J | 0.59 | UJ | 0.7 | UJ |
| METAL | Zinc | 0.4 | UJ | 0.28 | UJ | 0.33 | UJ | 0.31 | UJ | 0.3 | UJ | 0.36 | UJ |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID | | 014-S-0001-09 | | 014-S-0001-11 | | 014-S-OOOI -I3 | | 014-S-0001-15 | | 014-C-OOOI -15 D | | 014-S-0001-17 | |
| ORIGINAL ID | | 14S0109 | | 14S0111 | | 14S0113 | | 1450115 | | 14S0115D | | 14S0117 | |
| LAB SAMPLE ID | | 39304-6 | | 39304-7 | | 39304-8 | | 39304-9 | | 39304-10 | | 39304-11 | |
| ID FROM REPORT | | 14S0109 | | 14S0111 | | 14S0113 | | 14S0115 | | 14S0115D | | 14S0117 | |
| SAMPLE DATE | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| DATE EXTRACTED | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | |
| DATE ANALYZED | | 02/23/94 | | 02/23/94 | | 02/23/94 | | 02/23/94 | | 02/23/94 | | 02/23/94 | |
| MATRIX | | Soi 1 | | Soi 1 | | Soi 1 | | Soi 1 | | Soi 1 | | Soi 1 | |
| UNITS | | UGfKG | | UG/KG | | UG/KG | | UGfKG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| PEST | 4,4'-DDD | 3.5 | UJ | 3.4 | UJ | 3.5 | UJ | 3.5 | UJ | 3.4 | UJ | 3.6 | UJ |
| PEST | 4,4'-DDE | 3.5 | UJ | 3.4 | UJ | 3.5 | UJ | 3.5 | UJ | 3.4 | UJ | 3.6 | UJ |
| PEST | 4,4'-DDT | 3.5 | UJ | 3.4 | UJ | 3.5 | UJ | 3.5 | UJ | 3.4 | UJ | 3.6 | UJ |
| PEST | Aldrin | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |
| PEST | Aroclor-1016 | 35. | UJ | 34. | UJ | 35. | UJ | 35. | UJ | 34. | UJ | 36. | UJ |
| PEST | Aroclor-I221 | 71. | UJ | 70. | UJ | 71. | UJ | 71. | UJ | 70. | UJ | 73. | UJ |
| PEST | Aroclor-1232 | 35. | UJ | 34. | UJ | 35. | UJ | 35. | UJ | 34. | UJ | 36. | UJ |
| PEST | Aroclor-1242 | 35. | UJ | 34. | UJ | 35. | UJ | 35. | UJ | 34. | UJ | 36. | UJ |
| PEST | Aroclor-1248 | 35. | UJ | 34. | UJ | 35. | UJ | 35. | UJ | 34. | UJ | 36. | UJ |
| PEST | Aroclor-I254 | 35. | UJ | 34. | UJ | 35. | UJ | 35. | UJ | 34. | UJ | 36. | UJ |
| PEST | Aroclor-1260 | 35. | UJ | 34. | UJ | 35. | UJ | 35. | UJ | 34. | UJ | 36. | UJ |
| PEST | Dieldrin | 3.5 | UJ | 3.4 | UJ | 3.5 | UJ | 3.5 | UJ | 3.4 | UJ | 3.6 | UJ |
| PEST | Endosulfan I | '1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |
| PEST | Endosulfan II | 3.5 | UJ | 3.4 | UJ | 3.5 | UJ | 3.5 | UJ | 3.4 | UJ | 3.6 | UJ |
| PEST | Endosulfan sulfate | 3.5 | UJ | 3.4 | UJ | 3.5 | UJ | 3.5 | UJ | 3.4 | UJ | 3.6 | UJ |
| PEST | Endrin | 3.5 | UJ | 3.4 | UJ | 3.5 | UJ | 3.5 | UJ | 3.4 | UJ | 3.6 | UJ |
| PEST | Endrin aldehyde | 3.5 | UJ | 3.4 | UJ | 3.5 | UJ | 3.5 | UJ | 3.4 | UJ | 3.6 | UJ |
| PEST | Endrin ketone | 3.5 | UJ | 3.4 | UJ | 3.5 | UJ | 3.5 | UJ | 3.4 | UJ | 3.6 | UJ |
| PEST | Heptachlor | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |
| PEST | Heptachlor epoxide | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |
| PEST | Methoxychlor | 18. | UJ | 18. | UJ | 18. | UJ | 18. | UJ | 18. | UJ | 19. | UJ |
| PEST | Toxaphene | 180. | UJ | 180. | UJ | 180. | UJ | 180. | UJ | 180. | UJ | 190. | UJ |
| PEST | alpha-BHC | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |
| PEST | alpha-Chlordane | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |
| PEST | beta-BHC | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |
| PEST | delta-BHC | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |
| PEST | gamma-BHC (Lindane) | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |
| PEST | gamma-Chlordane | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ | 1.9 | UJ |

+++ Validation Complete **+

# NAS PENSACOLA Site 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0001-09 | | 014-S-0001-11 | | 014-S-0001-13 | | 014-S-0001-15 | | 014-C-0001-15 D | | 014-S-0001-17 | |
| ORIGINAL ID → | | 1450109 | | 14S0111 | | 14S0113 | | 14S0115 | | 14S0115D | | 14S0117 | |
| LAB SAMPLE ID → | | 39304-6 | | 39304-7 | | 39304-8 | | 39304-9 | | 39304-10 | | 39304-11 | |
| ID FROM REPORT → | | 14S0109 | | 14S0111 | | 14S0113 | | 14S0115 | | 14S0115D | | 1450117 | |
| SAMPLE DATE → | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| DATE EXTRACTED → | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | |
| DATE ANALYZED → | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| MATRIX → | | Soil | | Soil | | soil | | Soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 1,2-Dichlorobenzene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 1,3-Dichlorobenzene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 1,4-Dichlorobenzene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2,4,5-Trichlorophenol | 850. | U | 830. | U | 850. | U | 830. | U | 830. | U | 870. | U |
| SVOA | 2,4,6-Trichlorophenol | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2,4-Dichlorophenol | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2,4-Dimethylphenol | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2,4-Dinitrophenol | 850. | U | 830. | U | 850. | U | 830. | U | 830. | U | 870. | U |
| SVOA | 2,4-Dinitrotoluene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2,6-Dinitrotoluene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2-Chlomphthalene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2-Chloropheno1 | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2-Methylnaphthalene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2-Rethylphenol (o-Cresol) | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2-Nitroaniline | 850. | U | 830. | U | 850. | U | 830. | U | 830. | U | 870. | U |
| SVOA | 2-Nitrophenol | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 3,3'-Dichlorobenzidine | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 3-Nitroani1ine | 850. | U | 830. | U | 850. | U | 830. | U | 830. | U | 870. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 850. | U | 830. | U | 850. | U | 830. | U | 830. | U | 870. | U |
| SWA | 4-Bromophenyl-phenylether | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 4-Chloro-3-methylphenol | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 4-Chloroaniline | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 4-Chlorophcny l-pheny lether | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 4-Rethylphenol (p-Cresol) | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 4-Nitroaniline | 850. | U | 830. | U | 850. | U | 830. | U | 830. | U | 870. | U |
| SVOA | 4-Nitrophenol | 850. | U | 830. | U | 850. | U | 830. | U | 830. | U | 870. | U |
| SVOA | Acenaphthenc | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Acenaphthylene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Anthracene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Benzo(a)anthracene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Benzo(a)pyrene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Benzo(b)fluoranthene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Benzo(g,h,i)perylene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Benzo(k)fluoranthene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Butylbenzylphthalate | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |

+*+ Validation Complete ***

# NAS PENSACOLA Site 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-S-OOOI -09 | | 014-S-0001-11 | | 014-S-0001-13 | | 014-S-0001-15 | | 014-C-0001-15 D | | 014-S-0001-17 | |
| | ORIGINAL ID → | 14S0109 | | 14S0111 | | 14S0113 | | 14S0115 | | 14S0115D | | 14S0117 | |
| | LAB SAMPLE ID → | 39304-6 | | 39304-7 | | 39304-8 | | 39304-9 | | 39304-10 | | 39304-11 | |
| | ID FROM REPORT → | 14S0109 | | 14S0111 | | 14S0113 | | 14S0115 | | 14S0115D | | 14S0117 | |
| | SAMPLE DATE → | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| | DATE EXTRACTED → | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | |
| | DATE ANALYZED → | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| | MATRIX → | Soi1 | | soi1 | | Soi1 | | Soi1 | | Soi1 | | Soi1 | |
| | UNITS → | UGfKG | | UGfKG | | UGfKG | | UGfKG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| SVOA | Carbazole | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Chrysene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Di-n-butylphthalate | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Di-n-octylphthrlatc | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Dibenzo(a,h)anthracene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Dibenzofuran | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Dicthylphthalatc | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Dimethylphthalate | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Fluoranthcnc | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Fluorene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Hexachlorobenzene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Hexachlorobutadiene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Hexachlorocyclopentadiene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Hexachloroethane | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Isophorone | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | N-Nitroso-di-n-propylamine | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | N-Nitrosodiphenylamine | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Naphthalene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVoA | Nitrobenzene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Pentachloropheno1 | 850. | U | 830. | U | 850. | U | 830. | U | 830. | U | 870. | U |
| SVOA | Phenanthrene | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Phenol | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | Pyrenc | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | bis(2-Chloroethoxy)methane | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | bis(2-Chloroethyl)ether | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 350. | U | 340. | U | 350. | U | 340. | U | 340. | U | 360. | U |

# NAS PENSACOLA Site 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-OOOI -09 | | 014-S-0001-11 | | 014-S-MXII -13 | | 014-S-0001-15 | | 014-C-Oool -15 D | | 014-S-0001-17 | |
| ORIGINAL ID → | | 14S0109 | | 14S0111 | | 14S0113 | | 14S0115 | | 14S0115D | | 14S0117 | |
| LAB SAMPLE ID → | | 39304-34 | | 39304-35 | | 39304-36 | | 39304-37 | | 39304-38 | | 39304-39 | |
| ID FROM REPORT → | | 14S0109 | | 14S0111 | | 14S0113 | | 14S0115 | | 14S0115D | | 14S0117 | |
| SAMPLE DATE → | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/11/94 | |
| DATE EXTRACTED → | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | |
| DATE ANALYZED → | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/18/94 | | 02/18/94 | |
| MATRIX → | | Soi 1 | | Soi 1 | | Soi 1 | | Soi 1 | | Soi 1 | | soi 1 | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| VOA | 1,1,1-Trichlorocthanc | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | 1,1,2-Trichloroethane | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | U |
| VOA | 1,1-Dichloroethane | 11. | U | 10. | U | IO. | U | 10. | U | 10. | U | 11. | u |
| VOA | 1,1-Dichloroethene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | 1,2-Dichloroethane | 11. | U | 10. | U | 10. | U | 10. | U | IO. | U | 11. | u |
| VOA | 1,2-Dichloroethene (total) | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | 1,2-Dichloropropane | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | 2-Butanone (MEK) | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | 2-Hexanone | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 11. | U | 10. | U | 10. | U | IO. | U | 10. | U | 11. | U |
| VOA | Acetone | 40. | U | 20. | U | 22. | U | 58. | U | 10. | U | 19. | U |
| VOA | Benzene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Bromodichloromethane | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Bromoform | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Bromomethane | 11. | U | 10. | U | IO. | U | 10. | U | 10. | U | 11. | u |
| VOA | Carbon disulfidc | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Carbon tetrachloride | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Chlorobenzene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Chloroethane | 11. | U | 10. | U | 10. | U | 10. | U | IO. | U | 11. | u |
| VOA | Chloroform | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Chloromethane | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Dibromochloromethane | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Ethylbenzene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Methylene chloridc | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | U |
| VOA | Styrene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Tetrachloroethene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | Toluene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | U |
| VOA | Trichlorocthene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| KIA | Vinyl chloride | 11. | U | IO. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| KIA | m+p-Xylenes | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | cis-1,3-Dichloropropene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |
| VOA | trans-1,3-Dichloropropene | 11. | U | 10. | U | 10. | U | 10. | U | 10. | U | 11. | u |

*** Validation Complete ***

# Phase I

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0001-19 | | 014-S-OOOI-21 | | 014-S-OOOI-23 | | 014-S-WO2-01 | | 014-C-0002-01 D | | 014-S-0002-03 | |
| ORIGINAL ID → | | 14S0119 | | 14S0121 | | 1450123 | | 14S0201 | | 14S0201D | | 1410203 | |
| LAB SAMPLE ID → | | 39304-026 | | 39304-027 | | 39304-028 | | 39390-012 | | 39390-013 | | 39390-014 | |
| ID FROM REPORT → | | 14S0119 | | 14S0121 | | 14S0123 | | 14S0201 | | 14S0201D | | 1480203 | |
| SAMPLE DATE → | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | |
| DATE EXTRACTED → | | | | | | | | | | | | | |
| DATE ANALYZED → | | | | | | | | | | | | | |
| MTRXX → | | Soil | | Soil | | Soi1 | | Soi1 | | Soi1 | | Soi1 | |
| WITS → | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| METAL | Aluminum | 125. | U | 39.4 | J | 150. | J | 338. | | 518. | | 214. | |
| METAL | Antimony | 2.4 | UJ | 2.7 | UJ | 3. | UJ | 3.1 | U | 3.2 | U | 2.7 | U |
| METAL | Arsenic | 0.44 | U | 0.5 | U | 0.55 | U | 0.58 | UJ | 0.6 | UJ | 0.51 | UJ |
| METAL | Barium | 0.37 | UJ | 0.42 | UJ | 0.45 | UJ | 0.58 | U | 0.84 | U | 0.42 | U |
| METAL | Beryllium | 0.06 | UJ | 0.07 | UJ | 0.08 | UJ | 0.08 | U | 0.08 | U | 0.07 | U |
| METAL | cadmium | 0.32 | U | 0.36 | U | 0.4 | U | 0.42 | U | 0.44 | U | 0.38 | |
| HETAL | Calcium | 10500. | J | 7090. | J | 27000. | J | 2780. | | 3370. | | 3740. | |
| HETAL | Chromium | 2. | J | 1.5 | J | 8.3 | J | 2. | J | 1.9 | J | 2. | J |
| METAL | Cobalt | 0.49 | UJ | 0.56 | UJ | 0.61 | UJ | 0.64 | U | 0.67 | U | 0.56 | U |
| HETAL | Copper | 0.4 | UJ | 0.45 | UJ | 0.49 | UJ | 0.52 | U | 0.63 | U | 0.45 | U |
| HETAL | Cyanide | 0.08 | UJ | 0.09 | UJ | 0.1 | UJ | 0.08 | UJ | 0.08 | UJ | 0.09 | UJ |
| METAL | Iron | 286. | J | 139. | J | 365. | J | 808. | | 1240. | | 534. | |
| METAL | Lead | 0.6 | UJ | 0.63 | UJ | 0.83 | UJ | 1.4 | | 2. | | 1.1 | |
| METAL | Magnesium | 125. | J | 58.2 | J | 205. | J | 178. | | 269. | | 137. | |
| HETAL | Manganese | 2.9 | | 1.6 | U | 3. | | 13.8 | J | 19.2 | | 9.4 | J |
| METAL | Mercury | 0.04 | U | 0.04 | U | 0.02 | U | 0.03 | UJ | 0.02 | UJ | 0.03 | UJ |
| METAL | Nickel | 1.6 | U | 1.8 | U | 2. | U | 2.1 | UJ | 2.2 | UJ | 1.8 | UJ |
| METAL | Potassium | 99.1 | UJ | 113. | UJ | 123. | UJ | 129. | U | 135. | U | 113. | U |
| METAL | Selenium | 0.26 | U | 0.3 | U | 0.32 | U | 0.34 | U | 0.35 | U | 0.3 | U |
| METAL | Silver | 0.55 | U | 0.63 | U | 0.68 | U | 0.72 | U | 0.75 | U | 0.63 | U |
| METAL | Sodium | 113. | J | 81.4 | J | 247. | J | 58.4 | J | 65.8 | J | 65.3 | J |
| METAL | Thallium | 0.43 | UJ | 0.49 | UJ | 0.53 | UJ | 0.56 | U | 0.58 | U | 0.49 | U |
| HETAL | Vanadium | 0.64 | J | 0.57 | UJ | 1. | J | 1.5 | U | 1.7 | U | 0.71 | U |
| METAL | Zinc | 0.26 | UJ | 0.3 | UJ | 0.32 | UJ | 4. | UJ | 5.7 | UJ | 2.7 | UJ |

&&& Validation Complete ttt

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMKE ID → | | 014-S-0001-19 | | 014-S-0001-21 | | 014-S-0001-23 | | 014-S-0002-01 | | 014-C-0002-01 D | | 014-S-0002-03 | |
| ORIGINAL ID → | | 14S0119 | | 14S0121 | | 14S0123 | | 14S0201 | | 14S0201D | | 14S0203 | |
| LAB SMPLE ID → | | 39304-12 | | 39304-13 | | 39304-14 | | 39390-1 | | 39390-2 | | 39390-3 | |
| ID FROM REPORT → | | 14S0119 | | 14S0121 | | 14S0123 | | 14S0201 | | 14S0201D | | 1490203 | |
| SAMPLE DATE → | | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | |
| DATE EXTRACTED → | | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| DATE ANALYZED → | | 02/23/94 | | 02/23/94 | | 02/23/94 | | 03/05/94 | | | | | |
| MATRIX → | | Soil | | Soil | | soil | | Soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| PEST | 4,4'-DDD | 3.5 | UJ | 5.5 | U | 5.6 | U | 3.5 | U | 3.5 | U | 3.5 | UJ |
| PEST | 4,4'-DDE | 3.5 | UJ | 5.5 | U | 5.6 | U | 3.5 | U | 3.5 | U | 3.5 | UJ |
| PEST | 4,4'-DDT | 3.5 | UJ | 5.5 | U | 5.6 | U | 3.5 | U | 3.5 | U | 3.5 | UJ |
| PEST | Aldrin | 1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | U | 1.8 | U | 1.a | UJ |
| PEST | Aroclor-IO16 | 35. | UJ | 55. | U | 56. | U | 35. | U | 35. | U | 35. | UJ |
| PEST | Aroclor-1221 | 70. | UJ | 110. | U | 110. | U | 71. | U | 72. | U | 71. | UJ |
| PEST | Aroclor-1232 | 35. | UJ | 55. | U | 56. | U | 35. | U | 35. | U | 35. | UJ |
| PEST | Aroclor-1242 | 35. | UJ | 55. | U | 56. | U | 35. | U | 35. | U | 35. | UJ |
| PEST | Aroclor-1248 | 35. | UJ | 55. | U | 56. | U | 35. | U | 35. | U | 35. | UJ |
| PEST | Aroclor-I254 | 35. | UJ | 55. | U | 56. | U | 35. | U | 35. | U | 35. | UJ |
| PEST | Aroclor-1260 | 35. | UJ | 55. | U | 56. | U | 35. | U | 35. | U | 35. | UJ |
| PEST | Dieldrin | 3.5 | UJ | 5.5 | U | 5.6 | U | 3.5 | U | 3.5 | U | 3.5 | UJ |
| PEST | Endosulfan I | '1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | U | 1.8 | U | 1.8 | UJ |
| PEST | Endosulfan II | 3.5 | UJ | 5.5 | U | 5.6 | U | 3.5 | U | 3.5 | U | 3.5 | UJ |
| PEST | Endosulfan sulfate | 3.5 | UJ | 5.5 | U | 5.6 | U | 3.5 | U | 3.5 | U | 3.5 | UJ |
| PEST | Endrin | 3.5 | UJ | 5.5 | U | 5.6 | U | 3.5 | U | 3.5 | U | 3.5 | UJ |
| PEST | Endrin aldehyde | 3.5 | UJ | 5.5 | U | 5.6 | U | 3.5 | U | 3.5 | U | 3.5 | UJ |
| PEST | Endrin ketone | 3.5 | UJ | 5.5 | U | 5.6 | U | 3.5 | U | 3.5 | U | 3.5 | UJ |
| PEST | Heptachlor | 1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | U | 1.8 | U | 1.8 | UJ |
| PEST | Heptachlor epoxide | 1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | U | 1.8 | U | 1.8 | UJ |
| PEST | Methoxychlor | 18. | UJ | 29. | U | 29. | U | 18. | U | 18. | U | 18. | UJ |
| PEST | Toxaphene | 180. | UJ | 290. | U | 290. | U | 180. | U | 180. | U | 180. | UJ |
| PEST | alpha-BHC | 1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | UJ | 1.8 | UJ | 1.8 | UJ |
| PEST | alpha-Chlordane | 1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | U | 1.8 | U | 1.8 | UJ |
| PEST | beta-BHC | 1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | U | 1.8 | U | 1.8 | UJ |
| PEST | delta-BHC | 1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | U | 1.8 | U | 1.8 | UJ |
| PEST | gamma-BHC (Lindane) | 1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | U | 1.8 | U | 1.8 | UJ |
| PEST | gama-Chlordane | 1.8 | UJ | 2.9 | U | 2.9 | U | 1.8 | U | 1.8 | U | 1.8 | UJ |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-S-0001-19 | | 014-S-0001-21 | | 014-S-OOOI-23 | | 014-S-OOO2-01 | | 014-C-0002-01 D | | 014-S-0002-03 | |
| | ORIGINAL ID → | 1450119 | | 14S0121 | | 14S0123 | | 14S0201 | | 14S0201D | | 14S0203 | |
| | LAB SAMPLE ID → | 39304-12 | | 39304-13 | | 39304-14 | | 39390-1 | | 39390-2 | | 39390-3 | |
| | ID FROM REPORT → | 1450119 | | 14S0121 | | 14S0123 | | 14S0201 | | 14S0201D | | 14S0203 | |
| | SAMPLE DATE → | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | |
| | DATE EXTRACTED → | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/25/94 | | 02/25/94 | | 02/25/94 | |
| | DATE ANALYZED → | 02/24/94 | | 02/24/94 | | 02/24/94 | | 03/07/94 | | 03/07/94 | | 03/07/94 | |
| | MATRIX → | Soil | | Soil | | soil | | Soil | | Soil | | Soil | |
| | WITS → | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 1,2-Dichlorobenzene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 1,3-Dichlorobenzene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 1,4-Dichlorobenzene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2,4,5-Trichlorophenol | 840. | U | 840. | U | 850. | U | 840. | U | 850. | U | 840. | U |
| SVOA | 2,4,6-Trichlorophenol | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2,4-Dichlorophenol | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2,4-Dimethylphenol | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2,4-Dinitrophenol | 840. | U | 840. | U | 850. | U | 840. | U | 850. | U | 840. | U |
| SVOA | 2,4-Dinitrotoluene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2,6-Dinitrotoluene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2-Chloronaphthalene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2-Chlorophenol | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2-Methylnaphthalene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2-Methylphenol (o-Cresol) | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2-Nitroaniline | 840. | U | 840. | U | 850. | U | 840. | U | 850. | U | 840. | U |
| SVOA | 2-Nitrophenol | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 3,3'-Dichlorobenzidine | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 3-Nitroaniline | 840. | U | 840. | U | 850. | U | 840. | U | 850. | U | 840. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 840. | U | 840. | U | 850. | U | 840. | U | 850. | U | 840. | U |
| SVOA | 4-Bromophenyl-phenylether | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 4-Chloro-3-methylphenol | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 4-Chloroaniline | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 4-Chlorophenyl-phenylether | 350. | U | 350. | U | 350, | U | 350. | U | 350. | U | 350. | U |
| SVOA | 4-Methylphenol (p-Cresol) | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 4-Nitroaniline | 840. | U | 840. | U | 850. | U | 840. | U | 850. | U | 840. | U |
| SVOA | 4-Nitrophenol | 840. | U | 840. | U | 850. | U | 840. | U | 850. | U | 840. | U |
| SVOA | Acenaphthene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Acenaphthylene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Anthracene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Benzo(a)anthracene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Benzo(a)pyrene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Benzo(b)fluoranthene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Benzo(g,h,i)perylene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Benzo(k)fluoranthene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Butylbenzylphthalate | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-S-0001-19 | | 014-S-0001-21 | | 014-S-0001-23 | | 014-S-0002-01 | | 014-C-0002-01 D | | 014-S-0002-03 | |
| | ORIGINAL ID → | 14S0119 | | 14S0121 | | 14S0123 | | 14S0201 | | 14S0201D | | 1490203 | |
| | LAB SAMPLE ID → | 39304-12 | | 39304-13 | | 39304-14 | | 39390-1 | | 39390-2 | | 39390-3 | |
| | ID FROM REPORT → | 14S0119 | | 1450121 | | 1430123 | | 14S0201 | | 14S0201D | | 1480203 | |
| | SAMPLE DATE → | 02/11/94 | | 02/11/94 | | 02/11/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | |
| | DATE EXTRACTED → | 02/17/94 | | 02/17/94 | | 02/17/94 | | 02/25/94 | | 02/25/94 | | 02/25/94 | |
| | DATE ANALYZED → | 02/24/94 | | 02/24/94 | | 02/24/94 | | 03/07/94 | | 03/07/94 | | 03/07/94 | |
| | MATRIX → | Soil | | Soil | | soil | | Soil | | soil | | Soil | |
| | UNITS → | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| SVOA | Carbazole | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Chrysene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Di-n-butylphthalatc | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Di-n-octylphthalatc | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Dibenzo(a,h)anthracene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Dibenzofuran | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Diethylphthalate | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Dimethylphthalate | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Fluoranthene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Fluorene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Hexachlorobenzene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Hexachlorobutadiene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Hcxachlorocyclopentadiene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Hexachloroethane | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Isophorone | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | N-Nitroso-di-n-propylamine | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | N-Nitrosodiphenylamine | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Naphthalene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Nitrobenzene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Pentachlorophenol | 840. | U | 840. | U | 850. | U | 840. | U | 850. | U | 840. | U |
| SVOA | Phenanthrene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Phenol | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | Pyrene | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | bis(2-Chloroethoxy)methane | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | bis(2-Chloroethyl)ether | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U | 350. | U |

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID ——> | 014-S-0001-19 | 014-S-0001-21 | 014-S-0001-23 | 014-S-0002-01 | 014-C-0002-01 | 014-S-0002-03 |
| ORIGINAL ID ——> | 14S0119 | 14S0121 | 14S0123 | 14S0201 | 14S0201D | 14S0203 |
| LAB SAMPLE ID —> | 39304-40 | 39304-41 | 39304-42 | 39390-23 | 39390-24 | 39390-25 |
| ID FROM REPORT —> | 14S0119 | 14S0121 | 14S0123 | 14S0201 | 14S0201D | 14S0203 |
| SAMPLE DATE ——> | 02/11/94 | 02/11/94 | 02/11/94 | 02/21/94 | 02/21/94 | 02/21/94 |
| DATE EXTRACTED —> | 02/17/94 | 02/17/94 | 02/17/94 | | | |
| DATE ANALYZED —> | 02/18/94 | 02/18/94 | 02/18/94 | 03/10/94 | 03/10/94 | 03/10/94 |
| MATRIX ——> | Soil | Soil | Soil | Soil | Soil | Soil |
| UNITS ——> | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG |

| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | CT516 | VAL | CT516 | VAL | CT516 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VOA | 1,1,1-Trichloroethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 1,1,2-Trichloroethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 1,1-Dichloroethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 1,1-Dichloroethene | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 1,2-Dichloroethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 1,2-Dichloroethene (total) | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 1,2-Dichloropropane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 2-Butanone (MEK) | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 2-Hexanone | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Acetone | 13. | U | 10. | U | 27. | U | 24. | U | 14. | U | 30. | U |
| VOA | Benzene | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Bromodichloromethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Bromoform | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Bromomethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Carbon disulfide | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Carbon tetrachloride | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Chlorobenzene | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Chloroethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Chloroform | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Chloromethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Dibromochloromethane | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Ethylbenzene | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Methylene chloride | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Styrene | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Tetrachloroethene | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Toluene | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Trichloroethene | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | Vinyl chloride | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | m+p-Xylenes | 11. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| VOA | cis-1,3-Dichloropropene | 11. | U | 10. | U | 10. | U | 11 | U | 11. | U | 11 | U |
| VOA | trans-1,3-Dichloropropene | 11. | U | 10. | U | 10. | U | 11 | U | 11. | U | 11 | U |

*** Validation Complete ***

# NAS PENSACOLA SITE 1 *
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID ——> | 014-S-0002-05 | | 014-S-0002-S | | 014-S-0002-09 | | 014-S-0002-11 | | 014-S-0002-N | | 014-S-0002-15 | |
| | ORIGINAL ID ——> | 14S0205 | | 14S0207 | | 14S0209 | | 14S0211 | | 14S0213 | | 14S0215 | |
| | LAB SAMPLE ID ——> | 39390-015 | | 39390-016 | | 39390-017 | | 39390-018 | | 39390-019 | | 39390-020 | |
| | ID FROM REPORT ——> | 14S0205 | | 14S0207 | | 14S0209 | | 14S0211 | | 14S0213 | | 14S0215 | |
| | SAMPLE DATE ——> | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | |
| | DATE EXTRACTED ——> | | | | | | | | | | | | |
| | DATE ANALYZED ——> | | | | | | | | | | | | |
| | MATRIX ——> | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ——> | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| METAL | Aluminum | 554. | | 173. | | 553. | | 318. | | 151. | | 99.3 | |
| METAL | Antimony | 2.8 | U | 2.4 | U | 2.8 | U | 3. | U | 2.2 | U | 2.1 | U |
| METAL | Arsenic | 0.52 | UJ | 0.45 | UJ | 0.51 | UJ | 0.56 | UJ | 0.42 | UJ | 0.39 | UJ |
| METAL | Barium | 0.99 | U | 0.69 | U | 1. | U | 0.46 | U | 0.35 | U | 0.98 | U |
| METAL | Beryllium | 0.07 | U | 0.06 | U | 0.07 | U | 0.08 | U | 0.06 | U | 0.05 | U |
| METAL | Cadmium | 0.37 | U | 0.33 | U | 0.37 | U | 0.41 | U | 0.3 | U | 0.29 | U |
| METAL | Calcium | 7040. | | 6200. | | 7540. | | 6930. | | 6050. | | 19100. | |
| METAL | Chromium | 3.3 | J | 1.9 | J | 2.9 | J | 3.3 | | 3.6 | | 4.7 | |
| METAL | Cobalt | 0.57 | U | 0.5 | U | 0.56 | U | 0.62 | U | 0.46 | U | 0.43 | U |
| METAL | Copper | 0.87 | U | 0.4 | U | 0.88 | U | 0.5 | U | 0.37 | U | 0.46 | U |
| METAL | Cyanide | 0.11 | UJ | 0.09 | UJ | 0.1 | UJ | 0.13 | J | 0.08 | UJ | 0.08 | UJ |
| METAL | Iron | 1620. | | 448. | | 1830. | | 988. | | 330. | | 344. | |
| METAL | Lead | 3.2 | | 0.85 | | 4.3 | | 1.5 | | 0.58 | | 0.65 | |
| METAL | Magnesium | 369. | | 138. | | 475. | | 215. | | 87.2 | | 170. | |
| METAL | Manganese | 33.1 | | 6.8 | J | 37.7 | | 11.6 | J | 4.3 | J | 4.8 | J |
| METAL | Mercury | 0.02 | UJ | 0.02 | UJ | 0.04 | UJ | 0.03 | UJ | 0.04 | UJ | 0.02 | UJ |
| METAL | Nickel | 1.9 | UJ | 1.6 | UJ | 1.8 | UJ | 2. | UJ | 1.5 | UJ | 1.4 | UJ |
| METAL | Potassium | 116. | U | 100. | U | 114. | U | 125. | U | 93.5 | U | 88.1 | U |
| METAL | Selenium | 0.3 | U | 0.26 | U | 0.3 | U | 0.33 | U | 0.25 | U | 0.23 | U |
| METAL | Silver | 0.64 | U | 0.56 | U | 0.63 | U | 0.7 | U | 0.52 | U | 0.49 | U |
| METAL | Sodium | 74.6 | J | 71.3 | J | 95.3 | J | 76. | J | 66.7 | J | 210. | |
| METAL | Thallium | 0.5 | U | 0.43 | U | 0.49 | U | 0.54 | U | 0.4 | U | 0.38 | U |
| METAL | Vanadium | 2.1 | U | 0.81 | U | 2.4 | U | 1.7 | U | 0.95 | U | 0.79 | U |
| METAL | Zinc | 5.3 | UJ | 2.3 | UJ | 6.9 | UJ | 3.3 | UJ | 1.4 | UJ | 3.6 | UJ |

** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0002-05 | | 014-S-0002-07 | | 014-S-0002-09 | | 014-S-0002-11 | | 014-S-0002-13 | | 014-S-0002-15 | |
| ORIGINAL ID → | | 14S0205 | | 14S0207 | | 14S0209 | | 1450211 | | 1450213 | | 14S0215 | |
| LAB SAMPLE ID → | | 39390-4 | | 39390-5 | | 59390-6 | | 39390-7 | | 39390-8 | | 39390-9 | |
| ID FROM REPORT → | | 14S0205 | | 1490207 | | 14S0209 | | 14S0211 | | 1430213 | | 14S0215 | |
| SMPLE DATE → | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | |
| DATE EXTRACTED → | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| DATE ANALYZED → | | 03/06/94 | | 03/06/94 | | 03/06/94 | | 03/06/94 | | 03/06/94 | | 03/06/94 | |
| MATRIX → | | Soi 1 | | Soi 1 | | Soi 1 | | Soi 1 | | Soi 1 | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| PEST | 4,4'-DDD | 3.9 | U | 3.6 | U | 3.7 | U | 3.6 | U | 3.7 | U | 3.5 | U |
| PEST | 4,4'-DDE | 3.9 | U | 3.6 | U | 3.7 | U | 3.6 | U | 3.7 | U | 3.5 | U |
| PEST | 4,4'-DDT | 3.9 | U | 3.6 | U | 3.7 | U | 3.6 | U | 3.7 | U | 3.5 | U |
| PEST | Aldrin | 2. | U | 1.8 | U | 1.9 | U | 1.6 | U | 1.9 | U | 1.8 | U |
| PEST | Aroclor-IO16 | 39. | U | 36. | U | 37. | U | 36. | U | 37. | U | 35. | U |
| PEST | Aroclor-1221 | 80. | U | 73. | U | 76. | U | 73. | U | 74. | U | 72. | U |
| PEST | Aroclor-I232 | 39. | U | 36. | U | 37. | U | 36. | U | 37. | U | 35. | U |
| PEST | Aroclor-1242 | 39. | U | 36. | U | 37. | U | 36. | U | 37. | U | 35. | U |
| PEST | Aroclor-1248 | 39. | U | 36. | U | 37. | U | 36. | U | 37. | U | 35. | U |
| PEST | Aroclor-1254 | 39. | U | 36. | U | 37. | U | 36. | U | 37. | U | 35. | U |
| PEST | Aroclor-1260 | 39. | U | 36. | U | 37. | U | 36. | U | 37. | U | 35. | U |
| PEST | Dieldrin | 3.9 | U | 3.6 | U | 3.7 | U | 3.6 | U | 3.7 | U | 3.5 | U |
| PEST | Endosulfan I | 2. | U | 1.8 | U | 1.9 | U | 1.8 | U | 1.9 | U | 1.8 | U |
| PEST | Endosulfan If | 3.9 | U | 3.6 | U | 3.7 | U | 3.6 | U | 3.7 | U | 3.5 | U |
| PEST | Endosulfan sulfate | 3.9 | U | 3.6 | U | 3.7 | U | 3.6 | U | 3.7 | U | 3.5 | U |
| PEST | Endrin | 3.9 | U | 3.6 | U | 3.7 | U | 3.6 | U | 3.7 | U | 3.5 | U |
| PEST | Endrin aldehyde | 3.9 | U | 3.6 | U | 3.7 | U | 3.6 | U | 3.7 | U | 3.5 | U |
| PEST | Endrin ketone | 3.9 | U | 3.6 | U | 3.7 | U | 3.6 | U | 3.7 | U | 3.5 | U |
| PEST | Heptachlor | 2. | U | 1.8 | U | 1.9 | U | 1.8 | U | 1.9 | U | 1.8 | U |
| PEST | Heptachlor epoxide | 2. | U | 1.8 | U | 1.9 | U | 1.8 | U | 1.9 | U | 1.8 | U |
| PEST | Methoxychlor | 20. | U | 18. | U | 19. | U | 18. | U | 19. | U | 18. | U |
| PEST | Toxaphene | 200. | U | 180. | U | 190. | U | 180. | U | 190. | U | 180. | U |
| PEST | alpha-BHC | 2. | UJ | 1.8 | UJ | 1.9 | UJ | 1.8 | UJ | 1.9 | UJ | 1.6 | UJ |
| PEST | alpha-Chlordane | 2. | U | 1.8 | U | 1.9 | U | 1.8 | U | 1.9 | U | 1.8 | U |
| PEST | beta-BHC | 2. | U | 1.8 | U | 1.9 | U | 1.8 | U | 1.9 | U | 1.8 | U |
| PEST | delta-BHC | 2. | U | 1.8 | U | 1.9 | U | 1.8 | U | 1.9 | U | 1.8 | U |
| PEST | gamma-BHC (Lindane) | 2. | U | 1.8 | U | 1.9 | U | 1.8 | U | 1.9 | U | 1.8 | U |
| PEST | gamma-Chlordane | 2. | U | 1.8 | U | 1.9 | U | 1.8 | U | 1.9 | U | 1.6 | U |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0002-05 | | 014-S-OW2-07 | | 014-S-0002-09 | | 014-S-0002-11 | | 014-S-0002-13 | | 014-S-OW2-15 | |
| ORIGINAL ID → | | 14S0205 | | 14S0207 | | 14S0209 | | 14S0211 | | 14S0213 | | 14S0215 | |
| LAB SAMPLE ID → | | 39390-4 | | 39390-5 | | 39390-6 | | 39390-7 | | 39390-8 | | 39390-9 | |
| ID FROM REPORT → | | 14S0205 | | 14S0207 | | 14S0209 | | 14S0211 | | 14S0213 | | 14S0215 | |
| SAMPLE DATE → | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | |
| DATE EXTRACTED → | | 02/25/94 | | 02/25/94 | | 02/25/94 | | 02/25/94 | | 02/25/94 | | 02/25/94 | |
| DATE ANALYZED → | | 03/07/94 | | 03/07/94 | | 03/07/94 | | 03/07/94 | | 03/08/94 | | 03/08/94 | |
| MATRIX → | | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 1,2-Dichlorobenzene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 1,3-Dichlorobenzene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 1,4-Dichlorobenzene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2,4,5-Trichlorophenol | 950. | U | 860. | U | 900. | U | 860. | U | 880. | U | 850. | U |
| SVOA | 2,4,6-Trichlorophenol | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2,4-Dichlorophenol | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2,4-Dimethylphenol | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2,4-Dinitrophenol | 950. | U | 860. | U | 900. | U | 860. | U | 880. | U | 850. | U |
| SVOA | 2,4-Dinitrotoluene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2,6-Dinitrotoluene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2-Chloronaphthalene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2-Chlorophenol | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2-Methylnaphthalene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2-Methylphenol (o-Cresol) | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2-Nitroaniline | 950. | U | 860. | U | 900. | U | 860. | U | 880. | U | 850. | U |
| SVOA | 2-Nitrophenol | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 3,3'-Dichlorobenzidine | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 3-Nitroaniline | 950. | U | 860. | U | 900. | U | 860. | U | 880. | U | 850. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 950. | U | 860. | U | 900. | U | 860. | U | 880. | U | 850. | U |
| SVOA | 4-Bromophenyl-phenylether | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 4-Chloro-3-methylphenol | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 4-Chloroaniline | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 4-Chlorophenyl-phenylether | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 4-Methylphenol (p-Cresol) | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 4-Nitroaniline | 950. | U | 860. | U | 900. | U | 860. | U | 880. | U | 850. | U |
| SVOA | 4-Nitrophenol | 950. | U | 860. | U | 900. | U | 860. | U | 880. | U | 850. | U |
| SVOA | Acenaphthene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Acenaphthylene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Anthracene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Benzo(a)anthracene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Benzo(a)pyrene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Benzo(b)fluoranthene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Benzo(g,h,i)perylene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Benzo(k)fluoranthene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Butylbenzylphthalate | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-S-0002-05 | | 014-S-OOO2-07 | | 014-S-0002-09 | | D14-S-0002-11 | | D14-S-0002-13 | | D14-S-0002-15 | |
| | ORIGINAL ID → | 14S0205 | | 14S0207 | | 14S0209 | | 14S0211 | | 14S0213 | | 14S0215 | |
| | LAB SAMPLE ID → | 39390-4 | | 39390-5 | | 39390-6 | | 39390-7 | | 39390-8 | | 39390-9 | |
| | ID FROM REPORT → | 14S0205 | | 14S0207 | | 14S0209 | | 14S0211 | | 14S0213 | | 14S0215 | |
| | SAMPLE DATE → | 02/21/94 | | 02/21/94 | | 02/21/94 | | D2/21/94 | | 02/21/94 | | D2/21/94 | |
| | DATE EXTRACTED → | 02/25/94 | | 02/25/94 | | 02/25/94 | | D2/25/94 | | 02/25/94 | | D2/25/94 | |
| | DATE ANALYZED → | 03/07/94 | | 03/07/94 | | 03/07/94 | | D3/07/94 | | 03/08/94 | | 03/08/94 | |
| | MATRIX → | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS → | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| SVOA | Carbazole | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Chrysene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Di-n-butylphthalate | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Di-n-octylphthalatc | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Dibenzo(a,h)anthracene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Dibenzofuran | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Diethylphthalate | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Dimethylphthalate | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Fluoranthene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Fluorene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Hexachlorobenzene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Hexachlorobutadienc | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Hexachlorocyclopentadiene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Hexachloroethanc | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Isophorone | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | N-Nitroso-di-n-propylamine | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | N-Nitrosodiphenylamine | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Naphthalene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Nitrobenzene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Pentachlorophenol | 950. | U | 860. | U | 900. | U | 860. | U | 880. | U | 850. | U |
| SVOA | Phenanthrene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Phenol | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | Pyrene | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | bis(2-Chloroethoxy)methane | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | bia(2-Chloroethyl)ether | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 390. | U | 360. | U | 370. | U | 350. | U | 360. | U | 350. | U |

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0002-05 | | 014-S-0002-07 | | 014-S-0002-09 | | 014-S-0002-1 | | 014-S-0002-13 | | 014-S-0002-15 | |
| ORIGINAL ID → | | 14S0205 | | 14S0207 | | 14S0209 | | 1450211 | | 14S0213 | | 14S0215 | |
| LAB SAMPLE ID → | | 39390-26 | | 39390-27 | | 39390-28 | | 39390-29 | | 39390-30 | | 39390-31 | |
| ID FROM REPORT → | | 14S0205 | | 1480207 | | 14S0209 | | 14S0211 | | 14S0213 | | 14S0215 | |
| SAMPLE DATE → | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | | 02/21/94 | |
| DATE EXTRACTED → | | | | | | | | | | | | | |
| DATE ANALYZED → | | 03/01/94 | | 03/01/94 | | 03/01/94 | | 03/01/94 | | 03/01/94 | | 03/02/94 | |
| MATRIX → | | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| VOA | 1,1,1-Trichloroethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 1,1,2-Trichloroethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 1,1-Dichloroethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 1,1-Dichloroethene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 1,2-Dichloroethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 1,2-Dichloroethene (total) | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 1,2-Dichloropropane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 2-Butanone (MEK) | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 2-Hexanone | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Acetone | 18. | U | 110. | U | 41. | U | 28. | U | 60. | U | 81. | U |
| VOA | Benzene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Bromodichloromethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Bromoform | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Bromomethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Carbon disulfide | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Carbon tetrachloride | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Chlorobenzene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Chloroethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Chloroform | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Chloromethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Dibromochloromethane | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Ethylbenzene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Methylene chloride | 12. | U | 12. | U | 11. | U | 11. | U | 11. | U | 12. | U |
| VOA | Styrene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Tetrachloroethene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Toluene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Trichloroethene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | Vinyl chloride | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | m+p-Xylenes | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | cis-1,3-Dichloropropene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |
| VOA | trans-1,3-Dichloropropene | 12. | U | 11. | U | 11. | U | 10. | U | 11. | U | 11. | U |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil samples
## Phase I



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | WLE ID → | 014-S-0002-17 | | 014-S-0002-19 | | | | |
| | ORIGINAL ID → | 14S0217 | | 14S0219 | | | | |
| | LAB SAMPLE ID → | 39390-021 | | 39390-022 | | | | |
| | ID FROM REPORT → | 1480217 | | 14S0219 | | | | |
| | SAMPLE DATE → | 02/21/94 | | 02/21/94 | | | | |
| | DATE EXTRACTED → | | | | | | | |
| | DATE ANALYZED → | | | | | | | |
| | MATRIX → | Soil | | Soil | | | | |
| | UNITS → | MG/KG | | MG/KG | | | | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | | | |
| METAL | Aluminum | 221. | | 138. | | | | |
| NETAL | Antimony | 2.6 | U | 2.2 | U | | | |
| NETAL | Arsenic | 0.49 | UJ | 0.42 | UJ | | | |
| NETAL | Barium | 0.4 | U | 0.34 | U | | | |
| NETAL | Beryllium | 0.07 | U | 0.06 | U | | | |
| METAL | Cadmium | 0.35 | U | 0.3 | U | | | |
| NETAL | Calcium | 5520. | | 12600. | | | | |
| METAL | Chromium | 2.9 | J | 9.4 | | | | |
| METAL | Cobalt | 0.54 | U | 0.46 | U | | | |
| METAL | Copper | 0.44 | U | 0.37 | U | | | |
| METAL | Cyanide | 0.11 | UJ | 0.1 | UJ | | | |
| METAL | Iron | 481. | | 384. | | | | |
| NETAL | Led | 0.82 | | 0.75 | | | | |
| METAL | Magnesium | 97.7 | | 98.2 | | | | |
| METAL | Manganese | 6. | J | 3.7 | J | | | |
| NETAL | Mercury | 0.02 | UJ | 0.03 | UJ | | | |
| METAL | Nickel | 1.7 | UJ | 4.2 | J | | | |
| METAL | Potassium | 109. | U | 93.2 | U | | | |
| NETAL | Selenium | 0.29 | U | 0.24 | U | | | |
| METAL | Silver | 0.6 | U | 0.52 | U | | | |
| METAL | Sodium | 66.1 | J | 132. | J | | | |
| METAL | Thallium | 0.47 | U | 0.4 | U | | | |
| METAL | Vanadium | 0.71 | U | 0.71 | U | | | |
| METAL | Zinc | 2.8 | UJ | 1.2 | UJ | | | |

+++ Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-S-0002-17 | | 014-S-0002-19 | | | |
| | ORIGINAL ID → | 1480217 | | 14S0219 | | | |
| | LAB SAMPLE ID → | 39390-10 | | 39390-11 | | | |
| | ID FROM REPORT → | 1430217 | | 14S0219 | | | |
| | SAMPLE DATE → | 02/21/94 | | 02/21/94 | | | |
| | DATE EXTRACTED → | 02/24/94 | | 02/24/94 | | | |
| | DATE ANALYZED → | 03/06/94 | | 03/06/94 | | | |
| | MATRIX → | soil | | Soil | | | |
| | UNITS → | UG/KG | | UG/KG | | | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | | |
| PEST | 4,4'-DDD | 3.7 | U | 3.6 | U | | |
| PEST | 4,4'-DDE | 3.7 | U | 3.6 | U | | |
| PEST | 4,4'-DDT | 3.7 | U | 3.6 | U | | |
| PEST | Aldrin | 1.9 | U | 1.8 | U | | |
| PEST | Aroclor-1016 | 37. | U | 36. | U | | |
| PEST | Aroclor-1221 | 75. | U | 73. | U | | |
| PEST | Aroclor-1232 | 37. | U | 36. | U | | |
| PEST | Aroclor-1242 | 37. | U | 36. | U | | |
| PEST | Aroclor-1248 | 37. | U | 36. | U | | |
| PEST | Aroclor-1254 | 37. | U | 36. | U | | |
| PEST | Aroclor-1260 | 37. | U | 36. | U | | |
| PEST | Dieldrin | 3.7 | U | 3.6 | U | | |
| PEST | Endosulfan I | 1.9 | U | 1.8 | U | | |
| PEST | Endosulfan II | 3.7 | U | 3.6 | U | | |
| PEST | Endosulfan sulfate | 3.7 | U | 3.6 | U | | |
| PEST | Endrin | 3.7 | U | 3.6 | U | | |
| PEST | Endrin aldehyde | 3.7 | U | 3.6 | U | | |
| PEST | Endrin ketone | 3.7 | U | 3.6 | U | | |
| PEST | Heptachlor | 1.9 | U | 1.8 | U | | |
| PEST | Heptachlor epoxide | 1.9 | U | 1.8 | U | | |
| PEST | Methoxychlor | 19. | U | 18. | U | | |
| PEST | Toxaphene | 190. | U | 180. | U | | |
| PEST | alpha-BHC | 1.9 | UJ | 1.8 | UJ | | |
| PEST | alpha-Chlordane | 1.9 | U | 1.8 | U | | |
| PEST | beta-BHC | 1.9 | U | 1.8 | U | | |
| PEST | delta-BHC | 1.9 | U | 1.8 | U | | |
| PEST | gamma-BHC (Lindane) | 1.9 | U | 1.8 | U | | |
| PEST | gamma-Chlordane | 1.9 | U | 1.8 | U | | |

*** Validation Complete ***

NAS PENSACOLA SITE 14
Soil samples
Phase I



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0002-17 | | 014-S-0002-19 | | | |
| ORIGINAL ID → | | 14S0217 | | 1490219 | | | |
| LAB SAMPLE ID → | | 39390-10 | | 39390-11 | | | |
| ID FROM REPORT → | | 1450217 | | 14S0219 | | | |
| SAMPLE DATE → | | 02/21/94 | | 02/21/94 | | | |
| DATE EXTRACTED → | | 02/25/94 | | 02/25/94 | | | |
| DATE ANALYZED → | | 03/08/94 | | 03/08/94 | | | |
| MATRIX → | | Soil | | Soil | | | |
| UNITS → | | UG/KG | | UG/KG | | | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | | |
| SVOA | 1,2,4-Trichlorobenzene | 370. | U | 350. | U | | |
| SVOA | 1,2-Dichlorobenzene | 370. | U | 350. | U | | |
| SVOA | 1,3-Dichlorobenzene | 370. | U | 350. | U | | |
| SVOA | 1,4-Dichlorobenzene | 370. | U | 350. | U | | |
| SVOA | 2,4,5-Trichlorophenol | 890. | U | 860. | U | | |
| SVOA | 2,4,6-Trichlorophenol | 370. | U | 350. | U | | |
| SVOA | 2,4-Dichlorophenol | 370. | U | 350. | U | | |
| SVOA | 2,4-Dimethylphenol | 370. | U | 350. | U | | |
| SVOA | 2,4-Dinitrophenol | 890. | U | 860. | U | | |
| SVOA | 2,4-Dinitrotoluene | 370. | U | 350. | U | | |
| SVOA | 2,6-Dinitrotolume | 370. | U | 350. | U | | |
| SVOA | 2-Chloronaphthalene | 370. | U | 350. | U | | |
| SVOA | 2-Chlorophenol | 370. | U | 350. | U | | |
| SVOA | 2-Methylnaphthalene | 370. | U | 350. | U | | |
| SVOA | 2-Methylphenol (o-Cresol) | 370. | U | 350. | U | | |
| SVOA | 2-Nitroaniline | 890. | U | 860. | U | | |
| SVOA | 2-Nitrophenol | 370. | U | 350. | U | | |
| SVOA | 3,3'-Dichlorobenzidine | 370. | U | 350. | U | | |
| SVOA | 3-Nitroaniline | 890. | U | 860. | U | | |
| SVOA | 4,6-Dinitro-2-methylphenol | 890. | U | 860. | U | | |
| SVOA | 4-Bromophenyl-phenylether | 370. | U | 350. | U | | |
| SVOA | 4-Chloro-3-methylphenol | 370. | U | 350. | U | | |
| SVOA | 4-Chloroaniline | 370. | U | 350. | U | | |
| SVOA | 4-Chlorophenyl-phenylether | 370. | U | 350. | U | | |
| SVOA | 4-Methylphenol (p-Cresol) | 370. | U | 350. | U | | |
| SVOA | 4-Nitroaniline | 890. | U | 860. | U | | |
| SVOA | 4-Nitrophenol | 890. | U | 860. | U | | |
| SVOA | Acenaphthene | 370. | U | 350. | U | | |
| SVOA | Acenaphthylene | 370. | U | 350. | U | | |
| SVOA | Anthracene | 370. | U | 350. | U | | |
| SVOA | Benzo(a)anthracene | 370. | U | 350. | U | | |
| SVOA | Benzo(a)pyrene | 370. | U | 350. | U | | |
| SVOA | Benzo(b)fluoranthene | 370. | U | 350. | U | | |
| SVOA | Benzo(g,h,i)perylene | 370. | U | 350. | U | | |
| SVOA | Benzo(k)fluoranthene | 370. | U | 350. | U | | |
| SVOA | Butylbenzylphthalate | 370. | U | 350. | U | | |

*** Validation Complete ***

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0002-17 | | 014-S-0002-19 | | | |
| ORIGINAL ID → | | 14S0217 | | 1450219 | | | |
| LAB SAMPLE ID → | | 39390-10 | | 39390-11 | | | |
| ID FROM REPORT → | | 14S0217 | | 1480219 | | | |
| SAMPLE DATE → | | 02/21/94 | | 02/21/94 | | | |
| DATE EXTRACTED → | | 02/25/94 | | 02/25/94 | | | |
| DATE ANALYZED → | | 03/08/94 | | 03/08/94 | | | |
| MATRIX → | | Soil | | Soil | | | |
| UNITS → | | UG/KG | | UG/KG | | | |
| Method | Parameter | C1516 | VAL | CT516 | VAL | | |
| SVOA | Carbazole | 370. | U | 350. | U | | |
| SVOA | Chrysene | 370. | U | 350. | U | | |
| SVOA | Di-n-butylphthalate | 370. | U | 350. | U | | |
| SVOA | Di-n-octylphthalate | 370. | U | 350. | U | | |
| SVOA | Dibenzo(a,h)anthracene | 370. | U | 350. | U | | |
| SVOA | Dibenzofuran | 370. | U | 350. | U | | |
| SVOA | Diethylphthalate | 370. | U | 350. | U | | |
| SVOA | Dimethylphthalate | 370. | U | 350. | U | | |
| SVOA | Fluoranthene | 370. | U | 350. | U | | |
| SVOA | Fluorene | 370. | U | 350. | U | | |
| SVOA | Hexachlorobenzene | 370. | U | 350. | U | | |
| SVOA | Hexachlorobutadiene | 370. | U | 350. | U | | |
| SVOA | Hexachlorocyclopentadiene | 370. | U | 350. | U | | |
| SVOA | Hexachloroethane | 370. | U | 350. | U | | |
| SVOA | Indeno(1,2,3-cd)pyrene | 370. | U | 350. | U | | |
| SVOA | Isophorone | 370. | U | 350. | U | | |
| SVOA | N-Nitroso-di-n-propylamine | 370. | U | 350. | U | | |
| SVOA | N-Nitrosodiphenylamine | 370. | U | 350. | U | | |
| SVOA | Naphthalene | 370. | U | 350. | U | | |
| SVOA | Nitrobenzene | 370. | U | 350. | U | | |
| SVOA | Pentachlorophenol | 890. | U | 860. | U | | |
| SVOA | Phenanthrene | 370. | U | 350. | U | | |
| SVOA | Phenol | 370. | U | 350. | U | | |
| SVOA | Pyrene | 370. | U | 350. | U | | |
| SVOA | bis(2-Chloroethoxy)methane | 370. | U | 350. | U | | |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 370. | U | 350. | U | | |
| SVOA | bis(2-Chloroethyl)ether | 370. | U | 350. | U | | |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 370. | U | 350. | U | | |

# NAS PENSACOLA SITE 14
## Soil Samples
## Phase I



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID | 014-S-0002-17 | | 014-S-0002-19 | | | | |
| | ORIGINAL ID | 1430217 | | 14S0219 | | | | |
| | LAB SAMPLE ID | 39390-32 | | 39390-33 | | | | |
| | ID FROM REPORT | 1480217 | | 14S0219 | | | | |
| | SAMPLE DATE | 02/21/94 | | 02/21/94 | | | | |
| | DATE EXTRACTED | | | | | | | |
| | DATE ANALYZED | 03/02/94 | | 03/04/94 | | | | |
| | MATRIX | Soil | | Soil | | | | |
| | UNITS | UG/KG | | UG/KG | | | | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | | | |
| VOA | 1,1,1-Trichloroethane | 11. | U | 54. | U | | | |
| VOA | 1,1,2,2-Tetrachloroethane | 11. | U | 54. | U | | | |
| VOA | 1,1,2-Trichloroethane | 11. | U | 54. | U | | | |
| VOA | 1,1-Dichloroethane | 11. | U | 54. | U | | | |
| VOA | 1,1-Dichloroethene | 11. | U | 54. | U | | | |
| VOA | 1,2-Dichloroethane | 11. | U | 54. | U | | | |
| VOA | 1,2-Dichloroethene (total) | 11. | U | 54. | U | | | |
| VOA | 1,2-Dichloropropane | 11. | U | 54. | U | | | |
| VOA | 2-Butanone (MEK) | 11. | U | 54. | U | | | |
| VOA | 2-Hexanone | 11. | U | 54. | U | | | |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 11. | U | 54. | U | | | |
| VOA | Acetone | 45. | U | 1000. | U | | | |
| VOA | Benzene | 11. | U | 54. | U | | | |
| VOA | Bromodichloromethane | 11. | U | 54. | U | | | |
| VOA | Bromoform | 11. | U | 54. | U | | | |
| VOA | Bromomethane | 11. | U | 54. | U | | | |
| VOA | Carbon disulfidc | 11. | U | 54. | U | | | |
| VOA | Carbon tctrachloridc | 11. | U | 54. | U | | | |
| VOA | Chlorobenzene | 11. | U | 54. | U | | | |
| VOA | Chloroethane | 11. | U | 54. | U | | | |
| VOA | Chloroform | 11. | U | 54. | U | | | |
| VOA | Chloromethane | 11. | U | 54. | U | | | |
| VOA | Dibromochloromethane | 11. | U | 54. | U | | | |
| VOA | Ethylbenzene | 11. | U | 54. | U | | | |
| VOA | Methylene chloride | 11. | U | 54. | U | | | |
| VOA | Styrene | 11. | U | 54. | U | | | |
| VOA | Tetrachloroethene | 11. | U | 54. | U | | | |
| VOA | Toluene | 11. | U | 54. | U | | | |
| VOA | Trichloroethene | 11. | U | 54. | U | | | |
| VOA | Vinyl chloride | 11. | U | 54. | U | | | |
| VOA | m+p-Xylenes | 11. | U | 54. | U | | | |
| VOA | cis-1,3-Dichloropropene | 11. | U | 54. | U | | | |
| VOA | trans-1,3-Dichloropropene | 11. | U | 54. | U | | | |

*** Validation Complete ***

**Site 14**

Phase **I Sediment Samples**

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-M-OOOI-01 | | 014-M-0002-01 | | 014-S-0003-01 | | 014-S-0003-05 | | 014-S-0003-05 D | | 014-S-0003-10 | |
| | ORIGINAL ID → | 14110101 | | 14110201 | | 1450301 | | 1450305 | | 14S0305D | | 14S0310 | |
| | LAB SAMPLE ID → | 39364-004 | | 39364-006 | | 39408-002 | | 39407-005 | | 39407-006 | | 39407-007 | |
| | ID FROM REPORT → | 14M0101 | | 14M0201 | | 14S0301 | | 14S0305 | | 14S0305D | | 14S0310 | |
| | SAMPLE DATE → | 02/17/94 | | 02/17/94 | | 02/22/94 | | 02/22/94 | | 02/22/94 | | 02/22/94 | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | | | | | | | | | | | | |
| | MATRIX → | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS → | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| HETAL | Aluminum | 51.5 | | 80.3 | | 3770. | J | 1730. | | 2140. | | 4420. | |
| METAL | Antimony | 2.6 | U | 2.2 | U | 3. | UJ | 1690. | | 3.3 | U | 6.5 | U |
| METAL | Arsenic | 0.49 | UJ | 0.41 | UJ | 2.4 | J | 17.5 | | 1.6 | J | 4.6 | |
| HETAL | Barium | 0.4 | U | 0.34 | U | 20.9 | | 11.6 | J | 15.6 | J | 12.7 | J |
| HETAL | Beryllium | 0.07 | U | 0.06 | U | 0.23 | | 0.13 | | 0.22 | | 0.33 | |
| METAL | cadmium | 0.35 | U | 0.3 | U | 0.41 | U | 0.45 | U | 0.36 | U | 0.88 | U |
| HETAL | Calcium | 9240. | | 3010. | | 20600. | | 16100. | | 18400. | | 33000. | |
| METAL | Chromium | 0.93 | J | 0.83 | J | 8.3 | J | 6. | | 5.8 | | 17. | |
| HETAL | Cobalt | 0.54 | U | 0.45 | U | 1.2 | | 0.69 | U | 1.4 | | 1.6 | |
| METAL | Copper | 0.44 | U | 0.37 | U | 14.1 | | 35.4 | | 21.6 | | 17.7 | |
| HETAL | Cyanide | 0.11 | UJ | 0.11 | UJ | 0.13 | U | 0.1 | UJ | 0.1 | UJ | 0.21 | UJ |
| HETAL | Iron | 464. | J | 221. | J | 6670. | | 4920. | | 4360. | | 10900. | |
| HETAL | Lead | 0.59 | | 1.3 | | 32.3 | | 28600. | J | 47. | J | 100. | J |
| HETAL | Magnesium | 209. | | 162. | | 2060. | | 1840. | | 1710. | | 3970. | |
| METAL | Manganese | 2.9 | J | 2.7 | J | 52.6 | | 48.3 | | 47.8 | | 146. | |
| METAL | Mercury | 0.03 | UJ | 0.03 | UJ | 0.2 | J | 1.6 | J | 0.23 | J | 0.19 | J |
| METAL | Nickel | 1.7 | UJ | 1.5 | UJ | 3.5 | | 2.3 | UJ | 2.3 | J | 4.3 | UJ |
| METAL | Potassium | 109. | U | 91.6 | U | 360. | J | 257. | | 406. | | 742. | |
| METAL | Selenium | 0.28 | U | 0.24 | U | 0.33 | U | 0.37 | U | 0.29 | U | 0.71 | U |
| METAL' | Silver | 0.6 | U | 0.51 | U | 0.7 | UJ | 2.9 | | 0.61 | U | 1.5 | U |
| METAL | Sodium | 1220. | | 1020. | | 829. | | 2110. | | 2070. | | 5680. | |
| METAL | Thallium | 0.47 | U | 0.4 | U | 0.54 | U | 0.61 | U | 0.48 | U | 1.2 | U |
| METAL | Vanadium | 0.55 | U | 0.47 | U | 10.6 | J | 4.8 | | 5.8 | U | 13.1 | |
| METAL | Zinc | 2.2 | UJ | 28.3 | | 36.8 | J | 29.5 | | 36.4 | | 58.9 | |

+*+ Validation Complete ***

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| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-U-OOOI-01 | | 014-M-0002-01 | | 014-S-OOO3-01 | | 014-S-0003-05 | | 014-S-0003-05 D | | 014-S-0003-10 | |
| ORIGINAL ID → | | 14M0101 | | 14M0201 | | 14S0301 | | 14S0305 | | 14S0305D | | 14S0310 | |
| LAB SAMPLE ID 2 — | | 39364-1 | | 39364-3 | | 39408-1 | | 39407-1 | | 39407-2 | | 39407-3 | |
| ID FROM REPORT → | | 14M0101 | | 14M0201 | | 14S0301 | | 14S0305 | | 14S0305D | | 14S0310 | |
| SAMPLE DATE → | | 02/17/94 | | 02/17/94 | | 02/22/94 | | 02/22/94 | | 02/22/94 | | 02/22/94 | |
| DATE EXTRACTED → | | 02/24/94 | | 02/24/94 | | 02/28/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| DATE ANALYZED → | | 03/08/94 | | 03/08/94 | | 03/10/94 | | 03/06/94 | | 03/06/94 | | 03/06/94 | |
| MATRIX → | | Soi1 | | soi1 | | Soil | | Soi1 | | Soi1 | | soi1 | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| PEST | 4,4'-DDD | 4. | U | 4. | UJ | 4.4 | U | 4.1 | U | 4. | U | 8.4 | U |
| PEST | 4,4'-DDE | 4. | U | 4. | UJ | 4.4 | U | 4.1 | U | 4. | U | 8.4 | U |
| PEST | 4,4'-DDT | 4. | U | 4. | UJ | 4.4 | U | 4.1 | U | 4. | U | 8.4 | U |
| PEST | Aldrin | 2.1 | UJ | 2. | UJ | 8.4 | J | 2.1 | U | 2.1 | U | 4.3 | U |
| PEST | Aroclor-1016 | 40. | UJ | 40. | UJ | 44. | U | 41. | U | 40. | U | 84. | U |
| PEST | Aroclor-1221 | 81. | UJ | 81. | UJ | 88. | U | 84. | U | 82. | U | 170. | U |
| PEST | Aroclor-1232 | 40. | UJ | 40. | UJ | 44. | U | 41. | U | 40. | U | 84. | U |
| PEST | Aroclor-1242 | 40. | UJ | 40. | UJ | 44. | U | 41. | U | 40. | U | 84. | U |
| PEST | Aroclor-1248 | 40. | UJ | 40. | UJ | 49. | J | 41. | U | 40. | U | 84. | U |
| PEST | Aroclor-1254 | 40. | UJ | 40. | UJ | 68. | J | 37. | J | 62. | | 61. | J |
| PEST | Aroclor-1260 | 40. | UJ | 40. | UJ | 44. | U | 41. | U | 40. | U | 84. | U |
| PEST | Dialdrin | 4. | UJ | 4. | UJ | 4.4 | U | 4.1 | U | 4. | U | 8.4 | U |
| PEST | Endosulfan 1 | 2.1 | UJ | 2. | UJ | 2.2 | U | 2.1 | U | 2.1 | U | 4.3 | U |
| PEST | Endosulfan II | 4. | UJ | 4. | UJ | 4.4 | U | 4.1 | U | 4. | U | 8.4 | U |
| PEST | Endosulfan sulfate | 4. | UJ | 4. | UJ | 4.4 | U | 4.1 | U | 4. | U | 8.4 | U |
| PEST | Endrin | 4. | UJ | 4. | UJ | 4.4 | U | 4.1 | U | 4. | U | 8.4 | U |
| PEST | Endrin aldehyde | 4. | UJ | 4. | UJ | 4.4 | U | 4.1 | U | 4. | U | 8.4 | U |
| PEST | Endrin ketone | 4. | UJ | 4. | UJ | 4.4 | U | 4.1 | U | 4. | U | 8.4 | U |
| PEST | Heptachlor | 2.1 | UJ | 2. | UJ | 2.2 | U | 2.1 | U | 2.1 | U | 4.3 | U |
| PEST | Heptachlor epoxide | 2.1 | UJ | 2. | UJ | 2.2 | U | 2.1 | U | 2.1 | U | 4.3 | U |
| PEST | Methoxychlor | 21. | UJ | 20. | UJ | 22. | U | 21. | U | 21. | U | 43. | U |
| PEST | Toxaphene | 210. | UJ | 200. | UJ | 220. | U | 210. | U | 210. | U | 430. | U |
| PEST | alpha-BHC | 2.1 | UJ | 2. | UJ | 2.2 | UJ | 2.1 | UJ | 2.1 | UJ | 4.3 | UJ |
| PEST | alpha-Chlordane | 2.1 | UJ | 2. | UJ | 2.2 | U | 2.1 | U | 2.1 | U | 4.3 | U |
| PEST | beta-WC | 2.1 | UJ | 2. | UJ | 2.2 | U | 2.1 | U | 2.1 | U | 4.3 | U |
| PEST | delta-WC | 2.1 | UJ | 2. | UJ | 2.2 | U | 2.1 | U | 2.1 | U | 4.3 | U |
| PEST | gamma-BHC (Lindane) | 2.1 | UJ | 2. | UJ | 2.2 | U | 2.1 | U | 2.1 | U | 4.3 | U |
| PEST | gamma-Chlordane | 2.1 | UJ | 2. | UJ | 2.2 | U | 2.1 | U | 2.1 | U | 4.3 | U |

*+* Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID | | 014-M-0001-01 | | 014-M-0002-01 | | 014-S-OW3-01 | | 014-S-0003-05 | | 014-S-0003-05 D | | 014-S-0003-10 | |
| ORIGINAL ID | | 14M0101 | | 14M0201 | | 14S0301 | | 14S0305 | | 14S0305D | | 14S0310 | |
| LAB SAMPLE ID | | 39364-1 | | 39364-3 | | 39408-1 | | 39407-1 | | 39407-2 | | 39407-3 | |
| ID FROM REPORT | | 14M0101 | | 14M0201 | | 14S0301 | | 1490305 | | 14S0305D | | 14S0310 | |
| SAMPLE DATE | | 02/17/94 | | 02/17/94 | | 02/22/94 | | 02/22/94 | | 12/22/94 | | 02/22/94 | |
| DATE EXTRACTED | | 02/25/94 | | 02/25/94 | | 02/28/94 | | 02/25/94 | | 12/25/94 | | 02/25/94 | |
| DATE ANALYZED | | 03/07/94 | | 03/07/94 | | 03/08/94 | | 03/08/94 | | 33/08/94 | | 03/08/94 | |
| MATRIX | | Soil | | soil | | Soil | | Soil | | Soil | | Soil | |
| UNITS | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 1,2-Dichlorobenzene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 1,3-Dichlorobenzene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 1,4-Dichlorobenzene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2,4,5-Trichlorophenol | 980. | U | 960. | U | 1100. | U | 1000. | U | 980. | U | 2000. | U |
| SVOA | 2,4,6-Trichlorophenol | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2,4-Dichlorophcno1 | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2,4-Dimethylphenol | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2,4-Dinitrophenol | 980. | U | 960. | U | 1100. | U | 1000. | U | 980. | U | 2000. | U |
| SVOA | 2,4-Dinitrotoluene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2,6-Dinitrotoluene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2-Chloronaphthalene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2-Chlorophenol | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2-Methylnaphthalene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2-Methylphenol (o-Cresol) | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2-Nitroaniline | 980. | U | 960. | U | 1100. | U | 1000. | U | 980. | U | 2000. | U |
| SVOA | 2-Nitrophenol | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 3,3'-Dichlorobenzidine | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 3-Nitroaniline | 980. | U | 960. | U | 1100. | U | 1000. | U | 980. | U | 2000. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 980. | U | 960. | U | 1100. | U | 1000. | U | 980. | U | 2000. | U |
| SVOA | 4-Bromophenyl-phenylether | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 4-Chloro-3-methylphenol | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 4-Chloroaniline | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 4-Chlorophenyl-phenylether | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 4-Methylphenol (p-Cresol) | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 4-Nitroaniline | 980. | U | 960. | U | 1100. | U | 1000. | U | 980. | U | 2000. | U |
| SVOA | 4-Nitrophenol | 980. | U | 960. | U | 1100. | U | 1000. | U | 980. | U | 2000. | U |
| SVOA | Acenaphthene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Acenaphthylene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Anthracene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Benzo(a)anthracene | 400. | U | 400. | U | 62. | J | 410. | U | 400. | U | 830. | U |
| SVOA | Benzo(a)pyrene | 400. | U | 400. | U | 100. | J | 410. | U | 87. | J | 180. | J |
| SVOA | Benzo(b)fluoranthene | 400. | U | 400. | U | 100. | J | 410. | U | 400. | U | 830. | U |
| SVOA | Benzo(g,h,i)perylene | 400. | U | 400. | U | 69. | J | 410. | U | 400. | U | 830. | U |
| SVOA | Benzo(k)fluoranthene | 400. | U | 400. | U | 110. | J | 410. | U | 400. | U | 830. | U |
| SVOA | Butylbenzylphthalate | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-M-0001-01 | | 014-M-0002-01 | | 014-S-WO3-01 | | 014-S-ooO3-OS | | 014-s-0003-05 D | | 014-S-WO3-10 | |
| ORIGINAL ID → | | 14M0101 | | 14M0201 | | 14S0301 | | 14S0305 | | 14S0305D | | 14S0310 | |
| LAB SAMPLE ID → | | 39364-1 | | 39364-3 | | 39408-1 | | 39407-1 | | 39407-2 | | 39407-3 | |
| ID FROM REPORT → | | 14M0101 | | 141110201 | | 14S0301 | | 1430305 | | 14S0305D | | 14S0310 | |
| SAMPLE DATE → | | 02/17/94 | | 02/17/94 | | 02/22/94 | | 02/22/94 | | 02/22/94 | | 02/22/94 | |
| DATE EXTRACTED → | | 02/25/94 | | 02/25/94 | | 02/28/94 | | 02/25/94 | | 02/25/94 | | 02/25/94 | |
| DATE ANALYZED → | | 03/07/94 | | 03/07/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | |
| MATRIX → | | Soil | | Soil | | Soi1 | | Soi1 | | Soil | | Soi1 | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| SVOA | Carbazole | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Chrysene | 400. | U | 400. | U | 74. | J | 410. | U | 400. | U | 830. | U |
| SVOA | Di-n-butylphthalate | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Oi-n-octylphthalate | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Dibenzo(a,h)anthracene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Dibenzofuran | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Ofethylphthslate | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Dimethylphthalate | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Fluoranthene | 400. | U | 400. | U | 120. | J | 410. | U | 400. | U | 830. | U |
| SVOA | Fluorene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Hexachlorobenzene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Hexachlorobutadiene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Hexachlorocyclopentadiene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Hexachloroethane | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 400. | U | 400. | U | 63. | J | 410. | U | 400. | U | 830. | U |
| SVOA | Isophorone | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | N-Nitroso-di-n-propylamine | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | N-Nitrosodiphenylamine | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Naphthalene | 400. | U | 400. | U | 44. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Nitrobenzene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Pentachlorophenol | 980. | U | 960. | U | 1100. | U | 1000. | U | 980. | U | 2000. | U |
| SVOA | Phenanthrene | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Phenol | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | Pyrene | 400. | U | 400. | U | 120. | J | 85. | S | 97. | J | 180. | J |
| SVOA | bis(2-Chloroethoxy)methane | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | bis(2-Chloroethyl)ether | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 400. | U | 400. | U | 440. | U | 410. | U | 400. | U | 830. | U |

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-11-0001-01 | | 014-M-0002-01 | | 014-S-0003-01 | | 014-S-0003-05 | | 014-S-0003-05 D | | 014-S-0003-10 | |
| ORIGINAL ID → | | 14M0101 | | 14M0201 | | 14S0301 | | 1480305 | | 14S0305D | | 14S0310 | |
| LAB SAMPLE ID → | | 39364-7 | | 39364-9 | | 39408-3 | | 39407-9 | | 39407-10 | | 39407-11 | |
| ID FROM REPORT → | | 14110101 | | 14110201 | | 14S0301 | | 14S0305 | | 14S0305D | | 14S0310 | |
| SAMPLE DATE → | | 02/17/94 | | 02/17/94 | | 02/22/94 | | 02/22/94 | | 02/22/94 | | 02/22/94 | |
| DATE EXTRACTED → | | | | | | | | | | | | | |
| DATE ANALYZED → | | 03/10/94 | | 03/10/94 | | 03/03/94 | | 03/02/94 | | 03/02/94 | | 03/02/94 | |
| MATRIX → | | Soil | | Soil | | Soil | | Soil | | soil | | Soil | |
| WITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| VOA | 1,1,1-Trichloroethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | 1,1,2-Trichloroethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | 1,1-Dichloroethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | 1,1-Dichloroethene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | 1,2-Dichloroethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | 1,2-Dichloroethene (total) | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | 1,2-Dichloropropane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | 2-Butanone (MEK) | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | 2-Hexanone | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Acetone | 88. | U | 55. | U | 50. | U | 210. | U | 42. | U | 110. | U |
| VOA | Benzene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Bromodichloromethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Bromoform | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Bromomethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | Carbon disulfide | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | Carbon tetrachloride | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Chlorobenzene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Chloroethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | Chlorofora | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | Chloromethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | Dibromochloromethane | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Ethylbenzene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Methylene chloride | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | Styrene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Tetrachloroethene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Toluene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Trichloroethene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | Vinyl chloride | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | UJ |
| VOA | m+p-Xylenes | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | cis-1,3-Dichloropropene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |
| VOA | trans-1,3-Dichloropropene | 13. | U | 12. | U | 13. | U | 12. | U | 13. | U | 26. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID | 014-S-0003-14 | | 014-S-0004-01 | | 014-S-0004-01 D | | 014-S-0004-05 | | 014-S-0004-10 | |
| | ORIGINAL ID | 1450314 | | 14S0401 | | 14S0401D | | 1450405 | | 14S0410 | |
| | LAB SAMPLE ID | 39407-008 | | 39432-009 | | 39432-010 | | 39432-011 | | 39432-012 | |
| | ID FROM REPORT | 1480314 | | 14S0401 | | 14S0401D | | 14S0405 | | 14S0410 | |
| | SAMPLE DATE | 02/22/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| | DATE EXTRACTED | | | | | | | | | | |
| | DATE ANALYZED | | | | | | | | | | |
| | MATRIX | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | CT516 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| METAL | Aluminum | 4570. | | 17100. | J | 10600. | J | 14800. | J | 2650. | J |
| METAL | Antimony | 3.6 | U | 6.7 | UJ | 4.9 | UJ | 5.9 | UJ | 2.8 | UJ |
| METAL | Arsenic | 4.8 | | 15.9 | | 10.6 | | 15.7 | | 4.9 | J |
| METAL | Barium | 6.6 | U | 26.2 | | 18.9 | | 24.9 | | 2.4 | U |
| METAL | Beryllium | 0.32 | | 1.3 | | 0.95 | | 1.2 | | 0.25 | |
| METAL | Cadmium | 0.48 | U | 0.91 | U | 0.66 | U | 0.79 | U | 0.38 | U |
| METAL | Calcium | 6070. | | 13900. | | 11200. | | 11700. | | 25900. | |
| METAL | Chromium | 17.3 | | 45.8 | J | 32.7 | J | 42.4 | J | 14.1 | J |
| METAL | Cobalt | 1.9 | | 6.7 | | 4.5 | | 6. | | 1.7 | |
| METAL | Copper | 5.7 | J | 20.8 | | 14.7 | | 19.7 | | 4.6 | U |
| METAL | Cyanide | 0.11 | UJ | 0.23 | U | 0.17 | U | 0.26 | U | 0.1 | U |
| METAL | Iron | 10100. | | 34000. | | 24300. | | 32200. | | 7400. | |
| METAL | Lead | 32.5 | J | 45.4 | | 34.6 | | 44. | | 9.1 | |
| METAL | Magnesium | 2870. | | 9090. | | 7120. | | 9200. | | 1500. | |
| METAL | Manganese | 185. | | 619. | | 498. | | 554. | | 77.9 | |
| METAL | Mercury | 0.04 | J | 0.15 | J | 0.15 | J | 0.12 | UJ | 0.04 | J |
| METAL | Nickel | 2.4 | UJ | 11.4 | | 7.9 | | 9.7 | | 3.8 | |
| METAL | Potassium | 841. | | 2650. | | 1710. | | 2980. | | 386. | J |
| METAL | Selenium | 0.39 | U | 0.73 | U | 0.53 | U | 0.64 | U | 0.31 | U |
| METAL | Silver | 0.82 | U | 1.6 | UJ | 1.1 | UJ | 1.4 | UJ | 0.65 | UJ |
| METAL | Sodium | 5190. | | 6690. | | 4300. | | 18100. | | 1930. | |
| METAL | Thallium | 0.64 | U | 1.2 | U | 0.88 | U | 1.1 | U | 0.5 | U |
| METAL | Vanadium | 11.9 | | 43.3 | J | 28.8 | J | 40.6 | J | 13.6 | J |
| METAL | Zinc | 27.5 | | 96.9 | J | 70.3 | J | 93.4 | J | 15. | J |

*** Validation Complete ***

# Phase I

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0003-14 | | 014-S-0004-01 | | 014-S-0004-01 D | | 014-S-0004-05 | | 014-S-0004-10 | |
| ORIGINAL ID → | | 1430314 | | 14S0401 | | 14S0401D | | 14S0405 | | 14S0410 | |
| LAB SAMPLE ID → | | 39407-4 | | 39432-1 | | 39432-2 | | 39432-3 | | 39432-4 | |
| ID FROM REPORT → | | 14S0314 | | 14S0401 | | 14S0401D | | 1480405 | | 14S0410 | |
| SAMPLE DATE → | | 02/22/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| DATE EXTRACTED → | | 02/24/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | |
| DATE ANALYZED → | | 03/06/94 | | 03/11/94 | | 03/11/94 | | 03/11/94 | | 03/11/94 | |
| MATRIX → | | Soil | | soil | | soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| PEST | 4,4'-DDD | 4.4 | UJ | a. | U | 6.7 | U | 9.6 | U | 3.9 | U |
| PEST | 4,4'-DDE | 4.4 | UJ | a. | U | 6.7 | U | 9.6 | U | 3.9 | U |
| PEST | 4,4'-DDT | 4.4 | UJ | 8. | U | 6.7 | U | 9.6 | U | 3.9 | U |
| PEST | Aldrin | 2.3 | UJ | 4.1 | U | 3.5 | U | 4.9 | U | 2. | U |
| PEST | Aroclor-IO16 | 44. | UJ | 80. | U | 67. | U | 96. | U | 39. | U |
| PEST | Aroclor-1221 | 89. | UJ | 160. | U | 140. | U | 190. | U | 80. | U |
| PEST | Aroclor-1232 | 44. | UJ | 80. | U | 67. | U | 96. | U | 39. | U |
| PEST | Aroclor-I242 | 44. | UJ | 80. | U | 67. | U | 96. | U | 39. | U |
| PEST | Aroclor-I248 | 44. | UJ | 50. | J | 67. | U | 96. | U | 39. | U |
| PEST | Aroclor-1254 | 44. | UJ | 80. | U | 67. | U | 96. | U | 39. | U |
| PEST | Aroclor-1260 | 44. | UJ | 42. | J | 36. | J | W. | U | 39. | U |
| PEST | Dieldrin | 4.4 | UJ | 8. | U | 6.7 | U | 9.6 | U | 3.9 | U |
| PEST | Endosulfan I | 2.3 | UJ | 4.1 | U | 3.5 | U | 4.9 | U | 2. | U |
| PEST | Endosulfan II | 4.4 | UJ | 8. | U | 6.7 | U | 9.6 | U | 3.9 | U |
| PEST | Endosulfan sulfate | 4.4 | UJ | 8. | U | 6.7 | U | 9.6 | U | 3.9 | U |
| PEST | Endrin | 4.4 | UJ | 8. | U | 6.7 | U | 9.6 | U | 3.9 | U |
| PEST | Endrin aldehyde | 4.4 | UJ | 8. | U | 6.7 | U | 9.6 | U | 3.9 | U |
| PEST | Endrin ketone | 4.4 | UJ. | a. | U | 6.7 | U | 9.6 | U | 3.9 | U |
| PEST | Heptachlor | 2.3 | UJ | 4.1 | U | 3.5 | U | 4.9 | U | 2. | U |
| PEST. | Heptachlor epoxide | 2.3 | UJ | 4.1 | U | 3.5 | U | 4.9 | U | 2. | U |
| PEST | Methoxychlor | 23. | UJ | 41. | U | 35. | U | 49. | U | 20. | U |
| PEST | Toxaphene | 230. | UJ | 410. | U | 350. | U | 490. | U | 200. | U |
| PEST | alpha-BHC | 2.3 | UJ | 4.1 | UJ | 3.5 | UJ | 4.9 | UJ | 2. | UJ |
| PEST | alpha-Chlordane | 2.3 | UJ | 4.1 | U | 3.5 | U | 4.9 | U | 2. | U |
| PEST | beta-BHC | 2.3 | UJ | 4.1 | U | 3.5 | U | 4.9 | U | 2. | U |
| PEST | delta-BHC | 2.3 | UJ | 4.1 | U | 3.5 | U | 4.9 | U | 2. | U |
| PEST | gama-BHC (Lindane) | 2.3 | UJ | 4.1 | U | 3.5 | U | 4.9 | U | 2. | U |
| PEST | gamma-Chlordane | 2.3 | UJ | 4.1 | U | 3.5 | U | 4.9 | U | 2. | U |

*** Validation Complete +**

# NAS PENSACOLA Site 14
## Sediment 'Samples
## Phase I



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0003-14 | | 014-S-0004-01 | | 014-S-0004-M D | | 014-S-0004-05 | | 014-S-0004-10 | |
| ORIGINAL ID → | | 1480314 | | 14S0401 | | 14S0401D | | 14S0405 | | 14S0410 | |
| LAB SAMPLE ID → | | 39407-4 | | 39432-1 | | 39432-2 | | 39432-3 | | 39432-4 | |
| ID FROM REPORT → | | 1430314 | | 14S0401 | | 14S0401D | | 14S0405 | | 14S0410 | |
| SAMPLE DATE → | | 02/22/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| DATE EXTRACTED → | | 02/25/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | |
| DATE ANALYZED → | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | |
| MATRIX → | | Soi1 | | Soi1 | | Soi1 | | soi1 | | soi1 | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 1,2-Dichlorobenzene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 1,3-Dichlorobenzene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 1,4-Dichlorobenzene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2,4,5-Trichlorophenol | 1000. | U | 1900. | U | 1600. | U | 2300. | U | 950. | U |
| SVOA | 2,4,6-Trichlorophenol | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2,4-Dichlorophenol | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SWA | 2,4-Dimethylphenol | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2,4-Dinitrophenol | 1000. | U | 1900. | U | 1600. | U | 2300. | U | 950. | U |
| SVOA | 2,4-Dinitrotoluene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2,6-Dinitrotolumc | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2-Chloronaphthalene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2-Chlorophenol | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2-Methylnaphthalenc | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2-Rethylphenol (o-Cresol) | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2-Nitroaniline | 1000. | U | 1900. | U | 1600. | U | 2300. | U | 950. | U |
| SVOA | 2-Nitrophenol | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 3,3'-Dichlorobenzidine | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 3-Nitroaniline | 1000. | U | 1900. | U | 1600. | U | 2300. | U | 950. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 1000. | U | 1900. | U | 1600. | U | 2300. | U | 950. | U |
| SVOA | 4-Bromophenyl-phenylether | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 4-Chloro-3-methylpheno1 | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 4-Chloroaniline | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 4-Chlomphenyl-phcny lcthcr | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 4-Rcthylphenol (p-Cresol) | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 4-Nitroaniline | 1000. | U | 1900. | U | 1600. | U | 2300. | U | 950. | U |
| SVOA | 4-Nitrophenol | 1000. | U | 1900. | U | 1600. | U | 2300. | U | 950. | U |
| SVOA | Acenaphthenc | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Acenaphthylenc | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Anthracenc | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Benzo(a)anthracene | 430. | U | 170. | J | 170. | J | 210. | J | 390. | U |
| SVOA | Benzo(a)pyrene | 430. | U | 250. | J | 220. | J | 340. | J | 390. | U |
| SVOA | Benzo(b)fluoranthene | 430. | U | 320. | J | 270. | J | 360. | J | 390. | U |
| SVOA | Benzo(g,h i)perylenc | 430. | U | 800. | U | 140. | J | 960. | U | 390. | U |
| SVOA | Benzo(k)fluoranthenc | 430. | U | 260. | J | 250. | J | 350. | J | 390. | U |
| SVOA | Butylbenzylphthalate | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-S-0003-14 | | 014-S-0004-01 | | 014-S-0004-01 D | | 014-S-0004-05 | | 014-S-0004-10 | |
| | ORIGINAL ID → | 1450314 | | 14S0401 | | 14S0401D | | 1480405 | | 14S0410 | |
| | LAB SAMPLE ID → | 39407-4 | | 39432-1 | | 39432-2 | | 39432-3 | | 39432-4 | |
| | ID FROM REPORT → | 1490314 | | 14S0401 | | 14S0401D | | 1430405 | | 14S0410 | |
| | SAMPLE DATE → | 02/22/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| | DATE EXTRACTED → | 02/25/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | |
| | DATE ANALYZED → | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | |
| | MATRIX → | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS → | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT516 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| SVOA | Carbazole | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Chrysene | 430. | U | 200. | J | 200. | J | 260. | J | 390. | U |
| SVOA | Di-n-butylphthalate | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Di-n-octylphthalate | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Dibenzo(a,h)anthracene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Dibenzofuran | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Diethylphthalate | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Dimethylphthalate | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Fluoranthene | 430. | U | 270. | J | 260. | J | 310. | J | 390. | U |
| SVOA | Fluorene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Hexachlorobenzene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Hexachlorobutadiene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Hexachlorocyclopentadiene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Hexachloroethane | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Isophorone | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | N-Nitroso-di-n-propylamine | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | N-Nitrosodiphenylamine | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Naphthalene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Nitrobenzene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Pentachlorophenol | 1000. | U | 1900. | U | 1600. | U | 2300. | U | 950. | U |
| SVOA | Phenanthrene | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Phenol | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | Pyrenc | 430. | U | 260. | J | 230. | J | 280. | J | 390. | U |
| SVOA | bis(2-Chloroethoxy)methane | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | bis(2-Chloroethyl)ether | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 430. | U | 800. | U | 670. | U | 960. | U | 390. | U |

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-S-0003-10 RE | | 014-S-0003-14 | | 014-S-0004-01 | | 014-S-0004-01 D | | 014-S-0004-05 | | 014-S-0004-10 | |
| | ORIGINAL ID → | 14S0310RE | | 1490314 | | 14S0401 | | 14S0401D | | 14S0405 | | 14S0410 | |
| | LAB SAMPLE ID → | 39407-11RE | | 39407-12 | | 39432-17 | | 39432-18 | | 39432-19 | | 39432-20 | |
| | ID FROM REPORT → | 14S0310RE | | 14S0314 | | 14S0401 | | 14S0401D | | 14S0405 | | 14S0410 | |
| | SAMPLE DATE → | 02/22/94 | | 02/22/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | 03/03/94 | | 03/02/94 | | 03/04/94 | | 03/04/94 | | 03/04/94 | | 03/04/94 | |
| | MATRIX → | Soil | | Soil | | soil | | Soil | | Soil | | Soil | |
| | UNITS → | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 1516 | | CT516 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| VOA | 1,1,1-Trichloroethane | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | 1,1,2,2-Tetrachloroethane | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | 1,1,2-Trichloroethane | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | 1,1-Dichloroethane | NR | | 13. | U | 2s. | U | 20. | U | 28. | U | 12. | U |
| VOA | 1,1-Dichloroethene | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | 1,2-Dichloroethane | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | 1,2-Dichloroethene (total) | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | 1,2-Dichloropropane | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | 2-Butanone (MEK) | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | 2-Hexanone | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | Acetone | NR | | 29. | U | 160. | U | 39. | U | 47. | U | 49. | U |
| VOA | Benzene | NR | | 13. | U | 2s. | U | 20. | U | 28. | U | 12. | U |
| VOA | Bromodichloromethane | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | Bromoform | NR | | 13. | U | 2s. | U | 20. | U | 28. | U | 12. | U |
| VOA | Bromomethane | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | Carbon disulfide | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| KIA | Carbon tetrachloride | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| KIA | Chlorobenzene | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| KIA | Chloroethane | NR | | 13. | U | 2s. | U | 20. | U | 28. | U | 12. | U |
| KIA | Chloroform | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | Chloromethane | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | Dibromochloromethane | NR | | 13. | U | 2s. | U | 20. | U | 28. | U | 12. | U |
| KIA | Ethylbenzene | NR | | 13. | U | 2s. | U | 20. | U' | 28. | U | 12. | U |
| VOA | Methylme chloride | NR | | 13. | U | 2s. | U | 20. | U | 28. | U | 12. | U |
| KIA | Styrene | NR | | 13. | U | 2s. | U | 20. | U | 28. | U | 12. | U |
| KIA | Tetrachloroethene | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | Toluene | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | Trichloroethene | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| KIA | Vinyl chloride | NR | | 13. | U | 2s. | U | 20. | U | 28. | U | 12. | U |
| VOA | m+p-Xylenes | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| VOA | cis-1,3-Dichloropropene | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |
| KIA | trans-1,3-Dichloropropene | NR | | 13. | U | 25. | U | 20. | U | 28. | U | 12. | U |

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0004-11 | | 014-S-0005-01 | | 014-S-0005-05 | | 014-S-0005-07 | | 014-S-0060-01 | | 014-S-0060-05 | |
| ORIGINAL ID → | | 14S0411 | | 14S0501 | | 14S0505 | | 14S0507 | | 14S0601 | | 14S0605 | |
| LAB SAMPLE ID → | | 39432-013 | | 39432-014 | | 39432-015 | | 39432-016 | | 39443-004 | | 39443-005 | |
| ID FROM REPORT → | | 14S0411 | | 14S0501 | | 14S0505 | | 14S0507 | | 14S0601 | | 14S0605 | |
| SAMPLE DATE → | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| DATE EXTRACTED → | | | | | | | | | | | | | |
| DATE ANALYZED → | | | | | | | | | | | | | |
| MATRIX → | | Soil | | Soil | | soil | | Soil | | Soil | | Soil | |
| UNITS → | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| METAL | Aluminum | 214. | J | 19400. | J | 15000. | J | 575. | J | 14100. | J | 20400. | J |
| METAL | Antimony | 2.6 | UJ | 6. | UJ | 6.8 | UJ | 2.4 | UJ | 6.5 | UJ | 6.5 | UJ |
| METAL | Arsenic | 0.48 | U | 13.9 | | 14.6 | | 0.88 | J | 13.8 | | 15. | |
| METAL | Barium | 0.4 | U | 27.5 | | 19.7 | | 0.68 | U | 26.3 | | 26.3 | |
| METAL | Beryllium | 0.07 | U | 1.2 | | 1.3 | | 0.06 | | 1.2 | | 1.2 | |
| METAL | Cadmium | 0.35 | U | 0.81 | U | 0.92 | U | 0.32 | U | 0.87 | U | 0.88 | U |
| METAL | Calcium | 24900. | | 11500. | | 13500. | | 14900. | | 10800. | | 14200. | |
| RETAL | Chromium | 0.88 | J | 45.7 | J | 43.5 | J | 2.4 | J | 42. | J | 45.7 | J |
| METAL | Cobalt | 0.53 | U | 5.9 | | 6.5 | | 0.49 | U | 6.8 | | 6.8 | |
| METAL | Copper | 0.43 | U | 17.8 | | 17.5 | | 1.1 | U | 21.4 | | 16.5 | |
| METAL | Cyanide | 0.08 | U | 0.23 | U | 0.28 | U | 0.08 | U | 0.17 | U | 0.27 | U |
| RETAL | Iran | 534. | | 31400. | | 31400. | | 1560. | | 30000. | | 32300. | |
| METAL | Lead | 0.69 | | 40.7 | | 45.9 | | 2.1 | | 43.7 | | 37.6 | |
| METAL | Magnesium | 385. | | 9530. | | 9480. | | 576. | | 7910. | | 9100. | |
| METAL | Manganese | 8.3 | | 586. | | 646. | | 15.1 | | 57s. | | 541. | |
| METAL | Mercury | 0.02 | UJ | 0.19 | J | 0.18 | J | 0.04 | UJ | 0.18 | J | 0.13 | J |
| METAL | Nickel | 1.7 | U | 11.3 | | 11.4 | | 1.6 | U | 11.2 | | 12.5 | |
| METAL | Potassium | 107. | UJ | 2710. | | 3080. | | 116. | J | 2480. | | 3170. | |
| METAL | Selenium | 0.28 | U | 0.65 | U | 0.74 | U | 0.26 | U | 0.7 | U | 0.71 | U |
| METAL | Silver | 0.59 | UJ | 1.4 | UJ | 1.6 | UJ | 0.55 | UJ | 1.5 | UJ | 1.5 | UJ |
| METAL | Sodium | 1230. | | 11200. | | 19100. | | 1580. | | 7430. | | 18900. | |
| METAL | Thallium | 0.46 | U | 1.1 | U | 1.2 | U | 0.43 | U | 1.2 | U | 1.2 | U |
| METAL | Vanadium | 1.1 | UJ | 42. | J | 41.9 | J | 2.7 | UJ | 39.1 | J | 43.4 | J |
| METAL | zinc | 0.99 | UJ | 87.4 | J | 79.5 | J | 3.1 | UJ | 97.1 | J | 84.3 | J |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-S-0004-11 | | 014-S-0005-01 | | 014-S-0005-05 | | 014-S-0005-07 | | 014-S-0060-01 | | 014-S-0060-05 | |
| ORIGINAL ID → | | 14S0411 | | 14S0501 | | 14S0505 | | 14S0507 | | 14S0601 | | 14S0605 | |
| LAB SAMPLE ID → | | 39432-5 | | 39432-6 | | 39432-7 | | 39432-8 | | 39443-1 | | 39443-2 | |
| ID FROM REPORT → | | 14S0411 | | 14S0501 | | 1430505 | | 1490507 | | 14S0601 | | 14S0605 | |
| SAMPLE DATE → | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| DATE EXTRACTED → | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | |
| DATE ANALYZED → | | 03/11/94 | | 03/11/94 | | 03/11/94 | | 03/11/94 | | 03/11/94 | | 03/11/94 | |
| MATRIX → | | soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| UNITS → | | UGfKG | | UGfKG | | UGfKG | | UGfKG | | UGfKG | | UG/KG | |
| Method | Parameter | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| PEST | 4,4'-DDD | 4. | U | 8.2 | U | 9.7 | U | 3.8 | U | 8.4 | U | 8.8 | U |
| PEST | 4,4'-DDE | 4. | U | 8.2 | U | 9.7 | U | 3.8 | U | 8.4 | U | 8.8 | U |
| PEST | 4,4'-DDT | 4. | U | 8.2 | U | 9.7 | U | 3.8 | U | 8.4 | U | 8.8 | U |
| PEST | Aldrin | 2.1 | U | 4.2 | U | 5. | U | 1.9 | U | 4.3 | U | 4.5 | U |
| PEST | Aroclor-1016 | 40. | U | 82. | U | 97. | U | 38. | U | 84. | U | 88. | U |
| PEST | Aroclor-1221 | 81. | U | 170. | U | 200. | U | 76. | U | 170. | U | 180. | U |
| PEST | Aroclor-1232 | 40. | U | 82. | U | 97. | U | 38. | U | 84. | U | 88. | U |
| PEST | Aroclor-1242 | 40. | U | 82. | U | 97. | U | 38. | U | 84. | U | 88. | U |
| PEST | Aroclor-1248 | 40. | U | 82. | U | 97. | U | 38. | U | 44. | J | 88. | U |
| PEST | Aroclor-1254 | 40. | U | 82. | U | 97. | U | 38. | U | 84. | U | 88. | U |
| PEST | Aroclor-1260 | 40. | U | 82. | U | 97. | U | 38. | U | 49. | J | 88. | U |
| PEST | Dieldrin | 4. | U | 8.2 | U | 9.7 | U | 3.8 | U | 8.4 | U | 8.8 | U |
| PEST | Endosulfan I | 2.1 | U | 4.2 | U | 5. | U | 1.9 | U | 4.3 | U | 4.5 | U |
| PEST | Endosulfan II | 4. | U | 8.2 | U | 9.7 | U | 3.8 | U | 8.4 | U | 8.8 | U |
| PEST | Endosulfan sulfate | 4. | U | 8.2 | U | 9.7 | U | 3.8 | U | 8.4 | U | 8.8 | U |
| PEST | Endrin | 4. | U | 8.2 | U | 9.7 | U | 3.8 | U | 8.4 | U | 8.8 | U |
| PEST | Endrin aldehyde | 4. | U | 8.2 | U | 9.7 | U | 3.8 | U | 8.4 | U | 8.8 | U |
| PEST | Endrin ketone | 4. | U | 8.2 | U | 9.7 | U | 3.8 | U | 8.4 | U | 8.8 | U |
| PEST | Heptachlor | 2.1 | U | 4.2 | U | 5. | U | 1.9 | U | 4.3 | U | 4.5 | U |
| PEST | Heptachlor epoxide | 2.1 | U | 4.2 | U | 5. | U | 1.9 | U | 4.3 | U | 4.5 | U |
| PEST | Methoxychlor | 21. | U | 42. | U | 50. | U | 19. | U | 43. | U | 45. | U |
| PEST | Toxaphene | 210. | U | 420. | U | 500. | U | 190. | U | 430. | U | 450. | U |
| PEST | alpha-BHC | 2.1 | UJ | 4.2 | UJ | 5. | UJ | 1.9 | UJ | 4.3 | UJ | 4.5 | UJ |
| PEST | alpha-Chlordane | 2.1 | U | 4.2 | U | 5. | U | 1.9 | U | 4.3 | U | 4.5 | U |
| PEST | beta-BHC | 2.1 | U | 4.2 | U | 5. | U | 1.9 | U | 4.3 | U | 4.5 | U |
| PEST | delta-BHC | 2.1 | U | 4.2 | U | 5. | U | 1.9 | U | 4.3 | U | 4.5 | U |
| PEST | gamma-BHC (Lindane) | 2.1 | U | 4.2 | U | 5. | U | 1.9 | U | 4.3 | U | 4.5 | U |
| PEST | gamma-Chlordane | 2.1 | U | 4.2 | U | 5. | U | 1.9 | U | 4.3 | U | 4.5 | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID | 014-S-0004-11 | | 014-5-0005-01 | | 014-S-0005-05 | | 014-S-0005-07 | | 014-S-0060-01 | | 014-S-0060-05 | |
| | ORIGINAL ID | 1450411 | | 14S0501 | | 1450505 | | 1450507 | | 14S0601 | | 14S0605 | |
| | LAB SAMPLE ID | 39432-5 | | 39432-6 | | 39432-7 | | 39432-8 | | 39443-1 | | 39443-2 | |
| | ID FROM REPORT | 1450411 | | 14S0501 | | 14S0505 | | 1450507 | | 14S0601 | | 14S0605 | |
| | SAMPLE DATE | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| | DATE EXTRACTED | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | |
| | DATE ANALYZED | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | |
| | MATRIX | Soil | | Soil | | soil | | soil | | Soil | | Soil | |
| | UNITS | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 1,2-Dichlorobenzene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 1,3-Dichlorobenzene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 1,4-Dichlorobenzene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2,4,5-Trichlorophenol | 960. | U | 2000. | U | 2300. | U | 920. | U | 2000. | U | 2100. | U |
| SVOA | 2,4,6-Trichlorophenol | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2,4-Dichlorophenol | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2,4-Dimethylphenol | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2,4-Dinitrophenol | 960. | U | 2000. | U | 2300. | U | 920. | U | 2000. | U | 2100. | U |
| SVOA | 2,4-Dinitrotoluene | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2,6-Dinitrotoluene | 400. | U | 820. | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2-Chloronaphthalene | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2-Chlorophenol | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2-Methylnaphthalene | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2-Methylphenol (o-Cresol) | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2-Nitromiline | 960. | U | | | 2300. | U | 920. | U | 2000. | U | 2100. | U |
| SVOA | 2-Mitrophenol | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 3,3'-Dichlorobenzidine | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 3-Mitroaniline | 960. | U | | | 2300. | U | 920. | U | 2000. | U | 2100. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 960. | U | | | 2300. | U | 920. | U | 2000. | U | 2100. | U |
| SVOA | 4-Bromophenyl-phenylether | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 4-Chloro-3-methylphenol | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 4-Chloroaniline | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 4-Chlorophcny l-pheny lcther | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 4-Methylphenol (p-Cresol) | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 4-Nitroaniline | 960. | U | | | 2300. | U | 920. | U | 2000. | U | 2100. | U |
| SVOA | 4-Nitrophenol | 960. | U | | | 2300. | U | 920. | U | 2000. | U | 2100. | U |
| SVOA | Acenaphthene | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Acenaphthylene | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Anthracene | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Benzo(a)anthracene | 400. | U | | | 960. | U | 380. | U | 830. | U | 280. | J |
| SVOA | Benzo(a)pyrene | 400. | U | | | 260. | J | 380. | U | 230. | J | 330. | J |
| SVOA | Benzo(b)fluoranthene | 400. | U | | | 300. | J | 380. | U | 280. | J | 380. | J |
| SVOA | Benzo(g,h,i)perylene | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Benzo(k)fluoranthene | 400. | U | | | 270. | J | 380. | U | 220. | J | 350. | J |
| SVOA | Butylbenzylphthalate | 400. | U | | | 960. | U | 380. | U | 830. | U | 880. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID ——> | 014-S-0004-11 | | 014-S-0005-01 | | 014-S-0005-05 | | 014-S-0005-07 | | 014-S-0060-01 | | 014-S-0060-05 | |
| | ORIGINAL ID ——> | 14S0411 | | 14S0501 | | 14S0505 | | 14S0507 | | 14S0601 | | 14S0605 | |
| | LAB SAMPLE ID ——> | 39432-5 | | 39432-6 | | 39432-7 | | 39432-8 | | 39443-1 | | 39443-2 | |
| | ID FROM REPORT ——> | 14S0411 | | 14S0501 | | 14S0505 | | 14S0507 | | 14S0601 | | 14S0605 | |
| | SAMPLE DATE ——> | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| | DATE EXTRACTED ——> | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | |
| | DATE ANALYZED ——> | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | |
| | MATRIX ——> | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ——> | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| SVOA | Carbazole | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Chrysene | 400. | U | 180. | J | 190. | J | 380. | U | 200. | J | 380. | J |
| SVOA | Di-n-butylphthalate | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Di-n-octylphthalate | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Dibenzo(a,h)anthracene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Dibenzofuran | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Diethylphthalate | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Dimethylphthalate | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Fluoranthene | 400. | U | 260. | J | 260. | J | 380. | U | 260. | J | 520. | J |
| SVOA | Fluorene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Hexachlorobenzene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Hexachlorobutadiene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Hexachlorocyclopentadiene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Hexachloroethane | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Isophorone | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | N-Nitroso-di-n-propylamine | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | N-Nitrosodiphenylamine | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Naphthalene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Nitrobenzene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Pentachlorophenol | 960. | U | 2000. | U | 2300. | U | 920. | U | 2000. | U | 2100. | U |
| SVOA | Phenanthrene | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Phenol | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | Pyrene | 400. | U | 240. | J | 230. | J | 380. | U | 210. | J | 390. | J |
| SVOA | bis(2-Chloroethoxy)methane | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | bis(2-Chloroethyl)ether | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 400. | U | 820. | U | 960. | U | 380. | U | 830. | U | 880. | U |

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-S-0004-11 | | 014-S-0005-01 | | 014-S-0005-05 | | 014-S-0005-07 | | 014-S-0060-01 | | 014-S-0060-05 | |
| | ORIGINAL ID → | 14S0411 | | 14S0501 | | 14S0505 | | 14S0507 | | 14S0601 | | 14S0605 | |
| | LAB SAMPLE ID → | 39432-21 | | 39432-22 | | 39432-23 | | 39432-24 | | 39443-7 | | 39443-8 | |
| | ID FROM REPORT → | 14S0411 | | 14S0501 | | 14S0505 | | 1430507 | | 14S0601 | | 14S0605 | |
| | SAMPLE DATE → | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | | 02/24/94 | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | 03/04/94 | | 03/04/94 | | 03/04/94 | | 03/04/94 | | 03/03/94 | | 03/04/94 | |
| | MATRIX → | Soi 1 | | Soil | | Soil | | soi 1 | | Soil | | Soi 1 | |
| | UNITS → | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| VOA | 1,1,1-Trichloroethane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 1,1,2-Trichloroethane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 1,1-Dichloroethane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 1,1-Dichlorocthene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 1.2-Dichlorocthane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 1,2-Dichloroethene (total) | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 1,2-Dichloropropane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 2-Butanone (MEK) | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 2-Hexanone | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Acetone | 24. | U | 150. | U | 160. | U | 22. | U | 150. | U | 250. | U |
| VOA | Benzene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Bromodichloromethane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Bromoform | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Bromomethane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Carbon disulfide | 13. | U | 26. | U | 22. | J | 12. | U | 27. | U | 28. | U |
| VOA | Carbon tetrachLoride | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Chlorobenzene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Chloroethane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Chloroform | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Chloromethane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Dibromochloromethane | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Ethylbenzene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Methylene chloride | 13. | U | 26. | U | 28. | U | 12. | U | 31. | U | 28. | U |
| VOA | Styrene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | letrachloroethene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Toluene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Trichloroethene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | Vinyl chloride | 13. | U | 26. | U | 20. | U | 12. | U | 27. | U | 28. | U |
| VOA | m+p-Xylenes | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | cis-1,3-Dichloropropene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |
| VOA | trans-1,3-Dichloropropene | 13. | U | 26. | U | 28. | U | 12. | U | 27. | U | 28. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID → | 014-S-0060-09 | | | | | |
| ORIGINAL ID → | 14S0609 | | | | | |
| LAB SAMPLE ID → | 39443-006 | | | | | |
| ID FROM REPORT → | 14S0609 | | | | | |
| SAMPLE DATE → | 02/24/94 | | | | | |
| DATE EXTRACTED → | | | | | | |
| DATE ANALYZED → | | | | | | |
| MATRIX → | Soil | | | | | |
| UNITS → | MG/KG | | | | | |
| Method / Parameter | CT518 | VAL | | | | |
| METAL Aluminun | 1670. | J | | | | |
| METAL Antimony | 3.2 | UJ | | | | |
| METAL Arsenic | 1.3 | J | | | | |
| METAL Barium | 2.5 | U | | | | |
| METAL Beryllium | 0.1 | | | | | |
| METAL Cadmium | 0.43 | U | | | | |
| METAL Calcium | 10900. | | | | | |
| METAL Chromium | 5. | J | | | | |
| METAL Cobalt | 0.66 | U | | | | |
| METAL Copper | 1.6 | U | | | | |
| METAL Cyanide | 0.12 | U | | | | |
| METAL Iron | 3450. | | | | | |
| METAL Lead | 4.9 | | | | | |
| METAL Magnesium | 871. | | | | | |
| METAL Manganese | 52.7 | | | | | |
| METAL Mercury | 0.03 | UJ | | | | |
| METAL Nickel | 2.1 | U | | | | |
| METAL Potassium | 257. | J | | | | |
| METAL Selenium | 0.35 | U | | | | |
| METAL Silver | 0.74 | UJ | | | | |
| METAL Sodium | 1710. | | | | | |
| METAL Thallium | 0.57 | U | | | | |
| METAL Vanadium | 5.1 | UJ | | | | |
| METAL Zinc | 6.8 | J | | | | |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-S-0060-09 | | | | | |
| | ORIGINAL ID → | 14S0609 | | | | | |
| | LAB SAMPLE ID → | 39443-3 | | | | | |
| | ID FROM REPORT → | 14S0609 | | | | | |
| | SAMPLE DATE → | 02/24/94 | | | | | |
| | DATE EXTRACTED → | 02J28J94 | | | | | |
| | DATE ANALYZED → | 03/11/94 | | | | | |
| | MATRIX → | Soil | | | | | |
| | UNITS → | UG/KG | | | | | |
| Method | Parameter | CT518 | VAL | | | | |
| PEST | 4,4'-DDD | 4.3 | U | | | | |
| PEST | 4,4'-DDE | 4.3 | U | | | | |
| PEST | 4,4'-DDT | 4.3 | U | | | | |
| PEST | Aldrin | 2.2 | U | | | | |
| PEST | Aroclor-1016 | 43. | U | | | | |
| PEST | Aroclor-1221 | 88. | U | | | | |
| PEST | Aroclor-1232 | 43. | U | | | | |
| PEST | Aroclor-1242 | 43. | U | | | | |
| PEST | Aroclor-1248 | 43. | U | | | | |
| PEST | Aroclor-1254 | 43. | U | | | | |
| PEST | Aroclor-1260 | 43. | U | | | | |
| PEST | Dieldrin | 4.3 | U | | | | |
| PEST | Endosulfan I | 2.2 | U | | | | |
| PEST | Endosulfan II | 4.3 | U | | | | |
| PEST | Endosulfan sulfate | 4.3 | U | | | | |
| PEST | Endrin | 4.3 | U | | | | |
| PEST | Endrin aldehyde | 4.3 | U | | | | |
| PEST | Endrin ketone | 4.3 | U | | | | |
| PEST | Heptachlor | 2.2 | U | | | | |
| PEST | Heptachlor epoxide | 2.2 | U | | | | |
| PEST | Methoxychlor | 22. | U | | | | |
| PEST | Toxaphene | 220. | U | | | | |
| PEST | alpha-BHC | 2.2 | UJ | | | | |
| PEST | alpha-Chlordane | 2.2 | U | | | | |
| PEST | beta-BHC | 2.2 | U | | | | |
| PEST | delta-BHC | 2.2 | U | | | | |
| PEST | gamma-BHC (Lindane) | 2.2 | U | | | | |
| PEST | gamma-Chlordane | 2.2 | U | | | | |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | |
|---|---|
| SAMPLE ID → | 014-5-0060-09 |
| ORIGINAL ID → | 14S0609 |
| LAB SAMPLE ID → | 39443-3 |
| ID FROM REPORT → | 14S0609 |
| SAMPLE DATE → | 02/24/94 |
| DATE EXTRACTED → | 02/28/94 |
| BATE ANALYZED → | 03/09/94 |
| MATRIX → | Soil |
| UNITS → | UG/KG |

| Method | Parameter | CT518 | VAL |
|---|---|---|---|
| SVOA | 1,2,4-Trichlorobenzene | 440. | U |
| SVOA | 1,2-Dichlorobenzene | 440. | U |
| SVOA | 1,3-Dichlorobenzene | 440. | U |
| SVOA | 1,4-Dichlorobenzene | 440. | U |
| SVOA | 2,4,5-Trichlorophenol | 1100. | U |
| SVOA | 2,4,6-Trichlorophenol | 440. | U |
| SVOA | 2,4-Dichlorophenol | 440. | U |
| SVOA | 2,4-Dimethylphenol | 440. | U |
| SVOA | 2,4-Dinitrophenol | 1100. | U |
| SVOA | 2,4-Dinitrotoluene | 440. | U |
| SVOA | 2,6-Dinitrotoluene | 440. | U |
| SVOA | 2-Chloronaphthalene | 440. | U |
| SVOA | 2-Chlorophenol | 440. | U |
| SVOA | 2-Methylnaphthalene | 440. | U |
| SVOA | 2-Methylphenol (o-Cresol) | 440. | U |
| SVOA | 2-Nitroaniline | 1100. | U |
| SVOA | 2-Nitrophenol | 440. | U |
| SVOA | 3,3'-Dichlorobenzidine | 440. | U |
| SVOA | 3-Nitroaniline | 1100. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 1100. | U |
| SVOA | 4-Bromophenyl-phenylether | 440. | U |
| SVOA | 4-Chloro-3-methylphenol | 440. | U |
| SVOA | 4-Chloroaniline | 440. | U |
| SVOA | 4-Chlorophenyl-phenylether | 440. | U |
| SVOA | 4-Methylphenol (p-Cresol) | 440. | U |
| SVOA | 4-Nitroaniline | 1100. | U |
| SVOA | 4-Nitrophenol | 1100. | U |
| SVOA | Acenaphthene | 440. | U |
| SVOA | Acenaphthylene | 440. | U |
| SVOA | Anthracene | 440. | U |
| SVOA | Benzo(a)anthracene | 440. | U |
| SVOA | Benzo(a)pyrene | 170. | J |
| SVOA | Benzo(b)fluoranthene | 170. | J |
| SVOA | Benzo(g,h,i)perylene | 440. | U |
| SVOA | Benzo(k)fluoranthene | 220. | J |
| SVOA | Butylbenzylphthalate | 440. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID ——> | 014-S-0060-09 | | | | | |
| ORIGINAL ID ——> | 14S0609 | | | | | |
| LAB SAMPLE ID ——> | 39443-3 | | | | | |
| ID FROM REPORT ——> | 14S0609 | | | | | |
| SAMPLE DATE ——> | 02/24/94 | | | | | |
| DATE EXTRACTED ——> | 02/28/94 | | | | | |
| DATE ANALYZED ——> | 03/09/94 | | | | | |
| MATRIX ——> | Soil | | | | | |
| UNITS ——> | UG/KG | | | | | |
| Method | Parameter | CT518 | VAL | | | |
| SVOA | Carbazole | 440. | U | | | |
| SVOA | Chrysene | 100. | J | | | |
| SVOA | Di-n-butylphthalate | 440. | U | | | |
| SVOA | Di-n-octylphthalate | 440. | U | | | |
| SVOA | Dibenzo(a,h)anthracene | 440. | U | | | |
| SVOA | Dibenzofuran | 440. | U | | | |
| SVOA | Diethylphthalate | 440. | U | | | |
| SVOA | Dimethylphthalate | 440. | U | | | |
| SVOA | Fluoranthene | 120. | J | | | |
| SVOA | Fluorene | 440. | U | | | |
| SVOA | Hexachlorobenzene | 440. | U | | | |
| SVOA | Hexachlorobutadiene | 440. | U | | | |
| SVOA | Hexachlorocyclopentadiene | 440. | U | | | |
| SVOA | Hexachloroethane | 440. | U | | | |
| SVOA | Indeno(1,2,3-cd)pyrene | 440. | U | | | |
| SVOA | Isophorone | 440. | U | | | |
| SVOA | N-Nitroso-di-n-propylamine | 440. | U | | | |
| SVOA | N-Nitrosodiphenylamine | 440. | U | | | |
| SVOA | Naphthalene | 440. | U | | | |
| SVOA | Nitrabenzene | 440. | U | | | |
| SVOA | Pentachlorophenol | 1100. | U | | | |
| SVOA | Phenanthrene | 440. | U | | | |
| SVOA | Phenol | 440. | U | | | |
| SVOA | Pyrene | 420. | J | | | |
| SVOA | bis(2-Chloroethoxy)methane | 440. | U | | | |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 440. | U | | | |
| SVOA | bis(2-Chloroethyl)ether | 440. | U | | | |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 440. | U | | | |

# NAS PENSACOLA Site 14
## Sediment Samples
## Phase I



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID → | 014-S-0060-09 | | | | | |
| ORIGINAL ID → | 14S0609 | | | | | |
| LAB SAMPLE ID → | 39443-9 | | | | | |
| ID FROM REPORT → | 14S0609 | | | | | |
| SAMPLE DATE → | 02/24/94 | | | | | |
| DATE EXTRACTED → | | | | | | |
| DATE ANALYZED → | 03/03/94 | | | | | |
| MATRIX → | Soil | | | | | |
| UNITS → | UG/KG | | | | | |
| Method / Parameter | CT518 | VAL | | | | |
| VOA 1,1,1-Trichloroethane | 13. | U | | | | |
| VOA 1,1,2,2-Tetrachloroethane | 13. | U | | | | |
| VOA 1,1,2-Trichloroethane | 13. | U | | | | |
| VOA 1,1-Dichloroethane | 13. | U | | | | |
| VOA 1,1-Dichloroethene | 13. | U | | | | |
| VOA 1,2-Dichloroethane | 13. | U | | | | |
| VOA 1,2-Dichloroethene (total) | 13. | U | | | | |
| VOA 1,2-Dichloropropane | 13. | U | | | | |
| VOA 2-Butanone (MEK) | 13. | U | | | | |
| VOA 2-Hexanone | 13. | U | | | | |
| VOA 4-Methyl-2-Pentanone (MIBK) | 13. | U | | | | |
| VOA Acetone | 13. | U | | | | |
| VOA Benzene | 13. | U | | | | |
| VOA Bromodichloromethane | 13. | U | | | | |
| VOA Bromoform | 13. | U | | | | |
| VOA Bromomethane | 13. | U | | | | |
| VOA Carbon ditulfide | 13. | U | | | | |
| VOA Carbon tetrachloride | 13. | U | | | | |
| VOA Chlorobenzene | 13. | U | | | | |
| VOA Chloroethane | 13. | U | | | | |
| VOA Chloroform | 13. | U | | | | |
| VOA Chloromethane | 13. | U | | | | |
| KIA Dibromochloromethane | 13. | U | | | | |
| KIA Ethylbenzene | 13. | U | | | | |
| KIA Methylene chloride | 13. | U | | | | |
| VOA Styrene | 13. | U | | | | |
| VOA Tetrachloroethene | 13. | U | | | | |
| KIA Toluene | 13. | U | | | | |
| KIA Trichloroethene | 13. | U | | | | |
| VOA Vinyl chloride | 13. | U | | | | |
| VOA m+p-Xylenes | 13. | U | | | | |
| VOA cis-1,3-Dichloropropene | 13. | U | | | | |
| KIA trans-1,3-Dichloropropene | 13. | U | | | | |

*** Validation Complete ***

**Site 14**

**Phase I Lab Blanks**

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | LCS-T-T514-01 MS | | LCS-T-T514-01 MSD | | LCS-T-T516-01 MS | | LCS-T-T516-02 MSD | | LCS-T-T518-01 MS | | LCS-T-T518-01 MSD | |
| ORIGINAL ID → | | LCSG79MS | | LCSG79MSD | | LCSH86MS | | LCSH86MSD | | LCSI87MS | | LCSI87MSD | |
| LAB SAMPLE ID → | | SP3285MS | | SP3286MSD | | SP3295MS | | SP3296MSD | | SP3299MS | | SP3300MSD | |
| ID FROM REPORT → | | LCSG79MS | | LCSG79MSD | | LCSH86MS | | LCSH86MSD | | LCSI87MS | | LCSI87MSD | |
| SAMPLE DATE → | | | | | | | | | | | | | |
| DATE EXTRACTED → | | 02/17/94 | | 02/17/94 | | 02/24/94 | | 02/24/94 | | 02/28/94 | | 02/28/94 | |
| DATE ANALYZED → | | 02/22/94 | | 02/22/94 | | 03/08/94 | | 03/08/94 | | 03/10/94 | | 03/10/94 | |
| MATRIX → | | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT518 | VAL |
| PEST | 4,4'-DDD | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U |
| PEST | 4,4'-DDE | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U |
| PEST | 4,4'-DDT | 22. | | 24. | | 24. | | 27. | | 38. | | 36. | |
| PEST | Aldrin | 9.7 | | 9.8 | | 9.6 | P | 9.6 | P | 16. | | 16. | |
| PEST | Aroclor-1016 | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U |
| PEST | Aroclor-1221 | 67. | U | 67. | U | 67. | U | 67. | U | 67. | U | 67. | U |
| PEST | Aroclor-1232 | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U |
| PEST | Aroclor-1242 | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U |
| PEST | Aroclor-1248 | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U |
| PEST | Aroclor-1254 | 80. | | 100. | | 87. | | 110. | | 120. | | 140. | |
| PEST | Aroclor-1260 | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U | 33. | U |
| PEST | Dieldrin | 22. | P | 24. | P | 24. | P | 26. | P | 39. | | 37. | P |
| PEST | Endosulfan I | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U |
| PEST | Endosulfan II | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U |
| PEST | Endosulfan sulfate | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U |
| PEST | Endrin | 24. | | 27. | | 27. | | 29. | | 41. | | 41. | |
| PEST | Endrin aldehyde | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U |
| PEST | Endrin ketone | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U |
| PEST | Heptachlor | 10. | | 10. | | 11. | | 11. | | 17. | | 17. | |
| PEST | Heptachlor epoxide | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U |
| PEST | Methoxychlor | 17. | U | 17. | U | 17. | U | 17. | U | 17. | U | 17. | U |
| PEST | Toxaphene | 170. | U | 170. | U | 170. | U | 170. | U | 170. | U | 170. | U |
| PEST | alpha-BHC | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U |
| PEST | alpha-Chlordane | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U |
| PEST | beta-BHC | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U |
| PEST | delta-BHC | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U |
| PEST | gamma-BHC (Lindane) | 9.1 | | 9.4 | | 10. | | 10. | | 18. | | 18. | |
| PEST | gamma-Chlordane | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | LCS-T-T519-01 MS | | LCS-T-T519-01 MSD | | PBL-T-T514-01 | | PBL-T-T514-02 | | PEL-1-1514-03 | | PBL-T-T516-01 | |
| ORIGINAL ID → | | LCSH82MS | | LCSH82MSD | | PBLK45 | | PBLK46 | | PBLK47 | | PBLK55 | |
| LAB SAMPLE ID → | | SP3301MS | | SP3302MSD | | BP2780 | | BP2784 | | BP2784B | | BP2790B | |
| ID FROM REPORT → | | LCSH82MS | | LCSH82MSD | | PBLK45 | | PBLK46 | | PBLK47 | | PBLK55 | |
| SAMPLE DATE → | | | | | | | | | | | | | |
| DATE EXTRACTED → | | 02/20/94 | | 02/28/94 | | 02/16/94 | | 02/17/94 | | 02/17/94 | | 02/21/94 | |
| DATE ANALYZED → | | 03/04/94 | | 03/04/94 | | 02/22/94 | | 02/22/94 | | 02/23/94 | | 03/05/94 | |
| MATRIX → | | Water | | Water | | Water | | Soil | | Soil | | Water | |
| UNITS → | | UG/L | | UG/L | | UG/L | | UG/KG | | UG/KG | | UG/L | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT516 | VAL |
| PEST | 4,4'-DDD | 0.1 | U | 0.1 | U | 0.1 | U | 3.3 | U | 5.3 | U | 0.1 | U |
| PEST | 4,4'-DDE | 0.1 | U | 0.1 | U | 0.1 | U | 3.3 | U | 5.3 | U | 0.1 | U |
| PEST | 4,4'-DDT | 0.04 | | 0.76 | | 0.1 | U | 3.3 | U | 5.3 | U | 0.1 | U |
| PEST | Aldrin | 0.37 | P | 0.35 | P | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |
| PEST | Aroclor-1016 | 1. | U | 1. | U | 1. | U | 33. | U | 53. | U | 1. | U |
| PEST | Aroclor-1221 | 2. | U | 2. | U | 2. | U | 67. | U | 110. | U | 2. | U |
| PEST | Aroclor-1232 | 1. | U | 1. | U | 1. | U | 33. | U | 53. | U | 1. | U |
| PEST | Aroclor-1242 | 1. | U | 1. | U | 1. | U | 33. | U | 53. | U | 1. | U |
| PEST | Aroclor-1248 | 1. | U | 1. | U | 1. | U | 33. | U | 53. | U | 1. | U |
| PEST | Aroclor-1254 | 4.3 | | 4.1 | | 1. | U | 33. | U | 53. | U | 1. | U |
| PEST | Aroclor-1260 | 1. | U | 1. | U | 1. | U | 33. | U | 53. | U | 1. | U |
| PEST | Dieldrin | 0.98 | P | 0.93 | P | 0.1 | U | 3.3 | U | 5.3 | U | 0.1 | U |
| PEST | Endosulfan I | 0.05 | U | 0.05 | U | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |
| PEST | Endosulfan II | 0.1 | U | 0.1 | U | 0.1 | U | 3.3 | U | 5.3 | U | 0.1 | U |
| PEST | Endosulfan sulfate | 0.1 | U | 0.1 | U | 0.1 | U | 3.3 | U | 5.3 | U | 0.1 | U |
| PEST | Endrin | 1. | | 1. | | 0.1 | U | 3.3 | U | 5.3 | U | 0.1 | U |
| PEST | Endrln aldehyde | 0.1 | U | 0.1 | U | 0.1 | U | 3.3 | U | 5.3 | U | 0.1 | U |
| PEST | Endrin ketone | 0.1 | U | 0.1 | U | 0.1 | U | 3.3 | U | 5.3 | U | 0.1 | U |
| PEST | Heptachlor | 0.43 | | 0.41 | | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |
| PEST | Heptachlor epoxide | 0.05 | U | 0.05 | U | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |
| PEST | Methoxychlor | 0.5 | U | 0.5 | U | 0.5 | U | 17. | U | 27. | U | 0.5 | U |
| PEST | Toxaphene | 5. | U | 5. | U | 5. | U | 170. | U | 270. | U | 5. | U |
| PEST | alpha-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |
| PEST | alpha-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |
| PEST | beta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |
| PEST | delta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |
| PEST | gamma-BHC (Lindane) | 0.42 | P | 0.4 | P | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |
| PEST | gamma-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 1.7 | U | 2.7 | U | 0.05 | U |

*** Validation Complete ***

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | PBL-T-T516-02 | | PBL-T-T516-03 | | PBL-T-T518-01 | | PBL-T-T518-02 | | PBL-T-T518-03 | | PBL-T-T519-01 | |
| | ORIGINAL ID → | PBLK56 | | PBLK61 | | PBLK62 | | PBLK63 | | PBLK64 | | PBLK52 | |
| | LAB SAMPLE ID → | BP2792B | | BP2794C | | BP2792C | | BP2796 | | BP2797B | | BP2797 | |
| | ID FROM REPORT → | PBLK56 | | PBLK61 | | PBLK62 | | PBLK63 | | PBLK64 | | PBLK52 | |
| | SAMPLE DATE → | | | | | | | | | | | | |
| | DATE EXTRACTED → | 02/23/94 | | 02/24/94 | | 02/23/94 | | 02/28/94 | | 02/28/94 | | 02/28/94 | |
| | DATE ANALYZED → | 03/05/94 | | 03/08/94 | | 03/10/94 | | 03/10/94 | | 03/10/94 | | 03/04/94 | |
| | MATRIX → | Water | | soil | | Water | | Soil | | Water | | Water | |
| | UNITS → | UG/L | | UG/KG | | UG/L | | UG/KG | | UG/L | | UG/L | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT519 | VAL |
| PEST | 4,4'-DDD | 0.1 | U | 3.3 | U | 0.1 | U | 3.3 | U | 0.1 | U | 0.1 | U |
| PEST | 4,4'-DDE | 0.1 | U | 3.3 | U | 0.1 | U | 3.3 | U | 0.1 | U | 0.1 | U |
| PEST | 4,4'-DDT | 0.1 | U | 3.3 | U | 0.1 | U | 3.3 | U | 0.1 | U | 0.1 | U |
| PEST | Aldrin | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |
| PEST | Aroclor-1016 | 1. | U | 33. | U | 1. | U | 33. | U | 1. | U | 1. | U |
| PEST | Aroclor-1221 | 2. | U | 67. | U | 2. | U | 67. | U | 2. | U | 2. | U |
| PEST | Aroclor-1232 | 1. | U | 33. | U | 1. | U | 33. | U | 1. | U | 1. | U |
| PEST | Aroclor-1242 | 1. | U | 33. | U | 1. | U | 33. | U | 1. | U | 1. | U |
| PEST | Aroclor-1248 | 1. | U | 33. | U | 1. | U | 33. | U | 1. | U | 1. | U |
| PEST | Aroclor-1254 | 1. | U | 33. | U | 1. | U | 33. | U | 1. | U | 1. | U |
| PEST | Aroclor-1260 | 1. | U | 33. | U | 1. | U | 33. | U | 1. | U | 1. | U |
| PEST | Dieldrin | 0.1 | U | 3.3 | U | 0.1 | U | 3.3 | U | 0.1 | U | 0.1 | U |
| PEST | Endosulfan I | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |
| PEST | Endosulfan II | 0.1 | U | 3.3 | U | 0.1 | U | 3.3 | U | 0.1 | U | 0.1 | U |
| PEST | Endosulfan sulfate | 0.1 | U | 3.3 | U | 0.1 | U | 3.3 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin | 0.1 | U | 3.3 | U | 0.1 | U | 3.3 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin aldehyde | 0.1 | U | 3.3 | U | 0.1 | U | 3.3 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin ketone | 0.1 | U | 3.3 | U | 0.1 | U | 3.3 | U | 0.1 | U | 0.1 | U |
| PEST | Heptachlor | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |
| PEST | Heptachlor epoxide | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |
| PEST | Methoxychlor | 0.5 | U | 17. | U | 0.5 | U | 17. | U | 0.5 | U | 0.5 | U |
| PEST | Toxaphene | 5. | U | 170. | U | 5. | U | 170. | U | 5. | U | 5. | U |
| PEST | alpha-BHC | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |
| PEST | alpha-Chlordane | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |
| PEST | beta-BHC | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |
| PEST | delta-BHC | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |
| PEST | gamma-BHC (Lindane) | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |
| PEST | gamma-Chlordane | 0.05 | U | 1.7 | U | 0.05 | U | 1.7 | U | 0.05 | U | 0.05 | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | PIE-1-1514-04 | | PIB-T-T514-05 | | PIB-T-T514-06 | | PIB-T-T514-07 | | PIB-T-T514-08 | | PIB-T-T514-09 | |
| | ORIGINAL ID → | PIBLKGI | | PIBLKG2 | | PIBLKGN | | P IBLKGO | | PIBLKGP | | PIBLKGQ | |
| | LAB SAMPLE ID → | PIBLKG1 | | PIBLKG2 | | PIBLKGN | | PIBLKGO | | PIBLKGP | | PIBLKGQ | |
| | ID FROM REPORT → | PIBLKG1 | | PIBLKG2 | | PIBLKGN | | PIBLKGO | | PIBLKGP | | PIBLKGQ | |
| | SAMPLE DATE → | | | | | | | | | | | | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | 02/07/94 | | 02/08/94 | | 02/22/94 | | 02/22/94 | | 02/23/94 | | 02/24/94 | |
| | MATRIX → | Uater | | Water | | Uater | | Uater | | Uater | | Water | |
| | UNITS → | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT514 | VAL |
| PEST | 4,4'-DDD | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | 4,4'-DDE | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | 4,4'-DDT | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Aldrin | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Aroclor-1016 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1221 | 2. | U | 2. | U | 2. | U | 2. | U | 2. | U | 2. | U |
| PEST | Aroclor-I232 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-I242 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1248 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1254 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1260 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Dieldrin | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endosulfan I | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Endosulfan II | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endosulfan sulfate | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin aldehyde | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin ketone | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Heptachlor | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | Heptachlor epoxide | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | Methoxychlor | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U |
| PEST | Toxaphene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| 'EST | alpha-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | alpha-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | beta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | delta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | gamma-BHC (Lindane) | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | gamma-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID ——> | PIB-T-T516-04 | | PIB-T-T516-05 | | PIB-T-T516-06 | | PIB-T-T516-07 | | PIB-T-T516-08 | | PIB-T-T516-09 | |
| | ORIGINAL ID ——> | PIBLKH1 | | PIBLKH2 | | PIELKHC | | PIBLKHD | | PIELKHE | | PIELKHF | |
| | LAB SAMPLE ID ——> | PIBLKH1 | | PIBLKH2 | | PIBLKHC | | PIELKHD | | PIBLKHE | | PIELKHF | |
| | ID FROM REPORT → | PIBLKH1 | | PIBLKH2 | | PIELKHC | | PIBLKHD | | PIBLKHE | | PIBLKHF | |
| | SAMPLE DATE ——> | | | | | | | | | | | | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED ——> | 02/25/94 | | 02/27/94 | | 03/05/94 | | 03/05/94 | | 03/06/94 | | 03/06/94 | |
| | MATRIX ——> | Water | | Water | | Water | | Water | | Water | | Water | |
| | UNITS ——> | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| 'EST | 4,4'-DDD | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| 'EST | 4,4'-DDE | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| 'EST | 4,4'-DDT | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| 'EST | Aldrin | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | Aroclor-1016 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| 'EST | Aroclor-1221 | 2. | U | 2. | U | 2. | U | 2. | U | 2. | U | 2. | U |
| 'EST | Aroclor-1232 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| 'EST | Aroclor-1242 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| 'EST | Aroclor-1248 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| 'EST | Aroclor-1254 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| 'EST | Aroclor-1260 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| 'EST | Dieldrin | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| 'EST | Endosulfan I | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | Endosulfan If | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| 'EST | Endosulfan sulfate | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| 'EST | Endrin | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| 'EST | Endrin aldehyde | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| 'EST | Endrin ketone | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| 'EST | Heptachlor | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | Heptachlor epoxide | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | Methoxychlor | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U |
| 'EST | Toxaphene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| 'EST | alpha-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | alpha-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | beta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | delta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | gamma-BHC (Lindane) | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| 'EST | gamma-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |

*** Validation Complete ***

# Phase I

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | PIB-T-T516-10 | | PIB-T-T516-11 | | PIB-T-T518-04 | | PIB-T-T518-05 | | PIB-T-T518-06 | | PIB-T-T518-07 | |
| | ORIGINAL ID → | PIBLKHH | | PIBLKHI | | PIBLKI1 | | PIBLKI2 | | PIBLKI3 | | PIBLKI4 | |
| | LAB SAMPLE ID → | PIBLKHH | | PIBLKHI | | PIBLKI1 | | PIBLKIZ | | PIBLKI3 | | PIBLKI4 | |
| | ID FROM REPORT → | PIBLKHH | | PIBLMI | | PIBLKI1 | | PIBLKI2 | | PIBLKI3 | | PIBLKI4 | |
| | SAMPLE DATE → | | | | | | | | | | | | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/09/94 | | 03/10/94 | | 03/10/94 | |
| | MATRIX → | Uater | | Uater | | Water | | Uater | | Water | | Water | |
| | UNITS → | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL |
| PEST | 4,4'-DDD | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | 4,4'-DDE | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | 4,4'-DDT | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Aldrin | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Aroclor-1016 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1221 | 2. | U | 2. | U | 2. | U | 2. | U | 2. | U | 2. | U |
| PEST | Aroclor-1232 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1242 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1248 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1254 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1260 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Dieldrin | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endosulfan I | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Endosulfan II | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endosulfan sulfate | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin aldehyde | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin ketone | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Heptachlor | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Heptachlor epoxide | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Nethoxychlor | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U |
| PEST | Toxaphene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| PEST | alpha-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | alpha-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | beta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | delta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | gamma-BHC (Lindane) | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | gamma-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | PIB-T-T518-08 | | PIB-T-T518-09 | | PIB-T-T519-02 | | PIB-T-T519-03 | | PIB-T-T519-04 | | PIB-T-T519-05 | |
| | ORIGINAL ID → | PIBLKI5 | | PIBLKI6 | | PIBLKH1 | | PIBLKH2 | | PIBLKHA | | PIBLKHB | |
| | LAB SAMPLE ID → | PIBLKI5 | | PIBLKI6 | | PIBLKH1 | | PIBLKH2 | | PIBLKHA | | PIBLKHB | |
| | ID FROM REPORT → | PIBLKI5 | | PIBLKI6 | | PIBLKH1 | | PIBLKH2 | | PIBLKHA | | PIBLMB | |
| | SAMPLE DATE → | | | | | | | | | | | | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | 03/11/94 | | 03/11/94 | | 02/25/94 | | 02/27/94 | | 03/04/94 | | 03/04/94 | |
| | MATRIX → | Uater | | Uater | | Uater | | Water | | Uater | | Uatcr | |
| | UNITS → | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | CT518 | VAL | CT518 | VAL | CT519 | VAL | CT519 | VAL | CT519 | VAL | CT519 | VAL |
| PEST | 4,4'-DDD | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | 4,4'-DDE | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | 4,4'-DDT | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Aldrin | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Aroclor-1016 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1221 | 2. | U | 2. | U | 2. | U | 2. | U | 2. | U | 2. | U |
| PEST | Aroclor-1232 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1242 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1248 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1254 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1260 | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Dieldrin | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endosulfan I | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Endosulfan II | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endosulfan sulfate | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin aldehyde | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Endrin ketone | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| PEST | Heptachlor | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Heptachlor epoxide | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | Methoxychlor | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U |
| PEST | Toxaphene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| PEST | alpha-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | alpha-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | beta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | delta-BHC | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | gamma-BHC (Lindane) | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |
| PEST | gamma-Chlordane | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U | 0.05 | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID → | PIB-T-T519-06 | | | | | |
| ORIGINAL ID → | PIBLKHC | | | | | |
| LAB SAMPLE ID → | PIBLKHC | | | | | |
| ID FROM REPORT → | PIBLKHC | | | | | |
| SAMPLE DATE → | | | | | | |
| DATE EXTRACTED → | | | | | | |
| DATE ANALYZED → | 03/05/94 | | | | | |
| MATRIX → | Water | | | | | |
| UNITS → | UG/L | | | | | |

| Method | Parameter | CT519 | VAL | | | | | |
|---|---|---|---|---|---|---|---|---|
| PEST | 4,4'-DDD | 0.1 | u | | | | | |
| PEST | 4,4'-DDE | 0.1 | U | | | | | |
| PEST | 4,4'-DDT | 0.1 | u | | | | | |
| PEST | Aldrin | 0.05 | u | | | | | |
| PEST | Aroclor-1016 | 1. | u | | | | | |
| PEST | Aroclor-1221 | 2. | U | | | | | |
| PEST | Aroclor-1232 | 1. | u | | | | | |
| PEST | Aroclor-1242 | 1. | u | | | | | |
| PEST | Aroclor-1248 | 1. | u | | | | | |
| PEST | Amelor-1254 | 1. | u | | | | | |
| PEST | Aroclor-1260 | 1. | u | | | | | |
| PEST | Dieldrin | 0.1 | u | | | | | |
| PEST | Endosulfan I | 0.05 | u | | | | | |
| PEST | Endosulfan II | 0.1 | u | | | | | |
| PEST | Endosulfan sulfate | 0.1 | u | | | | | |
| PEST | Endrin | 0.1 | u | | | | | |
| PEST | Endrin aldehyde | 0.1 | u | | | | | |
| PEST | Endrln ketone | 0.1 | U | | | | | |
| PEST | Heptachlor | 0.05 | u | | | | | |
| PEST | Heptachlor epoxide | 0.05 | u | | | | | |
| PEST | Methoxychlor | 0.5 | u | | | | | |
| PEST | Toxaphene | 5. | u | | | | | |
| PEST | alpha-BHC | 0.05 | u | | | | | |
| PEST | alpha-Chlordane | 0.05 | u | | | | | |
| PEST | beta-BHC | 0.05 | u | | | | | |
| PEST | delta-BHC | 0.05 | u | | | | | |
| PEST | gamma-BHC (Lindane) | 0.05 | u | | | | | |
| PEST | gamma-Chlordane | 0.05 | U | | | | | |

*** Validation Complete +++

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID | SBL-T-T514-10 | | SBL-T-T514-11 | | SBL-T-T514-12 | | SBL-T-T516-12 | | SBL-T-T516-13 | | SBL-T-T516-14 | |
| | ORIGINAL ID | SBLKFD | | SBLKFY | | SBLKFZ | | SBLKFB | | SBLKFF | | SBLKFG | |
| | LAB SAMPLE ID | B-A1365 | | B-A1346 | | B-A1350 | | B-A1356 | | B-A1364 | | B-A1363 | |
| | ID FROM REPORT | SBLKFD | | SBLKFY | | SBLKFZ | | SBLKFB | | SBLKFF | | SBLKFG | |
| | SAMPLE DATE | | | | | | | | | | | | |
| | DATE EXTRACTED | 02/25/94 | | 02/16/94 | | 02/17/94 | | 02/19/94 | | 02/25/94 | | 02/23/94 | |
| | DATE ANALYZED | 02/28/94 | | 02/24/94 | | 02/24/94 | | 02/26/94 | | 03/07/94 | | 03/07/94 | |
| | MATRIX | Water | | Water | | Soil | | Water | | Soil | | Water | |
| | UNITS | UG/L | | UG/L | | UG/KG | | UG/L | | UG/KG | | UG/L | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 1,2-Dichlorobenzene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 1,3-Dichlorobenzene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 1,4-Dichlorobenzene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,4,5-Trichlorophenol | 25. | U | 25. | U | 800. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 2,4,6-Trichlorophenol | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,4-Dichlorophenol | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,4-Dimethylphenol | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,4-Dinitrophenol | 25. | U | 25. | U | 800. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 2,4-Dinitrotoluene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,6-Dinitrotoluene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-Chloronaphthalene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-Chlorophenol | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-llethy lnsphthalene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-Ilcthylphmol (o-Cresol) | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-Nitroaniline | 25. | U | 25. | U | 800. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 2-Nitrophenol | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 3,3'-Dichlorobenzidine | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 3-Nitroani1ine | 25. | U | 25. | U | 800. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 4 6-Dinitro-2-methylphenol | 25. | U | 25. | U | 800. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 4-Bromophenyl-phenylcthcr | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Chloro-3-methylphenol | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Chloroaniline | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Chloropheny1-phmylether | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Methylphenol (p-Cresol) | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Nitroaniline | 25. | U | 25. | U | 800. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 4-Nitrophenol | 25. | U | 25. | U | 800. | U | 25. | U | 800. | U | 25. | U |
| SVOA | Acwphthenc | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Acenaphthylene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Anthracene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Benzo(a)anthracene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Benzo(a)pyrene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Benzo(b)flwranthmc | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA' | Benzo(g,h i)perylene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Benzo(k)fluoranthene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Butylbenzylphthalate | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | SBL-T-T514-10 | | SBL-T-T514-11 | | SBL-T-T514-12 | | SBL-T-T516-12 | | SBL-T-T516-13 | | SBL-T-T516-14 | |
| | ORIGINAL ID → | SBLKFD | | SBLKFY | | SBLKFZ | | SBLKFB | | SBLKFF | | SBLKFG | |
| | LAB SAMPLE ID → | B-A1365 | | B-A1346 | | B-A1350 | | B-A1356 | | B-A1364 | | B-A1363 | |
| | ID FROM REPORT → | SBLKFD | | SBLKFY | | SBLKFZ | | SBLKFB | | SBLKFF | | SBLKFG | |
| | SAMPLE DATE → | | | | | | | | | | | | |
| | DATE EXTRACTED → | 02/25/94 | | 02/16/94 | | 02/17/94 | | 02/19/94 | | 02/25/94 | | 02/23/94 | |
| | DATE ANALYZED → | 02/28/94 | | 02/24/94 | | 02/24/94 | | 02/26/94 | | 03/07/94 | | 03/07/94 | |
| | MATRIX → | Water | | Uater | | Soil | | Water | | Soil | | Water | |
| | UNITS → | UG/L | | UG/L | | UG/KG | | UG/L | | UG/KG | | UG/L | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| SVOA | Carbazole | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Chrysene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Di-n-butylphthalate | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Di-n-octylphthalate | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Dibenzo(a,h)anthracene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Dibenzofuran | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Dicthylphthalatc | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Dimethylphthalate | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Fluoranthene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Flwrenc | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Hexachlorobenzene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Hexachlorobutadiene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Hexachlorocyclopentadiene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Hexachloroethane | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 13. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Isophorone | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | N-Nitroso-di-n-propylamine | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | N-Nitrosodiphenylamine | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Naphthalene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Nitrobenzene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Pentachlorophenol | 25. | U | 25. | U | 800. | U | 25. | U | 800. | U | 25. | U |
| SVOA | Phenanthrene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Phenol | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Pyrene | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | bis(2-Chloroethoxy)methane | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | bis(2-Chloroethyl)ether | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 10. | U | 10. | U | 330. | U | 10. | U | 330. | U | 10. | U |

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID | SBL-T-T518-10 | | SBL-T-T518-11 | | SBL-T-T518-12 | | SBL-T-T518-13 | | SBL-T-T519-07 | |
| | ORIGINAL ID | SBLKHQ | | SBLKHR | | SBLKHS | | SBLKHT | | SBLKFH | |
| | LAB SAMPLE ID | B-A1363 | | 8-A1365 | | B-A1368 | | B-A1367 | | B-A1365 | |
| | ID FROM REPORT | SBLKHQ | | SBLKHR | | SBLKHS | | SBLKHT | | SBLKFH | |
| | SAMPLE DATE | | | | | | | | | | |
| | DATE EXTRACTED | 02/23/94 | | 02/25/94 | | 02/28/94 | | 02/28/94 | | 02/25/94 | |
| | DATE ANALYZED | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/09/94 | |
| | MATRIX | Water | | Water | | Water | | Soi 1 | | Water | |
| | WITS | UG/L | | UG/L | | UG/L | | UG/KG | | UG/L | |
| Method | Parameter | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT519 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 1,2-Dichlorobenzene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 1,3-Dichlorobenzene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 1,4-Dichlorobenzene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,4,5-Trichlorophenol | 25. | U | 25. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 2,4,6-Trichlorophenol | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,4-Dichlorophenol | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,4-Dimethylphenol | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,4-Dinitrophenol | 25. | U | 25. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 2,4-Dinitrotoluene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2,6-Dinitrotoluene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-Chloronaphthalene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-Chlorophenol | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-Methylnaphthalene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-nethylphenol (o-Cresol) | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 2-Nitroaniline | 25. | U | 25. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 2-Nitrophenol | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 3,3'-Dichlorobenzidine | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 3-Nitroaniline | 25. | U | 25. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 25. | U | 25. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 4-Bromophenyl-phenylether | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Chloro-3-methylphenol | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Chloroaniline | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Chlorophenyl-phenylether | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Methylphenol (p-Cresol) | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 4-Nitroaniline | 25. | U | 25. | U | 25. | U | 800. | U | 25. | U |
| SVOA | 4-Nitrophenol | 25. | U | 25. | U | 25. | U | 800. | U | 25. | U |
| SVOA | Acenaphthene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Acenaphthylene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Anthracene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Benzo(a)anthracene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Benzo(a)pyrene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Benzo(b)fluoranthene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Benzo(g,h,i)perylene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Benzo(k)fluoranthene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Butylbenzylphthalate | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | SBL-T-T518-10 | | SBL-T-T518-11 | | SBL-T-T518-12 | | SBL-T-T518-13 | | SBL-T-T519-07 | |
| | ORIGINAL ID → | SBLKHQ | | SBLKHR | | SBLKHS | | SBLKHT | | SBLKFH | |
| | LAB SAMPLE ID → | 0-AI363 | | B-A1365 | | 0-AI368 | | 0-AI367 | | 0-AI365 | |
| | ID FROM REPORT → | SBLKHQ | | SBLKHR | | SBLKHS | | SBLKHT | | SBLKFH | |
| | SAMPLE DATE → | | | | | | | | | | |
| | DATE EXTRACTED → | 02/23/94 | | 02/25/94 | | 02/28/94 | | 02/28/94 | | 02/25/94 | |
| | DATE ANALYZED → | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/09/94 | |
| | MATRIX → | Water | | Water | | water | | Soi 1 | | Water | |
| | UNITS → | UG/L | | UG/L | | UG/L | | UG/KG | | UG/L | |
| Method | Parameter | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT519 | VAL |
| SVOA | Carbazole | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Chrysene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Di-n-butylphthalate | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Di-n-octylphthalate | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Dibenzo(a,h)anthracene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Dibenzofuran | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Diethylphthalate | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Dimethylphthalate | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Fluoranthene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Fluorene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Hexachlorobenzene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Hexachlorobutadiene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Hexachlorocyclopentadiene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Hexachloroethane | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Isophorone | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | N-Nitroso-di-n-propylamine | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | N-Nitrosodiphenylamine | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Naphthalene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Nitrobenzene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Pentachlorophenol | 2s. | U | 25. | U | 25. | U | 800. | U | 25. | U |
| SVOA | Phenanthrene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Phenol | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | Pyrene | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | bis(2-Chloroethoxy)methane | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | bis(2-Chloroethyl)ether | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |
| SVOA | 22 '-oxybis(1-Chloropropane) | 10. | U | 10. | U | 10. | U | 330. | U | 10. | U |

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | VBL-T-T514-13 | | VEL-T-T514-14 | | VBL-T-T516-15 | | VBL-T-T516-16 | | VBL-T-T516-17 | | VBL-T-T516-18 | |
| | ORIGINAL ID → | VELKCD | | VELKCF | | VELKCP | | VELKCQ | | VELKCR | | VELKCS | |
| | LAB SAMPLE ID → | BC021794A | | BC021894B | | BC022894B | | BC030194B | | BC030294B | | BC030394A | |
| | ID FROM REPORT → | VELKCD | | VELKCF | | VELKCP | | VELKCQ | | VELKCR | | VELKCS | |
| | SAMPLE DATE → | | | | | | | | | | | | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | 02/17/94 | | 02/18/94 | | 02/28/94 | | 03/01/94 | | 03/02/94 | | 03/03/94 | |
| | MATRIX → | Soil | | Soil | | Water | | Soil | | Soil | | Soil | |
| | UNITS → | UG/KG | | UG/KG | | UG/L | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL | CT516 | VAL |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichlorocthenc (total) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Butanone (MEK) | 8. | J | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Hexanone | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Acetone | 16. | | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Benzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromodichloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromoform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon disulfide | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloroform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Dibromochloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Ethylbenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Methylene chloride | 3. | J | 4. | J | 6. | J | 4. | J | 6. | J | 7. | J |
| VOA | Styrene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Tctrachloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Toluene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Trichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Vinyl chloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | m+p-Xylenes | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | trans-1,3-Dichloropropene | 10. | | 10. | | 10. | | 10. | U | 10. | U | 10. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Lab Blanks
## Phase I



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | VBL-T-T516-19 | | VBL-T-T518-14 | | VBL-T-T518-15 | | VBL-T-T519-08 | | VBL-T-T519-09 | |
| ORIGINAL ID → | | VBLKCT | | VBLKCS | | VBLKCT | | VBLKGI | | VBLKGU | |
| LAB SAMPLE ID → | | BC030494A | | BC030394A | | BC030494A | | BG022894A | | BG030394A | |
| ID FROM REPORT → | | VBLKCT | | VBLKCS | | VBLKCT | | VBLKGI | | VBLKGU | |
| SAMPLE DATE → | | | | | | | | | | | |
| DATE EXTRACTED → | | | | | | | | | | | |
| DATE ANALYZED → | | 03/04/44 | | 03/03/94 | | 03/04/94 | | 02/28/94 | | 03/03/94 | |
| MATRIX → | | Soil | | Soi1 | | Soi1 | | Water | | Llater | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/L | | UG/L | |
| Method | Parameter | CT516 | VAL | CT518 | VAL | CT518 | VAL | CT519 | VAL | CT519 | VAL |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | IO. | U | 10. | U | 10. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethene (total) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Butanone (MEK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Hexanone | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | IO. | U | 10. | U | IO. | U |
| VOA | Acetone | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Benzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromodichloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromoforn | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon disulfidc | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | IO. | U | IO. | U |
| VOA | Chloroethane | IO. | U | IO. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloroforn | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Dibromochloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Ethylbenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Ucthylenc chloride | 3. | J | 7. | J | 3. | J | 2. | J | 3. | J |
| VOA | styrene | 10. | U | 10. | U | 10. | U | 10. | U | IO. | U |
| VOA | Tctrachloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Toluene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Trichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Vinyl chloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | m+p-Xylenes | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | trans-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | IO. | U |

*** Validation Complete ***

**Site 14**

**Phase I QA/QC Samples**

# NAS PENSACOL Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-K-0001-01 MS | | 014-X-0001-01 MSD | | 014-K-0002-01 MS | | 014-X-OW2-01 MSD | | 014-S-0003-01 MS | | 014-S-0003-01 MSD | |
| ORIGINAL ID → | | 14S0101MS | | 14S0101MSD | | 14M0201MS | | 14M0201MSD | | 14S0301MS | | 14S0301MSD | |
| LAB SAMPLE ID → | | 39304-1MS | | 39304-1MSD | | 39364-3MS | | 39364-3MSD | | 39408-1MS | | 39408-1MSD | |
| ID FROM REPORT → | | 14S0101MS | | 14S0101MSD | | 14M0201MS | | 14M0201MSD | | 14S0301MS | | 14S0301MSD | |
| SAMPLE DATE → | | 02/11/94 | | 02/11/94 | | 02/17/94 | | 02/17/94 | | 02/22/94 | | 02/22/94 | |
| DATE EXTRACTED → | | 02/17/94 | | 02/17/94 | | 02/24/94 | | 02/24/94 | | 02/28/94 | | 02/28/94 | |
| DATE ANALYZED → | | 02/22/94 | | 02/22/94 | | 03/08/94 | | 03/08/94 | | 03/11/94 | | 03/11/94 | |
| MATRIX → | | soil | | soil | | soil | | Soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT518 | VAL |
| PEST | 4,4'-DDD | 4.2 | U | 4.2 | U | 3.9 | U | 3.9 | U | 4.4 | U | 4.4 | U |
| PEST | 4,4'-DDE | 4.2 | U | 4.2 | U | 3.9 | U | 3.9 | U | 4.4 | U | 4.4 | U |
| PEST | 4,4'-DDT | 26. | | 26. | | 27. | | 28. | | 44. | | 50. | |
| PEST | Aldrin | 24. | | 17. | | 10. | | 11. | | 21. | | 27. | |
| PEST | Aroclor-1016 | 42. | U | 42. | U | 39. | U | 39. | U | 44. | U | 44. | U |
| PEST | Aroclor-1221 | 85. | U | 85. | U | 80. | U | 80. | U | 89. | U | 89. | U |
| PEST | Aroclor-1232 | 42. | U | 42. | U | 39. | U | 39. | U | 44. | U | 44. | U |
| PEST | Aroclor-1242 | 42. | U | 42. | U | 39. | U | 39. | U | 44. | U | 44. | U |
| PEST | Aroclor-1248 | 42. | U | 42. | U | 39. | U | 39. | U | 42. | J | 39. | J |
| PEST | Aroclor-1254 | 42. | U | 42. | U | 39. | U | 39. | U | 69. | | 72. | |
| PEST | Aroclor-1260 | 42. | U | 42. | U | 39. | U | 39. | U | 44. | U | 44. | U |
| PEST | Dieldrin | 25. | | 25. | | 26. | | 26. | | 45. | | 48. | |
| PEST | Endosulfan I | 2.2 | U | 2.2 | U | 2. | U | 2. | U | 2.3 | U | 2.3 | U |
| PEST | Endosulfan II | 4.2 | U | 4.2 | U | 3.9 | U | 3.9 | U | 4.4 | U | 4.4 | U |
| PEST | Endosulfan sulfate | 4.2 | U | 4.2 | U | 3.9 | U | 3.9 | U | 4.4 | U | 4.4 | U |
| PEST | Endrin | 25. | | 26. | | 27. | | 27. | | 48. | | 54. | |
| PEST | Endrin aldehyde | 4.2 | U | 4.2 | U | 3.9 | U | 3.9 | U | 4.4 | U | 4.4 | U |
| PEST | Endrin ketone | 4.2 | U | 4.2 | U | 3.9 | U | 3.9 | U | 4.4, | U | 4.4 | U |
| PEST | Heptachlor | 12. | | 13. | | 12. | | 13. | | 22. | | 23. | |
| PEST. | Heptachlor epoxide | 2.2 | U | 2.2 | U | 2. | U | 2. | U | 2.3 | U | 2.3 | U |
| PEST | Methoxychlor | 22. | U | 22. | U | 20. | U | 20. | U | 23. | U | 23. | U |
| PEST | Toxaphene | 220. | U | 220. | U | 200. | U | 200. | U | 230. | U | 230. | U |
| PEST | alpha-BHC | 2.2 | U | 2.2 | U | 2. | U | 2. | U | 2.3 | U | 2.3 | U |
| PEST | alpha-Chlordane | 2.2 | U | 2.2 | U | 2. | U | 2. | U | 2.3 | U | 2.3 | U |
| PEST | beta-BHC | 2.2 | U | 2.2 | U | 2. | U | 2. | U | 2.3 | U | 2.3 | U |
| PEST | delta-BHC | 2.2 | U | 2.2 | U | 2. | U | 2. | U | 2.3 | U | 2.3 | U |
| PEST | gamma-BHC (Lindane) | 12. | | 12. | | 11. | | 12. | | 22. | | 26. | |
| PEST | gamma-Chlordane | 2.2 | U | 2.2 | U | 2. | U | 2. | U | 2.3 | U | 2.3 | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-K-0001-01 MS | | 014-X-0001-01 MSD | | 014-K-0002-01 MS | | 014-X-0002-01 MSD | | 014-S-0003-01 MS | | 014-S-0003-01 MSD | |
| ORIGINAL ID → | | 14S0101MS | | 14S0101MSD | | 14M0201MS | | 14M0201MSD | | 14S0301MS | | 14S0301MSD | |
| LAB SAMPLE ID → | | 39304-1MS | | 39304-1MSD | | 39364-3MS | | 39364-3MSD | | 39408-1MS | | 39408-1MSD | |
| ID FROM REWT → | | 14S0101MS | | 14S0101MSD | | 14M0201MS | | 14M0201MSD | | 14S0301MS | | 14S0301MSD | |
| SAMPLE DATE → | | 02/11/94 | | 02/11/94 | | 02/17/94 | | 02/17/94 | | 02/22/94 | | 02/22/94 | |
| DATE EXTRACTED → | | 02/17/94 | | 02/17/94 | | 02/25/94 | | 02/25/94 | | 02/28/94 | | 02/28/94 | |
| DATE ANALYZED → | | 02/25/94 | | 02/25/94 | | 03/07/94 | | 03/07/94 | | 03/08/94 | | 03/08/94 | |
| MATRIX → | | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT518 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 910. | | 1100. | | 1200. | | 1100. | | 1200. | | 1300. | |
| SVOA | 1,2-Dichlorobenzene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 1,3-Dichlorobenzene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 1,4-Dichlorobenzene | 710. | | 930. | | 980. | | 930. | | 1100. | | 1100. | |
| SVOA | 2,4,5-Trichlorophenol | 1000. | U | 1000. | U | 940. | U | 950. | U | 1000. | U | 1000. | U |
| SVOA | 2,4,6-Trichlorophenol | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 2,4-Dichlorophenol | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 2,4-Dimethylphenol | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 2,4-Dinitrophenol | 1000. | U | 1000. | U | 940. | U | 950. | U | 1000. | U | 1000. | U |
| SVOA | 2,4-Dinitrotoluene | 1300. | | 1400. | | 1400. | | 1400. | | 1400. | | 1500. | |
| SVOA | 2,6-Dinitrotoluene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 2-Chloronaphthalene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 2-chlorophenol | 1300. | | 1600. | | 1600. | | 1500. | | 1600. | | 1700. | |
| SVOA | 2-Methylnaphthalene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 2-Hethylphenol (o-Cresol) | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 2-Nitroaniline | 1000. | U | 1000. | U | 940. | U | 950. | U | 1000. | U | 1000. | U |
| SVOA | 2-Nitrophenol | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 3,3'-Dichlorobenzidine | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 3-Nitroaniline | 1000. | U | 1000. | U | 940. | U | 950. | U | 1000. | U | 1000. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 1000. | U | 1000. | U | 940. | U | 950. | U | 1000. | U | 1000. | U |
| SVOA | 4-Bromphenyl-phenylether | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 4-Chloro-3-methylphenol | 1900. | | 2000. | | 2000. | | 1900. | | 2100. | | 2200. | |
| SVOA | 4-Chloroaniline | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 4-Chlorophenyl-phenylether | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 4-Hethylphenol (p-Cresol) | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 4-Nitroaniline | 1000. | U | 1000. | U | 940. | U | 950. | U | 1000. | U | 1000. | U |
| SVOA | 4-Nitrophenol | 2200. | | 2200. | | 2200. | | 2300. | | 2400. | | 2400. | |
| SVOA | Acenaphthene | 1200. | | 1200. | | 1200. | | 1200. | | 1300. | | 1300. | |
| SVOA | Acenaphthylene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Anthracene | 420. | U | 420. | U | 390. | U | 390. | U | 100. | J | 420. | U |
| SVOA | Benzo(a)anthracene | 420. | U | 420. | U | 390. | U | 390. | U | 250. | J | 110. | J |
| SVOA | Benzo(a)pyrene | 420. | U | 420. | U | 390. | U | 390. | U | 380. | J | 180. | J |
| SVOA | Benzo(b)fluoranthene | 420. | U | 420. | U | 390. | U | 390. | U | 420. | J | 190. | J |
| SVOA | Benzo(g,h,i)perylene | 420. | U | 420. | U | 390. | U | 390. | U | 170. | J | 110. | J |
| SVOA | Benzo(k)fluoranthene | 420. | U | 420. | U | 390. | U | 390. | U | 310. | J | 150. | J |
| SVOA | Butylbenzylphthalate | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-K-0001-01 MS | | 014-X-0001-01 MSD | | 014-K-0002-01 MS | | 014-X-WO2-01 MSD | | 014-S-0003-01 MS | | 014-S-WO3-01 MSD | |
| | ORIGINAL ID → | 14S0101MS | | 14S0101MSD | | 14M0201MS | | 14M0201MSD | | 14S0301MS | | 14S0301MSD | |
| | LAB SAMPLE ID → | 39304-1MS | | 39304-1MSD | | 39364-3ns | | 39364-3MSD | | 39408-1MS | | 39408-1MSD | |
| | ID FROM REPORT → | 14S0101MS | | 14S0101MSD | | 14M0201MS | | 14M0201MSD | | 14S0301MS | | 14S0301MSD | |
| | SAMPLE DATE → | 02/11/94 | | 02/11/94 | | 02/17/94 | | 02/17/94 | | 02/22/94 | | 02/22/94 | |
| | DATE EXTRACTED → | 02/17/94 | | 02/17/94 | | 02/25/94 | | 02/25/94 | | 02/28/94 | | 02/28/94 | |
| | DATE ANALYZED → | 02/25/94 | | 02/25/94 | | 03/07/94 | | 03/07/94 | | 03/08/94 | | 03/08/94 | |
| | MATRIX → | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS → | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT518 | VAL |
| SVOA | Carbazole | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Chrysene | 420. | U | 420. | U | 390. | U | 390. | U | 320. | J | 130. | J |
| SVOA | Di-n-butylphthalate | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Di-n-octylphthalate | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Dibenzo(a,h)anthracene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Dibenzofuran | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Diethylphthalate | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Dimethylphthalate | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Fluoranthene | 420. | U | 420. | U | 390. | U | 390. | U | 450. | | 210. | J |
| SVOA | Fluorene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Hexachlorobenzene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Hexachlorobutadiene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Hexachlorocyclopentadiene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Hexachloroethane | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 420. | U | 420. | U | 390. | U | 390. | U | 150. | J | 100. | J |
| SVOA | Isophorone | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | N-Nitroso-di-n-propylamine | 1000. | | 1200. | | 1200. | | 1100. | | 1400. | | 1400. | |
| SVOA | N-Nitrosodiphenylamine | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Naphthalene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Nitrobenzene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Pentachlorophenol | 2200. | | 2100. | | 2400. | | 2400. | | 2400. | | 2400. | |
| SVOA | Phenanthrene | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | Phenol | 1400. | | 1600. | | 1600. | | 1500. | | 1700. | | 1600. | |
| SVOA | Pyrene | 1500. | | 1500. | | 1500. | | 1500. | | 1800. | | 1400. | |
| SVOA | bis(2-Chloroethoxy)methane | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 120. | U |
| SVOA | bis(2-Chloroethyl)ether | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |
| SVOA | 22'-oxybis(1-Chloropropane) | 420. | U | 420. | U | 390. | U | 390. | U | 430. | U | 420. | U |

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-K-0001-01 MS | | 014-X-0001-01 MSD | | 014-K-0002-01 MS | | 014-X-0002-01 MSD | | 014-S-0003-01 MS | | 014-S-0003-01 MSD | |
| ORIGINAL ID → | | 14S0101MS | | 14S0101MSD | | 14M0201MS | | 14M0201MSD | | 14S0301MS | | 14S0301MSD | |
| LAB SAMPLE ID → | | 39304-29MS | | 39304-29MS | | 39364-9MS | | 39364-9MSD | | 39408-3MS | | 39408-3MSD | |
| ID FROM REPORT → | | 14S0101MS | | 14S0101MSD | | 14M0201MS | | 14M0201MSD | | 14S0301MS | | 14S0301MSD | |
| SAMPLE DATE → | | 02/11/94 | | 02/11/94 | | 02/17/94 | | 02/17/94 | | 02/22/94 | | 02/22/94 | |
| DATE EXTRACTED → | | 02/17/94 | | 02/17/94 | | | | | | | | | |
| DATE ANALYZED → | | 02/17/96 | | 02/17/94 | | 03/10/94 | | 03/10/94 | | 03/03/94 | | 03/03/94 | |
| MATRIX → | | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| UNITS → | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | CT518 | VAL | CT518 | VAL |
| JOA | 1,1,1-Trichloroethane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| JOA | 1,1,2,2-Tetrachloroethane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| JOA | 1,1,2-Trichloroethane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| JOA | 1,1-Dichloroethane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| JOA | 1,1-Dichloroethene | 66. | | 68. | | 89. | | 70. | | 58. | | 67. | |
| JOA | 1,2-Dichloroethone | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| JOA | 1,2-Dichloroethene (total) | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | 1,2-Dichloropropane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | 2-Butanone (MEK) | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| JOA | 2-Hexme | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| JOA | 4-Methy1-2-Pentanone (MIBK) | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Acetone | 39. | U | 64. | U | 63. | U | 56. | U | 140. | U | 180. | U |
| JOA | Benzene | 64. | | 63. | | 59. | | 57. | | 66. | | 63. | |
| JOA | Bromodichloromethane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Bromoform | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Bromomethane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Carbon disulfide | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Carbon tctrachloride | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| KIA | Chlorobenzene | 65. | | 65. | | 64. | | 62. | | 70. | | 68. | |
| VOA | Chloroethane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Chloroform | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| KIA | Chloromethane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Dibromochloromethane | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Ethylbenzene | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Methylene chloride | 8. | J | 8. | J | 8. | J | 8. | J | 13. | | 12. | U |
| VOA | Styrene | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Tetrachloroethene | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | Toluene | 62. | | 63. | | 61. | | 59. | | 67. | | 65. | |
| VOA | Trichloroethene | 59. | | 57. | | 62. | | 59. | | 70. | | 67. | |
| VOA | Vinyl chloride | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | m+p-Xylenes | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | cis-1,3-Dichloropropene | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |
| VOA | trans-1,3-Dichloropropene | 12. | U | 12. | U | 12. | U | 12. | U | 13. | U | 13. | U |

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | SAMPLE ID ——> | 014-K-GS01-00 S | | 014-X-GS01-00 SD | | | |
| | ORIGINAL ID ——> | 14GS01MS | | 14GS01MSD | | | |
| | LAB SAMPLE ID ——> | 39431-1MS | | 39431-1MSD | | | |
| | ID FROM REPORT ——> | 14GS01MS | | 14GS01MSD | | | |
| | SAMPLE DATE ——> | 02/24/94 | | 02/24/94 | | | |
| | DATE EXTRACTED ——> | 02/28/94 | | 02/28/94 | | | |
| | DATE ANALYZED ——> | 03/04/94 | | 03/04/94 | | | |
| | MATRIX ——> | Water | | Water | | | |
| | UNITS ——> | UG/L | | UG/L | | | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | | |
| PEST | 4,4'-DDD | 0.13 | U | 0.13 | U | | |
| PEST | 4,4'-DDE | 0.13 | U | 0.13 | U | | |
| PEST | 4,4'-DDT | 1.1 | | 1.1 | | | |
| PEST | Aldrin | 0.51 | | 0.52 | | | |
| PEST | Aroclor-1016 | 1.3 | U | 1.3 | U | | |
| PEST | Aroclor-1221 | 2.6 | U | 2.6 | U | | |
| PEST | Aroclor-1232 | 1.3 | U | 1.3 | U | | |
| PEST | Aroclor-1242 | 1.3 | U | 1.3 | U | | |
| PEST | Aroclor-1248 | 1.3 | U | 1.3 | U | | |
| PEST | Aroclor-1254 | 1.3 | U | 1.3 | U | | |
| PEST | Aroclor-1260 | 1.3 | U | 1.3 | U | | |
| PEST | Dieldrin | 1.2 | | 1.2 | | | |
| PEST | Endosulfan I | 0.065 | U | 0.065 | U | | |
| PEST | Endosulfan II | 0.13 | U | 0.13 | U | | |
| PEST | Endosulfan sulfate | 0.13 | U | 0.13 | U | | |
| PEST | Endrin | 1.3 | | 1.3 | | | |
| PEST | Endrin aldehyde | 0.13 | U | 0.13 | U | | |
| PEST | Endrin ketone | 0.13 | U | 0.13 | U | | |
| PEST | Heptachlor | 0.59 | | 0.61 | | | |
| PEST | Heptachlor epoxide | 0.065 | U | 0.065 | U | | |
| PEST | Methoxychlor | 0.65 | U | 0.65 | U | | |
| PEST | Toxaphene | 6.5 | U | 6.5 | U | | |
| PEST | alpha-BHC | 0.065 | U | 0.065 | U | | |
| PEST | alpha-Chlordane | 0.065 | U | 0.065 | U | | |
| PEST | beta-BHC | 0.065 | U | 0.065 | U | | |
| PEST | delta-BHC | 0.065 | U | 0.065 | U | | |
| PEST | gamma-BHC (Lindane) | 0.55 | | 0.58 | | | |
| PEST | gamma-Chlordane | 0.065 | U | 0.065 | U | | |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-K-GS01-00 S | | 014-X-GS01-00 SD | | | |
| ORIGINAL ID → | | 14GS01MS | | 14GS01MSD | | | |
| LAB SAMPLE ID → | | 39431-1MS | | 39431-1MSD | | | |
| ID FROM REPORT → | | 14GS01MS | | 14GS01MSD | | | |
| SAMPLE DATE → | | 02/24/94 | | 02/24/94 | | | |
| DATE EXTRACTED → | | 02/25/94 | | 02/25/94 | | | |
| DATE ANALYZED → | | 03/09/94 | | 03/09/94 | | | |
| MATRIX → | | Water | | Water | | | |
| UNITS → | | UG/L | | UG/L | | | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | | |
| SVOA | 1,2,4-Trichlorobenzene | 51. | | 49. | | | |
| SVOA | 1,2-Dichlorobenzene | 14. | U | 13. | U | | |
| SVOA | 1,3-Dichlorobenzene | 14. | U | 13. | U | | |
| SVOA | 1,4-Dichlorobenzene | 45. | | 44. | | | |
| SVOA | 2,4,5-Trichlorophenol | 34. | U | 32. | U | | |
| SVOA | 2,4,6-Trichlorophenol | 14. | U | 13. | U | | |
| SVOA | 2,4-Dichlorophenol | 14. | U | 13. | U | | |
| SVOA | 2,4-Dimethylphenol | 14. | U | 13. | U | | |
| SVOA | 2,4-Dinitrophenol | 34. | U | 32. | U | | |
| SVOA | 2,4-Dinitrotoluene | 58. | | 53. | | | |
| SVOA | 2,6-Dinitrotoluene | 14. | U | 13. | U | | |
| SVOA | 2-Chloronaphthalene | 14. | U | 13. | U | | |
| SVOA | 2-Chlorophenol | 70. | | 68. | | | |
| SVOA | 2-Methylnaphthalene | 14. | U | 13. | U | | |
| SVOA | 2-Methylphenol (o-Cresol) | 14. | U | 13. | U | | |
| SVOA | 2-Nitroaniline | 34. | U | 32. | U | | |
| SVOA | 2-Nitrophenol | 14. | U | 13. | U | | |
| SVOA | 3,3'-Dichlorobenzidine | 14. | U | 13. | U | | |
| SVOA | 3-Nitroaniline | 34. | U | 32. | U | | |
| SVOA | 4,6-Dinitro-2-methylphenol | 34. | U | 32. | U | | |
| SVOA | 4-Bromophenyl-phenylether | 14. | U | 13. | U | | |
| SVOA | 4-Chloro-3-methylphenol | 82. | | 77. | | | |
| SVOA | 4-Chloroaniline | 14. | U | 13. | U | | |
| SVOA | 4-Chlorophenyl-phenylether | 14. | U | 13. | U | | |
| SVOA | 4-Methylphenol (p-Cresol) | 14. | U | 13. | U | | |
| SVOA | 4-Nftroani1fne | 34. | U | 32. | U | | |
| SVOA | 4-Nitrophenol | 98. | | 87. | | | |
| SVOA | Acenaphthene | 51. | | 50. | | | |
| SVOA | Acenaphthylene | 14. | U | 13. | U | | |
| SVOA | Anthracene | 14. | U | 13. | U | | |
| SVOA | Benzo(a)anthracene | 14. | U | 13. | U | | |
| SVOA | Benzo(a)pyrene | 74. | U | 13. | U | | |
| SVOA | Benzo(b)fluoranthene | 14. | U | 13. | U | | |
| SVOA | Benzo(g,h i)perylene | 14. | U | 13. | U | | |
| SVOA | Benzo(k)fluoranthene | 14. | U | 13. | U | | |
| SVOA | Butylbenzylphthalate | 14. | U | 13. | U | | |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SAMPLE ID | | 014-K-GS01-00 S | | 014-X-GS01-00 SD | | | |
| ORIGINAL ID | | 14GS01MS | | 14GS01MSD | | | |
| LAB SAMPLE ID | | 39431-1MS | | 39431-1MSD | | | |
| ID FROM REPORT | | 14GS01MS | | 14GS01MSD | | | |
| SAMPLE DATE | | 02/24/94 | | 02/24/94 | | | |
| DATE EXTRACTED | | 02/25/94 | | 02/25/94 | | | |
| DATE ANALYZED | | 03/09/94 | | 03/09/94 | | | |
| MATRIX | | Water | | Water | | | |
| UNITS | | UG/L | | UG/L | | | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | | |
| SVOA | Carbazole | 14. | U | 13. | U | | |
| EVOA | Chrysene | 14. | U | 13. | U | | |
| SVOA | Di-n-butylphthalate | 14. | U | 13. | U | | |
| EVOA | Di-n-octylphthalatc | 14. | U | 13. | U | | |
| EVOA | Dibenzo(a,h)anthracene | 14. | U | 13. | U | | |
| SVOA | Dibenzofuran | 14. | U | 13. | U | | |
| EVOA | Diethylphthalate | 14. | U | 13. | U | | |
| SVOA | Dimethylphthalate | 14. | U | 13. | U | | |
| SVOA | Fluoranthenc | 14. | U | 13. | U | | |
| SVOA | Fluorene | 14. | U | 13. | U | | |
| SVOA | Hexachlorobenzene | 14. | U | 13. | U | | |
| SVOA | Hexachlorobutadiene | 14. | U | 13. | U | | |
| SVOA | Hexachlorocyclopentadiene | 14. | U | 13. | U | | |
| SVOA | Hexachloroethane | 14. | U | 13. | U | | |
| SVOA | Indeno(1,2,3-cd)pyrene | 14. | U | 13. | U | | |
| SVOA | Isophorone | 14. | U | 13. | U | | |
| SVOA | N-Nitroso-di-n-propylamine | 54. | | 40. | | | |
| SVOA | N-Nitrosodiphenylamine | 14. | U | 13. | U | | |
| SVOA | Naphthalene | 14. | U | 13. | U | | |
| SVOA | Nitrobenzene | 14. | U | 13. | U | | |
| SVOA | Pentachlorophenol | 100. | | 93. | | | |
| SVOA | Phenanthrene | 14. | U | 13. | U | | |
| SVOA | Phenol | 66. | | 64. | | | |
| SVOA | Pyrene | 51. | | 50. | | | |
| SVOA | bis(2-Chloroethoxy)methane | 14. | U | 13. | U | | |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 14. | U | 13. | U | | |
| SVOA | bis(2-Chloroethyl)ether | 14. | U | 13. | U | | |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 14. | U | 13. | U | | |

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SAMPLE ID ——> | 014-K-GS01-00 S | | 014-X-GS01-00 SD | | | | | |
| ORIGINAL ID ——> | 14GS01MS | | 14GS01MSD | | | | | |
| LAB SAMPLE ID ——> | 39431-7MS | | 39431-7MSD | | | | | |
| ID FROM REPORT ——> | 14GS01MS | | 14GS01MSD | | | | | |
| SAMPLE DATE ——> | 02/24/94 | | 02/24/94 | | | | | |
| DATE EXTRACTED ——> | | | | | | | | |
| DATE ANALYZED ——> | 03/03/94 | | 03/03/94 | | | | | |
| MATRIX ——> | Water | | Water | | | | | |
| UNITS ——> | UG/L | | UG/L | | | | | |
| Method | Parameter | CT519 | VAL | CT519 | VAL | | | |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | | | |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | | | |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | | | |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | | | |
| VOA | 1,1-Dichloroethene | 58. | | 56. | | | | |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | | | |
| VOA | 1,2-Dichloroethene (total) | 10. | U | 10. | U | | | |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | | | |
| VOA | 2-Butanone (MEK) | 10. | U | 10. | U | | | |
| VOA | 2-Hexanone | 10. | U | 10. | U | | | |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | | | |
| VOA | Acetone | 18. | U | 19. | U | | | |
| VOA | Benzene | 52. | | 54. | | | | |
| VOA | Bromodichloromethane | 10. | U | 10. | U | | | |
| VOA | Bromoform | 10. | U | 10. | U | | | |
| VOA | Bromomethane | 10. | U | 10. | U | | | |
| VOA | Carbon disulfide | 10. | U | 10. | U | | | |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | | | |
| VOA | Chlorobenzene | 55. | | 53. | | | | |
| VOA | Chloroethane | 10. | U | 10. | U | | | |
| VOA | Chloroform | 10. | U | 10. | U | | | |
| VOA | Chloromethane | 10. | U | 10. | U | | | |
| VOA | Dibromochloromethane | 10. | U | 10. | U | | | |
| VOA | Ethylbenzene | 10. | U | 10. | U | | | |
| VOA | Methylene chloride | 8. | U | 10. | U | | | |
| VOA | Styrene | 10. | U | 10. | U | | | |
| VOA | Tetrachloroethene | 10. | U | 10. | U | | | |
| VOA | Toluene | 53. | | 51. | | | | |
| VOA | Trichloroethene | 56. | | 54. | | | | |
| VOA | Vinyl chloride | 10. | U | 10. | U | | | |
| VOA | m+p-Xylenes | 10. | U | 10. | U | | | |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | | | |
| VOA | trans-1,3-Dichloropropene | 10. | U | 10. | U | | | |

*** Validation complete ***

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID ——> | 014-E-0001-00 | | 014-E-0004-00 | | 014-E-0005-00 | | 014-E-0006-00 | | 014-F-0014-00 | | 014-F-0013-00 | |
| | ORIGINAL ID ——> | 14GE01 | | 14SE04 | | 14SE05 | | 14GE06 | | 70FB14 | | 70FB13 | |
| | LAB SAMPLE ID ——> | 39419-010 | | 39408-005 | | 39432-026 | | 39443-011 | | 39419-09 | | 39419-008 | |
| | ID FROM REPORT ——> | 14GE01 | | 14SE04 | | 14SE05 | | 14GE06 | | 70FB14 | | 70FB13 | |
| | SAMPLE DATE ——> | 02/23/94 | | 02/22/94 | | 02/24/94 | | 02/24/94 | | 02/23/94 | | 02/23/94 | |
| | DATE EXTRACTED ——> | | | | | | | | | | | | |
| | DATE ANALYZED ——> | | | | | | | | | | | | |
| | MATRIX ——> | Water | | Water | | Water | | Water | | Water | | Water | |
| | UNITS ——> | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | CT519 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT519 | VAL | CT519 | VAL |
| METAL | Aluminull | 17.9 | UJ | 17.9 | U | 17.9 | U | 17.9 | U | 17.9 | UN | 17.9 | UN |
| METAL | Antimony | 15.6 | U | 15.6 | U | 15.6 | U | 15.6 | U | 15.6 | U | 15.6 | U |
| METAL | Arsenic | 2.9 | U | 2.9 | U | 2.9 | U | 2.9 | U | 2.9 | U | 2.9 | U |
| METAL | Barium | 4.2 | | 2.4 | U | 2.4 | U | 2.4 | U | 2.4 | U | 3.1 | B |
| METAL | Beryllium | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U |
| METAL | Cadmium | 2.1 | U | 2.1 | U | 2.1 | U | 2.1 | U | 2.1 | U | 2.1 | U |
| METAL | Calcium | 293. | | 19. | U | 225. | | 56.8 | | NR | | 200. | B |
| METAL | Chromium | 2.3 | U | 2.3 | U | 2.3 | U | 2.3 | U | 2.3 | U | 2.3 | U |
| METAL | Cobalt | 3.2 | U | 3.2 | U | 3.2 | U | 3.2 | U | 3.2 | U | 3.2 | U |
| METAL | Copper | 2.6 | U | 2.6 | U | 3.2 | | 2.6 | U | 3.3 | B | 2.6 | U |
| METAL | Cyanide | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| METAL | Iron | 8.5 | UJ | 18.9 | | 9.9 | | 8.6 | | 16.7 | BN | 19.6 | BN |
| METAL | Lead | 0.7 | U | 0.7 | U | 0.7 | U | 0.7 | U | 1.6 | B | 1.8 | B |
| METAL | Magnesium | 24.7 | | 22. | U | 22. | U | 22. | U | 32.7 | B | 67.5 | B |
| METAL | Manganese | 2.2 | | 1. | U | 1. | U | 1. | U | 1. | U | 1.5 | B |
| METAL | Mercury | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| METAL | Nickel | 10.4 | U | 10.4 | U | 10.4 | U | 10.4 | U | 10.4 | U | 10.4 | U |
| METAL | Potassium | 649. | U | 649. | U | 649. | U | 649. | U | 649. | U | 649. | U |
| METAL, | Selenium | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U |
| METAL | Silver | 3.6 | U | 3.6 | U | 3.6 | U | 3.6 | U | 3.6 | U | 3.6 | U |
| METAL | Sodium | 64. | | 35.6 | | 46.1 | | 39.5 | | 92.8 | B | 548. | B |
| METAL | Thallium | 2.8 | U | 2.8 | U | 2.8 | U | 2.8 | U | 2.8 | U | 2.8 | U |
| METAL | Vanadium | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U |
| METAL | Zinc | 3.7 | | 1.7 | U | 4.9 | | 1.7 | U | 1.9 | B | 1.7 | U |

*** Validation Complete ***

# NAS PENSACOLA Site 1
## OA/OC Samples



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID ——> | 014-E-0001-00 | 014-E-0004-00 | 014-E-0005-00 | 014-E-0006-00 | 014-F-0013-00 | 014-F-0014-00 |
| ORIGINAL ID ——> | 14GE01 | 14SE04 | 14SE05 | 14GE06 | 70FB13 | 70FB14 |
| LAB SAMPLE ID ——> | 39419-5 | 39408-4 | 39432-25 | 39443-10 | 39419-3 | 39419-4 |
| ID FROM REPORT ——> | 14GE01 | 14SE04 | 14SE05 | 14GE06 | 70FB13 | 70FB14 |
| SAMPLE DATE ——> | 02/23/94 | 02/22/94 | 02/24/94 | 02/24/94 | 02/23/94 | 02/23/94 |
| DATE EXTRACTED ——> | 02/28/94 | 02/23/94 | 02/28/94 | 02/28/94 | 02/28/94 | 02/28/94 |
| DATE ANALYZED ——> | 03/04/94 | 03/10/94 | 03/10/94 | 03/10/94 | 03/04/94 | 03/04/94 |
| MATRIX ——> | Water | Water | Water | Water | Water | Water |
| UNITS ——> | UG/L | UG/L | UG/L | UG/L | UG/L | UG/L |

| Method | Parameter | CT519 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT519 | VAL | CT519 | VAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PEST | 4,4'-DDD | 0.13 | UJ | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U |
| PEST | 4,4'-DDE | 0.13 | UJ | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U |
| PEST | 4,4'-DDT | 0.13 | UJ | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U |
| PEST | Aldrin | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |
| PEST | Aroclor-1016 | 1.3 | UJ | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U |
| PEST | Aroclor-1221 | 2.6 | UJ | 2.2 | U | 2.1 | U | 2.2 | U | 2.2 | U | 2.2 | U |
| PEST | Aroclor-1232 | 1.3 | UJ | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U |
| PEST | Aroclor-1242 | 1.3 | UJ | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U |
| PEST | Aroclor-1248 | 1.3 | UJ | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U |
| PEST | Aroclor-1254 | 1.3 | UJ | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U |
| PEST | Aroclor-1260 | 1.3 | UJ | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U |
| PEST | Dieldrin | 0.13 | UJ | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U |
| PEST | Endosulfan I | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |
| PEST | Endosulfan II | 0.13 | UJ | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U |
| PEST | Endosulfan sulfate | 0.13 | UJ | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U |
| PEST | Endrin | 0.13 | UJ | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U |
| PEST | Endrin aldehyde | 0.13 | UJ | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U |
| PEST | Endrin ketone | 0.13 | UJ | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U | 0.11 | U |
| PEST | Heptachlor | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |
| PEST | Heptachlor epoxide | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |
| PEST | Methoxychlor | 0.65 | UJ | 0.54 | U | 0.53 | U | 0.56 | U | 0.56 | U | 0.56 | U |
| PEST | Toxaphene | 6.5 | UJ | 5.4 | U | 5.3 | U | 5.6 | U | 5.6 | U | 5.6 | U |
| PEST | alpha-BHC | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |
| PEST | alpha-Chlordane | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |
| PEST | beta-BHC | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |
| PEST | delta-BHC | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |
| PEST | gamma-BHC (Lindane) | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |
| PEST | gamma-Chlordane | 0.065 | UJ | 0.054 | U | 0.053 | U | 0.056 | U | 0.056 | U | 0.056 | U |

*** Validation Complete ***

# NAS PENSACOLA *Site* 14
## QA/QC samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-E-0001-00 | | 014-E-0004-00 | | 014-E-0005-00 | | 014-E-000600 | | 014-F-0013-00 | | 014-F-0014-00 | |
| | ORIGINAL ID → | 14GE01 | | 14SE04 | | 14SE05 | | 14GE06 | | 70FB13 | | 70FB14 | |
| | LAB SAMPLE ID → | 39419-5 | | 39408-4 | | 39432-25 | | 39443-10 | | 39419-3 | | 39419-4 | |
| | ID FROM REPORT → | 14GE01 | | 14SE04 | | 14SE05 | | 14GE06 | | 70FB13 | | 70FB14 | |
| | SAMPLE DATE → | 02/23/94 | | 02/22/94 | | 02/24/94 | | 02/24/94 | | 02/23/94 | | 02/23/94 | |
| | DATE EXTRACTED → | 02/25/94 | | 02/23/94 | | 02/25/94 | | 02/28/94 | | 02/25/94 | | 02/25/94 | |
| | DATE ANALYZED → | 03/09/94 | | 03/08/94 | | 03/08/94 | | 03/08/94 | | 03/09/94 | | 03/09/94 | |
| | MATRIX → | Uater | | Uattr | | Uatcr | | Uatcr | | Uatcr | | Uatcr | |
| | WITS → | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | CT519 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT519 | VAL | CT519 | VAL |
| SVOA | 1,2,4-Trichlorobenzene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 1,2-Dichlorobenzene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 1,3-Dichlorobenzene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 1,4-Dichlorobenzene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2,4,5-Trichlorophenol | 32. | U | 26. | U | 26. | U | 28. | U | 27. | U | 27. | U |
| SVOA | 2,4,6-Trichlorophenol | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2,4-Dichlorophenol | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2,4-Dimethylphenol | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2,4-Dinitrophenol | 32. | U | 26. | U | 26. | U | 28. | U | 27. | U | 27. | U |
| SVOA | 2,4-Dinitrotoluene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2,6-Dinitrotoluent | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2-Chloronaphthalene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2-Chlorophenol | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2-Methylnaphthalene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2-Methylphenol (o-Cresol) | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 2-Hitroanilline | 32. | U | 26. | U | 26. | U | 28. | U | 27. | U | 27. | U |
| SVOA | 2-Nitrophenol | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 3,3'-Dichlorobenzidine | 13; | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 3-Nitroaniline | 32. | U | 26. | U | 26. | U | 28. | U | 27. | U | 27. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 32. | U | 26. | U | 26. | U | 28. | U | 27. | U | 27. | U |
| SVOA | 4-Bromophenyl-phenylcthcr | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 4-Chloro-3-methylphenol | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 4-Chloroaniline | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 4-Chlorophenyl-phenyl ether | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 4-Methylphenol (p-Cresol) | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | 4-Nitroaniline | 32. | U | 26. | U | 26. | U | 28. | U | 27. | U | 27. | U |
| SVOA | 4-Nitrophenol | 32. | U | 26. | U | 26. | U | 28. | U | 27. | U | 27. | U |
| SVOA | Acenaphthene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Acenaphthylene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Anthracene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Benzo(a)anthracene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Benzo(a)pyrene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Benzo(b)fluoranthene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Benzo(g,h,i)perylene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Benzo(k)fluoranthene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Butylbenzylphthalate | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID ——> | 014-E-0001-00 | 014-E-0004-00 | 014-E-0005-00 | 014-E-0006-00 | 014-F-0013 00 | 014-F-0010-00 |
| ORIGINAL ID ——> | 14GE01 | 14SE04 | 14SE05 | 14GE06 | 70FB13 | 70FB14 |
| LAB SAMPLE ID ——> | 39419-5 | 39408-4 | 39432-25 | 39443-10 | 39419-3 | 39419-4 |
| ID FROM REPORT ——> | 14GE01 | 14SE04 | 14SE05 | 14GE06 | 70FB13 | 70FB14 |
| SAMPLE DATE ——> | 02/23/94 | 02/22/94 | 02/24/94 | 02/24/94 | 02/23/94 | 02/23/94 |
| DATE EXTRACTED ——> | 02/25/94 | 02/23/94 | 02/25/94 | 02/28/94 | 02/25/94 | 02/25/94 |
| DATE ANALYZED ——> | 03/09/94 | 03/08/94 | 03/08/94 | 03/08/94 | 03/09/94 | 03/09/94 |
| MATRIX ——> | Water | Water | Water | Water | Water | Water |
| UNITS ——> | UG/L | UG/L | UG/L | UG/L | UG/L | UG/L |

| Method | Parameter | CT519 | VAL | CT518 | VAL | CT518 | | CT518 | VAL | CT519 | VAL | CT518 | VAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SVOA | Carbazole | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Chrysene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Di-n-butylphthalate | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Di-n-octylphthalate | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Dibenzo(a,h)anthracene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Dibenzofuran | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Diethylphthalate | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Dimethylphthalate | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Fluoranthene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Fluorene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Hexachlorobenzene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Hexachlorobutadiene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Hexachlorocyclopentadiene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Hexachloroethane | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Isophorone | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | N-Nitroso-di-n-propylamine | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | N-Nitrosodiphenylamine | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Naphthalene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Nitrobenzene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Pentachlorophenol | 32. | U | 26. | U | 26. | U | 28. | U | 27. | U | 27. | U |
| SVOA | Phenanthrene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Phenol | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | Pyrene | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | bis(2-Chloroethoxy)methane | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 13. | U | 10. | U | 10. | U | 11. | U | 11. | U | 11. | U |
| SVOA | bis(2-Chloroethyl)ether | 13. | U | 10. | U | 10. | U | 11 | U | 11 | U | 11 | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 13. | U | 10. | U | 10. | U | 11 | U | 11 | U | 11 | U |

DATALCP3
05/03/95

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I

Time: 17:29

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-E-Owl-00 | | 014-E-0004-00 | | 014-E-0005-00 | | 014-E-0006-00 | | 014-F-0013-00 | | 014-F-0014-00 | |
| ORIGINAL ID → | | 14GE01 | | 14SE04 | | 14SE05 | | 14GE06 | | 70FB13 | | 70FB14 | |
| LAB SAMPLE ID → | | 39419-20 | | 39408-7 | | 39432-28 | | 39443-13 | | 39419-18 | | 39419-19 | |
| ID FROM REPORT → | | 14GE01 | | 14SE04 | | 14SE05 | | 14GE06 | | 70FB13 | | 70FB14 | |
| SAMPLE DATE → | | 02/23/94 | | 02/22/94 | | 02/24/94 | | 02/24/94 | | 02/23/94 | | 02/23/94 | |
| DATE EXTRACTED → | | | | | | | | | | | | | |
| DATE ANALYZED → | | 02/28/94 | | 03/03/94 | | 03/04/94 | | 03/03/94 | | 02/28/94 | | 02/28/94 | |
| MATRIX → | | Uater | | Uater | | Uater | | Uater | | Water | | Uater | |
| UNITS → | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | CT519 | VAL | CT518 | VAL | CT518 | VAL | CT518 | VAL | CT519 | VAL | CT519 | VAL |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichlorocthane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethenc | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethene (total) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Butanone (MEK) | IO. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Hexanone | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Acetone | 10. | U | 10. | U | 10. | U | IO. | U | 10. | U | 10. | U |
| VOA | Benzene | 10. | U | IO. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromodichloromethane | 10. | U | 10. | U | 10. | U | 10. | U | IO. | U | 10. | U |
| VOA | Bromoform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon disulfide | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloroform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloromethane | IO. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Dibromochloromethanc | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Ethylbenzene | 8. | J | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Methylene chloride | 10. | U | 6. | U | 10. | U | 6. | U | 10. | U | 10. | U |
| VOA | Styrene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Tetrachloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Toluene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Trichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Vinyl chloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | m+p-Xylenes | 290. | | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | trans-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |

** Validation Complete ***

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-E-SE01-00 | | 014-E-SE02-00 | | 014-E-SE03-00 | | | | | |
| | ORIGINAL ID → | 14SE01 | | 14SE02 | | 14SE03 | | | | | |
| | LAB SAMPLE ID → | 39304-044 | | 39364-011 | | 39390-035 | | | | | |
| | ID FROM REPORT → | 14SE01 | | 14SE02 | | 14SE03 | | | | | |
| | SAMPLE DATE → | 02/11/94 | | | | 02/21/94 | | | | | |
| | DATE EXTRACTED → | | | | | | | | | | |
| | DATE ANALYZED → | | | | | | | | | | |
| | MATRIX → | Water | | Water | | Water | | | | | |
| | UNITS → | UG/L | | UG/L | | UG/L | | | | | |
| Method | Parameter | CT514 | VAL | CT516 | VAL | CT516 | VAL | | | | |
| METAL | Aluminum | 17.9 | U | 17.9 | U | 17.9 | U | | | | |
| METAL | Antimony | 15.6 | U | 15.6 | U | 15.6 | U | | | | |
| METAL | Arsenic | 2.9 | U | 2.9 | U | 2.9 | U | | | | |
| METAL | Barium | 2.4 | U | 2.4 | U | 2.4 | U | | | | |
| METAL | Beryllium | 0.4 | U | 0.4 | U | 0.4 | U | | | | |
| METAL | Cadmium | 2.1 | U | 2.1 | U | 2.1 | U | | | | |
| METAL | Calcium | 78.2 | | 65.7 | | 19. | U | | | | |
| METAL | Chromium | 2.3 | U | 2.3 | U | 2.3 | U | | | | |
| METAL | Cobalt | 3.2 | U | 3.2 | U | 3.2 | U | | | | |
| METAL | Copper | 2.6 | U | 2.6 | U | 2.6 | U | | | | |
| METAL | Cyanide | 1. | U | 1. | U | 1. | U | | | | |
| METAL | Iron | 11.4 | | 17.4 | | 11.6 | | | | | |
| METAL | Lead | 0.85 | | 0.7 | U | 0.7 | U | | | | |
| METAL | Magnesium | 22. | U | 22. | U | 22. | U | | | | |
| METAL | Manganese | 1.8 | | 1.4 | | 1. | U | | | | |
| HETAL | Mercury | 0.25 | | 0.1 | U | 0.1 | U | | | | |
| HETAL | Nickel | 10.4 | U | 10.4 | U | 10.4 | U | | | | |
| METAL | Potassium | 649. | U | 649. | U | 649. | U | | | | |
| METAL | Selenium | 1.7 | U | 1.7 | U | 1.7 | U | | | | |
| METAL | Silver | 3.6 | U | 3.6 | U | 3.6 | U | | | | |
| METAL | Sodium | 22.4 | U | 22.4 | U | 30. | | | | | |
| METAL | Thallium | 2.8 | U | 2.8 | U | 2.8 | U | | | | |
| METAL | Vanadium | 3.3 | U | 3.3 | U | 3.3 | U | | | | |
| METAL | Zinc | 1.7 | | 2.6 | | 1.7 | U | | | | |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID | 014-E-SE01-00 | 014-E-SE02-00 | 014-E-SE03-00 | | | |
| ORIGINAL ID | 14SE01 | 14SE02 | 14SE03 | | | |
| LAB SAMPLE ID | 39304-43 | 39364-10 | 39390-34 | | | |
| ID FROM REPORT | 14SE01 | 14SE02 | 14SE03 | | | |
| SAMPLE DATE | 02/11/94 | | 02/21/94 | | | |
| DATE EXTRACTED | | 02/21/94 | 02/23/94 | | | |
| DATE ANALYZED | 02/22/94 | | | | | |
| MATRIX | Yater | Uater | Uater | | | |
| UNITS | UG/L | UG/L | UG/L | | | |

| Method | Parameter | CT514 | VAL | CT516 | VAL | CT516 | VAL | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PEST | 4,4'-DDD | 0.11 | U | 0.1 | U | 0.11 | U | | | |
| PEST | 4,4'-DDE | 0.11 | U | 0.1 | U | 0.11 | U | | | |
| PEST | 4,4'-DDT | 0.11 | U | 0.1 | U | 0.11 | U | | | |
| PEST | Aldrin | 0.054 | U | 0.052 | U | 0.054 | U | | | |
| PEST | Aroclor-1016 | 1.1 | U | 1. | U | 1.1 | U | | | |
| PEST | Aroclor-1221 | 2.1 | U | 2.1 | U | 2.2 | U | | | |
| PEST | Aroclor-1232 | 1.1 | U | 1. | U | 1.1 | U | | | |
| PEST | Aroclor-1242 | 1.1 | U | 1. | U | 1.1 | U | | | |
| PEST | Aroclor-1248 | 1.1 | U | 1. | U | 1.1 | U | | | |
| PEST | Aroclor-1254 | 1.1 | U | 1. | U | 1.1 | U | | | |
| PEST | Aroclor-1260 | 1.1 | U | [illegible] | U | 1.1 | U | | | |
| PEST | Dieldrin | 0.11 | U | 0.1 | U | 0.11 | U | | | |
| PEST | Endosulfan I | 0.054 | U | 0.052 | U | 0.054 | U | | | |
| PEST | Endosulfan II | 0.11 | U | 0.1 | U | 0.11 | U | | | |
| PEST | Endosulfan sulfate | 0.11 | U | 0.1 | U | 0.11 | U | | | |
| PEST | Endrin | 0.11 | U | 0.1 | U | 0.11 | U | | | |
| PEST | Endrin aldehyde | 0.11 | U | 0.1 | U | 0.11 | U | | | |
| PEST | Endrin ketone | 0.11 | U | 0.1 | U | 0.11 | U | | | |
| PEST | Heptachlor | 0.054 | U | 0.052 | U | 0.054 | U | | | |
| PEST | Heptachlor epoxide | 0.054 | U | 0.052 | U | 0.054 | U | | | |
| PEST | Methoxychlor | 0.54 | U | 0.52 | U | 0.54 | U | | | |
| PEST | Toxaphene | 5.4 | U | 5.2 | U | 5.4 | U | | | |
| PEST | alpha-BHC | 0.054 | U | 0.052 | U | 0.054 | U | | | |
| PEST | alpha-Chlordane | 0.054 | U | 0.052 | U | 0.054 | U | | | |
| PEST | beta-BHC | 0.054 | U | 0.052 | U | 0.054 | U | | | |
| PEST | delta-BHC | 0.054 | U | 0.052 | U | 0.054 | U | | | |
| PEST | gamma-BHC (Lindane) | 0.054 | U | 0.052 | U | 0.054 | U | | | |
| PEST | gamma-Chlordane | 0.054 | U | 0.052 | U | 0.054 | U | | | |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-E-SEOI-00 | | 014-E-SE01-00 RE | | 014-E-SE02-00 | | 014-E-SE03-00 | | | |
| | ORIGINAL ID → | 14SE01 | | 14SE01RE | | 14SE02 | | 14SE03 | | | |
| | LAB SAMPLE ID → | 39304-43 | | 39304-43RE | | 39364-10 | | 39390-34 | | | |
| | ID FROM REPORT → | 14SE01 | | 14SE01RE | | 14SE02 | | 14SE03 | | | |
| | SAMPLE DATE → | 02/11/94 | | 02/11/94 | | | | 02/21194 | | | |
| | DATE EXTRACTED → | | | 02/25/94 | | | | 02/23/94 | | | |
| | DATE ANALYZED → | 02/24/94 | | 02/28/94 | | 03/07/94 | | 03/07/94 | | | |
| | MATRIX → | Water | | Water | | Uater | | Water | | | |
| | UNITS → | UG/L | | UG/L | | UG/L | | UG/L | | | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | | |
| SVOA | 1,2,4-Trichlorobenzene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 1,2-Dichlorobenzene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 1,3-Dichlorobenzene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 1,4-Dichlorobenzene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2,4,5-Tr ichlorophenol | 26. | U | 26. | U | 26. | U | 26. | U | | |
| SVOA | 2,4,6-Tr ichlorophenol | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2,4-Dichlorophenol | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2,4-Dimethylphenol | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2,4-Dinitrophenol | 26. | U | 26. | U | 26. | U | 26. | U | | |
| SVOA | 2,4-Dinitrotoluenc | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2,6-Dinitrotoluena | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2-Chloronaphthalene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2-Chlorophenol | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2-Methylnaphthalene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2-Hethylphenol (o-Cresol) | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2-Nitmiline | 26. | U | 26. | U | 26. | U | 26. | U | | |
| SVOA | 2-Nitrophenol | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 3,3'-Dichlorobenzidine | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 3-Nitroaniline | 26. | U | 26. | U | 26. | U | 26. | U | | |
| SVOA | 4,6-Dinitro-2-methylphenol | 26. | U | 26. | U | 26. | U | 26. | U | | |
| SVOA | 4-Bromophenyl-phenylether | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 4-Chloro-3-methylphenol | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 4-Chloroaniline | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 4-chloropheny l-pheny lcther | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 4-Methylphenol (p-Cresol) | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 4-Nitroaniline | 26. | U | 26. | U | 26. | U | 26. | U | | |
| SVOA | 4-Nitrophenol | 26. | U | 26. | U | 26. | U | 26. | U | | |
| SVOA | Acenaphthene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Acenaphthylene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Anthracene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Benzo(a)anthracene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Benzo(a)pyrene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Benzo(b)fluoranthene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Benzo(g,h,i)perylene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Benzo(k)fluoranthene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Butylbenzylphthalate | 11. | U | 10. | U | 10. | U | 10. | U | | |

*** Validation Complete ***

# \ Site 14
## ıples
## Phase I

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-E-SE01-00 | | 014-E-SE01-00 RE | | 014-E-SE02-00 | | 014-E-SE03-00 | | | |
| | ORIGINAL ID → | 14SE01 | | 14SE01RE | | 14SE02 | | 14SE03 | | | |
| | LAB SAMPLE ID → | 39304-43 | | 39304-43RE | | 39364-10 | | 39390-34 | | | |
| | ID FROM REPORT → | 14SE01 | | 14SE01RE | | 14SE02 | | 14SE03 | | | |
| | SAMPLE DATE → | 02/11/94 | | 02/11/94 | | | | 02/21/94 | | | |
| | DATE EXTRACTED → | | | 02/25/94 | | | | 02/23/94 | | | |
| | DATE ANALYZED → | 02/24/94 | | 02/28/94 | | 03/07/94 | | 03/07/94 | | | |
| | MATRIX → | Uatcr | | Uatcr | | Uatcr | | Uatcr | | | |
| | UNITS → | UG/L | | UG/L | | UG/L | | UG/L | | | |
| Method | Parameter | CT514 | VAL | CT514 | VAL | CT516 | VAL | CT516 | VAL | | |
| SVOA | Carbazole | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Chrysene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Di-n-butylphthalatc | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Di-n-octylphthalate | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Dibenzo(a,h)anthracene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Dibenzofuran | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Dicthylphthalrtc | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Dimethylphthalate | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Fluoranthene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Fluorene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Hexachlorobenzene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Hexachlorobutadiene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Hcxrchlorocyclopentadiene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Hexachloroethsnc | 11. | U | IO. | U | 10. | U | 10. | U | | |
| SVOA | Indeno(1,2,3-cd)pyrene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Isophorone | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | N-Nitroso-di-n-propylamine | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | N-Nitrosodiphenylamine | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Naphthalene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Nitrobenzene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Pentachlorophenol | 26. | U | 26. | U | 26. | U | 26. | U | | |
| SVOA | Phenanthrene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Phenol | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | Pyrene | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | bis(2-Chloroethoxy)methane | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | bis(2-Chloroethyl)ether | 11. | U | 10. | U | 10. | U | 10. | U | | |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 11. | U | 10. | U | 10. | U | IO. | U | | |

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-E-SE01-00 | | 014-E-SE02-00 | | 014-E-SE03-00 | | | | |
| ORIGINAL ID → | | 14SE01 | | 14SE02 | | 14SE03 | | | | |
| LAB SAMPLE ID → | | 39304-46 | | 39364-13 | | 39390-37 | | | | |
| ID FROM REPORT → | | 14SE01 | | 14SE02 | | 14SE03 | | | | |
| SAMPLE DATE → | | 02/11/94 | | | | 02/21/94 | | | | |
| DATE EXTRACTED → | | | | | | | | | | |
| DATE ANALYZED → | | | | 02/28/94 | | 03/02/94 | | | | |
| MATRIX → | | Water | | Water | | Water | | | | |
| UNITS → | | UG/L | | UG/L | | UG/L | | | | |
| Method | Parameter | CT514 | VAL | CT516 | VAL | CT516 | VAL | | | |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,1-Dichloroethme | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,2-Dichloroethene (total) | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 2-Butanone (MEK) | IO. | U | 10. | U | 10. | U | | | |
| VOA | 2-Hexanone | IO. | U | IO. | U | 10. | U | | | |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | 10. | U | | | |
| VOA | Acetone | 10. | U | 10. | U | 16. | J | | | |
| VOA | Benzene | 10. | U | IO. | U | 10. | U | | | |
| VOA | Bromodichloromethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | Bromoform | 10. | U | 10. | U | 10. | U | | | |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | Carbon disulfide | 10. | U | 10. | U | 10. | U | | | |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | 10. | U | | | |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Chloroethane | IO. | U | 10. | U | 10. | U | | | |
| VOA | Chloroform | 10. | U | 10. | U | 10. | U | | | |
| VOA | Chloromethane | IO. | U | 10. | U | 10. | U | | | |
| VOA | Dibromochloromethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | Ethylbenzene | IO. | U | 10. | U | 10. | U | | | |
| VOA | Methylene chloride | 3. | J | 4. | J | 6. | J | | | |
| VOA | Styrene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Tetrachloroethene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Toluene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Trichloroethene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Vinyl chloride | 10. | U | 10. | U | 10. | U | | | |
| VOA | m+p-Xylenes | 10. | U | 10. | U | 10. | U | | | |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | IO. | U | | | |
| VOA | trans-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | | | |

+++ Validation Complete +++

# NAS PENSACOLA Site 14
## QA/QC Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-T-0002-00 | | 014-T-0003-00 | | 014-T-0005-00 | | 014-T-0006-00 | | 014-T-GT01-00 | | 014-T-ST01-00 | |
| | ORIGINAL ID → | 14GT02 | | 14ST03 | | 14ST05 | | 14ST06 | | 14GT01 | | 14ST01 | |
| | LAB SAMPLE ID → | 39431-9 | | 39390-38 | | 39408-8 | | 39432-29 | | 39419-21 | | 39304-47 | |
| | ID FROM REPORT → | 14GT02 | | 14ST03 | | 14ST05 | | 14ST06 | | 14GT01 | | 14ST01 | |
| | SAMPLE DATE → | 02/24/94 | | 02/21/94 | | 02/22/94 | | 02/24/94 | | 02/23/94 | | 02/11/94 | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | 03/03/94 | | 03/02/94 | | 03/03/94 | | 03/04/94 | | 02/28/94 | | | |
| | MATRIX → | Uater | | Water | | Water | | Uatcr | | Uater | | Uater | |
| | UNITS → | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | CT519 | VAL | CT516 | VAL | CT518 | VAL | CT518 | VAL | CT519 | VAL | CT514 | VAL |
| VOA | 1,1,1-Trichlorocthanc | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | IO. | U | 10. | U |
| VOA | 1,1-Dichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethene (total) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Butanarc (MEK) | IO. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Hexanone | IO. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Acetone | 10. | U | IO. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Benzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromodichloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | IO. | U |
| VOA | Bromoform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon disulfide | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | IO. | U |
| VOA | Chloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloroform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloromethane | 10. | U | 10. | U | IO. | U | 10. | U | 10. | U | 10. | U |
| VOA | Dibromochloromethane , | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Ethylbenzene | 10. | U | IO. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Methylene chloride | 8. | J | 7. | J | 7. | U | 3. | U | 10. | U | 4. | J |
| VOA | Styrene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Tetrachloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Toluene | IO. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Trichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Vinyl chloride | 10. | U | 10. | U | 10. | U | IO. | U | 10. | U | 10. | U |
| VOA | m+p-Xylenes | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | trans-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |

*** Validation Complete ***

# Phase I

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-T-ST02-00 | | 014-T-ST04-00 | | 014-T-ST07-00 | | | | |
| | ORIGINAL ID → | 14ST02 | | 14ST04 | | 14ST07 | | | | |
| | LAB SAMPLE ID → | 39364-14 | | 39390-39 | | 39443-14 | | | | |
| | ID FROM REPORT → | 14ST02 | | 14ST04 | | 14ST07 | | | | |
| | SAMPLE DATE → | 02/11/94 | | 02/21/94 | | 02/24/94 | | | | |
| | DATE EXTRACTED → | | | | | | | | | |
| | DATE ANALYZED → | 02/28/94 | | 03/02/94 | | 03/03/94 | | | | |
| | MATRIX → | Water | | Water | | Water | | | | |
| | UNITS → | UG/L | | UG/L | | UG/L | | | | |
| Method | Parameter | CT516 | VAL | CT516 | VAL | CT518 | VAL | | | |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,1-Dichloroethene | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,2-Dichloroethene (total) | 10. | U | 10. | U | 10. | U | | | |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | | | |
| VOA | 2-Butanone (MEK) | 10. | U | 10. | U | 10. | U | | | |
| VOA | 2-Hexanone | 10. | U | 10. | U | 10. | U | | | |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | 10. | U | | | |
| VOA | Acetone | 11. | | 10. | U | 10. | U | | | |
| VOA | Benzene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Bromodichloromethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | Bromoform | 10. | U | 10. | U | 10. | U | | | |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | Carbon disulfide | 10. | U | 10. | U | 10. | U | | | |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | 10. | U | | | |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Chloroethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | Chloroform | 10. | U | 10. | U | 10. | U | | | |
| VOA | Chloromethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | Dibromochloromethane | 10. | U | 10. | U | 10. | U | | | |
| VOA | Ethylbenzene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Methylene chloride | 5. | J | 8. | J | 8. | U | | | |
| VOA | Styrene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Tetrachloroethene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Toluene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Trichloroethene | 10. | U | 10. | U | 10. | U | | | |
| VOA | Vinyl chloride | 10. | U | 10. | U | 10. | U | | | |
| VOA | m+p-Xylenes | 10. | U | 10. | U | 10. | U | | | |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | | | |
| VOA | trans-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | | | |

*** Validation Complete ***

**Site 14**

**Phase II Surface Water Samples**

# NAS PENSACOLA Site 14
## Surface Water Samples
## Phase II



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-U-0001-01 | | 014-R-0001-01 | | 014-W-0002-01 | | 014-W-0003-01 | | 014-W-0004-01 | | 014-W-0005-01 | |
| | ORIGINAL ID → | 014W000101 | | 014R000101 | | 014W000201 | | 014W000301 | | 014W000401 | | 014W000501 | |
| | LAB SAMPLE ID → | 668744 | | 668746 | | 669358 | | 668748 | | 668733 | | 668728 | |
| | ID FROM REPORT → | 14W000101 | | 14R000101 | | 14W000201 | | 14W000301 | | 14W000401 | | 14W000501 | |
| | SAMPLE DATE → | 12/13/94 | | 12/13/94 | | 12/13/94 | | 12/13/94 | | 12/12/94 | | 12/12/94 | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | | | | | | | | | | | | |
| | MATRIX → | Water | | Water | | Uater | | Water | | Water | | Water | |
| | UNITS → | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | 982161 | VAL | 982161 | VAL | 982161 | VAL | 982161 | VAL | 982161 | VAL | 982161 | VAL |
| METAL | Aluninun | 160. | UJ | 411. | U | 1850. | J | 19.2 | UJ | 108. | U | 706. | J |
| METAL | Antimony | 6.6 | U | 7.4 | U | 7.1 | U | 6.2 | U | 1.9 | U | 1.9 | U |
| METAL | Arsenic | 4. | | 5. | | 6.4 | | 6.8 | | 11.3 | | 11.1 | |
| METAL | Barium | 43.3 | J | 48.5 | J | 52.1 | J | 43.1 | J | 19.2 | J | 19.6 | J |
| METAL | Beryllium | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| METAL | Cadmium | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U |
| METAL | Calcium | 99500. | | 106000. | | 111000. | | 101000. | | 76800. | | 76500. | |
| METAL | Chromium | 3.4 | | 4.3 | | 7.3 | | 2.4 | | 3.5 | | 3.8 | |
| METAL | Cobalt | 0.53 | | 0.5 | U | 0.72 | | 0.5 | U | 0.5 | U | 0.81 | |
| METAL | Copper | 3.3 | U | 3.9 | U | 7. | | 3.2 | U | 3. | U | 4. | U |
| METAL | Iron | 790. | | 1000. | | 2550. | | 471. | | 710. | | 1120. | |
| METAL | Lead | 6.1 | | 7.3 | | 17. | | 6.3 | | 2.2 | | 3.4 | |
| METAL | Magnesiw | 232000. | | 250000. | | 246000. | | 237000. | | 124000. | | 124000. | |
| METAL | Manganese | 22.2 | | 25.1 | | 41.1 | | 18.7 | | 83. | | 90.8 | |
| METAL | Mercury | 0.2 | U | 0.2 | U | 41.4 | | 0.2 | U | 0.2 | U | 0.2 | U |
| METAL | Nickel | 2.6 | | 2.7 | | 4. | | 2.5 | | 2. | | 1.5 | U |
| METAL | Potassium | 160000. | | 174000. | | 179000. | | 163000. | | 122000. | | 123000. | |
| METAL | Selenium | 4.4 | U | 4.4 | U | 4.4 | U | 4.4 | U | 4.7 | | 4.4 | U |
| METAL | Silver | 0.6 | U | 0.6 | U | 0.6 | U | 0.6 | U | 0.6 | U | 0.6 | U |
| METAL | Sodium | 2040000. | J | 2140000. | J | 2180000. | J | 2060000. | J | 1650000. | J | 1640000. | J |
| METAL | Thallium | 6. | | 6.7 | | 8. | | 10.9 | | 6.6 | | 5.8 | |
| METAL | Vanadium | 11.8 | | 13. | | 18.1 | | 11.4 | | 5.8 | | 6.9 | |
| METAL | Zinc | 15.3 | U | 16.4 | U | 32.9 | U | 11.3 | U | 23.4 | | 13.8 | U |
| METAL | Cyanide | 10. | UJ | 10. | UJ | 10. | UJ | 10. | UJ | 10. | UJ | 10. | UJ |

+*+ Validation Complete ***

# NAS PENSACOLA Site 14
## Surface Water Samples
## Phase II



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID ——> | 014-W-0001-01 | 014-R-0001-01 | 014-U-0002-01 | 014-W-0003-01 | 014-W-0004-01 | 014-W-0005-01 |
| ORIGINAL ID ——> | 014W000101 | 014R000101 | 014W000201 | 014W000301 | 014W000401 | 014W000501 |
| LAB SAMPLE ID ——> | 668743 | 668745 | 669357 | 668747 | 668732 | 668724 |
| ID FROM REPORT ——> | 14W000101 | 14R000101 | 14W000201 | 14W000301 | 14W000401 | 14W000501 |
| SAMPLE DATE ——> | 12/13/94 | 12/13/94 | 12/16/94 | 12/13/94 | 12/12/94 | 12/12/94 |
| DATE EXTRACTED ——> | | | | | | |
| DATE ANALYZED ——> | | | | | | |
| MATRIX ——> | | | | | | |
| WITS ——> | | | | | | |

| Method | Parameter | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PEST | alpha-BHC | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U |
| PEST | beta-BHC | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U |
| PEST | delta-BHC | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U |
| PEST | gamma-BHC (Lindane) | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U |
| PEST | Heptachlor | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U |
| PEST | Aldrin | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U |
| PEST | Heptachlor epoxide | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U |
| PEST | Endosulfan I | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U |
| PEST | Dieldrin | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.0007 | J |
| PEST | 4,4'-DDE | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U |
| PEST | Endrin | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U |
| PEST | Endosulfan II | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U |
| PEST | 4,4'-DDD | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U |
| PEST | Endosulfan sulfate | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U |
| PEST | 4,4'-DDT | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U |
| PEST | Methoxychlor | 0.02 | U | 0.02 | U | 0.02 | U | 0.1 | U | 0.02 | U | 0.1 | U |
| PEST | Endrin ketone | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U |
| PEST | Endrin aldehyde | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U | 0.02 | U |
| PEST | alpha-Chlordane | 0.02 | U | 0.02 | U | 0.01 | U | 0.01 | U | 0.02 | U | 0.0007 | J |
| PEST | gamma-Chlordane | 0.01 | U | 0.01 | U | 0.01 | U | 0.01 | U | 0.02 | U | 0.0009 | J |
| PEST | Toxaphene | 1. | U | [illegible] | U | 1. | U | 1. | U | 1. | U | 1. | U |
| PEST | Aroclor-1016 | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U |
| PEST | Aroclor-1221 | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U |
| PEST | Aroclor-1232 | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U |
| PEST | Aroclor-1242 | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U |
| PEST | Aroclor-1248 | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U |
| PEST | Aroclor-1254 | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U |
| PEST | Aroclor-1260 | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U |

*** Validation Complete ***

# Phase II

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-W-0001-01 | | 014-R-0001-01 | | 014-W-0002-01 | | 014-U-WO3-01 | | 014-W-0004-01 | | 014-W-0005-01 | |
| | ORIGINAL ID → | 014W000101 | | 014R000101 | | 014W000201 | | 014W000301 | | 014W000401 | | 014W000501 | |
| | LAB SAMPLE ID → | 668743 | | 668745 | | 669357 | | 668747 | | 668732 | | 668724 | |
| | ID FROM REPORT → | 14W000101 | | 14R000101 | | 14W000201 | | 14W000301 | | 14W000401 | | 14W000501 | |
| | SAMPLE DATE → | 12/13/94 | | 12/13/94 | | 12/16/94 | | 12/13/94 | | 12/12/94 | | 12/12/94 | |
| | DATE EXTRACTED → | 12/18/94 | | 12/18/94 | | 12/22/94 | | 12/18/94 | | 12/18/94 | | 12/18/94 | |
| | DATE ANALYZED → | 12/20/94 | | 12/20/94 | | 12/30/94 | | 12/20/94 | | 12/20/94 | | 12/20/94 | |
| | MATRIX → | Uatcr | | Uatcr | | Uatcr | | Uatcr | | Uatcr | | Uatcr | |
| | UNITS → | UG/L | | UG/L | | UG/L | | UG/L | | | | UG/L | |
| Method | Parameter | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL |
| SVOA | Phenol | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | bis(2-Chloroethyl)ether | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2-Chlorophenol | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 1,3-Dichlorobenzene | NR | | NR | | NR | | NR | | NR | | NR | |
| SVOA | 1,4-Dichlorobenzene | NR | | NR | | NR | | NR | | NR | | NR | |
| SVOA | 1,2-Dichlorobenzene | NR | | NR | | NR | | NR | | NR | | NR | |
| SVOA | 2-Methylphenol (o-Cresol) | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2,2'-oxybis(1-Chloropropane) | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 4-Ncthy lphwl (p-Cresol) | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | N-Nitroso-di-n-propylamine | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Hexachlorocthanc | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Nitrobenzene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Isophorone | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2-Nitrophenol | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2,4-Dimethylphenol | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | bis(2-Chloroethoxy)methane | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2,4-Dichlorophenol | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 1,2,4-Trichlorobenzene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Naphthalene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 4-Chloroaniline | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Hexachlorobutadiene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 4-Chloro-3-methylphenol | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2-Ncthylnaphthalene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Hexachlorocyclopentadiene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2,4,6-Trichlorophenol | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2,4,5-Trichlorophenol | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U |
| SVOA | 2-Chloronaphthalene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2-Nitroaniline | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U |
| SVOA | Dimethylphthalate | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Acenaphthylene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2,6-Dinitrotoluene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 3-Nitroaniline | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U |
| SVOA | Acenaphthene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 2,4-Dinitrophenol | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U |
| SVOA | 4-Hitrophenol | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U |
| SVOA | Dibenzofuran | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Surface Water Samples
## Phase II



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-W-0001-01 | | 014-R-0001-01 | | 014-W-0002-01 | | 014-W-0003-01 | | 014-U-04-01 | | 014-W-0005-01 | |
| ORIGINAL ID → | | 014W000101 | | 014R000101 | | 014W000201 | | 014W000301 | | 014W000401 | | 014W000501 | |
| LAB SAMPLE ID → | | 668743 | | 668745 | | 669357 | | 668747 | | 668732 | | 668724 | |
| ID FROM REPORT → | | 14W000101 | | 14R000101 | | 14W000201 | | 14W000301 | | 14W000401 | | 14W000501 | |
| SAMPLE DATE → | | 12/13/94 | | 12/13/94 | | 12/16/94 | | 12/13/94 | | 12/12/94 | | 12/12/94 | |
| DATE EXTRACTED → | | 12/18/94 | | 12/18/94 | | 12/22/94 | | 12/18/94 | | 12/18/94 | | 12/18/94 | |
| DATE ANALYZED → | | 12/20/94 | | 12/20/94 | | 12/30/94 | | 12/20/94 | | 12/20/94 | | 12/20/94 | |
| MATRIX → | | Water | | Water | | Water | | Uatcr | | Water | | Water | |
| UNITS → | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL |
| SVOA | 2,4-Dinitrotolucnc | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Diethylphthalatc | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 4-Chlorophenyl-phenylether | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Fluorene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 4-Nitroaniline | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U |
| SVOA | N-Nitrosodiphenylamine | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 4-BrMopheny l-pheny lcther | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Hexachlorobenzene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Pentachlorophenol | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U | 20. | U |
| SVOA | Phenanthrene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Anthracene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Carbazole | NR | | NU | | NR | | NR | | NR | | NR | |
| SVOA | Di-n-butylphthalate | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Fluoranthene | 5. | U | 5. | U | 0.5 | J | 5. | U | 5. | U | 5. | U |
| SVOA | Pyrene | 5. | U | 5. | U | 0.8 | J | 5. | U | 5. | U | 5. | U |
| SVOA | Butylbentylphtklate | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | 3,3'-Dichlorobenzidine | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Benzo(a)anthracene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA' | Chrysene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Di-n-octylphthalate | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Benzo(b)fluoranthene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Benzo(k)fluoranthene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Benzo(a)pyrene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Dibenzo(a,h)anthracene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |
| SVOA | Benzo(g,h,i)perylene | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U | 5. | U |

# NAS PENSACOLA Site 14
## Surface Water Samples
## Phase II



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID → | | 014-W-OWI -01 | | 014-R-0001-01 | | 014-W-0002-01 | | 014AWOW301 | | 014-W-0004-01 | | 014-W-0005-01 | |
| ORIGINAL ID → | | 014W000101 | | 014R000101 | | 014W000201 | | 014W000301 | | 014W000401 | | 014W000501 | |
| LAB SAMPLE ID → | | 668743 | | 668745 | | 669357 | | 668747 | | 668732 | | 668724 | |
| ID FROM REPORT → | | 14W000101 | | 14R000101 | | 14W000201 | | 14W000301 | | 14W000401 | | 14W000501 | |
| SAMPLE DATE → | | 12/13/94 | | 12/13/94 | | 12/16/94 | | 12/13/94 | | 12/12/94 | | 12/12/94 | |
| DATE EXTRACTED → | | | | | | | | | | | | | |
| DATE ANALYZED → | | 12/18/94 | | 12/18/94 | | 12/21/94 | | 12/18/94 | | 12/18/94 | | 12/18/94 | |
| MATRIX → | | Water | | Water | | Water | | Water | | Water | | Water | |
| UNITS → | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | | UG/L | |
| Method | Parameter | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL |
| VOA | Chloromethane | 1. | u | 1. | u | 1. | u | 1. | u | 1. | U | 1. | u |
| VOA | Bromomethane | 1. | u | 1. | u | 1. | u | 1. | u | 1. | U | 1. | u |
| VOA | Vinyl chloride | 1. | u | 1. | u | 1. | u | 1. | u | 1. | U | 1. | u |
| VOA | Chloroethane | 1. | u | 1. | u | 1. | u | 1. | u | [illegible] | U | 1. | u |
| VOA | Methylene chloride | 2. | u | 2. | u | 2. | u | 0.7 | U | 0.7 | U | 2. | u |
| VOA | Acetone | 8. | u | 7. | u | 5. | u | 7. | u | 6. | U | 5. | u |
| VOA | Carbon disulfide | 1. | u | 1. | u | 1. | u | 1. | u | [illegible] | U | 1. | u |
| VOA | 1,1-Dichloroethene | 1. | u | 1. | u | 1. | u | 1. | u | 1. | U | 1. | u |
| VOA | 1,1-Dichloroethane | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | cis-1,2-Dichlorocthylenc | 1. | u | 1. | u | 1. | u | 1. | u | 1. | U | 1. | u |
| VOA | Ethene, 1,2-dichloro-, (E)- | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | Chloroform | [illegible] | u | 1. | u | 1. | u | 1. | u | 1. | U | 1. | U |
| VOA | 1,2-Dichloroethane | 1. | u | 1. | u | 1. | u | 1. | u | 1. | U | 1. | u |
| VOA | 2-Butanone (MEK) | 5. | u | 5. | u | 5. | u | 5. | u | 5. | U | 5. | u |
| VOA | Chlorobromomethane | 1. | u | 1. | u | 1. | u | 1. | u | 1. | U | 1. | u |
| VOA | 1,1,1-Trichloroethane | 1. | u | [illegible] | u | 1. | u | 1. | u | 1. | U | 1. | u |
| VOA | Carbon tetrachloridc | 1. | u | 1. | u | 1. | u | [illegible] | u | 1. | u | 1. | U |
| VOA | Bromodichloromethane | [illegible] | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | 1,2-Dichloropropane | 1. | u | 1. | u | 1. | u | 1. | u | [illegible] | u | 1. | u |
| VOA | cis-1,3-Dichloropropene | 1. | u | 1. | u | 1. | u | 1. | u | [illegible] | u | 1. | U |
| VOA | Trichlorocthenc | [illegible] | u | 1. | u | 1. | u | 1. | u | 1. | U | 1. | u |
| VOA | Dibromochloromethane | 1. | u | 1. | u | [illegible] | u | 1. | u | 1. | u | 1. | u |
| VOA | 1,1,2-Trichloroethane | 1. | u | 1. | u | 1. | U | 1. | u | 1. | U | 1. | U |
| VOA | Benzene | [illegible] | U | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | trans-1,3-Dichloropropene | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | Bromoform | 1. | u | 1. | U | 1. | U | 1. | U | [illegible] | u | 1. | u |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 5. | u | 5. | u | 5. | u | 5. | u | 5. | u | 5. | u |
| VOA | 2-Hexanone | 5. | u | 5. | u | 5. | u | 5. | u | 5. | u | 5. | u |
| VOA | Tetrachloroethene | 1. | U | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | 1,1,2,2-Tetrachloroethane | [illegible] | u | 1. | u | [illegible] | u | 1. | u | 1. | u | 1. | u |
| VOA | Ethylene dibromide | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | Toluene | 1. | U | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | Chlorobenzene | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | Ethylbenzene | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | Styrene | 1. | u | 1. | u | 1. | U | 1. | U | 1. | U | 1. | u |
| VOA | m+p-Xylenes | 1. | u | [illegible] | u | 1. | u | 1. | u | 1. | u | 1. | u |

*** Validation Complete ***

# NAS PENSACOLA Site 14
## Surface Water Samples
## Phase I



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID → | 014-W-0001-01 | | 314-R-0001-01 | | )14-W-0002-01 | | 014-W-0003-01 | | )14-W-0004-01 | | )14-W-0005-01 | |
| | ORIGINAL ID → | 014W000101 | | 014R000101 | | 314W000201 | | 014W000301 | | )14W000401 | | )14W000501 | |
| | LAB SAMPLE ID → | 668743 | | 668745 | | 569357 | | 668747 | | 568732 | | 568724 | |
| | ID FROM REPORT → | 14W000101 | | 14R000101 | | 14W000201 | | 14W000301 | | 14W000401 | | 14W000501 | |
| | SAMPLE DATE → | 12/13/94 | | 12/13/94 | | 12/16/94 | | 12/13/94 | | 12/12/94 | | 12/12/94 | |
| | DATE EXTRACTED → | | | | | | | | | | | | |
| | DATE ANALYZED → | 12/18/94 | | 12/18/94 | | 12/21/94 | | 12/18/94 | | 12/18/94 | | 12/18/94 | |
| | MATRIX → | Water | | Water | | Uatcr | | water | | Water | | later | |
| | WITS → | UG/L | | UG/L | | JG/L | | UG/L | | JG/L | | JG/L | |
| Method | Parameter | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL | 0004L | VAL |
| VOA | 1,3-Dichlorobenzene | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | 1,4-Dichlorobenzene | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | 1,2-Dichlorobenzene | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| UOA | DBCP | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u | 1. | u |
| VOA | 1,2-Dichloroethcnc (total) | NR | | NR | | NR | | NR | | NR | | NR | |

# Appendix D

## NAS Pensacola Site 14
## Preliminary Human Health Risk-Based Screening of Sediment and Surface Water Data

## Introduction

Site 14 at NAS-Pensacola is an undeveloped dredge spoil disposal site located on the extreme eastern edge of the base. [Pensacola Bay abuts Site 14 on the east and Chevalier Field abuts the site to the west.] Site 14 is remote from operational areas, and its topography and engineering properties limit potential uses. [The site is a failing structure, which must be maintained. Storm events, such as Hurricane Erin, and dredging operations necessitate shore maintenance at this site. A major storm event, such as a severe hurricane, could potentially wash the site into the bay. Base workers are infrequently required to work in the Site 14 area during dredging and shoring activities. Site characteristics would not be expected to encourage frequent trespass or recreational use because site conditions will change in the future, and the Navy concluded that Site 14 would not be used as a training area because the site is structurally unsound. The Tier I Partnering Team determined that the Navy can move Site 14 sediment to Site 6 (an open rubble disposal landfill), and Site 14 sand could possibly be used as construction fill across NAS Pensacola. Additional information regarding Site 14 conditions and characteristics are discussed in accompanying report.]

During the investigative phase at Site 14, surface water, groundwater and sediment (term applied to all solid media collected) samples were collected. [It was determined that groundwater onsite is similar in characteristics to slightly diluted Pensacola Bay water (2,000 to 3,000 parts per million (ppm) sodium)], and thus is not suitable for consumption. In addition, [there is no viable route for human exposure to shallow groundwater under current conditions.] Surface water consisted of pooled rainwater and/or water which drained from dredge materials after placement in a bermed area within the dredge spoil pile. [Surface water salinity was also relatively high (approximately 2,000 ppm sodium).] Sediments consist of material deposited during numerous local dredging operations.

In order to provide a basis for decision-making relative to further action required at Site 14, a preliminary human health assessment was performed using a risk-based screening approach. This process is consistent with that used in RI baseline risk assessments to refine the chemicals

present in site samples to a list of chemicals of potential concern. For purposes of this assessment, [dual phased screening was performed. The first screening phase employed tabulated risk-based concentrations from USEPA Region III *Selecting Exposure Routes and Contaminants of Concern by Risk-Based Screening* Tables], March 18, [1994 (as supplemented by subsequent issues) and FDEP *Cleanup Goals for Military Sites in Florida,* July 1994 (as supplemented by subsequent issues)]. The risk-based concentrations (RBC) presented in these tables were computed based on an individual compound carcinogenic risk of 1E-6 and/or a hazard quotient of 0.[1 (USEPA) or 1.0 (FDEP). The most conservative of the USEPA and FDEP RBCs were used as Preliminary Remedial Goals (PRGs)]. Maximum sediment results were screened versus the tabulated residential soil PRGs, and maximum surface water results were compared to tap water PRGs. These values were used as a conservative primary screening tool for sediment and surface water, respectively. [Tables 1 and 2 present preliminary screening of surface sediment and surface water results from NAS-Pensacola Site 14. If the maximum detected concentration of a chemical did not exceed residential soil or tap water RBCs in sediment or surface water], respectively, the chemical was not considered further in this screening assessment.

[Because of the location of Site 14 and the current and anticipated future removal of Site 14 sediment, neither sediment nor surface water at Site 14 is likely to be contacted consistent with the assumptions used by USEPA Region III or FDEP in deriving soil and/or tap water PRGs. This provides a high degree of confidence in the decision to exclude chemicals that passed the generic primary screening process from further assessment.] For those chemicals which failed the conventional RBC screening, [a secondary screening process was performed which took into consideration more realistic assumptions regarding the conditions under which humans may be exposed to Site 14 media]. In order to provide more relevant screening criteria, [Site Use-Specific Risk-Based Concentrations (SUSRBCs) were calculated for each chemical detected in surface sediment or surface water. SUSRBCs were calculated based on future adolescent child and adult recreational use exposures and potential site worker exposures. Adolescent child refers to a child age seven to 18. Recreational assumptions are more conservative than a typical trespassing scenario]. It was

assumed that current and hypothetical future site workers would be exposed under the same conditions, and thus one set of worker SUSRBCs was derived.

SUSRBCs were calculated using the same formulae presented in the RBC document applying exposure assumptions more appropriate for Site 14. Exposure assumptions are presented in Table 3 and toxicological values used to derive SUSRBCs are presented in Table 4. A hazard quotient goal of 0.1 and an incidental lifetime excess cancer risk goal of 1E-6 were used to derive SUSRBCs for each chemical. [For each receptor (adolescent chid and adult recreationists], and workers), non-carcinogenic and carcinogenic endpoint based SUSRBCs were derived. [Figures 1 and 2 show the formulae used to compute SUSRBC for surface sediment and surface water], respectively. The calculated SUSRBCs for sediment and surface water are presented in Tables 5 and 6, respectively. For screening purposes, [the lowest of the two values (carcinogenic or noncarcinogenic) was used for each receptor type].

Sediment

Table 7 presents sediment screening using calculated SUSRBCs. [As shown in Table 7, the maximum reported concentration of no chemical detected in Site 14 sediment exceeded adolescent child], adult or lifetime-weighted average (carcinogenic) recreational scenario SUSRBCs for sediment. Figure 1 shows the calculations used for the sediment exposure pathway. [Carcinogenic risk and non-carcinogenic hazard estimated the sediment exposure pathway as no chemical concentration exceeded either hazard-based SUSRBCs.]

Surface Water

Table 8 presents surface water screening using calculated SUSRBCs. As shown, [the lifetime-weighted average (carcinogenic) recreational SUSRBC, adolescent recreational SUSRBC, and occupational SUSRBC for arsenic were exceeded. In addition, the maximum lead concentration is greater than the treatment technique action level of 15 µg/l. No maximum concentration exceeded the hazard-based recreational SUSRBCs. The continued recreational use of surface water present within the bermed area at Site 14 would not be

expected to occur at the frequency assumed to-develop SUSRBCs. The site sediment will be moved to Site 6 and currently impounded water will be drained during these operations.]

[The worker carcinogenic SUSRBC was exceeded by the maximum concentration reported for arsenic.] As is the case for sediments, [the exposure assumptions used to calculate surface water SUSRBCs are highly conservative. There is little Likelihood that a receptor would spend significant time in this area under current or anticipated future land use conditions, and arsenic is less than the corresponding MCL]. These factors should be weighed before making any decisions regarding further action. Figure 2 shows the calculations used for the surface water exposure pathway.

[Incremental lifetime excess carcinogenic risk (ILCR) was estimated for the surface water pathway by summing the chemical-specific risk. Carcinogenic risk based on maximum reported concentrations was estimated as follows:

Pathway Risk = Sum of ([Detected Concentration/SUSRBC] x 1E6 for each chemical).

The resultant ILCR for the adolescent recreationist, lifetime weighted average recreationist, and occupational receptors are 1.4E-6, 2.8E-6, and 1.6E-6, respectively. Arsenic is the primary contributor to ILCR for the surface water pathway, and dieldrin is a secondary contributor.

Because arsenic exceeded the calculated SUSRBC, a reasonable maximum assessment of non-carcinogenic hazard related to potential surface water exposure was performed in addition to the calculation of ILCR]. Two potential receptors (recreationists and workers) were considered. Non-carcinogenic hazard indices were computed as follows for each receptor type:

[Hazard Index = Sum of ([Detected Concentration/SUSRBC] x 0.11

[The lifetime weighted average recreational SUSRBC (carcinogenic) for arsenic was exceeded by the maximum reported concentration. As a result, arsenic was considered the only surface water chemical of potential concern for this receptor group. The maximum cumulative non-carcinogenic hazard index for adolescent child recreational users was projected to be 0.14. The cumulative hazard indices (i.e., the sum of all surface water hazard quotients) for the adolescent child and occupational receptor were estimated to be 0.09 and 0.08, respectively. The primary contributors to hazard were thallium and mercury, neither of which exceeded the corresponding SUSRBC at the maximum reported concentrations. The maximum concentration reported for arsenic in surface water is approximately five times less than the corresponding MCUFPDWS.]

Summary

[Both occupational receptors and future recreational scenarios were assessed in this document. Based on the maximum reported concentrations in sediment, no chemicals exceeded the corresponding sediment SUSRBCs. For all receptors assessed in this document, the total use scenario (i.e., the sum of sediment and surface water) hazard indices were estimated to be less than 1.0.

The lifetime-weighted average risk was projected to be less than the USEPA acceptable risk range of 1E-4 to 1E-6. The cumulative risk estimated for the ingestion of surface water exceeded the 1E6 FDEP risk threshold for each of the three receptors assessed, and the surface water pathway was the only significant route (based on cumulative risk). The estimated ILCR for the adolescent recreationist, lifetime weighted average recreationist, and occupational surface water receptors are 1.4E-6, 2.8E-6, and 1.6E-6, respectively. Arsenic contributed 84% of the ILCR estimated for each scenario.

With the exception of arsenic, no individual chemicals' hazard quotient or excess cancer risk exceeded 1E6 excess risk based on the surface water exposure pathway, which indicates that arsenic would be identified as a chemical of potential concern based on the maximum reported concentration and the corresponding ILCR. However, the maximum

concentration of arsenic reported in surface water is approximately five times less than the arsenic MCL, and no other chemicals reported in site samples exceeded the corresponding SUSRBCs. Therefore, arsenic concentrations are below the corresponding drinking water Applicable or Relevant and Appropriate Requirement (ARAR), and no chemicals of concern have been identified at this site that would require further action.

In conclusion, this preliminary screening assessment did not identify any chemical in sediment or surface water which would be considered a chemical of concern during formal baseline risk assessment relative to carcinogenic risk.] This conclusion was drawn assuming that available data is representative of reasonable maximum concentrations at Site 14. [The surface water exposure pathway was computed to be near the threshold for which COCs would be identified. However, the primary contributor (arsenic) was much less than the corresponding ARAR.]

In light of the conservativism built into this screening exercise, it is unlikely that COCs would be identified during formal assessment. Furthermore, no individual COC would exceed its individual non-carcinogenic remedial goal option based on a hazard quotient of 0.1. As a result, no human health risk would be expected under current or projected future site use scenarios. The preliminary human health assessment supports the Tier I Partnering Team decision to reuse dredge sand for construction and fill purposes. Should additional information become available regarding sediment or surface water impacts, additional screening analysis should be performed. This screening analysis does not consider any potential ecological effects related to reported sediment and surface water impacts.

| Table 1<br>Initial Sediment Screening<br>NAS Pensacola Site 14 | | | |
|---|---|---|---|
| Sediment | Maximum Hit (mg/kg) | PRG Residential Soil Screening Value (mg/kg) | Exceeds Residential Screening Value? |
| Arsenic | 21.4 | 0.37 c | ✓ |
| Acenaphthene | 0.3 | 470 n | |
| Aldrin | 0.0084 | 0.038 c | |
| Aluminum | 43000 | 7800 n | ✓ |
| Barium | 71.6 | 550 n | |
| Beryllium | 2 | 0.15 c | ✓ |
| alpha-BHC | 0.00013 | 0.1 c | |
| alpha-Chlordane | 0.013 | 0.47 n | |
| beta-BHC | 0.0031 | 0.35 c | |
| gamma-BHC | 0.0013 | 0.49 c | |
| gamma-Chlordane | 0.0041 | 0.47 n | |
| Calcium | 35500 | NA | |
| Carbazole | 0.12 | 32 c | |
| Chromium (as + VI) | 88.1 | 39 n | ✓ |
| Cobalt | 10.8 | 470 n | |
| Copper | 50.8 | 290 n | |
| Dibenzo(a,h)anthracene | 0.22 | 0.088 c | ✓ |
| Dibenzofuran | 0.11 | 31 n | |
| Endosulfan I | 0.00047 | 47 n | |
| Endosulfan sulfate | 0.0069 | 47sz | |
| Endrin ketone | 0.0071 | 23 se | |
| fluorene | 0.23 | 310 n | |
| Methoxychlor | 0.036 | 39 n | |
| Iron | 43700 | NA | |
| Magnesium | 25700 | NA | |
| Lead | 299 | 400 o | |
| Manganese | 1300 | 39 n | ✓ |
| Mercury | 1 | 2.3 n | |
| Nickel | 22.3 | 160 n | |

| Table 1<br>Initial Sediment Screening<br>NAS Pensacola Site 14 | | | |
|---|---|---|---|
| Sediment | Maximum Hit (mg/kg) | PRG Residential Soil Screening Value (mg/kg) | Exceeds Residential Screening Value? |
| Antimony | 6.2 | 3.1 n | ✓ |
| Vanadium | 78.9 | 55 n | ✓ |
| Zinc | 292 | 2300 n | |
| Anthracene | 0.44 | 2300 n | |
| Benzo(a)anthracene | 2.1 | 0.88 c | ✓ |
| Benzo(a)pyrene | 2.4 | 0.088 c | ✓ |
| Benzo(b)fluoranthene | 5.3 | 0.88 c | ✓ |
| Benzo(g,h,i)perylene | 0.82 | 230 sv | |
| Benzo(k)fluoranthene | 5.2 | 8.8 c | |
| Chrysene | 2.5 | 14.8 cg | |
| Fluoranthene | 3.4 | 310 n | |
| Indeno(1,2,3-cd)pyrene | 0.99 | 0.88 c | ✓ |
| Phenanthrene | 0.61 | 230 sv | |
| | | | |
| | | | |
| Aroclor-1254 (as PCB) | 0.64 | 0.083 c | ✓ |
| Aroclor-1248 (as PCB) | 0.05 | 0.083 c | |
| Aroclor-1260 (as PCB) | 0.049 | 0.083 c | |
| 4.4'-DDD | 0.26 | 2.7 c | |
| 4,4'-DDE | 0.016 | 1.9 c | |
| 4.4'-DDT | 0.013 | 1.9 c | |
| Selenium | 5.1 | 39 n | |
| Sodium | 27800 | NA | |
| Dieldrin | 0.0058 | 0.04 c | |

Notes:

| | | |
|---|---|---|
| NA | = | Not aveilable. |
| s | = | Surrogate screening velue used. |
| v | = | Pyrene used as screening value surrogate. |
| c | = | Carcinogen-based |
| n | = | Noncarcinogen-based |
| z | = | Endosulfan used as screening velue surrogete (noncarcinogen-based). |
| e | = | Endrin used as screening value surrogete (noncarcinogen-based). |
| g | = | FDEP CG used as initial screening value as it is more conservative than the corresponding USEPA. |
| o | = | Action level for lead in soil is 400 mg/kg as proposed by USEPA Region IV. |
| ✓ | = | Indicates chemical concentrations in excess of the corresponding screening values. |

| Table 2<br>Initial Surface Water Screening<br>NAS Pensacola Site 14 | | | |
|---|---|---|---|
| **Surface Water** | **Maximum Hit (µg/l)** | **PRG Tap Water Screening Value (µg/l)** | **Exceeds Residential Screening Value?** |
| Aluminum | 1850 | 3700 n | |
| Antimony | 7.4 | 15 n | ✓ |
| Arsenic | 11.3 | 0.038 c | ✓ |
| Barium | 52.1 | 260 n | |
| Calcium | 111000 | | |
| Chromium | 7.3 | 18 n | |
| Cobalt | 0.81 | 220 n | |
| Copper | 7 | 140 n | |
| Iron | 2550 | | |
| Lead | 17 | 15 a | ✓ |
| Magnesium | 250000 | | |
| Manganese | 90.8 | 18 n | ✓ |
| Mercury | 41.4 | 1.1 n | ✓ |
| **Nickel** | **4** | **73 n** | |
| Potassium | 179000 | | |
| Thallium | 10.9 | 0.29 n | ✓ |
| Sodium | 2180000 | | |
| **Selenium** | **10.9** | **18 n** | |
| Vanadium | 18.1 | 26 n | |
| Zinc | 23.4 | 1100 n | |
| Dieldrin | 0.15 | 0.0042 c | ✓ |
| Endrin | 0.16 | 1.1 n | |
| Endrin ketone | 0.0046 | 1.1 n | |
| Heptachlor | 0.0008 | 0.0023 c | |
| Heptachlor epoxide | 0.74 | 0.0012 c | ✓ |
| Methoxychlor | 0.008 | 18 n | |
| alpha-Chlordane | 0.0008 | 0.052 c | |
| gemma-Chlordane | 0.73 | 0.052 c | ✓ |
| gamma-BHC (lindane) | 0.07 | 0.052 c | ✓ |

| Table 2<br>Initial Surface Water Screening<br>NAS Pensacola Site 14 | | | |
|---|---|---|---|
| Surface Water | Maximum Hit (µg/l) | PRG Tap Water Screening Value (µg/l) | Exceeds Residential Screening Value? |
| 4,4'-DDE | 0.14 | 0.2 c | |
| 4,4'-DDD | 0.0065 | 0.28 c | |
| Endosulfan sulfate | 0.14 | 22 sz | |
| Fluoranthene | 0.5 | 150 n | |
| Pvrene | 0.8 | 110 n | |

**Notes:**

| | | |
|---|---|---|
| s | = | Surrogate screening value used. |
| z | = | Endosulfan used as screening value surrogate (noncarcinogen-based). |
| a | = | Treatment technique action level for lead in drinking water. |
| c | = | Carcinogen-based |
| n | = | Noncarcinogen-based |
| ✓ | = | Indicates chemical concentrations in excess of the corresponding screening values. |

**Table 3**
**Exposure Assumptions Used to Calculate SUSRBCs for Recreational and Occupational Scenarios**
**NAS Pensacola Site 14**

| Parameter | Noncarc Work-ing | Carc Work-ing | Noncarc Adult-ing | Noncarc Child-ing | Carc Lwa-ing | Carc Child-ing |
|---|---|---|---|---|---|---|
| **Sediment Exposure** | | | | | | |
| Body Weight (kg) | 70 | 70 | 70 | 45 | NA | 45 |
| Averaging Time (days) | 9125 | 25550 | 6570 | 4380 | 25550 | 25550 |
| Exposure Frequency (days/year) | 14 | 14 | 52 | 52 | 52 | 52 |
| Exposure Duration (years) | 25 | 25 | 18 | 12 | NA | 12 |
| Ingestion Rate (mg/day) | 50 | 50 | 16 | 16 | NA | 16 |
| Lifetime-weighted average (mg-yr/kg-day) | NA | NA | NA | NA | 8.38 | NA |
| **Surface Water Exposure** | | | | | | |
| Ingestion Rate (liters/day) | 0.4 | 0.4 | 0.13 | 0.13 | | 0.13 |
| Lifetime-weighted average (1-year/kg-day) | | | | | 0.0681 | |

**Notes:**
Sediment ingestion rate; adjusted for 2.6 hrs per day for recreationists assuming 100 mg/day '(2.6 hr/16 waking hours) for adolescent and adult IR, and 50 mg/day for worker IR.

Surface water ingestion rates assume incidental ingestion at 0.05 l/hour; with daily exposure duretions of *8 hours* for workers, and 2.6 hours for adolescent child and adult recreationists.

Recreational exposure frequency was assumed to be similar to **FDEP's** typical trespassing assumption of 80 days/yr. 52 days per year were used, which reflects a restricted access area used one day per weekend per year.

Lifetime weighted average; the sum of adolescent child and adult **(IR** x **ED/BW)** in units of (mg-yr/kg-day) for sediments and (l-hr/kg-day) for surface water.
child-ing = Indicates adolescent child exposure assumptions, ingestion only.
adult-ing = Indicates adult end adolescent child (lifetime weighted average) exposure assumptions, ingestion only.
work-ing = Indicates adult worker exposure assumptions, ingestion only.

**Table 4**
**Toxicological Reference and PRG Screening Values Used to Assess Sediment and Surface Water COPC Risk/Hazard**
**NAS Pensacola Site 14**

| Sediment COPCs | PRG Residential Soil Screening (mg/kg) | RfDo (mg/kg-day) | SFo (mg/kg-day)-1 | Surface Water | PRG Tap Water Screening Value (µg/l) | RfDo (mg/kg-day) | SFo (mg/kg-day)-1 |
|---|---|---|---|---|---|---|---|
| Arsenic | 0.37 | 0.0003 | 1.5 | Antimony | 1.5 | 0.0004 | NA |
| Aluminum | 7800 | 1 | NA | Arsenic | 0.038 | 0.0003 | 1.5 |
| Beryllium | 0.15 | 0.005 | 4.3 | Lead | 15 | NA | NA |
| Chromium (as +VI) | 39 | 0.005 | NA | Manganese | 18 | 0.005 | NA |
| Manganese | 39 | 0.14 | NA | Mercury | 1.1 | 0.0003 | NA |
| Antimony | 3.1 | 0.0004 | NA | Thallium | 0.29 | 8E-05 | NA |
| Vanadium | 55 | 0.007 | NA | Vanadium | 26 | 0.007 | NA |
| Benzo(a)anthracene | 0.88 | NA | 0.73 | Dieldrin | 0.0042 | 5E-05 | 16 |
| Benzo(a)pyrene | 0.088 | NA | 7.3 | Heptachlor epoxide | 0.0012 | 1.3E-05 | 9.1 |
| Benzo(b)fluoranthene | 0.88 | NA | 0.73 | gamma-Chlordane | 0.052 | 6E-05 | 1.3 |
| Dibenzo(a,h)anthracene | 0.088 | NA | 7.3 | gamma-BHC (lindane) | 0.052 | 0.0003 | 1.3 |
| Indeno(1,2,3-cd)pyrene | 0.88 | NA | 0.73 | | | | |
| Aroclor-1254 (as PCB*) | 0.083 | 2E-05 | 7.7 | | | | |

**Notes:**
Toxicological values obtained from IRIS, HEAST, and ECAO, and residentiel RBCs obtained from USEPA Region III RBC Tables for Fourth Quarter 1994 and First Quarter 1994.
Endosulfan RfDo and residentid RBC substituted for endosulfan sulfate as surrogate values (s1).
Endrin RfDo and residential RBC substituted for endrin ketone as surrogate values.
Pyrene RfDo and residentid RBC substituted for phenanthrene as Surrogate values (s2).
Only those chemicals that failed initial screening were included in Table 4 and subsequent tables.
NA - Indicates not applicable for this chemical.

**Table 5**
**Sediment Calculated SUSRBC**
**NAS Pensacola Site 14**

| Sediment | Hazard-Based SUSRBCs (mg/kg) | | | Risk-Based SUSRBCs (mg/kg) | | |
|---|---|---|---|---|---|---|
| | Adolescent Recreational | Adult Recreational | Worker Occupational | Adolescent Recreational | LWA Recreational | Worker Occupational |
| Arsenic | 592 | 921 | 1095 | 75.6 | 39.1 | 68.1 |
| Aluminum | >500000 | >500000 | 3650000 | NA | NA | NA |
| Beryllium | 9871 | 15355 | 18250 | 26.4 | 13.6 | 23.8 |
| Chromium (as + VI) | 9871 | 15355 | 18250 | NA | NA | NA |
| Manganese | 276382 | >500000 | 511000 | NA | NA | NA |
| Antimony | 790 | 1228 | 1460 | NA | NA | NA |
| Vanadium | 13819 | 21496 | 25550 | NA | NA | NA |
| Benzo(a)anthracene | NA | NA | NA | 155.3 | 80.3 | 140.0 |
| Benzo(a)pyrene | NA | NA | NA | 15.5 | 8.0 | 14.0 |
| Benzo(b)fluoranthene | NA | NA | NA | 155.3 | 80.3 | 140.0 |
| Dibenzo(a,h)anthracene | NA | NA | NA | 16 | 8 | 14 |
| Indeno(1,2,3-cd)pyrene | NA | NA | NA | 155.3 | 80 | 140 |
| Aroclor-1254 (as PCB) | 39.5 | 61.4 | 73.0 | 14.7 | 7.6 | 13.3 |

**Notes:**

| | | |
|---|---|---|
| NA | = | Indicates no toxicological values were available to dlow for calculation of a PRG. |
| Hazard-based SUSRBC | = | Calculated to represent a hazard quotient of 0.1. |
| Risk-based SUSRBC | = | Calculated to represent an individual compound ILCR of 1E-6. |
| ILCR | = | Incremental lifetime excess cancer risk. |
| >500000 | = | Indicates SUSRBC is greater than 500,000 mg/kg. |
| SUSRBC | = | Site use specific risk-based concentration, lower of risk- and hazard-based values used for screening. |

**Table 6**
**Surface Water Calculated PRG**
**NAS Pensacola Site 14**

| Surface Water (µg/l) | Hazard-Based SUSRBCs (µg/l) | | | Risk-Based SUSRBCs (µg/l) | | |
|---|---|---|---|---|---|---|
| | Adolescent child Recreational | Adult Recreational | Worker Occupational | Adolescent child Recreational | LWA Recreational | Worker Occupational |
| Antimony | 97.2 | 151.2 | 182.5 | NA | NA | NA |
| Arsenic | 72.9 | 113.4 | 136.9 | 9.4 | 4.8 | 8.5 |
| Lead | NA | NA | NA | NA | NA | NA |
| Manganese | 1215 | 1890 | 2281 | NA | NA | NA |
| Mercury | 72.9 | 113.4 | 136.9 | NA | NA | NA |
| Thallium | 19.4 | 30.2 | 36.5 | NA | NA | NA |
| Dieldrin | 12.1 | 18.9 | 22.8 | 0.9 | 0.5 | 0.80 |
| Heptachlor epoxide | 3.2 | 4.9 | 5.9 | 1.6 | 0.8 | 1.40 |
| gamma-Chlordane | 14.6 | 22.7 | 27.4 | 10.9 | 5.6 | 9.83 |
| gamma-BHC (lindane) | 72.9 | 113.4 | 136.9 | 10.9 | 5.6 | 9.83 |

**Notes:**

| | | |
|---|---|---|
| NA | = | Indicates no toxicological values were available to allow for calculation of a PRG. |
| Hazard-based SUSRBC | = | Calculated to represent a hazard quotient of **0.1.** |
| Risk-basad SUSRBC | = | Calculated to represent an individual compound ILCR of **1E-6.** |
| ILCR | = | Incremental lifetime excess cancer risk. |
| >500000 | = | Indicates SUSRBC is greater than **500,000** mg/kg. |
| SUSRBC | = | Site use specific risk-based concentration, lower of risk- and hazard-based values used for screening. |

**Table 7**
**Sediment SUSRBC Screening**
**NAS Pensacola Site 14**

| Sediment | Maximum Hit (mg/kg) | PRG Residential Soil Screening Value (mg/kg) | Exceeds Residential Screening Value? | Adolescent child Recreational SUSRBC (mg/kg) | Adult/LWA Recreational SUSRBC (mg/kg) | Worker Occupational SUSRBC (mg/kg) | Secondary Screening |
|---|---|---|---|---|---|---|---|
| Arsenic | 21.4 | 0.37 c | y | 75.6 c | 39.1 c | 68.1 c | |
| Aluminum | **43000** | 7800 n | y | **>500000 n** | **>500000 n** | **>500000 n** | |
| Beryllium | **2** | 0.15 c | y | 26.4 c | **13.6 c** | 23.8 c | |
| Chromium (as **+VI**) | 88.1 | **39 n** | y | 9871 n | 15355 n | 18250 n | |
| Manganese | 1300 | **39 n** | y | **276382 n** | **>500000 n** | **511000 n** | |
| Antimony | 6.2 | **3.1 n** | y | **790 n** | **1229 n** | **1460 n** | |
| Vanadium | 78.9 | **55 n** | y | **13819 n** | **21496 n** | **25550 n** | |
| Benzo(a)anthracene | 2.1 | **0.88 c** | y | **155.3 c** | **80.3 c** | **140.0 c** | |
| Benzo(a)pyrene | 2.4 | **0.088 c** | y | **15.5 c** | **8.0 c** | **14.0 c** | |
| Benzo(b)fluoranthene | 5.3 | **0.88 c** | y | **155.3 c** | **80.3 c** | **140.0 c** | |
| Dibenzo(a,h)anthracene | 0.22 | **0.088 c** | y | **15.5 c** | **8.0 c** | **14.0 c** | |
| **Indeno(1,2,3-cd)pyrene** | 0.99 | **0.88 c** | y | **155.3 c** | **80.3 c** | **140.0 c** | |
| Arocior-1254 (as **PCB*)** | 0.64 | 0.083 c | y | 14.7 c | **7.6 c** | **13.3** c | |

**Notes:**

| | | |
|---|---|---|
| s | = | Surrogate *screening* value used. |
| v | = | Pyrene used as screening value surrogate. |
| c | = | Carcinogen-based |
| n | = | Noncarcinogen-based |
| y | = | Indicates chemical concentrations in excess of the corresponding screening values. |
| NC | = | Not calculated; residential screening value was not exceeded. |
| 1 | = | Adolescent child recreationist SUSRBC exceeded by maximum value. |
| 2 | = | Adult or lifetime weighted-average (LWA) recreationist SUSRBC exceeded by maximum value. |
| 3 | = | Worker SUSRBC exceeded by maximum value. |
| • | = | Aroclor-1254 hss a non-carcinogenic RBC of 0.16 (HQ = 1) in EPA Region III, Fourth Quarter 1994 RBC tables. |
| >500000 | = | Indicates SUSRBC is greater rhan 500,000 mg/kg. |

**Table 8**
**Surface Water SUSRBC Screening**
**NAS Pensacola Site 14**

| Surface Water | Maximum Hit (µg/l) | PRG Tap Water Screening Value (µg/l) | Exceeds Residential Screening Value? | Adolescent child Recreational SUSRBC (µg/l) | LWA Recreational SUSRBC (µg/l) | Worker Occupational SUSRBC (µg/l) | Secondary Screening |
|---|---|---|---|---|---|---|---|
| Antimony | 7.4 | 1.5 n | Y | 97 n | 151 n | 183 n | |
| Arsenic | 11.3 | 0.038 c | Y | 9.4 c | 4.8 c | 8.5 c | 1,2,3 |
| Lead | 17 | 15 n | Y | 15 n | 15 n | 15 n | 1,2,3 |
| Mangenese | 41.1 | 18 n | Y | 1215 n | 1890 n | 2281 n | |
| Mercury | 41.4 | 1.1 n | Y | 73 n | 113 n | 137 n | |
| Thallium | 10.9 | 0.29 n | Y | 19 n | 30 n | 37 n | |
| Dieldrin | 0.15 | 0.0042 c | Y | 0.9 c | 0.5 c | 0.80 c | |
| Heptachlor epoxide | 0.074 | 0.0012 c | Y | 1.6 c | 0.8 c | 1.40 c | |
| gamma-Chlordane | 0.073 | 0.052 c | Y | 10.9 c | 5.6 c | 9.8 c | |
| gamma-BHC (lindane) | 0.07 | 0.052 c | Y | 10.9 c | 5.6 c | 9.83 c | |

**Notes:**

| | | |
|---|---|---|
| — | = | Florida Primary Drinking Water Standard and federal MCL for arsenic is 50 µg/l. |
| c | = | Carcinogen-based |
| n | = | Noncarcinogen-based |
| Y | = | Indicates chemical concentrations in excess of the corresponding screening values. |
| 1 | = | Adolescent child recreationist SUSRBC exceeded by maximum value. |
| 2 | = | Adult or lifetime weighted-average (LWA) recreationist SUSRBC exceeded by maximum value. |
| 3 | = | Worker SUSREC exceeded by maximum value. |
| >500000 | = | Indicates SUSRBC is greater than 500,000 µg/l. |

## Figure 1

## Formulae for Calculating SUSRBCs for Sediment

**SEDIMENT INGESTION PATHWAY**

*Non-Carcinogens - Child - Recreational:*

$$C_S = \frac{THO \times RfD_o \times 106\ mg/kg \times AT_{NC\text{-}C} \times BW_{adoles}}{IR_{sed/adoles} \times EF_{adoles} \times ED_{adoles}}$$

*Non-Carcinogens - Adult - Recreational:*

$$C_S = \frac{THO \times RfD_o \times 10^6\ mg/kg \times AT_{NC\text{-}A} \times BW_{adult}}{IR_{sed/adult} \times EF_{adult} \times ED_{adult}}$$

*Non-Carcinogens - Adult - Industrial:*

$$C_S = \frac{THO \times RfD_o \times 10^6\ mg/kg \times AT_{NC\text{-}W} \times BW_{adult}}{IR_{sed/work} \times EF_{work} \times ED_{work}}$$

*Carcinogens - (based on combined childhood and adult exposure - a lifetime weighted average):*

*Recreational:*

$$C_S = \frac{TR \times 10^6\ mg/kg \times AT_C \times}{SF_o} \quad \frac{BW_{adoles}}{IR_{sed/adoles} \times EF_{adoles} \times ED_{adoles}} + \frac{BW_{adult}}{IR_{sed/adult} \times EF_{adult} \times ED}$$

*Industrial:*

$$C_S = \frac{TR \times AT_c \times 10^6\ mg/kg \times BW_{adult}}{SF_o \times IR_{sed/work} \times EF_{work} \times ED_{work}}$$

Figure 1 is continued on the following page

## Figure 1 (continued)

### Formulae for Calculating SUSRBCs for Sediment

| Variable | Description |
|---|---|
| $BW_{adolcs}$ | average child body weight from adolescent (kg) |
| $BW_{adult}$ | average adult body weight from adult (kg) |
| $ED_{adolcs}$ | exposure duration during adolescent (yr) |
| $ED_{adult}$ | exposure duration during adult (yr) |
| $ED_{work}$ | worker exposure duration during (yr) |
| $EF_{adolcs}$ | exposure frequency — adolescent (days/year) |
| $EF_{adult}$ | exposure frequency — adult (days/year) |
| $EF_{work}$ | exposure frequency — worker (days/year) |
| $IR_{sed/adolcs}$ | sediment intake rate — adolescent (mg/day) |
| $IR_{sed/adult}$ | sediment intake rate — adult (mg/day) |
| $IR_{sed/work}$ | sediment intake rate — worker (mg/day) |
| $AT_C$ | Averaging time (carcinogen) ($ED_{tot}$ x *365* days/yr) |
| $AT_{NC-A}$ | Averaging time (non-carcinogen adult) ($ED_{adult}$ x *365* days/yr) |
| $AT_{NC-C}$ | Averaging time (non-carcinogen child) (ED—— x **365** days/yr) |
| $C_S$ | Chemical concentration in sediment (mg/kg) |
| $RfD_o$ | **Oral** reference dose (mg/kg-day) |
| $SF_o$ | **Oral** slope factor $(mg/kg\text{-}day)^{-1}$ |
| THQ | Target Hazard Quotient (0.1) |
| TR | Target Excess Cancer **Risk** (1E-6) |

Notes:
- SUSRBC indicates Site Use-Specific Risk-Based Concentration
- The calculations shown above were excerpted from USEPA Region III's Selecting Contaminants of Concern By Risk-Based Screening Table, January 1995.

## Figure 2

## Formulae for Calculating SUSRBCs for Surface Water

### WATER INGESTION PATHWAY

*Non-Carcinogens - Child - Recreational:*

$$C_w = \frac{THQ \times RfD_o \times AT_{NC\text{-}C} \times BW_{adoles}}{IR_{water/adoles} \times EF_{adoles} \times ED_{adoles}}$$

*Non-Carcinogens - Adult - Recreational:*

$$C_w = \frac{THQ \times RfD_o \times AT_{NC\text{-}A} \times BW_{adult}}{IR_{water/adult} \times EF_{adult} \times ED_{adult}}$$

*Non-Carcinogens - Adult - Industrial:*

$$C_w = \frac{THQ \times RfD_o \times AT_{NC\text{-}W} \times BW_{adult}}{IR_{water/work} \times EF_{work} \times ED_{work}}$$

*Carcinogens - (based on combined childhood and adult exposure - a lifetime weighted average):*

*Recreational:*

$$C_w = \frac{TR \times AT_C}{SF_o} \times \frac{BW_{adoles}}{IR_{water/adoles} \times EF_{adoles} \times ED_{adoles}} + \frac{BW_{adult}}{IR_{water/adult} \times EF_{adult} \times ED_{adult}}$$

*Industrial:*

$$C_w = \frac{TR \times AT_C \times BW_{adult}}{SF_o \times IR_{water/work} \times EF_{work} \times ED_{work}}$$

Figure 2 is continued on the following page

**Figure 2 (continued)**

**Formulae for Calculating SUSRBCs** for **Surface Water**

| Variable | Description |
|---|---|
| $BW_{adolcs}$ | average child body weight from adolescent (kg) |
| $BW_{adult}$ | average adult body weight from adult (kg) |
| $ED_{adolcs}$ | exposure duration during adolescent (yr) |
| $ED_{adult}$ | exposure duration during adult (yr) |
| $ED_{work}$ | worker exposure duration during (yr) |
| $EF_{adolcs}$ | exposure frequency — adolescent (days/year) |
| $EF_{adult}$ | exposure frequency — adult (days/year) |
| $EF_{work}$ | exposure frequency — worker (days/year) |
| $IR_{water/adolcs}$ | water intake rate — adolescent (L/day) |
| $IR_{water/adult}$ | water intake rate — adult (Wday) |
| $IR_{water/work}$ | water intake rate — worker (L/day) |
| $AT_C$ | Averaging time (carcinogen) (ED, x 365 days/yr) |
| $AT_{NC-A}$ | Averaging time (non-carcinogen adult) (ED, x 365 days/yr) |
| $AT_{NC-C}$ | Averaging time (non-carcinogen child) (ED—— x 365 days/yr) |
| $C_W$ | Chemical concentration in surface water (mg/l) |
| $RfD_o$ | Oral reference dose (mg/kg-day) |
| $SF_o$ | Oral slope factor $(mg/kg\text{-}day)^{-1}$ |
| THQ | Target Hazard Quotient (0.1) |
| TR | Target Excess Cancer Risk (1E-6) |

Notes:
- SUSRBC indicates Site Use-Specific Risk-Based Concentration
- The calculations shown above were excerpted from USEPA Region III's Risk-Based Concentrations Table, January 1995.

# Appendix E

# Preliminary Ecological Risk Assessment

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# 1.0 ECOLOGICAL RISK ASSESSMENT

## 1.1 Problem Formulation

### 1.1.1 Site Description and History

Located along the eastern waterfront of the NAS Pensacola peninsula just east of Chevalier Field, Site 14 contains a 63 acre area of dredge spoils deposited along the Pensacola Bay waterfront. The site consists of two settling basins enclosed by an approximately 15 to 20 feet high sand pile separated by a central berm. The basins were designed for both primary and secondary containment of fine-grained material. The primary containment basin (Basin 1) is used for direct discharge of dredge spoil, then decants water to the secondary basin (Basin 2) for additional clarification before discharge to Pensacola Bay.

The settling basins contain an unknown thickness of fine-grained, silty-clay sediment. Aerial photographs indicate dredge spoils from Pensacola Bay have been deposited at Site 14 since the late 1950s. The form and shape of the site has changed throughout the decades as dredging activities have taken place to create and maintain an aircraft carrier turning basin and clear the basin after local storm activity. During these processes, millions of cubic feet of sand and sediment have been pumped into the Site 14 area to create the present form and shape of the site.

Located at both the north and south ends of the site are two depressional areas that appear to be "wetland" in nature. The only water source to these two areas appears to be runoff from Chevalier Field. No impact to these areas by groundwater at Site 14 was found and discharge to these areas from water within the basin does not appear to occur.

### 1.1.2 Ecosystem at Risk

Baseline information collected at Site 14 indicates that the ecosystem is primarily a temporary, ephemeral pond system which is dependent on input from rain events for its maintenance. The system is freshwater in nature and the organisms that were observed, such as Hemipteran insects (swimming insects) and swimming crustaceans (such as Ostracodans and Notostracans), are classified as short-term opportunistic species typically found in temporary standing-water

systems. No evidence of an established benthic infaunal community was Seen during the October 1994 field sampling event. No true nektonic species, such as fish, were observed from any of the sampling sites. The riparian habitat is primarily limited to open sandy banks, with little vegetation present. Some cattails (Typha sp.) are found in the second basin with opportunistic grasses intermittently found. No herpetiles were observed in the ponds or along the banks.

The ponds are known to dry up during low rainfall periods leaving exposed, crusted substrate. The extremely variable nature of the ponds limits the establishment of viable benthic or nektonic communities.

Migratory and local bird species visit the basins but no documented information on variety and numbers was available. Based on the October 1994 sampling survey, no evidence of nesting or rookery populations exists at the site. It appears that bird usage of the basins is occasional and based solely on opportunity. The basins do not offer any vegetative cover or physical protection from predation to encourage nesting.

### 1.1.3 Chemicals of Potential Concern (COPC)

Sediments

Major metal constituents found in sediment samples appear to be arsenic, chromium, copper, mercury, lead, and zinc (Table 1). The maximum values observed were: 21.4 ppm for arsenic at Station 14M000101 (in duplicate); 88.1 ppm for chromium at Station 14M000501; 50.8 ppm for copper at Station 14M000401; 0.82 ppm for mercury at Station 14M000101; 299.0 ppm for lead at Station 14M000301; and 292.0 ppm for zinc at Station 14M000101 (in duplicate).

Both high and low molecular weight (LMW, HMW) polycyclic aromatic hydrocarbons **(PAHs)** were found in sediments at Site 14 (Table 1). Overall, **HMW PAH** concentrations were higher than LMWs concentrations. Stations 1 and 4 had the highest overall **PAH** contamination and were substantially higher than the other stations. Considering the source of the spoil found at Site 14 the **PAH** levels found are surprisingly low. Pyrene appears to be the most significant LMW compound; at **5** of the **7** stations concentrations equal to or greater than 1600 ppb were

found. Chrysene, benzo(a)anthrocene and benzo(a)pyrene appear to be the most significant HMW PAHs at Site 14. Individually and combined, the concentrations are somewhat significant.

Various pesticide constituents were found in sediments across the site but only two stations, 14M000301 and 14M000401, had total concentrations that suggest impacts to biota.

No significant sediment contamination was found at either Station 14M000701 or Station 14M000601, both of which were in the bay just outside of the basin outfalls. Sediment concentrations at these stations were very low compared to concentrations found within the basins.

***Surface*** Waters

Surface water metal concentrations were negligible except for lead, which was found at four of the six stations ranging in concentrations from 3.4 ppb to 17 ppb, and one occurrence of mercury at Station 14W000201, where a concentration of 41.4 ppb was found (Table 2). These were the only metals detected from any of the stations and no correlation with observed sediment concentrations was apparent.

No organic constituents detected in surface water were above the screening criteria.

### 1.1.4 Stressor Characteristics

The stressors identified as COPCs are heavy metals, polycyclic aromatic hydrocarbons (PAHs), and minimal pesticide/PCB compounds. No volatile compounds were found in water or sediment.

Metals

Metals affect the survival, growth, reproduction, development, and metabolism of most aquatic species. The toxicity of transition metals such as copper, lead, nickel, and zinc is increased in freshwater by a decrease in the hardness. This is because metal solubility is a function of the

pH, alkalinity, and hardness of the transporting media. These heavy metals have similar solubilities to calcium and magnesium. Hardness is a calculation of the dissolved cations based on calcium and magnesium.

As pH and alkalinity decrease, the solubilities of these metals are increased in solution and are more available for uptake (e.g. the differentially permeable membrane of gills). As hardness increases, the calcium and magnesium ions are more electropositive than copper, nickel, lead, and zinc, outcompeting the available binding sites. This competition for binding sites based on ionic strength is termed the "salting out" effect. The result is transition metals in solution without available binding sites. Because these metals have relatively low electronegativities and tend to assume positive charges in compounds, they will associate with any electrical surface, for example a clay particle, in order to reduce their affinity for a pair of electrons (electropositivity). This association with any suspended matter enhances the flocculation or precipitation of these metals. The deposition of these heavy metals is further enhanced by co-precipitation. This mechanism involves the precipitation of a sister transition metal such as sequioxides of iron or manganese which offer an open lattice structure in which other metals can settle satisfying their electropositive nature. The precipitation and co-precipitation mechanisms effectively reduce the bioavailability for these ions.

In a marine environment; hardness, alkalinity, and pH are rarely influenced on a large enough Scale to affect a population in a chronic manner. In other words it would be difficult to change the pH and alkalinity of the ocean for long periods of time. In order for acute toxicity for metals to be a problem in a marine environment the alkalinity and pH shift would need to be drastic. This alone would be acutely toxic making the metals problem insignificant relative to the pH. Since these heavy metals are used as a biocide in paints and other anti-fouling compounds, hardness alone is insufficient to evaluate the need for further study or remediation.

Two attributes often used to evaluate the metal speciation in water are hardness and salinity. Salinity is an evaluation of total dissolved salts based on the empirical relationship to the chloride ion concentration or calculated from a known relationship to conductivity and

temperature. Hardness is best used in freshwater-describing ionic concentration while salinity describes ionic strength in brackish and marine waters. As stated previously the increase in ionic strength merely increases the salting out effect.

Mance (1987) drew the following conclusions regarding the toxicity of heavy metals on marine animals.

- Fish and annelid worm exhibited an increase in metal toxicity as salinity decreased,
- In estuaries, metal concentrations decrease rapidly at the interface between fresh and saltwater.
- There is an apparent increase in sediment metal concentration at the point of fresh and saltwater.

In saline water, sodium, magnesium and calcium are the primary ions causing the high ionic strength. The high ionic strength out competes any other metals for binding sites whether on a clay particle or organic tissue. At this point, unstable metal ions will flocculate with available anions and neutral clay particles becoming a part of the sediment, thus the salting out effect is observed. To relate this to Site 14, as these metals are transported to the marine environment from a less saline environment, the higher ionic strength of seawater will outcompete the available binding sites on clay particles and organic tissue. With a slight increase in pH and alkalinity from the seawater, all metals above their respective solubility product ($K_{sp}$) will flocculate and be incorporated into the sediment. Since this area exhibits high energy due to tides and waves, the "floc" and clay particles could travel for miles before finding a low energy environment conducive for deposition.

### *Organics*

Polycyclic aromatic hydrocarbons (PAH) vary by molecular weight. With increasing molecular weight, aqueous solubility decreases and the log Kow increases, suggesting increased solubility

in fats, a decrease in resistance to oxidation and reduction, and a decrease in vapor pressure (Eisler 1987). Accordingly, PAHs of different molecular weight vary substantially in their behavior and distribution in the environment and in their biological effects. In water, PAHs either evaporate, disperse into the water column, become incorporated into sediments or undergo degradative processes such a photooxidation, chemical oxidation, and biological transformation by bacteria and animals (Neff 1979).

Most environmental concern has focused on PAHs that range in molecular weight from 128.16 (naphthalene) to 300.36 (coronene). Generally, lower molecular weight (LMW) PAH compounds, containing 2 or 3 aromatic rings, exhibit significant acute toxicity but are not carcinogenic. High molecular weight (HMW) PAH compounds, 4 to 7-rings, are significantly less toxic, but are demonstrably carcinogenic, mutagenic, or teratogenic to aquatic species. PAHs show little tendency to biomagnify in food chains because most are rapidly metabolized (Eisler 1987).

## 1.2 Conceptual Model

Aqueous borne contaminants may effect biota via respiratory or feeding pathways. The soluble form of the contaminant is the most critical element to bioavailability, especially for metal constituents. Physicochemical conditions are important variables affecting the solubility of a metal and thus uptake.

Aquatic invertebrates and larval vertebrates may absorb chemicals via respiratory uptake or through detrital and planktonic trophic uptake. Contaminant pathways to upper level species, such as waterfowl which are prevalent in the area, are dependent on food web interactions (feeding on nektonic or benthic species) and/or direct exposure to water-borne contaminants by ingestion (drinking or passive sediment intake).

## 1.3 Risk Characterization

Characterization of the risk imposed to potential receptor species at Site 14 will involve analysis of observed concentrations to (1) EPA Region IV Sediment Screening Values (SSV);

(2) "natural" levels as presented in Florida Department of Environmental Protection's (1988) sediment interpretation document; and (3) potential for predicted uptake pathways which are applicable to the site. In addition, an environmental effects quotient (EEQ), as provided in EPA Region 111-Interim Ecological Risk Assessment Guidelines (1994), has been calculated for each COPC. Because of the limited number of samples all EEQ calculations used maximum reported concentrations. Use of SSVs and FDER (1988) regressions was deemed applicable based on the fact that sediments found within the basins originated as marine sediments resulting from dredging activities within the bay.

Metals

Arsenic concentrations in sediments, when presented as arsenic-to-aluminum ratios, appear to be natural when compared to FDEP regressions (Figure 1). Most concentrations were above the SSV of 8 ppm, but this may not be significant when "natural" concentrations are considered. Also the EEQ of 2.6 (Table 3) may not be considered appropriate when "natural" Florida sediment concentrations may produce values above a "No Risk" level (ie. EEQ > 1 are considered to be at potential risk).

Chromium concentrations, appear to be "natural" when compared to FDEP regressions (Figure 2) although the majority of the concentrations were above the SSV of 33 ppm. Like arsenic, the EEQ of 2.7 (Table 3) may not reflect the true risk potential when "natural" Florida sediment concentrations may produce values above the "No Risk" level.

Copper: aluminum ratios were slightly above those for "natural" Florida sediments (Figure 3). Also, those concentrations exceeding the SSV of 28 ppm, when put in the context of Al:Cu ratios for Florida sediments, do not appear to be serious. An EEQ of 1.8 was determined, which is not high.

Lead across the site was, as with most sediments in Pensacola Bay, above "natural" levels (Figure 4). Also most of the concentrations were above the SSV of 21 ppm. The EEQ was 14.2, which means a moderately high potential risk exists. Lead availability to biological

organisms may be limited due to lead's affinity to bind with fine-grained sediment particles, but each time the sediments are disturbed the bioavailability is increased.

All zinc concentrations were above both the SSV of 68 and above "natural" concentrations for Florida sediments (Figure 5). None were extremely high and an EEQ of 4.3 suggests that risk is not at a critical level.

Mercury levels were all above the SSV of 0.1. Concentrations were not all that high when compared to other places in the bay, but again this is a disposal area. The EEQ for mercury was 8.2, which puts it in the "potential risk" category. However, most fine-grained sediments in the bay may fall into this category or higher (see Site 2 RI). According to Eisler (1987), sediments with mercury levels below 1.0 would be considered as non-contaminated. All concentrations found at Site 14 were at or below this concentration.

***Organics***

Both low and high molecular weight (LMW/HMW) PAHs were found in sediments at Site 14. Overall, HMW PAH concentrations were higher than LMWs. EEQs for most compounds were near or below 10 and for total PAHs the value was 6.0. Considering the source of the spoil found at Site 14 the levels of PAH's found are surprisingly low. Pyrene appears to be the most significant LMW compound; at 5 of the 7 stations concentrations equal to or greater than 1600 ppb were found. The EEQ for pyrene was 12. Pyrene is soluble in water and effects are typically acute. Longevity in sediments should, relatively, be short. Chrysene, benzo(a)anthracene and benzo(a)pyrene appear to be the most significant HMW PAHs at Site 14.

Oxidation of sediments will aid in degradation of PAHs as will direct sunlight. Bioavailability of PAHs, especially the HMWs, is minimal based on the biological survey data presented previously.

Exposure Scenario

The primary exposure route to biota from contamination found at Site 14 will be via water ingestion or passive sediment intake by waterfowl. The lack of a benthic community along with an absence of nekton species severely limits transfer of contaminants to upper level species. Although birds have been observed "feeding" within the ponds, it does not appear that they have much to truly feed upon. Possibly their actions are just normal "feeding behavior mechanisms" and do not necessarily indicate that they are actually ingesting any organisms.

Based on the concentrations observed and their potential for effects as described, exposure risks from drinking water or ingesting sediments appear to be minimal. Spatially, concentrations found in water limit exposure via this pathway and the amount of sediment that would be passively ingested during the "feeding behavior mechanism" is most likely small and insignificant.

Risks to marine biota resulting from placement of dredged material within the basins appears to be very low. Sediment data indicates that contaminant transfer from Basin 1 to Basin 2 is minimal and subsequent transfer to Pensacola Bay, as evidenced by the sediment samples at Stations 14M00601 and 14M00701, is not occurring. There does not appear to be any risks to marine species at present.

[Risk to adjacent wetlands appears to be minimal. Leaching of contaminants to groundwater from surface waters within the collection basins appears to be attenuated by the fine grained sediments of the basins, which cause surface water to perch in the basins. This phenomenon minimizes percolation of surface waters to groundwater, The surface waters within the Site 14 collection basins either evaporate or discharge into Pensacola Bay via the onsite drainage system. Piezometric results also reveal that groundwater beneath Site 14 flows east toward the bay, and away from the adjacent wetlands.]

## 1.4 Groundwater

Risks to receptors resulting from groundwater impact will be very low. Concentrations found within groundwater samples were extremely low and piezometric data indicates that flow is toward Pensacola Bay. Natural attenuation and dilution as groundwater mixes with bay waters will result in undetectable concentrations for those parameters identified in Site 14 groundwater. Additionally, parameters and concentrations are comparable to ambient water quality data for Sand and Gravel Aquifer in this area.

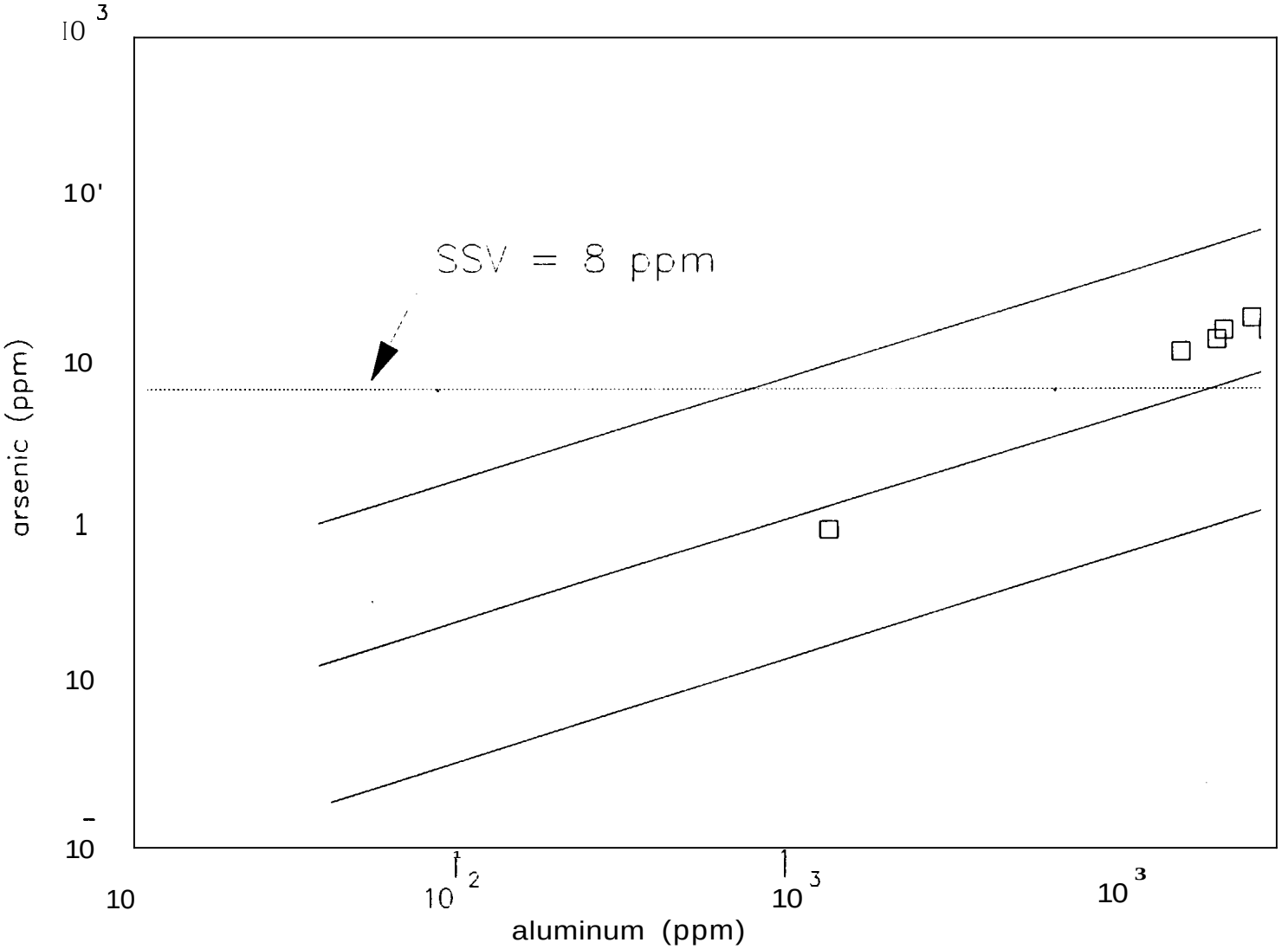
| Table 1<br>Summary of Sediment Concentrations<br>Site 14 | | | | | |
|---|---|---|---|---|---|
| Parameter[1] | SSV | N | Range | Number of Detections | Number of SSV Exceedances |
| Arsenic | 8 | 8 | 0.90 - 21.4 | 6 | 5 |
| Chromium | 33 | 8 | 0.98 - 88.1 | 8 | 5 |
| Copper | 28 | 8 | 9.2 - 50.8 | 6 | 5 |
| Lead | 21 | 8 | 0.78 - 299 | 7 | 6 |
| Mercury | 0.1 | 8 | 0.42 - 1.0 | 4 | 4 |
| Zinc | 68 | 8 | 75 - 292 | 6 | 6 |
| Dieldrin | 3.3 | 8 | 2.3 - 5.8 | 4 | 3 |
| DDT (total) | 3.3 | 8 | 10 - 266.1 | 5 | 5 |
| PCB (total) | 3.3 | 8 | 640 | 1 | 1 |
| Phenanthrene | 330 | 8 | 180 - 610 | 5 | 2 |
| Anthracene | 330 | 8 | 91 - 440 | 4 | 1 |
| Fluoranthene | 380 | 8 | 90 - 3400 | 7 | 5 |
| Pyrene | 330 | 8 | 150 - 4000 | 7 | 5 |
| Benzo(a)anthracene | 330 | 8 | 55 - 2100 | 6 | 5 |
| Chrysene | 330 | 8 | 81 - 2500 | 6 | 5 |
| Benzo(a)pyrene | 330 | 8 | 110 - 2400 | 6 | 5 |
| Dibenzo(a,h)anthracene | 330 | 8 | 92 - 220 | 5 | 0 |
| total PAHs | 2900 | 8 | 1000 - 28200 | 7 | 7 |

Note:
1 – Metal concentrations in ppm, organics in ppb.

| Table 2<br>Summary of Surface Water Concentrations<br>Site 14 | | | | | |
|---|---|---|---|---|---|
| Parameter (ppb) | WQC[1] | N | Range | Number of Detections | Number of WQC Exceedances |
| Lead | 3.2[a] | 6 | 2.2 - 17.0 | 5 | 4 |
| Mercury | 0.012[a,b] | 6 | 41.4 | 1 | 1 |

Notes:
1 = Water Quality Criteria; lowest of either USEPA or Florida standard.
a – EPA WQC
b – Florida WQS

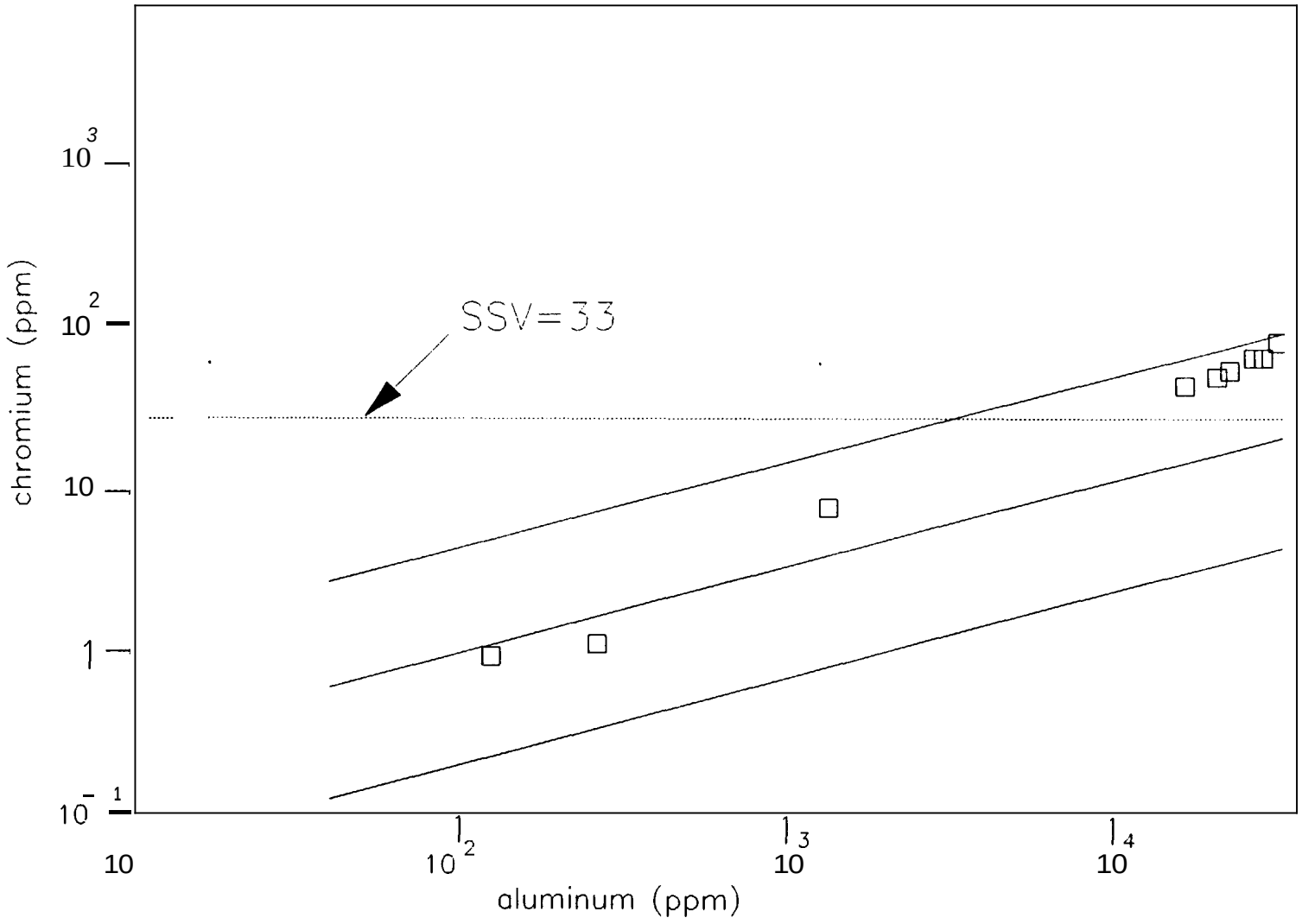
| Table 3<br>Environmental Effects Quotient (EEQ) for PCOCs at Site 14 | |
|---|---|
| Contaminant | EEQ |
| Arsenic | 2.6 |
| Chromium | 2.7 |
| Copper | 1.8 |
| Lead | 14.2 |
| Mercury | 8.2 |
| Zinc | 4.3 |
| Benzo(a)anthracene | 6.4 |
| Benzo(a)pyrene | 7.2 |
| Benzo(b)fluoranthene | 12.4 |
| Chrysene | 7.5 |
| Fluoranthene | 8.9 |
| Pyrene | 12.0 |
| Total PAH | 6.0 |
| DDT | 3.9 |




PRELIMINARY SITE CHARACTERIZATION
SITE 14
NAS PENSACOIA

FIGURE E–1
SITE 14
ARSENIC CONCENTRATIONS ON FDEP REGRESSIONS

DATE 1 | D I 14FIGE1

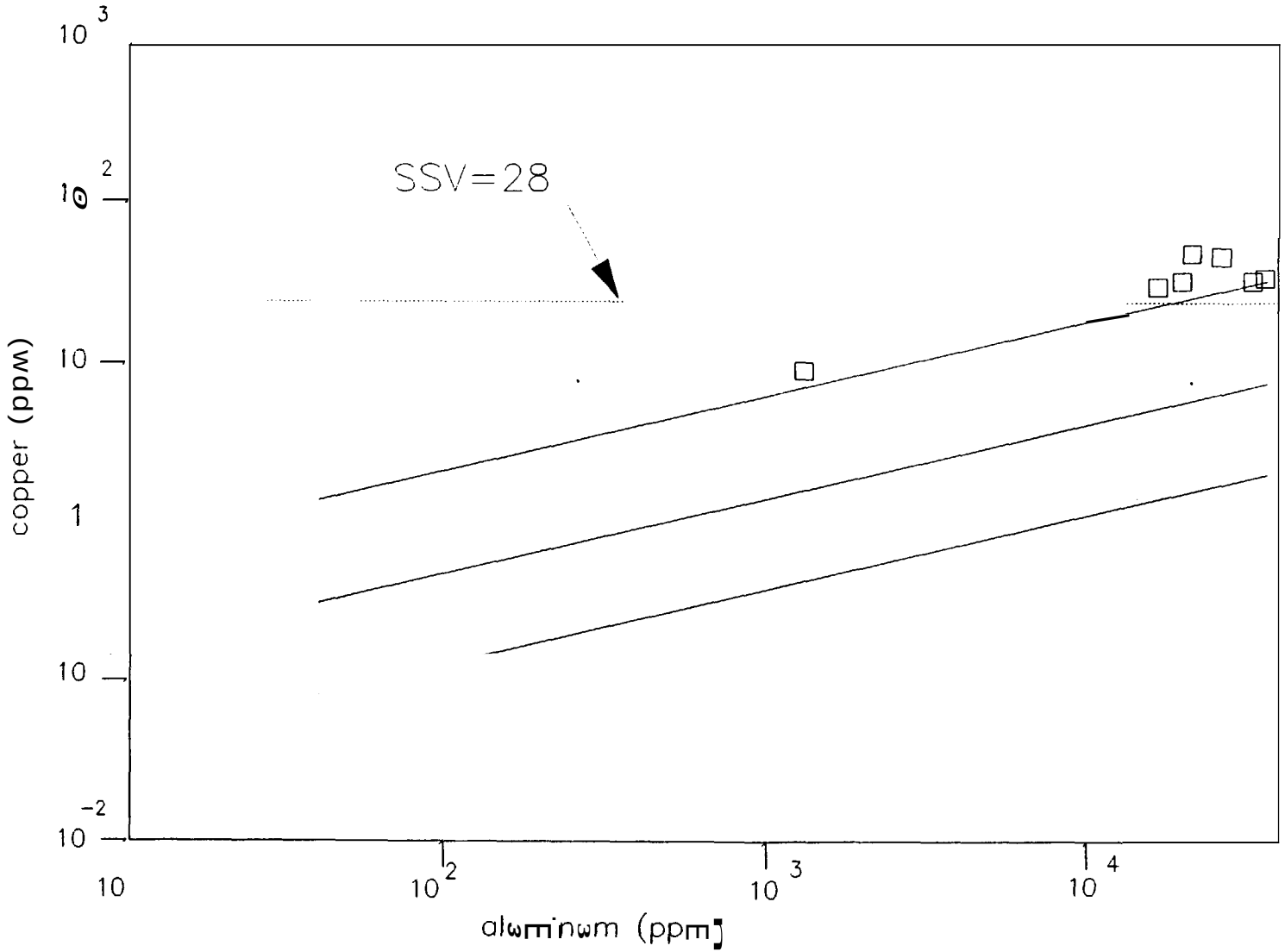



PRELIMINARY SITE CHARACTERIZATION
SITE 14
NAS PENSACOLA

**FIGURE E-2**

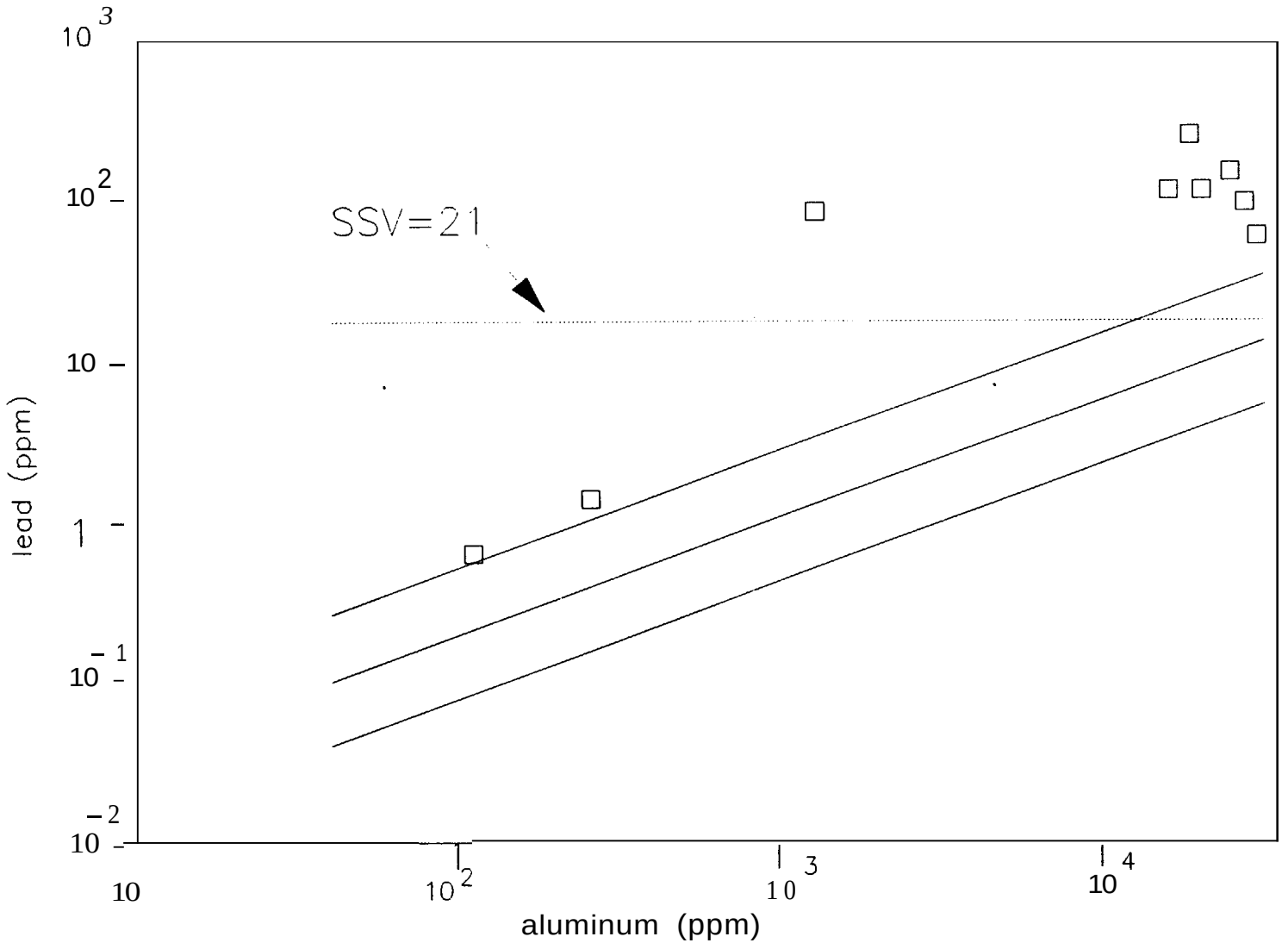
SITE 14
CHROMIUM CONCENTRATIONS ON
FDEP REGRESSIONS

DWG DATE 4/11/95 | DWG NAME 14FIGE2




PRELIMINARY SITE CHARACTERIZATION
SITE 14
NAS PENSACOLA

FIGURE E-3
SITE 14
COPPER CONCENTRATIONS ON FDEP REGRESSIONS

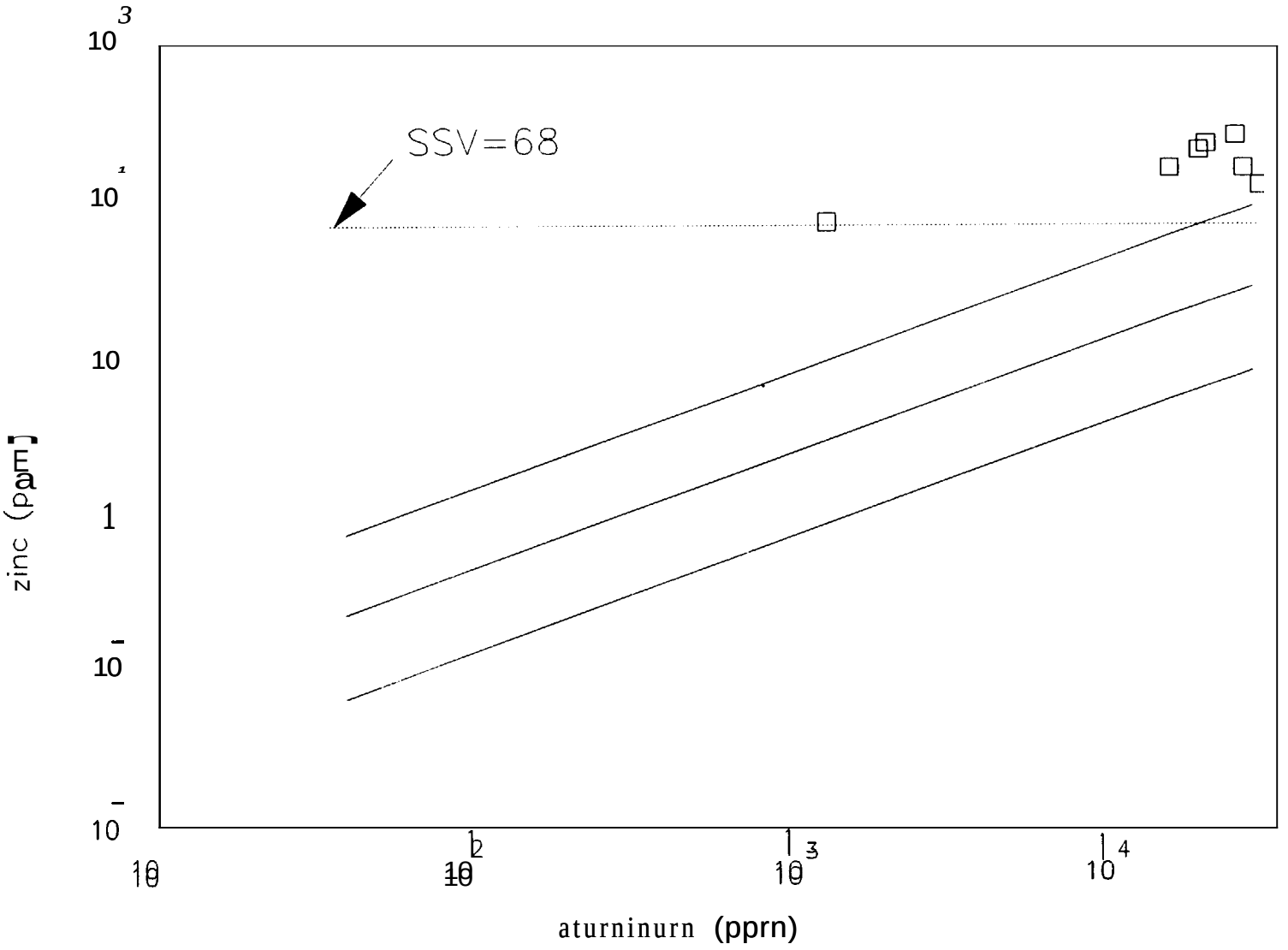



PRELIMINARY SITE CHARACTERIZATION
SITE 14
NAS PENSACOLA

FIGURE E-4

SITE 14
LEAD CONCENTRATIONS ON FDEP REGRESSIONS

DWG DATE 4/11/95 | DWG NAME: 14FIGE4




PRELIMINARY SITE CHARACTERIZATION
SITE 14
NAS PENSACOIA

FIGURE E-5
SITE 14
ZINC CONCENTRATIONS ON FDEP REGRESSIONS

DWG DATE: 4/11/95 | DWG NAME: 14FIGE5

# Appendix F

## Preliminary Remediation Goals

| Preliminary Remediation Goals - PRGs For Soil Contaminants | | | |
|---|---|---|---|
| Parameter | USEPA - RBCs | FDEP - CGs | Reference Concentration |
| Inorganics (mg/kg) | | | |
| Aluminum | 23,000 | 75,000 | 3833.6 |
| Antimony | 3.1 | 26 | 9.49 |
| Arsenic | .37 | 0.7 | 1.56 |
| Barium | 550 | 5000 | 4.63 |
| Beryllium | 0.15 | 0.1 | 0.41 |
| Cadmium | 3.9 | 37 | 1.00 |
| Calcium | NA | NA | 912.37 |
| Chromium | 7800 | 66,000 | 6.13 |
| Cobalt | 4700 | 4700 | 1.87 |
| Copper | 290 | 2900 | 5.74 |
| Cyanide | 160 | 1600 | 0.52 |
| Iron | NA | NA | 2745 |
| Lead | NA | 500 | 7.32 |
| Magnesium | NA | NA | 133.33 |
| Manganese | 39 | 10,000 | 21.36 |
| Mercury | 2.3 | 23 | 0.10 |
| Nickel | 160 | 1500 | 6.38 |
| Potassium | NA | NA | 460.67 |
| Selenium | 39 | 390 | 0.62 |
| Silver | 39 | 380 | 2.07 |
| Sodium | NA | NA | 107.85 |
| Thallium | NA | NA | 0.82 |
| Vanadium | 55 | 480 | 5.83 |
| Zinc | 23,000 | 23,000 | 16.87 |

| Preliminary Remedial Goals - PRGs for Soil Confaminants | | |
|---|---|---|
| **Parameters** | **USEPA - RBCs** | **FDEP - CGs** |
| **Pesticides/PCBs (μg/kg)** | | |
| 4,4-DDD | 2,700 | 4,400 |
| 4,4'-DDE | 1,900 | 2,900 |
| 4,4'-DDT | 1,900 | 3,100 |
| Aldrin | 38 | 60 |
| Aroclor 1016 | 550 | NA |
| Aroclor 1221 | NA | NA |
| Aroclor 1232 | NA | NA |
| Aroclor 1242 | NA | NA |
| Aroclor 1248 | NA | NA |
| Aroclor 1254 | NA | NA |
| Aroclor 1260 | NA | NA |
| Dieldrin | 40 | 70 |
| Endosulfan I | NA | 340,000' |
| Endosulfan II | NA | NA |
| Endosulfan sulfate | NA | NA |
| Endrin | 2300 | 23,000 |
| Endrin aldehyde | NA | 23,000 |
| Endrin ketone | NA | NA |
| Heptachlor | 140 | 200 |
| Heptachlor epoxide | 70 | 100 |
| Methoxychlor | 3900 | 380,000 |
| Toxaphene | 580 | 800 |
| alpha-BHC | 100 | 200 |
| alpha-Chlordane | NA | 800[2] |
| beta-BHC | 350 | NA |
| delta-BHC | NA | NA |
| gamma-BHC (Lindane) | 490 | NA |
| gamma-Chlordane | NA | 800[2] |

| Preliminary Remedial Goals - PRGs for Soil Contaminants | | |
|---|---|---|
| **Parameters** | **USEPA - RBCs** | **FDEP - CGs** |
| **Semivolatiles (µg/kg)** | | |
| **1,2,4-Trichlorobenzene** | **78,000** | **480,000** |
| **1,2-Dichlorobenzene** | **700,000** | **420,000** |
| 1.3-Dichlorobenzene | 700,000 | 960,000 |
| **1,4-Dichlorobenzene** | 27,000 | 4,200 |
| 2,4,5-Trichlorophenol | 780,000 | 6,700,000 |
| 2,4,6-Trichlorophenol | 58,000 | 77,000 |
| 2,4-Dichlorophenol | 23,000 | 210,000 |
| 2,4-Dimethylphenol | 160,000 | 960,000 |
| 2,4-Dinitrophenol | 16,000 | NA |
| 2,4-Dinitrotoluene | 16,000 | 1,200 |
| 2,6-Dinitrotoluene | 7800 | 1,400 |
| 2-Chloronaphthalene | 630,000 | 1,700,000 |
| 2-Chlorophenol | 39,000 | 220,000 |
| 2-Methylnaphthalene | NA | 700,000 |
| 2-Methylphenol | 390,000 | 1,900,000 |
| | | |
| 2-Nitrophenol | NA | NA |
| 3,3'-Dichlorobenzidine | 1,400 | NA |
| 3-Nitroaniline | 23,000 | NA |
| **4,6-Dinitro-2-methylphenol** | NA | NA |
| **4-Bromophenyl-phenylether** | 450,000 | NA |
| **4-Chloro-3-methylphenol** | NA | 1,200,000 |
| 4-Chloroaniline | 31,000 | 190,000 |
| **4-Chlorophenyl-phenylether** | NA | NA |
| 4-methyl phenol | 39,000 | 300,000 |
| 4-Nitroaniline | 23,000 | 230,000 |
| 4-Nitrophenol | 480,000 | NA |
| Acenaphthene | NA | 2,000,000 |

| Preliminary Remedial Goals - PRGs for Soil Contaminants | | |
|---|---|---|
| Parameters | USEPA - RBCs | FDEP - CGs |
| Acenaphthylene | NA | 320,000 |
| Anthracene | NA | 16,000,000 |
| Benzo(a)anthracene | 880 | 1,400 |
| Benzo(a)pyrene | 88 | 140 |
| Benzo(b)fluoranthene | 880 | 1,400 |
| Benzo(g,h,i)perylene | NA | 14,000 |
| Benzo(k)fluoranthene | 8,800 | 14,000 |
| Butylbenzylphthalate | 1,600,000 | 15,000,000 |
| Carbazole | 32,000 | 35,000 |
| Chrysene | 88,000 | 140,000 |
| Di-n-butylphthalate | NA | 7,500,000 |
| Di-n-octylphthalate | 160,000 | 1,500,000 |
| Dibenz(a,h)anthracene | 88 | 140 |
| Dibenzofuran | NA | 200,000 |
| Diethylphthalate | 6,300,000 | 51,000,000 |
| Dimethylphthalate | 78,000,000 | 540,000,000 |
| Fluoranthene | 310,000 | 2,800,000 |
| Fluorene | 310,000 | 1,900,000 |
| Hexachlorobenzene | 400 | 500 |
| Hexachlorobutadiene | 1,600 | 1,700 |
| Hexachlorocyclopentadiene | 550,000 | 300 |
| Hexachloroethane | 7,800 | 17,000 |
| Indeno(1,2,3-cd)pyrene | 880 | 1,400 |
| Isophorone | 670,000 | NA |
| N-Nitroso-di-n-propylamine | 91 | 10 |
| N-Nitrosodiphenylamine | 130,000 | 44,000 |
| Naphthalene | 310,000 | 840,000 |
| Nitrobenzene | 3900 | 33,000 |
| Pentachlorophenol | 5,300 | 5,500 |

| Preliminary Remedial Goals - PRGs for Soil Contaminants | | |
|---|---|---|
| **Parameters** | **USEPA - RBCs** | **FDEP - CGs** |
| Phenanthrene | NA | 1,200,000 |
| Phenol | 4,700,000 | 27,000,000 |
| Pyrene | 230,000 | 2,200,000 |
| bis(2-Chloroethoxy)methane | NA | 150,000 |
| bis(2-EthlyhexyL)phthalate | 46,000 | 45,000 |
| bis(2-chloroethyl)ether | *580* | 300 |
| bis(2-chloroisopropyl)ether | 9,100 | NA |
| **Volatiles (µg/kg)** | | |
| 1,1,1-Trichloroethane | *700,000* | 320,000 |
| 1,1,2,2-Tetrachloroethane | 3,200 | *500* |
| 1,1,2-Trichloroethane | 11,000 | 1,100 |
| 1,1-Dichloroethane | *780,000* | 160,000 |
| 1,1-Dichloroethene | 1,100 | NA |
| 1,2-Dichloroethane | 7,000 | 400 |
| 1,2-Dichloroethene (total) | *70,000* | NA |
| 1,2-Dichloropropane | 9,400 | 400 |
| 2-Butanone | NA | 2,500,000 |
| 2-Hexanone | NA | NA |
| 4-Methyl-2-Pentanone | NA | 310,000 |
| Acetone | *780,000* | 130,000 |
| Benzene | 22,000 | *800* |
| Bromodichloromethane | 10,000 | *400* |
| Bromoform | 81,000 | 43,000 |
| Bromomethane | 11.000' | NA |
| Carbon Disulfide | *780,000* | 2,600 |
| Carbon Tetrachloride | 4,900 | 300 |
| Chlorobenzene | 160,000 | 19,000 |
| Chloroethane | 160,000 | NA |
| Chloroform | *78,000* | 300 |

| Preliminary Remedial Goals - PRGs for Soil Contaminants | | |
|---|---|---|
| **Parameters** | **USEPA - RBCs** | **FDEP - CGs** |
| Chloromethane | 49,000 | 100 |
| | | |
| Ethylbenzene | 780,000 | 770,000 |
| Methylene Chloride | 85,000 | 9,300 |
| Styrene | 1,600,000 | 1,700,000 |
| Tetrachloroethene | 12,000 | 9,200 |
| Toluene | 1,600,000 | 270,000 |
| Trichloroethene | 47,000 | 3,400 |
| Vinyl Chloride | 340 | 3 |
| Xylene (total) | 16,000,000 | 6,400,000 |
| **cis-1,3-Dichloropropene** | NA | NA |
| **trans-1,3-Dichloropropene** | NA | NA |

Notes:

USEPA-RBCs – Risk-based concentrations (RBCs). USEPA Region III COC Screening table (18 Mar 1994) for residential soil.

FDEP-CGs – FDEP Clean-up Goal for Department of Defense sites (April 5, 1995), aggregate resident or child resident scenario (lowest value).

NASP-Reference Concentration – NAS Pensacola, specific reference concentrations, two times the mean concentration and one-half the detection level for non-detections.

NA – Data not available, listed, or applicable under the particular guidance reference.

| Preliminary Remediation Goals (PRGs) for Groundwater Contaminants | | | | | | |
|---|---|---|---|---|---|---|
| **Inorganics** | **EPA MCLs[1]** | **FPDWS[2]** | **EPA SMCLs[3]** | **FSDWS[4]** | **FGGC[5]** | **NASP Reference Concentration[6]** |
| Aluminum | NA | NA | 50-200 | 200 | NA | 3882.8 |
| Antimony | 6 | 6 | NA | NA | NA | 30.2 |
| Arsenic | 50' | 50 | NA | NA | NA | 2.8 |
| Barium | 2000 | 2000 | NA | NA | NA | 13.2 |
| Beryllium | 4 | 4 | NA | NA | NA | 1.1 |
| Cadmium | 5 | 5 | NA | NA | NA | 3.4 |
| Calcium | NA | NA | NA | NA | NA | 17560.0 |
| Chromium | 100 | 100 | NA | NA | NA | 35 |
| Cobalt | NA | NA | NA | NA | NA | 4.1 |
| Copper | 1300 | NA | 1000 | 1000 | NA | 16.2 |
| Cyanide | 200[b] | 200 | NA | NA | NA | NA |
| Iron | NA | NA | 300 | 300 | NA | 1707.8 |
| Lead | 15' | 15 | NA | NA | NA | 1.6 |
| Magnesium | NA | NA | NA | NA | NA | 2872.6 |
| Manganese | NA | NA | 50 | 50 | NA | 22.0 |
| Mercury | 2 | 2 | NA | NA | NA | 0.2 |
| Nickel | 100 | 100 | NA | NA | NA | 39.9 |
| Potassium | NA | NA | NA | NA | NA | 12167.6 |
| Selenium | 50 | 50 | NA | NA | NA | 3.9 |
| Silver | NA | NA | 100 | 100 | NA | 4.0 |

| Preliminary Remediation Goals (PRGs) for Groundwater Contaminants | | | | | | |
|---|---|---|---|---|---|---|
| **Inorganics** | **EPA MCLs[1]** | **FPDWS[2]** | **EPA SMCLs[3]** | **FSDWS[4]** | **FGGC[5]** | **NASP Reference Concentration[6]** |
| Sodium | NA | 160,000 | NA | NA | NA | 18345.0 |
| Thallium | 2 | 2 | NA | NA | NA | 3.6 |
| | | | | | | |
| Zinc | NA | NA | 5000 | 5000 | NA | 153.20 |

Notes:

1 = USEPA-MCLs - U.S. Environmental Protection Agency - Maximum Contaminant Levels

2 = FPDWS - Florida Primary Drinking Water Standards

3 = EPA-SMCLs - U.S. Environmental Protection Agency - Secondary Maximum Contaminant Levels

4 = FSDWS - Florida Secondary Drinking Water Standards

6 = FGGC - Florida Groundwater Guidance Concentrations

6 = NAS Pensacola - specific reference concentrations, two times the mean concentration (using one-half the detection level for non-detections).

8 = Under EPA Review

b = EPA proposed MCL

c = Action Level

NA = Data not available, listed, or determined under the particular guidance reference.

| Preliminary Remediation Goals (PRGs) for Groundwater Contaminants | | | | | |
|---|---|---|---|---|---|
| Parameter | USEPA MCLs[1] | FPDWS[2] | USEPA SMCLs[3] | FSDWs[4] | FGCG[5] |
| **Pesticides** | | | | | |
| 4,4-DDD | NA | NA | NA | NA | 0.1 |
| 4,4'-DDE | NA | NA | NA | NA | 0.1 |
| 4,4'-DDT | NA | NA | NA | NA | 0.1 |
| Aldrin | NA | NA | NA | NA | 0.5 |
| Aroclor 1016 | NA | NA | NA | NA | NA |
| Aroclor 1221 | NA | NA | NA | NA | NA |
| Aroclor 1232 | NA | NA | NA | NA | NA |
| Aroclor 1242 | NA | NA | NA | NA | NA |
| Aroclor 1248 | NA | NA | NA | NA | NA |
| Aroclor 1254 | NA | NA | NA | NA | NA |
| Aroclor 1260 | NA | NA | NA | NA | NA |
| Dieldrin | NA | NA | NA | NA | 0.1 |
| Endosulfan I | NA | NA | NA | NA | 0.35 |
| Endosulfan II | NA | NA | NA | NA | 0.35 |
| Endosulfan sulfate | NA | NA | NA | NA | 0.3 |
| Endrin | 2.0 | 2.0 | NA | NA | NA |
| Endrin aldehyde | NA | NA | NA | NA | 0.1 |
| Endrin ketone | NA | NA | NA | NA | NA |
| Heptachlor | 0.4 | 0.4 | NA | NA | NA |
| Heptachlor epoxide | 0.2 | 0.2 | NA | NA | NA |
| Methoxychlor | 40 | 40 | NA | NA | NA |
| Toxaphene | 3.0 | 3.0 | NA | NA | NA |
| alpha-BHC | NA | NA | NA | NA | 0.5 |
| alpha-Chlordane | NA | NA | NA | NA | NA |
| beta-BHC | NA | NA | NA | NA | 0.1 |
| delta-BHC | NA | NA | NA | NA | 0.5 |
| gamma-BHC (Lindane) | 0.2 | NA | NA | NA | NA |

| P for Groundwater Contaminants | | | | | |
|---|---|---|---|---|---|
| Parameter | USEPA MCLs[1] | FPDWS[2] | USEPA SMCLs[3] | FSDWs[4] | FGCG[5] |
| gamma-Chlordane | NA | NA | NA | NA | NA |
| **Semivolatiles** | | | | | |
| 1,2,4-Trichlorobenzene | 70 | 70 | NA | NA | NA |
| 1,2-Dichlorobenzene | 600 | 600 | NA | NA | NA |
| 1,3-Dichlorobenzene | 600* | NA | NA | NA | 10 |
| 1,4-Dichlorobenzene | 75 | 75 | NA | NA | NA |
| 2,4,5-Trichlorophenol | NA | NA | NA | NA | 4 |
| 2,4,6-Trichlorophenol | NA | NA | NA | NA | 10 |
| 2,4-Dichlorophenol | NA | NA | NA | NA | 4 |
| 2,4-Dimethylphenol | NA | NA | NA | NA | 400 |
| 2,4-Dinitrophenol | NA | NA | NA | NA | 30 |
| 2,4-Dinitrotoluene | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | NA | NA | NA | NA | 560 |
| 2-Chlorophenol | NA | NA | NA | NA | 35 |
| 2-Methylnaphthalene | NA | NA | NA | NA | NA |
| 2-Methylphenol | NA | NA | NA | NA | 350 |
| 2-Nitroaniline | NA | NA | NA | NA | 7.5 |
| 2-Nitrophenol | NA | NA | NA | NA | 20 |
| 3,3'-Dichlorobenzidine | NA | NA | NA | NA | 7.5 |
| 3-Nitroaniline | NA | NA | NA | NA | NA |
| 4,6-Dinitro-2-methylphenol | NA | NA | NA | NA | NA |
| 4-Bromophenyl-phenylether | NA | NA | NA | NA | NA |
| 4-Chloro-3-methyl phenol | NA | NA | NA | NA | 3000 |
| 4-Chloroaniline | NA | NA | NA | NA | 28 |
| 4-Chlorophenyl-phenylether | NA | NA | NA | NA | 10 |
| 4-methyl phenol | NA | NA | NA | NA | 35 |
| 4-Nitroaniline | NA | NA | NA | NA | NA |

| Preliminary Remediation Goals (PRGs) for Groundwater Contaminants | | | | | |
|---|---|---|---|---|---|
| Parameter | USEPA MCLs[1] | FPDWS[2] | USEPA SMCLs[3] | FSDWs[4] | FGCG[5] |
| 4-Nitrophenol | NA | NA | NA | NA | 15 |
| Acenaphthene | NA | NA | NA | NA | 20 |
| Acenaphthylene | NA | NA | NA | NA | 10 |
| Anthracene | NA | NA | NA | NA | 2100 |
| Benzo(a)anthracene | 0.1 | NA | NA | NA | 4 |
| Benzo(a)pyrene | 0.2 | 0.2 | NA | NA | NA |
| Benzo(b)fluoranthene | 0.2 | NA | NA | NA | 4 |
| Benzo(g,h,i)perylene | NA | NA | NA | NA | 10 |
| Benzo(k)fluoranthene | 0.2 | NA | NA | NA | 4 |
| Butylbenzylphthalate | 0.1 | NA | NA | NA | 1400 |
| Carbazole | NA | NA | NA | NA | 7.5 |
| Chrysene | 0.2 | NA | NA | NA | 5 |
| Di-n-butylphthalate | NA | NA | NA | NA | 700 |
| Di-n-octylphthalate | NA | NA | NA | NA | 140 |
| Dibenzo(a,h)anthracene | 0.3 | NA | NA | NA | 7.5 |
| Dibenzofuran | NA | NA | NA | NA | NA |
| Diethylphthalate | NA | NA | NA | NA | 5600 |
| Dimethylphthalate | NA | NA | NA | NA | 70,000 |
| Fluoranthene | NA | NA | NA | NA | 280 |
| Fluorene | NA | NA | NA | NA | 280 |
| Hexachlorobenzene HCB | 1.0 | 1.0 | NA | NA | NA |
| Hexachlorobutadiene | NA | NA | NA | NA | 15 |
| Hexachlorocyclopentadiene | 50 | 50 | NA | NA | NA |
| Hexachloroethane | NA | NA | NA | NA | 10 |
| Indeno(1,2,3-cd)pyrene | 0.4 | NA | NA | NA | 7.5 |
| Isophorone | NA | NA | NA | NA | 40 |
| N-Nitroso-di-n-propylamine | NA | NA | NA | NA | 4.0 |
| N-Nitrosodiphenylamine | NA | NA | NA | NA | 7 |

| Preliminary Remediation Goals (PRGs) for Groundwater Contaminants | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **USEPA MCLs[1]** | **FPDWS[2]** | **USEPA SMCLs[3]** | **FSDWs[4]** | **FGCG[5]** |
| Naphthalene | NA | NA | NA | NA | 6.8 |
| Nitrobenzene | NA | NA | NA | NA | 9.5 |
| Pentachlorophenol | 1.0 | 1.0 | NA | NA | NA |
| Phenanthrene | NA | NA | NA | NA | 10 |
| Phenol | NA | NA | NA | NA | 10 |
| Pyrene | NA | NA | NA | NA | 210 |
| bis(2-Chloroethoxy)methane | NA | NA | NA | NA | 10 |
| bis(2-Ethlyhexy)phthalate | NA | NA | NA | NA | NA |
| bis(2-chloroethyl)ether | NA | NA | NA | NA | 1.5 |
| bis(2-chloroisopropyl)ether | NA | NA | NA | NA | 7.5 |
| **Volatiles** | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | NA | NA | NA | NA | 0.2 |
| 1,1,2-Trichloroethane | 5 | 5 | NA | NA | NA |
| 1,1-Dichloroethane | NA | NA | NA | NA | 700 |
| 1,1-Dichloroethene | 7 | 7 | NA | NA | NA |
| 1,2-Dichloroethane | 5 | 3 | NA | NA | NA |
| 1,2-Dichloroethene (total) | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 5 | 5 | NA | NA | NA |
| 2-Butanone | NA | NA | NA | NA | 4,200 |
| 2-Hexanone | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | NA | NA | NA | NA | 350 |
| Acetone | NA | NA | NA | NA | 700 |
| Benzene | 5.0 | 1.0 | NA | NA | NA |
| Bromodichloromethane | NA | NA | NA | NA | 0.6 |
| Bromoform | NA | NA | NA | NA | 4 |
| Bromomethane | NA | NA | NA | NA | 10 |
| Carbon Disulfide | NA | NA | NA | NA | 700 |

| Preliminary Remediation Goals (PRGs) for Groundwater Contaminants | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **USEPA MCLs[1]** | **FPDWS[2]** | **USEPA SMCLs[3]** | **FSDWs[4]** | **FGCG[5]** |
| Carbon Tetrachloride | 5.0 | 3 | NA | NA | NA |
| Chlorobenzene | 100 | 100 | NA | NA | NA |
| Chloroethane | NA | NA | NA | NA | 140 |
| Chloroform | NA | NA | NA | NA | 6 |
| Chloromethane | NA | NA | NA | NA | *2.7* |
| Dibromochloromethane | NA | NA | NA | NA | 1.0 |
| Ethylbenzene | *700* | *700* | NA | 30 | NA |
| Methylene Chloride | 5 | 5 | NA | NA | NA |
| Styrene | 100 | 100 | NA | NA | NA |
| Tetrachloroethene | 5 | 3 | NA | NA | NA |
| Toluene | 1000 | 1000 | NA | 40 | NA |
| Trichloroethene | 5 | 3 | NA | NA | NA |
| Vinyl Chloride | *2.0* | 1 | NA | NA | NA |
| Xylene (total) | 10,000 | 10,000 | NA | 20 | NA |
| **cis-1,3-Dichloropropene** | NA | NA | NA | NA | NA |
| **trans-1,3-Dichloropropene** | NA | NA | NA | NA | NA |

Notes:

[1] – USEPA-MCLs - U.S. Environmental Protection Agency - Maximum Contaminant Levels
[2] – FPDWS - Florida Primary Drinking Water Standards
[3] = EPA-SMCLs - U.S. Environmental Protection Agency - Secondary Maximum Contaminant Levels
[4] = FSDWS - Florida Secondary Drinking Water Standards
[5] = FGGC - Florida Groundwater Guidance Concentrations
[a] = Under EPA Review
[b] = EPA proposed MCL
[c] = Action Level
[d] = Based on data for o-dichlorobenzene
NA = Data not available, listed, or determined under the particular guidance reference.

| Draft Region IV Waste Management Division Sediment Screening Values for Hazardous Waste Sites (2/16/94 Version) | | | |
|---|---|---|---|
| Chemical Analyte | Effects Value | CLP POL [1] | Screening Value |
| **Trace Elements (ppm)** | | | |
| Antimony | 2[2] | 12 | 12 |
| Arsenic | 8[3] | 2 | a |
| Cadmium | 13 | 1 | 1 |
| Chromium | 33[3] | 2 | 33 |
| Copper | 28[3] | 5 | 28 |
| Lead | 213 | 0.6 | 21 |
| Mercury | 0.13 | 0.02 | 0.1 |
| Nickel | 20.9[4] | a | 20.9 |
| Silver | 0.5[3] | 2 | 2 |
| Zinc | 68[3] | 4 | 68 |
| **Organics (ppb)** | | | |
| Total PCBs | 22.7[1] | 33 (67 for Aroclor 1221) | 33 (67 for Aroclor 1221) |
| DDT | 1[2] | 3.3 | 3.3 |
| Total DDT | 1.58[4] | 3.3 | 3.3 |
| Chlordane | 0.5[2] | 1.7 | 1.7 |
| Dieldrin | 0.02[2] | 3.3 | 3.3 |
| Endrin | 0.02[2] | 3.3 | 3.3 |
| Acenaphthene | 16[4] | 330 | 330 |
| Acenaphthylene | 44[1] | 330 | 330 |
| Anthracene | 85[3] | 330 | 330 |
| Fluorene | 18[1] | 330 | 330 |
| 2-Methyl Naphthalene | 70[4] | 330 | 330 |
| Naphthalene | 130[3] | 330 | 330 |
| Phenanthrene | 140[3] | 330 | 330 |
| Low Molecular Weight PAHs | 250[3] | | 330 |

| Draft Region IV Waste Management Division Sediment Screening Values for Hazardous Waste Sites (2/16/94 Version) | | | |
|---|---|---|---|
| **Chemical Analyte** | **Effects Value** | **CLP POL [1]** | **Screening Value** |
| Benzo(a)anthracene | 160[3] | 330 | 330 |
| Benzo(a)pyrene | 230[3] | 330 | 330 |
| Chrysene | 2203 | 330 | 330 |
| Dibenz(a,h)anthracene | 31[3] | 330 | 330 |
| Fluoranthene | 380[3] | 330 | 330 |
| Pyrene | 290[3] | 330 | 330 |
| High Molecular Weight PAHs | 870[3] | 330 | 330 |
| Total PAHs | 2900[3] | | 2900 |

**Note:**

1 = Contract Laboratory Program Practical Quantification Limit.

2 = Long, Edward R., and Lee G. Morgan. **1991.** The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program. NOAA Technical Memorandum NOS OMA 52.

3 = MacDonald, D.D. **1993.** Development of an Approach to the Assessment of Sediment Quality in Florida Coastal Waters. Florida Department of Environmental Regulation.

4 = Long, Edward R., Donald D. MacDonald, and Sherri L' Smith. In press. Incidence of Adverse Biological Effects Within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environmental Management.

# Approach to the Assessment of Sediment Quality in Florida Coastal Waters

## Volume 1 - Development and Evaluation of Sediment Quality Assessment Guidelines

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**November 1994**

Table 4. A summary of sediment quality assessment guidelines applicable to Florida coastal waters.

| Substance | Total Number of Records | Number of Entries in the EDS | Number of Entries in the NEDS | Sediment Quality Assessment Guidelines | |
|---|---|---|---|---|---|
| | | | | TEL | PEL |
| **Metals (SQAGs in mg/kg)** | | | | | |
| Arsenic | 295 | 39 | 256 | 7.24 | 41.6 |
| Cadmium | 433 | 107 | 326 | 0.676 | 4.21 |
| Chromium | 354 | 53 | 301 | 52.3 | 160 |
| Copper | 440 | 105 | 335 | 18.7 | 108 |
| Lead | 402 | 95 | 307 | 30.2 | 112 |
| Mercury | 331 | 66 | 265 | 0.13 | 0.696 |
| Nickel | 355 | 23 | 332 | 15.9 | 42.8 |
| Silver | 190 | 35 | 155 | 0.733 | 1.77 |
| Tributyltin | 72 | 6 | 66 | ID | ID |
| Zinc | 411 | 96 | 315 | 124 | 271 |
| **Polychlorinated Biphenyls (PCBs; SQAGs in µg/kg)** | | | | | |
| Total PCBs | 199 | 65 | 134 | 21.6 | 189 |
| **Polycyclic Aromatic Hydrocarbons (PAHs; SQAGs in µg/kg)** | | | | | |
| Acenaphthene | 240 | 62 | 178 | 671 | 88.9 |
| Acenaphthylene | 209 | 36 | 173 | 5.87 | 128 |
| Anthracene | 259 | 70 | 189 | 46.9 | 245 |
| Fluorene | 263 | 73 | 190 | 21.2 | 144 |
| 2-methylnaphthalene | 189 | 40 | 149 | 20.2 | 201 |
| Naphthalene | 256 | 57 | 199 | 34.6 | 391 |
| Phenanthrene | 268 | 74 | 194 | 86.7 | 544 |
| Sum LMW-PAHs | 274 | 69 | 205 | 312 | 1442 |

**Table 4. A summary of sediment quality assessment guidelines applicable to Florida coastal waters (continued).**

| Substance | Total Number of Records | Number of Entries in the EDS | Number of Entries in the NEDS | Sediment Quality Assessinent Guidelines TEL | PEL |
|---|---|---|---|---|---|
| **Polycyclic Aromatic Hydrocarbons (PAHs; SQAGs in µg/kg)** | | | | | |
| Benz(a)anthracene | 249 | 63 | 186 | 74.8 | 693 |
| Benzo(a)pyrene | 259 | 68 | 191 | 88.8 | 763 |
| Chrysene | 258 | 68 | 190 | 108 | 846 |
| Dibenzo(a,h)anthracene | 246 | 54 | 192 | 6.22 | 135 |
| Fluoranthene | 279 | 85 | 194 | 113 | 1494 |
| Pyrene | 263 | 70 | 193 | 153 | 1398 |
| Sum HMW-PAHs | 274 | 64 | 210 | 655 | 6676 |
| Total PAHs | 250 | 58 | 192 | 1684 | 16770 |
| **Pesticides (SQAGs in µg/kg)** | | | | | |
| Aldrin | 180 | 15 | 165 | ID | ID |
| Azinphos-methyl (Guthion) | 0 | 0 | 0 | ID | ID |
| Chlordane | 203 | 25 | 178 | 2.26 | 4.79 |
| Chlorthalonil | 0 | 0 | 0 | ID | ID |
| Chlorpyrifos | 1 | 1 | 0 | ID | ID |
| p,p'-DDD | 173 | 22 | 151 | 1.22 | 7.8 1 |
| p,p'-DDE | 211 | 37 | 174 | 2.07 | ~~3.74~~ 37 |
| p,p'-DDT | 175 | 26 | 149 | 1.19 | 4.77 |
| Total DDT | 89 | 37 | 52 | 3.89 | 51.7 |
| Dieldrin | 181 | 25 | 156 | 0.715 | 4.3 |
| Disulfoton | 0 | 0 | 0 | ID | ID |
| Endosulfan | 6 | 4 | 2 | ID | ID |
| Endrin | 146 | 14 | 132 | ID | ID |

**Table 4. A summary of sediment quality assessment guidelines applicable to Florida coastal waters (continued).**

| Substance | Total Number of Records | Number of Entries in the EDS | Number of Entries in the NEDS | Sediment Quality Assessment Guidelines TEL | PEL |
|---|---|---|---|---|---|
| **Pesticides (SQAGs in µg/kg)** | | | | | |
| Heptachlor | 168 | 14 | 154 | ID | ID |
| Heptachlor epoxide | 137 | 9 | 128 | ID | ID |
| Lindane (gamma-BHC) | 181 | 21 | 160 | 0.32 | 0.99 |
| Mirex | 120 | 3 | 117 | ID | ID |
| Phorate | 0 | 0 | 0 | ID | ID |
| Quintozene (PCNB) | 0 | 0 | 0 | ID | ID |
| Toxaphene (alpha-BHC) | 133 | 4 | 129 | ID | ID |
| Trifluralin | 0 | 0 | 0 | ID | ID |
| **Chlorinated Organic Substances (SQAGs in µg/kg)** | | | | | |
| 2,3,7,8-Tetrachlorodibenzo-p-dio: | 18 | 2 | 16 | ID | ID |
| 2,3,7,8-Tetrachlorodibenzofuran | 17 | 1 | 16 | ID | ID |
| Ptntachlorophenol | 82 | 7 | 75 | ID | ID |
| **Phthalates (SQAGs in µg/kg)** | | | | | |
| Bis(2-ethylhexyl)phthalate | 131 | 31 | 100 | 182 | 2647 |
| Dimethyl phthalate | 86 | 10 | 76 | ID | ID |
| Di-n-butyl phthalate | 79 | 7 | 72 | ID | ID |

Total Number of Records = Number of data records in the expanded biological effects database for sediments.
All of the sediment quality assessment guidelines are expressed on a dry weight basis, as potential normalizers (e.g., Al, TOC, AVS) were rarely reported.
EDS = Effects data set; NEDS = No effects data set; TEL = Toxic effect level; PEL = Probable effect level.
ID = insufficient data to derive sediment quality assessment guidelines.
SQAG = Sediment quality assessment guidelines

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET. N E.
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# REGION IV WASTE MANAGEMENT DIVISION SCREENING VALUES for HAZARDOUS WASTE SITES

The Region IV Waste Management Division Screening Values for Hazardous Waste Sites are intended to serve as preliminary screening tools for the review of chemical data associated with hazardous waste sites, These lists, currently there is one for surface water and one for sediments, are considered dynamic documents in that they will be updated as more information and other sources become available with the addition of media, parameters, screening levels, or changes in the screening levels.

Exceedences of the screening levels would indicate a need for more investigation, such as site-specific toxicity tests, literature reviews, etc. It is possible that given the characteristics of a specific site, lower screening values may be used in evaluating preliminary data for that location.

Federal sediment quality criteria for the protection of aquatic life are being developed. In the interim, the EPA Region IV Waste Management Division uses sediment values compiled by the National Oceanic and Atmospheric Administration (NOM) as screening values for evaluating the potential for chemical constituents in sediments to cause adverse biological effects. NOAA developed this screening method through evaluation of biological effects data for aquatic (marine and freshwater) organisms, obtained through equilibrium partitioning calculations, spiked-sediment bioassays, and concurrent biological and chemical field surveys. For each constituent having sufficient data available, the concentrations causing adverse biological effects were arrayed, and the lower 10 percentile (called an Effects Range-Low, or ER-L) and the median (called an Effects Range-Median, or ER-M) were determined.

EPA Region IV's Waste Management Division compares sediment analytical data to these NOAA values. If sediment contaminant concentrations are above the ER-M, adverse effects on the biota are considered probable. If contaminant concentrations are between the ER-L and the ER-M, adverse effects are considered possible, and EPA recommends conducting sediment toxicity tests as a follow-up. If contaminant concentrations are below the ER-L, adverse effects are considered unlikely.

Region IV Waste Management Division
Freshwater Water Quality Screening Values
for
Hazardous Waste Sites'
(11/16/92 Version)

| Compound | Acute Screening value (ug/L) | Chronic Screening Values (ug/L) |
|---|---|---|
| Priority Pollutants | | |
| Antimony | 1300 (2s) | 160 (2s) |
| Arsenic III | 360' | 190* |
| Beryllium | 16 (6s) | 0m53 (Is) |
| Cadmium[2] | 1.79'. | 0.66* |
| Chromium (III)[2] | 984.32* | 117.32' |
| Chromium (VI) | 16' | 11' |
| Copper[2] | 9.22' | 6.54* |
| Lead' | 33.78* | 1.32' |
| Mercury | 2.40* | 0.012*[3] |
| Nickel' | 789.00* | 87-71' |
| Selenium | 20.00' | 5.00' |
| Silver? | 1.23* | 0.012(Is) |
| Thallium | 140.00(3s) | 4.00 (2s) |
| Zinc[2] | 65.04' | 58.91' |
| Cyanide | 22' | 5.2* |
| | | |
| 2,3,7,8-TCDD-Dioxin | 0m1 | 0.00001[3] |
| | | |
| Acrolein | 6.8(3s) | 2.1 (1s) |
| Acrylonitrile | 755 (4s) | 75.5 |
| Benzene | 530 (7s) | 53 |
| Bromoform | 2930 (2s) | 293 |
| Carbon Tetrachloride | 3520 (3s) | 352 |
| Chlorobenzene | 1950 (5s) | 195 |

Region IV WSMD Freshwater Water Quality Screening Values
November 16, 1992

| Compound | Acute Screening Value (ug/L) | chronic Screening Values (ug/L) |
|---|---|---|
| 2-Chloroethylvinyl Ether | 35400 (1s) | 3540 |
| Chloroform | 2890 (3s) | 289 |
| 1,2-Dichloroethane | 11800 (3s) | 2000 (1s) |
| 1,1-Dichloroethylene | 3030 (3s) | 303 |
| 1,2-Dichloropropane | 5250 (3s) | 525 |
| 1,3-Dichloropropylene (cis and trans) | 606 (2s) | 24.4 (1s) |
| | | |
| | | |
| Methyl Chloride | 55000 (1s) | 5500 |
| Methylene Chloride | 19300 (3s) | 1930 |
| 1,1,2,2-Tetrachloroethane | 932 (3s) | 240 (1s) |
| Tetrachloroethylene | 528 (5s) | 84 (1s) |
| Toluene | 1750 (5s) | 175 |
| 1,2-Trans-Dichloroethylene | 13500 (1s) | 1350 |
| 1,1,1-Trichloroethane | 5280 (2s) | 528 |
| 1,1,2-Trichloroethane | 3600 (3s) | 940 (1s) |
| | | |
| 2-Chlorophenol | 438 (5s) | 43.8 |
| 2,4-Dichlorophenol | 202 (3s) | 36.5 (Is) |
| 2,4-Dimethylphenol | 212 (3s) | 21.2 |
| 2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-O-Cresol) | 23 (4s) | 2.3 |
| 2,4-Dinitrophenol | 62 (3s) | 6.2 |
| 2-Nitrophenol | - | 3500 |
| 4-Nitrophenol | 828 (3s) | 82.8 |
| 3-Methyl-4-Chlorophenol (P-Chloro-M-Cersol) | 3 (1s) | 0.3 |

Region IV WSMD Freshwater Water Quality Screening Values
November 16, 1992

| Compound | Acute Screening Value (ug/L) | Chronic Screening Values (ug/L) |
|---|---|---|
| Pentachlorophenol[4] | 3.32* | 2.10* |
| Phenol | 1020(16s) | 256 (1s) |
| 2,4,6-Trichlorophenol | 32 (3s) | 3.2 |
| | | |
| Acenaphthene | 170 (2s) | 17 |
| Benzidine | 250 (4s) | 25 |
| Bis(2-Chloroethyl) Ether | 23800 (1s) | 2380 |
| Bis(2-Ethylhexyl) Phthalate | 1110 (2s) | <0.3 (2s) |
| 4-BromophenylPhenyl Phthalate | 36(2s) | 12.2 (1s) |
| Butylbenzyl Phthalate | 330(4s) | 22 (2s) |
| 1,2-Dichlorobenzene | 158(4s) | 15.8 (3s) |
| 1,3-Dichlorobenzene | 502(3s) | 50.2 |
| 1,4-Dichlorobenzene | 112(5s) | 11.2 |
| Diethyl Phthalate | 5210(2s) | 521 |
| Dimethyl Phthalate | 3300(2s) | 330 |
| Di-n-Butyl Phthalate | 94(6s) | 9.4 |
| 2,4-Dinitrotoluene | 3100(2s) | 310 |
| 1,2-Diphenylhydrazine | 27(2s) | 2.7 |
| Fluoranthene | 398(2s) | 39.8 |
| Hexachlorobutadiene | 9(5s) | 0.93(1s) |
| Hexachlorocyclopentadiene | 0.7(4s) | 0.07 |
| Eexachloroethane | 98(5s) | 9.8 |
| Isophorone | 11700(2s) | 1170 |
| Naphthalene | 230(4s) | 62(1s) |
| Nitrobenzene | 2700(2s) | 270 |

**Region IV WSMD Freshwater Water Quality Screening Values**
**November 16, 1992**

| Compound | Acute Screening Value (ug/L) | Chronic Screening Values (ug/L) |
|---|---|---|
| N-Nitrosodiphenylamine | 585(2s) | 58.5 |
| 1,2,4-Trichlorobenzene | 150(4s) | 44.9 (1s) |
| | | |
| Aldrin | 3* | 0.3 |
| a-BHC | - | 500[5] |
| | | |
| | | |
| | | |
| 4,4'-DDT | 1.1* | 0.001' |
| 4,4'-DDE | 105(1s) | 10.5 |
| 4,4'-DDD | 0.064 (8s) | 0,0064 |
| Dieldrin | 2.5' | 0.0019*[3] |
| a-Endosulfan | 0.22' | 0.056' |
| b-Endosulfan | 0.22' | 0.056' |
| Endrin | 0.18' | 0.0023*[3] |
| Heptachlor | 0.52' | 0.0038'' |
| Heptachlor Epoxide | 0.52' | 0.0038*[3] |
| PCB-1242 | 0.2(7s) | 0.014' |
| PCB-1254 | 0.2(7s) | 0.014' |
| PCB-1221 | 0.2(7s) | 0.014' |
| PCB-1232 | 0.2(7s) | 0.014* |
| PCB-1248 | 0.2(7s) | 0.014* |
| PCB-1260 | 0.2(7s) | 0.014' |
| PCB-1016 | 0.2(7s) | 0.014' |
| Toxaphene | 0.73' | 0.0002*[3] |

Region IV WSMD Freshwater Water Quality Screening Values
November 16, 1992

| Compound | Acute Screening Value (ug/L) | Chronic Screening Values (ug/L) |
|---|---|---|
| Non-priority Pollutants | | |
| Aluminum (pH 6.5 - 9.0) | 750' | 87* |
| Boron | - | 750*6 |
| Chloride | 860000' | 230000' |
| Chlorine (TRC) | 19' | 11' |
| Chloropyrifos | 0.083' | 0.041' |
| | | |
| | | |
| | | |
| Malathion | - | 0.1* |
| Methoxychlor | - | 0.03' |
| Mirex | - | 0.001' |
| Oil and Grease | - | 0.01' Low $LC_{50}$ |
| Parathion | 0.065' | 0.013' |
| Pentachlorobenzene | 250 | 50 |
| pH | - | 6.5 - 9.0' |
| Sulfide ($S_2$-, HS-) | - | 2' |
| 1,2,4,5-Tetrachlorobenzene | 250 | 50 |
| Tributyltin | - | 0.026 |

Region IV WSMD Freshwater Water Quality Screening Values
November 16, 1992

[1] Based on Region IV Water Management Division, Water Quality Standards Unit's Screening List.
Hardness (mg/L as $CaCO_3$) : 50.0
pH: 6
*: Criteria
s: Number of Species

[2] Hardness Dependent
Based on the following equations:

| Compound | Acute Screening Value | Chronic Screening Value |
|---|---|---|
| Cadmium | $e^{(1.128(\ln H)-3.828)}$ | $e^{(0.7852(\ln H)-3.49)}$ |
| Chromium III | $e^{(0.819(\ln H)+3.688)}$ | $e^{(0.819(\ln H)+1.561)}$ |
| Copper | $e^{(0.9422(\ln H)-1.464)}$ | $e^{(0.8545(\ln H)-1.465)}$ |
| Lead | $e^{(1.273(\ln H)-1.46)}$ | $e^{(1.273(\ln H)+4.705)}$ |
| Nickel | $e^{(0.846(\ln H)+3.3612}$ | $e^{(0.846(\ln H)+1.1645)}$ |
| Silver | $e^{(1.72(\ln H)-6.52)}$ | |
| Zinc | $e^{(0.8473(\ln H)+0.8604)}$ | $e^{(0.8473(\ln H)+0.7614)}$ |

[3] Based on the marketability of fish, The use of other values which may have greater ecological significance may be considered.

[4] pH Dependent,
Based on the following equation:

| Compound | Acute Screening Value | Chronic Screening Value |
|---|---|---|
| Pentachlorophenol | $e^{(1.005pH-4.83)}$ | $e^{(1.005pH-5.29)}$ |

[5] Lowest plant value reported

[6] For long term irrigation of sensitive crops (minimum standard)

# 17-302.530, Criteria,for Surface Water Quality Classifications

| Parameter | Units | class I: Potabk Water Supply | class II: Shellfish Propagation or Harvesting | Class III: Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and wildlife | | class IV: Agricultural Water Supplies | class V: Navigation, Utility, and Industrial Use |
|---|---|---|---|---|---|---|---|
| | | | | Predominantly Fresh Waters | Predominantly Marine Waters | | |
| (1) Alkalinity | Milligrams/L as $CaCO_3$ | Shall not be depressed below 20 | | Shall not be depressed below 20 | | ≤600 | |
| (2) Aluminum | Milligrams/L | | ≤1.5 | | ≤1.5 | | |
| (3) Ammonia (un-ionized) | Milligrams/L as $NH_3$ | ≤0.02 | | ≤ 0.02 | | | |
| (4) Antimony | Micrograms/L | ≤ 14.0 | ≤4,300 | ≤4,300 | ≤4,300 | | |
| (5) (a) Arsenic (total) | Micrograms/L | ≤50 | ≤50 | ≤50 | ≤50 | ≤50 | ≤50 |
| (5) (b) Arsenic (trivalent) | Micrograms/L | | ≤36 | | ≤36 | | |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) 'Max" means the maximum not to be exceeded at any lime; (3) "ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.

| Parameter | Units | | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (6) Bacteriological Quality (Fecal Coliform Bacteria) | Number per 100 ml (Most Probable Number (MPN) or Membrane Filter (MF)) | MPN or MF counts shall not exceed a monthly average of 200, nor exceed 400 in 10% of the samples. Monthly averages shall be expressed as geometric means based on a minimum of 5 samples taken over a 30 day period. | MPN shall not exceed a median value of 14 with not more than 10% of the samples exceeding 43 | MPN or MF counts shall not exceed a monthly average of 200, nor exceed 400 in 10% of the samples, nor exceed 800 on any one day. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30 day period. | MPN or MF counts shall not exceed a monthly average of 200, nor exceed 400 in 10% of the samples, nor exceed 800 on any one day. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30 day period. | | |
| (7) Bacteriological Quality (Total Coliform Bacteria) | Number per 100 ml (Most Probable Number (MPN) or Membrane Filter (MF)) | ≤ 1,000 as a monthly avg., nor exceed 1,000 in more than 20% of samples examined during any month, nor exceed 2,400 at any time, using either MPN or MF counts. | Median MPN shall not exceed 70. and not more than 10% of the sampla shall exceed an MPN of 230. | ≤ 1,000 as a monthly average; nor exceed 1,000 in more than 20% of the samples examined during any month; ≤ 2,400 at any time. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30 day period, using either the MPN or MF counts. | ≤ 1,000 as a monthly average; nor exceed 1,000 in more than 20% of the samples examined during any month; ≤ 2,400 at any time. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30 day period, using either the MPN or MF counts. | | |
| (8) Barium | Milligrams/L | ≤ 1 | | | | | |
| (9) Benzene | Micrograms/L | ≤ 1.18 | ≤ 71.28 annual rvg | ≤ 71.28 annual avg. | ≤ 71.28 annual avg. | | |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) "ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.



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| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (10) Beryllium | Micrograms/L | ≤ 0.0077 annual avg. | ≤ 0.13 annual avg. | ≤ 0.13 annual avg. | ≤ 0.13 annual avg. | ≤ 100 in waters with a hardness in mg/L of $CaCO_3$ of less than 250 and shall not exceed 500 in harder waters | |
| (11) Biological Integrity | Per cent reduction of Shannon-Weaver Diversity Index | The Index for benthic macroinvertebrates shall not be reduced to less than 75% of background levels as measured using organisms retained by a U. S. Standard No. 30 sieve and collected and composited from a minimum of three Hester-Dendy type artificial substrate samplers of 0.10 to 0.15 $m^2$ area each, incubated for a period of four weeks. | The Index for benthic macroinvertebrates shall not be reduced to less than 75% of established background levels as measured using organisms retained by a U. S. Standard No. 30 sieve and collected and composited from a minimum of three natural substrate samples, taken with Ponar type samplers with minimum sampling area of 225 $cm^2$. | The Index for benthic macroinvertebrates shall not be reduced to less than 75% of established background levels as measured using organisms retained by a U. S. Standard No. 30 sieve and collected and composited from a minimum of three Hester-Dendy type artificial substrate samplers of 0.10 to 0.15 $m^2$ area each, incubated for a period of four weeks. | The Index for benthic macroinvertebrates shall not be reduced to less than 75% of established background levels as measured using organisms retained by a U. S. Standard No. 30 sieve and collected and composited from a minimum of three natural substrate samples, taken with Ponar type samplers with minimum sampling area of 225 $cm^2$. | ≤ 4.42 annual avg. | |
| (12) BOD (Biochemical Oxygen Demand) | | Shall not be increased to exceed values which would cause dissolved oxygen to be depressed below the limit established for each class and, in no case, shall it be great enough to produce nuisance conditions. | | | | | |
| (13) Boron | Milligrams/L | | | | | ≤ 0.75 | |
| (14) Bromates | Milligrams/L | | ≤ 100 | | ≤ 100 | | |
| (15) Bromine (free molecular) | Milligrams/L | | ≤ 0.1 | | ≤ 0.1 | | |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) 'Max" means the maximum not to be exceeded at any time; (3) 'ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.

| Parameter | Units | Class I | Class II | Clur 111: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (16) Cadmium | Micrograms/L | Cd ≤ $e^{(0.7852[\ln H]-3.49)}$, 10 max | ≤ 9.3 | Cd ≤ $e^{(0.7852[\ln H]-3.49)}$ | ≤ 9.3 | | |
| (17) Carbon tetra-chloride | Micrograms/L | ≤ 0.25 annual avg.; 3.0 max | ≤ 4.42 annual rvg. | ≤ 4.42 annual avg. | ≤ 4.42 annual avg. | | |
| (18) Chlorides | Milligrams/L | ≤ 250 | Not increased more than 10% above normal background. Normal daily and seasonal fluctuations shall be maintained. | | Not increased more than 10% above normal background. Normal daily and seasonal fluctuations shall be maintained. | | In predominantly marine waters, not increased more than 10% above normal background. Normal daily and seasonal fluctuations shall be maintained. |
| (19) Chlorine (total residual) | Milligrams/L | ≤ 0.01 | ≤ 0.01 | ≤ 0.01<br>≤ 0.01 | ≤ 0.01<br>< 0.01 | | |
| (20) (a) Chromium (trivalent) | Micrograms/L | Cr (III) ≤ $e^{(0.819[\ln H]+1.561)}$ | ≤ 673,000 | Cr (III) ≤ $e^{(0.819[\ln H]+1.561)}$ | ≤ 673,000 | Cr (III) ≤ $e^{(0.819[\ln H]+1.561)}$ | In predominantly fresh waters, ≤ $e^{(0.819[\ln H]+1.561)}$. In predominantly marine waters, ≤ 673,000 |
| (20) (b) Chromium (hexavalent) | Micrograms/L | ≤ 11 | ≤ 50 | ≤ 11 | ≤ 50 | ≤ 11 | In predominantly fresh waters, ≤ 11. In predominantly marine waters, ≤ 50 |

Notes: (1) 'Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) 'Max" means the maximum not to be exceeded at any lime; (3) "ln H" means the natural logarithm of total hardness expressed as milligrams/l. of $CaCO_3$.





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| Parameter | Units | Class I | Clus II | Class III: Fresh | Class III: Marine | class IV | Class V |
|---|---|---|---|---|---|---|---|
| (21) Chronic Toxicity (see definition in Section 17-302.200(3), F.A.C. and also see below, "Substances in concentrations which...") | | | | | | | |
| (22) Color, etc. (see also Minimum Criteria, Odor, Phenols, etc.) | Color, odor, and taste producing substances and other deleterious substances, including other chemical compounds attributable to domestic wastes, industrial wastes, and other wastes | | | | | Only such amounts as will not render the waters unsuitable for agricultural irrigation, livestock watering, industrial cooling, industrial process water supply purposes, or fish survival. | |
| (23) Conductance, Specific | Micromhos/cm | Shall not be increased more than 50% above background or to 1275, whichever is greater | | Shall not be increased more than 50% above background or to 1275, whichever is greater | | Shall not be increased more than 50% above background or to 1275, whichever is greater | Shall not exceed 4,000 |
| (24) Copper | Micrograms/L | Cu $\leq e^{(0.8545[\ln H]-1.465)}$ | $\leq 2.9$ | Cu $\leq e^{(0.8545[\ln H]-1.465)}$ | $\leq 2.9$ | $\leq 500$ | $\leq 500$ |
| (25) Cyanide | Micrograms/L | $\leq 5.2$ | $\leq 1.0$ | $\leq 5.2$ | $\leq 1.0$ | $\leq 5.0$ | $\leq 5.0$ |
| (26) Definitions (see Section 17-302.200, F.A.C.) | | | | | | | |
| (27) Detergents | Milligrams/L | $\leq 0.5$ | $\leq 0.5$ | $\leq 0.5$ | $\leq 0.5$ | $\leq 0.5$ | $\leq 0.5$ |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) "ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.



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| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: | class IV | Class V |
|---|---|---|---|---|---|---|---|
| (28) 1,1-Dichloroethylene (1,1-dichloroethene) | Ml——— | ≤0.053 annual avg; ≤7.0 max | ≤3.2 annual avg. | ≤3.2 annual avg. | ≤3.2 annual avg. | | |
| (29) Dichloromethane (methylene chloride) | Micrograms/L | ≤4.65 annual avg. | ≤1,580 annual avg. | ≤1,580 annual avg. | ≤1,580 annual avg. | | |
| (30) 2,4-Dinitrotoluene | Micrograms/L | ≤0.11 annual avg. | ≤9.1 annual avg. | 19.1 annual avg. | ≤9.1 annual avg. | | |
| (31) Dissolved Oxygen | Milligrams/L | Shall not be less than 5.0. Normal daily and seasonal fluctuations above this level shall be maintained. | Shall not average less than 5.0 in a 24-hour period and shall never be less than 4.0. Normal daily and seasonal fluctuations above these levels shall be maintained. | Shall not be less than 5.0. Normal daily and seasonal fluctuations above these levels shall be maintained. | Shall not average less than 5.0 in a 24-hour period and shall never be less than 4.0. Normal daily and seasonal fluctuations above these levels shall be maintained. | Shall not average less than 4.0 in a 24-hour period and shall never be less than 3.0. | Shall not be less than 0.3, fifty percent of the time on an annual basis for flows greater than or equal to 250 cubic feet per second and shall never be less than 0.1. Normal daily and seasonal fluctuations above these levels shall be maintained. |
| (32) Dissolved Solids | Milligrams/L | ≤500 as a monthly avg.; ≤1,000 max | | | | | |
| (33) Fluorides | Milligrams/L | <1.5 | ≤1.5 | ≤10.0 | ≤5.0 | ≤10.0 | ≤10.0 |
| (34) "Free Froms" (see Minimum Criteria in Section 17-302.500, F.A.C.) | | | | | | | |
| (35) "General Criteria" (see Section 17-302.510, F.A.C. and individual criteria) | | | | | | | |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) "ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.

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| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (36) (a) Halomethanes (Total trihalomethanes) (total of bromoform, chlorodibromomethane, dichlorobromomethane, and chloroform). Individual halomethanes shall not exceed (b)1. to (b)5. below. | Micrograms/L | _ 100 | | | | | |
| (36) (b) 1. Halomethanes (individual): Bromoform | Micrograms/L | ≤ 4.3 annual avg. | ≤ 360 annual avg. | ≤ 360 annual avg. | ≤ 360 annual avg. | | |
| (36) (b) 2. Halomethanes (individual): Chlorodibromomethane | Micrograms/L | ≤ 0.41 annual avg. | ≤ 34 annual avg. | ≤ 34 annual avg. | ≤ 34 annual avg. | | |
| (36) (b) 3. Halomethanes (individual): Chloroform | Micrograms/L | ≤ 5.67 annual avg. | ≤ 470.8 annual avg. | ≤ 470.8 annual avg. | ≤ 470.8 annual avg. | | |
| (36) (b) 4. Halomethanes (individual): Chloromethane (methyl chloride) | Micrograms/L | ≤ 5.67 annual avg. | ≤ 470.8 annual avg. | ≤ 470.8 annual avg. | ≤ 470.8 annual avg. | | |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) "ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.

| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (36) (b) 5. Halomethanes (individual): Dichlorobromo-methane | Micrograms/L | ≤0.27 annual avg. | ≤22 annual avg. | ≤22 annual avg. | ≤22 annual avg. | | |
| (37) Hexachlorobu-tadiene | Micrograms/L | ≤0.45 annual avg. | ≤49.7 annual avg. | ≤49.7 annual avg. | ≤49.7 annual avg. | | |
| (38) Imbalance (see Nutrients) | | | | | | | |
| (39) Iron | Milligrams/L | ≤0.3 | ≤0.3 | ≤1.0 | ≤0.3 | ≤1.0 | |
| (40) Lead | Micrograms/L | Pb ≤ $e^{(1.273[\ln H]-4.705)}$; 50 max | ≤5.6 | Pb ≤ $e^{(1.273[\ln H]-4.705)}$; 50 max | ≤5.6 | ≤50 | ≤50 |
| (41) Manganese | Milligrams/L | | ≤0.1 | | | | |
| (42) Mercury | Micrograms/L | ≤0.012 | ≤0.025 | ≤0.012 | ≤0.025 | ≤0.2 | ≤0.2 |
| (43) Minimum Criteria (see Section 17-302. 500, F.A.C.) | | | | | | | |
| (44) Mixing Zones (See Section 17-4.246, F.A.C.) | | | | | | | |
| (45) Nickel | Micrograms/L | Ni ≤ $e^{(0.846[\ln H]+1.1645)}$ | ≤8.3 | Ni ≤ $e^{(0.846[\ln H]+1.1645)}$ | ≤8.3 | ≤100 | |
| (46) Nitrate | Milligrams/L as N | ≤10 or that concentration that exceeds the nutrient criteria | | | | | |
| (47) Nuisance Species | | Substances in concentrations which result in the dominance of nuisance species: none shall be present. | | | | | |

Notes: (1) 'Annual avg." means the maximum concentration at average annual flow conditions (see Sedion 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) 'ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.

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| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (48) (a) Nutrients | | The discharge of nutrients shall continue to be limited as needed to prevent violations of other standards contained in this chapter. Man-induced nutrient enrichment (total nitrogen or total phosphorus) shall be considered degradation in relation to the provisions of Sections 17-302.300, 17-302.700, and 17-4.242, F.A.C. | | | | | |
| (48) (b) Nutrients | | In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna. | | | | | |
| (49) Odor (also see Color, Minimum Criteria, Phenolic Compounds, etc.) | Threshold odor number | | Shall not exceed 24 at 60 degrees C as a daily average. | | | | Odor producing substances: only in such amounts as will not unreasonably interfere with use of the water for the designated purpose of this classification. |
| (50) (a) Oils and Greases | Milligrams/L | Dissolved or emulsified oils and greases shall not exceed 5.0 | Dissolved or emulsified oils and greases shall not exceed 5.0 | Dissolved or emulsified oils and greases shall not exceed 5.0 | Dissolved or emulsified oils and greases shall not exceed 5.0 | Dissolved or emulsified oils and greases shall not exceed 5.0 | Dissolved or emulsified oils and greases shall not exceed 10.0 |
| (50) (b) Oils and Greases | | No undissolved oil, or visible oil defined as iridescence, shall be present so as to cause taste or odor, or otherwise interfere with the beneficial use of waters. | | | | | |
| (51) Pesticides rod Herbicides | | | | | | | |
| (51) (a) 2,4,5-TP | Micrograms/L | ≤ 10 | | - 1 | | | |
| (51)(b)24-D | Micrograms/L | ≤ 100 | | | | | |
| (51) (c) Aldrin | Micrograms/L | ≤ .00013 annual avg.; 3.0 max | ≤ .00014 annual avg.; 1.3 max | ≤ .00014 annual avg.; 3.0 max | ≤ .00014 annual avg.; 1.3 max | | |
| (51) (d) Beta-hexachlorocyclo-hexane (b-BHC) | Micrograms/L | ≤ 0.014 annual avg. | ≤ 0.046 annual avg. | ≤ 0.046 annual avg. | ≤ 0.046 annual avg. | | |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) 'ln H' means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.

| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (51) (e) Chlordane | Micrograms/L | ≤0.00058 annual avg.; 0.0043 max | ≤0.00059 annual avg.; 0.004 max | ≤0.00059 annual avg.; 0.0043 max | ≤0.00059 annual avg.; 0.004 max | | |
| (51) (f) DDT | Micrograms/L | ≤0.00059 annual avg.; 0.001 max | ≤0.00059 annual avg.; 0.001 max | ≤0.00059 annual avg.; 0.001 max | ≤0.00059 annual avg.; 0.001 max | | |
| (51) (g) Demeton | Micrograms/L | ≤0.1 | ≤0.1 | ≤0.1 | ≤0.1 | | |
| (51) (h) Dieldrin | Micrograms/L | ≤0.00014 annual avg.; 0.0019 max | ≤0.00014 annual avg.; 0.0019 max | ≤0.00014 annual avg.; 0.0019 max | ≤0.00014 annual avg.; 0.0019 max | | |
| (51) (i) Endosulfan | Micrograms/L | ≤0.056 | ≤0.0087 | ≤0.056 | ≤0.0087 | | |
| (51) (j) Endrin | Micrograms/L | ≤0.0023 | ≤0.0023 | ≤0.0023 | ≤0.0023 | | |
| (51) (k) Guthion | Micrograms/L | ≤0.01 | ≤0.01 | ≤0.01 | ≤0.01 | | |
| (51) (l) Heptachlor | Micrograms/L | ≤0.00021 annual avg.; 0.0038 max | ≤0.00021 annual avg.; 0.0036 max | ≤0.00021 annual avg.; 0.0038 max | ≤0.00021 annual avg.; 0.0036 max | | |
| (51) (m) Lindane (g-benzene hexachloride) | Micrograms/L | ≤0.019 annual avg.; 0.08 max | ≤0.063 annual avg.; 0.16 max | ≤0.063 annual avg.; 0.08 max | ≤0.063. annual avg.; 0.16 max | | |
| (51) (n) Malathion | Micrograms/L | ≤0.1 | ≤0.1 | ≤0.1 | ≤0.1 | | |
| (51) (o) Methoxychlor | Micrograms/L | ≤0.03 | ≤0.03 | ≤0.03 | ≤0.03 | | |
| (51) (p) Mirex | Micrograms/L | ≤0.001 | ≤0.001 | ≤0.001 | ≤0.001 | | |
| (51) (q) Parathion | Micrograms/L | ≤0.04 | ≤0.04 | ≤0.04 | ≤0.04 | | |
| (51) (r) Toxaphene | Micrograms/L | ≤0.0002 | ≤0.0002 | ≤0.0002 | ≤0.0002 | | |
| (52) (a) pH (Class I and Class IV Waters) | Standard Units | Shall not vary more than one unit above or below natural background provided that the pH is not lowered to less than 6 units or raised above 8.5 units. If natural background is less than 6 units, the pH shall not vary below natural background or vary more than one unit above natural background. If natural background is higher than 8.5 units, the pH shall not vary above natural background or vary more than one unit below background. | | | | | |

*Notes:* (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) *"Max."* means the maximum no! lo be exceeded at any lime; (3) "In ti" means the natural logarithm of total hardness *expressed* as milligrams/L of $CaCO_3$.





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| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| 52) (b) pH (Class II Waters) | Standard Units | Shall not vary more than one unit above or below natural background of coastal waters as defined in Section 17-302.520(3)(b), F.A.C., or more than two-tenths unit above or below natural background of open waters as defined in Section 17-302.520(3)(f), F.A.C., provided that the pH is not lowered to less than 6.5 units or raised above 8.5 units. If natural background is less than 6.5 units, the pH shall not vary below natural background or vary more than one unit above natural background for coastal waters or more than two-tenths unit above natural background for open waters. If natural background is higher than 8.5 units, the pH shall not vary above natural background or vary more than one unit below natural background of coastal waters or more than two-tenths unit below natural background of open waters. | | | | | |
| 52) (c) pH (Class III Waters) | Standard Units | Shall not vary more than one unit above or below natural background of predominantly fresh waters and coastal waters as defined in Section 17-302.520(3)(b), F.A.C. or more than two-tenths unit above or below natural background of open waters as defined in Section 17-302.520(3)(f), F.A.C., provided that the pH is not lowered to less than 6 units in predominantly fresh waters, or less than 6.5 units in predominantly marine waters, or raised above 8.5 units. If natural background is less than 6 units, in predominantly fresh waters or 6.5 units in predominantly marine waters, the pH shall not vary below natural background or vary more than one unit above natural background of predominantly fresh waters and coastal waters, or more than two-tenths unit above natural background of open waters. If natural background is higher than 8.5 units, the pH shall not vary above natural background or vary more than one unit below natural background of predominantly fresh waters and coastal waters, or more than two-tenths unit below natural background of open waters. | | | | | |
| (52) (d) pH (Class V Waters) | Standard Units | Not lower than 5.0 nor greater than 9.5 except certain swamp waters which may be as low as 4.5. | | | | | |
| (53) (a) Phenolic Compounds: Total (Class I, Class II, Class III, and Class IV) | Micrograms/L | 1. Phenolic compounds as listed - Total chlorinated phenols, including trichlorophenols, and chlorinated cresols, shall not exceed 1.0 except as set forth in (b) 1. to (b) 6. below or unless higher values are shown not to be chronically toxic. Such higher values shall be approved in writing by the Secretary. In addition, the compounds listed below shall not exceed the limits specified for each compound. Phenolic compounds other than those produced by the natural decay of plant material, listed or unlisted, shall not taint the flesh of edible fish or shellfish or produce objectionable taste or odor in a drinking water supply. | | | | | |
| (53) (b) 1. Phenolic Compound: 2-chlorophenol | Micrograms/L | ≤ 120 | ≤ 400 | ≤ 400 | ≤ 400 | ≤ 400 | |
| (53) (b) 2. Phenolic Compound: 2,4-dichlorophenol | Micrograms/L | ≤ 93 | ≤ 790 | ≤ 790 | ≤ 790 | ≤ 790 | |
| (53) (b) 3. Phenolic Compound: 2,4-dinitrophenol | Milligrams/L | ≤ 0.0697 | ≤ 14.26 | ≤ 14.26 | ≤ 14.26 | ≤ 14.26 | |

Notes: (1) 'Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) 'ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.

| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (53) (b) 4. Phenolic Compound: 2,4,6-trichlorophenol | Micrograms/L | 52.1 annual avg. | ≤6.5 annual avg. | ≤6.5 annual avg. | ≤6.5 annual avg. | ≤6.5 annual avg. | |
| (53)(b) 5. Phenolic Compound: Penta-chlorophenol | | ≤30 max; ≤0.28 annual avg; $\leq e^{(1.005[pH]-5.29)}$ | ≤7.9 | ≤30 max; ≤8.2 annual avg; $\leq e^{(1.005[pH]-5.29)}$ | ≤7.9 | ≤30 | |
| P3) (b) 6. Phenolic Compound: Phenol | Milligrams/L | <21 | ≤4,600 | ≤4,600 | ≤4,600 | ≤4,600 | |
| (53) (c) Phenolic Compounds: Total (Class V) | Milligrams/L | | | | | | Phenolic compounds as listed: Chlorinated phenols, including trichlorophenols; chlorinated cresols; 2-chlorophenol; 2,4-di-chlorophenol; pentachlorophenol; and 2,4-dinitrophenol, shall not exceed 0.05. Phenol: shall not exceed 0.2. Phenolic compounds other than those produced by the natural decay of plant material, listed or unlisted, shall not taint the flesh of edible fish or shellfish. |
| (54) Phosphorus (Elemental) | Micrograms/L | | ≤0.1 | | ≤0.1 | | |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) "ln H" means the natural logarithm of total hardness *expressed* as milligrams/L of $CaCO_3$.



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| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (55) Phthalate Esters | Micrograms/L | ≤3.0 | | ≤3.0 | | | |
| (56) Polychlorinated Biphenyls (PCBs) | Micrograms/L | ≤0.000044 annual avg.; 0.014 max | ≤0.000045 annual avg.; 0.03 max | ≤0.000045 annual avg.; 0.014 max | ≤0.000045 annual avg.; 0.03 max | | |
| (57) (a) Polycyclic Aromatic Hydrocarbons (PAHs). Total of: Acenaphthylene; Benzo(a)anthracene; Benzo(a)pyrene; Benzo(b)fluoranthene; Benzo-(ghi)perylene; Benzo(k)fluoranthene; Chrysene; Dibenzo-(a,h)anthracene; Indeno(1,2,3-cd)pyrene; and Phenanthrene | Micrograms/L | ≤0.0028 annual avg. | ≤0.031 annual avg. | ≤0.031annual avg. | ≤0.031 annual avg. | | |
| (57) (b) 1. (Individual PAHs): Anthracene | Milligrams/L | ≤9.6 | ≤110 | ≤110 | ≤110 | | |
| (57) (b) 2. (Individual PAHs): Fluorene | Milligrams/L | ≤1.3 | ≤14 | ≤14 | ≤14 | | |
| (57) (b) 3. (Individual PAHs): Pyrene | Milligrams/L | ≤0.96 | ≤11 | ≤11 | ≤11 | | |
| (57) (b) 4. (Individual PAHs): Fluoranthene | Milligrams/L | ≤0.3 | ≤0.370 | ≤0.370 | ≤0.370 | | |
| (57) (b) 5. (Individual PAHs): Acenaphthene | Milligrams/L | ≤1.2 | ≤2.7 | ≤2.7 | ≤2.7 | | |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) "ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.

| Parameter | Units | Class I | Class II | Class III: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (58) (a) Radioactive substances (Combined radium 226 and 228) | Picocuries/L | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 |
| (58) (b) Radioactive substances (Gross alpha particle activity including radium 226, but excluding radon and uranium) | Picocuries/L | ≤15 | ≤15 | ≤15 | ≤15 | ≤15 | ≤15 |
| (59) Selenium | Micrograms/L | ≤5.0 | ≤71 | ≤5.0 | ≤71 | | |
| (60) Silver | Micrograms/L | ≤0.07 | ≤0.05 | ≤0.07 | ≤0.05 | | |
| (61) Specific Conductance (see Conductance, Specific, above) | | | | | | | |
| (62) Substances in concentrations which injure, are chronically toxic to, or produce adverse physiological or behavioral response in humans, plants, or animals | | None shall be present. | | | | | |
| (63) 1,1,2,2-Tetrachloroethane | Micrograms/L | ≤0.17 annual avg. | ≤10.8 annual avg. | ≤10.8 annual avg. | ≤10.8 annual avg. | | |
| (64) Tetrachloroethylene (1,1,2,2-tetrachloroethene) | Micrograms/L | ≤0.8 annual avg., ≤3.0 max | ≤8.85 annual avg. | ≤8.85 annual avg. | ≤8.85 annual avg. | | |
| (65) Thallium | Micrograms/L | 113 | ≤48 | ≤41 | ≤48 | | |

*Notes:* (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) "ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.



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| Parameter | Units | Clur I | Class II | Class 111: Fresh | Class III: Marine | Class IV | Class V |
|---|---|---|---|---|---|---|---|
| (66) Thermal Criteria (See Section 17-302.520) | | | | | | | |
| (67) Total Dissolved Gases | Percent of the saturation value for gases at the existing atmospheric and hydrostatic pressures | ≤ 110% of saturation value | ≤ 110% of saturation value | ≤ 110% of saturation value | ≤ 110% of saturation value | | |
| (68) Transparency | Depth of the compensation point for photosynthetic activity | Shall not be reduced by more than 10% as compared to the natural background value. | Shall not be reduced by more than 10% as compared to the natural background value. | Shall not be reduced by more than 10% as compared to the natural background value. | Shall not be reduced by more than 10% as compared to the natural background value. | | |
| (69) Trichloroethylene (trichloroethene) | Micrograms/L | ≤ 2.7 annual avg., ≤ 3.0 max | ≤ 80.7 annual avg. | ≤ 80.7 annual avg. | ≤ 80.7 annual avg. | | |
| (70) 1,1,1-Trichloroethane | Milligrams/L | ≤ 3.100 | | ≤ 173 | ≤ 173 | | |
| (71) Turbidity | Nephelometric Turbidity Units (NTU) | ≤ 29 above natural background conditions | ≤ 29 above natural background conditions | ≤ 29 above natural background conditions | ≤ 29 above natural background conditions | ≤ 29 above natural background conditions | ≤ 29 above natural background conditions |
| (72) Zinc | Micrograms/L | Zn ≤ $e^{(0.8473[\ln H]+0.7614)}$; ≤ 1,000 | ≤ 86 | Zn ≤ $e^{(0.8473[\ln H]+0.7614)}$; ≤ 1,000 | ≤ 86 | ≤ 1,000 | ≤ 1,000 |

Notes: (1) "Annual avg." means the maximum concentration at average annual flow conditions (see Section 17-4.020(1), F.A.C.); (2) "Max" means the maximum not to be exceeded at any time; (3) "ln H" means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$.

# Appendix G

## Reference Concentrations and Background Samples Analytical Report

**Summary Analytical Results for Shallow and Intermediate Background Groundwater Samples**
**June 1994**
**(All results in µg/l)**

| Parameter | FPDWS | Sample Number | | | | | |
|---|---|---|---|---|---|---|---|
| | | 01GS67 | 01GI68 | 01GS69 | 01GI70 | Mean Concentration | RC (2xMC) |
| Aluminum | 200[4] | *4240.0* | 146.5 U | *3270.0* | 109.0 U | *1941.4* | *3882.8* |
| Antimony | 6 | 15.1 U | 15.1 U | 15.1 U | 15.1U | *15.1* | *30.2* |
| Arsenic | 50 | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 | 2.8 |
| Barium | 2000 | 5.5 U | 6.75 U | 9.45 U | 4.75 U | 6.6 | 13.2 |
| Berylium | 4 | .55 U | .55 U | .55 U | .55 U | .55 | 1.1 |
| Cdmium | 5 | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 | 3.4 |
| Calcium | — | 17800.0 | 5670.0 | 6300.0 | 5350.0 | 8780.0 | 17560.0 |
| Chromium | 100 | 4.85 U | 2.6 U | 59.9 | 2.6 U | 17.5 | 35.0 |
| Cobalt | — | 2.05 U | 2.05 U | 2.05 U | 2.05 U | 2.05 | 4.1 |
| Copper | 1000* | 5.4 U | 5.4 U | 16.2 | 5.4 U | 8.1 | 16.2 |
| Iron | 300* | *677.0* | *942.0* | *1770.0* | 26.65 | *853.9* | *1707.8* |
| Lead | 15 | .8 U | .8 U | .8 U | .8 U | .8 | 1.6 |
| Magnesium | — | 795.0 U | 665.0 U | 1255.0 U | 3030.0 | 1436.3 | 2872.6 |
| Manganese | 50' | 6.7 | 8.9 | 26.7 | 1.55 U | 11.0 | 22.0 |
| Mercury | 2 | .1 U | .1 U | .1 U | .1 U | .1 | .2 |
| Nickel | 100 | 19.95 U | 19.95 U | 19.95 U | 19.95 U | 19.95 | 39.9 |
| Potassium | — | 13300.0 | 1275.0 U | 6560.0 | 3200.0 | 6083.8 | 12167.6 |
| Selenium | 50 | 1.95 U | 1.95 U | 1.95 U | 1.95 U | 1.95 | 3.9 |
| Silver | 100 | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 | |
| Sodium | 160,000 | 10700.0 | 8350.0 | 7830.0 | 9810.0 | 9172.5 | 18345.0 |

**Summary Analytical Results for Shallow and Intermediate Background Ground vater Samples**
**June 1994**
**(All results in µg/l)**

| Parameter | FPDWS | Sample Number | | | | Mean Concentration | RC (2xMC) |
|---|---|---|---|---|---|---|---|
| | | 01GS67 | 01GI68 | 01GS69 | 01GI70 | | |
| Thallium | 2 | 1.8 U | 1.8 U | 1.8 U | 1.8 | 1.8 | ***3.6*** |
| Vanadium | 49** | 7.9 | 3.75 U | 3.75 U | 3.75 U | 4.8 | 9.6 |
| Zinc | 5000* | 8.75 U | 3.9 U | 290 | 3.75 U | 76.60 | 153.20 |

**Notes:**

| | | |
|---|---|---|
| µg/l | = | Micrograms per liter. |
| U | = | Parameter not detectsd, value reported equals one-half detection limit. |
| RC | = | Reference concentration, cslculated os two times the mean concentrations (MC). |
| FPDWS | = | Florida and/or USEPA Primary Drinking Water Standerd (lower of the two) MCL. |
| * | = | Florida Secondary Drinking Wster Standard (FSDWS). |
| ** | = | Florida Groundwater Guidance Concentration. |
| Bold Italics | = | The reported value exceeds the FPDWS/USEPA or FSDWS MCL. |

| Summary Analytical Results for Background Soil Samples Site 1 | | | | |
|---|---|---|---|---|
| Parameter | Minimum Detected Concentration | Maximum Detected Concentration | Mean Concentration (MC) | Reference Concentration (2 X MC) |
| Metals (mg/kg) | | | | |
| | | | | |
| | | | | |
| | | | | |
| Beryllium | 0.20U | 0.21U | 0.21 | 0.41 |
| Cadmium | 0.50U | 0.50U | 0.50 | 1.00 |
| Calcium | 35.70 | 6740.00 | 456.18 | 912.37 |
| Chromium (total) | 2.40 | 11.80 | 3.07 | 6.13 |
| Cobalt | 0.90U | 0.95U | 0.93 | 1.87 |
| Copper | 5.10 | 5.10 | 2.87 | 5.74 |
| Cyanide | 0.25U | 0.26U | 0.26 | 0.52 |
| Iron | 205.00 | 9180.00 | 1372.5 | 2745.00 |
| Lead | 0.44 | 28.00 | 3.66 | 7.32 |
| Magnesium | 365.00 | 365.00 | 66.67 | 133.33 |
| Manganese | 1.70 | 63.70 | 10.68 | 21.36 |
| Mercury | 0.05U | 0.05U | 0.05 | 0.10 |
| Nickel | 3.10U | 3.25U | 3.19 | 6.38 |
| Potassium | 225 | 233 | 230.34 | 460.67 |
| Selenium | 0.30 | 0.31 | 0.31 | 0.62 |
| Silver | 1.00 | 1.05 | 1.04 | 2.07 |
| Sodium | 97.20 | 108.00 | 53.93 | 107.85 |
| Vanadium | 1.60 | 20.60 | 2.91 | 5.83 |
| Zinc | 3.30 | 29.00 | 8.43 | 16.87 |

Notes:

mg/kg = Milligrams per kilogram

U = Parameter not detected, value reported equals one-half the detection limit.

RC = Reference concentration. calculated as two times the mean concentration (MC).

# NAS PENSACOLA, BACKGROUND GROUNDWATER SAMPLES 1994 DATA



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------> | 001-G-GI68-00 | | 001-G-GI70-00 | | 001-G-GS67-00 | | 001-G-GS69-00 | | | |
| | ORIGINAL ID -----> | 01GI68 | | 01GI70 | | 01GS67 | | 01GS69 | | | |
| | LAB SAMPLE ID ---> | 622850 | | 622852 | | 622849 | | 622851 | | | |
| | SAMPLE DATE -----> | 07/01/94 | | 07/01/94 | | 07/01/94 | | 07/01/94 | | | |
| | MATRIX ----------> | water | | Water | | Uater | | Water | | | |
| | UNITS ----------> | UG/L | | UG/L | | UG/L | | UG/L | | | |
| Method | Parameter | 93820 | VAL | 93820 | VAL | 93820 | VAL | 93820 | VAL | | |
| METAL | Cyanide | NR | | NR | | NR | | NR | | | |
| METAL | Aluminum | 293. | U | 218. | U | 4240. | | 3270. | | | |
| METAL | Antimony | 30.2 | U | 30.2 | U | 30.2 | U | 30.2 | U | | |
| METAL | Arsenic | 2.8 | U | 2.8 | U | 2.8 | U | 2.8 | U | | |
| METAL | Barium | 13.5 | U | 9.5 | U | 11. | U | 18.9 | U | | |
| METAL | Beryllium | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | | |
| METAL | Cadmium | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | | |
| METAL | Calcium | 5670. | | 5350. | | 17800. | | 6300. | | | |
| METAL | Chromium | 5.2 | U | 5.2 | U | 9.7 | U | 59.9 | | | |
| METAL | Cobalt | 4.1 | U | 4.1 | U | 4.1 | U | 4.1 | U | | |
| YETAL | Copper | 10.8 | U | 10.8 | U | 10.8 | U | 16.2 | | | |
| YETAL | Iron | 942. | | 53.3 | U | 677. | | 1770. | | | |
| YETAL | Lead | 1.6 | UJ | 1.6 | UJ | 1.6 | UJ | 1.6 | UJ | | |
| METAL | Magnesium | 1330. | U | 3030. | | 1590. | U | 2510. | U | | |
| METAL | Manganese | 8.9 | | 3.1 | U | 6.7 | | 26.7 | | | |
| METAL | Mercury | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | | |
| METAL | Nickel | 39.9 | U | 39.9 | U | 39.9 | U | 39.9 | U | | |
| METAL | Potassium | 2550. | U | 3200. | | 13300. | | 6560. | | | |
| METAL | Selenium | 3.9 | U | 3.9 | U | 3.9 | U | 3.9 | UJ | | |
| ICTAL | Silver | 4. | U | 4. | U | 4. | U | 4. | U | | |
| METAL | Sodium | 8350. | | 9810. | | 10700. | | 7830. | | | |
| METAL | Thallium | 3.6 | UJ | 3.6 | UJ | 3.6 | UJ | 3.6 | UJ | | |
| METAL | Vanadium | 7.5 | U | 7.5 | U | 7.9 | | 7.5 | U | | |
| METAL | Zinc | 7.8 | U | 7.5 | U | 17.5 | U | 290. | | | |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | |
|---|---|---|---|---|---|---|
| SAMPLE ID -------> | D01-S-0067-17 | | | | | |
| ORIGINAL ID -----> | 01S6717 | | | | | |
| LAB SAMPLE ID ---> | 01S6717 | | | | | |
| SAMPLE DATE -----> | | | | | | |
| DATE ANALYZED ---> | 06/17/93 | | | | | |
| MATRIX ----------> | soil | | | | | |
| UNITS ----------> | mg/L | | | | | |
| Method Parameter | NOSDG VAL | | | | | |
| HEXACHROME 10-32-0 | 0.026 | | | | | |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------> | 001-S-0067-01 | | 001-S-0067-03 | | 001-S-0067-05 | | 001-S-0067-07 | | 001-S-0067-09 | | 001-S-0067-11 | |
| | ORIGINAL ID -----> | 01S6701 | | 01S6703 | | 01S6705 | | 01S6707 | | 01S6709 | | 01S6711 | |
| | LAB SAMPLE ID ---> | 553146 | | 553153 | | 553155 | | 553156 | | 553157 | | 553158 | |
| | SAMPLE DATE -----> | | | | | | | | | | | | |
| | MATRIX ----------> | Soil | | soil | | Soil | | Soil | | Soil | | soil | |
| | UNITS ----------> | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | 731446 | VAL | 731446 | VAL | 731446 | VAL | 731446 | VAL | 731446 | VAL | 731446 | VAL |
| METAL | Silver | 2. | U | 2. | U | 2. | U | 2.1 | U | 2.1 | U | 2.1 | U |
| METAL | Aluminum | 12400. | | 1800. | | 9050. | | 1320. | | 932. | | 574. | |
| METAL | Arsenic | 2.4 | J | 0.61 | UJ | 1.7 | J | 0.62 | UJ | 0.62 | UJ | 0.62 | UJ |
| METAL | Barium | 5.8 | | 1.6 | | 10.1 | | 1.8 | | 1.8 | | 1.2 | |
| METAL | Beryllium | 0.4 | U | 0.41 | U | 0.4 | U | 0.42 | U | 0.42 | U | 0.41 | U |
| METAL | Calcium | 421. | | 227. | | 6740. | | 113. | | 78.7 | | 67. | |
| METAL | Cadmium | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| METAL | Cyanide | 0.51 | U | 0.51 | U | 0.5 | U | 0.52 | U | 0.52 | U | 0.52 | U |
| METAL | Cobalt | 1.8 | U | 1.8 | U | 1.8 | U | 1.9 | U | 1.9 | U | 1.9 | U |
| METAL | Chromium | 11.8 | | 2. | U | 8. | | 2.1 | U | 2.1 | U | 2.1 | U |
| METAL | copper | 5.1 | | 5.1 | U | 5.1 | | 5.2 | U | 5.2 | U | 5.2 | U |
| METAL | Iron | 9180. | | 1450. | | 4790. | | 1140. | | 866. | | 525. | |
| METAL | Mercury | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| METAL | Potassium | 452. | U | 458. | U | 450. | U | 466. | U | 466. | U | 464. | U |
| METAL | Magnesium | 96.3 | U | 97.4 | U | 365. | | 99.2 | U | 99.2 | U | 98.8 | U |
| METAL | Manganese | 63.7 | | 3.7 | | 63.6 | | 3.8 | | 4.4 | | 5.7 | |
| METAL | Sodium | 116. | U | 87.5 | U | 112. | U | 111. | U | 135. | U | 98. | U |
| METAL | Nickel | 6.3 | U | 6.3 | U | 6.2 | U | 6.5 | U | 6.5 | U | 6.4 | U |
| METAL | Lead | 20.1 | | 1.3 | | 28. | | 1.2 | | 0.53 | | 0.41 | U |
| METAL | Antimony | 9.3 | U | 9.4 | U | 9.3 | U | 9.6 | U | 9.6 | U | 9.5 | U |
| METAL | Selenium | 0.61 | U | 0.61 | U | 0.6 | U | 0.62 | U | 0.62 | U | 0.62 | U |
| METAL | Thallium | 0.81 | U | 0.82 | U | 0.81 | U | 0.83 | U | 0.83 | U | 0.83 | U |
| METAL | Vanadium | 20.6 | | 2.6 | | 12.5 | | 2. | | 1.6 | | 1.5 | U |
| METAL | Zinc | 10.9 | | 3. | U | 29. | | 2.8 | U | 3.3 | | 7.2 | |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | SAMPLE ID -------: | 001-S-0067-13 | | 001-S-0067-17 | | 001-S-0067-19 | | 001-S-0067-21 | | 001-S-0067-23 | | 001-S-0069-01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ORIGINAL ID -----: | 01S6713 | | 01S6717 | | 01S6719 | | 01S6721 | | 01S6723 | | 01S6901 | |
| | LAB SAMPLE ID ---: | 553160 | | 553720 | | 553194 | | 553169 | | 553173 | | 552866 | |
| | SAMPLE DATE -----: | | | | | | | | | | | | |
| | MATRIX ----------: | Soil | | soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ----------: | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | 731446 | VAL | 314135 | VAL | 314135 | VAL | 731446 | VAL | 731446 | VAL | 731446 | VAL |
| METAL | Silver | 2.1 | U | 2.1 | U | 2.1 | U | 2.1 | U | 2.1 | U | 2. | U |
| METAL | Aluminum | 502. | | 473. | | 179. | | 156. | | 95.2 | | 1240. | |
| METAL | Arsenic | 0.62 | UJ | 0.7 | UJ | 0.62 | UJ | 0.62 | UJ | 0.62 | UJ | 0.61 | UJ |
| METAL | Barium | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 5.9 | |
| METAL | Beryllium | 0.42 | U | 0.41 | U | 0.42 | U | 0.41 | U | 0.41 | U | 0.41 | U |
| METAL | Calcium | 50.6 | | 47.7 | | 32.5 | U | 35.7 | | 36.5 | | 162. | |
| METAL | Cadmium | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| METAL | Cyanide | 0.52 | U | 0.51 | U | 0.52 | U | 0.51 | U | 0.52 | U | 0.51 | U |
| METAL | Cobalt | 1.9 | U | 1.9 | U | 1.9 | U | 1.9 | U | 1.9 | U | 1.8 | U |
| METAL | Chromium | 2.1 | U | 2.1 | U | 3.7 | | 2.1 | U | 2.1 | U | 2. | U |
| METAL | Copper | 5.2 | U | 5.1 | U | 5.2 | U | 5.1 | U | 5.2 | U | 5.1 | U |
| METAL | Iron | 482. | | 483. | | 449. | | 237. | | 225. | | 911. | |
| METAL | Mercury | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| METAL | Potassium | 464. | U | 460. | U | 466. | U | 460. | U | 463. | U | 453. | U |
| METAL | Magnesium | 98.9 | U | 97.9 | U | 99.2 | U | 97.9 | U | 98.7 | U | 96.6 | U |
| METAL | Manganese | 5.7 | | 5.6 | | 4.1 | | 1.7 | | 1.7 | | 3.7 | |
| METAL | Sodium | 93.9 | U | 88.8 | U | 73.8 | U | 108. | U | 101. | U | 101. | U |
| METAL | Nickel | 6.4 | U | 6.4 | U | 6.5 | U | 6.4 | U | 6.4 | U | 6.3 | U |
| METAL | Lead | 0.44 | | 1.1 | | 0.6 | | 0.41 | U | 0.41 | U | 6.7 | |
| HETAL | Antimony | 9.6 | U | 9.5 | R | 9.6 | R | 9.5 | U | 9.5 | U | 9.3 | U |
| METAL | Selenium | 0.62 | U | 0.62 | U | 0.62 | U | 0.62 | U | 0.62 | U | 0.61 | U |
| METAL. | Thallium | 0.83 | U | 0.82 | U | 0.83 | U | 0.82 | U | 0.83 | U | 0.81 | U |
| METAL | Vanadium | 1.5 | U | 1.4 | U | 1.5 | U | 1.4 | U | 1.5 | U | 2.5 | |
| METAL | Zinc | 7.3 | | 6. | | 29. | | 19.9 | | 17.2 | | 8.2 | |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | SAMPLE ID -------: | 001-S-0069-03 | | 001-S-0069-05 | | 001-S-0069-07 | | 001-S-0069-09 | | 001-S-0069-11 | | 001-S-0069-13 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ORIGINAL ID -----: | 01S6903 | | 01S6905 | | D1S6907 | | 01S6909 | | D1S6911 | | D1S6913 | |
| | LAB SAMPLE ID ---: | 552867 | | 552868 | | 552869 | | 552870 | | 552871 | | 552872 | |
| | SAMPLE DATE -----: | | | | | | | | | | | | |
| | MATRIX ----------: | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ----------: | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | | MG/KG | |
| Method | Parameter | 731446 | VAL | 731446 | VA | 731446 | VAL | 731446 | VAL | 731446 | VAL | 731446 | VAL |
| METAL | Silver | 2. | U | 2.1 | U | 2.1 | U | 2. | U | 2.1 | U | 2.1 | U |
| METAL | Aluminum | 1430. | | 1550. | | 991. | | 820. | | 293. | | 695. | |
| METAL | Arsenic | 0.61 | UJ | 0.62 | UJ | 0.62 | UJ | 0.61 | UJ | 0.62 | UJ | 0.62 | UJ |
| METAL | Barium | 3. | | 2.4 | | 1.7 | | 1.6 | | 1. | U | 1.8 | |
| METAL | Beryllium | 0.41 | U | 0.42 | U | 0.41 | U | 0.41 | U | 0.41 | U | 0.42 | U |
| METAL | Calcium | 71.4 | | 50.8 | | 32.3 | U | 31.9 | U | 32.3 | U | 45.4 | |
| METAL | Cadmium | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U | 1. | U |
| METAL | Cyanide | 0.51 | U | 0.52 | U | 0.52 | U | 0.51 | U | 0.52 | U | 0.52 | U |
| METAL | Cobalt | 1.8 | U | 1.9 | U | 1.9 | U | 1.8 | U | 1.9 | U | 1.9 | U |
| METAL | Chromium | 3.5 | | 2.4 | | 3.3 | | 3.5 | | 5.4 | | 4.6 | |
| METAL | Copper | 5.1 | U | 5.2 | U | 5.2 | U | 5.1 | U | 5.2 | U | 5.2 | U |
| METAL | Iron | 1010. | | 963. | | 697. | | 595. | | 205. | | 497. | |
| METAL | Mercury | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U |
| METAL | Potassium | 456. | U | 465. | U | 463. | U | 457. | U | 463. | U | 466. | U |
| METAL | Magnesium | 97.1 | U | 99. | U | 98.7 | U | 97.2 | U | 98.7 | U | 99.2 | U |
| METAL | Manganese | 3.7 | | 3.7 | | 4.6 | | 3.7 | | 3.4 | | 5.7 | |
| METAL | Sodium | 99.6 | U | 109. | U | 103. | U | 118. | U | 97.2 | | 91.3 | U |
| METAL | Nickel | 6.3 | U | 6.4 | U | 6.4 | U | 6.3 | U | 6.4 | U | 6.5 | U |
| METAL | Led | 2.9 | | 0.79 | | 0.56 | | 0.49 | | 0.41 | U | 0.59 | |
| METAL | Antimony | 9.4 | U | 9.6 | U | 9.5 | U | 9.4 | U | 9.5 | U | 9.6 | U |
| UETAL | Selenium | 0.61 | U | 0.62 | U | 0.62 | U | 0.61 | U | 0.62 | U | 0.62 | U |
| METAL | Thallium | 0.82 | U | 0.83 | U | 0.83 | U | 0.82 | U | 0.83 | U | 0.83 | U |
| METAL | Vanadium | 1.7 | | 1.6 | | 1.5 | U | 1.4 | U | 1.5 | U | 1.5 | U |
| METAL | Zinc | 4.6 | | 3.6 | U | 2. | U | 2.4 | U | 1.6 | U | 3. | U |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------> | 001-S-0067-01 | | 001-S-0067-03 | | 001-S-0067-05 | | 001-S-0067-07 | | 001-S-0067-09 | | 001-S-0067-11 | |
| | ORIGINAL ID -----> | 01S6701 | | 01S6703 | | 01S6705 | | 01S6707 | | 01S6709 | | 01S6711 | |
| | LAB SAMPLE ID ---> | 553077 | | 553078 | | 553079 | | 553080 | | 553081 | | 553106 | |
| | SAMPLE DATE -----> | | | | | | | | | | | | |
| | DATE EXTRACTED --> | 06/11/93 | | 06/11/93 | | 06/11/93 | | 06/11/93 | | 06/11/93 | | 06/11/93 | |
| | DATE ANALYZED ---> | 06/16/93 | | 06/16/93 | | 06/16/93 | | 06/16/93 | | 06/16/93 | | 06/16/93 | |
| | MATRIX ----------> | Soil | | Soil | | Soil | | Soil | | soil | | Soil | |
| | UNITS ----------> | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL |
| PEST | Heptachlor epoxide | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |
| PEST | Endosulfan sulfate | 3.3 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U | 3.4 | U |
| PEST | Aroclor-1260 | 33. | U | 34. | U | 33. | U | 34. | U | 34. | U | 34. | U |
| PEST | Aroclor-1254 | 33. | U | 34. | U | 33. | U | 34. | U | 34. | U | 34. | U |
| PEST | Aroclor-1221 | 67. | U | 68. | U | 68. | U | 69. | U | 68. | U | 70. | U |
| PEST | Aroclor-1232 | 33. | U | 34. | U | 33. | U | 34. | U | 34. | U | 34. | U |
| PEST | Aroclor-1248 | 33. | U | 34. | U | 33. | U | 34. | U | 34. | U | 34. | U |
| PEST | Aroclor-1016 | 33. | U | 34. | U | 33. | U | 34. | U | 34. | U | 34. | U |
| PEST | Aldrin | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |
| PEST | alpha-BHC | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |
| PEST | beta-BHC | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |
| PEST | delta-BHC | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |
| PEST | Endosulfan II | 3.3 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U | 3.4 | U |
| PEST | 4,4'-DDT | 0.55 | J | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U | 3.4 | U |
| PEST | alpha-Chlordane | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |
| PEST | gamma-Chlordane | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |
| PEST | Aroclor-1242 | 33. | U | 34. | U | 33. | U | 34. | U | 34. | U | 34. | U |
| PEST | Endrin ketone | 3.3 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U | 3.4 | U |
| PEST | gamma-BHC (Lindane) | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |
| PEST | Dieldrin | 0.45 | J | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U | 3.4 | U |
| PEST | Endrin | 3.3 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U | 3.4 | U |
| PEST | Methoxychlor | 17. | U | 17. | U | 17. | U | 18. | U | 17. | U | 18. | U |
| PEST | 4,4'-DDD | 3.3 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U | 3.4 | U |
| PEST | 4,4'-DDE | 0.14 | J | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U | 3.4 | U |
| PEST | Endrin aldehyde | 1.4 | J | 3.4 | U | 0.62 | J | 3.4 | U | 3.4 | U | 3.4 | U |
| PEST | Heptachlor | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |
| PEST | Toxaphene | 170. | U | 170. | U | 170. | U | 180. | U | 170. | U | 180. | U |
| PEST | Endosulfan I | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U | 1.8 | U |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID ------- | 001-S-0067-13 | | 001-S-0067-17 | | 001-S-0067-19 | | 001-S-0067-21 | | 001-S-0067-23 | | 001-S-0069-01 | |
| | ORIGINAL ID ----- | 01S6713 | | 01S6717 | | 0136719 | | 01S6721 | | 01S6723 | | 01S6901 | |
| | LAB SAMPLE ID --- | 553120 | | 553121 | | 553193 | | 553124 | | 553130 | | 552859 | |
| | SAMPLE DATE ----- | | | | | | | | | | | | |
| | DATE EXTRACTED -- | 06/11/93 | | 06/11/93 | | 06/11/93 | | 06/11/93 | | 06/11/93 | | 06/04/93 | |
| | DATE ANALYZED --- | 06/16/93 | | 06/16/93 | | 06/18/93 | | 06/16/93 | | 06/18/93 | | 06/19/93 | |
| | MATRIX ---------- | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ---------- | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 120 | VAL | 32 | VAL | 120 | VAL | 32 | VAL |
| PEST | Heptachlor epoxide | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 0.029 | J | 0.13 | J |
| PEST | Endosulfan sulfate | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.3 | U |
| PEST | Aroclor-1260 | 34. | U | 34. | U | 34. | U | 34. | U | 34. | U | 33. | U |
| PEST | Aroclor-1254 | 34. | U | 34. | U | 34. | U | 34. | U | 34. | U | 33. | U |
| PEST | Aroclor-1221 | 69. | U | 69. | U | 69. | U | 69. | U | 69. | U | 67. | U |
| PEST | Aroclor-1232 | 34. | U | 34. | U | 34. | U | 34. | U | 34. | U | 33. | U |
| PEST | Aroclor-1248 | 34. | U | 34. | U | 34. | U | 34. | U | 34. | U | 33. | U |
| PEST | Aroclor-1016 | 34. | U | 34. | U | 34. | U | 34. | U | 34. | U | 33. | U |
| PEST | Aldrin | 1.8 | U | 1.8 | U | 18 | U | 1.8 | U | 0.38 | J | 1.7 | U |
| PEST | alpha-BHC | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.7 | U |
| PEST | beta-BHC | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.7 | U |
| PEST | delta-BHC | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.7 | U |
| PEST | Endosulfan II | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.3 | U |
| PEST | 4,4'-DDT | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 2.2 | J |
| PEST | alpha-Chlordane | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.7 | U |
| PEST | gamma-Chlordane | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 0.059 | J | 0.14 | J |
| PEST | Aroclor-1242 | 34. | U | 34. | U | 34. | U | 34. | U | 34. | U | 33. | U |
| PEST | Endrin ketone | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.3 | U |
| PEST | gamma-BHC (Lindane) | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 0.43 | J | 1.7 | U |
| PEST | Dieldrin | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 1. | J | 0.53 | J |
| PEST | Endrin | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 1.1 | J | 3.3 | U |
| PEST | Methoxychlor | 18. | U | 18. | U | 18. | U | 18. | U | 18. | U | 17. | U |
| PEST | 4,4'-DDD | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.3 | U |
| PEST | 4,4'-DDE | 3.4 | U | 3.4 | U | 3.4 | U | 3.2 | U | 3.4 | U | 2.6 | J |
| PEST | Endrin aldehyde | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.3 | U |
| PEST | Heptachlor | 18 | U | 1.8 | U | 1.8 | U | 18 | U | 0.55 | J | 1.7 | U |
| PEST | Toxaphene | 180. | U | 180. | U | 180. | U | 180. | U | 180. | U | 170. | U |
| PEST | Endosulfan I | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.8 | U | 1.7 | U |

*** Validation Complete ***

# NAS PBNSACOLA, BACKGROUND SOIL SAMPLES 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------: | 001-S-0069-03 | | 001-S-0069-05 | | 001-S-0069-07 | | 001-S-0069-09 | | 001-S-0069-11 | | 001-S-0069-13 | |
| | ORIGINAL ID -----: | 01S6903 | | 01S6905 | | 01S6907 | | 01S6909 | | 01S6911 | | 01S6913 | |
| | LAB SAMPLE ID ---: | 552860 | | 552861 | | 552862 | | 552863 | | 552864 | | 552865 | |
| | SAMPLE DATE -----: | | | | | | | | | | | | |
| | DATE EXTRACTED --: | 06/04/93 | | 06/04/93 | | 06/04/93 | | 06/04/93 | | 06/04/93 | | 16/04/93 | |
| | DATE ANALYZED ---: | 06/11/93 | | 06/19/93 | | 06/19/93 | | 06/19/93 | | 06/19/93 | | 06/19/93 | |
| | MATRIX ----------: | soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ----------: | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL |
| PEST | Heptachlor epoxide | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U |
| PEST | Endosulfan sulfate | 3.3 | U | 3.4 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U |
| PEST | Aroclor-1260 | 33. | U | 34. | U | 34. | U | 33. | U | 34. | U | 34. | U |
| PEST | Aroclor-1254 | 33. | U | 34. | U | 34. | U | 33. | U | 34. | U | 34. | U |
| PEST | Aroclor-1221 | 68. | U | 68. | U | 69. | U | 67. | U | 70. | U | 68. | U |
| PEST | Aroclor-1232 | 33. | U | 34. | U | 34. | U | 33. | U | 34. | U | 34. | U |
| PEST | Aroclor-1248 | 33. | U | 34. | U | 34. | U | 33. | U | 34. | U | 34. | U |
| PEST | Aroclor-1016 | 33. | U | 34. | U | 34. | U | 33. | U | 34. | U | 34. | U |
| PEST | Aldrin | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U |
| PEST | alpha-BHC | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U |
| PEST | beta-BHC | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U |
| PEST | delta-BHC | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U |
| PEST | Endosulfan II | 3.3 | U | 0.23 | J | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U |
| PEST | 4,4'-DDT | 0.61 | J | 3.4 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U |
| PEST | alpha-Chlordane | 1.7 | U | 1.7 | U | 1.7 | U | 0.3 | J | 1.8 | U | 1.7 | U |
| PEST | gamma-Chlordane | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U |
| PEST | Aroclor-1242 | 33. | U | 34. | U | 34. | U | 33. | U | 34. | U | 34. | U |
| PEST | Endrin ketone | 3.3 | U | 3.4 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U |
| PEST | gamma-BHC (Lindane) | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U |
| PEST | Dieldrin | 3.3 | U | 0.39 | J | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U |
| PEST | Endrin | 3.3 | U | 0.28 | J | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U |
| PEST | Methoxychlor | 17. | U | 17. | U | 17. | U | 17. | U | 18. | U | 17. | U |
| PEST | 4,4'-DDD | 3.3 | U | 0.28 | U | 3.4 | U | 3.3 | U | 0.26 | J | 0.2 | U |
| PEST | 4,4'-DDE | 0.7 | J | 3.4 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U |
| PEST | Endrin aldehyde | 3.3 | U | 3.4 | U | 3.4 | U | 3.3 | U | 3.4 | U | 3.4 | U |
| PEST | Heptachlor | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U |
| PEST | Toxaphene | 170. | U | 170. | U | 170. | U | 170. | U | 180. | U | 170. | U |
| PEST | Endosulfan I | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 1.7 | U |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------> | 001-S-0067-01 | | 001-S-0067-03 | | 001-S-0067-05 | | 001-S-0067-07 | | 001-S-0067-09 | | 001-S-0067-11 | |
| | ORIGINAL ID -----> | 01S6701 | | 01S6703 | | 01S6705 | | 01S6707 | | 01S6709 | | 13166711 | |
| | LAB SAMPLE ID ---> | 553077 | | 553078 | | 553079 | | 553080 | | 553081 | | 553106 | |
| | SAMPLE DATE -----> | | | | | | | | | | | | |
| | DATE EXTRACTED --> | 06/14/93 | | 06/14/93 | | 06/14/93 | | 06/14/93 | | 06/14/93 | | 06/14/93 | |
| | DATE ANALYZED ---> | 06/17/93 | | 06/17/93 | | 06/17/93 | | 06/17/93 | | 06/18/93 | | 06/18/93 | |
| | MATRIX ----------> | | | Soil | | Soil | | Soil | | soil | | Soil | |
| | UNITS ----------> | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL |
| SVOA | 4-Nitroaniline | 810. | U | 820. | U | 810. | U | 830. | U | 830. | U | 830. | U |
| SVOA | 4-Nitrophenol | 810. | U | 820. | U | 810. | U | 830. | U | 830. | U | 830. | U |
| SVOA | 4-Bromophenyl-phenylether | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2,4-Dimethylphenol | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 4-Methylphenol | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 1,4-Dichlorobenzene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 4-Chloroaniline | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Phenol | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | bis(2-Chloroethyl)ether | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | bis(2-Chloroethoxy)methane | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 330. | U | 340. | U | 87. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Di-n-octylphthalate | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Hexachlorobenzene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Anthracene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 1,2,4-Trichlorobenzene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2,4-Dichlorophenol | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2,4-Dinitrotoluene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Pyrene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Dimethylphthalate | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Dibenzofuran | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Benzo(g,h,i)perylene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Benzo(b)fluoranthene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Fluoranthene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Benzo(k)fluoranthene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Acenaphthylene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Chrysene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Bis(2-chloroisopropyl)ether | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SWA | Benzo(a)pyrene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2,4-Dinitrophenol | 810. | U | 820. | U | 810. | U | 830. | U | 830. | U | 830. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 810. | U | 820. | U | 810. | U | 830. | U | 830. | U | 830. | U |
| SVOA | Dibenzo(a,h)anthracene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 1,3-Dichlorobenzene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Benzo(a)anthracene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 4-Chloro-3-methylphenol | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2,6-Dinitrotoluene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SWA | N-Nitroso-di-n-propylamine | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------: | 001-S-0067-01 | | 001-S-0067-03 | | 001-S-0067-05 | | 001-S-0067-07 | | 001-S-0067-09 | | 001-S-0067-11 | |
| | ORIGINAL ID -----: | 01S6701 | | 01S6703 | | 01S6705 | | 01S6707 | | 01S6709 | | 01S6711 | |
| | LAB SAMPLE ID ---: | 553077 | | 553078 | | 553079 | | 553080 | | 553081 | | 553106 | |
| | SAMPLE DATE -----: | | | | | | | | | | | | |
| | DATE EXTRACTED --: | 06/14/93 | | 06/14/93 | | 06/14/95 | | 06/14/93 | | 06/14/93 | | 06/14/93 | |
| | DATE ANALYZED ---: | 06/17/93 | | 06/17/93 | | 06/17/93 | | 06/17/93 | | 06/18/93 | | 06/18/93 | |
| | MATRIX ----------: | Soil | | Soil | | Soil | | Soil | | soil | | Soil | |
| | UNITS ----------: | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL |
| SVOA | Hexachloroethane | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| EVOA | 4-Chlorophenyl-phenylether | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| EVOA | Hexechlorocyclopentadiene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Isophorone | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Acenaphthene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Diethylphthalate | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Di-n-butylphthalate | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Phenanthrene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Butylbenzylphthalate | 330. | U | 340. | U | 51. | U | 340. | U | 340. | U | 340. | U |
| SVOA | N-Nitrosodiphenylamine | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Fluorene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Carbazole | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Hexechlorobutadiene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Pentachlorophenol | 610. | U | 820. | U | 810. | U | 830. | U | 830. | U | 830. | U |
| SVOA | 2,4,6-Trichlorophenol | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2-Nitroaniline | 810. | U | 820. | U | 810. | U | 830. | U | 830. | U | 830. | U |
| SVOA | 2-Nitrophenol | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | Naphthalene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2-Methylnaphthalene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2-Chloronaphthalene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 3,3'-Dichlorobenzidine | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2-Methylphenol | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 1,2-Dichlorobenzene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2-Chlorophenol | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 2,4,5-Trichlorophenol | 810. | U | 820. | U | 810. | U | 830. | U | 830. | U | 830. | U |
| SVOA | Nitrobenzene | 330. | U | 340. | U | 330. | U | 340. | U | 340. | U | 340. | U |
| SVOA | 3-Nitroaniline | 810. | U | 820. | U | 810. | U | 830. | U | 830. | U | 830. | U |
| SVOA | 1,1-Dichloroethane | | | | | | | | | | | | |

# NAS PENSACOLA, BACKGROUND SOIL SAMPLES 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------> | 001-S-0067-13 | | 001-S-0067-17 | | 001-S-0067-19 | | 001-S-0067-21 | | 001-S-0067-23 | | 001-S-0069-01 | |
| | ORIGINAL ID -----> | 01S6713 | | 01S6717 | | 01S6719 | | 0156721 | | 01S6723 | | 01S6901 | |
| | LAB SAMPLE ID ---> | 553120 | | 553121 | | 553193 | | 553124 | | 553130 | | 552859 | |
| | SAMPLE DATE -----> | | | | | | | | | | | | |
| | DATE EXTRACTED --> | 06/14/93 | | 06/14/93 | | 06/11/93 | | 06/14/93 | | 06/11/93 | | 06/04/93 | |
| | DATE ANALYZED ---> | 06/18/93 | | 06/18/93 | | 06/16/93 | | 06/18/93 | | 06/16/93 | | 06/09/93 | |
| | MATRIX ----------> | soil | | soil | | Soil | | Soil | | soil | | Soil | |
| | UNITS ----------> | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 120 | VAL | 32 | VAL | 120 | VAL | 32 | VAL |
| SVOA | 4-Nitroaniline | 830. | U | 820. | U | 830. | U | 820. | U | 820. | U | 800. | U |
| SVOA | 4-Nitrophenol | 830. | U | 820. | U | 830. | U | 820. | U | 820. | U | 800. | U |
| SVOA | 4-Bromophenyl-phenylether | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2,4-Dimethylphenol | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 4-Methylphenol | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 1,4-Dichlorobenzene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 4-Chloroaniline | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Phenol | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | bis(2-Chloroethyl)ether | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | bis(2-Chloroethoxy)methane | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Di-n-octylphthalate | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Hexachlorobenzene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Anthracene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 1,2,4-Trichlorobenzene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2,4-Dichlorophenol | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2,4-Dinitrotoluene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Pyrene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Dimethylphthalate | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Dibenzofuran | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Benzo(g,h,i)perylene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Benzo(b)fluoranthene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Fluoranthene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Benzo(k)fluoranthene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Acenaphthylene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Chrysene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Bis(2-chloroisopropyl)ether | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Benzo(a)pyrene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2,4-Dinitrophenol | 830. | U | 820. | U | 830. | U | 820. | U | 820. | U | 800. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 830. | U | 820. | U | 830. | U | 820. | U | 820. | U | 800. | U |
| SVOA | Dibenzo(a,h)anthracene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 1,3-Dichlorobenzene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Benzo(a)anthracene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 4-Chloro-3-methylphenol | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2,6-Dinitrotoluene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | N-Nitroso-di-n-propylamine | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------: | 001-S-0067-13 | | 001-S-0067-17 | | 001-S-0067-19 | | 001-S-0067-21 | | 001-S-0067-23 | | 001-S-0069-01 | |
| | ORIGINAL ID -----: | 0186713 | | 01S6717 | | 01S6719 | | 01S6721 | | 01S6723 | | 01S6901 | |
| | LAB SAMPLE ID ---: | 553120 | | 553121 | | 553193 | | 553124 | | 553130 | | 552859 | |
| | SAMPLE DATE -----: | | | | | | | | | | | | |
| | DATE EXTRACTED --: | 06/14/93 | | 06/14/93 | | 06/11/93 | | 06/14/93 | | 06/11/93 | | 06/04/93 | |
| | DATE ANALYZED ---: | 06/18/93 | | 06/18/93 | | 06/16/93 | | 06/18/93 | | 06/16/93 | | 06/09/93 | |
| | MATRIX ----------: | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ----------: | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 120 | VAL | 32 | VAL | 120 | VAL | 32 | VAL |
| SVOA | Hexachloroethane | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 4-Chlorophenyl-phenylether | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Hexachlorocyclopentadiene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Isophorone | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Acenaphthene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Diethylphthalate | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Di-n-butylphthalate | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Phenanthrene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Butylbenzylphthalate | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | N-Nitrosodiphenylamine | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Fluorene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Carbazole | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Hexachlorobutadiene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Pentachlorophenol | 830. | U | 820. | U | 830. | U | 820. | U | 820. | U | 800. | U |
| SVOA | 2,4,6-Trichlorophenol | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2-Nitroaniline | 830. | U | 820. | U | 830. | U | 820. | U | 020. | U | 800. | U |
| SVOA | 2-Nitrophenol | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | Naphthalene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2-Methylnaphthalene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2-Chloronaphthalene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 3,3'-Dichlorobenzidine | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2-Methylphenol | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 1,2-Dichlorobenzene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2-Chlorophenol | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 2,4,5-Trichlorophenol | 830. | U | 820. | U | 830. | U | 820. | U | 820. | U | 800. | U |
| SVOA | Nitrobenzene | 340. | U | 340. | U | 340. | U | 340. | U | 340. | U | 330. | U |
| SVOA | 3-Nitroaniline | 830. | U | 820. | U | 830. | U | 820. | U | 820. | U | 800. | U |
| SVOA | 1,1-Dichloroethane | | | | | | | | | | | | |

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------: | 001-S-0069-03 | | )01-S-0069-05 | | )01-S-0069-07 | | 001-S-0069-09 | | 001-S-0069-11 | | )01-S-0069-13 | |
| | ORIGINAL ID -----: | 01S6903 | | )1S6905 | | )1S6907 | | 01S6909 | | 01S6911 | | )1S6913 | |
| | LAB SAMPLE ID ---: | 552860 | | 552861 | | 552862 | | 552863 | | 552864 | | 552865 | |
| | SAMPLE DATE -----: | | | | | | | | | | | | |
| | DATE EXTRACTED --: | 06/04/93 | | 36/04/93 | | )6/04/93 | | 06/04/93 | | 06/04/93 | | 16/04/93 | |
| | DATE ANALYZED ---: | 06/09/93 | | 36/09/93 | | 16/09/93 | | 06/09/93 | | )6/09/93 | | 36/09/93 | |
| | MATRIX ----------: | soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ----------: | UG/KG | | JG/KG | | JG/KG | | UG/KG | | UG/KG | | JG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 52 | VAL | 32 | VAL | 32 | VAL | 12 | VAL |
| SVOA | 4-Nitroaniline | 810. | U | 820. | U | 820. | U | 810. | U | 820. | U | 820. | U |
| SVOA | 4-Nitrophenol | 810. | U | 820. | U | 820. | U | 810. | U | 820. | U | 820. | U |
| SVOA | 4-Bromophenyl-phenylether | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 2,4-Dimethylphenol | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 4-Methylphenol | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 1,4-Dichlorobenzene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 4-Chloroaniline | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Phenol | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | bis(2-Chloroethyl)ether | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | bis(2-Chloroethoxy)methane | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | bis(2-Ethylhexyl)phthalate (BEHP) | 46. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Di-n-octylphthalate | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Hexachlorobenzene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Anthracene | 330. | U | 340. | U | 346. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 1,2,4-Trichlorobenzene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 2,4-Dichlorophenol | 330. | U | 340. | U | 340. | U | 336. | U | 340. | U | 340. | U |
| SVOA | 2,4-Dinitrotoluene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Pyrene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Dimethylphthalate | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Dibenzofuran | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Benzo(g,h,i)perylene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Indeno(1,2,3-cd)pyrene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Benzo(b)fluoranthene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Fluoranthene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Benzo(k)fluoranthene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Acenaphthylene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Chrysene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Bis(2-chloroisopropyl)ether | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Benzo(a)pyrene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 2,4-Dinitrophenol | 810. | U | 820. | U | 820. | U | 810. | U | 820. | U | 820. | U |
| SVOA | 4,6-Dinitro-2-methylphenol | 810. | U | 820. | U | 820. | U | 810. | U | 820. | U | 820. | U |
| SVOA | Dibenzo(a,h)anthracene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 1,3-Dichlorobenzene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Benzo(a)anthracene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 4-Chloro-3-methylphenol | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 2,6-Dinitrotoluene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | N-Nitroso-di-n-propylamine | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------> | 001-S-0069-03 | | 001-S-0069-05 | | 001-S-0069-07 | | 001-S-0069-09 | | 001-S-0069-11 | | 001-S-0069-13 | |
| | ORIGINAL ID -----> | 01S6903 | | 01S6905 | | 01S6907 | | 01S6909 | | 01S6911 | | 01S6913 | |
| | LAB SAMPLE ID ---> | 552860 | | 552861 | | 552862 | | 552863 | | 552864 | | 552865 | |
| | SAMPLE DATE -----> | | | | | | | | | | | | |
| | DATE EXTRACTED --> | 06/64/93 | | 06/04/93 | | 06/04/93 | | 06/04/93 | | 06/04/93 | | 06/04/93 | |
| | DATE ANALYZED ---> | 06/09/93 | | 06/09/93 | | 06/09/93 | | 06/09/93 | | 06/09/93 | | 06/09/93 | |
| | MATRIX ----------> | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ----------> | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL |
| SVOA | Hexachloroethane | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 4-Chlorophenyl-phenylether | 330. | U | 340. | U | 340. | U | 330, | U | 340. | U | 340. | U |
| SVOA | Hexachlorocyclopentadiene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Isophorone | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SWA | Acenaphthene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Diethylphthalate | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Di-n-butylphthalate | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Phenanthrene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SWA | Butylbenzylphthalate | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | N-Nitrosodiphenylamine | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Fluorene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SWA | Carbazole | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SWA | Hexachlorobutadiene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SWA | Pentachlorophenol | 810. | U | 820. | U | 820. | U | 810. | U | 820. | U | 820. | U |
| SVOA | 2,4,6-Trichlorophenol | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 2-Nitroaniline | 810. | U | 820. | U | 820. | U | 810. | U | 820. | U | 820. | U |
| SWA | 2-Nitrophenol | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | Naphthalene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 2-Methylnaphthalene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 2-Chloronaphthalene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 3,3'-Dichlorobenzidine | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 2-Methylphenol | 330. | U | 340. | U | 340. | U | 330. | U | 346. | U | 340. | U |
| SWA | 1,2-Dichlorobenzene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 2-Chlorophenol | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SWA | 2,4,5-Trichlorophenol | 810. | U | 820. | U | 820. | U | 810. | U | 820. | U | 820. | U |
| SVOA | Nitrobenzene | 330. | U | 340. | U | 340. | U | 330. | U | 340. | U | 340. | U |
| SVOA | 3-Nitroaniline | 810. | U | 820. | U | 820. | U | 810. | U | 820. | U | 820. | U |
| SVOA | 1,1-Dichloroethane | | | | | | | | | | | | |

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------> | 001-S-0067-01 | | 001-S-0067-03 | | 001-S-0067-05 | | 001-S-0067-07 | | 001-S-0067-09 | | 001-S-0067-11 | |
| | ORIGINAL ID -----> | 01S6701 | | 01S6703 | | 01S6705 | | 01S6707 | | 01S6709 | | 01S6711 | |
| | LAB SAMPLE ID ---> | 553077 | | 553078 | | 553079 | | 553080 | | 553081 | | 553106 | |
| | SAMPLE DATE -----> | | | | | | | | | | | | |
| | DATE EXTRACTED --> | 06/03/93 | | 06/03/93 | | 06/03/93 | | 06/03/93 | | 06/03/93 | | 06/03/93 | |
| | DATE ANALYZED ---> | 06/07/93 | | 06/07/93 | | 06/07/93 | | 06/07/93 | | 06/07/93 | | 06/07/93 | |
| | MATRIX ----------> | Soil | | Soil | | Soil | | Soil | | Soil | | Soil | |
| | UNITS ----------> | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL |
| VOA | Ethylbenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Styrene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | trans-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Toluene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Dibromochloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Tetrachloroethylene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Xylene (total) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Hexanone | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Acetone | 10. | U | 7. | U | 11. | U | 17. | U | 15. | U | 13. | U |
| VOA | Chloroform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Benzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Vinyl chloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Methylene chloride | 8. | U | 8. | U | 6. | U | 6. | U | 10. | U | 9. | U |
| VOA | Carbon disulfide | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromoform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromodichloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethylene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Butanone (MEK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Trichloroethylene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------> | 001-S-0067-13 | | 001-S-0067-17 | | 001-S-0067-19 | | 001-S-0067-21 | | 001-S-0067-23 | | 001-S-0069-01 | |
| | ORIGINAL ID -----> | 01S6713 | | 01S6717 | | 01S6719 | | 01S6721 | | 01S6723 | | 01S6901 | |
| | LAB SAMPLE ID ---> | 553120 | | 553121 | | 553193 | | 553124 | | 553130 | | 552859 | |
| | SAMPLE DATE -----> | | | | | | | | | | | | |
| | DATE EXTRACTED --> | 06/03/93 | | 06/03/93 | | | | 06/03/93 | | | | 06/03/93 | |
| | DATE ANALYZED ---> | 06/07/93 | | 06/09/93 | | 06/04/93 | | 06/07/93 | | 06/04/93 | | 06/03/93 | |
| | MATRIX ----------> | Soil | | Soil | | Soil | | Soil | | soil | | Soil | |
| | UNITS ----------> | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 120 | VAL | 32 | VAL | 120 | VAL | 32 | VAL |
| VOA | Ethylbenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Styrene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | trans-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Toluene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Dibromochloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Tetrachloroethylene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Xylene (total) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| MA | 2-Hexanone | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Acetone | 21. | U | 27. | U | 45. | U | 22. | U | 25. | U | 10. | U |
| VOA | Chloroform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| MA | Benzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| MA | Chloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Vinyl chloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Methylene chloride | 10. | U | 26. | U | 16. | U | 16. | U | 22. | U | 11. | U |
| VOA | Carbon disulfide | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromoform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromodichloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethylene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| MA | 2-Butanone (MEK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Trichloroethylene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |

*** Validation Complete ***

# NAS PENSACOLA, BACKGROUND
## SOIL SAMPLES
## 1993 DATA



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE ID -------> | 001-5-0069-03 | | 001-S-0069-05 | | 001-S-0069-07 | | DO1-S-0069-09 | | 001-S-0069-11 | | D01-S-0069-13 | |
| | ORIGINAL ID -----> | 01S6903 | | 01S6905 | | 01S6907 | | 01S6909 | | 01S6911 | | 01S6913 | |
| | LAB SAMPLE ID ---> | 552860 | | 552861 | | 552862 | | 552863 | | 552864 | | 552865 | |
| | SAMPLE DATE -----> | | | | | | | | | | | | |
| | DATE EXTRACTED --> | 06/03/93 | | 06/03/93 | | 06/03/93 | | 06/03/93 | | 06/03/93 | | 06/03/93 | |
| | DATE ANALYZED ---> | 06/03/93 | | 06/03/93 | | 06/03/93 | | 06/03/93 | | 06/03/93 | | 06/03/93 | |
| | MATRIX ----------> | Soil | | Soil | | Soil | | Soil | | soil | | Soil | |
| | UNITS ----------> | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| Method | Parameter | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL | 32 | VAL |
| VOA | Ethylbenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Styrene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | cis-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | trans-1,3-Dichloropropene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 4-Methyl-2-Pentanone (MIBK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Toluene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chlorobenzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Dibromochloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Tetrachloroethylene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Xylene (total) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloroethene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Carbon tetrachloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Hexanone | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Acetone | 86. | U | 38. | U | 28. | U | 24. | U | 42. | U | 35. | U |
| VOA | Chloroform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Benzene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,1-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromomethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Chloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Vinyl chloride | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Methylene chloride | 12. | U | 29. | U | 20. | U | 16. | U | 17. | U | 28. | U |
| VOA | Carbon disulfide | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromoform | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Bromodichloromethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1-Dichloroethylene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,2-Dichloropropane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 2-Butanone (MEK) | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2-Trichloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | Trichloroethylene | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |
| VOA | 1,1,2,2-Tetrachloroethane | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U | 10. | U |

*** Validation Complete ***