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REMEDIAL INVESTIGAT.
OPERABLE UNIT 13 — SITES 8 AND 24
NAVAL AIR STATION
PENSACOLA, FLORIDA

Prepared for:

Comprehensive Long-Term
Environmental Action Navy (Clem)
Naval Air Station
Pensacola, Florida

Prepared by:

EnSafe/Allen & Hoshall
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June 20, 1997

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REMEDIAL INVESTIGATION REPORT
OPERABLE UNIT 13 – SITES 8 AND 24
NAVAL AIR STATION
PENSACOLA, FLORIDA

SOUTHNAVFACENGCOM

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Comprehensive Long-Term
Environmental Action Navy (Clean)
Naval Air Station
Pensacola, Florida

Prepared by:

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The Contractor, EnSafe/Allen & Hoshall, hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0318 is complete, accurate, and complies with all requirements of the contract.

Date: June 20, 1997
Signature:
Name: Brian Caldwell.
Title: Task Order Manager

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19. Abstract

A remedial investigation (RI) was performed for Operable Unit 13, which includes Site 8 — the Rifle Range Disposal Area, and Site 24 — the dichloro-diphenyl-trichloroethane (DDT) Mixing Area, at Naval Air Station (NAS) Pensacola. The RI was performed to determine the source, nature, and extent of soil and groundwater contamination. The RI also was conducted to evaluate the risk to human health and the environment from on site contaminated media through the baseline risk assessment (BRA) process. Analytical data generated from the RI were compared to specific State of Florida and/or federal standards and risk-based guidance concentrations. These standards and concentrations, previously agreed upon by the Tier I Partnering Team, were designated as Preliminary Remediation Goals (PRGs).

Sites 8 and 24 border the eastern side of John Tower Road, southeast of the intersection of John Tower and Taylor roads in the center of the installation. Site 8 is reported to have been immediately south of Site 24 and at the current location of Building 356 1. Various solid wastes and dry refuse were disposed of in trenches and burned at this location during the late 1950s and early 1960s. The waste disposal and later construction activit ies have disturbed the upper several feet of soil across the site. Charred metal, glass, and plastic fragments were occasionally encountered in the unsaturated subsurface soil at Sites 8 and 24. From the early 1950s until the early 1960s, Site 24 was used as a location to mix DDT with diesel fuel for mosquito control. DDT was aerially applied for at least 10 years at NAS Pensacola to control mosquito outbreaks and was reported to have been spilled in the mixing area while being transferred from drums to spray tanks.

Inorganic and organic parameters exceeding PRGs were detected in Site 8 soil samples. Barium, cadmium, and lead subsurface exceedances a t boring 08S01 are suspected to be associated with past waste disp osal. However, aluminum and iron surface soil exceedances are attributable to the red clayey road base fill beneath the asphalt pavement, Most arsenic surface soil PRG exceedances were below the facility specific NAS Pensacola reference concentration (RC) for arsenic, indicating they represent background conditions at the site. The few slight arsenic RC exceedances are also attributable to background condi tions, and/or the red clayey road base beneath the asphalt.

All organic soil exceedances at Site 8 were detected in samples from the site's northern portion. The single semivolatile organic compound (SVOC) exceedance, ami other nonexceedance SVOC detections in surface soil, are suspected to be associated with fragments of the overlying asphalt in the surficial interval. Pesticide soil exceedances (dieldrin and aldrin) detected in samples collected around the building are attributable to either past waste disposal ai the site, or the previous handling of pesticide rinsates at Building 3561. However, all soil exceedance locations are paved with asphalt.

No organic PRG exceedances were detected in Site 8 groundwater sa mples. Only cadmium, manganese, and an isolated lead concentration exceeded PRGs and RCs in site groundwater. All exceedances occurred in samples from the site's north and northeast portion, extending toward the cemetery. This distribution is consistent with past disposal of metallic-alloy aircraft refuse or other metallic material around Building 3561's current location, and the site's north-northeasterly shallow groundwater flow. The extent of shallow groundwater impact from cadmium does extend tu Site 24, but does not extend beyond the OU13 downgradient boundary.

Inorganic soil exceedances (aluminum, arsenic, iron, and manganese) were limited to surface soil at Site 24, Aluminum, iron, and manganese commonly occur as "essential nutrients" in fertilizers; arsenic-based compounds are common ingredients of herbicides and pesticides. Because the site is mostly a maintained grass field, exceedances in maintained areas are attributable to routine herbicide, fertilizer, and pesticide application. The slight inorganic PRG/RC exceedances in the site's southern portion are attributable to background conditions at NAS Pensaco la, and/or the red clayey road base fill beneath the asphalt and crushed shell pavement.

Exceedances of the pesticides dieldrin and heptachlor e poxide in surface and subsurface soil samples at Site 24 are consistent with past routine use of these materials. Polychlorinated biphenyls (PCBs) and SVOCs detected in a few surface soil sample locations at the site's western margin are suspected to be the result of past waste oil application for dust control along previously unpaved John Tower Road.

PRG and RC exceedances of iron and manganese detected in Site 24 shallow groundwater can be attributed to fertilizer application, which commonly c ontains water-soluble forms of these inorganics as essential nutrients. Metal fragments were found in t he subsurface soil north of Building 3678, indicating that Site 8 fill activities extended, or have been reworked, onto Site 24. Based on this evidence, sporadic antimony, cadmium, nickel, and thallium exceedances in shallow groundwater *can* be attributed to metal-alloy debris disposal at Site 8 and/or 24. Relatively low chlorinated solvent volatile organic compound concentrations slightly exceeding PRGs in shallow Site 24 groundwater a r t also suspected to be t he result of past disposal activities at Site 8 and/or 24. The single dieldrin groundwater exceedance at Site 24 is near dieldrin s oil exceedance locations, indicating that soil concentrations have leached to groundwater in a limited area. However, the extent of all organic PRG exceedances is limited to the Site 24 area. With the exception of manganese and thallium, inorganic PRG and/or RC exceedances are limited to the OU13 area.

Transport of parameters detected at Sites 8 a nd 24 is generally downward from surface soil through subsurface soil to groundwater. Shallow groundwater moves generally north-northeastward across the combined Sites 8 and 24 area. The primary receiving body of site impact is the surficial zone of the Sand-and-Gravel Aquifer. However, it is not used as a water-supply *source* in the Pensacola area due to its high iron and aluminum content and its susceptibility to local contamination. The extent of inorganic and organic parameter exceedances in shallow groundwater is generally limited to the combined site area, indicating substantial contaminant migration is not occurring.

Several inorganic and organic parameters have been identified as contaminants of concern in the human health component of the BRA with regard to specific land use scenarios, each contributing to the estimated risk for one or more evaluated exposure pathways. However, this risk analysis should be qualified based on factors that affect the exposure potential of humans to impacted media at these sites. The surface soil exposure pathway at Site 8 is effectively nonexistent due to widespread asphalt pavement, Additionally, the shallow groundwater of the surficial zone at both sites is not currently, nor is it expected in the future, to be a potable groundwater source due to its poor ambient quality. These two factors greatly reduce the actual exposure potential to Site 8 surface soil, and Site 8 and 24 groundwater.

Based on a model prediction of receptor species dietary exposure to maximum detected DDD and lead surface soil concentrations at Site 24, contaminant uptake may present a risk to site biota. However, actual exposure potentials are generally much lower than the model prediction due to its unrealistic assumption that animals will consume all of their food from the location of highest detected concentration.

The Navy recommends performing a Focused Feasibility Study to select appropriate risk management alternatives and actions for portions of Site 24 contributing to the surface soil exposure risk. Additonally the Navy recommends no further action for Site 8 soil given the limited exposure potential due to pavement. No further action is recommended for OU13 groundwater, contingent on limiting exposure through institutional control.

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List of Abbreviations

µg/kg	Microgram per kilogram
µg/L	Microgram per liter
BAF	Bioaccumulation Factor
BRA	Baseline Risk Assessment
bls	Below land surface
BTOC	Below Top of Casing
CEC	Cation Exchange Capacity
CFR	Code of Federal Regulation
CG	Cleanup Goal
CGL	Cleanup Goal-Leaching Scenario
CLP	Contract Laboratory Program
CSAP	Comprehensive Sampling and Analysis Plan
CSS	Contaminant Source Survey
DDT	Dichloro-diphenyl-trichloroethane
DQO	Data Quality Objective
E/A&H	EnSafe/Allen & Hoshall
E&E	Ecology and Environment, Inc.
ECPC	Ecological Chemical of Potential Concern
FDEP	Florida Department of Environmental Protection
FGGC	Florida Groundwater Guidance Concentration
FNAI	Florida Natural Areas Inventory
FPDWS	Florida Primary Drinking Water Standard
FS	Feasibility Study
FSDWS	Florida Secondary Drinking Water Standard
ft/day	Feet per day
G&M	Geraghty & Miller, Inc.
GC/MS	Gas Chromatograph/Mass Spectrometer
GS	Grain Size
IAS	Initial Assessment Study
ICP	Inductive Coupled Plasma
ICS	Interference Check Sample
ID	Inside Diameter
IPA	Isopropanol Alcohol
IRP	Installation Restoration Program
IS	Internal Standard
K_d	Normalized Partition Coefficient
K_{oc}	Organic Carbon/Water Partitioning Coefficient
K_{ow}	Octanol Water Partition Coefficient
LCS	Laboratory Control Sample
LOAEL	Lowest-observed-adverse-effect-level
MCL	Maximum Contaminant Level
mEq/100g	Milliequivalent per 100 grams

mg/kg	Milligrams per kilogram
ml	Milliliter
MS	Matrix Spike
MSD	Matrix Spike Duplicate
msl	Mean sea level
mS/cm	milliSiemens per Centimeter
NAS	Naval Air Station
NEESA	Naval Energy and Environmental Support Activity (now NFESC/Naval Environmental Engineering Support Agency)
NFESC	Naval Facilities Engineering Service Center (formerly NEESA)
NOAEL	No-observed-adverse-effect level
NTU	Nephelometric Turbidity Unit
OFG	Organic Functional Guidelines
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated biphenyl
PDE	Potential Dietary Exposure
ppm	Parts per million
PPS	Physical Parameters-Soil
PPW	Physical Parameters-Water
PRG	Preliminary Remediation Goal
PVC	Polyvinyl Chloride
PWC	Public Works Center
QA/QC	Quality Assurance/Quality Control
RBC	Risk-based Concentration
RC	Reference Concentration
Redox	Oxidation/Reduction
RI	Remedial Investigation
ROD	Record of Decision
RPD	Relative Percent Difference
SAP	Sampling and Analysis Plan
SDG	Sample Delivery Group
SEGS	Southeastern Geological Society
SFF	Site Foraging Factor
SMCL	Secondary Maximum Contaminant Level
SMP	Site Management Plan
SOUTHNAVFACENGCOM	Southern Division Naval Facilities Engineering Command
SOV	Semivolatile
SOW	Statement of Work
SSL	Soil Screening Level (Subsurface)
SVOC	Semivolatile Organic Compound
SW	Solid Waste
TAL	Target Analyte List
TCE	Trichloroethene

TCL	Target Compound List
TOC	Total Organic Carbon
TRPHs	Total Recoverable Petroleum Hydrocarbon
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

Sites 8 and 24

Naval Air Station Pensacola

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Inorganic and organic parameters exceeding PRGs were detected in Site 8 soil samples. Barium, cadmium, and lead subsurface exceedances at boring 08S01 are suspected to be associated with past waste disposal. However, aluminum and iron surface soil exceedances are attributable to the

red clayey road base fill beneath the asphalt pavement. Most arsenic surface soil PRG exceedances were below the facility specific NAS Pensacola reference concentration (RC) for arsenic, indicating they represent background conditions at the site. The few slight arsenic RC exceedances are also attributable to background conditions, and/or the red clayey road base beneath the asphalt.

All organic soil exceedances at Site 8 were detected in samples from the site's northern portion. The single semivolatile organic compound (SVOC) exceedance, and other nonexceedance SVOC detections in surface soil, are suspected to be associated with fragments of the overlying asphalt in the surficial interval. Pesticide soil exceedances (dieldrin and aldrin) detected in samples collected around the building are attributable tu either past waste disposal at the site, or the previous handling of pesticide rinsates at Building 3561. However, all soil exceedance locations are paved with asphalt.

No organic PRG exceedances were detected in Site 8 groundwater samples. Only cadmium, manganese, and an isolated lead concentration exceeded PRGs and RCs in site groundwater. All exceedances occurred in samples from the site's north and northeast portion, extending toward the cemetery. This distribution is consistent with past disposal of metallic-alloy aircraft refuse or other metallic material around Building 3561's current location, and the site's north-northeasterly shallow groundwater flow. **The extent of shallow groundwater impact from cadmium does extend to Site 24, but does not extend beyond the OU13 downgradient boundary.**

Inorganic soil exceedances (aluminum, arsenic, iron, and manganese) were limited to surface soil at Site 24. Aluminum, iron, and manganese commonly occur as "essential nutrients" in fertilizers; arsenic-based compounds are common ingredients of herbicides and pesticides. Because the site is mostly a maintained grass field, exceedances in maintained areas are attributable to routine herbicide, fertilizer, and pesticide application. The slight inorganic PRG/RC exceedances in the site's southern portion are attributable to background conditions at NAS Pensacola, and/or the red clayey road base fill beneath the asphalt and crushed shell pavement+

Exceedances of the pesticides dieldrin and heptachlor epoxide in surface and subsurface soil samples at Site 24 are consistent with past routine use of these materials. Polychlorinated biphenyls (PCBs) and SVOCs detected in a few surface soil sample locations at the site's western margin are suspected to be the result of past waste oil application for dust control along previously unpaved John Tower Road.

PRG and RC exceedances of iron and manganese detected in Site 24 shallow groundwater can be attributed to fertilizer application, which commonly contains water-soluble forms of these inorganics as essential nutrients. Metal fragments were found in the subsurface soil north of Building 3678, indicating that Site 8 fill activities extended, or have been reworked, onto Site 24. Based on this evidence, sporadic antimony, cadmium, nickel, and thallium exceedances in shallow groundwater can be attributed to metal-alloy debris disposal at Site 8 and/or 24. Relatively low chlorinated solvent volatile organic compound concentrations slightly exceeding PRGs in shallow Site 24 groundwater are also suspected to be the result of past disposal activities at Site 8 and/or 24. The single dieldrin groundwater exceedance at Site 24 is near dieldrin soil exceedance locations, indicating that soil concentrations have leached to groundwater in a limited area. However, the extent of all organic PRG exceedances is limited to the Site 24 area. **With the exception of manganese and thallium, all inorganic PRG and/or RC exceedances are limited to the OU13 area.**

Transport of parameters detected at Sites 8 and 24 is generally downward from surface soil through subsurface soil to groundwater. Shallow groundwater moves generally north-northeastward across the combined Sites 8 and 24 area. The primary receiving body of site impact is the surficial zone of the Sand-and-Gravel Aquifer. However, it is not used as a water-supply source in the Pensacola area due to its high iron and aluminum content and its susceptibility to local contamination. The extent of inorganic and organic parameter exceedances in shallow groundwater is generally limited to the combined site area, indicating substantial contaminant migration is not occurring.

Several inorganic and organic parameters have been identified as contaminants of concern in the human health component of the BRA with regard to specific land use scenarios, each contributing to the estimated risk for one or more evaluated exposure pathways. However, this risk analysis should be qualified based on factors that affect the exposure potential of humans to impacted media at these sites, The surface soil exposure pathway at Site 8 is effectively nonexistent due to widespread asphalt pavement. Additionally, the shallow groundwater of the surficial zone at both sites is not currently, nor is it expected in the future, to be a potable groundwater source due to its poor ambient quality. These two factors greatly reduce the actual exposure potential to Site 8 surface soil, and Site 8 and 24 groundwater.

Based on a model prediction of receptor species dietary exposure to maximum detected DDD and lead surface soil concentrations at Site 24, contaminant uptake may present a risk to site biota. However, actual exposure potentials are generally much lower than the model prediction due to its unrealistic assumption that animals will consume all of their food from the location of highest detected concentration.

The Navy recommends performing a Focused Feasibility Study to select appropriate risk management alternatives and actions for portions of Site 24 contributing to the surface soil exposure risk. **Additonally the Navy recommends no further action for Site 8 soil, given the limited exposure potential due to pavement. No further action is recommended for OU13 groundwater, contingent on limiting exposure through institutional control.**

1.0 INTRODUCTION

Under the authority of the U.S. Navy Comprehensive Long-Term Environmental Action Navy program, a Remedial Investigation (RI) was recently completed at Site 8 — the Rifle Range Disposal Area, and Site 24 — the dichloro-diphenyl-trichloroethane (DDT) Mixing Area, at Naval Air Station (NAS) Pensacola. These sites are grouped as Operable Unit 13 and listed under Categories *6* (Site 24) and 7 (Site 8) of the Site Management Plan (SMP) of the Installation Restoration Program (IRP) for NAS Pensacola (southern Division, Naval Facilities Engineering Command [SOUTHNAVFACENGCOM], 1996). Sites 8 and 24 are west-northwest of Barrancas National Cemetery and southeast of the intersection of John Tower and Taylor roads.

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, which administers hazardous waste investigation and cleanup. The RI report summarizes the investigation's activities, results, and conclusions, including a Baseline Risk Assessment (BRA). If appropriate, it provides the basis for a feasibility study (FS). RI objectives are outlined below.

Objectives of the Remedial Investigation

- To determine the source, nature, and extent of soil and groundwater contamination, and to characterize surface soil within the site.

- To facilitate the evaluation of the risk to human health and the environment from onsite contaminated media. This goal is accomplished through the BRA process.

After the remedial investigation is complete, an FS may be conducted if necessary to determine appropriate methods of addressing site contamination, based on data generated during the RI process.

1.1 Project Organization

The RI was executed in three parts. First, all available previous investigation reports in the administrative record were reviewed to develop a comprehensive understanding of the site history and background to develop the Sampling and Analysis Plan for each site (SAP, E/A&H, 1995a, 1996). Next, a contaminant source survey (CSS) was performed to gain additional information on the history of the site, including past and present activities that may have contributed to site impact. Finally, soil borings were advanced and monitoring wells were installed during a field investigation to collect soil and groundwater samples for chemical and physical analyses.

This investigation was phased to allow for periodic review and input from the Tier I Partnering Team before additional phases were executed. Thus, the investigation incorporated ongoing input from the U.S. Environmental Protection Agency (USEPA) and the Florida Department of Environmental Protection (FDEP).

1.2 Purpose of Report

This RI report summarizes the activities, results, and conclusions of the overall investigation, and provides the basis fur an FS, to be completed if necessary, and ultimately, a Record of Decision (ROD) for the sites. The report also documents the data collection and analytical methods used during the investigation.

2.0 SITE DESCRIPTION AND HISTORY

Contaminant Source Survey

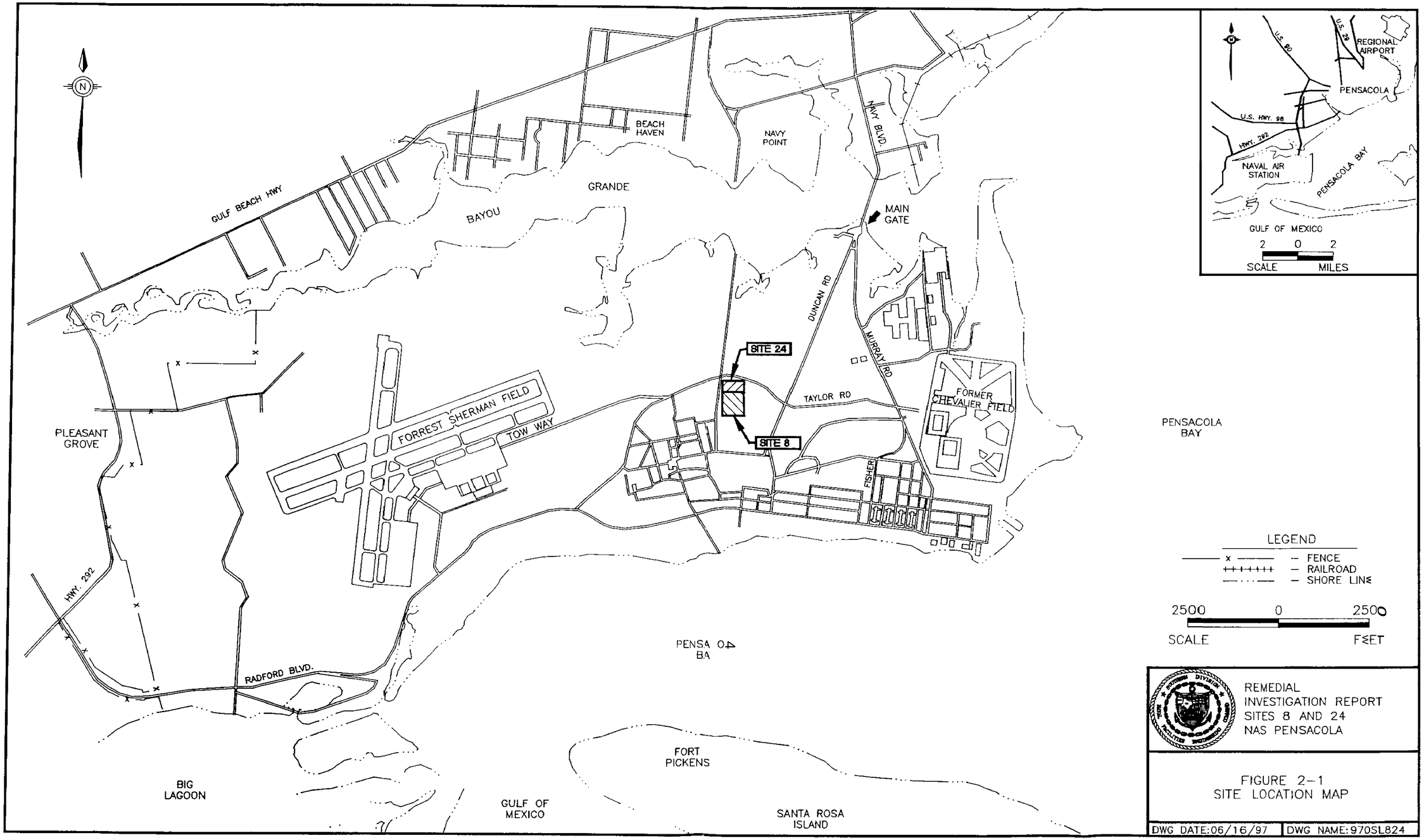
A *CSS* was completed at Sites 8 and 24 before fieldwork began to determine past and present site activities and potential sources of contamination. E/A&H personnel reviewed previous investigations, aerial photographs, maps, and information on underground utilities, and interviewed NAS Pensacola personnel. *CSS* findings have been incorporated into the site description and history.

2.1 Site Descriptions

Sites 8 and 24 border the eastern side of John Tower Road, southeast of the intersection of John Tower and Taylor roads. As shown on Figures 2-1 and 2-2, these adjacent sites are approximately in the center of the installation.

Site 8 is an approximately 450- by 600-foot area currently occupied by Building 3561, which houses the NAS Pensacola Public Works Center (PWC) Maintenance/Material Department. An extensive asphalt-paved area surrounds Building 3561 to the north, east, and west, covering nearly all land surface. PWC stores building materials on the paved area west of the building. The Site 8 area is generally flat with a land surface elevation averaging 29 feet above mean sea level (msl). Miscellaneous office trailers and fenced storage, including Building 3678, are north of the building. The paved area east of the building is used for PWC and employee vehicles parking. Sidewalks and a grassy median are to the south, between Buildings 3560 and 3561. Most of the site is surrounded by chain-link fencing.

Site 24 is located immediately north of Building 3561, near the northwest comer of the Barrancas National Cemetery (see Figures 2-1 and 2-2). The central and northern portions of


N
GULF BEACH HWY
BEACH HAVEN
NAVY POINT
NAVY BLVD.
GRANDE
BAYOU
MAIN GATE
DUNCAN RD
MURRAY RD
SITE 24
SITE 8
TAYLOR RD
FORMER CHEVALIER FIELD
FORREST SHERMAN FIELD
TOW WAY
FISHER
PLEASANT GROVE
HWY. 292
RADFORD BLVD.
PENSACOLA BAY
PENSACOLA BAY
FORT PICKENS
BIG LAGOON
GULF OF MEXICO
SANTA ROSA ISLAND
U.S. 90
U.S. 29
REGIONAL AIRPORT
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
REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 2-1
SITE LOCATION MAP
DWG DATE:06/16/97
DWG NAME:970SL824

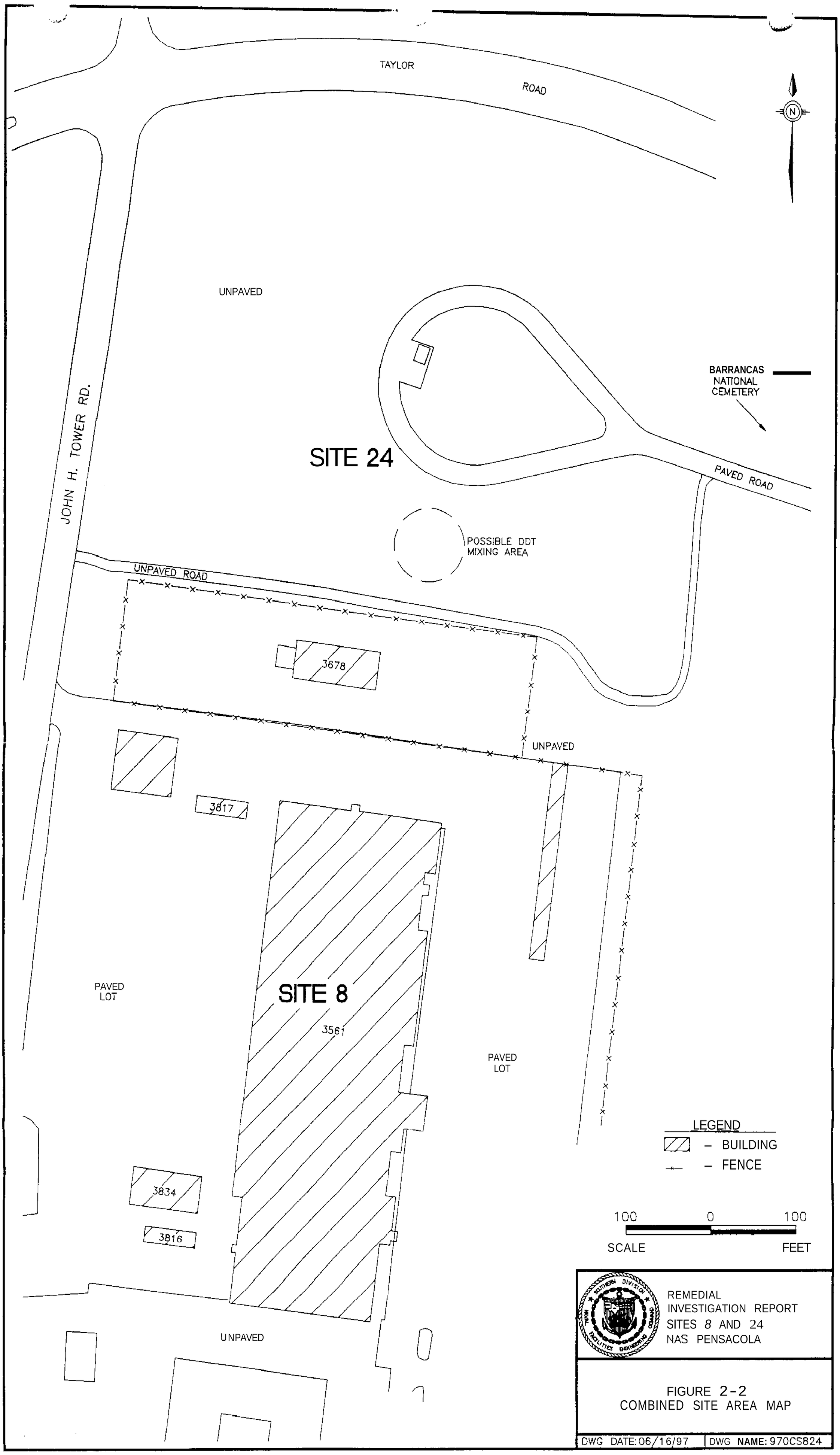


FIGURE 2-2
COMBINED SITE AREA MAP

Site 24 are primarily unpaved and sparsely covered with native grasses and trees. However, the fenced storage area around Building 3678, in Site 24's southern portion, has a gravel/crushed shell land surface. An unimproved dirt road runs west to east across the site's center.

Site 24's soil is primarily sand, and near the surface in some locations, silty clayey sandy fill. The entire site area is generally flat, with land surface elevations approximately 24 to 26 feet above msl. Surface drainage across the site is likely precluded by the high permeability of the surficial soil, which allows direct, rapid infiltration of precipitation. The site's northern portion is currently part of the Barrancas National Cemetery. No permanent monitoring wells were onsite prior to this investigation.

A water supply well (NAS Pensacola Well No. 1), approximately 0.3 miles southeast of the combined site area, is infrequently used as secondary water supply to augment the primary well field at Corry Station (E&E 1992a). Several other IRP sites are nearby. Site 22 (the Refueler Repair Shop) is directly west, across John Tower Road. Site 17 (The Transformer Storage Yard) is approximately 1,300 feet southwest. The southern extent of Site 1 (the Sanitary Landfill) begins approximately 200 feet northwest of the John Tower/Taylor Road intersection.

2.2 Site History

From the early 1950s until the early 1960s, Site 24 was used to mix DDT with diesel fuel for mosquito control. DDT, reported to have been spilled in the mixing area while being transferred from drums to spray tanks, may have contaminated local soil and groundwater. DDT was aerially applied for at least 10 years to control mosquito outbreaks. In later years, DDT was applied by a fogger machine. On the average, two or three mosquito outbreaks occurred each year during the spring and summer. Following each outbreak, DDT was generally applied during a one-week period. For each aerial application, 500 gallons of a 20% DDT solution was mixed with 500 gallons of diesel oil. The fogger machine used 300 gallons of a 20% DDT solution mixed

with 300 gallons of diesel fuel. It is estimated that up to 20 gallons of the 20% solution may have been spilled during the approximately 10 years of mixing at the site (NEESA, 1983).

Based on aerial photographs, Building 3561 was constructed in the mid 1970s and is first visible in photographs taken April 1976. The fenced storage area north of Building 3561 was developed during the mid 1980s. Storage Building 3678 inside the fenced area is first visible in a November 1989 photograph. During most of the 1980s, a limited portion of Building 3561 was used as a pesticide storage and equipment rinsing area. A tank washrack rinsing area was constructed in March of 1981 midway along Building 3561's eastern side to contain and collect pesticide equipment washwater and pesticide rinsate. Wastewater from the washrack was discharged to the sanitary sewer system. Base pest control operations were moved from Building 3561 to their current location at Building 1538 in the early 1990s (NEESA, 1983; Pike, 1997).

The base rifle range and disposal area — Site 8 — were reported to have been immediately south of Site 24 and at the current location of Building 3561. Various solid wastes and dry refuse are reported to have been placed in trenches and burned at this location during the late 1950s and early 1960s. Aerial photographs and maps from the 1950s and 1960s show a rifle range at Building 3561's current location. Earlier aerial photographs show an excavation at the northern end of the rifle range, while later photographs show the excavated area to be overgrown with vegetation. Most of the excavation noted in the earlier photographs is currently covered by Building 3561 and the surrounding paved area, which were constructed during the mid 1970s. Facility personnel reported no waste or residue was identified during the building's construction (NEESA, 1983). However, cemetery personnel have reported finding various metal, rubber, and plastic aircraft parts buried along Site 24's eastern margin while excavating (Montgomery, 1996).

Previous Investigations

Previous investigations at Sites 8 and 24 include the following:

- An Initial Assessment Study (IAS) was completed by the Naval Energy and Environmental Support Activity (NEESA) in 1983. The IAS report evaluated Sites 8 and 24 based on information from historical records, field inspections and interviews with NAS Pensacola personnel. No evidence of hazardous waste disposal was identified at Site 8. It is estimated that approximately 20 gallons of pesticide mixture containing 3.3 pounds of DDT was inadvertently spilled during Site 24 operations. According to IAS conclusions, the estimated level of DDT contamination posed no threat to human health or the environment. As a result, no further study was recommended at either site. No environmental sampling was performed during the IAS.

- Ecology and Environment (E&E) performed a Phase I screening investigation of Site 24 to identify areas and potential contaminants of concern. The investigation results are fully discussed in the E&E Interim Data Report (E&E, 1991). Soil and groundwater samples were collected during the investigation and submitted for laboratory analysis. Lead, total recoverable petroleum hydrocarbons (TRPHs), polynuclear aromatic hydrocarbons (PAHs), and the carbamate pesticide, fluometuron, were detected in soil. Metals, tetrachloroethene, and the carbamate pesticide, methomyl, were detected in groundwater. As a result, additional assessment was recommended for Site 24. Analytical results from the Phase I investigation are summarized in Appendix A+

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 peninsula's southern and eastern shorelines. Landward of the bluff is a gently rolling upland with elevations up to 40 feet above mean sea level (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; it comprises Chevalier Field and Magazine Point.

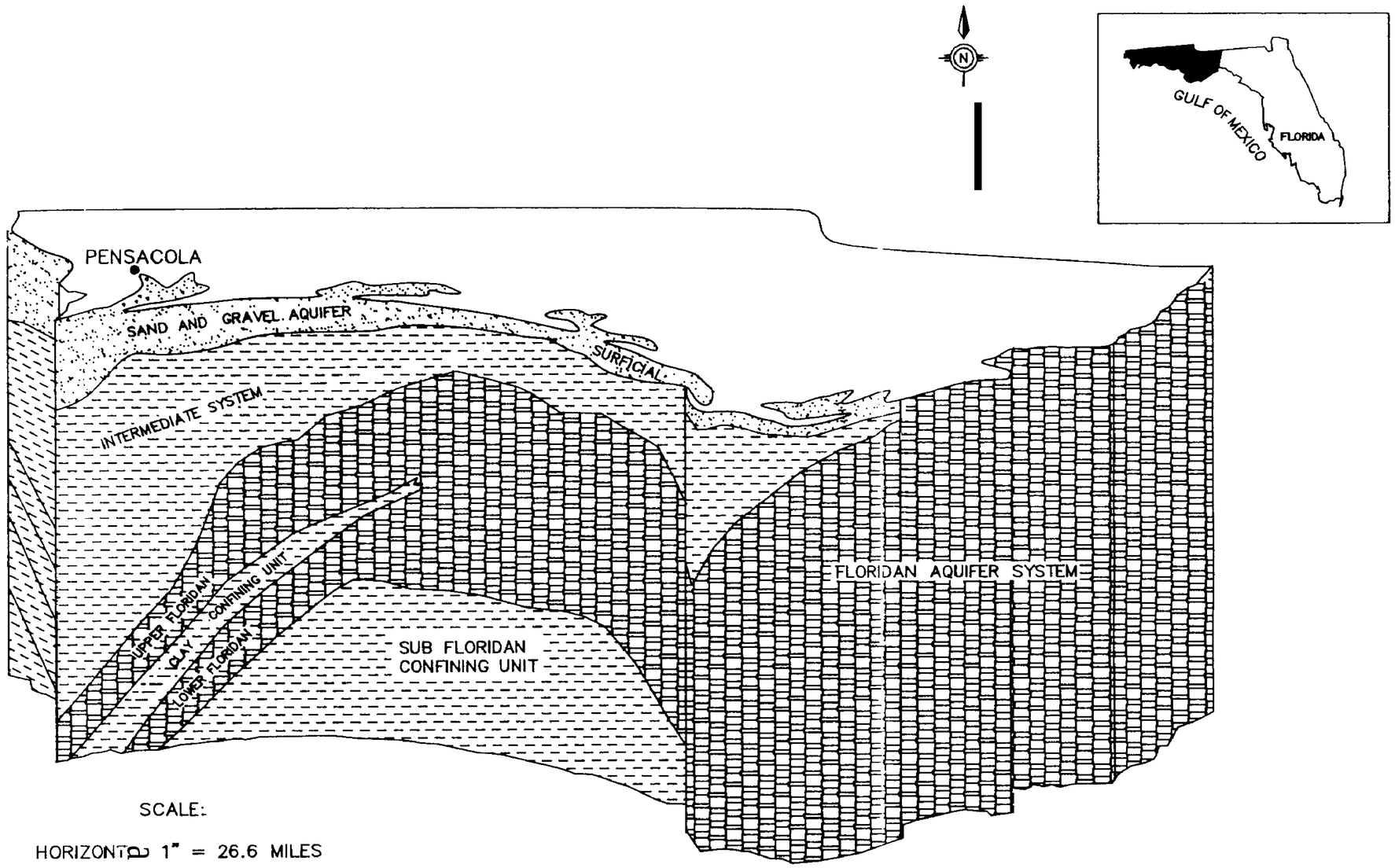
Sandy soils typify the NAS Pensacola area. Consequently, most rainfall infiltrates directly into the subsurface, resulting in few natural streams. Streams on base generally are man-made and channelized. Numerous natural wetlands occur in low-lying areas.

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 Florida,



SCALE:

HORIZONTAL 1" = 26.6 MILES

VERTICAL 1" = 500 FEET

VERTICAL EXAGGERATION = 281

SOURCE: E&E 1992c.

REMEDIAL
INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA

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

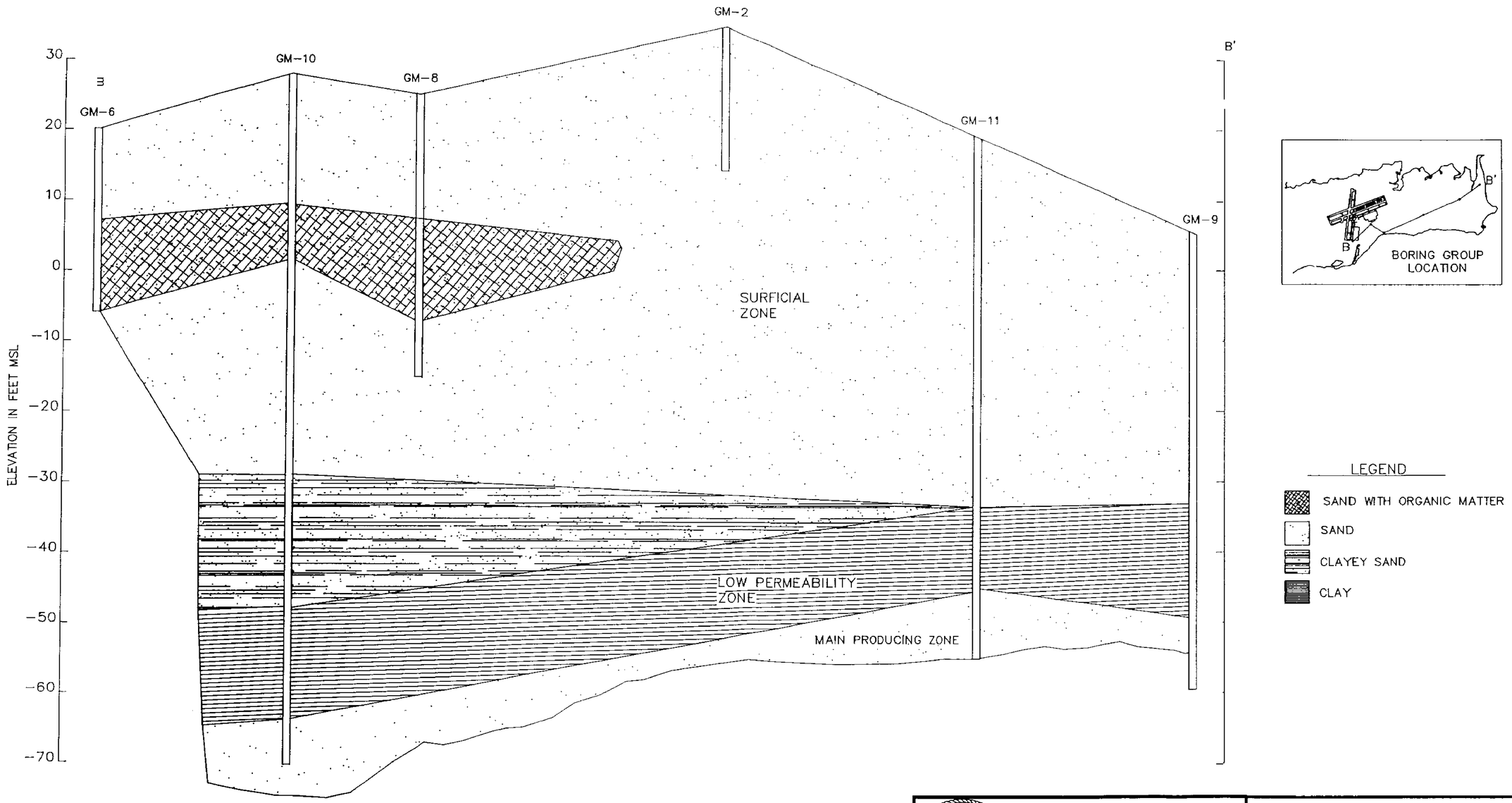
DATE: 06/16/97 | DWG NAME: 97OGG01

the Surficial Aquifer is referred to as the Sand-and-Gravel Aquifer, and is a major source of drinking water (SEGS, 1986). The FDEP classification of the surficial aquifer is G-1 with a 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 zones' stratigraphic relationship.

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 generally composed of a poorly graded quartz sand (G&M, 1984, 1986). Beneath the base's western side, 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 thickens to the west and thins to the east. This increased clay content in the transition from the surficial zone to the low permeability zone is responsible for lower hydraulic conductivities that have been measured in the surficial zone's base.

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



SOURCE: GERAGHTY & MILLER, 1986

REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA

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

DATE: 06/16/97 | DWG NAME: 970GSSA

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 they are in 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 the Pensacola area's water supply (Wilkins et al., 1985). Groundwater in this zone is generally 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 for 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-and-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. 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 predominantly limestone, but 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 NAS Pensacola area, 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; pines, mixed with a variety of other shrubs, prevail in upland areas, Wetlands dominate 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 U.S. territory.

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. 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 able to tolerate various soil moisture conditions. Tree species in flatwood 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 present 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 mow-leaved sundew, All are considered rare or endangered for Escambia County, Florida, by the Florida Natural Areas Inventory (FNAI, 1995).

3.3.3 Site-Specific Setting

Habitat and Biota Survey

A Phase I habitat/biota survey for Sites 8 and 24 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, 1994]). The survey's primary objective was to describe site habitats and support a preliminary risk evaluation.

Sites 8 and 24 lie within a developed area of the base. These site areas do not contain any surface water bodies, wetlands, or wooded areas, nor are they adjacent to any. No natural plant or animal habitats are present onsite. The site is surrounded by an industrial setting to the south and southwest, and the grassy landscaped Barrancas National Cemetery to the north and east. Animals inhabiting the site area include squirrels, rodents, birds, and insects that can be found in similar developed areas on the base. No threatened or endangered species are found onsite.

3.4 Area Climate

The Pensacola area has a mild, subtropical climate, with average annual temperatures 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 tu 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 surface 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, including Hurricanes Erin and Opal, which both struck the Pensacola area during August and October 1995, respectively.

4.0 FIELD INVESTIGATION AND METHODS

Site 8 field activities were performed during the Category 7 investigation; Site 24 field activities were performed during the Category 6 investigation. Both field investigations were conducted at the same time as work on other Category 6/7 sites identified in the NAS Pensacola SMP (SOUTHNAVFACENGCOM, 1996). Work was performed in accordance with the respective Site 8 and Site 24 SAPs; (E/A&H, 1995a), (E/A&H, 1996a), the Final CSAP (E/A&H, 1994), and the USEPA Region IV Standard Operating Procedures and Quality Assurance Manual (USEPA, 1991). Field methods followed guidelines set forth in these documents as referenced or discussed in the following sections,

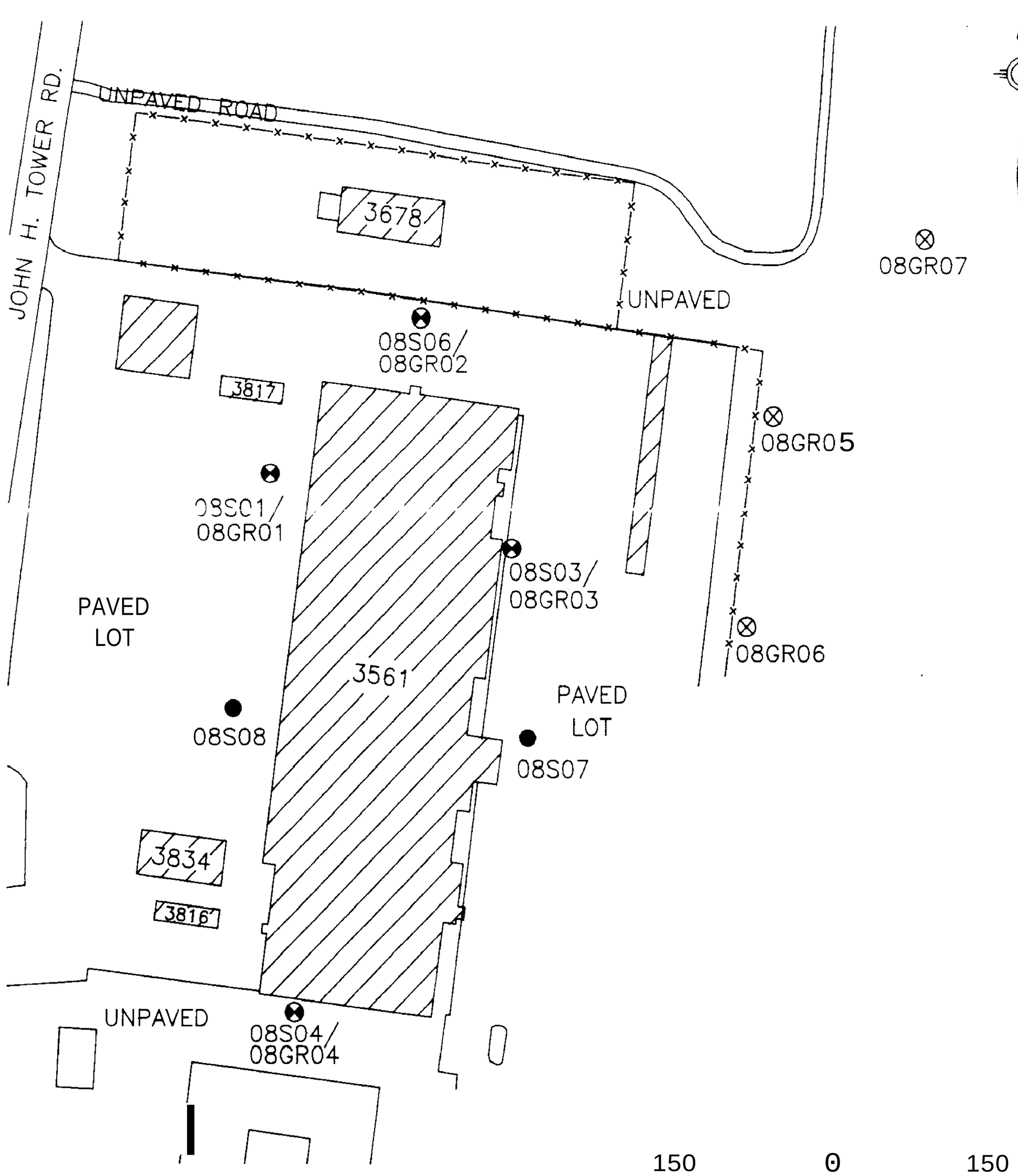
Both investigations were initiated as Preliminary Site Characterizations, which were raised to RI status and combined after analytical results showed several preliminary remediation goal (PRG) exceedances. Due to their separate investigative schedules and phased approach, field activities are discussed by site in Sections 4.1 and 4.2. General investigative methods common to both site investigations are discussed in Section 4.3.

4.1 Field Investigation — Site 8

Figure 4-1 shows soil boring and temporary monitoring well locations for all phases of the Site 8 investigation. Table 4-1 lists the sample location, associated sample identification number, and analytical parameters for each sample collected at Site 8. The last two digits of the sample identification number indicate the sample collection depth in feet bls for soil samples, or, for groundwater samples, the collection event (i.e., 008GGR0502 represents the second sample event for well 08GR05).

Field Activities Summary

Phase I of the Site 8 investigation, which occurred in March through May 1996, included the completion of six soil borings and eight temporary monitoring wells. Phase I results were



LEGEND

- BUILDING
- FENCE
- SOIL BORING
- SOIL BORING/TEMPORARY WELL
- TEMPORARY WELL

REMEDIAL
INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA

FIGURE 4-1
SOIL BORING AND
MONITORING WELL LOCATIONS
SITE 8

DWG DATE: 06/16/97 | DWG NAME: 970SBMW8

Table 4-1
Site 8 — Phases I and II
Sample Location Identification and Analytical Parameters

Media	Location	Sample Number	Analytical Parameters
soil	Boring-08S01	008S000101	TAL/TCL
		008S000106	TAL/TCL
		008S000109	TAL/TCL
	Boring-08S03	008S000301	TALlTCL
		008S000307	TAL/TCL
		008S000311	TAL/TCL
	Boring-08S04	008S000401	TAL/TCL
		008S000407	TAL/TCL
	Boring-08S06	008S000601	TAL/TCL
		008C000601*	TAL/TCL
		008S00607	TAL/TCL
	Boring-08S07	008S000701	TAL/TCL
		008S000707	TAL/TCL
	Boring-08S08	0085000801	TALlTCL
		008S000807	TAL/TCL
Groundwater	MW-08GR01	008GGR0101	TAL/TCL
	MW-08GR02	008GGR0201	TAL/TCL
	MW-08GR03	008GGR0301	TAL/TCL
	MW-08GR04	008GGR0401	TAL/TCL
	MW-08GR05	008GGR0501	TAL/TCL
		008GGR0502	Sb, Cd, Tl Only**
		008HGR0502*	Sb, Cd, Tl Only**
	MW-08GR06	008GGR0601	TAL/TCL
		008HGR0601*	TAL/TCL
	MW-08GR07	008GGR0701	Sb, Cd, Tl Only**

Notes:

TAL/TCL	=	Full Contract Laboratory Program Target Analyte List/Target Compound List (TAL Inorganics, TCL VOCs, Pesticides/PCBs, and SVOCs)
Sb, Cd, Tl Only	=	Selected TAL inorganics (antimony, cadmium, and thallium) analysis only
MW	=	Monitoring well
*	=	Duplicate sample
**	=	Phase II Groundwater Sample (all others are Phase I)

presented to the Tier I Partnering Team for evaluation in August 1996. Based on this evaluation, additional Phase II activities occurred in March and April 1997 to further delineate specific groundwater PRG exceedances of interest. Phase II included the installation and sampling of an additional downgradient temporary well, and the resampling of a selected Phase I well.

Analytical Methods summary

Phase I soil and groundwater samples were analyzed for the full Target Analyte List/Target Compound List (TAL/TCL) in accordance with the Contract Laboratory Program (CLP). These analyses included TCL volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), TCL pesticides, TCL polychlorinated biphenyls (PCBs), TAL metals (unfiltered for groundwater), and TCL cyanide.

Phase II groundwater samples were analyzed only fur selected parameters detected during Phase I at concentrations exceeding PRGs, as agreed upon by the Tier I partnering team. They were analyzed using CLP methods for selected TAL inorganics (antimony, cadmium, and thallium) only. All Phase I samples were analyzed by S-Cubed Laboratories of San Diego, California. Phase II groundwater samples were analyzed by Savannah Laboratories, Inc., of Savannah, Georgia. Strict quality assurance/quality (QA/QC) control procedures were followed during the investigation as outlined in Section 15 of the CSAP. These included collecting numerous QNQC samples such as field blanks, equipment rinsate blanks, trip blanks, material blanks, duplicates, matrix spikes, and matrix spike duplicate samples. Sample collection dates and times were noted in field logbooks or field sample forms. All samples collected during this investigation were labeled, processed, packaged, and shipped in accordance with Section 12 of the CSAP.

4.1.1 Soil Investigation — Site 8

Fourteen soil samples (not including QA/QC samples) were collected for laboratory analysis during Phase I sampling conducted March 26 and April 4, 1996. These samples were collected at boring locations 08S01, 08S03, 08S04, and 08S06 through 08S08 before installing temporary shallow monitoring wells. Samples were collected across discrete intervals beginning at land surface as follows: 0 to 1 foot below land surface (bls), then one 2-foot interval per five feet in depth (i.e., 5 to 7 feet bls, 8 to 10 feet bls, etc.) until the water table was reached. The last two digits of the sample identification number indicate the sample collection depth in feet bls (i.e., 07 indicates sample was collected from 5 to 7 feet bls). At most brings, soil was saturated between 7 and 9 feet bls at Site 8. No soil samples were collected below the water table for chemical analysis.

4.1.2 Groundwater Investigation — Site 8

Six borings were completed on March 21, 22, 26, and 29, 1996, using hollow-stem auger drilling techniques fur the installation of Phase I temporary wells 08GR01 through 08GR06. A single Phase II temporary well, 08GR07, was installed March 28, 1997, at a downgradient location in a hand-augered boring. Borings were advanced deep enough to install the shallow wells with screens bracketing the water table.

Phase I wells were developed on April 30, through and May 2, 1996, and groundwater samples were collected from them on May 7 and 14, 1996. Phase II groundwater samples were collected (from newly installed well 08GR07 and Phase I well 08GR05) on April 2, 1997.

4.2 Field Investigation — Site *24*

Immunoassay Screening Activities

Before invasive investigation activities (soil boring and well installation), E/A&H personnel established a grid across Site 24 and used immunoassay analyses to screen surface soil for DDT

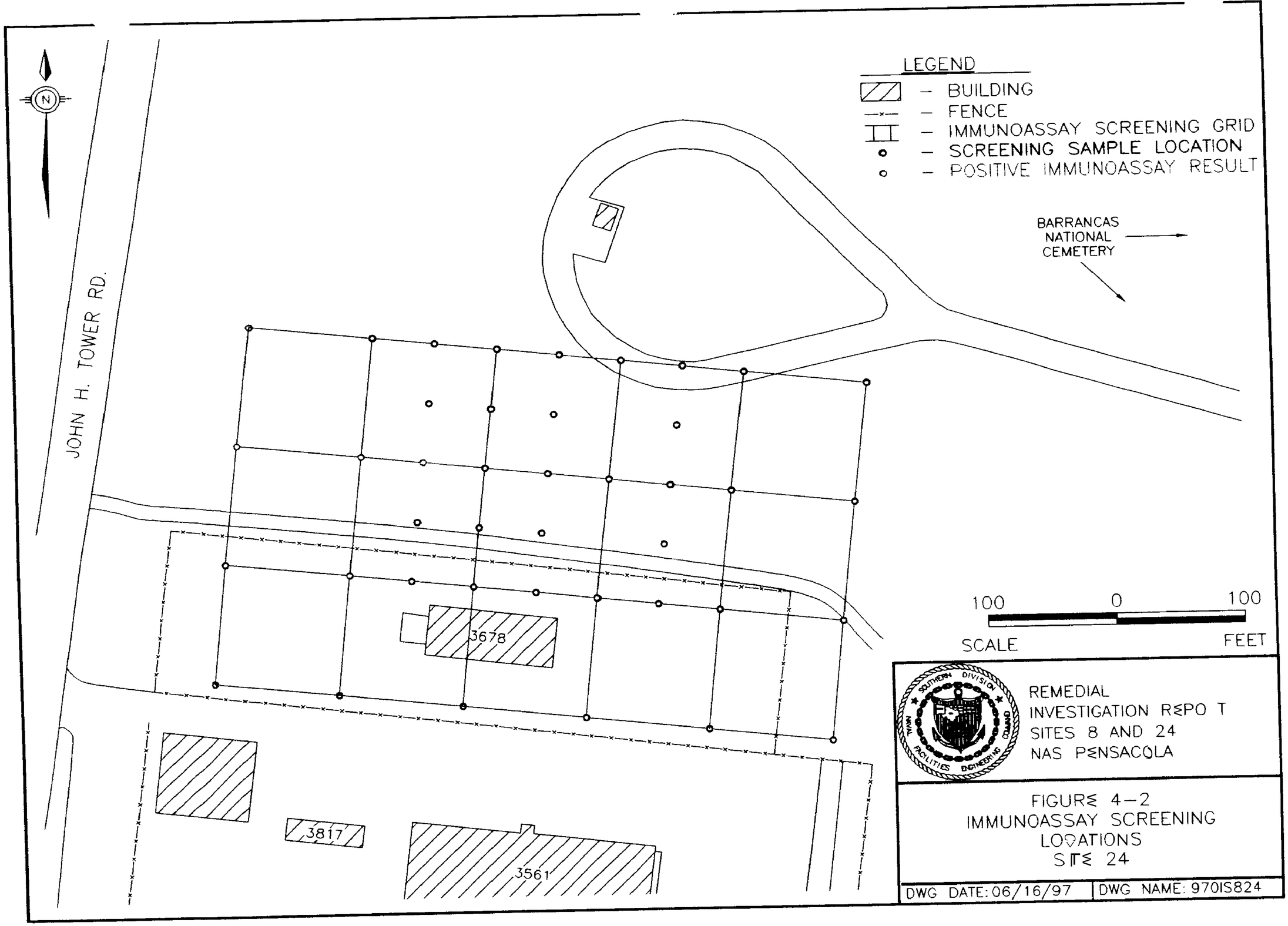
and its metabolites. Screening results were used to guide the placement of Phase I boring and well locations to focus on potential "hot spots."

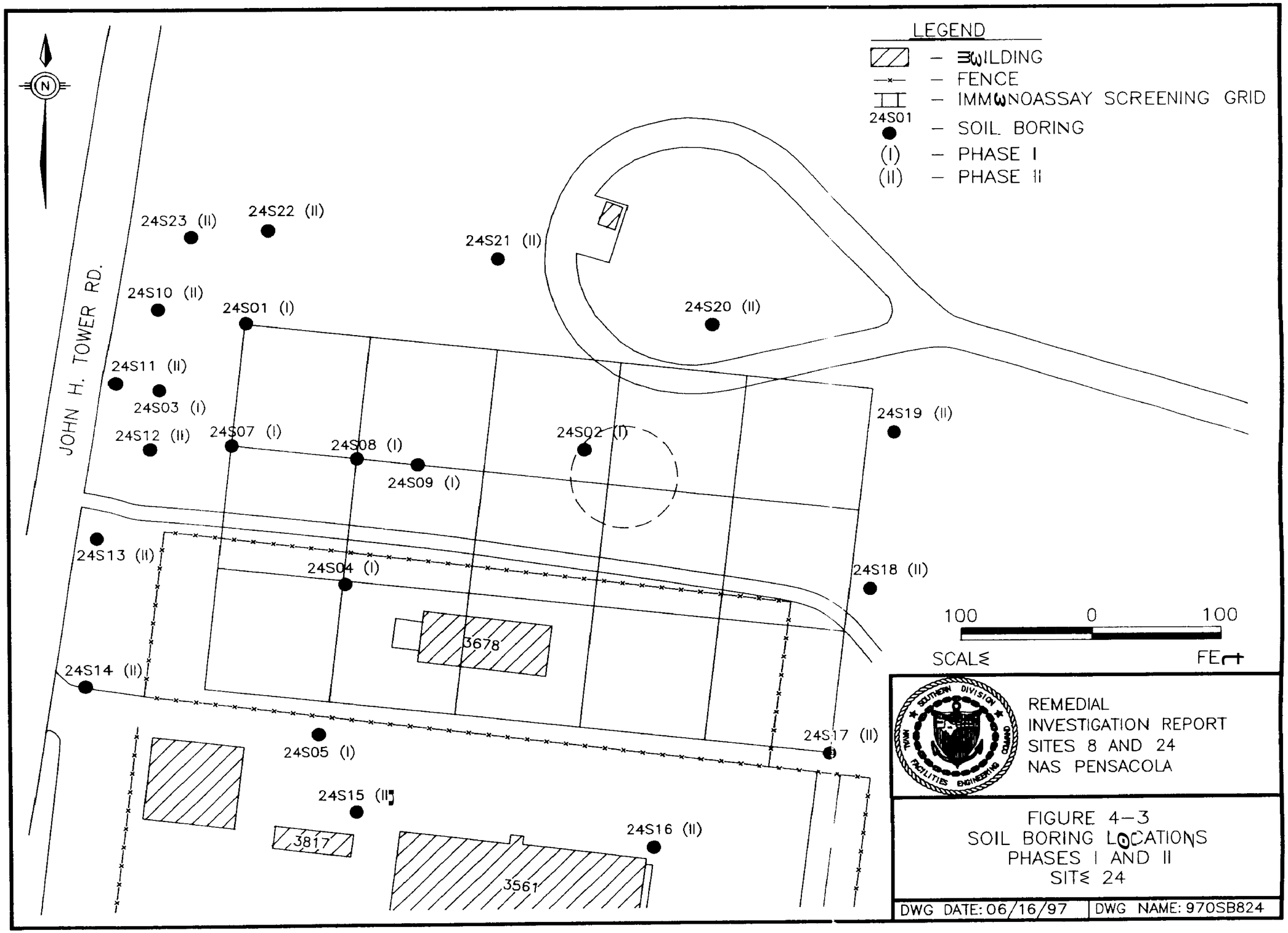
A Millipore EnviroGard DDT soil test kit (Model ENVR 00031) was used to perform field screening immunoassay testing for the target pesticides. This kit uses enzyme immunoassay technology to qualitatively/semiquantitatively analyze soil for the presence of DDT and its metabolites, DDD and DDE, but the test does nut differentiate between the three compounds. Surface (0-1 foot depth interval) soil samples were collected at 50 and 100-foot centers across the 300- by 500- feet grid. Samples were collected with stainless steel implements as done in other sampling phases (discussed in Section 4.3.1). Figure 4-2 shows the grid layout, screening sample locations, and positive immunoassay result locations.

Figure 4-2 shows that several samples collected from the site's western portion had positive immunoassay results, indicating the presence of either DDT or its metabolites, Based on these results, Phase I boring and well locations were modified to focus on these potential "hot spots."

Field Activities Summary

The following figures show soil boring (Figure 4-3) and monitoring well locations (Figure 4-4) fur Site 24 investigation phases. Tables 4-2 and 4-3 list the sample locations, associated sample identification numbers, and analytical parameters for each Phase I and Phase II/III sample, respectively. The last two digits of the sample identification number indicate the sample collection depth in feet bls for soil samples, or, fur groundwater samples, the collection event (i.e., 024GGS0102 represents the second sample event for well 024GS01).


LEGEND
BUILDING
FENCE
IMMUNOASSAY SCREENING GRID
SCREENING SAMPLE LOCATION
POSITIVE IMMUNOASSAY RESULT
BARRANCAS NATIONAL CEMETERY
JOHN H. TOWER RD.
3678
3817
3561
100 0 100
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 4-2
IMMUNOASSAY SCREENING LOCATIONS
SITE 24
DWG DATE: 06/16/97
DWG NAME: 970IS824


LEGEND
BUILDING
FENCE
IMMUNOASSAY SCREENING GRID
24S01
SOIL BORING
(I) PHASE I
(II) PHASE II
N
JOHN H. TOWER RD.
24S23 (II)
24S22 (II)
24S21 (II)
24S20 (II)
24S10 (II)
24S01 (I)
24S11 (II)
24S03 (I)
24S12 (II)
24S07 (I)
24S08 (I)
24S09 (I)
24S02 (I)
24S19 (II)
24S13 (II)
24S04 (I)
24S18 (II)
3678
24S14 (II)
24S05 (I)
24S17 (II)
24S15 (II)
3817
24S16 (II)
3561
100 0 100
SCALE FEET
REMEDIAL
INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 4-3
SOIL BORING LOCATIONS
PHASES I AND II
SITE 24
DWG DATE: 06/16/97
DWG NAME: 970SB824

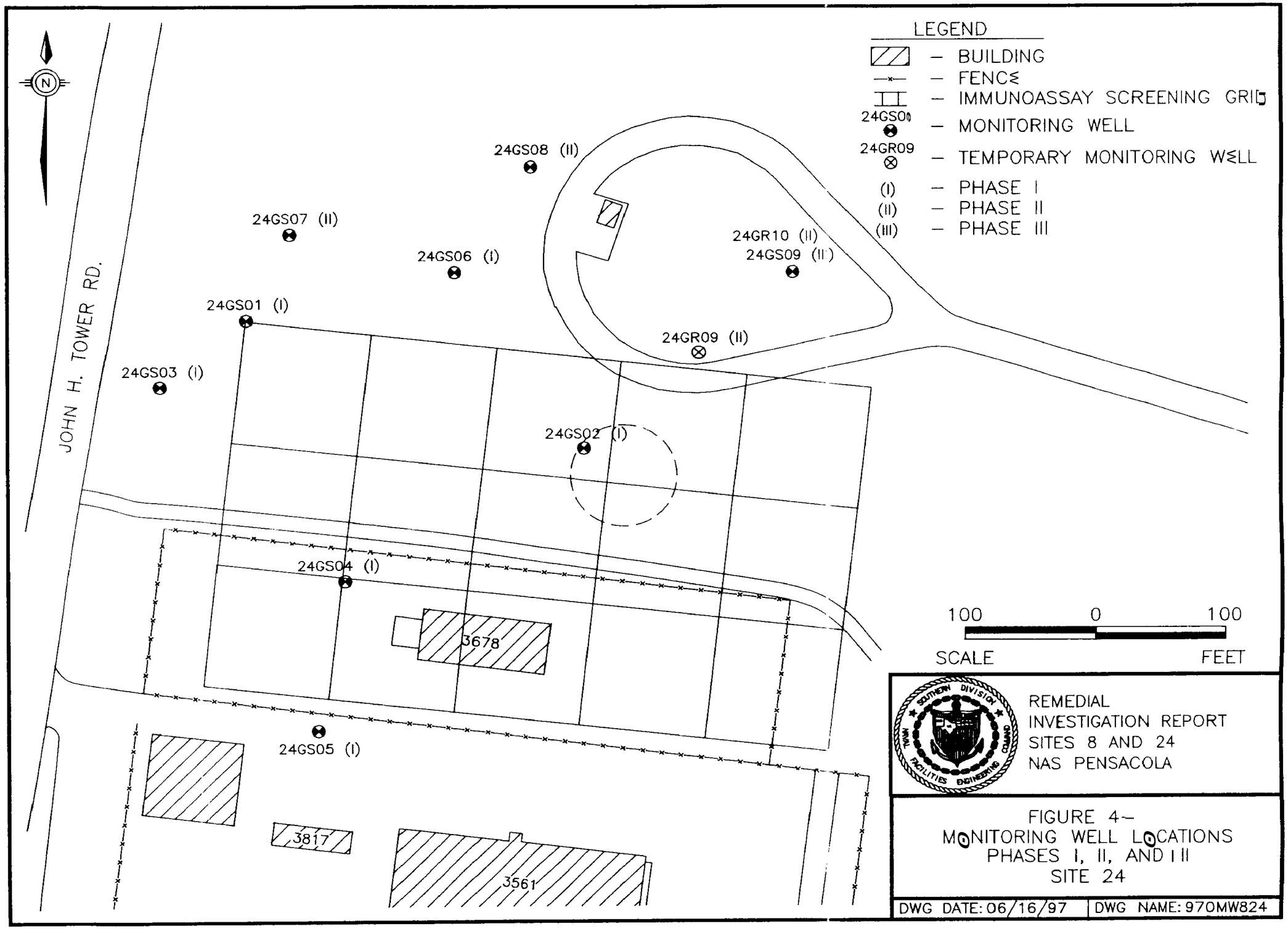

LEGEND
BUILDING
FENCE
IMMUNOASSAY SCREENING GRID
24GS01 MONITORING WELL
24GR09 TEMPORARY MONITORING WELL
(I) PHASE I
(II) PHASE II
(III) PHASE III
N
JOHN H. TOWER RD.
24GS08 (II)
24GS07 (II)
24GS06 (I)
24GR10 (II)
24GS09 (II)
24GS01 (I)
24GR09 (II)
24GS03 (I)
24GS02 (I)
24GS04 (I)
3678
24GS05 (I)
3817
3561
100 0 100
SCALE FEET
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 4-
MONITORING WELL LOCATIONS
PHASES I, II, AND III
SITE 24
DWG DATE: 06/16/97
DWG NAME: 970MW824

Table 4-2
Site *24* — Phase I
Sample Location Identification and Analytical Parameters

Media	Location	Sample Number	Analytical Parameters
Soil	Boring-24S01	024S000101	TAL/TCL
		024S00105	TAL/TCL
		024SUG0106	Phys.Params.
	Boring-24S02	024S00201	TAL/TCL
		024S00205	TAL/TCL
		024S00210	SVOC, Pest., PCB
		024SDG0206	Phys.Params.
	Boring-24S03	024S00301	TAL/TCL
		024S00305	TAL/TCL
	Boring-24S04	024S00401	TAL/TCL
		024S00405	TAL/TCL
		024S00416	Grain Size
	Boring-24S05	024S00501	TAL/TCL
		024S00505	TAL/TCL
		024S00510	SVOC, Pest., PCB
		024S00519	Grain Size
	Boring-24S07	024S00701	TAL/TCL
	Boring-24S08	024S00801	TAL/TCL
	Boring-24S09	024S00901	TAL/TCL
Groundwater	MW-24GS01	024GGS0101	TAL/TCL Phys.Params.
		024HGS0101*	TAL/TCL
	MW-24GS02	024GGS0201	TAL/TCL
	MW-24GS03	024GGS0301	TAL/TCL
	MW-24GS04	024GGS0401	TAL/TCL

Table 4-2
Site *24* — Phase I
Sample Location Identification and Analytical Parameters

Media	Location	Sample Number	Analytical Parameters
Groundwater	MW-24GS05	024GGS0501	TAL/TCL
	MW-24GS06	024GGS0601	TAL/TCL

Notes:

TAL/TCL	=	Full Contract Laboratory Program Target Analyte List/Target Compound List (TAL Inorganics, TCL VOCs, Pesticides/PCBs, and SVOCs)
SVOC, Pest., PCB	=	TCL semivolatile, pesticide and polychlorinated biphenyl (PCB) analysis only
MW	=	Monitoring well
*	=	Duplicate sample
Phys. Params.	=	Soil: total phosphorus, nitrate-n, TKN, heterotrophic plate count, TOC, and cation exchange capacity; groundwater: 5-day BOD, COD, hardness, TSS, alkalinity, total phosphorus, nitrate-n, TKN, and heterotrophic plate count
Grain Size	=	Aquifer media gram size only

Table 4-3
Site *24* — Phase II and III
Sample Location Identification and Analytical Parameters

Media	Location	Sample Number	Analytical Parameters
Soil	Boring-24S10	024S001001	Metals, Pests, SVOCs
		024C001001*	Metals, Pests, SVOCs
		024S001007	Metals, Pests, SVOCs
	Boring-24S11	024S001101	Metals, Pests, SVOCs
		024S001106	Metals, Pests, SVOCs
	Boring-24S12	024S001201	Metals, Pests, SVOCs
		024S001206	Metals, Pests, SVOCs
	Boring-24S13	024S001301	Metals, Pests
		024S001307	Metals, Pests
	Boring-24S14	024S001401	Metals, Pests
		024S001407	Metals, Pests
	Boring-24S15	024S001501	Metals, Pests
		024S001507	Metals, Pests
	Boring-24S16	024S001601	Metals, Pests
		024S001607	Metals, Pests
	Boring-24S17	024S001701	Metals, Pests
		024S001707	Metals, Pests

Table 4-3
Site 24 — **Phase II and III**
Sample Location Identification and Analytical Parameters

Media	Location	Sample Number	Analytical Parameters
soil	Boring-24S18	024S001801	Metals, Pests
		024S001807	Metals, Pests
	Boring-24S19	024S001901	Metals, Pests
		024S001907	Metals? Pests
	Boring-24S20	024S002001	Metals, Pests
		024S002006	Metals, Pests
	Boring-24S21	024S002101	Metals, Pests
		024S002106	Metals, Pests
	Boring-24S22	024S002201	Metals, Pests
		024C002201*	Metals, Pests
		024S002207	Metals, Pests
	Boring-24S23	024S002301	Pests, SVOCs
		024C002301*	Pests, SVOCs
		024S002307	Pests, SVOCs
Groundwater	MW-24GS01	024GGS0102	Metals, Pest/PCBs, VOCs
	MW-24GS02	024GGS0202	Metals, Pest/PCBs, VOCs
	MW-24GS03	024GGS0302	Metals, Pest/PCBs, VOCs
	MW-24GS04	024GGS0402	Metals, Pest/PCBs, VOCs
	MW-24GS05	024GGS0502	Metals, Pest/PCBs, VOCs
	MW-24GS06	024GGS0602	Metals, Pest/PCBs, VOCs
	MW-24GS07	024GGS0701 024HGS0701*	TAL/TCL
	MW-24GS08	024GGS0801	TAL/TCL

Table 4-3
Site *24* — Phase II and III
Sample Location Identification and **Analytical** Parameters

Media	Location	Sample Number	Analytical Parameters
Groundwater	MW-24GR09	024GGR0901	Metals, VOCs
		024HGR0901*	Metals, VOCs
		024GGR0902	Antimony
	MW-24GR10	024GGR1001	Antimony
	MW-24GS09	024GGS0903	TAL Metals, TCL VOCs **
		024HGS0903*	TAL Metals, TCL VOCs **

Notes:

TAL/TCL	=	Contract Laboratory Program Target Analyte List/Target Compound List
Metals, Pests, SVOCs	=	Soil: selected inorganics (arsenic, manganese, and beryllium), pesticides/PCBs, and semivolatile organic compound analysis using SW-846 methods
Metals, Pests	=	Soil: selected inorganics (arsenic, manganese, and beryllium) and pesticides/PCBs analysis using SW-846 methods
Pests, SVOCs	=	Soil: pesticides/PCBs and semivolatile organic compound analysis using SW-846 methods
Metals, Pest/PCB, VOCs	=	Groundwater: TAL inorganics, TCL pesticide/PCBs, volatile organic, and semivolatile organic compound analysis using CLP methods
Metals, VOCs	=	Groundwater: selected inorganics (antimony, cadmium, nickel, manganese, and thallium) and volatile organic *compounds* analysis using SW-846 methods
Antimony	=	Groundwater: antimony only analysis using SW-846 methods
TAL Metals, TCL VOCs	=	Groundwater: inorganics and volatile organic compounds analysis using CLP methods
MW	=	Monitoring well
*	=	Duplicate sample
**	=	Phase III groundwater sample (all others are Phase II)

Multiple fieldwork phases were performed during the investigation of Site 24 to fully evaluate detected parameter concentrations exceeding PRGs. Phase I of the Site 24 investigation, which took place during August and September 1995, included the installation of eight soil borings and six shallow permanent monitoring wells at locations based on the immunoassay results and the collection of associated soil and groundwater samples. The summarized results of the Phase I investigation were submitted to the Tier I Partnering Team in November 1995. Based on the Phase I results, Phase II was proposed to addressed issues agreed upon by the Tier I Team in February 1996, reflecting the decision that further characterization was required. Phase II was performed during March and April 1996, and included the installation of two additional permanent shallow wells, and 13 additional soil borings agreed upon by the Partnering Team to further evaluate soil and groundwater within the site area.

After Phase II data were reviewed, limited additional Phase 11 fieldwork was performed to m e r delineate Phase II PRG exceedances in soil and groundwater. For this purpose, one additional soil boring and two temporary shallow wells were installed and sampled during June and July 1996. To confirm previous groundwater sample results, one additional Phase III permanent shallow well was also installed and sampled in July 1996, replacing one of the earlier Phase II temporary wells.

Analytical Methods Summary

Phase I soil and groundwater samples were analyzed for the full TAL/TCL analytical suite in accordance with CLP: TCL VOCs, TCL SVOCs, TCL pesticides/PCBs, TAL inorganics (unfiltered for groundwater), and TCL cyanide, Additional samples were collected during Phase I for Physical Parameters Soil (PPS), Physical Parameters Water (PPW) and Grain Size *(GS)* analyses.

Phase II soil samples were analyzed only for parameters detected during Phase I that exceeded PRGs. They were analyzed by the following solid waste (SW) 846 methods:

- selected metals using method 6010;
- pesticides/PCBs using method 8080;
- SVOCs using method 8270.

Phase I wells were resampled during Phase II to confirm Phase I inorganic, VOC, and pesticide detections using CLP methods. Groundwater samples from newly installed Phase II wells were analyzed for the full TAL/TCL list using CLP methods. Additional limited Phase II delineation sampling occurred in lune and July for soil and groundwater with associated sample analyses for only selected PRG exceedance parameters (selected inorganics, SVOCs, and VOCs) by methods 6010, 8270, and 8260, respectively. The Phase III confirmation groundwater samples collected

in July were analyzed only for selected PRG exceedance parameters (TAL inorganic and TCL VOCs) using CLP methods. All Phase I, II, and III chemical analysis samples were analyzed by Savannah Laboratories, Inc., of Savannah, Georgia. Phase I physical parameter PPS, PPW, and GS samples were analyzed by Savannah Laboratories, and Thompson Engineering and Testing, Inc., of Mobile, AL. Strict QA/QC control procedures were followed during the investigation as outlined in Section 15 of the CSAP. QA/QC procedures included collecting numerous QA/QC samples such as field blanks, equipment rinsate blanks, trip blanks, material blanks, duplicates, matrix spikes, and matrix spike duplicate samples. Sample collection dates and times were noted in field logbooks or on field sample forms. Samples collected during this investigation were labeled, processed, packaged, and shipped in accordance with the CSAP's Section 12.

4.2.1 Soil Investigation – Site 24

Fifteen Phase I soil samples (not including QA/QC samples) were collected on August 29 and 30, 1995, for laboratory analysis while installing permanent shallow monitoring wells 24GS01 through 23GS05, and at shallow boring locations 024S07 through 024S09. Samples were collected across discrete intervals beginning at land surface as follows: 0 to 1 foot bls, then one 2-foot interval per five feet in depth (i.e., 3 to 5 feet bls, 8 to 10 feet bls, etc..) until the water table was reached. No samples were collected below the water table. The last two digits of the sample identification number indicate the sample collection depth in feet bls. Fourteen Phase II soil samples (not including QA/QC and Physical Parameter/Grain Size samples) were collected on April 2 and 3, and June 7, 1996, at boring locations 024S10 through 024S23 for laboratory analysis. They were collected in the same manner as those collected during Phase I; however, Phase II samples were collected across only two discrete intervals beginning at land surface as follows: 0 to 1 foot bls, and the 2-foot interval just above the water table (generally the water table was encountered at 6 to 7 feet bls).

4.2.2 Groundwater Investigation — Site 24

Six borings were completed on August 29, 30, and September 8 1995, using hollow-stem auger drilling techniques, for the installation of Phase I wells 24GS01 through 24GS06. Two Phase II shallow permanent wells, 24GS07 and 24GS08, were completed on March 13, 1996, also using hollow-stem auger drilling. Two Phase II shallow temporary wells, 24GR09 and 24GR10, were installed in hand-augered boreholes on June 6, and July 2, 1996, respectively. A single Phase III permanent well, 24GS09, was installed with hollow-stern auger drilling techniques on July 11, 1996, to replace temporary well 24GR10.

Phase I monitoring wells were developed September 14; Phase II and III permanent wells were developed on March 29 (24GS07 and 24GS08), and July 15, 1996 (24GS09). Phase I groundwater samples were collected from all Phase I wells on September 18 and 19, 1995, within four to five days of well development. Phase II groundwater samples were collected from all Phase I and II wells, 24GS01 through 24GS08, on April 17 through 19, 1996. Phase II temporary wells 24GR09 and 24GR10 were sampled June 7, June 24 (original and re-sampling of 24GR09) and July 2, 1996, respectively. Phase III permanent well 24GS09 was sampled on July 29, 1996.

4.3 Investigation Methodology — Sites 8 and 24

The following sections describe the various methods used during the investigation of Site 8 and 24. These investigations were conducted in accordance with the respective Site 8 and Site 24 SAPs (E/A&H, 1995a, E/A&H, 1996a), the CSAP (E/A&H, 1994), and the USEPA Region IV SOP/QAM (USEPA, 1991).

4.3.1 Soil Sampling

All soil samples were collected with 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. Most samples were collected across discrete intervals beginning at land surface as follows: 0 to

1 foot bls, then one 2-foot interval per five feet in depth (i.e., 3 to 5 feet bls, 8 to 10 feet bls, etc.) until the water table was reached. However, Site 24 Phase II samples were collected across only two discrete intervals beginning at land surface as follows: 0 to 1 foot bls, and the 2-foot interval just above the water table (generally the water table was encountered at 6 to 7 feet bls). The last two digits of the sample identification number indicate the lowest extent of the sample interval in feet bls. For VOC soil samples, representative sample aliquots were collected directly from the sampler or auger bucket and containerized before soil homogenizing to avoid degassing. Sample depth, lithologic descriptions, organic vapor concentrations, and other pertinent information were noted in boring logs or field logbooks during the collection process.

4.3.2 Monitoring Well Installation

Most borings for well installation were completed using hollow-stem auger drilling techniques with 4.25-inch inside diameter (ID) augers. Borings were advanced deep enough to install the shallow wells with screens bracketing the water table. All Phase I wells were assembled through the annulus of the augers as described in Section 5.3 of the CSAP. Each Site 24 permanent shallow well was constructed of flush-threaded, 2-inchdiameter Schedule 40 polyvinyl chloride (PVC) terminating with a 10-foot length, 0.01-inch continuous slotted, "V-wrapped" well screen Drill rig installed temporary wells (Site 8 Phase I) were constructed of flush threaded, 2-inch diameter PVC well casing terminating with a 5-foot length, 0.01-inch factory slotted, PVC well screen. A graded 20-30 size quartz sand filter pack was installed around each drill-rig-installed well screen and to a depth 2 to 3 feet above it. Bentonite pellets were carefully placed above the filter pack and hydrated with analyte-free water to form an approximate 1.5 to 2-foot seal. Grout collars were generally not installed on either temporary or permanent wells at either site due to the shallow water table. Rather, a Portland cement based concrete was placed immediately above the hydrated seal on permanent wells to complete a 3-foot-by-3-foot square by one-half-foot thick concrete pad at land surface, which was finished with bolt-down, flush-mount protective steel casings at land surface. Temporary wells were completed withuut concrete pads. Instead,

depending on traffic conditions, each well was finished at land surface with an approximately 2-foot PVC riser stickup, or cut flush with land surface, and fitted with a lucking well cap.

Temporary wells 08GR07, 24GR09, and 24GR10 were installed in hand-augered boreholes. These borings were advanced deep enough to install the temporary monitoring wells with screened intervals bracketing the water table. These temporary wells were installed directly inside the open hand-augered boring, as described in Section 5.3 of the CSAP, and constructed of flush threaded, 2-inch diameter PVC well casing terminating with a 5-foot length, 0.01-inch factory slotted, PVC well screen, Native sand was backfilled around the temporary well screen and riser and topped at land surface by a 1-foot thick bentonite seal. Due to the temporary nature of these wells, no grout collar or concrete pad was constructed at land surface. Instead, they were completed with 2 to 3 inches of PVC well casing stickup, and fitted with a locking well cap.

Soil boring logs and well construction diagrams for Sites 8 and 24 are presented in Appendix B.

4.3.3 Well Development

All drill-rig-installed monitoring wells were developed before groundwater sampling, as described in Section 5.4 of the CSAP. Well development occurred within approximately two weeks of installation, but no sooner than 24 hours after well completion. Development involved alternating surging and pumping of the well using a centrifugal pump and decontaminated PVC tubing until field parameters stabilized and adequate groundwater clarity was obtained. At least 55 gallons (12 well volumes) were purged from each well during development.

4.3.4 Groundwater Sampling

Groundwater samples were generally collected within four to five days of well development, as described in Section 6.3 of the CSAP. Before sample collection, at least three well volumes were purged from each well using a peristaltic pump and decontaminated Teflon tubing. Purging was

performed at a slow, controlled (approximately 0.25 gallons per minute or less) pumping rate while field parameters and turbidity levels were monitored. Field parameter stabilization and relatively low turbidity readings (approximately 20 nephelometric turbidity units [NTUs] or less) were obtained within four volumes at each well. All hand-auger-installed temporary wells (08GR07, 24GR09, and 24GR10) were micropurged of several well volumes until field parameters stabilized and adequate groundwater clarity was obtained. Once stabilized, groundwater was sampled at these wells immediately after micropurging.

Groundwater (for laboratory analysis) was collected under low vacuum pressure with the peristaltic pump and Teflon tubing used during purging, via an in-line collection/transfer bottle apparatus. This apparatus consisted of a two-aperture Teflon cap attached to a 300 series laboratory-certified, 80-ounce glass container (using a clean container for each well). Teflon tubing from the well was attached to one aperture while the tubing from the peristaltic pump was attached to the second. The vacuum created by the pump was sufficient to lift groundwater from the well, filling the collection/transfer bottle at a low controlled flow rate (approximately 0.1 gallons per minute). This technique allowed groundwater with minimal turbidity to be collected and transferred to the appropriate containers (i.e, inorganics, SVOCs, pesticides, PCBs, or cyanide). Sample volumes for VOC analysis were collected by removing the Teflon tubing from the well and the transfer cap, and allowing the unagitated groundwater volume retained in the line to flow backward into 40-milliliter (ml) volatile organic analysis vials.

4.3.5 Hydrologic Assessment

All sampling and monitoring well locations were surveyed and well top-of-casing elevations determined to an accuracy of ± 2 millimeters with a global positioning system after sampling events were completed. Water levels were measured below each well top of casing to the nearest 0.01 foot with an electronic water-level indicator. Based on these measurements, the combined

site area's piezometric surface was mapped and shallow groundwater flow direction and gradient determined. Hydrologic assessment results are presented in Section 5.2 of this report.

Specific Capacity Testing

Specific capacity tests were conducted during Phase III of the Site 24 investigation to calculate first estimates of aquifer parameters for site characterization purposes. Aquifer parameters were calculated from specific data using a computer program developed by Bradbury and Rothschild (1985), based on equations presented in Lohman (1972). This program is used to correct specific capacity data for partial penetration and well loss, and through an iterative technique, estimates aquifer transmissivity and hydraulic conductivity.

Two shallow Site 24 wells were tested fur specific capacity; they were selected to provide beneficial areal coverage of the surficial aquifer across the site. These newly installed permanent wells were tested by measuring the initial water level in the well and then withdrawing groundwater at a constant rate for a recorded length of time. Water was withdrawn from each well using a centrifugal pump and suction line. Water level drawdown and discharge rate were recorded throughout the test. When the pumping water level stabilized, it was noted along with the elapsed time and confirmed discharge rate. Then pumping was ended and water level recovery was noted. Water levels were recorded with an electronic water-level indicator, and discharge rates were measured with a graduated bucket of known volume and a stopwatch.

For each well tested, several variables were entered into the computer program to characterize the aquifer and pumping system. These variables included the initial water level, pumping (stabilized) water level, well construction information, aquifer thickness, and pumping duration. Aquifer thickness is the approximate saturated thickness of the surficial aquifer above the confining clay at each well's location. Because this thickness is not known at Site 24, an estimate of 30 feet was used as the saturated aquifer thickness fur both wells. Two other assumed variables entered into

the specific capacity program were the storage coefficient and well-loss coefficient. A storage coefficient of 0.25 was estimated for unconfined fine- to medium-grain sand aquifers from Todd (1980). A well-loss coefficient of 0.75 was selected from Todd (1980) to represent well screens and sand packs with mild deterioration and clogging (however, during sensitivity analysis the program was found to be relatively insensitive to these parameters). The program estimates specific capacity, transmissivity, and hydraulic conductivity. Copies of the input and output information for each tested well are presented in Appendix C.

Once hydraulic conductivity values were calculated, the geometric mean was calculated using the following formula:

$$Geometric\ \ Mean\ \ =\ \ nth\ \ \sqrt{(X_1)(X_2)(X_3)...(X_n)}$$

where:

the geometric mean equals the nth rout of the product of n values.

The geometric mean offers a more representative value of the central tendency of these data because hydrologic conductivity values frequently can vary by more than two orders of magnitude within the same hydrogeologic unit, and hydrologic data are typically log-normally distributed (Fetter, 1988).

Groundwater Velocity Calculations

Using the geometric mean, a shallow zone groundwater velocity was calculated using the following formula:

$$V = Ki/n_e$$

where:

V	=	horizontal groundwater velocity
K	=	hydraulic conductivity
i	=	horizontal hydraulic gradient
n_e	=	effective porosity

An effective porosity of 35% (0.35) was estimated for the site area's fine- to medium-grained unconsolidated sand.

Hydrologic investigation results are discussed in Section 5.2.

4.3.6 Equipment Decontamination

Equipment used in the Site 8 and 24 field investigations was decontaminated as outlined in Section 11 of the CSAP. All, sampling, exploration, and drilling equipment was decontaminated before its use at each sampling station, while sampling equipment that contacted the actual sampled material was decontaminated before sample collection at any given station. All investigation-derived wastes, which included soil cuttings, development and purge water, decontamination liquids, plastic sheeting, and personal protective equipment, were drummed and labeled as described in Section 13 of the CSAP.

5.0 GEOLOGIC AND HYDROLOGIC ASSESSMENT RESULTS

5.1 Site-Specific Geology

Surface soil (0 to 1 foot bls) across the site area generally consisted of either red silty, clayey sand road base material immediately beneath the asphalt pavement, or light to dark brown silty sandy loam with decayed organics and root traces at unpaved locations. Beneath this material, subsurface lithologies observed across the site during drilling generally consisted of buff white to tan and light gray to brown, fine- to medium-grained quartz sand containing varying, but relatively small amounts of silt-sized material. However, once saturated by groundwater, site soil commonly changed to dark brown or gray. A relatively thick capillary fringe was noted in the site area. Across this fringe, soil moisture steadily increased to full saturation over an approximate 2-foot interval. Water level elevations varied significantly (more than of 2 feet) during the investigation depending upon recent rainfall amounts and seasonal effects. The depth-to-water observed during drilling and soil sampling varied from approximately 5.5 feet bls along the Site 24's western portion (well location 24GS01) to approximately 8.5 feet bls at it's southern portion (wells 24GS04 and 24GS05). At Site 8, the depth-to-water during drilling was approximately 8 feet bls across most of the site, except at northeastern most well 08GR07, where water was encountered at approximately 11 feet bls.

The only significant subsurface anomalies noted during boring completion were fragments of plastic, metal/slag, and glass debris, which was intermixed with the native sandy soil and appeared charred at some locations. This debris was encountered on both sites at the following locations: boring 24S14 (5 feet bls); a location north of Building 3678 and immediately south of the adjacent unpaved road (3 feet bls); boring 08S06 (5 feet bls); and boring 08S07 (6 feet bls). The presence of the debris is consistent with the Site 8's past use as a disposal area,

5.2 Hydrologic Interpretation

Water Level Elevations and Groundwater Flow

During Phase I, water levels were measured in five of the newly installed wells at Site 24 on September 8, 1995, to assist in the placement of the sixth downgradient Phase I well — 24GS06. Site 24 wells were re-measured at different phases of the investigation on October 3, 1995, and May 24, 1996, to confirm the site's shallow groundwater flow direction. Site 8 and 24 wells were measured at the same time on August 30, 1996, to determine the piezometric surface and groundwater flow direction across the combined site area. Water-level data for the three periods and well construction information for both sites are listed on Table 5-1. Figure 5-1 presents latest piezometric surface for adjacent Sites 8 and 24 on August 30, 1996.

Water level elevations fur all three dates indicate shallow groundwater flows consistently north-northeast across Site 24. However, water levels were lower during the latter dates as a result of fluctuating seasonal conditions during the period of observation. Figure 5-1 shows the north-northeast shallow groundwater flow direction for the combined Sites 8 and 24 area measured on August 30, 1996. Overall, this flow regime generally mimics the local topography that is generally level to slightly northward sloping across the combined site area. The average hydraulic gradient across the area is a relatively flat .0017.

Specific Capacity Test Results

Specific capacity tests were performed on two shallow Site 24 monitoring wells as described in Section 5.4.2. These tests followed well development and groundwater sampling. Results are listed in Table 5-2.

Using the data from Table 5-2, the geometric mean for hydraulic conductivity was calculated for the shallow-well depth interval. As discussed in Section 4.3, the geometric mean is the most representative value of the central tendency of these data because hydrologic conductivity data are generally log-normally distributed. The range of hydraulic conductivity is 30.64 to 38.95; the geometric means is 34.55.

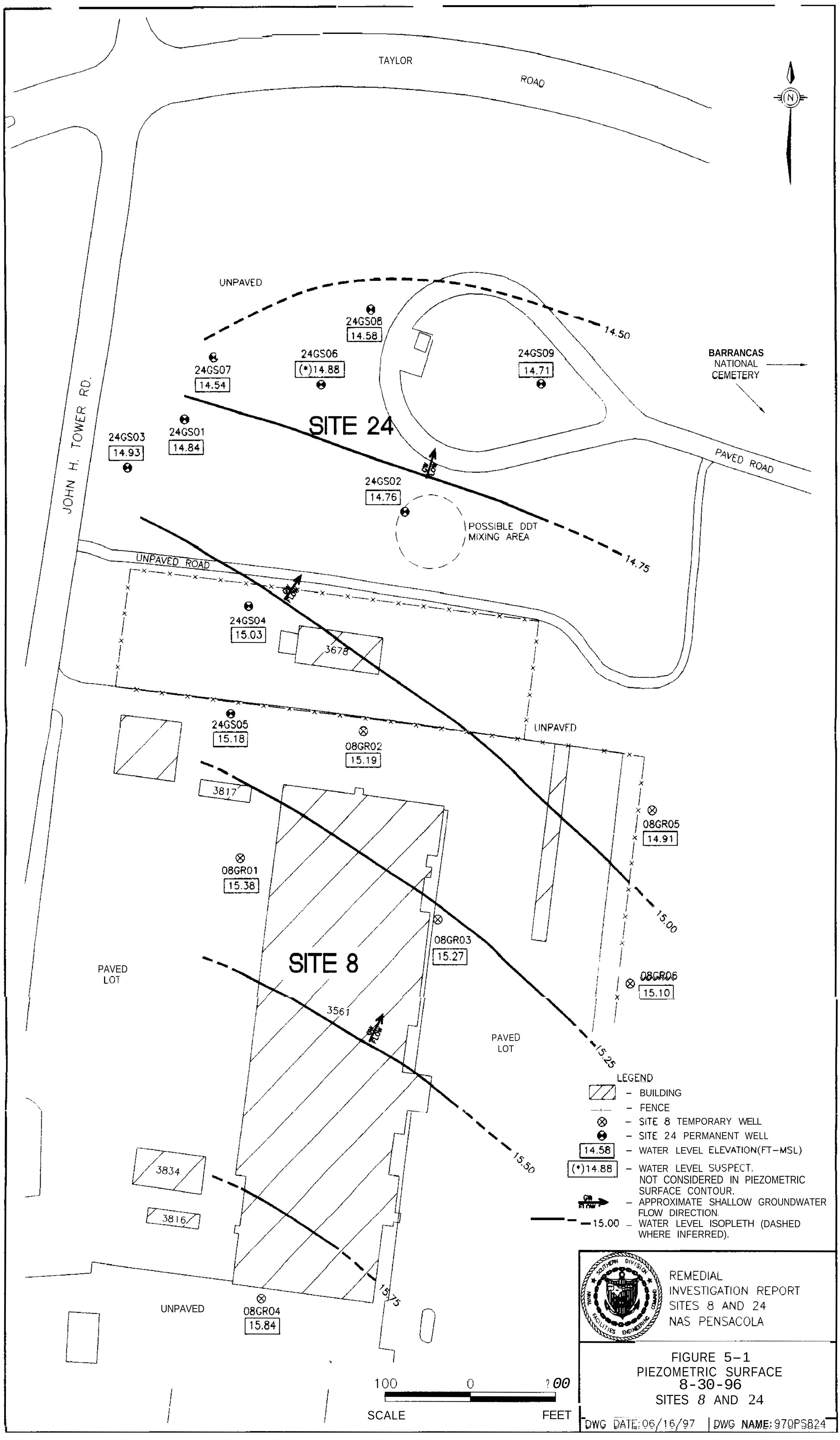

TAYLOR
ROAD
N
UNPAVED
24GS08
14.58
24GS06
(*)14.88
24GS07
14.54
24GS09
14.71
14.50
BARRANCAS
NATIONAL
CEMETERY
SITE 24
24GS03
14.93
24GS01
14.84
JOHN H. TOWER RD.
PAVED ROAD
24GS02
14.76
POSSIBLE DDT
MIXING AREA
14.75
UNPAVED ROAD
24GS04
15.03
3678
24GS05
15.18
08GR02
15.19
UNPAVED
3817
08GR05
14.91
08GR01
15.38
15.00
08GR03
15.27
SITE 8
PAVED
LOT
08GR06
15.10
3561
PAVED
LOT
15.25
LEGEND
– BUILDING
– FENCE
– SITE 8 TEMPORARY WELL
– SITE 24 PERMANENT WELL
14.58 – WATER LEVEL ELEVATION(FT–MSL)
(*)14.88 – WATER LEVEL SUSPECT. NOT CONSIDERED IN PIEZOMETRIC SURFACE CONTOUR.
– APPROXIMATE SHALLOW GROUNDWATER FLOW DIRECTION.
15.00 – WATER LEVEL ISOPLETH (DASHED WHERE INFERRED).
15.50
3834
3816
15.75
UNPAVED
08GR04
15.84
100
0
200
SCALE
FEET
REMEDIAL
INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 5–1
PIEZOMETRIC SURFACE
8-30-96
SITES 8 AND 24
DWG DATE: 06/16/97
DWG NAME: 970PS824

Table 5-1
Sites 8 and 24
Monitoring Well Construction Information and Water Level Elevations[a]
Phases I, II, and III

Location[b]	Total Well Depth (BTOC)	Screened Interval (BTOC)	Top of Casing Elevation[a]	Depth to Water (BTOC) 10/3/95	5/24/96	8/30/96	Groundwater Level Elevation[a]		
24GS01	**14.10**	**3.6-13.6**	**23.81**	**6.23**	**6.70**	**8.97**	**17.58**	**17.11**	**14.84**
24GS02	15.25	4.75-14.75	25.51	7.94	8.46	10.75	17.57	17.05	14.76
24GS03	**14.40**	**3.9-13.9**	**24.45**	**6.78**	**7.27**	**9.52**	**17.67**	**17.18**	**14.93**
24GS04	17.10	6.6-16.6	27.01	9.21	9.79	11.98	17.80	17.22	15.03
24GS05	**17.20**	**6.7-16.7**	**27.79**	**9.84**	**10.44**	**12.61**	**17.95**	**17.35**	**15.18**
24GS06	14.15	3.65-13.65	25.36	7.86	8.37	10.48	17.59	16.99	14.88*
24GS07	**15.25**	**4.75-14.75**	**25.21**	**-**	**8.19**	**10.67**	**-**	**17.02**	**14.54**
24GS08	14.50	4.0-14.0	26.63	-	9.73	12.05	-	16.90	14.58
24GS09	**18.60**	**8.1-18.1**	**27.60**	**-**	**NM**	**12.89**	**-**	**-**	**14.71**
08GR01	15.40	10.4-15.4	27.99	-	NM	12.61	-	ND	15.38
08GR02	**15.45**	**10.45-15.45**	**28.52**	**-**	**NM**	**13.33**	**-**	**ND**	**15.19**
08GR03	15.37	10.37- 5.37	28.17	-	NM	12.90	-	ND	15.27
08GR04	**18.14**	**13.14-18.14**	**30.51**	**-**	**NM**	**14.67**	**-**	**ND**	**15.84**
08GR05	15 40	10 40 15 40	28 25		NM	13 34	-	ND	14.91

Table 5-1
Sites 8 and 24
Monitoring Well Construction Information and Water Level Elevations[a]
Phases I, II, and III

Location[b]	Total Well Depth (BTOC)	Screened Interval (BTOC)	Top of Casing Elevation[a]	Depth to Water (BTOC) 10/3/95	Depth to Water (BTOC) 5/24/96	Depth to Water (BTOC) 8/30/96	Groundwater Level Elevation[a] 10/3/95	Groundwater Level Elevation[a] 5/24/96	Groundwater Level Elevation[a] 8/30/96
08GR06	15.45	10.45-15.45	28.33	-	NM	13.23	-	ND	15.10
08GR07	13.00	3.0-13.00	ND	-	-	11.20**	-	-	ND

Notes:

a	=	All elevations measured in feet above msl.
b	=	GS label assigned to permanent wells (Site 24); GR label assigned to temporary wells (Site 8).
*	=	Water level suspect; not considered in piezometric surface construction.
**	=	Water level measured April 2, 1997 during Phase II groundwater sampling.
NM	=	Not measured
ND	=	Not determined
BTOC	=	Below top of well casing
-	=	Well not yet installed

Table 5-2
Site 24
Specific Capacity Test Results

Well Number	Well Depth (BTOC)	specific Capacity (gpm/ft)	Transmissivity (ft^2/day)	Hydraulic Conductivity (ft/day)
024GS02	15.25	2.87	1163.78	38.96
024GS03	14.40	2.29	919.38	30.65

Notes:
BTOC = Below top of well casing
gpm = Gallons per minute
ft = Feet

Groundwater Velocity Estimate

Estimated average horizontal pore velocities for shallow groundwater flow calculated for the combined site area are approximately 0.17 ft/day. This estimate is based on the combined site area's .0017 shallow groundwater gradient, the calculated geometric mean hydraulic conductivity of 34.55 feet per day (ft/day) for the shallow zone obtained from the Site 24 specific capacity testing, and an effective porosity estimate of 35% for unconsolidated fine- to medium-grained sand.

6.0 NATURE AND EXTENT OF CONTAMINATION

Sections 6.1 and 6.2 discuss the analytical results for Site 8 and 24 samples, respectively, collected during this investigation. Section 6.3 summarizes these results. Conclusions and recommendations based on these results are presented in Section 10.

Establishment of Preliminary Remediation Goals

State of Florida and/or USEPA risk-based concentrations (RBCs), guidance concentrations, and promulgated standards have been defined as PRGs for this investigation. These PRGs have been used to evaluate analytical results for contamination distribution and risk assessment purposes. Discussions of the analytical results specifically address the relationship between detected parameter concentrations and the PRGs listed below. Parameters concentrations detected below PRGs are not discussed.

Soil

- RBCs soil ingestion scenario for residential soil, and soil screening levels (SSLs) transfer scenario from soil to groundwater for subsurface soil (USEPA, 1996a).

- Selected Soil Cleanup Goals (CGs) residential scenario for surface soil and leaching scenario (CGLs) for subsurface soil (FDEP, 1995 and 1996).

- USEPA, Office of Solid Waste and Emergency Response draft revised Interim Soil *Lead Guidance* (USEPA, 1994a).

- Title 40 Code of Federal Regulations (CFR) Part 761.125 Requirements for PCB Spill Cleanup (USEPA, 1988).

- USEPA, Office of Solid Waste and Emergency Response *Soil* Screening Guidance (USEPA, 1994b).

Groundwater

- USEPA Maximum Contaminant Levels (MCLs) and Secondary Maximum Contaminant Levels (SMCLs) (USEPA 1996b).

- Florida Primary/Secondary Drinking Water Standards (FPDWSIFSDWS) and Florida Groundwater Guidance Concentrations (FGGC; FDEP 1994).

All soil and groundwater PRGs are listed in Appendix D. Appendix E contains summarized soil and groundwater sample analytical results that exceed one or more PRGs (i.e., PRG exceedances only). A complete set of validated analytical results is contained in Appendix F. Additionally, figures illustrating the distribution of PRG exceedances at each site are presented in the following results discussions (Sections 6.1 and 6.2). For the soil assessment, surface soil is defined as the 0 to 1 foot bls, while subsurface soil is defined as the interval from 1-foot bls to the water table.

Establishment of Background

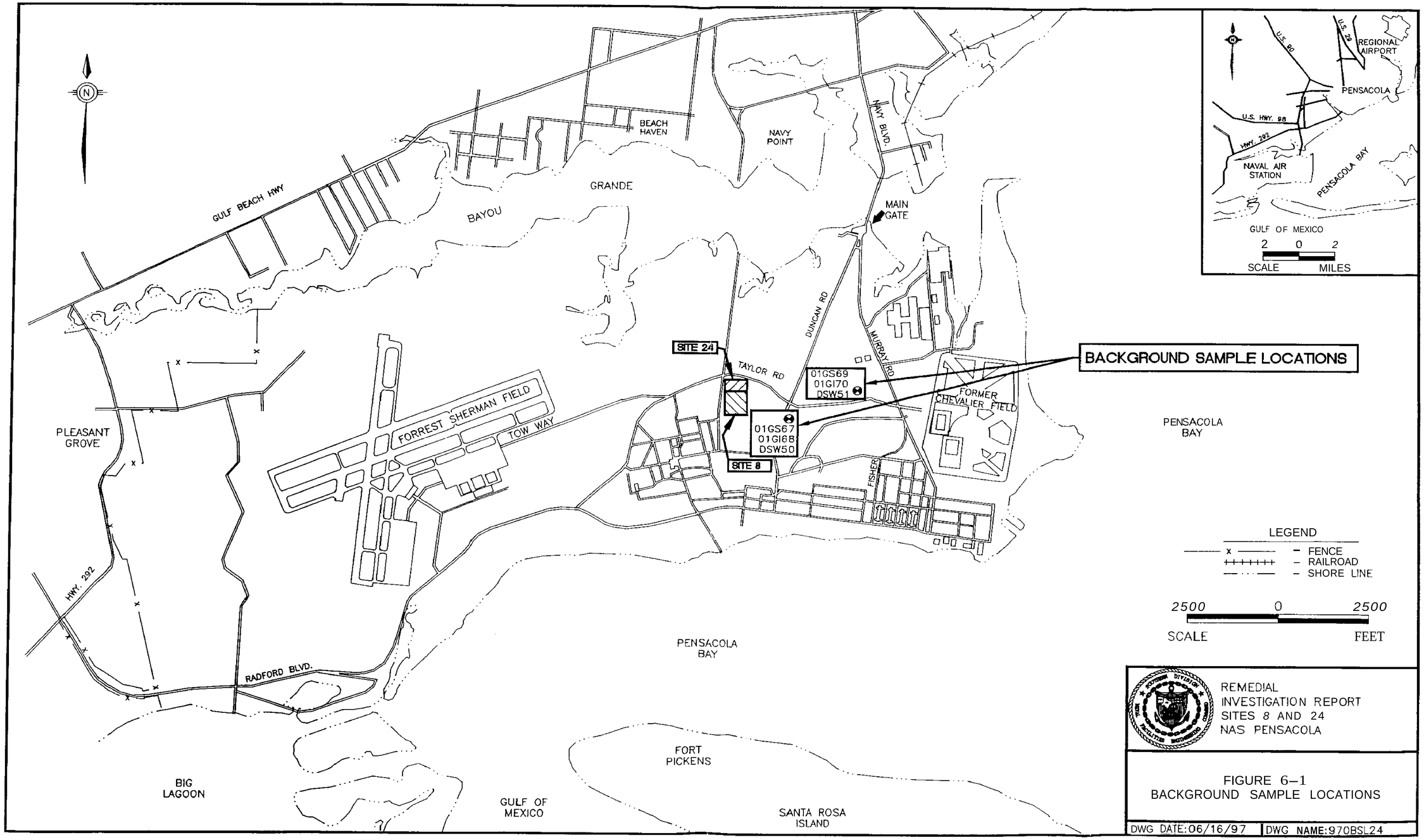
Site 8 and 24 soil and groundwater inorganics results were also compared to NAS Pensacola-specific reference concentrations (RCs) developed by the Navy. These RCs were developed from background sample data and have been used to define a range of concentrations for each detected inorganic parameter considered representative of ambient conditions. An RC has been calculated for each inorganic parameter, equal to two times the parameter's mean concentration. When an analyzed parameter was not detected in background samples at concentrations exceeding the quantitation limit, a value of one-half the reported detection limit was used to calculate the mean RC concentration. Calculated RCs for detected inorganic parameters, along with the summary

analytical results for NAS Pensacola background soil and groundwater samples, are presented in Appendix G.

Figure 6-1 shows background sample locations. Background soil samples were collected while installing background wells 01GS67, 01GI68, 01GS69, and 01GI70. These shallow and intermediate depth wells were sampled in 1993 using Teflon bailers. Due to sample turbidity, they were resampled in July 1994 using low-flow rate quiescent sampling techniques. Deep supply wells 01DSW50 and 01DSW51 were also sampled 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 using a bailer; these samples exhibited low turbidities comparable to those collected from the shallow wells using low-flow techniques).

Inorganic parameters detected in site samples are discussed in the following sections relative to RCs only when a specific parameter exceeds a PRG or when no PRG is available fur a parameter.

As evident by the RCs and background data, aluminum and iron concentrations detected in background groundwater samples exceeded secondary drinking water standards for all wells, indicating that these metals naturally occur at relatively high concentrations in the NAS Pensacola groundwater. 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; therefore, the abundance of aluminum, iron, manganese, and calcium is not unexpected.


N
GULF BEACH HWY
BEACH HAVEN
NAVY POINT
NAVY BLVD.
GRANDE
BAYOU
MAIN GATE
DUNCAN RD
MURRAY RD
SITE 24
TAYLOR RD
01GS69
01GI70
DSW51
01GS67
01GI68
DSW50
SITE 8
BACKGROUND SAMPLE LOCATIONS
FORMER CHEVALIER FIELD
FISHER
FORREST SHERMAN FIELD
TOW WAY
PLEASANT GROVE
HWY. 292
RADFORD BLVD.
PENSACOLA BAY
PENSACOLA BAY
FORT PICKENS
BIG LAGOON
GULF OF MEXICO
SANTA ROSA ISLAND
U.S. 90
U.S. 29
REGIONAL AIRPORT
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
REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 6–1
BACKGROUND SAMPLE LOCATIONS
DWG DATE:06/16/97
DWG NAME:970BSL24

6.1 Site 8

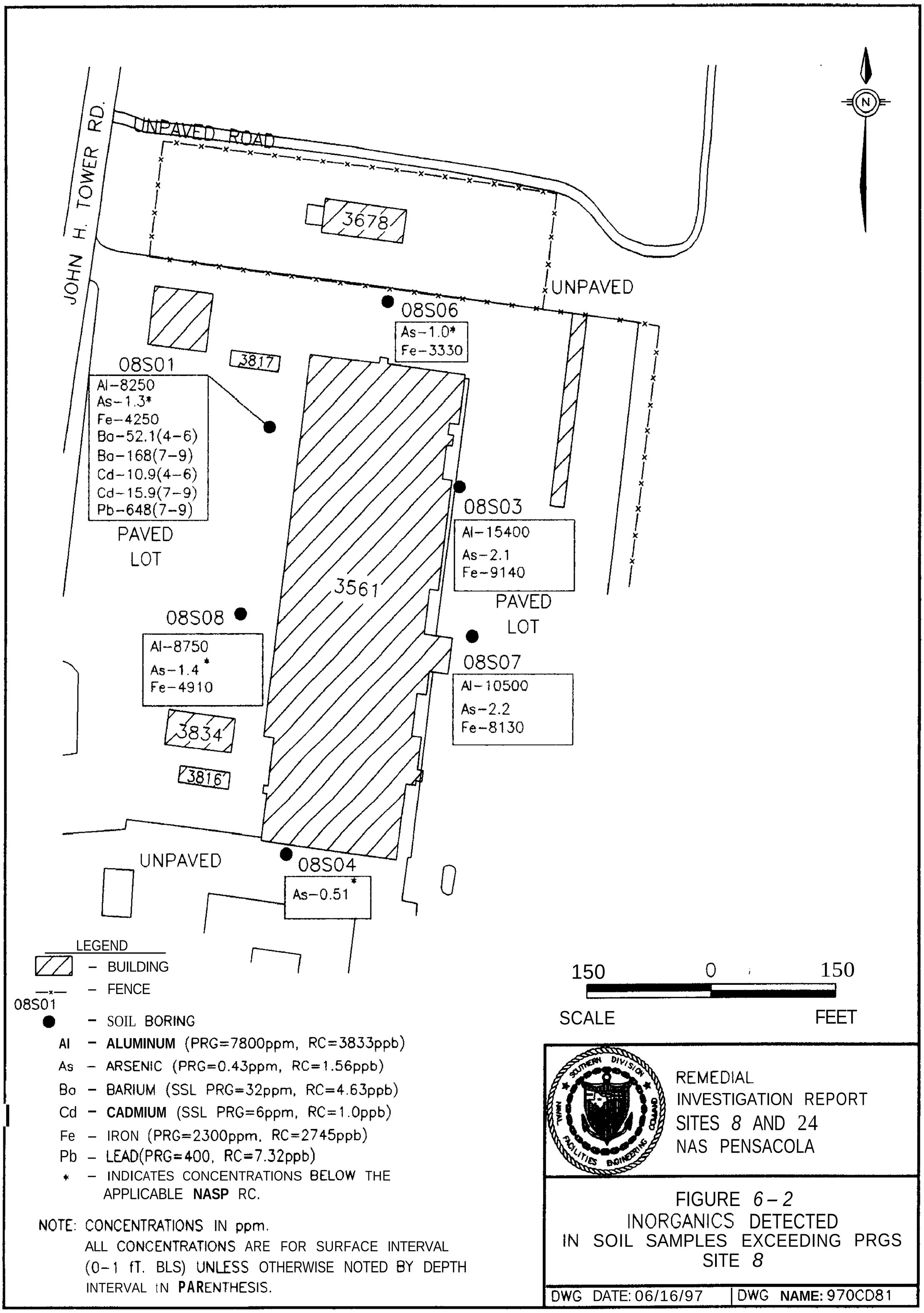
6.1.1 Soil

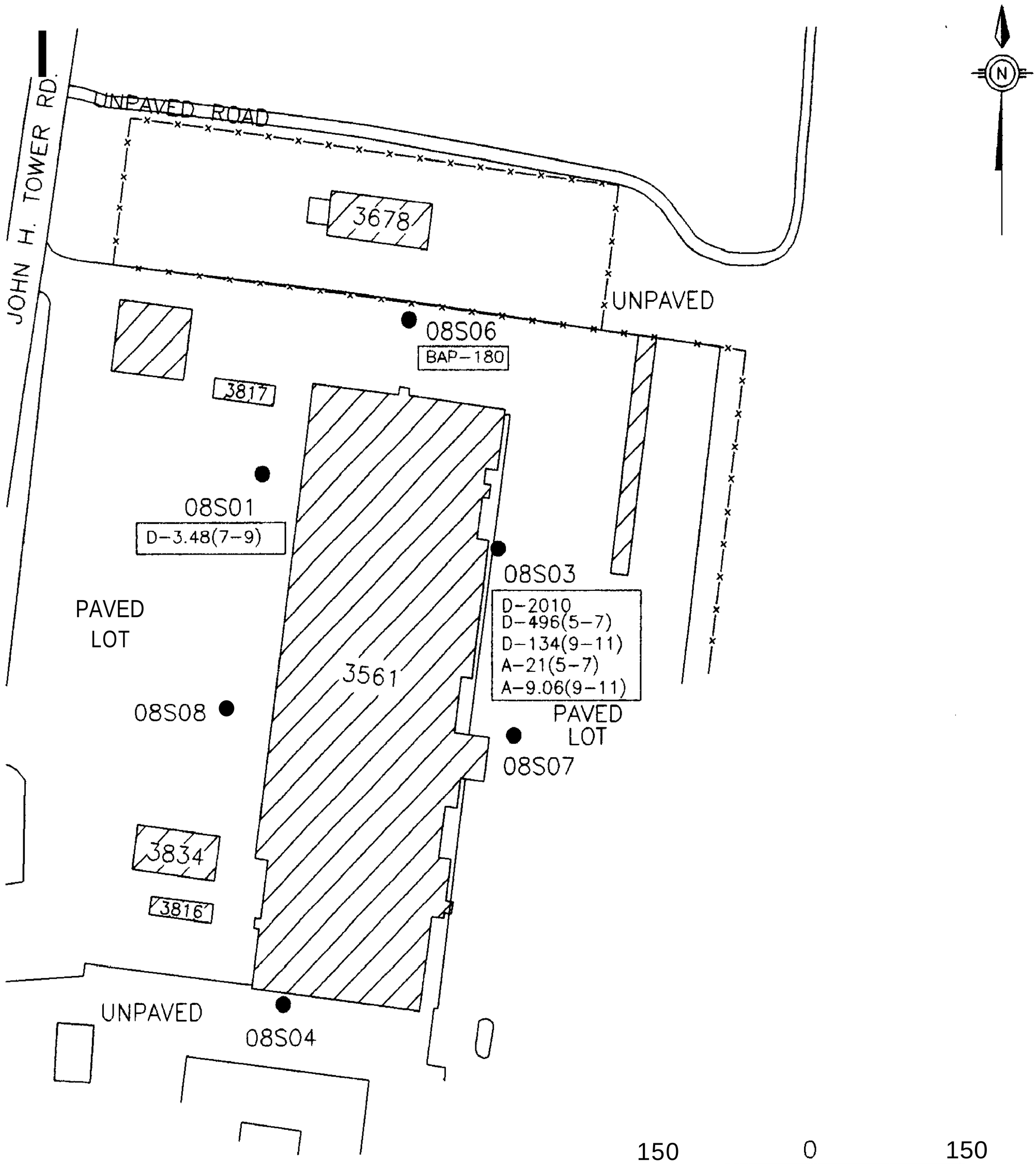
Soil sample results indicated several inorganics, one SVOC, and two pesticides exceeded PRG concentrations. These exceedances are discussed in the following sections and shown on Figures 6-2 and 6-3 by parameter group (e.g., inorganics versus organics). All Site 8 soil PRG exceedences are listed in Appendix E.

As previouly discussed, most Site 8 land surface is paved. Therefore, the first sample interval began beneath approximately 2 to 3 inches of asphalt pavement. The only unpaved soil sample location at Site 8 was boring 08S04.

Inorganics

Figure 6-2 shows inorganic PRG exceedences in Site 8 soil samples. Aluminum, arsenic, and iron surface soil concentrations exceeded PRGs at most sampling locations. However, most arsenic exceedences were below the 1.56 parts per million (ppm) NAS Pensacola RC. Maximum concentrations for the three metals, aluminum 15,400 ppm, arsenic 2.2 ppm, and iron 9,140 ppm, were detected at two locations, 08S03 (aluminum and iron) and 08S07 (arsenic only). Barium and cadmium were the only inorganics that exceeded a subsurface (SSL) PRG. Each exceeded its SSL PRG of 32 ppm and 6 ppm, respectively. Barium and cadmium exceedances were detected only in samples collected from location 08S01, in both the 4 to 6 feet bls and 7 to 9 feet bls sample intervals. The highest detected concentration of each was 168 ppm and 15.9 ppm, respectively. A single lead concentration that exceeded the 400 ppm USEPA Interim Soil Lead Guidance was also detected in a sample from 08S01. This 648 ppm concentration was detected in the 7 to 9 feet bls interval.


JOHN H. TOWER RD.
UNPAVED ROAD
3678
UNPAVED
08S06
As-1.0*
Fe-3330
3817
08S01
Al-8250
As-1.3*
Fe-4250
Ba-52.1(4-6)
Ba-168(7-9)
Cd-10.9(4-6)
Cd-15.9(7-9)
Pb-648(7-9)
PAVED
LOT
08S03
Al-15400
As-2.1
Fe-9140
PAVED
LOT
3561
08S08
Al-8750
As-1.4*
Fe-4910
08S07
Al-10500
As-2.2
Fe-8130
3834
3816
UNPAVED
08S04
As-0.51*
N
LEGEND
- BUILDING
- FENCE
08S01
- SOIL BORING
Al - ALUMINUM (PRG=7800ppm, RC=3833ppb)
As - ARSENIC (PRG=0.43ppm, RC=1.56ppb)
Ba - BARIUM (SSL PRG=32ppm, RC=4.63ppb)
Cd - CADMIUM (SSL PRG=6ppm, RC=1.0ppb)
Fe - IRON (PRG=2300ppm, RC=2745ppb)
Pb - LEAD(PRG=400, RC=7.32ppb)
* - INDICATES CONCENTRATIONS BELOW THE APPLICABLE NASP RC.
NOTE: CONCENTRATIONS IN ppm.
ALL CONCENTRATIONS ARE FOR SURFACE INTERVAL (0-1 ft. BLS) UNLESS OTHERWISE NOTED BY DEPTH INTERVAL IN PARENTHESIS.
150 0 150
SCALE FEET
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 6-2
INORGANICS DETECTED
IN SOIL SAMPLES EXCEEDING PRGS
SITE 8
DWG DATE: 06/16/97
DWG NAME: 970CD81



LEGEND

- BUILDING
- FENCE
- 08S01 – SOIL BORING
- BAP – Benzo(a)pyrene (PRG=88ppb)
- D – Dieldrin (SSL PRG=1ppb;PRG=40ppb)
- A – Aldrin (SSL PRG=5ppb)

NOTE: CONCENTRATIONS IN ppb.
ALL CONCENTRATIONS ARE FOR SURFACE INTERVAL (0-1 fT. BIs) UNLESS OTHERWISE NOTED BY DEPTH INTERVAL IN PARENTHESIS,

REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA

FIGURE 6-3
ORGANICS DETECTED
IN SOIL SAMPLES EXCEEDING PRGS
SITE 8

DWG DATE: 06/16/97 | DWG NAME: 970CD82

Organics

Figure 6-3 shows organics that exceeded PRGs in Site 8 soil. As shown, only one SVOC, benzo(a)pyrene (BAP), and two pesticides, aldrin and dieldrin, exceeded PRGs. The surface soil sample from boring 08S06, north of Building 3561, contained a 180 ppb BAP concentration exceeding the 88 ppb RBC PRG. One or more pesticide exceedance was detected in samples from borings 08S01 and 08S03, which are located west and east of Building 3561, respectively. A single surface soil dieldrin concentration, 2010 ppb from boring 08S03, exceeded the 40 ppb RBC. Subsurface dieldrin concentrations at both locations also exceeded the 1.0 ppb SSL for dieldrin. Maximum subsurface dieldrin concentrations were 3.48 ppb at 08S01 and 496 ppb at 08S03. Aldrin, a metabolite of dieldrin, also exceeded its 5 ppb SSL in subsurface samples from 08S03. The maximum aldrin exceedance concentration was 21 ppb.

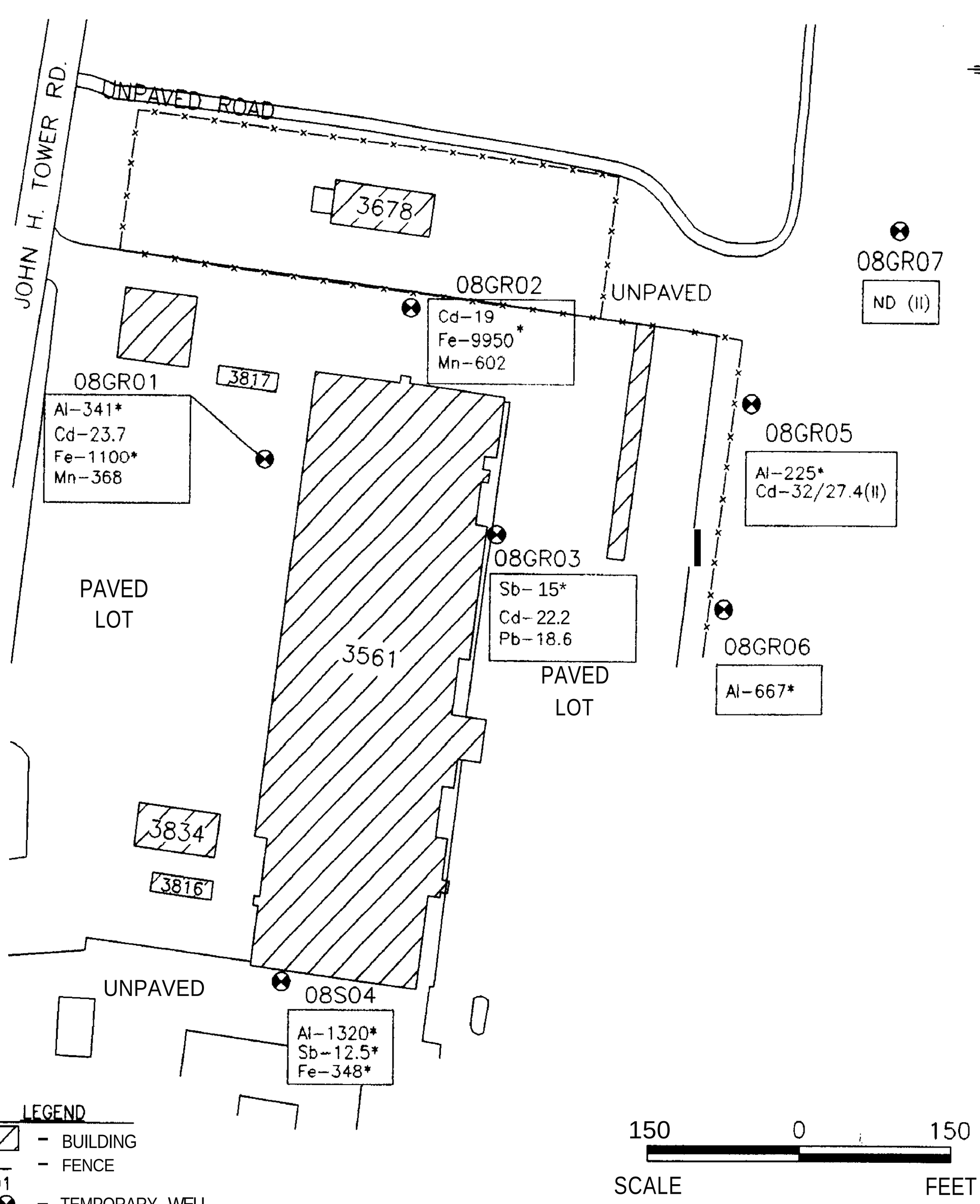
6.1.2 Groundwater

Table 6-1 presents stabilized groundwater field parameter values measured before sample collection each sampling phase. Typical groundwater pH was approximately 5.4 to 6.6 units across the site.

Groundwater sample results indicated several inorganic parameters exceeded PRG concentrations. However, no organic parameter exceedances were detected, Inorganic exceedances are discussed in the following section and shown on Figure 6-4. Site 8 groundwater PRG exceedances are listed in Appendix E.

Inorganics

Figure 6-4 shows all PRG exceedances detected in Site 8 groundwater samples. Several inorganics exceeded either USEPA/Florida Primary or Secondary Drinking Water Standard (P/SDWS) MCLs.



LEGEND

- BUILDING
- FENCE
- 08GR01 – TEMPORARY WELL
- Al – ALUMINUM (PRG=200ppb, RC=3882ppb)
- Cd – **CADMIUM** (PRG=5ppb, RC=3.4ppb)
- Fe – IRON (PRG=300ppb, RC=1707ppb)
- Pb – LEAD (PRG=15ppb, RC=1.6ppb)
- Mn – **MANGANESE** (PRG=50ppb, RC=22ppb)
- Sb – **ANTIMONY** (PRG=6ppb, RC=30.2ppb)
- ND – NO PRG EXCEEDANCES DETECTED.
- * – INDICATES CONCENTRATION IS BELOW THE APPLICABLE **NASP** RC.

NOTE: CONCENTRATIONS **IN** ppb.
ALL RESULTS ARE FOR PHASE: I UNLESS NOTED OTHERWISE BY (II) IN PARENTHESIS.

REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA

FIGURE 6-4
INORGANICS DETECTED IN PHASE I AND II GROUNDWATER SAMPLES EXCEEDING PRGS
SITE 8

DWG DATE: 06/16/97 | DWG NAME: 970CD83

Table 6-1
Groundwater Field Parameters
Site 8

Sampling Phase	Location	pH (units)	Specific Conductance (mS/cm)	Temperature (°C)
I (May 96)	08GR01	5.68	.544	24.8
	08GR02	5.39	.339	23.8
	08GR03	6.41	.333	23.4
	08GR04	6.96	.130	22.3
	08GR05	5.90	.327	21.8
	08GR06	6.58	.208	22.2
II (April 97)	08GR05	4.51	.216	19.5
	08GR07	5.98	.460	20.6

Notes:
mS/cm = milliSiemens per centimeter
°C = Degrees centigrade

As shown, aluminum exceeded the 200 ppb SDWS MCL in most Phase I samples; however, all detected concentrations are below the 3882 ppb NAS Pensacola RC. Iron also exceed its 300 ppb SDWS MCL in samples from three of the six original Phase I temporary wells. Only the 9950 ppb iron concentration from well 08GR02 also exceeded the 1707 ppb RC. Manganese exceeded its 50 ppb SDWS MCL in two Phase I samples: a 368 ppb concentration from well 08GR01 and a 602 ppb from well 08GR02.

Antimony, cadmium, and lead exceeded their respective PDWS MCLs of 6 ppb, 5 ppb, and 15 ppb. The two antimony exceedances from wells 08GR03 and 08GR04 were each below the associated 30.2 ppb RC. The highest concentration was 15 ppb. A single lead exceedance of 18.6 ppb detected in the Phase I sample from 08GR03 slightly exceeded the PRG. Cadmium exceedances were detected in Phase I samples from well 08GR01, 08GR02, 08GR03, and 08GR05, and in the Phase II sample from 08GR05. The highest cadmium concentrations, 32 ppb in Phase I and 27.4 in Phase II, were detected in samples from 08GR05. However, no cadmium

or other inorganic exceedances were detected in the Phase II sample collected from the most downgradient well 08GR07.

6.2 Site 24

6.2.1 Soil

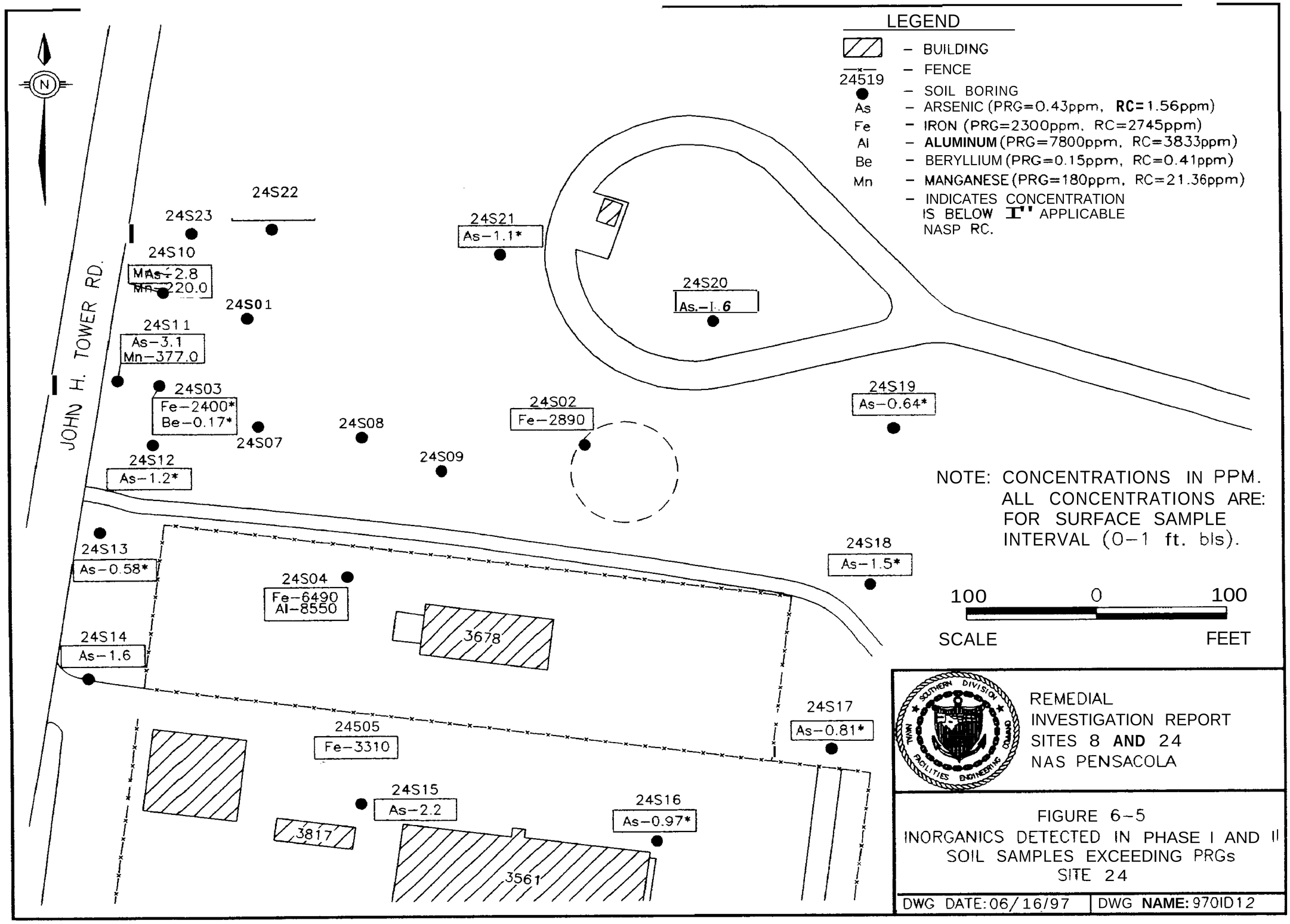
Phase I and II soil sample results indicated several inorganics, pesticides, PCBs, and SVOCs exceeded PRG concentrations. These exceedances are discussed in the following sections and shown on Figures 6-5 through 6-7 by parameter group (e.g., inorganics versus pesticides, etc.). Site 24 soil PRG exceedances are listed in Appendix E.

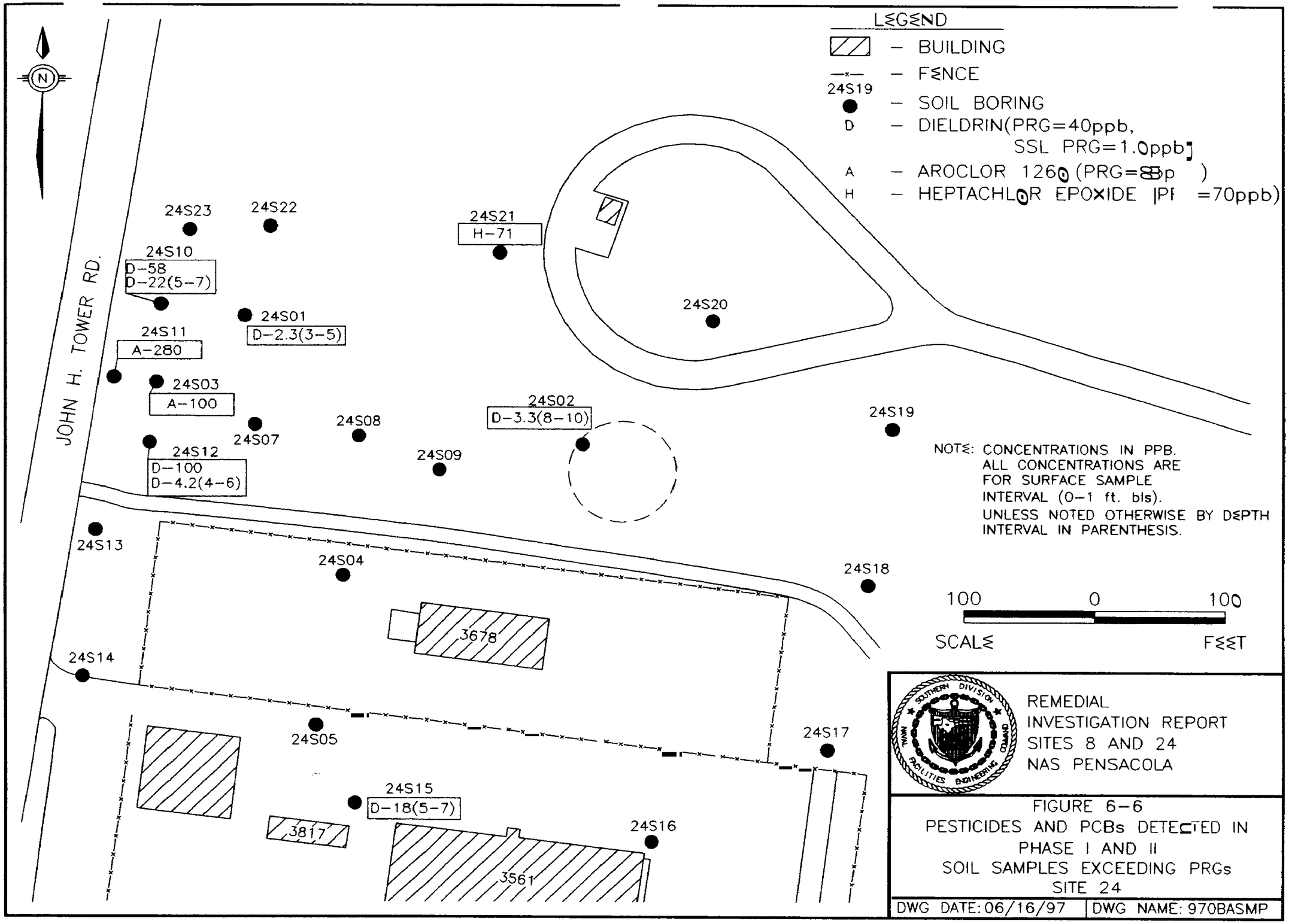
Inorganics

Figure 6-5 shows inorganic PRG exceedances detected in Phase I and II soil samples. All inorganic PRG exceedances occured in the surface sample interval.

Several detected arsenic concentrations exceeded the soil 0.43 ppm RBC PRG. Arsenic exceedances, which were detected across the site, ranged from 0.58 to 3.1 ppm. However, most of these were below the 1.56 ppm RC calculated for NAS Pensacola soil. Only samples collected from borings 24S10, 24S11, 24S14, and 24S20 exceeded both the PRG and RC.

Aluminum, beryllium, manganese, and iron concentrations infrequently exceeded PRGs in surface soil. Only one PRG exceedance was detected for each aluminum and beryllium. The 7,800 ppm RBC for aluminum was exceeded by a single 8,550 ppm concentration at location 24S04. The 0.15 ppm RBC for beryllium was sightly exceeded by a 0.17 ppm concentration at location 24S03; however, this concentration was below its associated 0.41 RC. Two detected manganese concentrations exceeded the 180 ppm RBC for this parameter; the highest was 377 ppm. These were detected at locations 24S10 and 24S11, along the site's western boundary. Iron exceedances ranging from 2,400 to 6,490 ppm were limited to the site's central and western portion at locations 24S02 through 24305.


LEGEND
BUILDING
FENCE
24519
SOIL BORING
As ARSENIC (PRG=0.43ppm, RC=1.56ppm)
Fe IRON (PRG=2300ppm, RC=2745ppm)
Al ALUMINUM (PRG=7800ppm, RC=3833ppm)
Be BERYLLIUM (PRG=0.15ppm, RC=0.41ppm)
Mn MANGANESE (PRG=180ppm, RC=21.36ppm)
INDICATES CONCENTRATION IS BELOW "I" APPLICABLE NASP RC.
NOTE: CONCENTRATIONS IN PPM. ALL CONCENTRATIONS ARE: FOR SURFACE SAMPLE INTERVAL (0-1 ft. bls).
100 0 100
SCALE FEET
N
JOHN H. TOWER RD.
24S22
24S23
24S10
As-2.8
Mn-220.0
24S01
24S11
As-3.1
Mn-377.0
24S03
Fe-2400*
Be-0.17*
24S07
24S08
24S09
24S12
As-1.2*
24S13
As-0.58*
24S14
As-1.6
24S04
Fe-6490
Al-8550
3678
24505
Fe-3310
24S15
As-2.2
3817
3561
24S16
As-0.97*
24S17
As-0.81*
24S18
As-1.5*
24S19
As-0.64*
24S20
As.-1.6
24S21
As-1.1*
24S02
Fe-2890
REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 6-5
INORGANICS DETECTED IN PHASE I AND II SOIL SAMPLES EXCEEDING PRGs
SITE 24
DWG DATE: 06/16/97
DWG NAME: 970ID12


LEGEND
BUILDING
FENCE
24S19
SOIL BORING
D DIELDRIN(PRG=40ppb, SSL PRG=1.0ppb)
A AROCLOR 1260 (PRG=88ppb)
H HEPTACHLOR EPOXIDE (PRG=70ppb)
N
JOHN H. TOWER RD.
24S23
24S22
24S10
D-58
D-22(5-7)
24S01
D-2.3(3-5)
24S11
A-280
24S03
A-100
24S07
24S08
24S12
D-100
D-4.2(4-6)
24S09
24S02
D-3.3(8-10)
24S21
H-71
24S20
24S19
24S13
24S04
24S18
3678
24S14
24S05
24S17
24S15
D-18(5-7)
3817
24S16
3561
NOTE: CONCENTRATIONS IN PPB.
ALL CONCENTRATIONS ARE FOR SURFACE SAMPLE INTERVAL (0-1 ft. bls).
UNLESS NOTED OTHERWISE BY DEPTH INTERVAL IN PARENTHESIS.
100 0 100
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 6-6
PESTICIDES AND PCBs DETECTED IN PHASE I AND II SOIL SAMPLES EXCEEDING PRGs
SITE 24
DWG DATE: 06/16/97
DWG NAME: 970BASMP

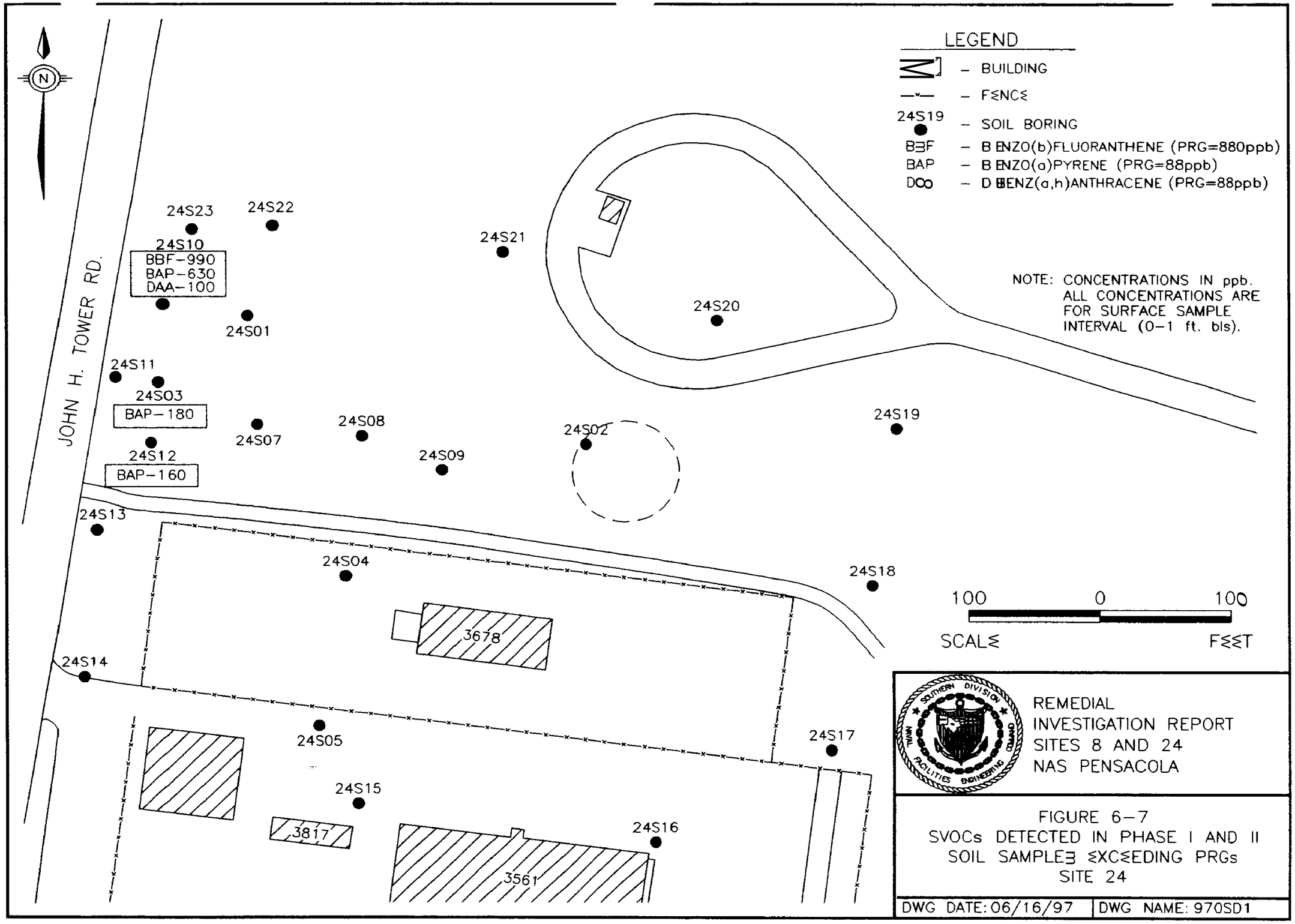


FIGURE 6-7
SVOCs DETECTED IN PHASE I AND II SOIL SAMPLES EXCEEDING PRGs
SITE 24

DWG DATE: 06/16/97 | DWG NAME: 970SD1

Pesticides and PCBs

As shown on Figure 6-6, the pesticides dieldrin and heptachlor epoxide, and the PCB Aroclor-1260, were detected in site soil samples at concentrations exceeding PRGs. Except for dieldrin, these exceedances were infrequent and limited to the surface soil sample interval.

Only one heptachlor epoxide concentration, a 71 ppb surface soil concentration from location 24S21, slightly exceeded the 70 ppb RBC for this parameter. Only two exceedances of the 83 ppb Aroclor-1260 RBC occurred. Both PCB exceedances were detected in the western portion of the site; the highest was a 280 ppb concentration at location 024S11. Dieldrin PRG exceedances occured more frequently. Two surface sample concentrations, 58 ppb and 100 ppb from borings 24S10 and 24S12, respectively, exceeded the surface soil RBC of 40 ppb. Dieldrin's subsurface soil SSL of 1.0 ppb was exceeded in several samples collected from the following locations: 24S01, 24S02, 24S10, 24S12, and 24S15. The highest subsurface dieldrin concentration, 22 ppb, was detected in the sample collected from the 8 to 10-foot depth at 24S10.

Semivolatiles

Figure 6-7 shows the limited locations where SVOC concentrations *exceeding* PRGs were detected. All detections were detected in surface soil samples from locations 24303, 24S10, and 24S12, along the site's western boundary. Benzo(b)fluoranthene and dibenzo(a,h)anthracene concentrations (990 and 100 ppb, respectively), detected at location 24S10, exceeded their respective 880 and 88 ppb RBCs. Benzo(a)pyrene was detected at all three locations exceeding its 88 ppb RBC. The highest benzo(a)pyrene concentration, 630 ppb, was detected at 24S10.

6.2.2 Groundwater

Table 6-2 presents stabilized groundwater field parameter values measured prior to sample collection during each sampling phase. Typical shallow groundwater pH ranged from 5.5 to 6.5 units across the site,

Table 6-2
Groundwater Field Parameters
Site 24

Sampling Phase	Location	pH (units)	Specific Conductance (mS/cm)	Temperature (°C)
I (Sept 95)	24GS01	6.43	.414	26.6
	24GS02	6.07	.238	26.3
	24GS03	6.35	.767	26.5
	24GS04	6.55	.583	26.9
	24GS05	6.06	.420	29.9
	24GS06	5.81	.191	26.0
II (April 96)	24GS01	5.80	.422	19.3
	24GS02	6.44	.257	19.8
	24GS03	6.56	.712	20.5
	24GS04	5.97	.533	20.7
	24GS05	5.25	.256	22.1
	24GS06	5.95	.252	19.1
	24GS07	6.55	.140	19.0
	24GS08	4.23	.250	19.5
II (June 96)	24GR09	6.58	.383	23.2
	24GR09	6.69	.404	--
II (July 96)	24GR10	4.65	.194	24.2
III (July 96)	24GS09	5.41	.196	25.0

Notes:
mS/cm = milliSiemens per centimeter
°C = Degrees centigrade
-- = Not measured

Phase I, II, and III groundwater sample results indicated several inorganic and organic parameters exceeded PRG concentrations. PRG exceedances are discussed in the following section and shown on Figures 6-8 through 6-10.

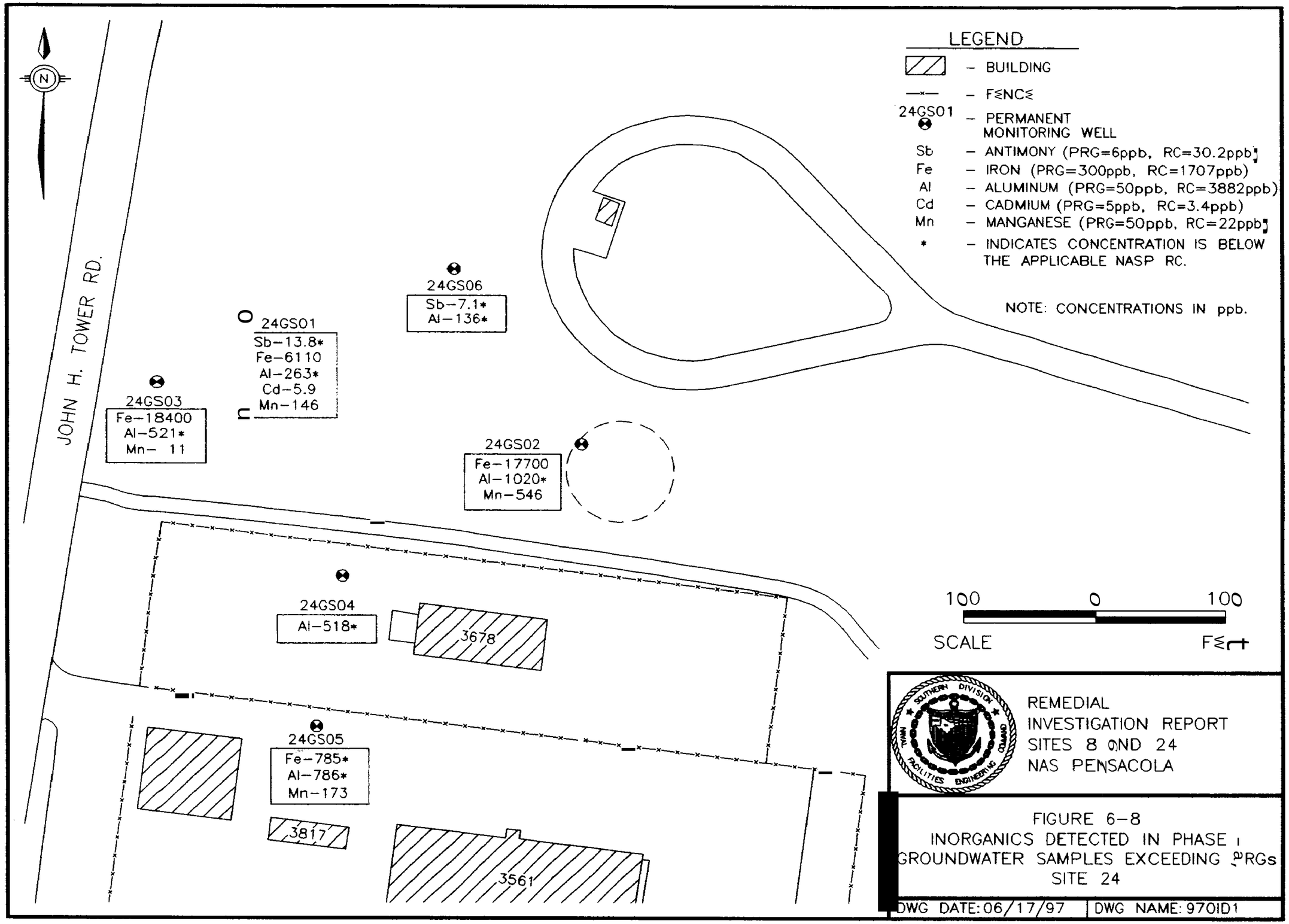

N
JOHN H. TOWER RD.
LEGEND
BUILDING
FENCE
24GS01
PERMANENT MONITORING WELL
Sb – ANTIMONY (PRG=6ppb, RC=30.2ppb)
Fe – IRON (PRG=300ppb, RC=1707ppb)
Al – ALUMINUM (PRG=50ppb, RC=3882ppb)
Cd – CADMIUM (PRG=5ppb, RC=3.4ppb)
Mn – MANGANESE (PRG=50ppb, RC=22ppb)
* – INDICATES CONCENTRATION IS BELOW THE APPLICABLE NASP RC.
NOTE: CONCENTRATIONS IN ppb.
24GS06
Sb–7.1*
Al–136*
24GS01
Sb–13.8*
Fe–6110
Al–263*
Cd–5.9
Mn–146
24GS03
Fe–18400
Al–521*
Mn– 11
24GS02
Fe–17700
Al–1020*
Mn–546
24GS04
Al–518*
3678
24GS05
Fe–785*
Al–786*
Mn–173
3817
3561
100 0 100
SCALE
Feet
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
REMEDIAL INVESTIGATION REPORT
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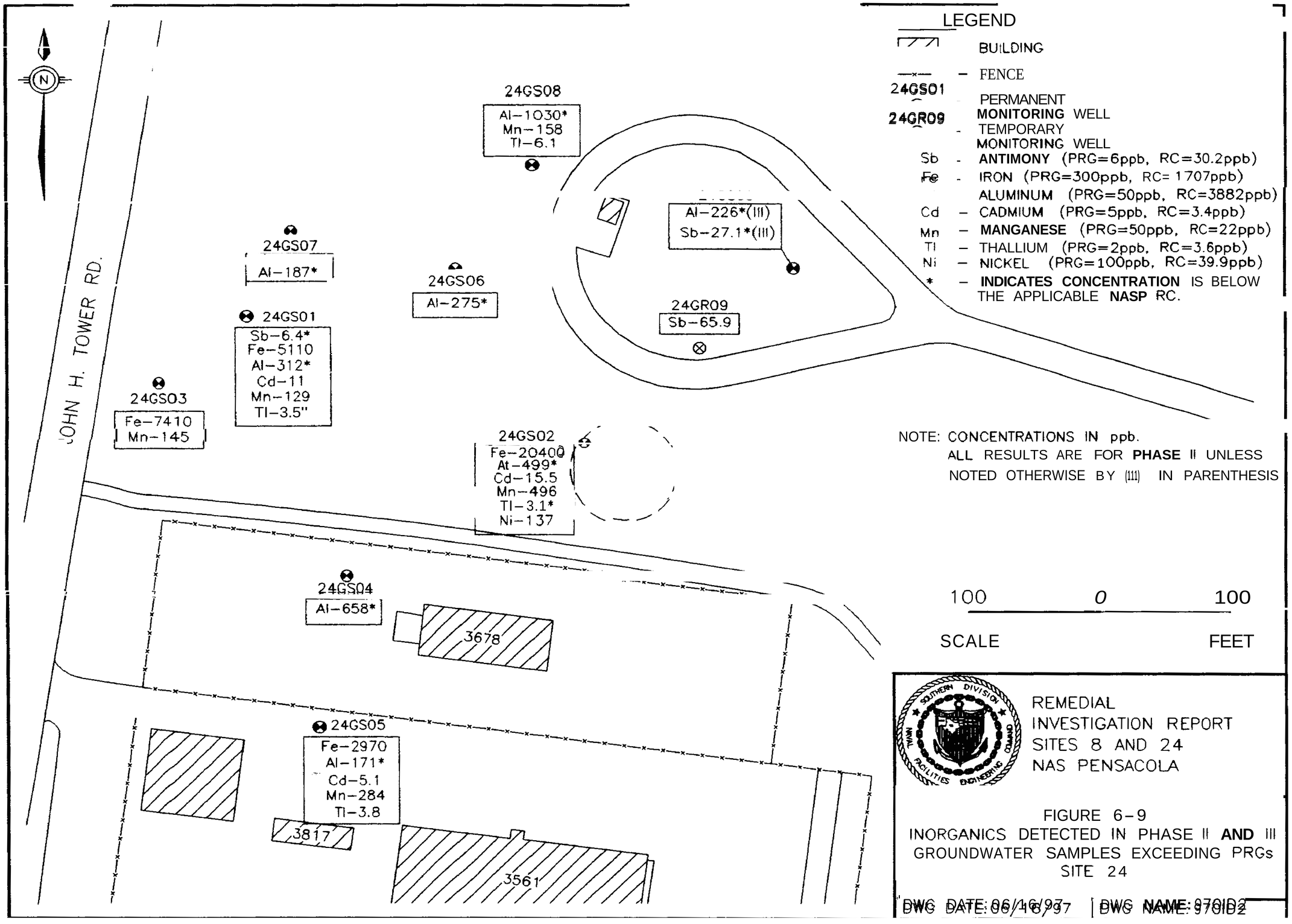
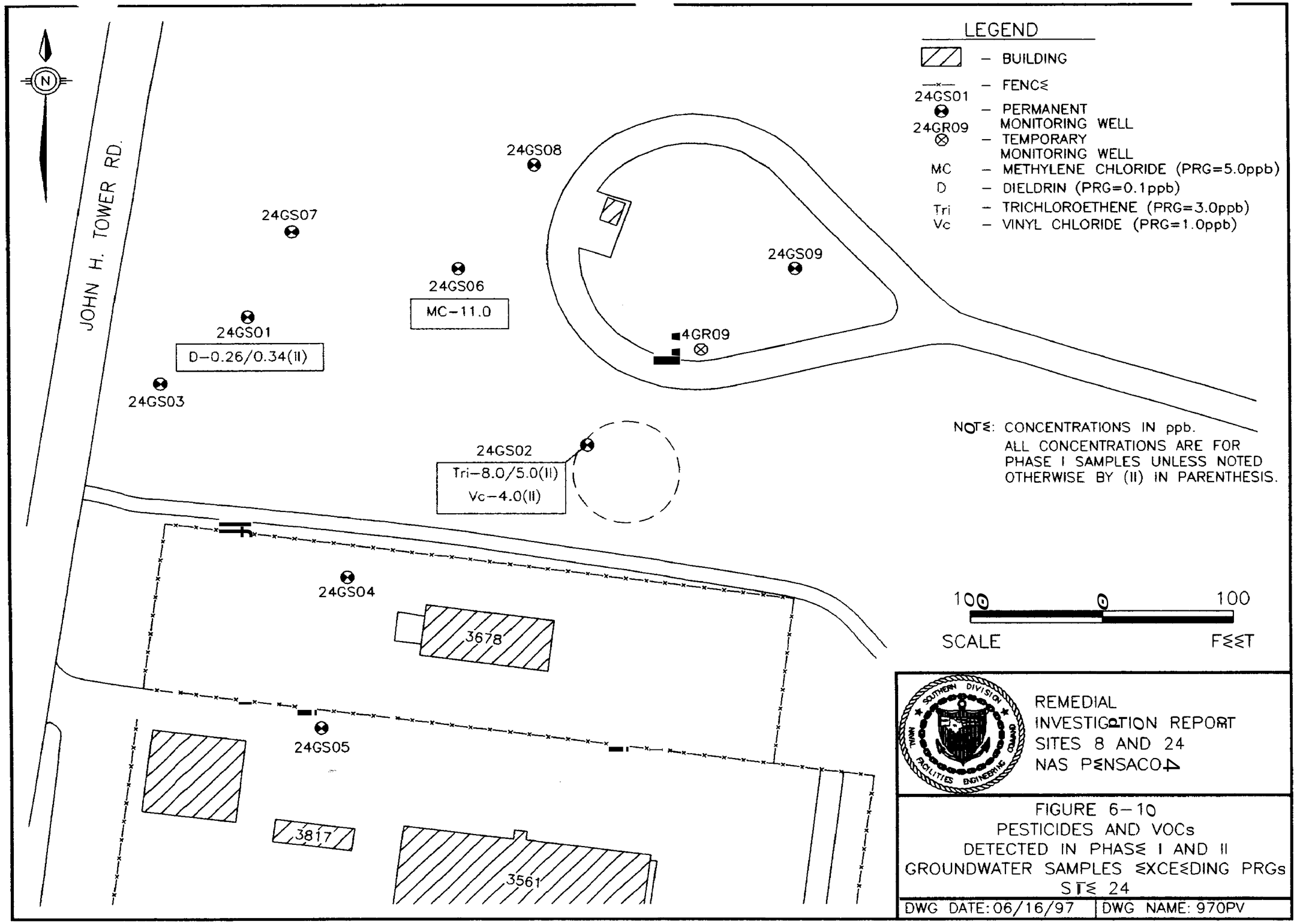
FIGURE 6–8
INORGANICS DETECTED IN PHASE I GROUNDWATER SAMPLES EXCEEDING PRGs
SITE 24
DWG DATE: 06/17/97
DWG NAME: 970ID1


N
JOHN H. TOWER RD.
24GS08
Al-1030*
Mn-158
Tl-6.1
24GS07
Al-187*
24GS06
Al-275*
24GS01
Sb-6.4*
Fe-5110
Al-312*
Cd-11
Mn-129
Tl-3.5"
24GS03
Fe-7410
Mn-145
Al-226*(III)
Sb-27.1*(III)
24GR09
Sb-65.9
24GS02
Fe-20400
At-499*
Cd-15.5
Mn-496
Tl-3.1*
Ni-137
24GS04
Al-658*
3678
24GS05
Fe-2970
Al-171*
Cd-5.1
Mn-284
Tl-3.8
3817
3561
LEGEND
BUILDING
FENCE
24GS01 PERMANENT MONITORING WELL
24GR09 TEMPORARY MONITORING WELL
Sb - ANTIMONY (PRG=6ppb, RC=30.2ppb)
Fe - IRON (PRG=300ppb, RC= 1707ppb)
ALUMINUM (PRG=50ppb, RC=3882ppb)
Cd - CADMIUM (PRG=5ppb, RC=3.4ppb)
Mn - MANGANESE (PRG=50ppb, RC=22ppb)
Tl - THALLIUM (PRG=2ppb, RC=3.6ppb)
Ni - NICKEL (PRG=100ppb, RC=39.9ppb)
* - INDICATES CONCENTRATION IS BELOW THE APPLICABLE NASP RC.
NOTE: CONCENTRATIONS IN ppb.
ALL RESULTS ARE FOR PHASE II UNLESS NOTED OTHERWISE BY (III) IN PARENTHESIS
100 0 100
SCALE FEET
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 6-9
INORGANICS DETECTED IN PHASE II AND III GROUNDWATER SAMPLES EXCEEDING PRGs
SITE 24
DWG DATE: 06/16/97
DWG NAME: 970ID2


N
JOHN H. TOWER RD.
LEGEND
BUILDING
FENCE
24GS01
PERMANENT MONITORING WELL
24GR09
TEMPORARY MONITORING WELL
MC – METHYLENE CHLORIDE (PRG=5.0ppb)
D – DIELDRIN (PRG=0.1ppb)
Tri – TRICHLOROETHENE (PRG=3.0ppb)
Vc – VINYL CHLORIDE (PRG=1.0ppb)
24GS08
24GS07
24GS09
24GS06
MC–11.0
24GS01
D–0.26/0.34(II)
4GR09
24GS03
NOTE: CONCENTRATIONS IN ppb.
ALL CONCENTRATIONS ARE FOR PHASE I SAMPLES UNLESS NOTED OTHERWISE BY (II) IN PARENTHESIS.
24GS02
Tri–8.0/5.0(II)
Vc–4.0(II)
24GS04
3678
100
0
100
SCALE
FEET
24GS05
3817
3561
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
REMEDIAL INVESTIGATION REPORT
SITES 8 AND 24
NAS PENSACOLA
FIGURE 6–10
PESTICIDES AND VOCs
DETECTED IN PHASE I AND II
GROUNDWATER SAMPLES EXCEEDING PRGs
SITE 24
DWG DATE: 06/16/97
DWG NAME: 970PV

Inorganics

Figures 6-8 and 6-9 show all inorganic PRG exceedances detected in groundwater samples collected during Phase I, and Phases II and III, respectively. Several inorganics exceeded either USEPA/Florida Primary or Secondary Drinking Water Standard MCLs.

As shown on Figures 6-8 and 6-9, most Phase I and II groundwater samples contained aluminum concentrations exceeding the 50 ppb secondary MCL PRG; however, all were below the 3,882 ppb NAS Pensacola shallow groundwater RC. Also shown on these figures, iron and manganese commonly exceeded their respective 300 ppb and 50 ppb RBCs during Phases I and II. The highest iron and manganese concentrations were 20,400 ppb (Phase II), and 546 ppb (Phase I), respectively. Each was detected in samples from well 24GS02 in the site's central portion.

Figures 6-8 and 6-9 show antimony, cadmium, nickel, and thallium concentrations that exceeded their respective primary MCL PRGs of 6 ppb, 5 ppb, 100 ppb, and 2 ppb. Antimony exceedances occurred in samples collected from wells 24GS01, 24GS06, 24GR09, and 24GS09, across the site's west-central and northeastern portions. These concentrations ranged from 6.4 to 67 ppb. Except for samples from well 24GR09 which contained the highest antimony concentrations, all detected antimony concentrations were below the 30.2 ppb RC. Cadmium exceedances, ranging from 5.1 ppb to 15.5 ppb, occurred in samples collected from wells 24GS01, 24GS02, and 24GS05, in the site's central and southern portion. The highest cadmium concentration was detected in a sample from well 24GS02. Only one nickel exceedance was detected in site groundwater. This 137 ppb nickel concentration was in the sample collected from well 246502. Thallium exceeded the 2 ppb PRG in Phase II samples from wells 24GS01, 24GS02, 24GS05, and 24GS08. However, only those from wells 24GS05, in the site's southern portion, and 24GS08, in the northern portion, also exceeded the 3.6 ppb NAS Pensacola RC. The highest thallium concentration, 6.1 ppb, was detected in the sample from well 24GS08.

Pesticides

As shown on Figure 6-10, dieldrin was the only pesticide which exceeded a PRG. Dieldrin concentrations of' .26 ppb and +34ppb were detected in samples collected from well 24GS01 during Phase I and II, respectively. Each of these concentrations exceeded the dieldrin FGGC of 0.1 ppb.

Volatiles

The VOCs methylene chloride, trichloroethene (TCE), and vinyl chloride exceeded their PRGs during Phases I and/or II. Figure 6-10 shows the locations of these VOC exceedances.

As shown, single detections of methylene chloride (11 ppb) and vinyl chloride (4 ppb) exceeded their respective PRGs of 5 ppb and 1 ppb. The methylene chloride exceedance occurred in the Phase I sample from well 24GS06. The vinyl chloride exceedance occurred in the Phase II sample from 24GS02. TCE concentrations of 8 ppb and 5 ppb, exceeding the 3 ppb PRG, were detected in samples collected during both Phases I and II from well 24GS02.

Semivolatiles

No SVOCs were detected in Site 24 groundwater samples at concentrations exceeding PRGs.

6.3 Contamination Summary

6.3.1 Site 8

Soil

Inorganic and organic parameters exceeding PRGs were detected in Site 8 soil samples. Past waste disposal and later construction activities have disturbed the upper several feet of soil across the site, as indicated by the debris (charred metal, glass, and plastic fragments) occasionally encountered in the unsaturated subsurface soil at Sites 8 and 24. Barium, cadmium, and lead subsurface exceedances at boring 08S01 are suspected to be associated with past waste disposal.

However, aluminum and iron surface exceedances are attributable to the red clayey road base fill beneath the asphalt pavement. Most arsenic surface soil PRG exceedances were below the RC, indicating they represent background conditions at NAS Pensacola. The few slight arsenic RC exceedances are also attributable to background conditions, and/or the red clayey road base beneath the asphalt.

All organic soil exceedances were detected in samples from the site's northern portion. The single SVOC exceedance, and other nonexceedance SVOC detections in surface soil, are suspected to be associated with fragments of the overlying asphalt in the surficial interval. Pesticide soil exceedances (dieldrin and aldrin) detected in samples collected around the building are attributable to either past waste disposal onsite, or the previous handling of pesticide rinsates at Building 3561. However, as noted in the site description, land surface at all soil exceedance locations is paved with asphalt.

Groundwater

Only cadmium, manganese, and an isolated lead concentration exceeded both PRGs and RCs in site groundwater. All exceedances occurred in samples collected from the site's north and northeast portion, extending toward the cemetery. This distribution is consistent with past disposal of metallic-alloy aircraft refuse or other metallic material around Building 3561's current location, and the site's north-northeasterly shallow groundwater flow. **The extent of this shallow groundwater impact does extend to Site 24, but does not extend beyond the OU13 downgradient boundary.** No organic PRG exceedances were detected in Site 8 groundwater samples.

6.3.2 Site 24

Soil

Inorganic soil exceedances (aluminum, arsenic, iron, and manganese) were limited to surface soil. Aluminum, iron, and manganese commonly occur as "essential nutrients" in fertilizers; arsenic-based compounds are common ingredients of herbicides and pesticides. Because the site is mostly a maintained grass field, exceedances in maintained areas are attributable to routine herbicide, fertilizer, and pesticide application. The slight inorganic PRG/RC exceedances in the site's southern portion are attributable to background conditions at NAS Pensacola, and/or the red clayey road base fill beneath the asphalt and crushed shell pavement.

Exceedances of the pesticides dieldrin and heptachlor epoxide in surface and subsurface soil samples is consistent with past routine use of these materials, and their downward movement over time through permeable site soil. PCBs and SVOCs detected in a limited number of surface soil sample locations at the site's western margin are suspected to be the result of past waste oil application for dust control along previously unpaved John Tower Road.

Groundwater

PRG and RC exceedances of iron and manganese detected in shallow groundwater can be attributed to fertilizer application, which commonly contains water-soluble forms of these inorganics as essential nutrients. Metal fragments were found in the subsurface soil north of Building 3678, indicating that Site 8 fill activities extended, or have been reworked, onto Site 24. Based on this evidence, sporadic antimony, cadmium, nickel, and thallium exceedances in shallow groundwater can be attributed to metal-alloy debris disposal at Site 8 and/or 24. Relatively low chlorinated solvent VOC concentrations slightly exceeding PRGs in shallow groundwater are also suspected to be the result of past disposal activities at Site 8 and/or 24. The single dieldrin groundwater exceedance near the soil exceedance locations indicates that soil concentrations have leached to groundwater in a limited area. However, the extent of all organic PRG exceedances is limited to the Site 24 area, as indicated by no organic exceedances in samples from the most downgradient wells 24GS07, 24GS08, 24GR09, and 24GS09. With the exception

of manganese and thallium, inorganic PRE and/or RC exceedances are limited to the OU13 area.

7.0 SITE 8 AND 24 DATA VALIDATION

Sites 8 and 24 data were validated by either Heartland Environmental Services Inc. of St. Charles, Missouri, or E/A&H. The analytical work was conducted by Maxwell S-Cubed Division in San Diego, California (Site 8) and Savannah Laboratories in Savannah, Georgia (Site 24). Samples were analyzed in accordance with one of the following guidance documents:

- Naval Energy and Environmental Support Activity (NEESA) Level D QA/QC guidelines as stated in: Sampling and Chemical Analysis *Quality* Assurance Requirements for the *Navy Installation and Restoration Program (NEESA- 20.2047B).*

- Naval Facilities Engineering Service Center (NFESC) *Navy Installation* Restoration *Laboratory* Quality Assurance Guide, Interim Document, February 1996.

- USEPA Contract Laboratory Program (CLP), *Superfund* Analytical Methods for Low *Concentration* Water for Organic Analysis, October 1992 (CLP Low Organic SOW).

- USEPA CLP, *Superfund Analytical Methods* for Low Concentration Water for Inorganic Analysis, October 1991 (CLP Low Inorganic SOW).

- USEPA CLP, *Statement* of Work for Organic *Analysis,* Multi-Media, Multi-Concentration, OLM01.8 (CLP Organic SOW).

- USEPA CLP, *Statement* of Work for Inorganic Analysis, *Multi-Media,* Multi-*Concentration,* ILM03.0 (CLP Inorganic SOW).

- USEPA (OSWER), Test Methodsfor Evaluating *Solid* Waste, *Physical/Chemical Methods* (SW-846), Third Edition, revised July 1992.

- USEPA Environmental Monitoring and Support Laboratory, Methods for Chemical Analysis *of* Water and Wastes (EPA-600/4-79-020, revised March 1983).

Data were validated using the following documents:

- USEPA *Contract* Laboratory Program National *Functional* Guidelinesfor Organic Datu Review, February 1994 (EPA-540/R-94/012) (Organic Functional Guidelines).

- USEPA *Contract* Laboratory Program *National Functional* Guidelinesfor Inorganic *Data Review,* February 1994 (EPA-540/R-94/013) (Inorganic Functional Guidelines).

Data validation qualifiers are listed at the end of this section.

site 8

Fourteen soil and six water samples were collected March *26* through May 14, 1996, at Site 8. Two Phase II groundwater samples were collected on April 2, 1997. These totals do not include field QC samples. All samples were received by the laboratory in good condition and with the proper custody documents and seals intact. The organic and inorganic results fur these samples were reported in four Sample Delivery Groups (SDGs): 5597, 5648, 5671, and PJL15.

Site 24

Forty-eight soil and twenty-two water samples were collected in three sampling events at Site 24. These totals do not include field QC samples. Sampling Phase I ran from August 29, to

September 19, 1995, Phase II ran from April 2, to July 2, 1996, and Phase III was conducted on July 29, 1996. All samples were received by the laboratory in good condition and with the proper custody documents and seals intact. The organic and inorganic results for these samples were reported in nine SDGs: ENP02, ENP14, 83691, 83859, PJL05, PJL06, PJL08, PLJ10, and PJL12.

QC Summary

Tables 7-1 through 7-8 summarize the QC parameters used for the data validation of each SDG and can be found at the end of this section. The analytical data were found to be acceptable for use in the remedial investigation of Sites 8 and 24 at NAS Pensacola.

7.1 Organic Analysis

7.1.1 Holding Times

Site 8

All technical and contractual holding times were within QC requirements.

Site 24

All technical and contractual holding times were within QC requirements for the pesticide/PCB and SVOC fractions. VOC samples 024GGS0903 and 024HGS0903 were reanalyzed 24 days outside of holding times. The original sample results were chosen for investigative purposes (see Section 7.1.2); therefore, the missed holding times for the reanalyzed samples do not affect interpretation.

7.1.2 Calibrations

Site 8

All QC criteria for VOC and SVOC GC/MS tuning were met in all SDGs. Several compounds were outside the calibration *QC* criteria in all fractions. These *QC* deficiencies represent common laboratory practices and occurred at a rate consistent with instruments that are calibrated correctly. All affected sample results were qualified for calibration outliers per the Organic Functional Guidelines. In the VOC fraction, several calibration outliers grossly exceeded *QC* criteria, Low response factors warranted rejection of undetected acetone and 2-butanone values in samples 008GGR0601, 008GGR0501, and 008HGR0601. In addition, 008GGS0101, 008GGS0201, 008GGS0301, and 008GGS0401 warranted rejection of undetected acetone, 2-butanone, and I,2 -dibromo-3-chloropropane due to low response factors.

Methoxychlor was outside the initial calibration QC criteria on March 28, 1996, in SDG 5597. Methoxychlor and alpha-BHC were outside the initial calibration QC criteria on May 20, 1996, in SDG 5671. Affected sample results were estimated per the Organic Functional Guidelines.

Site *24*

All *QC* criteria for SVOC GC/MS tuning was met in all SDGs. SDG PJL12 was analyzed using the CLP Low Organic SOW; however, the laboratory evaluated the GC/MS tune against SW-846 method 8240 criteria. Upon discovery of the mistake, all samples were reanalyzed 24 days outside of holding times. Because the tuning criteria between the two methods are similar and because both sets of values concur, the original results were used for interpretation due to superior holding times.

Several compounds were outside the calibration QC criteria in all fractions. These QC deficiencies represent common laboratory practices and occurred at a rate consistent with

instruments that are calibrated correctly. All affected sample results were qualified for calibration outliers per the Organic Functional Guidelines.

In the VOC fraction, several calibration outliers grossly exceeded *QC* criteria. Low response factors warranted rejection of undetected acetone and 2-butanone values in samples 024GGS0101, 024HGS0101, 024GGS0201, 024GGS0301, 024GGS0401, 024GGS0501, and 024GGS0601. Undetected xylene and chloroform were rejected in samples 024GGS0201 and 024S000301, respectively, due to low response factors. Undetected chloroethane was rejected in samples 024S000305, and 024S000401, 024S000405 due to low response factors. In the SVOC fraction, low response factors warranted rejection of undetected di-n-octylphthalate in samples 024GGS0301, 024GGS0401, 024GGS0501, and 024GGS0601.

7.1.3 Blanks

Qualification of compounds detected in blanks transpired as recommended by the Organic Functional Guidelines, Action levels were based on the highest concentration of any laboratory artifact found in associated method blank(s) or QC sample(s). No positive sample result for a common laboratory artifact was reported unless that particular artifact's concentration exceeded the action level of 10 times the amount found in any blank(s) or five times the blank amount for non common laboratory artifacts. All results believed to be attributed to blank contamination were flagged as undetected "U".

Site 8

Acetone was detected in the blanks associated with the investigation of Site 8. This compound is considered to be a common laboratory artifact and was qualified as recommended by the Organic Functional Guidelines.

In most cases following data validation, common laboratory contaminants were deemed tu be undetected in the investigative samples due to their presence in associated laboratory and field blanks. The presence of acetone in samples 008S000101, 008S000106, 008S000109RE, 008S000301, 008S000307, 008S000311, 008S000601, 008C000601, and 008S000707RE could not be directly related to blank contamination. Acetone concentrations ranged from 8 µg/kg to 110 µg/kg in these samples. This does not mean acetone in these samples should be considered a site constituent. The usability of the data must be based on historical evidence at the site, as well as other data results. VOC constituents used in laboratory analysis and other processes are particularly common sources of potential cross-contamination. The solvents acetone, methylene chloride, and methyl ethyl ketone are used for extraction and cleaning in commercial laboratories, but are usually separated from the VOC analysis section. Although in theory these solvents are not spread from one part of the laboratory to another, this is not always true in day-today laboratory operations and analyses. These VOC compounds can easily be transported via air ducts, clothing, glassware, shoes, paperwork, and writing instruments. Acetone found in the investigative samples may also be attributed to isopropanol alcohol (IPA) used for decontamination. IPA is used for manufacturing acetone and its derivatives (Lewis, 1993). Oxidation of IPA may yield acetone contamination. Based on potential field and laboratory sources, the presence of acetone in investigative samples may be questionable and should be used with extreme caution.

Site 24

Several compounds were detected in the blanks associated with the investigation of Site 24. Most compounds were considered common laboratory artifacts: acetone, methylene chloride, and phthalate esters, However, some compounds were detected in blanks that are not associated with laboratory practices (i.e., tetrachloroethene, ethylbenzene, xylene, styrene, bromoform, and

4-methyl-2-pentanone). Qualification of compounds detected in blanks transpired as recommended by the Organic Functional Guidelines.

7.1.4 Matrix Spike/Matrix Spike Duplicates

In each method used to analyze environmental samples, the reported results may vary due to the random differences in the handling and analysis of the matrix. These variations are referred to as the *precision* or the *reproducibility* of results. To demonstrate reproducibility, known quantities of several compounds are added 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 can then be analyzed by applying the same preparation techniques and analytical methods used for all the samples of similar matrix types. This enables the MS and MSD to be used during sample analysis to detect matrix effects caused by contaminants that interfere with the compounds of interest that may also be within the sample. No specific requirements have been established for qualifying MS/MSD data. However, guidelines to aid in applying professional judgment are discussed in Organic Functional Guidelines.

All MS/MSD criteria were met for the Sites 8 and 24 samples.

7.1.5 Laboratory Control Samples

The CLP Low Concentration SOW requires that a Laboratory Control Sample (LCS) be performed for organic parameters. LCSs are used to demonstrate that the laboratory process for sample preparation and analysis is in control. The LCS is similar to the MS/MSD except ASTM Type II water with known amounts of specific analytes is carried through the entire analytical procedure with the samples.

All LCS criteria were met for SDGs analyzed.

7.1.6 Surrogates

Accuracy is the degree to which a given result agrees with the *true* value. To check the accuracy in a VOC, SVOC, and pesticide/PCB analysis, the CLP Organic SOW requires the addition of known amounts of surrogate compounds. If the surrogate %R are close to the known concentrations as defined within the limits set by the CLP, the reported target compound concentrations are assumed to be accurate.

Site 8

All VOC and SVOC surrogate recoveries were within QC limits. In the pesticide/PCB fraction fur SDG 5597, samples 008S000301, 008S000601, and 008S000607 had surrogate recoveries outside the QC criteria. Results were qualified as estimated per the Organic Functional Guidelines.

Site 24

All VOC and SVOC surrogate recoveries were within QC limits. In the pesticide/PCB fraction for SDGs ENP03 and ENP14, samples 024S000801, 024S000205, 024S000901, 024S000501, 024S000305, 024S000401, 024S000105, 0245000701, 024S000201, 024S000301, 024S000405, 024S000210, and 024GGS0301 had surrogate recoveries below the QC limit. All positive and non detected results reported in these samples were qualified as estimated per the Organic Functional Guidelines.

7.1.7 Internal Standards

Internal standards (IS) added to VOC and SVOC samples are used to calculate the concentrations of target compounds. Two IS QC criteria must be met when a sample is analyzed. The retention time of the IS must not vary more than 30 seconds and the IS area counts must not vary more than

a factor of two (-50% to +100%) from the associated calibration standard. All Site 8 and 24 VOC and SVOC SDGs met the retention time QC criteria.

Site 8

VOC samples 008S000106, 008S000301, 008S000307, 008S000601, 008S000607, 008S000607, 008S000801, 008S000401, and 008S0003 11 were reanalyzed due to noncompliant IS areas. Upon reanalysis, the IS areas did not improve, indicating matrix interference, The original sample analyses were used for interpretation, and appropriately qualified, because of preferable holding times. VOC samples 008S000701 and 008S000707 had two IS areas outside QC limits. Sample 008S000109 had three IS areas outside *QC* limits. All three samples were reanalyzed. Upon reanalysis, the IS areas improved; however, one IS was still outside QC limits in each sample. The reanalyzed sample analyses (0085000109RE, 008500070RE, and 0085000109RE) were used for interpretation and the compounds associated with the internal standard were flagged as estimated according to the Organic Functional Guidelines.

Site 24

VOC sample 024S000301 exhibited a low area for one IS in SDG ENP02. SVOC sample 024S002307 also exhibited low IS areas. Both samples were reanalyzed and still had IS areas outside QC limits, indicating matrix interference. The original sample analyses were used for interpretation because of preferable holding times. The compounds associated with the ISs were flagged as estimated according to the Organic Functional Guidelines.

7.1.8 Field Duplicates

Representativeness expresses the degree to which sample data accurately and precisely represent the characteristic of a population, parameter variations at a sampling point, or an environmental condition, The duplicate samples indicate overall field and laboratory precision. A greater

variance should be expected fur the soil sample duplicates compared to water sample duplicates due to the differences in matrix.

The field duplicates associated with Sites 8 and 24 indicated good field duplicate correlation.

7.1.9 Compound Quantitation

Two columns and two separate detectors are used in pesticides analysis. Quantitation of target analytes and surrogates is generally performed and reported on both columns; however, only the lower of the two concentrations are reported. The lower of the two concentrations is used because if present, coeluting interferences are likely tu increase the calculated concentration of any target compound. For detected analytes, the %D between the two columns are calculated. If the %D between the calculated concentrations is greater than 25%, the laboratory flags the value with a "P" qualifier. This flag alerts the data user of the potential problems in quantitating the analyte.

During the validation process, the laboratory's "P" flags are dropped. The values are flagged "J" when the %D between the calculated concentrations is greater than 25%. The validation flag alerts the data user that the pesticide value is an estimated concentration.

Site 8

Most samples exhibited low IS areas for the VOC fraction in SDG 5597. Eleven of 15 samples with noncompliant IS areas were reanalyzed. Nine of 15 samples that exhibited low IS areas were reanalyzed and the IS areas did not improve, indicating matrix interference. The original sample analyses were used for interpretation, and appropriately qualified, because of preferable holding times. Three of 15 reanalyzed samples had IS area that improved; however one IS in each sample was still outside QC limits. The reanalyzed samples were chosen for interpretation. All positive

and undetected results associated with the ISs outside QC criteria were estimated per the Organic Functional Guidelines.

Site 24

SDG PJL12 was analyzed using the CLP Low Organic SOW; however, the laboratory evaluated the GC/MS tune against the SW-846 8240 criteria. Upon discovery of the mistake, all. samples were reanalyzed 24 days outside of holding times. Because the tuning criteria between the two methods are similar, both sets of values concur, all original results were used for interpretation due to superior holding times.

VOC sample 024S000301 exhibited low areas for one IS. SVOC sample 024S002307 also exhibited low IS areas. These samples were reanalyzed and still had IS areas outside QC limits, indicating matrix interference. The compounds associated with the IS were flagged as estimated according to the Organic Functional Guidelines. The original sample analysis was reported because of preferable holding times.

The following samples were diluted because one or more compounds exceeded the calibration range (flagged "E" by the laboratory).:

VOC Fraction:	024GGS0201
SVOC Fraction:	024S000301
Pesticide Fraction.:	024C000101, 024S000301, 024S000401, 024S001001, 024C001001, 024S001007, 024S001101, 024S001201, 024S001206, 024S001507, 024S001301, 024S002101

The values that exceeded the calibration range in the original samples were substituted by the diluted values. The "D" flag was left on the substituted values to alert the data user that the results were from a secondary dilution. The remaining values in the diluted sample should not be used for interpretation.

7.2 Inorganic Analysis

7.2.1 Holding Times

Sites 8 and 24

All samples from Sites 8 and 24 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 analysis, holding times were within method and contractual requirements.

7.2.2 Calibration

Sites 8 and 24

Initial and continuing calibration is conducted to ensure that the instrument is capable of acceptable and quantitative performance at the beginning and throughout each analytical run. Initial and continuing calibrations for Sites 8 and 24 were performed for the analysis of inorganics within the criteria established by the USEPA CLP Inorganics SOW.

7.2.3 Blanks

Sites 8 and 24

Blank results are used to determine the presence and magnitude of any con——tion problems. According to Inorganic Functional Guidelines, a sample result should not be considered positive unless the concentration of the compound in the sample exceeds five tunes the amount in any associated blank. As expected, contamination was identified in the blanks of both inorganic SDGs. Action levels were set for each affected element based on the highest concentration in any

associated blank. Elements attributed to blank contamination were flagged undetected "U." No positive sample result was reported for an element detected in any blank unless that particular artifact's concentration exceeded the action level of five times the amount found in any blank per the CLP Inorganic SOW.

7.2.4 ICP Interference Check Sample Analyses

Sites 8 and 24

The inductive coupled plasma (ICP) Interference Check Sample (ICS) analysis is performed to check the laboratory's instrument and the background correction factors. An ICS was analyzed for each SDG without any indication of interferences.

7.2.5 ICP Serial Dilutions

ICP serial dilutions assess of matrix interference. One sample from each set of similar matrix type is diluted by a factor of five. For an analyte concentration that is at least 50 times above the instrument detection limit, the measured concentrations of the undiluted sample and of the diluted sample should agree within 10%.

Site 8

In SDG 5597, aluminum, barium, calcium, iron, lead, magnesium, manganese, sodium, vanadium, and zinc were outside QC criteria. All positive results for these elements in SDG 5597 were estimated as recommended by the Inorganic Functional Guidelines.

Site 24

The serial dilution result for barium was outside the QC limits in SDG ENP02. All positive barium results in SDG ENP02 were flagged as estimated. Zinc was outside the QC limits in SDG PJL08. All positive zinc results in SDG PJL08 were flagged as estimated.

7.2.6 Laboratory Control Sample

LCSs are used to monitor the overall performance or accuracy of all steps in the analysis, including the sample preparation. LCS criteria were met for all SDGs.

7.2.7 Laboratory Duplicates/Spikes

Laboratory duplicate samples are used to determine the precision of analytical methods for each Parameter. Laboratory spiked samples are designed to provide information about the effects of the sample matrix on the digestion and measurement methodology.

Site 8

In SDG 5597, the spike result for antimony, selenium, chromium, copper, manganese, nickel, and zinc were outside the QC limits. In SDG 5671, the spike results for aluminum, barium, beryllium, chromium, cobalt, copper, iron, manganese, nickel, silver, vanadium, zinc, and selenium were outside control limits. In addition, the duplicate result for aluminum was outside QC limits in SDGs 5597 and 5671. All analytes were estimated that did not meet the laboratory duplicate and/or spike QC criteria as specified in CLP Inorganic SOW.

Site 24

In SDG EPN02, the spike result for barium was outside the QC limits. All barium results in SDG EPNOZ were flagged as estimated as specified in CLP Inorganic SOW+ All laboratory duplicate criteria were met.

7.2.8 Field Duplicates

Representativeness expresses the degree to which sample data accurately and precisely represent the characteristic of a population, parameter variations at a sampling point, or an environmental condition. The duplicate samples assist in indicating overall field and laboratory precision.

A greater variance should be expected for the soil sample duplicates compared to water sample duplicates due to matrix differences.

Site 8

Samples 008S000601 and 008C000601 were field duplicates and the relative %Ds (RPDs) for calcium and iron were outside the QC criteria. All positive calcium and iron results in SDG 5597 were estimated. Samples 008GGR0502 and 008HGR0502, in SDG PJL15 were field duplicates. The RPD for thallium was outside QC criteria. The positive and undetected results for these samples were estimated.

Site 24

All field duplicate precision criteria were met for Site 24.

7.2.9 Atomic Absorption Spike Recoveries

Site 8

Atomic absorption spike recoveries do not apply to Site 8. All elements were analyzed using a trace ICP instrument.

Site 24

Graphite furnace atomic absorption analytical spike recoveries did not meet the control limits of 85% to 115% (but did not require Method of Standard Addition analysis) for the following analytes:

Lead: 024GGS0101 (84%), 024HGS0101 (83%), 024GGS0401 (83%), 024GGS0501 (84%)

Thallium: 024GGS0301 (80%), 024GGS0101 (80%), 024HGS0101 (78%), 024GGS0201 (78%), 024GGS0401 (81%), 024GGS0501 (84%)

Selenium: 024S000301 (52%), 024C000101 (77%), 02415000405 (68%), 024S000401 (70%), 024GGS0301 (58%), 024GGS0101 (71%), 024HGS0101 (60%), 024GGS0201 (78%), 024GGS0903 (64%), 024HGS0903 (84%)

When the percent recovery was less than 85% the results were qualified as estimated (J) for positive results and (UJ) for undetected results. When the %R was greater than 115%, the results were qualified as estimated (J) for positive results only.

7.3 Summary

7.3.1 Completeness

Completeness is defined as the percentage of measurements made which are judged to be valid. All samples analyzed for the investigation of Sites 8 and 24 were determined to be valid with some qualification, except for the results flagged "UR."

Site 8

Of 3,367 total measurements made (number of unique sample and parameter pairs), 18 were flagged "UR" (greater than 99% completeness). Therefore, the data met the 95% completeness goal.

Site 24

Of 6,024 total measurements made (number of unique sample and parameter pairs), 23 were flagged "UR" (greater than 99% completeness). Therefore, the data met the 95% completeness goal.

7.3.2 Comparability

Sites 8 and 24

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Comparability is assured through the use of established methods of field sampling by experienced field personnel and laboratory analysis as specified by USEPA protocols. All samples for Sites 8 and 24 were collected using the USEPA Region IV Standard Operating Procedures and analyzed according to CLP SOW protocols.

7.4 Conclusion

The overall data quality of the analytical work done for Sites 8 and 24 at NAS Pensacola, except for the undetected sample results that were qualified as unusable, were considered to be satisfactory and usable for site remediation and risk assessment. The data validation summary reports submitted by either E/A&H and/or Heartland Environmental Services for Sites 8 and 24 will be provided upon request or otherwise will become a part of the NAS Pensacola Site 8 Final Report Reference File.

Table 7-1
Site 8 Volatile SDG Summary

SDG	Holding Times	GC/MS Tunes	Ical	Ccal	I. S.	Blanks	Surr.	MS MSD	LCS	Overall
5597					X	X				OK
5648				X						OK
5671				X		X				OK
PLJ15	No VOCS Analyzed									

Table 7-2
Site 8 Semivolatile SDG Summary

SDG	Holding Times	GC/MS Tunes	ICal	CCal	I. S.	Blanks	Surr.	MS MSD	LCS	Overall
5597										**QK**
5648										**OK**
5671										OK
PJL15	No SVOCs Analyzed									

Table 7-3
Site 8 Pesticide/PCB SDG Summary

SDG	Holding Times	I.P.	ICal	CCal	C.C.	Blanks	Surr.	MS MSD	LCS	Overall
5597			X				X			**OK**
5648										OK
5671			X							**OK**
PJL15	No Pesticides Analyzed									

Notes:
Ical = initial calibration
Ccal = continuing calibration
Surr. = surrogates
I.S. = Internal standard
I.P. = pesticide instrument performance
C.C. = pesticide cleanup checks

An "X" in a column means that one or more QC criteria were not met; one or more samples were qualified.

An "OK" in the Overall column means the data were acceptable with minor qualifications. No positive results were rejected; however, nondetects may have been rejected and flagged "UR."

Table 7-4
Site 8 Inorganic SDG Summary

SDG	Holding Times	Cal.	Blanks	Serial Dil.	ICP Check	LCS	MS	Lab Dup	Overall
5697			X	X			X	X	OK
5648			X						OK
5671			X.	X			X	X	OK
PJL15			X						

Notes:

Cal.	=	Calibrations
Serial Dil	=	Serial dilutions
ICP. Check	=	ICP interference check
LCS	=	Laboratory Control Sample
Lab Dup.	=	Laboratory Duplicate

An "X" in a column means that one or more QC criteria were not met.

An "OK" in the Overall column means the data were acceptable with minor qualifications. No positive results were rejected; however, nondetects may have been rejected and flagged "UR."

Table 7-5
Site 24 Volatile SDG Summary

SDG	Holding Times	GC/MS Tunes	ICal	CCal	I. S.	Blanks	Surr.	MS/ MSD	LCS	Overall
83691	No Volatiles Analyzed									OK
83859	No Volatiles Analyzed									OK
ENP02			X	X	X	X			NA	OK
ENP14				X		X				OK
PJL05	No Volatiles Analyzed									OK
PJL06	No Volatiles Analyzed									OK
PJL08						X				OK
PJL10										OK
PJL12	X					X				OK

Table 7-6
Site *24* Semivolatile SDG Summary

SDG	Holding Times	GC/MS Tunes	ICal	CCal	I. S.	Blanks	Surr.	MS/ MSD	LCS	Overall
83691	No Semivolatiles Analyzed			X		X				OK
83859	No Semivolatiles Analyzed			X						OK
ENP02						X				OK
ENP14										OK
PJL05										OK
PJL06	No Semivolatiles Analyzed									OK
PJL08										OK
PJL10										OK
PJL12	No Semivolatiles Analyzed									OK.

Table 7-7
Site *24* Pesticide SDG Summary

SDG	Holding Times	I.P	ICal	ccal	C.C.	Blanks	Surr.	MS/ MSD	LCS	Overall
83691			X			X	X			OK
83859			X				X			OK
ENP02										OK
ENP14										OK
PJL05										
PJL06										OK
PJL08										OK

Table 7-7
Site 24 Pesticide SDG Summary

SDG	Holding Times	I.P	ICal	CCal	C.C.	Blanks	Surr.	MSD	MSI LCS	Overall
PJL10										OK
PJL12	No Pesticides Analyzed									OK

Notes:
Ical = initial calibration
Ccal = continuing calibration
Surr. = surrogates
I.S. = Internal Standards
I.P. = pesticide instrument performance
C.C. = pesticide cleanup checks
NA = Non applicable

An "X" in a column means that one or more QC criteria were not met; one or more samples were qualified.

An "OK" in the Overall column means the data were acceptable with minor qualifications. No positive results were rejected; however, nondetects may have been rejected and flagged "UR."

Table 7-8
Site 24 Inorganic SDG Summary

SDG	Holding Times	Cal.	Blanks	Serial Dil.	ICP Check	LCS	MS	Lab Dup	AA	Overall
83691										OK
83859										OK
ENP02			X	X			X		X	OK
ENP14			X				X		X	OK
PJL05			X							
PJL06			X							OK
PJL08			X							OK

Table 7-8
Site 24 Inorganic SDG Summary

SDG	Holding Times	Cal.	Blanks	Serial Dil.	ICP Check	LCS	MS	Lab Dup	AA	Overall
PJL10									X	OK
PJL12			X							OK

Notes:

Cal	=	Calibrations
Cal.	=	Calibrations
Serial Dil	=	Serial Dilutions
ICP. Check	=	ICP interference check
LCS	=	Laboratory Control Sample
Lab Dup.	=	Laboratory Duplicate
AA	=	Atomic Absorption Spike Recoveries

An "X" in a column means that one or more *QC* criteria were not met.

An "OK" in the Overall column means the data were acceptable with minor qualifications. No positive results were rejected; however, nondetects may have been rejected and flagged "U."

Validation Qualifiers

U — **Undetected** — The analyte was not detected or was also found in an associated blank, but at a concentration less than 10 times the blank concentration for common constituents or five times the blank concentration for other constituents; the associated value shown is the quantitation limit.

J — **Estimated Value** — One or more QC parameters were outside control limits.

UJ — **Undetected and Estimated** — The analyte was not detected above the listed estimated quantitation limit; the quantitation limit is estimated because one or more QC parameters were outside control limits.

D — **Diluted Result** — The compound was reanalyzed at a secondary dilution factor. If one or more compounds are outside the calibration range during an initial analysis, the laboratory flags the analyte "E." When diluted, the sample results will be flagged "D." Generally, values from the initial analysis will be used except where the value *exceeded* the calibration range. Values exceeding the calibration range in the initial analysis will be substituted by the diluted value to ensure the most representative data. The "D" flag will remain on the value to alert the data user that a secondary dilution value was used.

R/UR — **Unusable Data** — One or more QC parameters grossly exceeded control limits.

8.0 FATE AND TRANSPORT

Fate and transport assessment evaluates the ability of contaminants to become mobile or change in the environment, based on their chemical and physical properties and. on processes that govern the interaction of the constituents with environmental media. Contaminant properties and fate and transport processes are discussed to assess the likelihood of impact to potential receptors.

8.1 Contamination Summary

Environmental media sampled as part of the Sites 8 and 24 RI include surface soil, subsurface soil, and groundwater, Groundwater samples were collected from the upper (shallow depth wells) portion of the surficial zone only. Section 6 summarizes the nature and extent of contamination based on comparisons to soil and groundwater PRGs and RCs.

Total Exceedances

Table 8-1 presents the total number of analyzed parameters that exceeded their respective PRGs and RCs in one or more surface soil, subsurface soil, and groundwater samples at Sites 8 and 24.

8.2 Contaminant Migration

The following section discusses the contaminant and environmental media properties that affect the fate and transport of detected constituents. Potential migration pathways fur Sites 8 and 24 are evaluated in Section 8.3.

Properties Affecting Fate and Transport

Numerous chemical and physical properties of both the contaminant constituent(s) and the surrounding media are used tu evaluate fate and transport mechanisms.

Table 8-1
Number of Parameters Exceeding PRG(s) and RCs at Sites 8 and 24*

	Surface Soil	Subsurface Soil	Shallow GW
Inorganics	3/4	2/0	416
VOCS	010	010	0/4
SVOCs	1/3	0/0	0/0
Pests/PCBs	112	2/1	0/1

Notes:
* = Numbers are listed for Site 8/Site 24, respectively.

PRGs include RBCs and CGs for surface soil, SSLs and CGLs for subsurface soil, and MCLs, FDWSs, and FGGCs for shallow groundwater.

8.2.1 Contaminant Properties Affecting Fate and Transport

Chemical and physical properties of contaminants used to evaluate fate and transport include vapor pressure, density, solubility, Henry's law constant, half-life, organic carbon/water partitioning coefficient, and molecular weight. Table 8-2 provides an overview of contaminant constituent behavior based on these properties. Table 8-3 contains chemical and physical property data for each organic parameter detected in Site 8 and 24 samples (soil and groundwater) that exceeded a PRG.

Chemical compounds with similar chemical and physical properties display similar fate and transport behavior. This facilitates the general grouping of contaminants, based on chemical and physical properties, into these categories: VOCs, SVOCs, pesticides/PCBs, and inorganics.

VOCs

The chemical and physical properties with the greatest influence on the fate and transport of VOCs are solubility, Henry's law constant, and vapor pressure. Typical fate and transport characteristics of VOCs include the following:

Table 8-2
Contaminant Characteristics Based On Chemical and Physical Properties

Property	Critical Value	High (>)	Low (<)
Vapor Pressure (VP)	10^{-3} mmHg	volatile	nonvolatile
Density[a] (D)	1.0 g/cm^3	sinks/falls	floats/rises
Solubility[a] (S)	0 to 100 mg/L	leaches from soil; mobile in water; does not readily volatilize from water	sorbs to soil; immobile in water; volatilizes from water
Henry's law constant (HL)	$5x10^{-6}$ to $5x10^{-3}$ atm-m^3/mole	resistance to mass transfer in the aqueous phase	resistance to mass transfer in the gas phase
Half-life ($T_{1/2}$)	biologically dependent	does not degrade readily	degrades readily
Organic Carbon/Water Partitioning Coefficient[a] (K_{oc})	10 to 10,000 kg_{oc}/L_{water}	tends to sorb to organic material in soil; immobile in the soil matrix	tends not to sorb to organic material in soil; mobile in the soil matrix
Molecular Weight (MW)	400 g/mole	characteristics listed above may not hold true: more detailed evaluation necessary	all of the above generally hold true

Notes:

a	=	Determinations of the critical values were based on literature review and professional judgment.
mmHg	=	millimeters of mercury
g/cm^3	=	grams per cubic centimeter
atm-m^3/mole	=	atmospheres per cubic meter per mole
g/mole	=	grams per mole
mg/L	=	milligrams per liter

Table 8-3
Fate and Transport Properties for Organic Parameters Detected in Soil and Groundwater Samples Exceeding PRG

Parameter	Media of Exceedance	Vapor Pressure (mm Hg)	Density (g/cm^3)	Solubility (mg/L)	Henry's Law Constant (atm-m3/mole)	Organic Carbon/Water Partitioning Coefficient (K_{oc}) (L/kg)
Aroclor-1260	Soil	4.05E-05	1.566	8.00E00	7.10E-03	8.22E+05
Benzo(a)pyrene	Soil	5.60E-09	1.351	3.90E-03	2.40E-06	1.77E+06
Benzo(b)fluoranthene	Soil	5.00E-07	NDA	1.40E-03	1.20E-05	5.50E+05
Dibenz(a,h)anthracene	Soil	1.00E-10	1.252	5.00E-04	7.33E-08	3.3E+06
Dieldrin	Soil Groundwater	1.80E-07	1.750	2.00E-01	2.00E-05	8.34E+04
Aldrin	Soil	6.00E-06	NDA	1.8E01	1.60E-05	9.6E+04
Heptachlor epoxide	Soil	2.60E-06	1.57	3.50E-01	3.20E-05	2.09E+04
Methylene chloride	Groundwater	3.62E+02	1.325	2.00E+04	2.03E-03	8.8
Trichloroethene	Groundwater	5.79E+01	1.464	1.10E+03	9.10E-03	126
Vinyl chloride	Groundwater	2.66E+00	0.9106	2.67E+03	8.19E-02	57

Notes:
NDA = No data available
L/kg = Liters per kilogram
mg/L = Milligrams per liter
mmHg = Millimeters of mercury
atm-m^3/mole = Atmospheres per cubic meter per mole
No inorganic parameter are included due to lack of available information regarding their fate and transport properties.

- Leach from soil into groundwater.
- Tend to be highly mobile in both soil and groundwater.
- Tend to volatilize from both soil and groundwater.
- Tend to dissipate relatively quickly.

VOCs have low molecular weights, high solubilities, and high vapor pressures. Densities may be less than or greater than that of water. Because of these properties, VOCs are expected to be highly mobile in the environment and, therefore, quick to migrate from soil and groundwater

SVOCS

The chemical and physical properties with the greatest influence on the fate and transport of SVOCs are solubility, vapor pressure, and organic carbon/water partitioning coefficient. Typical fate and transport characteristics of SVOCs include the following:

- Tend tu sorb to soil particles.
- Tend to be immobile in the environment.
- Movement tends to occur more often by colloidal suspension than by diffusion (i.e., greater mobility occurs when coupled with "carrier" compounds).

SVOCs have high molecular weights, low-to-moderate vapor pressures, moderate-to-high densities, and generally high organic carbon/water partitioning coefficients. Overall, SVOCs are relatively immobile in soil and diffuse only slightly to groundwater. Exceptions to anticipated SVOC immobility in the environment are phenols, as they readily hydrolyze in water.

Pesticides/PCBs

The chemical and physical properties with the greatest influence on the fate and transport of pesticides/PCBs are solubility, Henry's law constant, and organic carbon/water partitioning coefficient. Typical fate and transport characteristics of pesticides/PCBs include the following:

- Tend to sorb to soil particles.
- Tend to be hydrophobic (avoid water).
- Tend to be immobile in the environment.
- Tend to degrade relatively slowly.

Pesticides/PCBs have moderate-to-high molecular weights, generally high densities and organic carbodwater partitioning coefficients, and generally low solubilities, vapor pressures, and Henry's law constants. Most pesticides/PCBs are immobile and persistent in the environment, not readily diffusing into groundwater. Additionally, over time some pesticides degrade to other pesticide forms; for example, the moderately persistent aldrin transforms to the more persistent dieldrin.

Inorganics

Solubility has the greatest influence on the fate and transport of inorganics. Typical fate and transport characteristics of inorganics include the following:

- Tend to sorb to soil particles.
- not degradable.
- "end to have moderate to low mobility; however, in environments where pH is less than 5 (i.e., acidic conditions), inorganics can mobilize.

Properties of the surrounding environmental media (soil matrix and groundwater chemistry) tend to dictate the fate and transport mechanisms of inorganic elements. In general, inorganics tend to be relatively immobile and sorb to soil particles, not readily diffusing into groundwater.

8.2.2 Media Properties Affecting Fate and Transport

The properties of environmental media used to evaluate fate and transport are total organic carbon (TOC), normalized partition coefficient (K_d), carbon exchange capacity (CEC), oxidation/reduction (redox) conditions. pH, sail type, and retardation rate. The following paragraphs briefly discuss these properties.

Total Organic Carbon

TOC indicates the soil's sorptive capabilities. The higher the TOC, the higher the potential for a chemical, particularly an organic compound, to sorb to soil particles.

Normalized Partition Coefficient

K_d is used to predict the capacity for a contaminant constituent to partition between soil and water; it is a function of both the constituent and the soil. To estimate K_d, the constituent's organic carbon/water partitioning coefficient (K_{oc}) is adjusted by the soil's TOC: $K_d = K_{oc} * f_{oc}$, where f_{oc} = organic carbon content fraction of the soil. Soils with higher K_d s have a higher potential to sorb organic compounds.

Cation Exchange Capacity

CEC reflects the soil's capacity to adsorb ions, neutralizing ionic deficiencies on the surfaces of its particles. Generally, trivalent ions are preferentially adsorbed to soil over divalent ions, and divalent ions are preferentially adsorbed over monovalent ions. Although this relationship generally holds true, the process also depends on soil pH. Soil with high CEC values has the

potential to adsorb inorganic ions, although organic compounds with dipole moments also are affected by CEC.

Redox Conditions

Redox is the process which includes oxidation (the loss of electrons) and reduction (the gain of electrons). The resultant change in valence generates products that are different from the parent reactants in their solubilities, toxicities, reactivities, and mobilities. Extreme redox conditions tend to mobilize contaminants, especially transition metals.

pH

The pH value is a negative inverse logarithmic measure of hydrogen ions in the soil or groundwater, indicating the acidity or alkalinity of the medium. Contaminants react differently as pHs change. Low pH conditions tend to mobilize most metals and facilitate substitution in organic compounds, High pH conditions may cause metals to precipitate and organic molecules to degrade.

Soil Type

The mineral composition, particle size distribution, and organic content of soil affect chemical fate and transport. Soil. characteristics influence or determine hydraulic conductivity, effective porosity, and hydraulic gradient which, in turn, dictate groundwater flow.

Retardation Factor (R_f)

The retardation factor describes the ability of the aquifer matrix to inhibit the movement of contaminants relative to that of groundwater, by preferentially binding to those with high organic carbon/water partitioning coefficients. Because dissolved constituents generally travel more slowly through an aquifer than does groundwater itself, contaminant travel time is some multiple of groundwater trave1 time. The multiple is called the retardation factor, R_f:

$$R_f = 1 + (K_d \rho_b / n)$$

where K_d is the normalized partition coefficient, ρ_b is the dry bulk density of the soil, and n is the soil effective porosity. K_d is based on K_{oc} and TOC as shown above in this section, while ρ_b and n are obtained from soil analysis. The given equation for R_f assumes a linear equilibrium sorption isotherm, in which the concentration of solute sorbed on the solid phase is linearly related to the dissolved concentration. This assumption is considered valid when the equilibrium concentration of the solute is less than half of its limit of solubility. Linear sorption isotherms are commonly used to describe sorption of chlorinated solvents, and have also been used for radionuclides and heavy metals. Use of a single R_f over the entire migration route is a significant simplification of reality because it assumes a constant sorptive capability of the aquifer, and ignores the potential spatia1 variability of hydrogeological properties. However, a R_f calculation can offer useful information as to a detected parameter's relative migration potential at a given site.

8.3 Migration Pathways

The presence of the same contaminant in both source and receptor media indicates contaminant transport, Likewise, soil contaminant concentrations exceeding typical leachability screening levels, or groundwater contaminants exceeding applicable PRGs, indicate the potential for future contaminant transport and impact on receptors. This section of the report discusses possible pathways for contaminant transport at each site.

Site 8 land surface is generally level and asphalt-paved; Site 24 land surface is generally level and unpaved. Site 24 surface soil is highly permeable sand with grassy cover. Precipitation falling on unpaved surfaces infiltrates the sandy soil and percolates into the unconfined surficial zone, which is the uppermost unit of the regional Sand-and-Gravel Aquifer. Groundwater moves from the south to the north-northeast across the combined site area, toward Bayou Grande and associated tidal ponds approximately 3,500 feet to the north. After evaluating Sites 8 and 24 for the

constituent and media properties discussed in Section 8.2, and for the hydrogeologic characteristics described in Section 5, three potential routes of constituent migration have been identified for further discussion,:

- Leaching of constituents from soil to groundwater
- Transport of constituents in groundwater
- Air emissions resulting from VOCs and particulates released from surface soil (Site 24 only)

Table 8-4 summarizes the chemical and physical parameters of Site 8 and 24 soil, or those of comparable soil from other portions of NAS Pensacola, used to evaluate fate and transport. Typical bulk density and porosity values reported for surficial soil at NAS Pensacola are 92.09 pounds per cubic foot (lbs/ft^3) and 44.22%, respectively. These values are consistent with a fine- to medium-grained sandy soil containing significant interconnected void space. The average CEC for Site 24 soil is 0.45 milliequivalent per 100 grams (mEq/100g), with results ranging from 0.34 to 0.56. This value indicates an environment of relatively low electromagnetic attraction between site soil and detected constituents, particularly inorganics. The average pH (measured during sample preparation) of soil across Site 24 is 7.8 units, indicating a relatively neutral environment that does not particularly promote the mobility or precipitation of inorganics, or the molecular substitution or degradation of organic compounds. The average TOC concentration for Site 24 soil is 1,185 mg/kg, with a range of 370 mg/kg to 2,000 mg/kg. This result indicates a relatively low soil organic content that moderately inhibits the movement of contaminants, particularly those with high K_{oc} values, due to soil adsorption. Physical parameter results for soil and groundwater samples are contained in Appendix H.

Table 8-4
Soil **Parameters Used to Evaluate Fate and Transport**

Parameter	Minimum Value	Maximum Value	Average Value	Units
Cation Exchange Capacity	0.34	0.56	0.45	(mEq/100g)
Total Organic Carbon	370	2000	1185	(mg/kg)
pH [a]	6.1	8.5	7.8	(pH units)
Total Porosity[b]	44.22	44.22	—	(percent)
Bulk Density[b]	92.09	92.09	—	(lbs/ft^3)

Notes:
a = pH values compiled from surface and subsurface soil analysis prescreening by the laboratory
b = Total porosity and bulk density values based on analysis of a shallow zone undisturbed soil (Shelby tube) sample from NAS Pensacola Site 15
lbs/ft^3 = Pounds per cubic foot

8.3.1 Leaching from Soil to Groundwater

Contaminants may be **leached from** soil through percolation of rainwater or through direct continua1 contact with groundwater during periods of elevated water table due to heavy precipitation. The **unsaturated** soil zone at both sites is composed of unconsolidated fine- to medium- grained **quartz** sand with **a** small amount (less than 10%) of silt and clay-sized parti cles. This soil type characteristically has **a high** vertical permeability, resulting **in minimal** contact time between percolating water and vadose zone soil. Site **24's** extensive unpaved land surface increases the susceptibility **of** site soil **to** potential surface contamination by site activities, and surface exposure to precipitation. However, Site 8's near totally paved surface inhibits percolation of direct rainfall through site soil.

Screening for this pathway involved dab comparison on two levels, Initially, screening fur leachability was conducted by comparing generic leachability PRGs for subsurface soils (these are cited in Section *6* and listed in Appendix D) with soil results. If a parameter exceeded one of these PRGs, a further evaluation of its presence in groundwater was conducted. The latter part of this screening is clearly the most important: the first level

screening only establishes the potential for a parameter to leach, while the second establishes the probable leaching by noting the actual coupling of empirical soil and groundwater' data. Finally, even if a parameter exceeded its leaching PRG and was detected in groundwater, this screening requires that it be above groundwater PRGs to be considered a threat to groundwater. No attempt was made to derive site-specific leachability screening values, and the results were derived solely on empirical data.

For specific spatial occurences, the reader is referred to Section *6,* where nature and extent is detailed. Sample analyses indicate only a limited number of parameters detected in soil have potentially leached to groundwater in appreciable amounts (eg. resulting in concentrations above groundwater PRGs). The inorganics iron and manganese, and the pesticide dieldrin., were detected above PRGs (and RCs for inorganics) in both soil and groundwater samples at Site 24 (dieldrin was detected in groundwater at only one location at Site 24 above its PRG). Only cadmium exceeded its PRG and RC in both soil and groundwater at Site 8. These parameters have adequate solubility and/or K_{oc} properties, and/or the areas of soil concentration (at Site 24 only) are exposed to sufficient rainfall and percolation to allow constituent migration from soil to groundwater. In contrast, the less soluble, relatively higher K_{oc} compounds such as the SVOCs (benzo[a]pyrene equivalents) detected in surface soil, were not detected in groundwater at either site, indicating no appreciable leaching of these have occurred. In summary, this screening indicates the significant (eg. above PRGs) concentrations of iron, manganese, dieldrin, and cadmium in groundwater at OU13 may potentially have been derived from site soil. Some questions arise with respect tu cadmium in Site 8 soil and OU13 groundwater; while the potential for derivation from soil is present, the pathway would appear to be suspect due to the pavement over the potential source soil at Site *8,* This screening is theoretical in that generic leachability values were used; there may be parameters above PRGs in groundwater that have been derived from site soil (and conversely may not have been derived from site soil) that are not well represented by the use

of generic leachability values, However, PRG exceedances in groundwater, when viewed with soil results, indicate that there are no major (eg. large scale) source areas of residual soil concentrations that pose a threat to groundwater. At any rate, these PRG exceedances will be addressed in the following subsection.

8.3.2 Groundwater Transport

Shallow groundwater moves generally north-northeastward across the combined Sites 8 and 24 area, as shown on Figure 5-1. Shallow groundwater from portions of NAS Pensacola containing Sites 8 and 24 flows northward and ultimately discharges to Bayou Grande and several associated tidal ponds/wetlands, approximately 3,500 feet north of Site 24. The site's flow regime occurs under a consistently low hydraulic gradient of 0.0017. The average shallow groundwater horizontal pore velocity calculated for the site area in Section 5 was 0.17 ft/day.

As previously discussed, groundwater pH can affect the migration of groundwater entrained contaminants. Typical shallow groundwater pH across the site area ranged from 5.5 to 6.5 units. This indicates the shallow groundwater zone is neutral to only slightly acidic. Under these conditions, inorganics tend to be relatively immobile, and organics relatively stable.

Cadmium was the most prevalent inorganic PRG and RC exceedance detected in Site 8 groundwater; antimony, iron, and manganese were the most prevalent at Site 24. Due to the complexities of inorganic parameter fate and transport processes, sufficient data are not available to calculate a representative transport rate for these parameters. However, the spatial distribution of these exceedances in groundwater (elevated cadmium and antimony concentrations do not extend beyond the downgradient OU13 boundary) suggests that significant attenuation of these exceedances occurs over very short distances. Iron and manganese in Site 24 groundwater, attributable to the routine fertilizing of the cemetery grounds, is generally widespread. Manganese and thallium both are present above their PRGs at the

downgradient boundary of OU13, and are migrating offsite. However, as similar processes affect the fate of inorganics, and the aquifer system is quite homogenous, it is likely that these parameters attenuate over distances similar to those demonstrated for cadmium and antimony.

No organic PRG exceedances were detected in Site 8 groundwater. Dieldrin (via only slight exceedance at a single location) and the VOCs methylene chloride, trichloroethene, and vinyl chloride were detected in Site 24 groundwater. Given the physical soil properties determined from laboratory analysis, an estimated R_f may be calculated for each parameter. When combined with the horizontal groundwater velocity, an approximate travel time for these organics in shallow groundwater can be determined to illustrate the magnitude of the sorption process occurring during transport. Using the literature-derived K_{oc} values shown on Table 8-3 for these compounds, and the soil's 'average TOC of 1,185 mg/kg, calculated site-specific K_d values for each compound are as follows (see Section 8.2.2 for this equation):

Parameter	K_d (in L/kg)
Dieldrin	15.88
Methylene Chloride	0.01
Trichloroethene	0.15
Vinyl Chloride	0.07

Given a soil bulk density value of 92.09 lbs/ft^3, and effective porosity estimate of 35%, calculated R_f values for each compound in the shallow groundwater at Site 24 (see Section 8.2.2 for this equation) are as follows:

Parameter	R_f
Dieldrin	67.92

immobile compared to the more soluble VOCs. In reality, additional fate processes such as molecular diffusion, physical dispersion, and chemical degradation combine with sorption, further impeding the transport of organics through the flow system.

8.3.3 Surface Soil-to-Air Transport

The surface soil-to-air pathway applies to fugitive dusts and VOCs in soil released to the atmosphere. No VOCs were identified in surface or subsurface soil at either site; therefore, their migration is not a concern. Site 8 is near totally naved with asphalt, removing the concern of the fugitive dust migration. Site 24 is primarily unpaved land surface with moderate grassy vegetative cover. All detected surface soil concentrations are below the surface soil-tu-air transfer screening RBCs. Furthermore, the results of E&E's 1991 air monitoring indicated that Site 24 is not a significant source of air particulates (E&E, 1991). Based on this information, the surface soil-to-air migration pathway at both Sites 8 and 24 is not viable. The various soil exposure scenarios are further evaluated in Section 9, the Baseline Risk Assessment.

8.3.4 Other Pathways

Other potential migration pathways from the combined site area include groundwater discharge to downgradient surface water bodies and (surface water body-related) sediment. As stated above, NAS Pensacola surface water bodies (Bayou Grande and wetland/tidally inlets) are being investigated separately. However, given the limited magnitude and extent of groundwater impacted at the site, and the significant distance of these sites to surface waters (approximately 3,500 feet), no impact to these features from Sites 8 and 24 is anticipated.

8.4 Current and Potential Receptors

Transport of parameters detected at Sites 8 and 24 is generally downward from surface soil through subsurface soil to groundwater. The primary receiving body of site impact is the surficial zone of the Sand-and-Gravel Aquifer. Described in Sections 3 and 5, the surficial zone is a porous

and permeable unconfined aquifer with relatively small amounts of organic carbon, all of which make it a viable migration pathway for dissolved and entrained contaminants, particularly organic compounds. It is not used as a water-supply source in the Pensacola area due to its high iron and aluminum content and its susceptibility to local contamination. The extent of inorganic and organic parameter exceedances in shallow groundwater is generally limited to the combined site area, indicating substantial contaminant migration is not occurring.

A potential receptor of surficial aquifer zone contamination from Site 8 and 24 is the main producing zone, which underlies the surficial zone and serves as a potable water source for wells north and upgradient in Escambia County. Water from the main producing zone is not used as a potable supply at NAS Pensacola because of its high iron and aluminum content, but the aquifer is used as a supplementary water source for fire control at the base. The main producing zone is separated from the surficial zone by a low-permeability clay layer. A low-permeability sandy clay was documented at 65 feet bls at nearby well location 01GI66 (approximately 250 feet west-northwest of Site 24), corresponding to the low-permeability zone which separates the surficial from the main producing zone. Given that PRG exceedances in Site 8 and 24 shallow groundwater are relatively low in magnitude, groundwater from the low-permeability and main producing zones is not expected to be impacted by site activities and was not sampled for this investigation.

Other potential receptors of surficial zone contaminants are downgradient surface waters Bayou Grande and associated tidal ponds. As previously discussed, the distance of the sites to these features, coupled with the magnitude and limited extent of detected groundwater constituents, makes impact to these receptors highly unlikely. However, surface water, sediment, and associated ecological receptors at NAS Pensacola will be evaluated fully during the Sites 40 and 41 RIs, for Bayou Grande and the wetlands, respectively.

9.0 BASELINE RISK ASSESSMENT

9.1 Introduction

A BRA analyzes the potential adverse effects on actual or hypothetical human and ecological receptors that could arise from exposures to hazardous substances released from a site if no remedial actions are taken to reduce the extent of environmental contamination. Generally, a BRA is divided into two subsections; one addresses the human health risk, and the second assesses ecological risk. Data management and analysis methods used to reach the conclusions of this human health risk assessment (HHRA) are discussed in the following text and in Section 9.I.1. Discussions specific tu Sites 8 and 24 are presented in Sections 9.1.2 and 9.1.3, respectively, brief toxicological profiles for chemicals detected are in Section 9.1.4, and ecological risk assessment is discussed in Section 9.2.

The HHRAs for Sites 8 and 24 were prepared generally in accordance with the guidelines set forth in:

- Risk Assessment Guidance for Superfund *(RAGS)*, Volume I — *Human* Health *Evaluation* Manual *(Part* A), (USEPA, 1989b).
- RAGS, Volume I — *Human Health Evaluation Manual* (Part *B*, Development of Risk-Based *PRGs)*, (USEPA, 1991c).
- *Dermal* Exposure Assessment: *Principles and* Applications — *Interim* Report, ORD, EPA/600/8-91/011B, January 1992 (USEPA, 1992b).
- Supplemental Guidance to RAGS: Region IV Bulletin, Human Health Risk Assessment — Interim, (USEPA Region IV, 1995b).

- Supplemental Guidance to RAGS: Region IV Bulletin, *Development* of Health-Based Preliminary *Remediation* Goals, Remedial Goal Options *(RGOs) and Remediation Levels* (Supplemental RGO Guidance; USEPA, 1995c).

- Supplemental Guidance to RAGS: Region IV Bulletin, Provisional Guidance of *Quantitative* Risk Assessment of *PAHs* (PAH Guidance; USEPA, 1993a).

- Exposure *Factors* Handbook (USEPA, 1989c).

- USEPA Region III Risk-Based Concentration *Table*. USEPA Region III, Office of RCRA, Philadelphia, Pennsylvania (USEPA, 1996a).

- Groundwater Guidance *Concentrations*. FDEP Division of Water Facilities, Bureau of Drinking Water and Groundwater Resources, Tallahassee, Florida (FDEP, 1994a).

- *Memorandum-Soil* Cleanup *Goals* for *Florida*. FDEP Division of Waste Management, Tallahassee, Florida (FDEP, 1995).

- Technical *Memorandum* Guidance on Estimating *Exposure* tu *VOCs* During Showering, (USEPA, 1991e).

Objectives

The objectives of the HHRA are tu:

- Characterize the source media and determine the chemicals of potential concern (COPCs) for affected environmental media;

- **Identify** potential **receptors** and quantify **potential exposures** for those receptors under current and future conditions for all affected environmental media;

- Qualitatively **and** quantitatively evaluate the adverse effects associated with the site-specific COPCs in each medium;

- Characterize the potential **baseline** carcinogenic risk **and** noncarcinogenic hazards associated with **exposure** to impacted environmental media at Sites 8 and **24** under current and future conditions;

- Evaluate the uncertainties related to exposure predictions, toxicological data, and resultant carcinogenic risk and noncarcinogenic hazard predictions; and

- Establish RGOs for chemicals of concern (COCs) in each environmental medium based on risk/hazard to facilitate risk management **decision-maluing**.

Organization

An HHRA, as defied by **RAGS Part A,** includes the following **steps:**

- *Site characterization*: evaluation of data regarding site geography, geology, hydrogeology , **climate,** and demographics.

- *Data collection*: analysis of environmental media samples, including background/ reference **samples**.

- Data *evaluation*: statistical analysis of data to identify the nature and extent of contamination and to establish a preliminary list of COPCs based on risk-based and background screening. This list will subsequently be refined to identify COCs.

- *Exposure assessment*: identification of potential receptors under current and predicted conditions, visualization of potential exposure pathways, calculation of exposure point concentrations (EPCs), and quantification of chemical intakes.

- *Toxicity* assessment qualitative evaluation of the adverse effects of the COPCs, and quantitative estimate of the relationship between exposure and severity or probability of effect.

- Risk characterization: a combination of the outputs of the exposure assessment and the toxicity assessment to quantify the total noncancer and cancer risk to the hypothetical receptors.

- *Uncertainty*: discussion and evaluation of the areas of recognized uncertainty in human health risk assessments in addition to medium- and exposure pathway-specific influences.

- *Risk/Hazard* Summary: presentation and discussion of the results of the quantification of exposure (risk and hazard) for the potential receptors and their exposure pathways identified under current and future conditions.

- Remedial *Goal* Options: computation of exposure concentrations corresponding to risk projections within the USEPA target risk range of 10^{-6} to 10^{-4} for carcinogenic COCs and Hazard Quotient (HQ) goals of 0.1, 1, and 3 for noncarcinogenic COCs.

This general process was followed in preparing the HHRA for each site at Sites 8 and 24. A discussion of each is provided in Sections 9.1.1.1 through 9.1.1.12 with a fucus on issue specific to each sites.

9.1.1 Sites 8 and 24 Human Health Risk Assessment Methods

9.1.1.1 Site Characterization

The focus of each site investigation is detailed in the Site Background and Investigative Approach section. Comprehensive tables show the sample identification numbers and analytical methods applied for each sample. At most sites, sampling consisted of collecting surface (0 to 1 foot) and subsurface (1 foot depth to the water table) soil samples, in addition to groundwater samples from permanent and temporary monitoring wells installed in the shallow water-bearing zone of the aquifer. Analytical results from surface soil and shallow groundwater were used to assess possible human exposure to environmental contaminants. Subsurface soil results were evaluated in Section 8, Fate and Transport, with respect to contaminant migration from soil to groundwater or air. **Additionally, a semi-quantitative evaluation of subsurface soil results is provided in the Site 24 assessment,**

9.1.1.2 Data Sources

For each investigation, soil, groundwater, surface water, sediment, and/or other environmental media samples (as applicable) were collected and analyzed to delineate the sources, nature, magnitude, and extent of any contamination associated with current or past site operations. The data used in the HHRA for each site were obtained from the results of the sampling activities associated with the RI.

Environmental samples were collected for the Sites 8 and 24 RI from August 1995 to April 1997 (including supplemental sampling rounds). S-Cubed Laboratories, San Diego, California, and Savannah Laboratories Inc., Savannah, Georgia, performed for Site 8 analyses. All Site 24

samples were analyzed by Savannah. Samples were analyzed according to USEPA CLP SOW protocols for TCL/TAL parameters using DQO Level IV. Section 7 summarizes data validation methods and DQO laboratory deliverables.

9.1.1.3 Data Validation

Data validation is an after-the-fact, independent, systematic process of evaluating data and comparing them to established criteria to confirm they are of the technical quality necessary to support the RI/FS decisions. Parameters specific to the data are reviewed to determine whether they meet the stipulated DQOs. The quality objectives address five principal parameters: precision, accuracy, completeness, comparability, and representativeness. To verify that these objectives are met, field measurements, sampling and handling procedures, laboratory analysis and reporting, and nonconformances and discrepancies in the data are examined to determine compliance with appropriate and applicable standards. Data collected for the Sites 8 and 24 RI report were validated in accordance with the USEPA CLP Functional Guidelines, as discussed in Section 7.

9.1.1.4 Management of Site-Related Data

All environmental sampling data were evaluated for suitability for use in the quantitative HHRA. Data obtained via the following methods were not appropriate for the quantitative HHRA:

- Analytical methods that are not specific for a particular chemical, such as TOC or total organic halogen.

- Field screening instruments including total organic vapor monitoring units and organic vapor analyzers.

The HHRAs addressed limitations of analytical results by estimating concentrations for nondetected parameters. A nondetect indicates the analyte was not detected above the quantitation limit of the sample (*U*-qualified results), which is determined by the analytical method, the instrument used, and possible matrix interferences, However, a nondetected analyte could be present at any concentration between zero and the quantitation limit. For this reason, one-half the *U* value could serve as an unbiased estimate of the nondetect. This would result in a high bias for parameters with maximum detected concentrations lower than one-half the quantitation limits. In these situations, one-half of each *U* value was compared to one-half of the lowest hit at the same site. The lesser of these two values was used as the best estimate of the concentration potentially present below the sample quantitation limit, and was inserted into the adjusted data set. For inorganic chemicals, the decision rule was less complex: one-half of each *U* value represented the concentration of the corresponding sample when compiling the adjusted data set. If a parameter was not detected, neither data management method was applied, and the parameter was not considered in screening or formal assessment.

Once the data set was complete (i.e., after eliminating faulty data and quantifying censored values), statistical methods were used to evaluate the analytical results to: (1) identify COPCs and (2) establish EPCs at potential receptor locations. The statistical methods used in data evaluation are discussed below. The rationale used to develop this methodology and the statistical techniques to implement it are based on the following sources:

- RAGS Part A
- Statistical *Methods* for Environmental *Pollution* Monitoring (Gilbert, 1987)
- Supplemental Guidance to RAGS: Calculating the *Concentration Term* (USEPA, 1992d)
- Supplemental Guidance to RAGS: *Human Health* Risk Assessment (USEPA, 1995a)

Commercially available data base and spreadsheet computer programs were used to manage data and calculate statistics. For each data set describing the concentration of chemicals in a contaminated area, the following information was tabulated (where appropriate): frequency of detection, range of nondetected values, range of detected values, average of detected concentrations, and the calculated 95% upper confidence limit (UCL) for the mean of log-transformed values of the concentration. In accordance with RAGS, the lesser of either the maximum concentration detected or the UCL was used to quantify potential soil exposure. Generally, the greater of the arithmetic mean of detected concentrations ox the UCL was used to quantify potential groundwater exposures. These algorithms were modified (as necessary) to account for contaminant distribution. Where applicable, details are provided in site-specific sections. This procedure is detailed in Section 9.1.1.7 of this document.

9.1.1.5 Selection of Chemicals of Potential Concern

The objective of this section of the HHRA was to screen the available information on the chemicals present in site samples (CPSSs) in order to develop a list or group of COPCs. COPCs are selected by comparison with screening concentrations (risk-based and reference), intrinsic toxicological properties, persistence, fate and transport characteristics, and cross-media transport potential. For any COPC to be considered a COC, thus warranting assessment relative to remedial action, it must meet two criteria. First, it must contribute to an exposure pathway with an incremental lifetime excess cancer risk (ILCR) in excess of 10^{-6} or a hazard index (HI) greater than 1 for any exposure scenario evaluated in the risk assessment. Secondly, the COPC must have an individual risk projection greater than 10^{-6} or an HQ greater than 0.1. ILCR, HQ, and HI are discussed in Sections 9.1.1.8 and 9.1.1.9 of this report. The results of the COPC selection process are provided for the individual sites in Sections 9.1.2 and 9.1.3.

Before evaluating the risks/hazards associated with site media, the contamination onsite required delineation. The chemicals detected in environmental media represent the CPSSs for each site. To reduce the list of CPSSs and focus the risk assessment on COPCs, two comparisons were made as described below.

Comparison of Site-Related Data to Risk-Based Screening Concentrations

The maximum concentrations of CPSSs detected in samples were compared to risk-based screening values. These values were obtained from three sources: 1) *Determination of COCs by* **Risk-Based Screening, USEPA Region** *III,* **(USEPA, 1996a), 2) Memorandum** — *Soil* Cleanup *Goals* fur *Florida*, or 3) *Florida Groundwater Guidance Concentrations* (FGGCs). A risk goal of 10a was used to calculate screening concentrations for carcinogens. Target HQs of 1 and 0.1 were used to calculate Florida and USEPA Region IV noncarcinogenic screening concentrations, respectively.

Groundwater results were compared to the lesser of USEPA's tap water RBC and FGGCs. Reported soil concentrations were compared to the lower of residential soil ingestion RBCs or Florida residential soil cleanup goals. The soil screening value for lead was set equal to 400 mg/kg, consistent with recent OSWER directives considering protection of a hypothetical child resident. The lead groundwater screening value used was the USEPA Office of Water treatment technique action level (TTAL) of 15 μg/L.

In accordance with Region IV supplemental guidance to RAGS (USEPA, 1993a), benzo(a)pyrene equivalents (BEQs) were computed, where appropriate, by multiplying the reported concentration of each the seven carcinogenic PAHs — benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) — by its corresponding Toxicity Equivalence Factor (TEF). The BEQ values were then summed for each sample, and the total was compared to the benzo(a)pyrene RBC

value during the screening process. Subsequent exposure quantification and risk/hazard projections for carcinogenic PAHs in soil and groundwater used total BEQ values for each sampling location rather than individual compound concentrations.

CPSSs with maximum detected concentrations exceeding their corresponding concentrations, goals, levels, and/or standards were retained for further evaluation and reference concentration screening in the risk assessment. Screening values based on surrogate compounds were used if no screening values were available. Surrogate compounds were selected based on structural, chemical, or toxicological similarities.

Comparison of Site-Related Data to Background Concentrations

The background reference concentration is a fixed value determined exclusively for inorganic parameters to represent naturally occurring levels for a chemical in a specific matrix. Soil and groundwater background concentrations were determined for NAS Pensacola using results from two background sampling locations. CPSS concentrations were simultaneously compared to corresponding background RC. CPSSs with maximum detected concentrations exceeding both corresponding background RCs and risk-based screening concentrations were retained for further consideration as COPCs in the HHRA. This comparison helps account for chemicals that are common in nature, such as aluminum, manganese, and arsenic. Thus risk and/or hazard associated with naturally occurring chemicals is not addressed where concentrations are not above corresponding background.

If the maximum concentration of a CPSS was less than either background or the risk-based screening value, the CPSS was not considered further unless deemed appropriate based on chemical-specific characteristics (e.g., degradation product with greater toxicity).

Elimination of Essential Elements: Calcium, Magnesium, Potassium, and Sodium

In accordance with RAGS Part A, essential elements that are potentially toxic only at extremely high concentrations may be eliminated as COPCs in a risk assessment. Specifically, an essential nutrient may be screened out of a risk assessment if its concentrations are not associated with adverse health effects. Based on RAGS, the lack of risk-related data, and USEPA Region IV's recommendations, the following essential nutrients were eliminated from the HHRA: calcium, magnesium, potassium, and sodium.

9.1.1.6 Calculation of Risk and Hazard

As previously discussed, CPSSs exceeding their respective screening values are considered COPCs. Subsequently identifying COCs is a two-step process. First, exposure pathways exceeding the USEPA and FDEP screening criteria are identified. Identifying COCs involves calculating chemical-specific cancer risks and HQs for COPCs, estimating exposure-pathway risk/hazard, evaluating frequency and consistency of detection, relative chemical toxicity, and comparing them to background concentrations. In the next step, COPCs which individually exceed 10^{-6} ILCR or an HQ greater than 0.1 in a pathway of concern (i.e., an exposure pathway having ILCR greater than 10^{-6} or HI greater than 1) are retained as COCs. Section 9.1.1.8 discusses cancer risk thresholds and noncancer toxicity.

9.1.1.7 Exposure Assessment

This section of the HHRA determines the magnitude of contact that a potential receptor may have with site-related COPCs. Exposure assessment involves four stages:

- Characterizing the physical setting and land use;
- Identifying COPC release and migration pathway(s);

- Identifying the potential receptors, under various current and future land uses or site conditions, and the pathways through which they might be **exposed;** and

- Estimating reasonable EPCs and quantifying the intake rates, or contact rates, of COPCs.

Exposure Setting and Land Use

This section of each HHRA describes the basic layout of the individual site as well as the suspected source(s) of contamination. In addition, current **and projected** future use of the site is **discussed if information was available**. For Sites **8** and **24, existing** features such as asphalt/concrete surfaces, buildings, vegetation, and fences would prevent and/or minimize **exposure** to impacted media if they are maintained under base reuse **plans**. Where site features affect how an individual might be **exposed under** current **conditions, the impact** for current land users is discussed. The assessments considered **existing features** as an additional exposure scenario within the site-specific HHRAs **(exposure** quantification and **risk** characterization sections).

Potentially Exposed Populations

In each site-specific HHRA, this section describes who may be **exposed** to contaminants in environmental media. For the Site 8 and **24** HHRAs, the potentially **exposed populations** considered were current and future site workers, current maintenance workers and hypothetical future site residents. **Because current workers at these sites would be expected to have limited contact with contaminated media, non-maintenance worker-related exposure was addressed exclusively for future site workers.** This **approach,** while conservatively assessing future site worker risk/hazard, also renders a highly conservative **approximation** of risk/hazard for current site workers. It also accounts **fur** the fact that the specific nature of future **industrial** uses cannot be definitively stated. **An** exception made for Site **24** is discussed in Section 9.1.3.2, **where current maintenance or cemetery workers could be exposed to affected media. Additionally,**

while adolescent trespassers are a potentially exposed population, they would not be likely to frequent the subject sites. As a result, this population is not addressed for all sites.

Exposure Pathways

This section of each HHRA summarizes how potential receptors (site workers, residents, etc.) may be exposed to contaminated media. In general, soil matrix-related pathways include incidental ingestion and dermal contact. For groundwater, ingestion and inhalation of volatilized contaminants were the primary exposure pathways evaluated, where applicable. **Construction would generally not disturb soil below 2 feet deep, although at Site 24 the preparation of grave sites could lead to contact with soil to a depth of six to seven feet. As a result, subsurface impacts at Site 24 are discussed relative to potential cemetery workers.** Therefore direct uniform exposure to subsurface soil conditions is not likely. Indirect exposure to contaminants in subsurface soil is discussed in Section 8, Fate and Transport. When fate and transport analyses identify areas with significant indirect exposure to subsurface soil contaminants, additional consideration is provided in the site-specific risk assessment.

Exposure Point Concentrations

The EPC is the contaminant concentration in an exposure medium that will be contacted by an actual or hypothetical receptor. Determining the EPC depends on factors such as:

- Availability of data
- Amount of data available to perform statistical analysis
- Reference concentrations not attributed to site impacts
- Location of the potential receptor
- Geospatial distribution of chemicals.

USEPA Region IV guidance assumes lognormal distributions for environmental data and calculates the 95% UCL for the mean of concentrations to quantify exposure. **Applying** the UCL is generally inappropriate with fewer than 10 samples. Instead, the **maximum** concentration detected was **used** for each data **set** with fewer **than** 10 samples. In **general,** outliers were included when calculating the UCL **because** high values seldom **appear as** outliers for a lognormal distribution. Including outliers increases the overall **uncertainty** of the calculated risks and conservatively increases the estimate of the human health **threat.**

For sample sets of 10 **and** greater, the UCL was calculated for a **lognormal** distribution as e^x where:

$$x = \left(\bar{a} + 0.5 s_a^2 + \frac{H_{0.95} \; x \; s_a}{\sqrt{n-1}} \right)$$

where:

$\bar{a}$	=	$\Sigma a/n$ = sample arithmetic mean of the log-transformed data, $a = \ln(x)$
s_a	=	**sample** standard deviation of the log-transformed data
n	=	number **of** samples in the data set
$H_{0.95}$	=	value **for** computing the one-sided **95%** UCL for a lognormal mean from standard statistical tables (Gilbert, 1987)

The calculated values for the **95% UCL** are tabulated (where **applicable)** in each HHRA. The tables **statistically summarize** COPCs identified in each environmental medium. Included **for** each COPC are the **number** of samples analyzed, mean and standard deviation of the natural log-transformed **data** (including the **nondetect** values), the **H-statistic,** the maximum of detected concentrations, and background concentrations (where available). **For media from which fewer**

than 10 samples were collected, the maximum positive detection of each COPC identified was used as the EPC to compute exposure.

In some instances, factors were derived to modify the EPC to account for the fraction ingested/fraction contacted (FIIFC) from the contaminated source where impacts were extremely limited in areal extent (hot spots). Where this approach was taken, the basis for the decision is discussed in the site-specific HHRAs (Section 9.1.2 and 9.1.3). Similarly, for relatively large sites, it may be Implausible for an individual to be continuously exposed throughout the entire area of investigation. As a result, subareas within a site may be designated as the area of exposure. Any special conditions are discussed in detail.

As discussed in Section 9.1.1.4, analytical results are presented as "nondetects" whenever chemical concentrations in samples do not exceed the detection or quantitation limits for the analytical procedures as applied to each sample. Generally?the quantitation limit is the lowest concentration of a chemical that *can* be reliably quantified above the normal, random noise of an analytical instrument or method. Tu apply the above-mentioned statistical procedures to a data set with reported nondetects for organic compounds, one-half of the sample quantitation limit was inserted as a proxy concentration. If the detected concentrations for an individual site were consistently lower than the sample quantitation limits, then one-half of the lowest detected value at the site was the proxy concentration. For inorganic chemicals, one-half of the sample quantitation limit was the proxy concentration. This is a reasonable method for addressing the uncertainty of unusually high sample quantitation limits, and reduces the bias (positive or negative) in the calculated UCL.

USEPA Region IV supports using the arithmetic mean of concentrations in the most concentrated area of a plume as an EPC for estimating groundwater exposures (Supplemental Guidance to RAGS: Region IV Bulletins, 1995b.) Most sampling regimes are designed to define the extent

of a plume, potentially resulting in the biased placement of monitoring wells in uncontaminated areas of the aquifer, thus causing a low bias on concentration. Since many groundwater COPCs were not in a well-defined plume, a simplifying assumption was made. It defined a separate plume for each COPC or chemical group (metals, volatiles) comprising all the monitoring wells in which at least one chemical in a particular group exceeded screening values. To guard against any inadequacies in this simplification, the traditional 95% UCL was calculated based on the data from all monitoring wells at a given site if it would render a more reasonable estimate. The outcome of this was a reasonable maximum exposure (RME) concentration for assessing risk. Since a production well could be established in areas of high contamination in future use scenarios, the risk assessment uses the above-mentioned reasonable worst case to estimate potential exposure and subsequent risk/hazard to groundwater. The RME risk/hazard projections could exceed those estimated for any specific point of the site.

Quantification of Exposure

This section describes the models, equations, and input parameter values used to quantify doses or intakes of the COPCs for the surface soil and groundwater exposure pathways. The models are designed to estimate route- and medim-specific factors, which are multiplied by the EPC to estimate chronic daily doses. The intake model variables generally reflect 50th or 95th percentile values which, when applied to the EPC, ensure that the estimated intakes represent the RME. Formulae were derived from RAGS, Part A, unless otherwise indicated. Table 9-1 lists input parameters used to compute chronic daily intake (CDI) for potential receptors of surface soil and/or groundwater contaminants. These pathway assumptions were applied for each site. Where other exposure routes/pathways were identified (or predicted), additional. exposure quantification formulae are presented. Because future site use cannot be assumed with any certainty, conservative assumptions were used to account for any reasonable future use. Age-adjusted ingestion factors were derived for the potential future residential receptors (resident adult and child combined) for carcinogenic endpoints. These factors consider the difference in daily

ingestion rates for soil and drinking water, body weights, and exposure durations for children (ages 1 to 6) and adults (ages 7 to 31). **Maintenance worker ingestion rate was based on a reasonable estimate of chronic soil exposure; USEPA's contact intensive IR of 480 mg/day (short-term) was judged to be an inaccurate estimator of exposure over a working lifetime and is only intended for chronic applications.** The exposure frequency is assumed tu be identical for the adult and child exposure groups.

Surface Soil Pathway Exposure

Ingestion of *COPCs* in *Surface* Soil

The following equation is used to estimate the ingestion of COPCs in soil:

$$CDI_s = (C_s)(IR)(EF)(ED)(F)(FI)/(BW)(AT)$$

where:

CDI_s	=	ingested dose (mg/kg-day)
C_s	=	concentration of contaminant in soil (mg/kg)
IR	=	ingestion rate (mglday)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
F	=	conversion factor (10^{-6} kg/mg)
FI	=	fraction ingested from contaminated source (unitless)
BW	=	body weight (kg)
AT	=	averaging time (days)

Table 9-1
Parameters Used to Estimate CDI at RME

Pathway Parameters	Resident Adult	Resident Child	Current Adult Maintenance Worker	Adult Worker	Units
Surface Soil Ingestion and Dermal Contact					
Ingestion Rate (soil)	100[a]	200[a]	100[a]	50[a]	mg/day
Ingestion Rate (water)	2	1	NA	1	L/day
Exposure Frequency	350[b]	350[b]	52[b]	250[b]	days/year
Exposure Duration	24[c]	6[c]	25[c]	25[c]	years
Dermal Contact Area	4,100[d]	2,900[d]	4,100[d]	4,100[d]	cm^2
Skin Adherence Factor	1	1	1	1	mg/cm^2
Absorbance Factor.	0.01 (organics) 0.001 (inorganics)	0.01 (organics) 0.001 (inorganics)	0.01 (organics) 0.001 (inorganics)	0.01 (organics) 0.001 (inorganics)	unitless
Dermal Adjustment: Factor	0.8 (VOCs) 0.5 (other organics) 0.2 (inorganics)	0.8 (VOCs) 0.5 (other organics) 0.2 (inorganics)	0.8 (VOCs) 0.5 (other organics) 0.2 (inorganics)	0.8 (VOCs) 0.5 (other organics) 0.2 (inorganics)	unitless
Conversion Factor	1E-6	1E-6	1E-6	1E-6	kg/mg
Body Weight	70[a]	15[a]	70[a]	70[a]	kg
Averaging Time, Noncancer	8,760[e]	2,190[e]	9125[e]	9125[e]	days
Averaging Time, Cancer	25,556	25,556	25,550[f]	25,556	days

Notes:

a = USEPA (1989b) Risk Assessment Guidance for Superfund Vol. I, *Human Health Evaluation Manual* (part A).

b = USEPA (1991d) Risk Assessment Guidance for Superfund Vol. I: *Human Health Evaluation Manual Supplemental* Guidance, *Standard Default Exposure Factors, Interim Final*, OSWER Directive: 9285.6-03.EPA/600/8-89/043.

c = USEPA (1991c), Risk Assessment Guidance for Superfund: Vol. I – *Human Health Evaluation* Manual (Part B, Development of Risk-based Preliminary Remediation Goals), OSWER Directive 9285.7-01B.

d = Resident adult accounts for head, hands, and forearms at 90th percentile values from Table 4B.1, Exposure *Factors Handbook;* assumes individual is clothed with shoes, long pants, and short sleeves; rounded up from 4,090 square centimeters (cm^2). Resident Child accounts for head, hands, forearms, lower leg, and feet using 90th percentile total body surface are a values for male children 1 to 6 years old (6,000 cm^2 assumed for 1 to 2 years old); because individual body part information is not available for 5 to 6 year olds, mean of other groups was assumed. Forearm surface area set *equal* to 46% of full arm; lower leg set equal to 41% of full leg measurement.

e = Calculated as the product of exposure duration (years) x 365 days/year.

= Calculated as the product of 70 years (assumed lifetime) x 365 days per year.

NA = Not applicable.

Dermal Contact with COPCs in Surface Soil

The following equation is used to estimate intake due to dermal contact with COPCs in soil:

$$CDI_{sd} = (C_s)(SA)(EF)(ED)(F)(FC)(DAF)(AF)/(BW)(AT)$$

where:

CDI_{sd}	=	dermal dose (mg/kg-day)
C_s	=	concentration of contaminant in soil (mg/kg)
SA	=	exposed skin surface area (cm^2)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
F	=	conversion factor (10^{-6} kg/mg)
FC	=	fraction contacted from contaminated source (unitless)
DAF	=	dermal absorption factor (unitless value, specific to organic versus inorganic compounds)
AF	=	adherence factor (mg/cm^2)
BW	=	body weight (kg)
AT	=	averaging time (days)

Groundwater Pathway Exposure

Ingestion and *Inhalation of COPCs* in Groundwater

The following equation estimates the ingestion and/or inhalation of COPCs in GW pathway:

$$CDI_w = (C_w)(IR)(EF)(ED)(FI)/(BW)(AT)$$

where:

CDI_w	=	ingested/inhaled dose (mg/kg-day)
C_w	=	concentration of contaminant in water (mg/L)
IR	=	ingestion rate (Llday)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
FI	=	fraction ingested from contaminated source (unitless)
BW	=	body weight (kg)
AT	=	averaging time (days)

Figures 9-1 and 9-2 lists formulae for calculating the CDIs for soil and groundwater, respectively. Tables in each HHRA quantify exposure through all applicable pathways. Future site worker, hypothetical site resident, and current maintenance worker (where applicable) exposure are projected separately. In accordance with USEPA guidance, the potential exposure to volatiles originating from groundwater during showering and domestic use is estimated to be equivalent to that ingested by consuming 2 liters/per day of contaminated groundwater. Although the inhalation CDI computed on this basis equals that for ingestion exposures, risk and/or hazard associated with inhaled volatile contaminants are characterized using toxicological values specific to the inhalation pathway (e.g., inhalation slope factors [SF_is] and reference doses [RfDs]).

9.1.1.8 Toxicity Assessment

Carcinogenicity and Noncancer Effects

USEPA classifies the potential carcinogenicity of environmental contaminants based on the weight of scientific evidence. Cancer weight-of-evidence class "A" (human carcinogens) means that human toxicological data have shown a proven correlation between exposure and the onset of cancer (in varying forms). The "B1" classification indicates some human exposure studies have

implicated the compound as a probable carcinogen. Weight-of-evidence class "B2" indicates a possible human carcinogen, based on positive laboratory animal data (for carcinogenicity) in the absence of human data. Weight-of-evidence class "C" identifies possible human carcinogens, and class "D" indicates a compound not classifiable for its carcinogenic potential. USEPA also has established cancer slope factors (SFs) for carcinogenic compounds, defined as a "plausible upper-bound estimate of the probability of a response (cancer) per unit intake of a chemical over a lifetime" (RAGI;, Part A)+

Most substances also can produce other toxic responses at doses greater than experimentally derived threshold concentrations. USEPA has derived RfD values for these substances as an estimate (with uncertainty spanning an order of magnitude or greater) of a daily exposure concentration for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects during a lifetime. Risk formulae use these toxicological values to assess the upper-bound level of cancer risk and noncancer hazard associated with exposure to a given contaminant concentration.

For carcinogens, the potential excess risk posed by a chemical is computed by multiplying the CDI (as mg/kg-day) by the SF (in reciprocal mg/kg-day). The HQ (for noncarcinogens) is computed by dividing the CDI by the RfD. USEPA sets standard limits (or points of departure) for carcinogens and noncarcinogens to evaluate whether significant risk is posed by a chemical (or combination of chemicals). For carcinogens, the point of departure is 10^{-6}, with a generally accepted range of 10^{-6} to 10^{-4}. These risk values correlate with a one-in-10,000 and a one-in-one million excess incidence of cancer resulting from exposure to xenobiotics (all pathways). Although USEPA considers a range of acceptable ILCR, FDEP fixes 1E-06 as the single or cumulative risk goal. Therefore, this one-in-1 million ILCR was used as the target for identifying COCs and/or problem pathways.

Figure 9-1
Formulae for Calculating CDI for Soil

SOIL INGESTION PATHWAY
Residential Scenario:
Noncarcinogens — Child — Residential Scenario:

$$CDI_{NC-C} = \frac{C_S * IR_{soil/child} * EF_{res} * F * FI * ED_{child}}{AT_{NC-C} * BW_{child}}$$

Noncarcinogens — Adult — Residential Scenario:

$$CDI_{NC-A} = \frac{C_S * IR_{soil/adult} * EF_{res} * F * FI * ED_{adult}}{AT_{NC-A} * BW_{adult}}$$

Carcinogens (based on a lifetime weighted average):

$$CDI_C = \frac{C_S}{AT_C}\left[\frac{IR_{soil/child} * EF_{res} * F * FI * ED_{child}}{BW_{child}} + \frac{IR_{soil/adult} * EF_{res} * F * FI * ED_{adult}}{BW_{adult}}\right]$$

SOIL DERMAL CONTACT PATHWAY
Residential Scenario:
Noncarcinogens — Child — Residential Scenario:

$$CDI_{NC-C} = \frac{C_S * SA_{child} * AF * DAF * EF_{res} * F * FC * ED_{child}}{AT_{NC-C} * BW_{child}}$$

Noncarcinogens — Adult — Residential Scenario:

$$CDI_{NC-A} = \frac{C_S * SA_{adult} * AF * DAF * EF_{res} * F * FC * ED_{adult}}{AT_{NC-A} * BW_{adult}}$$

Carcinogens (based on a lifetime weighted average):

$$CDI_C = \frac{C_S}{AT_C}\left[\frac{SA_{child} * EF_{res} * F * FC * DAF * AF * ED_{child}}{BW_{child}} + \frac{SA_{adult} * EF_{res} * F * FC * DAF * AF * ED_{adult}}{BW_{adult}}\right]$$

Figure 9-1 (continued)

Formulae for Calculating CDI for Surface Soil

Variable	Description
BW_{child}	average child body weight (ages 1-6) (kg)
BW_{adult}	average adult body weight (kg)
DAF	absorbance factor (unitless value specific to organic versus inorganic compounds)
AF	adherence factor (1 mg/cm^2)
ED_{child}	child exposure duration during ages 1-6 (yr)
ED_{adult}	adult exposure duration during ages 7-31 (yr)
$ED_{adult-w}$	adult worker exposure duration (yr)
EF_{res}	residential exposure frequency (days/year)
EF_w	worker exposure frequency (days/year)
$IR_{soil/child}$	child soil intake rate (mg/day)
$IR_{soil/adult}$	adult soil intake rate (mg/day)
FC	fraction contacted from contaminated source (unitless)
SA_{child}	exposed skin surface area, child (cm^2)
SA_{adult}	exposed skin surface area, adult (cm^2)
AT_C	averaging time (carcinogen)
AT_{NC-A}	averaging time (noncarcinogen adult)
AT_{NC-C}	averaging time (noncarcinogen child)
C_s	chemical concentration in surface soil (mg/kg)
FI	fraction ingested from contaminated source (unitless)
F	conversion factor (10^6 kg/mg)

Notes:

CDI indicates Chronic Daily Intake. The worker and maintenance worker scenario risk and hazard were calculated by substituting worker/maintenance worker-specific assumptions into the adult portions of the formulae and then deleting the child portions of the formulae.

Figure 9-2

Formulae for Calculating CDI for Groundwater

GROUNDWATER INGESTION PATHWAY

Residential Scenario:

Noncarcinogens -- Child – *Residential* Scenario:

$$CDI_{NC-C} = \frac{C_W * IR_{water/child} * EF_{res} * ED_{child}}{AT_{NC-C} * BW_{child}}$$

Noncarcinogens -- Adult – *Residential* Scenario:

$$CDI_{NC-A} = \frac{C_W * IR_{water/adult} * EF_{res} * ED_{adult}}{AT_{NC-A} * BW_{adult}}$$

Carcinogens *(based* on a *lifetime* weighted average):

$$CDI = \frac{C_W}{AT_C}\left[\frac{IR_{water/child} * EF_{res} * F * ED_{child}}{BW_{child}} + \frac{IR_{water/adult} * EF_{res} * F * ED_{adult}}{BW_{adult}}\right]$$

PATHWAY: GROUNDWATER INHALATION WHILE SHOWERING

Residential Scenario:

In accordance with Technical Memorandum Guidance on Estimating **Exposure** to VOCs During Showering, USEPA/ORD, July 10, 1991:

$$CDI_{ingestion} = CDI_{inhalation}$$

Figure 9-2 (continued)

Formulae for Calculating CDI for Groundwater

Variable	Description
BW_{child}	average child body weight (ages 1-6) (kg)
BW_{adult}	average adult body weight (kg)
ED_{child}	child exposure duration during ages 1-6 (yr)
ED_{adult}	adult exposure duration during ages 7-31 (yr)
$ED_{adult-w}$	adult worker exposure duration (yr)
EF_{res}	residential exposure frequency (days/year)
EF_{w}	worker exposure frequency (days/year)
$IR_{water/child}$	child water intake rate (mg/day)
$IR_{water/adult}$	adult water intake rate (mg/day)
AT_{C}	averaging time (carcinogen)
AT_{NC-A}	averaging time (noncarcinogen adult)
AT_{NC-C}	averaging time (noncarcinogen child)
C_{w}	chemical concentration in groundwater (mg/L)

Notes:

CDI indicates Chronic Daily Intake. The worker scenario risk and hazard were calculated by substituting worker-specific assumptions into the adult portions of the formulae and then deleting the child portions of the formulae.

For noncarcinogens, other toxic effects are generally considered possible if the HQ (or sum of HQs for a pathway, HI) exceeds unity (a value of 1). Although both cancer risk and noncancer hazard are generally additive (within each group) only if the target organ is common to multiple chemicals, a most conservative estimate of each may be obtained by summing the individual risks or hazards, regardless of target organ. The following HHRAs take the universal summation approach for each toxicant class. The Risk Characterization section of this document details the use formulae applied to site data.

Critical studies USEPA used in establishing toxicity classifications are shown in the Integrated Risk Information System (IRIS) database (primary source) and/or Health Effects Assessment Summary Tables (HEAST), Fiscal Year 1995 (secondary source). If toxicological information is unavailable in IRIS or HEAST, values were obtained from reports issued by the Environmental Criteria and Assessment Office (ECAO)/National Center for Environmental Assessment (NCEA). Where applicable, these values were also included in the database fur these HHRAs. Tables 9-11 and 9-28 summarizes toxicological data for each COPC identified at Sites 8 and 24 as RfDs and SFs obtained for the relevant COPCs, as well as uncertainty/modifying factors, target organs, and cancer classes (where available).

Toxicity Profiles for COPCs

In accordance with RAGS, the HHRAs include brief toxicological profiles for all COPCs. Most information for the profiles was gleaned from IRIS and HEAST, and the toxicological database information table. Any additional references are noted specifically in the profiles. The profiles, provided in Section 9.1.4, summarize adverse effects of COPCs and the amounts associated with such effects.

9.1.1.9 Risk Characterization

Risk characterization combines the exposure and toxicity assessment results to yield qualitative and quantitative expressions of risk and/or hazard for the exposed receptors. The quantitative component expresses the probability of developing cancer, or a nonprobabalistic comparison of the estimated dose with an RfD for noncancer effects. These quantitative estimates are developed for individual chemicals, exposure pathways, transfer media, and source media, and for each receptor for all media to which one may be exposed. The qualitative component usually compares COC concentrations in media with established criteria or standards for chemicals for which there are no corresponding toxicity values. The risk characterization guides risk management decisions.

Generally, the risk characterization follows the methodology prescribed by RAGS Part A, as modified by more recent information and supplemental guidance. USEPA methods are designed to be health-protective, and tend to overestimate, rather than underestimate, risk. The risk results, therefore, are generally overly conservative, because risk characterization involves multiplying the conservative assumptions built into the exposure and toxicity assessments.

This section of each HHRA characterizes the health risks associated with the intake of chemicals originating from the respective site. The USEPA methods used to estimate the types and magnitudes of health effects associated with exposure to chemicals have been supplemented?where appropriate, by graphical representations of risk and hazard. This supplemental information more clearly depicts the problem areas at the relevant sites on scales specific to individual sampling points.

Risk Characterization Methodology

Potential *excess* risk to humans following exposure to COPCs is estimated using USEPA methods, when available. These health-protective methods are likely to overestimate risk, Risk from hazardous chemicals is calculated for either carcinogenic or noncarcinogenic effects. Some

carcinogenic chemicals may also pose a noncarcinogenic hazard. The potential human health effects associatedl with chemicals that produce systemic toxic and carcinogenic influences are characterized for both types of health effects. As mentioned in Section 9.1.1.7, inhalation exposure-related risk and hazard were computed using appropriate route-specific SFs and RfDs (where available).

Unlike the methods for estimating inhaled or ingested dose of COPCs, which quantify the dose presented to the barrier membranes (the pulmonary or gastrointestinal mucosa, respectively), dermal dose is estimated as that which crosses the skin and is systemically absorbed. Thus, oral toxicity values are adjusted to reflect the dermally absorbed dose.

Dermal RfD values and SFs are derived from the corresponding oral values. In deriving a dermal RfD, the oral RfD is multiplied by an oral absorption factor, expressed as a decimal fraction. The resulting dermal RfD is based on the absorbed dose, the appropriate value with which to compare a dermal dose because they are expressed as absorbed rather than administered (intake) doses. For the same reasons, a dermal SF is derived by dividing the oral SF by the oral absorption factor. The oral SF is divided rather than multiplied because SFs are expressed as reciprocal doses.

Appendix A of RAGS, Part A, states that in the absence of specific data, assuming a 5% oral absorption efficiency would be relatively conservative. Supplemental Guidance to RAGS: Region IV Bulletin indicates that in the absence of specific data, USEPA Region IV suggests an oral-to-dermal absorption factor of 80% for VOCs, 50% for SVOCs, and 20% fur inorganics. These percentages (or associated fractions) were used in the HHRA and are reflected in the applicable risk/hazard results.

Carcinogenic Effects of Chemicals

The risk attributed to exposure to carcinogens is estimated as the probability of an individual developing cancer over a lifetime as a result of exposure to a potential carcinogen. In the low-dose range, which would be expected for most environmental exposures, cancer risk is estimated from the following linear equation (RAGS, part A):

$$ILCR = (CDI)(SF)$$

where:

ILCR	=	incremental lifetime excess cancer risk, a unitless expression of the probability of developing cancer, adjusted for reference incidence
CDI	=	chronic daily intake, averaged over 70 years (mg/kg-day)
SF	=	cancer slope factor $(mg/kg\text{-}day)^{-1}$

For a given pathway with simultaneous exposure of a receptor tu several carcinogens, the following equation is used to sum cancer risks:

$$Risk, = ILCR(chem_1) + ILCR(chem_2) + \ldots ILCR(chem_i)$$

where:

Risk,	=	total pathway risk of cancer incidence
$ILCR(chem_i)$	=	incremental lifetime excess cancer risk for a specific chemical

Cancer risk for a given receptor across pathways and across media is summed in the same manner.

Noncarcinogenic Effects of Chemicals

The risk associated with a chemical's noncarcinogenic effects is evaluated by comparing an exposure level or intake with an RfD. The HQ, defined as the ratio of intake to RfD, is defined

as (RAGS, Part A):

$$HQ = CDI/RfD$$

where:

HQ	=	hazard quotient (unitless)
CDI	=	chronic daily intake (mg/kg-day)
RfD	=	reference dose (mg/kg-day)

Chemical noncarcinogenic effects are evaluated on a chronic basis, using chronic RfD values. An HQ of unity or 1 indicates that the estimated intake equals the RfD. If the HQ is greater than unity, there may be a concern for potential adverse health effects.

For simultaneous exposure of a receptor to several chemicals, an HI will be calculated as the sum of the HQs by:

$$HI = HQ_1 + HQ_2 + \ldots HQ_i$$

where:

HI	=	Hazard Index (unitless)
HQ	=	Hazard Quotient (unitless)

Risk and hazard projections are tabulated for each medium following the general discussions of risk and hazard quantification methods. For must sites, the following subsections are included.

Surface Soil Pathways

This section of each HHRA summarizes estimated surface soil risk/hazard for each receptor group. In addition, the primary contributors to carcinogenic risk and/or noncarcinogenic hazard are discussed.

Groundwater Pathways

This section summarizes estimated groundwater risk/hazard fur each receptor group. In addition, the primary contributors to carcinogenic risk and/or noncarcinogenic hazard are discussed.

Other Applicable Pathways

This section identifies pathways other than soil and groundwater. It summarizes estimated risk/hazard for each receptor group and discusses the primary contributors to carcinogenic risk and/or noncarcinogenic hazard.

COCs Identified

This section summnarizes the outcome of risk/hazard projections by identifying COCs for each impacted environmental medium on cumulative (all pathway) risk and hazard projected for each site, and are tabulated (where necessary)+ USEPA has established a generally acceptable risk range of 10^{-4} to 10^{-6}, and an HI threshold of 1 (unity). As per FDEP guidance, a COC was any chemical contributing tu a cumulative risk level of 10^{-6} or greater and/or a cumulative HI above 1, and whose individual ILCR exceeds 10^{-6} or whose HQ exceeds 0.1. For carcinogens, this approach is relatively conservative. USEPA Region IV generally recognizes a cumulative risk of 10^{-4} (and individual ILCR of 10^{-6}) as the actionable trigger for establishing COCs. The COC selection method more apprehensively evaluates chemicals contributing to carcinogenic risk or noncarcinogenic hazard during the RGO development process.

Under the traditional risk-based COC trigger provisions, no carcinogenic COCs would be identified for a particular receptor group/pathway combination if the overall cumulative site risk is less than 10^{-4}. However, as described in Section 9.1.1.8, the cumulative risk threshold used to identify COCs in the following HHRAs is two orders of magnitude more conservative, 10^{-6}.

9.1.1.10 Risk Uncertainty

This section presents and discusses the uncertainty and/or variability inherent in the risk assessment process in addition to medium-specific and exposure pathway-specific influences. Risk assessment sections are discussed separately below, and specific examples of uncertainty sources are included where appropriate.

General

Uncertainty is a factor in each step of the exposure and toxicity assessments summarized above. Overall, uncertainties associated with the initial stages of the risk assessment process become magnified when combined with other uncertainties. The use of high-end estimates of potential exposure concentrations, frequencies, durations, and rates leads to conservative estimates of CDI. Toxicological values for chemicals from USEPA databases and other sources are generally derived from animal studies, so uncertainty and modifying factors are applied to predict potential human responses, providing a margin of safety based upon confidence in the studies. During the risk characterization process, individual chemical risk is added tu determine the ILCR for each exposure pathway. If the individual exposure predictions were calculated from the upper-limit estimates of exposure to each chemical, then the margin of safety of the cumulative incremental risk is the sum of all the individual safety margins applied throughout the process. Using these safety margins during all exposure and risk/hazard computations provides an extremely conservative prediction of potential human health effects. The margins of safety or "conservatisms" inherent in each step of the human health risk assessment are addressed in the Risk Uncertainty discussions.. It is not possible to eliminate all uncertainties or potential variability in the risk assessment process; however, recognizing the influences of these factors is fundamental to understanding and subsequently using risk assessment results.

The Risk Uncertainty section of each HHRA presents the uncertainty and/or variability of site-specific and medium/pathway-specific factors introduced in the risk assessment process, in

addition to other factors influencing the uncertainty of the calculated ILCR and HQs/HIs. Calculated risk/hazard levels reflect the underlying variability of the analytical results they are based on; they also embody uncertainty about potentially unsampled maxima and minima in the analytes. The exposure pathways selected in the Exposure Assessment section are extremely conservative.

Assumptions are based on population studies and USEPA guidance, which divides the assumptions into two basic categories: the upper bound (90th to 95th percentile) and the mean ox 50th percentile central tendency (CT) exposure assumptions. As discussed in the Exposure Assessment section, the RME exposure is based on the upper-bound assumptions, and CT exposure is based on mean assumptions. Therefore, risk and hazard calculated using RME exposure assumptions are generally overestimates rather than underestimates. The following paragraphs discuss sources of uncertainty and variability pertinent to each exposure pathway evaluated.

Quality of Data

Data collected during the Sites 8 and 24 investigations are presented in Section 6 of this RI, which includes results from each site and the review of those data. The data are evaluated to verify that the QC requirements of the data set have been met and to characterize the weakness of questionable data.

Most analytical results for environmental samples have inherent uncertainty. This uncertainty is a function of the matrix characteristics and heterogeneity, the precision and accuracy of sampling, and preparation and analysis methods employed. Although data are typically considered to be exact values, they are in reality the laboratory's best estimate within a range defined by method control limits. As a result, reported concentrations for any chemical can under or overestimate actual concentrations.

Exposure Pathways and Contaminants of Concern

Comparisons made using the most conservative sets of WSEPA and FDEP screening values (residential land use) for each exposure medium eliminated many CPSSs from the formal assessment. Although potential cumulative effects associated with multiple chemicals dismissed through this process are a valid concern, the fact that maximum detected concentrations were used in the screening comparison alleviates much uncertainty. More than 10 constituents would have to be present at near-RBC concentrations to justify a concern for cumulative effects. Although the screening method is highly conservative, inhalation and dermal exposure are not incorporated into the soil USEPA screening values. FDEP screening values include inhalation and dermal exposures. If inhalation and dermal pathways were the primary concern (as opposed to ingestion) and an FDEP screening value did not exist, the screening method could eliminate contaminants that should otherwise be considered COPCs. The fate and transport discussion evaluates Sites 8 and 24 surface soil data compared to soil-to-ah cross-media transport (via volatilization). Any constituents omitted based on comparison to residential RBCs that may significantly contribute to risk via other exposure pathways were reinstated to the list of COPCs.

Comparison to Reference Concentrations (Background)

Because the HHRA is intended to estimate the excess cancer risk or health hazard posed by COPCs, individual sample data values of inorganic chemicals were compared to background reference concentrations in the RI for Sites 8 and 24 after comparing the data to risk-based screening values. Additional uncertainty is introduced by comparing site data to nonspecific screening reference data. Although the background concentrations are specific to NAS Pensacola, they are not specific to Sites 8 and 24.

Elimination of Essential Nutrients

In accordance with RAGS, the following nutrients were eliminated from the HHRAs: calcium, sodium, potassium, and magnesium. Toxicity from overexposure to these nutrients is possible only if humans are exposed to extremely high doses. USEPA recommends eliminating these chemicals from formal risk assessment. Because no screening comparison was performed, the HIs calculated in the HHRA could be positively influenced by the nutrient concentrations detected onsite. Therefore, the HIs are possibly underestimates. However, these nutrients are expected to be naturally plentiful in a coastal environment.

Characterization of Exposure Setting and Identification of Exposure Pathways

Highly conservative assumptions (e.g., future residential use) recommended by USEPA Region IV and FDEP introduce the potential for high bias due to the exposure pathways and settings selected when assessing potential and current exposure. The exposure assumptions for the site worker and maintenance worker scenarios are also very conservative and tend to overestimate exposure. Current site workers are not exposed to site groundwater and contact with soil is expected to be minimal due to coverage by existing features.

Exposure to current soil conditions by hypothetical future site residents is unlikely. If this area were developed as residential, most of the present buildings would be demolished and the surface soil conditions would likely change — the soil could be covered with roads, paved driveways, landscaping soil, and/or houses, or parts of the property could become playgrounds. These factors indicate that exposure pathways assessed in the HHRA would generally overestimate the risk and hazard posed to current site workers and future site residents.

To more accurately assess potential exposure under current site conditions, existing features were evaluated to determine whether they might preclude or minimize contact. Asphalt parking/road surfaces, buildings, vegetation, and concrete slabs are features under which soil samples were collected. Assuming the future site use involves maintaining these structures or conditions, onsite

workers would not be chronically exposed tu soil beneath them at the rates assumed. These factors were considered in calculating alternative EPCs for sites with significant surface features (where applicable)) and generating descriptive text where formal analysis was deemed unnecessary.

Where chronic RME estimates of risk/hazard indicate that a significant threat would be posed to human health, CT analyses were performed. CT exposure scenarios were constructed consistent with standard CT exposure assumptions provided in *Superfund's Standard* Default *Exposure Factors for* the *CT and* Reasonable *Maximum Exposure-Draft* (USEPA, 1993b).

Groundwater is not currently used at NAS Pensacola for potable or process water. Water is obtained from a well field across Bayou Grande at NAS Correy Station. As a result, groundwater use is expected under future site use scenarios. Therefore, the scenario established to project risk/hazard for with shallow groundwater exposure is highly conservative, since associated pathways are not expected to be completed.

Determination of Exposure Point Concentrations

Based on the guidance provided by USEPA, EPCs are used to estimate CDI. The uncertainty associated with EPCs sterns primarily from their statistical determination or the imposition of maximum concentrations, described below.

Statistical Estimation of Exposure Point Concentrations

USEPA's *Supplemental Guidance* to *RAGS: Calculating* the Concentration *Term* guidance (USEPA, 1992d) outlines a statistical estimation of EPC. These calculated concentrations are 95% UCLs for the mean, which are based on certain assumptions. USEPA assumes that most (if not all) environmental data are lognormally distributed. This assumption can over- or underestimate the concentration term because many environmental data are neither normally nor lognormally distributed.

The UCL calculation method includes a statistical value, the H-statistic, which is based on the number of samples analyzed for each COPC and the standard deviation of the results. To obtain this number, a table must be referenced, and the value must be interpolated (an estimation) from the table. The equation for the H-statistic has not been provided in the supplemental guidance, nor does the document referred to therein provide the equation. Although the statistic appears to be nonlinear, local linearity was assumed to facilitate interpolation for each COPC addressed.

Linear interpolation provides a good estimate of H; however, both the UCL formula and H are natural log values. The effect of multiplying natural log numbers is not equivalent to multiplying untransformed values. When data are log-transformed, adding two numbers is the equivalent of multiplying them if they were not transformed. The effect of multiplying a number while in log form is exponential; and here, H is applied as a multiplier. In summary, using this method to calculate the UCL can overestimate, and often provides concentrations greater than the maximum detected onsite, particularly for small datasets. For all data sets with fewer than 10 samples for a specific medium or subarea, the maximum concentrations detected were used as EPCs. The limited number of soil and groundwater samples used to assess site conditions often resulted in considerable variability between data points, and thus relatively high standard deviations about the mean. The high standard deviation elevates UCL projections. **This effect could relate to an inaccurate assumption of a log-normal distribution, however, these determinations are not entirely effective when applied to biased data from a few samples.**

Although RAGS advocates using neither worst-case scenarios nor maximum concentrations as EPCs, applying the H-statistic often results in using the reported maximum concentration as the EPC. In accordance with RAGS, the lesser of either the maximum concentration or the UCL is the EPC. As reviewed above, summation of risk based on maximum concentrations overestimates exposure, especially in the case of low detection frequency or spatially segregated COPCs. This concept is further discussed below.

Frequency of Detection and Spatial Distribution

Because of the influence of standard deviation on EPC, low frequency of detection can cause COPCs to be addressed inappropriately. COPCs detected only once or twice in ail samples analyzed (having concentrations exceeding the RBCs and reference concentrations) would be expected to have relatively higher standard deviations as concentration variability or range widens. Higher standard deviation results in a high H-statistic, typically leading to a UCL greater than the maximum concentration detected onsite. If that occurs, then using the UCL or maximum concentration detected as EPC (or possibly including the COPC in question as a COC) may not be appropriate when an EPC is assumed to be widely distributed spatially. It is not feasible for a receptor to be simultaneously exposed to maximum concentrations of different contaminants at several locations. Using the maximum concentrations (or the UCL) is questionable fur these contaminants, and the calculated risk and hazard could be skewed upward due to the low frequency of detection. It is, however, an appropriately conservative application where data are biased and do not support more rigorous distribution analysis.

In some instances, hot spots may occur within the investigation area. A hot spot is an isolated area of concentrated contamination within a larger area which is nut impacted, or much less so. Exposure in a hot spot may be quantified by calculating an FI/FC from contaminated source factor based on the percentage of the total exposure area of the hot spot, then using this term to modify the maximum (or restricted area average) contaminant concentration to derive the EPC.

Phase I and Phase II Groundwater Data

Two phases of groundwater sampling were conducted at Site 24 in order to account for temporal variability; results fur both sampling events were considered in estimating groundwater EPCs.

Toxicity Assessment Information

Human toxicological risk values developed from experimental data generally contain uncertainty primarily due to the uncertainty of data extrapolation in the areas of: (1) high-to-low-dose exposure and (2) animal data to human experience. The site-specific uncertainty occurs mainly in the degree of accuracy of the exposure assumptions. Most assumptions used in this and any risk assessment have not been verified. For example, the degree of chemical absorption from the gut or through the skin or the amount of soil contact is not known with certainty.

The uncertainty of IRIS and HEAST toxicological values is summarized (where available) in each HHRA. The uncertainty factors assigned to these values account for acute-to-chronic dose extrapolation, study inadequacies, and sensitive subpopulations, among other factors. Although uncertainty factors for a specific compound may be 1,000 or higher, they are applied by USEPA to help guarantee that the overall assessment of risk/hazard is conservative toward human health concerns. In the presence of such uncertainty, USEPA and the risk assessor are obligated to make conservative assumptions so that the chance is very small for the actual health risk to be greater than that determined through the risk assessment process. However, the process is not intended to yield overly conservative risk values that have no basis in actual conditions. This balance was considered in developing exposure assumptions and pathways and in interpreting data and guidance.

Evaluation of Chemicals for Which No Toxicity Values Are Available

In addition to the typical uncertainties inherent in toxicity values, parameters without corresponding RBCs due to the lack of approved toxicological values were not included in the CDI calculation data. This does not indicate that chemicals lacking approved toxicological values pose no risk or hazard. As stated previously, essential nutrients were eliminated based on their low potential for toxicity. Therefore, these chemicals were not assessed further in the HHRA.

Quantification of Risk/Hazard

This section of each HHRA discusses potential sources of uncertainty or variability identified in the quantification of risk and hazard that are not covered above. Each exposure medium addressed in the formal risk assessment process is discussed briefly.

9.1.1.11 Risk Summary

In each site-specific HHRA, this section summarizes the risk and hazard projected for each receptor group, exposure medium, and exposure pathway.

9.1.1.12 Remedial Goal Options

RGOs are chemical concentrations computed to equal with specific risk and/or hazard goals that may be established for a particular site. As previously discussed, COCs are any COPCs that significantly contribute to a pathway of concern. A pathway having an ILCR greater than 10^{-6} or an HI greater than I is defined as a pathway of concern, and an individual chemical which contributes either 10^{-6} ILCR or 0.1 HQ is considered to significantly contribute to the pathway ILCR or HI. Based on this method, COCs were identified which required calculating RGOs. These are listed in the Risk Characterization section for each site. RGOs were calculated for all COPCs contributing to a pathway risk of 10^{-6} or greater. Inclusion in the RGO table does not necessarily indicate that remedial action is needed to address a specific chemical.. Instead, RGOs are provided to facilitate risk management decisions.

In accordance with USEPA Supplemental RGO Guidance, RGOs were calculated at 10^{-4}, 10^{-5}, and 10^{-6} risk levels for carcinogenic COCs and HQ goals of 3, 1, and 0.1 for noncarcinogenic COCs. RGOs for carcinogens were based on the lifetime weighted average (LWA) and the adult site worker. Groundwater RGOs for the site resident and site worker are presented in separate tables (where applicable:) in each site-specific HHRA. Hazard-based RGOs were calculated for either the hypothetical child resident or the adult site worker, as noted in the each corresponding table.

Consistent with Project Team agreements, FDEP soil cleanup goals (CGs) and FGGCs are aiso presented as alternate remedial goals.

9.1.2 Human Health Risk Assessment for Site 8

9.1.2.1 Site Background and Investigative Approach

The Rifle Range Disposal Area, Site 8, is approximately 6 acres occupied by Building 3561, NAS Pensacola PWC Maintenance/Material Department. An extensive asphalt paved area borders Building 3561 to the north, east, and west covering nearly all land surface. Before the construction of Building 3561, the base rifle range and disposal area were at Site 8. Various solid wastes and dry refuse were reportedly burned in trenches during the late 1950s to early 1960s. Portions of Building 3561 were used during the 1980's to store pesticide and to rinse application equipment.

As part of the RI, six surface soil samples (0 to 1 foot bls) were collected and analyzed for full scan TCL/TAL, and cyanide (note that five of these six sample locations were asphalt paved). Although samples collected beneath asphalt are not by definition "surface", the assumption was made that existing features would be removed under future residential and industrial scenarios, Table 9-2 lists the soil sample depths and analytical methods. All tables associated with the Site 8 HHRA are presented at the end of this section.

Six samples were collected from six shallow wells during the Phase I investigation and two shallow wells (08GR05 and 08GR07) were sampled during the Phase II investigation. Phase I groundwater was analyzed for full-scan TCL/TAL parameters, including cyanide. Phase II sample analyses were limited to antimony, cadmium and thallium only. Table 9-2 lists the analytical methods for the groundwater samples. For groundwater, TAL metals were not filtered.

9.1.2.2 COPC Identification

Soil

Based on the screening comparisons described in Section 9.1.15 of this RI and presented in Table 9-3, this HHRA will focus on these COPCs: aluminum, arsenic, iron, dieldrin and BEQs.

Groundwater

As shown in Table 9-4, the COPCs identified in groundwater (Phase I and II) are barium, cadmium, iron, lead, manganese, and zinc.

9.1.3.3 Exposure Assessment

Exposure Setting

Site 8 is a 6-acre area covered almost in its entirety by Building 3561 and an asphalt parking lot. Plans call for site features and use to remain unchanged fur the next five years.

Potentially Exposed Populations

Potentially exposed populations are current and future site workers, and future site residents. Future site resident and future site worker scenarios were addressed.

The hypothetical future site worker scenario assumed continuous exposure to surface soil conditions and the use of groundwater as a potable water source, Current site workers' exposure would be less than that assumed for the hypothetical future site worker scenario because of their limited soil contact and the fact that groundwater is not used onsite fox potable or process water. Worker exposures from invasive activities, such as construction, are expected to be less frequent and of shorter duration than the hypothetical future worker assuming chronic exposure over longer time periods for the hypothetical future worker versus a subchronic exposure for a short time for the hypothetical construction worker. Therefore, future worker assessment is considered consevatively representative of both current site use and future construction events. In addition,

a review of subsurface soil data revealed that soil COPC concentrations are below industrial worker risk based on screening levels, As a result, existing sail conditions at depth are protective of hypothetical construction workers.

The future site resident scenario assumes buildings would be removed and replaced with dwellings. In addition, the future use scenarios were assumed to use the onsite underlying shallow aquifer as drinking water.

Exposure Pathways

Exposure pathways for site workers and future residents are dermal contact and incidental ingestion of surface soil and ingestion of groundwater. Inhalation of VOCs through domestic use of groundwater was not considered due to the absence of volatile COPCs. Uniform exposure was assumed for all sample locations. No indirect exposure pathways were identified through fate and transport analysis. Table 9-5 justifies exposure pathways assessed in this HHRA.

Exposure Point Concentrations

Table 9-6 summarizes the statistical analysis of the data for COPCs identified in surface soil. Due to the limited number of soil samples collected, the maximum detected concentration of each COC was applied as the EPC. Aluminum, arsenic, and iron were detected in each surface soil sample. As a result, no FI/FC term was calculated. The maximum concentration of each is well within the naturally occurring range fur Florida soil (Dragun, 1991). Dieldrin was detected above screening levels exclusively in sample 08S000301, collected along the foundation on the east side of Building 3561. The dieldrin result was conservatively assumed to represent soil quality over 1/5th of area east and north of Building 3561 (FI/FC 0.2) based on its absence in other proximate samples. This FI/FC necessarily assumes exposure to minimally affected soil elsewhere at Site 8 will lead to inconsequential exposure. BEQs were reported only in sample 08S000601 collected north of Building 3561 beneath asphalt. Based on analytical results for

surrounding Site 8 and 24 samples, an FI/FC of 0.2 was estimated assuming the exposure area was that portion of the site between Buildings 3561 and 3678.

Table 9-7 provides the data set used to determine the Site 8 groundwater EPCs for COPCs identified above. Due to the limited number of groundwater samples collected, no UCL was calculated. The groundwater metals plume was defined by Site 8 monitoring wells 08GR01,08GR202, 08GR03, and 08GR05 and Site 24 well 24GS05. The mean of the detected concentration for each COPC in these wells was applied as the EPC.

Quantification of Exposure

Soil

CDIs for ingestion. and dermal contact with soil are shown in Tables 9-8 and 9-9, respectively.

Groundwater

The CDIs fur groundwater ingestion are presented in Table 9-10.

9.1.2.4 Toxicity Assessment

Table 9-11 presents toxicological information for COPCs identified at Site 8. This information was used to quantify risk/hazard associated with soil and groundwater contaminants. Toxicological profiles are provided in Section 9.1.4.

Some constituents detected in soil and groundwater at Site 8 lack toxicity criteria. The RBC for endosulfan was cross-assigned to endosulfan I, endosulfan II, and endosulfan sulfate. The RBC for naphthalene was cross-assigned to 2-methylnaphthalene. The RBC for acenaphthene was cross-assigned to acenaphthylene.

9.1.2.5 Risk Characterization

Surface Soil Pathways

Exposure to surface soil onsite was evaluated under both residential and industrial (site worker) scenarios. For these scenarios, the incidental ingestion and dermal contact **exposure** pathways were evaluated. For noncarcinogenic contaminants evaluated for future site residents, hazard was computed separately to address child **and** adult **exposure.** Tables **9-12** and 9-13 present the computed carcinogenic **risks and/or HQs** associated with the incidental ingestion of and dermal contact with site surface soil, respectively.

Hypothetical Site Residents

The ingestion ILCR **(based** on the adult and child **LWA)** fur **Site** 8 surface soil **is** 2E-05. The dermal pathway ILCR is 6E-06. Arsenic, dieldrin, and BEQs were the primary contributors for the ingestion pathway and dieldrin **was** the primary contributor **for** the dermal **pathway.**

The computed HIs **for** the adult and child resident were 0.08 and 0.8, respectively, for the soil ingestion pathway. The computed HIs for the adult and child dermal contact **pathways** were both **less than** 1. Iron was the primary contributor for **the** ingestion pathway+

Hypothetical Site Workers

Site worker ILCR.is 2E-06 for the ingestion pathway and 2E-06 for the dermal contact pathway. Dieldrin was the sole COC identified. HIs for the ingestion and dermal pathways were both less than 0.1.

Groundwater Pathways

Exposure to groundwater onsite was evaluated under residential and industrial scenarios. The **groundwater exposure** pathways were evaluated assuming that site groundwater **will supply** potable and/or domestic water and that an unfiltered well, drawing from the corresponding water-bearing zone, will be installed. For noncarcinogenic contaminants evaluated **relative to** future site

residents, hazard was computed separately for child and **adult** receptors. Table 9-14 presents the ingestion risk/hazard for groundwater.

Hypothetical Site Residents

No carcinogenic COCs were identified in groundwater. HIs for the adult and child resident are 2 and 4 for the ingestion pathway. Cadmium was the primary contributor to ingestion HI. Secondary contributors to groundwater ingestion HI were barium, iron, manganese, and zinc.

Hypothetical Site Workers

The ingestion **pathway** HI **was** computed to be 0.7. Cadmium, iron, and manganese were the primary contributors to ingestion HI.

Current Site Workers

Groundwater is **not** currently used as a potable water source for Site 8, or other areas of NAS Pensacola. Without a completed **exposure pathway,** no threat **to** human health is posed by reported groundwater contamination.

Lead in Groundwater

A single lead hit (08GR00301, 18.6 μg/L) only slightly **exceeding** the FGGC (15 μg/L) was reported. The plume mean concentration was computed to be 9.5 μg/L. Because this reasonable **maximum** estimate **was** below the FGGC, lead was not considered **a groundwater** COC.

COCs Identified

COCs were identified based on cumulative (all pathway) risk and hazard projected fur this site, as described in Section 9.1.1.9. Table 9-15 lists COCs identified for surface soil, and groundwater.

Surface Soil

Hypothetical Site Residents (*Future* Land Use)

Arsenic, dieldrin, and BEQs were identified as COCs based on their contribution to the cumulative ILCR. No noncarcinogenic COCs were identified.

***Hypothetical Site* Workers (Future Land Use)**

Dieldrin was identified as the only COC based on its contribution to the cumulative ILCR. No noncarcinogenic COCs were identified.

Groundwater

***Hypothetical* Site Residents (Future Land Use)**

Barium, cadmium, iron, manganese, and zinc were identified as groundwater COCs based on contributions to the cumulative HI. No carcinogenic COPC were identified in the shallow aquifer.

***Hypothetical* Site Workers (Future Land Use)**

No groundwater COCs were identified for this scenario. No carcinogenic COPC were identified in the shallow aquifer.

9.1.2.6 Risk Uncertainty

Characterization of Exposure Setting and Identification of Exposure Pathways

Highly conservative assumptions (i.e., future residential use) were used in assessing current and future exposure. Residential use of the site is not anticipated. If this area were ever used as a residential site or redeveloped for continued commercial use, buildings would be demolished, asphalt/concrete surfaces removed, and wetlands and the surface soil conditions would be dramatically changed. Consequently, uniform exposure to current surface soil conditions would be unlikely under true future residential or industrial scenarios. These factors indicate that

exposure pathways assessed in this HHRA would generally overestimate the risk and hazard posed to future site residents and future site workers.

Groundwater is not currently used at Site 8 for potable or industrial purposes. Drinking water is provided from NAS Correy Station, across Bayou Grande. Since this system will is likely to remain in operation under current plans, Site 8 groundwater has no anticipated future use. Therefore, the scenario established to project risk/hazard associated with groundwater exposure is highly conservative.

Determination of Exposure Point Concentrations

Due to the limited number of soil samples collected, the maximum concentration of each COPC was applied as the EPC. This approach is expected to overestimate exposure. The mean of arsenic hits (1.4 mg/kg) was below the RC of 1.56 mg/kg.

Because fewer than 10 wells were installed, no UCL could be calculated. Instead, the EPC for each groundwater COPC was set equal to the mean of detects in the plume. For this evaluation, the plume was defined by those wells in which at least one exceedance of an RBC or RC was reported. The metals plume is described in the following section.

Frequency of Detection and Spatial Distribution

Dieldrin and BEQs were each detected in one surface soil sample. Dieldrin was identified in sample 08S000301 which was collected along the Building 3561's eastern side. Due to the infrequent detection and sample distribution, it was estimated that results for this sample represented soil conditions over 20% of the area north and east of Building 3561. The dieldrin source cannot be confirmed; however, historical information indicates a pesticide handling and wash rack area were present along the buildings eastern side during the 1980's. If activities resulting in dieldrin impacts preceded Building 3561 construction, it is possible that it is more

widespread. The uncertainty associated with dieldrin distribution could underestimate potential exposure under the future resident scenario.

BEQs were detected exclusively in sample 08S000601 along Site 8's northern boundary. Conditions at this location were estimated to represent 20% of the northern half of the current parking lot. Although previous site activities (refuse burning) could have produced BEQs, they are also constituents of asphalt, which represents a likely and typical source,

Since both dieldrin and BEQs were detected only in samples collected beneath asphalt, the computed exposures (CDI) for each are considered significant overestimates if existing site features are maintained. In addition, current workers would not be expected to be exposed to affected soil.

Groundwater COCs were detected consistently in Site 8 wells. Due to its proximity tu Building 3561, well 24GS05 results from Site 24 were evaluated as part of Site 8. Based on at least one exceedance of screening values, the following wells were considered to define the metals plume at Site 8: 08GR01 (Ba, Cd, Mn), 08GR02 (Ba, Cd, Fe, Mn), 08GR03 (Cd, Pb), 08GR05 (Cd, Zn), and 24GS05 (Cd, Fe, Mn). Of the groundwater COCs, only Cd was consistently detected above both its RBC and RC.

Quantification of Risk/Hazard

Soil

Of the organic CPSSs screened and eliminated from formal assessment, none was reported at a maximum concentration close to (within approximately 10%) its RBC. The use of maximum concentration for the screening comparison minimizes the likelihood of potentially significant cumulative risk/hazard based on the eliminated organic CPSSs. Antimony's maximum

concentration **exceeded its** corresponding RBC; however, it was eliminated based on a comparison to its corresponding RC.

Arsenic?BEQs, and dieldrin were significant contributors to soil-based risk projections. Arsenic is **a** naturally occurring element found abundantly in nature. **As** mentioned earlier, the mean arsenic concentration found in soil is less than **the RC. As a** result, risk estimates based on **exposures** to **arsenic in Site 8 surface** soil **overestimate site impact.**

CT analysis was not formally **performed** for Site 8 surface **soil,** but **a** simplified **approach** was **taken to** assess the potential influences of CT assumptions. The CT assumption for residential **exposure** duration (ED) is nine years compared **to the** 30-year **assumption** for RME. The CT **exposure** frequency (EF) assumption is **234 days/year** compared **to 350 days/year** RME. If **all other exposure assumptions** remain **fixed, applying** the CT **ED** and EF **would** result in risk projections approximately 80% below the RME. **At** CT, the residential surface soil **pathway-related risk** (incidental ingestion and dermal contact) **would drop** from 3E-5 **to** approximately 6E-6, but would still exceed the 1E-6 **point** of departure. **For** occupational exposures, the CT EF is **219 days/yr** and the CT ED is five **years.** Modifying only these assumptions reduces lifetime **exposure and** projected **risk greater** than 80%. Under CT assumption, site worker **soil pathway**-related ILCR falls below 1E-06.

Although the future **land** use of Site 8 **is** unknown, both the worker and residential **exposure** scenarios were **assessed**. **Base** redevelopment **plans** for **NAS Pensacola** are **drafted** every five years. Site 8 is likely to maintain its current use under **the next five-year plan**. **As** previously discussed, these **scenarios** are likely to overestimate risk **and/or** hazard.

Groundwater

No organic CPSS exceeded its RBC although TCE and tetrachlorethene (PCE) concentrations within an order of magnitude of the screening values were reported. Anthony exceeded its RBC, but was eliminated through RC comparisons.

Barium, cadmium, iron, manganese, and zinc were significant contributors to groundwater-based HI projections. Manganese and iron are naturally occurring elements found abundantly in nature. In the absence of toxicity data for iron, a provisional RfD has been provided by the ECAO/NCEA. The EPCs used to estimate exposure to barium (0.216 mg/L; FGGC = 2 mg/L) and zinc (0.661 mg/L; FGGC = 5 mg/L) are lower than their ARARs. Risk estimates and HIs based on exposures to these inorganic elements in Site 8 groundwater are likely overestimates.

CT was analyzed informally for Site 8 groundwater using the CT residential ED of nine years, the CT EF assumption of 234 days/year, the CT ingestion rate of 1.4 liters/day. At CT HQs based on residential child exposure, using an exposure frequency of 234 days/year and an ingestion rate of 1.4 liters/day, would drop the HI from 4 (ingestion and inhalation) to 2 or approximately 50%.

Groundwater is not currently a potable water source at NAS Pensacola. Municipal water is provided from a well field at NAS Correy Station. As previously mentioned, it is highly unlikely that the site will be developed as a residential area, and it is unlikely that a potable-use well would be installed onsite. If residences were constructed onsite and an unfiltered well were installed, the salinity and dissolved solids probably would preclude this aquifer from being an acceptable potable water source.

9.1.2.7 Risk Summary

The risk and hazard posed by contaminants at Site 8 were assessed for the hypothetical site worker and the hypothetical future site resident under RME assumptions. For surface soil, the incidental

ingestion and dermal contact pathways were assessed, The ingestion and inhalation pathways were evaluated for groundwater. Table 9-16 summarizes the risk for each pathway/receptor group evaluated for Site 8.

9.1.2.8 Remedial Goal Options

Soil

Surface soil RGOs are presented in Table 9-17 for hypothetical site residents and hypothetical site workers. Risk-based RGOs were based on the LWA site resident and adult site worker and hazard-based RGOs were calculated based on either the hypothetical child resident or the adult site worker, as noted in the table. The background concentration of arsenic would equal a risk between 1E-06 and 1E-05.

Groundwater

Groundwater RGOs based on site residents, shown in Table 9-18, were based on the LWA site resident and adult site worker. Hazard-based RGOs were calculated based on either the hypothetical child resident or the adult site worker as noted in the table. Except for cadmium, the EPC for each groundwater COC falls below its ARAR (MCL or FGGC) or RGO where HI = 1.

Table 9-2
Site 8 — Phases I and II
Sample Numbers and Analytical Parameters

Media	Location	Sample Number	Analytical Parameters
Soil			
	Boring-08S01	08S000101	TAL/TCL
	Boring-08S03	08S000301	TAL/TCL
	Boring-08S04	08S000401	TAL.TCL
	Boring-08S06	08S000601	TAL/TCL
		08C000601*	TAL/TCL
	Boring-08S07	08S000701	TAL/TCL
	Boring-08S08	08S000801	TAL/TCL
Groundwater			
	MW-08GR01	008GGR0101	TAL/TCL
	MW-08GR02	008GGR0201	TAL/TCL
	MW-08GR03	008GGR0301	TAL/TCL
	MW-08GR04	008GGR0401	TAL/TCL
	MW-08GR05	008GGR0501	TAL/TCL
		008GGR0502	Sb, Cd, TI Only**
		008HGR0502*	Sb, Cd, TI Only**
	MW-08GR06	008GGR0601	TAL/TCL
		008HGR0601*	TAL/TCL
	MW-08GR07	008GGR0701	Sb, Cd, TI Only**

Notes:

TAL/TCL	=	Full Contact Laboratory Program Target Analyte List/Target Compound List (TAL inorganics, TCL VOCs, pesticides/PCBs, and SVOCs)
Sb, Cd, TI Only	=	Selected TAL inorganics (antimony, cadmium, and thallium) analysis only
MW	=	Monitoring well
*	=	Duplicate sample
**	=	Phase II groundwater sample (all others are Phase I)

Table 9-3
NAS-Pensacola
Site 8
Pensacola, Florida
Surface Soil COPC Screening

	Parameter	Units	Frequency of Detection	Range of Nondetected Upper Bounds	Raw of Detected	Average Detected	Screening	Num. Over	Reference	Num. Over Ref.
	Aroclor-1260	UG/KG	0/6	17.4 - 17.9	ND - ND	NA	319 RBC			
•	Benzo(a)pyrene equiv.	UG/KG	1/6	0.7 - 35.6	609.4 - 609.4	609.4	88 RBC	1		
	Benzo(a)anthracene	UGIKG	1/6	24.5 - 25.5	390 - 390	390	880 RBC			
	Benzo(b)fluoranthene	UG/KG	1/6	41 - 42.5	555 - 555	555	880 RBC			
	Chrysene	UG/KG	1/6	19.5 - 20.5	470 - 470	470	*88000* RBC			
	Indeno(t,2,3-cd)pyrene	UG/KG	1/6	25 - 26	270 - 270	270	880 RBC			
	Benzo(k)fluoranthene	UG/KG	116	27 - 27.5	595 - 595	595	8800 RBC			
•	Benzo(a)pyrene	UG/KG	1/6	25 - 26	495 - 495	495	88 RBC	1		
*	Aluminum	MG/KG	6/6	-	2050 - 15400	0365.8	7800 RBC	4	3833.4	5
	Antimony	MG/KG	3/6	0.1 - 0.1	0.23 - 0.75	0.5183	3.1 RBC		9.49	
*	Arsenic	MG/KG	6/6	-	0.51 - 2.2	1413	0.43 RBC	6	1.56	2
	Barium	MG/KG	6i6	-	4.2 - 27.2	10.17	550 RBC		4.63	4
	Beryllium	MG/KG	2/6	0.02 - 0.02	0.05 - 0.05	0.05	0.15 RBC		0.41	
	Cadmium	MG/KG	6/6	-	0.03 - 1+7	0.508	7.8 RBC		1	1
	Calcium	MG/KG	6/6	-	146 - 2890	936.2			912.4	
	Chromium	MGIKG	6/6	-	2 - 16.6	8.85	39 RBC		9.13	5
	Cobalt	MGIKG	1/6	0.1 - 0.1	0.46 - 0.46	0.46	470 RBC		1.87	
	Copper	MGIKG	6/6	-	2 - 30.5	*8.75*	310 RBC		5.74	2
•	Iron	MG/KG	6/6	-	1240 - 9140	5214.2	2300 RBC	5	2745	5
	Lead	MG/KG	6/6	-	6 - 82.4	43.6	400 RBC		7.32	5
	Magnesium	MGIKG	6/6	-	73.2 - 244	115.9	RBC		133.3	
	Manganese	MG/KG	6/6	-	9.8 - 33.7	18.24	360 RBC		21.36	1
	Mercury	MG/KG	5/6	0.05 - 0.05	0.11 - 0.19	0.14	2.3 RBC		0.1	5
	Nickel	MG/KG	6/6	-	0.82 - 4.4	1.89	160 RBC		6.38	
	Potassium	MG/KG	6/6	-	41.2 - 128	69.5	RBC		460.7	
	Silver	MGIKG	1/6	0.05 - 0.05	0.83 - 0.83	0.83	39 RBC		2.07	
	Vanadiurn	MG/KG	6/6	-	3.1 - 21.8	13.3	55 RBC		5.83	5
	Zinc	MGIKG	6/6	-	5 - 69.7	23.67	2300 RBC		16.87	2
	Aldrin	UG/KG	2/6	0.3 - 0.3	1.92 - 19.3	10.61	38 RBC			
	alpha-Chlordane	UG/KG	1t6	0.3 - 0.3	0.728 - 0.728	0.728	470 RBC			
	gamma-Chlordane	UG/KG	3/6	0.3 - 0.3	0.725 - 1.89	1.475	470 RBC			
	4,4'-DDD	UG/KG	1/6	0.8 - 0.9	2.11 - 2.11	2.11	2700 RBC			
	4,4'-DDE	UG/KG	4/6	0.7 - 0.7	5.77 - 19.3	11.94	1900 RBC			
	4,4'-DDT	UG/KG	4/6	0.9 - 0.9	1.89 - 12	4.737	1900 RBC			
•	Dieldrin	UGJKG	4/6	0.8 - 0.9	2.03 - 2010	504.75	40 RBC	1		
	Endosulfan sulfate	UG/KG	1/6	0.6 - 0.7	2.54 - 2.54	2.54	47000 RBC			
	Endnn	UG/KG	1/6	0.8 - 0.8	4.61 - 4.61	4.61	2300 RBC			
	Endnn ketone	UGMG	1/6	0.7 - 0.7	18.1 - 18.1	10.1	2300 RBC			
	Acenaphthene	UG/KG	1/6	12 - 12.5	17 - 17	17	470000 RBC			
	Anthracene	UG/KG	1/6	18 - 18.5	52 - 52	52	2300000 RBC			
	Benzo(g,h,i)perylene	UGJKG	1/6	20.5 - 21	240 - 240	240	14000 CG			
	Butylbenzylphthalate	UGIKG	1/6	16.5 - 17	63 - 63	63	1600000 RBC			
	Carbazole	UGIKG	1/6	20.5 - 21	84 - 84	84	32000 RBC			
	Fluoranthene	UGIKG	1/6	19 - 19.5	560 - 560	560	310000 RBC			
	Fluorene	UG/KG	1/6	18 - 18.5	11 - 11	11	310000 RBC			
	Phenanthrene	UG/KG	1/6	17 - 17.5	181.5 - 181.5	181.5	310000 RBC			
	Pyrene	UG/KG	1/6	19 - 19.5	570 - 570	570	230000 RBC			
	Acetone	UGMG	3/6	0.5 - 10.5	28 - 55	46	*260000* CG			
	Bromoform	UG/KG	1/6	0.2 - 0.2	0.5 - 0.5	0.5	65000 CG			
	2-Butanone	UGIKG	1/6	1 - 1	2 - 2	2	2200000 CG			

NOTES:

UG/KG	-	micrograms/kilogram
MG/KG	-	milligrams/kilogram
RBC	-	risk-based concentration from USEPA Region III Risk-based Concentration Tabla, June 1996 (HI=0.1, ILCR=1E-6)
CG	-	Florida Cleanup Goal fw Soil - Residential Scenario
ND	-	Not detected
NA	-	Not applicable
01 & 02	-	indicate the groundwater sampling round from which results were produced.

Table 9-4
NAS-Pensacola
Site 8
Pensacola, Florida
Shallow Groundwater COPC Screening

Parameter	Round	Units	Frequency of Detection	Range of Nondetected Upper Bounds	Range of Detected Concentrations	Average Detected Conc.	Screening Conc.	Num. Over Screen	Reference Conc.	Num. Over Ref.
Aluminum	01	UG/L	6/7	64.5 - 120.5	225 - 1320	629.3	3700 RBC		3883	
	02	UG/L	1/1		171 - 171	171	3700 RBC		3883	
Antimony	01	UG/L	2/7	0.8 - 1.6	12.5 - 15	13.75	1.5 RBC	2	30.2	
	02	UG/L	1/1	1.7 - 1.7	ND - ND	NA	1.5 RBC		30.2	
* Barium	01	UG/L	6/7	5.4 - 5.4	6.7 - 411	159.5	260 RBC	2	13.2	5
	u2	UG/L	1/1		103 - 103	103	260 RBC		13.2	1
Beryllium	01	UG/L	0/7	0.02 - 0.2	ND - ND	NA	0.016 RBC		1.1	
	02	UG/L	1/1		0.68 - 0.68	0.68	0.016 RBC	1	1.1	
• Cadmium	0f	UG/L	5/7	0.1 - 0.1	3.6 - 32	20.1	1.8 RBC	5	3.4	5
	02	UG/L	1/1		5.1 - 5.1	5.1	1.8 RBC	1	3.6	1
Calcium	01	UG/L	7/7		14300 - 87500	43037				
	02	UG/L	1/1		40600 - 40600	40600				
Chromium	01	UG/L	2/7	0.6 - 2.1	1.5 - 1.9	17	18 RBC		35	5
	02	UG/L	0/1	0.5 - 0.5	ND - ND	NA	18 RBC		35	
Cobalt	01	UG/L	1/7	0.3 - 0.6	2.1 - 2.1	2.1	220 RBC		4.1	
	02	UG/L	1/1		1.2 - 1.2	1.2	220 RBC		4.1	
Copper	01	UG/L	6/7	0.2 - 1.1	0.92 - 11.7	5.67	150 RBC		16.2	
	02	UG/L	0/1	0.6 - 0.6	ND - ND	NA	150 RBC		16.2	
• Iron	01	UG/L	7/7		67.2 - 9950	1779	1100 RBC	2	1708	1
	02	UG/L	1/1		2970 - 2970	2970	1100 RBC	1	1708	1
• Lead	01	UG/L	5/7	1.2 - 1.2	1.7 - 18.6	8.56	15 FGGC	1	1.6	5
	02	UG/L	0/1	0.6 - 0.6	ND - ND	NA	15 FGGC		16	
Magnesium	01	UG/L	7/7		1680 - 10600	4885				
	02	UG/L	1/1		5270 - 5270	5270				
• Manganese	01	UG/L	7/7	0.6 - 0.6	5.5 - 602	170	84 RBC	3	22	4
	02	UG/L	1/1		204 - 284	284	04 RBC	1	22	1
Mercury	01	UG/L	2/7	0.1 - 0.1	0.1 - 0.22	0.16	1.1 RBC		0.2	1
	02	UG/L	1/1		0.02 - 0.02	0.02	1.1 RBC		0.2	
Nickel	01	UGIL	4/7	0.3 - 0.3	3.9 - 14.2	9.35	73 RBC		39.9	
	02	UGIL	1/1		2 - 2	2	73 RBC		39.9	
Potassium	01	UGIL	7/7		516 - 6230	3168				
	02	UG/L	1/1		3680 - 3680	3680				
Silver	01	UG/L	3/7	0.3 - 0.7	1.8 - 2.3	2	18 RBC		4	
	02	UG/L	0/1	0.5 - 0.5	ND - ND	NA	18 RBC		4	
Sodium	01	UG/L	7/7		6550 - 16900	11079				
	02	UG/L	1/1		4860 - 4860	4860				
(a) Thallium	01	UG/L	0/8	0.3 - 2.6	ND - ND	NA	0.28 RBC		3.6	
	02	UG/L	1/1		3.8 - 3.8	3.8	0.29 RBC	1	3.6	1
Vanadium	01	UG/L	5/7	0.2 - 1	0.53 - 2	1.04	26 RBC		9.6	5
	02	UG/L	0/1	0.3 - 0.3	ND - ND	NA	26 RBC		9.6	
* Zinc	01	UG/L	7/7		2.7 - 1700	467.9	1100 RBC	1	153.2	4
	02	UG/L	1/1		202 - 202	202	1100 RBC		153.2	1
bis(2-Ethylhexyl)phthalate	01	UG/L	1/7	1 - 2.5	1 - 1	1	4.8 RBC			
Butylbenzylphthalate	01	UG/L	2/7	1.5 - 2.5	1 - 3	2	730 RBC			
Di-n-butylphthalate	01	UGIL	1/7	1 - 2.5	2 - 2	2	370 RBC			
Carbon disulfide	01	UG/L	1/7	0.1 - 0.5	0.3 - 0.3	0.3	100 RBC			
	02	UGIL	0/1	0.5 - 0.5	ND - ND	NA	100 RBC			
(b) Chloroform	01	UGIL	1/7	0.05 - 0.5	0.2 - 0.2	0.2	0.15 RBC	1		
	02	UG/L	0/1	0.5 - 0.5	ND - ND	NA	0.15 RBC			
cis-1,2-Dichloroethene	01	UG/L	2/7	0.1 - 0.1	0+4 - 2	1.2	6.1 RBC			
	02	UG/L	1/1		3 - 3	3	6.1 RBC			
trans-1,2-Dichloroethene	01	UG/L	0/7	0.1 - 0.5	ND - ND	NA	12 RBC			
	02	UG/L	1/1		0.5 - 0.5	0.5	12 RBC			
Styrene	01	UG/L	1/7	0.05 - 0.05	0.2 - 0.2	0.2	160 RBC			
	02	UG/L	0/1	0.5 - 0.5	ND - ND	NA	160 RBC			
Tetrachloroethene	01	UG/L	1/7	0.1 - 0.5	1 - 1	1	1.1 RBC			
	02	UG/L	0/1	0.5 - 0.5	ND - ND	NA	1.1 RBC			
Trichloroethene	01	UGIL	1/7	0.05 - 0.5	1 - 1	1	1.6 RBC			
	02	UG/L	1/1		1 - 1	1	1.6 RBC			

NOTES:

(a) - indicates that thallium was detected exclusively in well 24MW05 and was addressed as a COPC in the Site 24 HHRA
(b) - chloroform was detected in 08MW04 upgradient of the site, and thus was not considered a COPC
- second round GW samples were collected from 24MW05 only
UG/L - micrograms/liter
RBC - risk-based concentration from USEPA Region III Risk-based Concentration Table, June 1996 (HI=0.1, ILCR=1E-6)
NO - Not detected
NA - Not applicable
01 & 02 - indicate the groundwater sampling round from which results were produced.

Table 9-5
Exposure Pathways Summary — Site 8
NAS Pensacola
Pensacola, Florida

Medium and Exposure Pathway	Resident	Worker	Reason for Selection or Exclusion
Air — Inhalation of gaseous contaminants emanating from soil	No	No	Fate and transport analysis determined this to be an insignificant pathway.
Air — Inhalation of chemicals entrained in fugitive dust	NO	No	The potential for significant exposure via this pathway is low relative to other exposure pathways assessed.
Groundwater — Ingestion of contaminants during potable or general use	No	No	No volatile COPCs were identified in groundwater based on the screening process described in Section 9.1.1.5.
Groundwater — Inhalation of volatilized contaminants during domestic use	Yes	Yes	COPCs were identified in groundwater based on the screening process described in Section 9.1.1.5.
Soil — Incidental ingestion	Yes	Yes	COPCs were identified subsequent to risk-based and background screening comparisons.
Soil — Dermal contact	Yes	Yes	COPCs were identified subsequent to risk-based and background screening comparisons.
Wild game or domestic animals — Ingestion of tissue impacted by media contamination	No	No	Hunting/taking of game and/or raising livestock is prohibited at NAS Pensacola.
Fruits and vegetables — Ingestion of plant tissues grown in media	No	NO	The potential for significant exposure via this pathway is low relative to that of other exposure pathways assessed.

Table 9-6
Statistical Analysis of COPCs
Surfa e Soils at Site 8
Naval Air Station Pensacola
Pensacola, Florida

COPC	n	Natural Log Transformed mean	SD	H-stat	UCL (mg/kg)	MAX (mg/kg)	EPC (mg/kg)	
A luminum	6	NA	NA	NA	NA	15,400	15,400	MAX Used
Arsenic	6	NA	NA	NA	NA	2.2	2	MAX Used
Benzo(a)pyrene Equiv.	6	NA	NA	NA	NA	0.610	1	MAX Used
Dieldrin	6	NA	NA	NA	NA	2.01	2	MAX Used
Iron	6	NA	NA	NA	NA	9,140	9,140	MAX Used

Notes:

mean Arithmetic mean of the log-transformed data
n Number of samples analyzed
SD Standard deviation for a sample of data
H-stat "H" statistic from Gilbert 1987; cuboidal interpolation was used to determine the value in accordance with USEPA Supplemental Guidance to RAGS, Calculating the Concentration Term
NA Not applicable
EPC Exposure point concentration
UCL 95 percentile upper confidence level mean
MAX Maximum reported concentration

Table 9-
Statistical Analysis of COPCs
Groundwater at Site 8
Naval Air Station, Pensacola
Pensacola, Florida

COPC	Number of Detects	Number of Exceedances	Number of Samples	Average ln(a)	Sample Standard Deviation sd(a)	H Statistic	Arithmetic Mean Detected Concentration (mg/L)	Mean Within Plume (mg/L)	Maximum Detected Conc. (mg/L)	EPC (mg/L)
Barium (Ba)	6	2	7	NA	NA	NA	0.181	0.216	0.411	0.216 Plume Mean
Cadmium (Cd)	5	5	7	NA	NA	NA	0.020	0.020	0.03	0.020 Plume Mean
Iron (Fe)	6	2	7	NA	NA	NA	2.24	3.25	10	3.25 Plume Mean
Lead (Pb)	5	1	7	NA	NA	NA	0.009	0.0095	0.019	0.0095 Plume Mean
Manganese (Mn)	6	3	7	NA	NA	NA	0.207	0.247	0.60	0.247 Plume Mean
Zinc	6	1	7	NA	NA	NA	0.55150	0.661	1.70	0.661 Plume Mean

Notes:

mean	arithmetic mean of the log-transformed data
n	number of samples analyzed
SD	standard deviation for a sample of data
H-stat	"H" statistic from Gilbert 1987; cuboidal interpolation was used to determine the value in accordance with USEPA Supplemental Guidance to RAGS, Calculating the Concentration Term
NA	not applicable
ND	not determined
EPC	exposure point concentration
Mean Within Plume	arithmetic mean of concentrations reported in wells found to contain at least one metal in excess of applicable screening values. for Site 8, the metals 'plume' was represented by wells GS-1; -2; -3; & -5, and Site 24 well GS-5
MAX	maximum reported concentration

Table 9-8
Cωr>mic Daily Intakes
Incidental Ingestion of Surface Soil
Site 8
Naval Air Station, Pensacola
Pen acola, Florida

Chemical	FI *	Exposure Point Concentration (mg/kg)	Future Resident adult H-CDI (mg/kg-day)	Future Resident child H-CDI (mg/kg-day)	Future Resident lwa C-CDI (mg/kg-day)	⊕ω ture Worker adult H-CDI (mg/kg-day)	F ture Worker adult C-CDI (mg/kg-day)
Alumωm	1	15400	2.11E-02	1.97E-01	2.4 02	7.53E-03	2.69E-03
Arsenic	1	2.2	3.01E-06	2.81E-05	3.44E-06	1.08E-06	3.84E-07
Benzo(a)pyrene Equiv.	0.7	0.610	1.67E-07	1.56E-06	1.91E-07	5.96E-08	2.13E-08
Dieldrin	0.Z	2.010	5.51E-07	5.14E-06	6.29E-07	1.97E-07	7.02E-08
Iron	1	9140	1.25E-02	1.17E-01	1.43E-02	4.47E-03	1.60E-03

Notes:

lwa Lifetime weighted average; used to calculate carcinogenic CDI, RAGS Parts A and B
CDI Chronic Daily Intake in mg/kg-day
H-CDI CDI for hazard quotient
C-CDI CDI for excess cancer risk
* Reflects the estimated fraction of the site impacted by the corresponding COPC

Table 9-9
Chronic Daily Intakes
Dermal Contact with Surface Soil
Site 8
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	Exposure Point Concentration (mg/kg)	FC *	Dermal (unitless)	Future Resident adult H-CDI (mg/kg-day)	Future Resident child H-CDI (mg/kg-day)	Future Resident lwa C-CDI (mg/kg-day)	Future Worker adult H-CDI (mg/kg-day)	Future Worker adult C-CDI (mg/kg-day)
Aluminum	15,400	1	0.001	8.65E-04	2.85E-03	5.41E-04	6.18E-04	2.21E-04
Arsenic	2.2	1	0.001	1.24E-07	4.08E-07	7.73E-08	8.83E-08	3.15E-08
Benzo(a)pyrene Equiv.	0.610	0.01	0.01	6.85E-08	2.26E-07	4.28E-08	4.89E-08	1.75E-08
Dieldrin	2.010	0.01	0.01	2.26E-07	7.45E-07	1.41E-07	1.61E-07	5.76E-08
Iron	9,140	1	0.001	5.13E-04	1.69E-03	3.21E-04	3.67E-04	1.31E-04

Notes:

CDI Chronic Daily Intake in mg/kg-day
H-CDI CDI for hazard quotient
C-CDI CDI for excess cancer risk
- The dermal absorption factor was applied to the exposure point concentration to reflect the different trans-dermal migration of inorganic versus organic chemicals
* Reflects the estimated fraction of the site impacted by the corresponding COPC.

Table 9-10
Chronic Daily Intakes
Ingestion of COPCs in Groundwater
Site 8
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	Exposure Point Concentration (mg/liter)	Future Resident adult H-CDI (mg/kg-day)	Future Resident child H-CDI (mg/kg-day)	Future Resident lwa C-CDI (mg/kg-day)	Future Worker adult H-CDI (mg/kg-day)	Future Worker adult C-CDI (mg/kg-day)
Barium (Ba)	0.216	5.9E-03	1.4E-02	3.2E-03	2.1E-03	1.0E-03
Cadmium (Cd)	0.020	5.5E-04	1.3E-03	3.1E-04	2.0E-04	9.7E-05
Iron (Fe)	3.25	8.9E-02	2.1E-01	4.9E-02	3.2E-02	1.6E-02
Lead (Pb)	0.0095	2.6E-04	6.1E-04	1.4E-04	9.3E-05	4.6E-05
Manganese (Mn)	0.247	6.8E-03	1.6E-02	3.7E-03	2.4E-03	1.2E-03
Zinc	0.661	1.8E-02	4.2E-02	1.0E-02	6.5E-03	3.2E-03

Notes:

lwa Lifetime weighted average
CDI Chronic Daily Intake
H-CDI Noncarcinogenic hazard based Chronic Daily Intake
C-CDI Carcinogenic risk based Chronic Daily Intake

Table 9-11
Toxic> a>ase om
Chemicals (ntial Con n
Naval Air Station Pensacola
Site 8
Pensacola, Florida

I	Oral Reference Dose (mg/kg/day)	Conf. Level	Critical Effect	N Uncertainty Factor Oral	Inhalation Reference Dose (mg/kg/day)	Co Lev	Critical Effect	Uncertainty Factor Inhalation
Aluminum	I	d						
Arsenic	0.0003	a	M		ND			
Barium	0.07	a	M	tion	ND			
mts	ND		increased blc pressure	3	0.0001	b		
Cadmium (food)	0.001	a	H		NI			
Cadmium (water)	0.0005	a	H	proteinuria	NI			
	5E-05	a	M	proteinuria	NI			
Iron	0.3	d		liver lesions	NI			
	ND				NI			
Mar ng	0.047	a		neurologi	NI			
Mar nganese (wate	0.023	a		gical effects	ND			
Zinc	0.3	a	M	decreased enzym leve	1.43E-5	a	M	neurological effects
				3	ND			1000

	Oral Slope Factor [(mg/kg/day)].		Inhalation Slope Factor [(mg/kg/day)]		Weight of Evidence	Tumor Type
Aluminum	ND		ND			
A	1.5	a	15.1	a		
Barium	ND		ND		A	various
zo	7.3	a	ND		D	
Ca ium (food)	ND		6.3	a	B2	mutagen
Cadmium (water)	ND		6.3	a	B1	lun
Dieldrin	16	a	16.1	a	B1	ng
Iron	ND		ND		B2	hepatom
Lead	ND		ND			
Mar g	ND		ND		B2	various
3 nganese (water)	ND		ND		D	
Z..c	ND		ND		D	
					D	

c HEAST alternative method
d EPA Environmenta l Criteria and Assessment Office - Cincinnati (provisional)
ND Nc determined (ue to lac of information

Table 9-12
Hazard Quotients and Incremental Lifetime Excess Cancer Risk
Incidental Surface Soil Ingestion
Site 8
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	Oral RfD Used (mg/kg-day)	Oral SF Used (mg/kg-day)-1	Future Resident adult Hazard Quotient	Future Resident child Hazard Quotient	Future Resident lwa ILCR	Future Worker adult Hazard Quotient	Future Worker adult ILCR
Aluminum	1	NA	0.0211	0.197	ND	0.0075	ND
Arsenic	0.0003	1.5	0.0100	0.094	5.2E-06	0.0036	5.3E-07
Benzo(a)pyrene Equiv.	NA	7.3	ND	ND	1.4E-06	ND	1.5E-07
Dieldrin	5E-05	16	0.01101	0.1028	1.0E-05	0.0 3933	1.1E-06
Iron	0.3	NA	0.042	0.39	ND	.0149	ND
SUM Hazard Index/ILCR			0.08	0.78	2E-05	0.03	3E-06

Notes:

NA Not available
ND Not Determined due to lack of available information
lwa Lifetime weighted average; used to calculate excess carcinogenic risk derived from RAGS Part A

Table 9-13
Hazard Quotients and Incremental Lifetime Excess Cancer Risk
Dermal Contact With Surface Soil
Site 8
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	ABS	Oral RfD Used (mg/kg-day	Oral SF Used (mg/kg-day)-1	Future Resident adult Hazard Quotient	Future Resident child Hazard Quotient	Future Resident lwa ILCR	Future Worker adult Hazard Quotient	Future Worker adult ILCR
Aluminum	0.2	0.2	NA	0.0043	0.0143	ND	0.0031	ND
Arsenic	0.2	6E-05	7.5	0.0021	0.0068	5.8E-07	0.00147	2.4E-07
Benzo(a)pyrene Equiv.	0.5	NA	14.6	ND	ND	6.3E-07	ND	2.5E-07
Dieldrin	0.5	2.5E-05	32	0.00903	0.02981	4.5E-06	0.006451	1.8E-06
Iron	0.2	0.06	NA	0.0086	0.028	ND	0.0061	ND
SUM Hazard Index/ILCR				0.02	0.08	6E-06	0.02	2E-06

Notes:

NA Not available
ND Not determined due to lack of available information
lwa Lifetime weighted average; used to calculate excess carcinogenic risk derived from RAGS Part A
ABS Dermal to absorbed dose adjustment factor is applied to adjust for Oral SF and RfD (i.e., the oral RfD is based on oral absorption efficiency which should not be applied to dermal exposure and dermal CDI)

Table 9-14
Hazard Quotients and Incremental Lifetime Excess Cancer Risk
Groundwater Ingestion
Site 8
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	Oral RfD Used (mg/kg-day)	Oral SF Used (mg/kg-day)-1	Future Resident adult Hazard Quotient	Future Resident child Hazard Quotient	Future Resident lwa ILCR	Future Worker adult Hazard Quotient	Future Worker adult ILCR
Barium (Ba)	0.07	NA	0.084	0.197	ND	0.0301	ND
Cadmium (Cd)	0.0005	NA	1.1	2.6	ND	0.40	ND
Iron (Fe)	0.3	NA	0.30	0.69	ND	0.11	ND
Lead (Pb)	NA	NA	ND	ND	ND	ND	ND
Manganese (Mn)	0.023	NA	0.29	0.69	ND	0.105	ND
Zinc	0.3	NA	0.06	0.14	ND	0.022	ND
SUM Hazard Index/ILCR			1.8	4.3	ND	0.7	ND

Notes:

NA Not available
ND Not Determined due to lack of available information
lwa Lifetime weighted average; used to calculate excess carcinogenic risk derived from RAGS Part A

Table 9-15
Summary of Risk and Hazard-Based Soil COCs
Site 8
Naval Air Station, Pensacola
Pensacola, Florida

Medium	Exposure Pathway		Future Resident Adult Hazard Quotient	Future Resident Child Hazard Quotient	Future Resident Lifetime ILCR	Site Worker Hazard Quotient	Site Worker ILCR	Identification of COCs	
Surface Soil	Incidental Ingestion	Aluminum	0.02	0.20	ND	0.008	ND		
		Arsenic	0.01	0.09	3.2E-06	0.004	5.8E-07	2	
		Benzo(a)pyrene Equiv.	ND	ND	1.4E-06	ND	1.6E-07	2	
		Dieldrin	0.01	0.10	1.0E-05	0.004	1.1E-06	2	4
		Iron	0.04	0.39	ND	0.015	ND		
	Dermal Contact	Aluminum	0.004	0.01	ND	0.003	ND		
		Arsenic	0.002	0.01	5.8E-07	0.001	2.4E-07		
		Benzo(a)pyrene Equiv.	ND	ND	6.3E-07	ND	2.5E-07		
		Dieldrin	0.01	0.03	4.5E-06	0.006	1.8E-06	2	4
		Iron	0.01	0.03	ND	0.006	ND		
Surface Soil Pathway Sum			0.1	0.9	2.2E-05	0.05	4.2E-06		
Groundwater	Ingestion	Barium (Ba)	0.08	0.20	ND	0.03	ND	1	
		Cadmium (Cd)	1.11	2.59	ND	0.40	ND	1	
		Iron (Fe)	0.30	0.69	ND	0.11	ND	1	
		Lead (Pb)	ND	ND	ND	ND	ND		
		Manganese (Mn	0.29	0.69	ND	0.11	ND	1	
		Zinc	0.06	0.14	ND	0.02	ND	1	
Groundwater Pathway Sum			.8	4.3	ND	0.7	ND		

Notes:
ND indicates not determined due to the lack of available risk information.
1- Chemical is a COC by virtue of projected child residence noncarcinogenic hazard.
2- Chemical is a COC by virtue of projected future resident lifetime ILCR.
3- Chemical is a COC by virtue of projected site worker noncarcinogenic hazard.
4- Chemical is a COC by virtue of projected site worker ILCR.

Table 9-16
Summary of Risk and Hazard
Site 8
Naval Air Station, Pensacola
Pensacola, Florida

Medium	Exposure Pathway	HI (Adult)	HI (Child)	ILCR (LWA)	HI (Worker)	ILCR (Worker)
#SurfaceSoil	Incidental Ingestion	**0.08**	**0.8**	2E-05	**0.03**	2E-06
	Dermal Contact	0.02	**0.08**	6E-06	**0.02**	2E-06
Groundwater	Ingestion	**1.8**	**4.3**	ND	**0.7**	ND

Tai -17
Remedial Goal Opti>ns for Surface Soil
Site 8
Naval Air Stati>n, Pensacola
Pensacola, Florida

Residential RGOs

Chemical	Slope Factor (mg/kg-day)-1	Reference Dose (mg/kg-day)	EPC mg/kg	Hazard-Based Remedial Goal Options 3 mg/kg	1 mg/kg	0.1 mg/kg	Risk-Based Remedial Goal Options 1E-06 mg/kg	1E-05 mg/kg	1E-04 mg/kg	Bac ound Concentration mg/kg	Florida Soil Cleanup Goal mg/kg
Arsenic	1.5	0.0003	2.2	70	23	2.3	0.38	3.8	38	1.56	0.7
Benzo(a)pyrene Equiv.	7.3	NA	0.61	ND	ND	ND	0.30	3.02	30.2	NA	0.14
Dieldrin	16	5E-05	2.01	59	20	2.0	0.14	1.38	13.8	NA	0.07

Industrial RGOs

Chemical	Slope Factor (mg/kg-day)-1	Reference Dose (mg/kg-day)	EPC mg/kg	Hazard-Based Remedial Goal Options 3 mg/kg	1 mg/kg	0.1 mg/kg	Risk-Based Remedial Goal Options 1E-06 mg/kg	1E-05 mg/kg	1E-04 mg/kg	Background Concentration mg/kg	Florida Soil Cleanup Goal mg/kg
Dieldrin	16	5E-05	2.0	1533	511	51.1	0.68	6.8	68	NA	0.3

Notes:

NA Not applicable
ND Not determined
- Remedial goal options were based on the residential LWA for carcinogens and the child resident or site worker for noncarcinogens

Table 9-18
Remedial Goal Options Groundwater
Site 8
Naval Air Station, Pensacola
Pensacola, Florida

Residential RGOs

Chemical	Oral SF (mg/kg-day)-1	Oral RfD (mg/kg-day)	EPC mg/l	Hazard-Based Remedial Goal Options **0.1** mg/l	**1.0** mg/l	**3** mg/l	Risk-Based Remedial Goal Options **1E-06** mg/l	**1E-05** mg/l	**1E-04** mg/l	Background Concentration mg/l	ARAR mg/l
Barium (Ba)	NA	0.07	0.216	0.11	1.1	3.3	ND	ND	ND	0.0132	2
Cadmium (Cd)	NA	0.0005	0.020	0.00078	0.0078	0.023	ND	ND	ND	0.0034	0.005
Iron (Fe)	NA	0.3	3.25	0.47	4.7	14	ND	ND	ND	1.708	0.3
Manganese (Mn)	NA	0.023	0.247	0.036	0.36	1.1	ND	ND	ND	0.022	0.05
Zinc	NA	0.3	0.661	0.469	4.69	14.1	ND	ND	ND	0.1532	5

Notes:

NA Not applicable
ND Not determined
- Remedial goal options were based on the residential LWA for carcinogens and the child resident or site worker for noncarcinogens

9.1.3 Human Health Risk Assessment for Site 24

9.1.3.1 Site Background and Investigative Approach

Site 24 is immediately north of Building 3561 (Site 8) and includes an area reserved for cemetary expansion at the northwest comer of Barrancas National Cemetery. From the early 1950's until the early 1960's, Site 24 was used for mixing DDT with diesel fuel for mosquito control. It has been estimated that 20 gallons of 20% DDT solution may have been spilled over the duration of mixing operations. The RI focused on identifying impacts associated with these or other related past operations. The entire area of investigation encompassed approximately 8 acres.

As part of the RI, eight surface soil samples were analyzed for full scan TCL/TAL; supplemental soil sampling included four semivolatile, 13 metals, and 14 pesticide analyses. Table 9-19 lists the soil sample depths and analytical methods. All tables associated with the Site 24 HHRA are presented at the end of this section.

Six groundwater samples were collected from six shallow wells during the Phase I investigation while 11 wells (nine permanent and two temporary) were sampled during the Phase II investigation. Not all Phase II wells were sampled for full scan TCL/TAL parameters. Water samples collected from temporary wells were analyzed for volatiles and metals only while permanent well samples were also analyzed for pesticides (as discussed in Section 6.2). Table 9-19 lists groundwater samples by phase along with analytical methods.

9.1.3.2 COPC Identification

Soil

Based on the screening comparisons described in Section 9.1.1.5 of this RI and presented in Table 9-20, this HHRA will focus on these COPCs: aluminum, arsenic, BEQs, chlordane, dieldrin, hepachlor epoxide, iron, manganese, and zinc.

Groundwater

As shown in Table 9-21, the COPCs identified antimony, arsenic, benzene, cadmium, 1,4-dichlorobenzene, 1,1-dichloroethene, cis-1,2-DCE, dieldrin, heptachlor, heptachlor epoxide, iron, 4,4-DDD, manganese, chlordane, nickel, thallium, tetrachloroethene, TCE, delta-BHC, and vinyl chloride.

9.1.3.3 Exposure Assessment

Exposure Setting

Site 24 is an open field east of John H. Tower Road and encompassing the western (unused) fringe of Barancas National Cemetery. The area is covered by lawn grasses and limited roadways and structures. The principal activities onsite are related to maintenance (e.g., lawn care). Groundwater is not currently used. Development plans indicate site features and use will remain unchanged for at least the next five years.

Potentially Exposed Populations

Potentially exposed populations are current and future site workers and future site residents, Additionally, due to knowledge of site activities, current adult maintenance workers were also considered. **Cemetery workers are also semi-quantitatively addressed altough no formal assessment was performed.**

The future site resident scenario assumes existing structures and features would be removed and replaced with dwellings, In addition, the future use scenarios assumed the onsite underlying aquifers would become a drinking water source. The current maintenance worker is characterized as an adult who visits the site once a week to cut grass and perform related activities.

Exposure Pathways

Exposure pathways for the site worker and future resident are dermal contact and incidental ingestion of surface soil and ingestion of groundwater, while the current maintenance worker scenario includes soil **exposure** pathways only because no **exposure to** groundwater is **expected** for the current maintenance worker scenario. In addition, inhalation of VOCs through domestic use of groundwater is considered for future site residents and future site workers. Uniform **exposure** was assumed for all sample locations (unless otherwise specified). No indirect **exposure** pathways were identified through fate and transport analysis. Table **9-22** justifies **exposure** pathways assessed in this HHRA.

Exposure Point Concentrations

Table 9-23 summarizes the statistical analysis of the data for COPCs in surface soil. **Although** a sufficient number of **samples** were collected to compute **UCL** values, contaminant distribution justified an alternate approach. Based on RI results, a small subarea **(approximately** a half acre) along John H. Tower **Road** on the western boundary of the site (represented roughly by soil samples from borings 3, 10, 11, and 12) was identified as the primary area of **impact** for most soil COPCs. Although.heptachlor **epoxide,** aluminum, and iron **impacts** were not isolated to this area, their maximum concentrations were used to estimate soil **exposure.** Of these three chemicals, only heptachlor **epoxide** was **a** potential concern. **As** a result, **exposure was evaluated** assuming residential and occupational use of this limited area, **Separate EPC sets were developed for each group as shown in Table 9-23. For the maintenance worker scenario, exposure was assumed to be uniform across the entire site. A review of subsurface soil results was performed to determine potential cemetery worker exposure. It was found the concentration of no surface soil COPC exceeded residential and reference screening levels in samples collected at depth. Based on this evaluation, it was determined that the maintenance worker exposure scenario was consevatively representative of the cemetery worker, and no formal assessment of the latter was performed.**

Table 9-24 summarizes the statistical analysis of the combined groundwater data set for COPCs identified in any sampling phase. To quantify potential exposure to groundwater COPCs, it was necessary to first establish EPCs for each. USEPA guidance specifies that the "mean in the most concentrated portion of the plume be used as the EPC." At Site 24, no consistent, easily distinguishable plume was identified. As a result, the distribution of COPCs in all wells was evaluated. For purposes of this risk assessment, plumes were identified for three chemical groups: metals, volatile organics, and pesticides. A well was considered to be within the plume if it produced a sample with a concentration of any COPC in that group above reference and risk-based screening concentrations during any sampling event. The following lists plume wells for each chemical group:

Chemical Group	Plume Wells
Metals	24GS02, 24GS03, 24GS08 and 24GR09R
Volatile organics	24GS02, 24GS03, and 24GS04
Pesticides	24GS01, 24GS02, 24GS03, 24GS04 and 24GS06

Once the plumes were defined for each COPC, EPCs were calculated as the mean of the detection means for each well. For example, if dieldrin was detected in only one of two sampling events in well 24GS01, the single hit was used as the mean for that well. This conservative method was applied to provide a reasonable maximum estimate of concentrations expected in a well. The computed EPCs are presented as "mean within plume" in Table 9-24.

Quantification of Exposure

Soil

CDIs for ingestion and dermal contact with soil are shown in, Tables 9-25 and 9-26, respectively.

Groundwater

The CDIs for groundwater ingestion are presented in **Table 9-27.** The CDIs for inhalation of VOCs are assumed to be **approximately equal** to the CDIs for ingestion, as indicated in the Technical *Memorandum* Guidance *on Estimating* Exposure to *VOCs* During Showering (USEPA, 1991e).

9.1.3.4 Toxicity Assessment

Table **9-28 presents toxicological** information for COPCs identified **at** Site **24.** This information was used to quantify **risk/hazard** associated with soil **and groundwater** contaminants. Toxicological profiles are provided in Section 9.4,

Some constituents detected in soil and groundwater **at** Site **24** do not have toxicity criteria available. The RBC for endosulfan was cross-assigned to endosulfan I, endosulfan II, and endosulfan sulfate. The RBC for naphthalene was cross-assigned to 2-methylnaphthalene. The RBC for acenaphthene was cross-assigned to acenaphthylene.

9.1.3.5 Risk Characterization

Surface Soil Pathways

Exposure to surface soil onsite was evaluated under both **residential,** industrial (site worker), and current maintenance **worker** scenarios. For these scenarios, the incidental ingestion **and** dermal contact **exposure pathways were evaluated.** For noncarcinogenic contaminants evaluated for future site residents, hazard was computed separately to address child and adult **exposure.** Tables **9-29** and 9-30 **present** the computed carcinogenic **risks and/or HQs** associated with the incidental ingestion of and dermal contact **with** site surface soil, respectively.

Hypothetical *Site* Residents

The ingestion ILCR (based on the adult and child LWA) for Site 24 surface soil is 2E-05. The dermal pathway ILCR is 8E-06. Arsenic, dieldrin, and BEQs were the primary contributors to the ingestion and dermal contact pathways+ Chlordane and heptachlor epoxide were secondary contributors.

The computed HIs for the adult and child resident were below 1 for combined soil pathways. As a result, no noncarcinogenic COCs were identified.

Hypothetical Site Workers

Site worker ILCR is 3E-06 for the ingestion pathway and 3E-06 for the dermal contact pathway. BEQs were the primary contributors for both. Arsenic was the only other significant contributor. HIs for the ingestion and dermal pathways were both less than 0.1.

Current Maintenance Worker

Maintenance worker ILCR is 6E-07 for the ingestion pathway and 4E-7 for the dermal contact pathway. BEQs were the primary contributors for both. HIs for the ingestion and dermal pathways were both less than 0.1.

Groundwater Pathways

Exposure to groundwater onsite was evaluated under both residential and industrial scenarios. All phases of groundwater data were combined to provide a single RME of pathway-related risk/hazard. The groundwater exposure pathways were evaluated assuming that site groundwater will be used fur potable and/or domestic purposes and that an unfiltered well, drawing from the corresponding water-bearing zone, will be installed. For noncarcinogenic contaminants evaluated relative to future site residents, hazard was computed separately for child and adult receptors. Tables 9-31 and 9-32 present the ingestion and inhalation risk/hazard for groundwater.

Hypothetical Site Residents

For the ingestion and inhalation pathways, the LWA ILCRs were computed to be 3E-04 and 2E-*05*, respectively. Arsenic and vinyl chloride were the primary contributors to the ingestion pathway risk. Secondary contributors to groundwater ingestion risk were zinc, dieldrin, 1,1-DCE, delta-BHC, 1,4-dichlorobenzene, PCE, and TCE. The primary contributor to inhalation risk is vinyl chloride, with secondary contributions from 1,1-DCE and 1,4-dichlorobenzene.

HIs for the adult and child resident are 6 and 14 for the ingestion pathway and 0.09 and *0.2* for the inhalation pathway. Arsenic, iron, antimony, and thallium were the primary contributors to ingestion HI. Secondary contributors to groundwater ingestion HI are cadmium, manganese, and dieldrin. 1,2-DCE (cis) is the primary contributor to inhalation HI with secondary contribution from benzene and TCE.

Hypothetical Site Workers

For the ingestion and inhalation pathways, the ILCRs were computed to be 8E-05 and 7E-06, respectively. Arsenic, dieldrin, and vinyl chloride were the primary contributors to ingestion risk. Secondary contributions to ingestion risk were 1,1-DCE and dieldrin. Vinyl chloride was the primary contributor to inhalation risk.

The ingestion and inhalation pathway HIs were computed to be *2* and 0.03, respectively. Antimony, iron, and thallium were the primary contributors to ingestion HI.

Current Site Workers

Groundwater is not currently a potable water source for Site 24. Without a completed exposure pathway, no threat to human health is posed by reported groundwater contamination,

COCs Identified

COCs were identified based on cumulative (all pathway) risk and hazard projected for this site, as detailed in Section 9.1.1.9. Table 9-33 lists COCs for surface soil, while Table 9-34 lists COCs for groundwater.

Surface Soil

Hypothetical Site Residents (Future Land Use)

No COCs were identified based on their contribution to the cumulative HI. Arsenic, BEQs, chlordane, dieldrin, and heptachlor epoxide were identified as COCs based on their contributions to the cumulative ILCR.

Hypothetical Site Workers (Future Land Use)

Arsenic and BEQs were identified as COCs based on their contributions to the cumulative ILCR.

Current Maintenance Worker (Current Land Use)

No soil pathway-related COCs were identified. **By extension, no COCs are identified for cemetery workers for which maintenance workers were considered to represent a conservative surrogate.**

Groundwater

***Hypothetical* Site Residents (Future Land Use)**

Antimony, arsenic:, cadmium, 1,2-DCE (cis), iron, manganese, thallium, zinc, TCE, and dieldrin were identified as groundwater *COCs* based on contributions to the cumulative HI. Arsenic, 1,4-dichlorobenzene, 1,1-DCE, delta-BHC, dieldrin, heptachlor epoxide, TCE, and vinyl chloride were identified as COCs based on contributions to the cumulative ILCR.

Hypothetical Site Workers (Future *Land* Use)

Antimony, arsenic, cadmium, iron, and thallium were identified as a groundwater COCs based on their contributions to the HI. Arsenic, dieldrin, and vinyl chloride were identified as COCs based on contributions to the cumulative ILCR.

9.1.3.6 Risk Uncertainty

Characterization of Exposure Setting and Identification of Exposure Pathways

Highly conservative assumptions (i.e., future residential use) were used in assessing current and future exposure. Residential use of the site is not anticipated. If this area were ever used as a residential site or redeveloped for continued commercial use, buildings would be demolished, asphalt/concrete surfaces removed, and the surface soil conditions would change dramatically. Consequently, uniform exposure to current surface soil conditions would be unlikely under true future residential or industrial scenarios. These factors indicate that exposure pathways assessed in this HHRA would generally overestimate the risks and hazards posed to future site residents and future site workers. Furthermore, resident and general site workers were assumed to spend 100% of their time in the most heavily impacted area along John H. Tower Road. **This assumption was considered appropriate as the approximately 0.5 acre area could represent the sole exposure area for either receptor group under future conditions.**

Current maintenance workers were assumed to come into uniform contact with surface soil throughout Site 24. Although they may, in fact, spend equal time in all areas, the potential for frequent contact with soil is mitigated by vegetative cover, **as is the potential for fugitive dust generation. Cemetery worker exposure was not formally assessed for the following reasons. First, an evaluation of subsurface soil data indicated that no soil COPC was present above screening levels. Second, cemetery workers would be expected to be engaged in onsite activities at a lower frequency and potentially a shorter duration than the assessed maintenance workers. As a result, the maintenance worker, for whom risk/hazard projections were acceptable, was considered a conservative surrogate population for analysis.**

Groundwater is not currently used at Site 24 for potable or industrial purposes. Drinking water is provided from NAS Correy Station, across Bayou Grande. Since this system will is likely to remain in operation under current plans, Site 24 groundwater has no anticipated future use. Therefore, the scenario established to project risk/hazard associated with groundwater exposure is highly conservative.

Determination of Exposure Point Concentrations

For surface soil, different EPCs were established based upon the exposed population. For future site residents and workers, the maximum concentration of each COPC identified in a half-acre subarea along John H. Tower Road was applied as the EPC. This subarea is discussed in detail in the following subsection. Three other COPCs (aluminum, iron, and heptachlor epoxide) were not concentrated in this subarea. The maximum concentration of each was, however, used to compute CDI for soil pathways. Use of the maximum concentration will generally overestimate exposure. In addition, the intent of the RI was to focus on suspected areas of impact. As a result, soil results are expected to be biased high, overestimating potential exposure.

For the current maintenance worker scenario, the 95% UCL was applied as the EPC for all COPCs except aluminum and iron. No UCL was computed for these two surface soil metals due to the limited data set (fewer than 10 samples). As a result, the maximum concentration of aluminum and iron were applied as the EPCs for this exposure group as well+

As discussed in Section 9.1.1, separate plumes were defined for each chemical group with identified COPCs. It should be noted that due to the spacing of monitoring wells, it was not possible to determine whether a true plume existed for relatively immobile COPCs such as pesticides. The mean of all-phase individual well results (excluding nondetects) in the plume was used as the EPC. The exclusion of nondetect (censored) data points is expected to produce a conservative RME. Use

of **a** censored data algorithm may have produced a generally lower estimate of EPC; however, such a process was not applied due tu variability observed between groundwater phases.

Frequency of Detection and Spatial Distribution

As previously mentioned, a subarea was identified at Site 24 in which generally greater soil impacts were reported. This subarea was approximated to be a half acre along John H. Tower Road. This subarea is roughly defined by soil borings 24S003, 24S010, 24S011 and 24S012. Most (if not all) RC and risk-based screening value exceedances for arsenic, manganese, BEQs, dieldrin, and chlordane were identified in this area. Since the apparent area of maximal impact represented a reasonable area of exposure, it became the focus for the future site resident and worker exposure assessments. Heptachlor epoxide was not detected at significant concentrations in this subarea. The only sampling point at which heptachlor epoxide was detected at a level of concern was 24S021. As a result, under anticipated exposure conditions, an individual would not be expected to be concurrently exposed to COCs in the impacted subarea and heptachlor epoxide. And thus, exposure estimates are overestimated relative to assumed typical activity patterns.

In groundwater, inorganic COCs were widely distributed and the defined plume was the most extensive of those postulated. Although pesticides were also detected in numerous wells, 24GS01 and 24GS03 had the highest frequency of detection and concentrations. Volatile compounds were detected far less frequently with the greater number and concentration occurring in well 24GS02. The exposure quantification process assumed that an individual using the shallow water-bearing zone as potable water could be exposed concurrently to contaminants (at the EPC) from each plume. This is generally reasonable based on the overlap of metal-, volatile-, and pesticide-impacted groundwater.

Quantification of Risk/Hazard

Soil

Of the organic CPSS screened and eliminated from formal assessment, Aroclor-1260, 4,4'-DDT, and 4,4'-DDD had maximum reported concentrations within an order of magnitude of the screening value. Using the maximum concentration for the screening comparison minimizes the likelihood of potentially significant cumulative risk/hazard based on the eliminated organic CPSSs. Cadmium, chromium, copper, vanadium, and zinc maximum concentrations exceeded their corresponding RBCs and were eliminated based on comparison to their corresponding reference concentrations.

Arsenic was a significant contributor to soil-based risk and HI projections. Arsenic is a naturally occurring element found abundantly in nature. The maximum concentration (3.1 mg/kg), although higher than the NAS Pensacola background, is well within the naturally occurring range for Florida The full site arsenic UCL of 1.7 mg/kg is consistent with the RC (1.56 mg/kg). Similarly, the mean and/or UCL values for aluminum, iron, and manganese were less than their corresponding RBCs.

CT was not formally analyzed for Site 24 surface soil, but a simplified approach was taken to assess the potential influences of CT assumptions. The CT assumption for residential ED is nine years compared to the 30-year assumption for RME. The CT EF assumption is 234 days/year compared to 350 days/year RME. If all other exposure assumptions remain fixed, applying the CT ED and EF would result in risk projections approximately 80% below the RME. At CT, the residential surface soil pathway-related risk (incidental ingestion and dermal contact) would drop from 3E-05 to approximately 6E-06, but would still exceed the 1E-6 point of departure.
Under CT assumptions, occupational (site worker) EF is 219 days/year and ED is five years. Modification of exposure estimates to reflect these CT assumptions results are greater than 80% reduction in lifetime CDI. The CT-based ILCR fur site workers was estimated at 1E-06, the lower boundary of the acceptable range.

Although the future land use of Site 24 is unlikely to change due to its use as a future burial area for Barrancas National Cemetery, both the worker and residential exposure scenarios were assessed. Base redevelopment plans for NAS Pensacola are drafted every five years. Site 24 is likely to maintain its current use under the next five-year plan. As previously discussed, these scenarios likely overestimate risk and/or hazard.

Groundwater

Of the organic CPSSs screened and eliminated from formal assessment, aldrin, beta-GHC, gamma-GHC, 4,4'-DDE, 4,4'-DDD, and chlorobenzene were reported at concentrations within approximately one order of magnitude of the RBC. Using maximum concentrations for the screening comparison minimizes the likelihood of potentially significant cumulative risk/hazard based on the eliminated organic CPSSs. Lead, barium, and cobalt were eliminated from formal assessment based upon comparison to RBCs although their maximum results exceeded background reference concentrations.

Arsenic, cadmium, iron, antimony, thallium, and manganese were significant contributors to groundwater-based risk and/or HI projections. Manganese and iron are naturally occurring elements found abundantly in nature. Iron is an essential nutrient. Although each was found to exceed NAS Pensacola RCs, the reported concentrations are not exceptional in view of iron-rich formations on base and the periodic application of fertilizer containing these elements. Furthermore, the inorganic COCs identified would not appear to be associated with former DDT mixing activities. The plume mean concentrations of antimony and nickel were below their respective RCs.

As mentioned above, in lacking toxicity data for iron, a provisional RfD has been provided by the ECAO/NCEA. The EPCs used to estimate exposure to arsenic (0.020 mg/L; MCL = 0.0.2 mg/L) are lower than their MCLs. Risk estimates and HIs based on exposures to these inorganic elements in Site 24 groundwater are overestimates.

An informal CT analysis was performed fur Site 24 duration of nine years, the CT EF assumption of 234 days/year, the CT ingestion rate of 1.4 liters/day. If all other exposure assumptions remain fixed, applying the CT exposure parameters would result in risk projections more than 85% below the RME. At CT, the residential groundwater pathway-related risk (ingestion and inhalation) would drop from 3E-04 to approximately 4E-5 and would fall below the upper end of USEPA's acceptable risk range of 1E-4. CT analysis for HQs based on residential child exposure, using an exposure frequency of 234 days/year and an ingestion rate of 1.4 liters/day, would drop the HI from 7 (ingestion and inhalation) to 15 or approximately 53%.

Groundwater is not a potable water source at NAS Pensacola. Municipal water is provided from a well field at NAS Correy Station. As previously mentioned, it is highly unlikely that the site will be developed as a residential area, and it is unlikely that a potable-use well would be installed onsite. If residences were constructed onsite and an unfiltered well were installed, the ambient inorganic FGGC/FSDW5 exceedences would preclude the shallow aquifer zone from being an acceptable potable water source.

9.1.3.7 Risk Summary

The risk and hazard posed by contaminants at Site 24 were assessed for the hypothetical site worker, the hypothetical future site resident, and the current maintenance worker under RME assumptions. For surface soil, the incidental ingestion and dermal contact pathways were assessed. The ingestion and inhalation pathways were evaluated for groundwater. Table 9-35 summarizes the risk for each pathway/receptor group evaluated for Site 24.

9.1.3.8 Remedial God Options

Soil

Surface soil RGOs are presented in Table 9-36 for hypothetical site residents and hypothetical site workers. Risk-based RGOs were based on the LWA site resident and adult site worker and hazard-based RGOs were calculated based on either the hypothetical child resident or the adult site worker. No RGOs were computed for the current maintenance worker as no COCs were identified. The background concentration of arsenic would equal with a risk between 1E-06 and 1E-05. Iron does not have a Florida soil cleanup goal.

Groundwater

Groundwater RGOs based on site residents and site workers, shown in Table 9-37, were based on the LWA site resident and adult site worker. Hazard-based RGOs were calculated based on either the hypothetical child resident or the adult site worker. Both ingestion and inhalation (VOCs only) exposure are used to calculate groundwater RGOs. Of the identified groundwater COCs, the EPCs for arsenic:, cadmium, nickel, zinc, 1,4-dichlorobenzene, 1,1-DCE, cis-1,2-DCE, PCE, heptachlor epoxide, 4,4'-DDD, dieldrin, heptachlor, chlordone, and delta-BHC were less than their corresponding FGGC or MCL (ARARs).

Table 9-19
Site 2U — All Phases
Sample Number and Analytical Parameters

Media	Location	Sample Number	Analytical Parameters
Soil			
	Boring-24S01	024S000101	TAL/TCL
		024C000101*	TAL/TCL
	Boring-24S02	024S00201	TAL/TCL
		024S00205	TAL/TCL
	Boring-24S03	024S00301	TAWTCL
	Boring-24S04	024S00401	TAL/TCL
	Boring-24S05	024S00501	TAL/TCL
	Boring-24S07	24S00701	TAL/TCL
	Boring-24S08	24S00801	TAL/TCL
	Boring-24S09	24S00901	TAL/TCL
	Boring-24S10	024S001001	Metals, Pests, SVOCs
		024C001001*	Metals, Pests, SVOCs
	Boring-24S11	024S001101	Metals, Pests, SVOCs
	Boring-24S12	024S001201	Metals, Pests, SVOCs
	Boring-24s13	024S001301	Metals, Pests
	Boring-24S14	024S001401	Metals, Pests
	Boring-24S15	024S001501	Metals, Pests
	Boring-24S16	024S001601	Metals, Pests
	Boring-24S17	024S001701	Metals, Pests
	Boring-24S18	024S001801	Metals,.Pests
	Boring-24S19	024S001901	Metals, Pests
	Boring-24S20	024S002001	Metals, Pests
	Boring-24S21	024S002101	Metals, Pests
	Boring-24S22	024S002201	Metals, Pests
	Boring-24S23	024S002301	Pests, SVOCs
Groundwater			
	MW-24GS01	024GGS0101	TAL/TCL Phys. Params.
		024HGS0101*	TAL/TCL
	MW-24GS02	024GGS0201	TAL/TCL
	MW-24GS03	024GGS0301	TAL/TCL

Table 9-19
Site 24 — All Phases
Sample Number and Analytical Parameters

Media	Location	Sample Number	Analytical Parameters
Groundwater			
	MW-24GS04	024GGS0401	TAL/TCL
	MW-24GS05	024GGS0501	TAL/TCL
	MW-24GS06	025GGS0601	TAL/TCL
	MW-24GS01	024GGS0102	Metals, Pest/PCBs, VOCs
	MW-24GS02	024GGS0202	Metals, Pest/PCBs, VOCs
	MW-24GS03	024GGS0302	Metals, Pest/PCBs, VOCs
	MW-24GS04	024GGS0402	Metals, Pest/PCBs, VOCs
	MW-24GS05	024GGS0502	Metals; Pest/PCBs, VOCs
	MW-24GS06	024GGS0602	Metals, Pest/PCBs, VOCs
	MW-24GS07	024GGS0701	TAL/TCL
		024HGS0701*	TAL/TCL
	MW-24GS08	024GGS0801	TAL/TCL
	MW-24GR09	024GGR0901	Metals, VOCS
		024HGR0901*	Metals, VOCs
		024GGR0902	Antimony
	MW-24GR10	024GGR1001	Antimony
	MW-24GS09	024GGS0903	Metals, Pest/PCBs, VOCs**
		024HGS0903*	Metals. Pest/PCBs. VOCs**

Notes:

TAL/TCL	=	Contract Laboratory Program Target Analyte List/Target Compound List.
SVOC, Pest, PCB	=	TCL semivolatile, pesticide and polychlorinated biphenyl (PCB) analysis only.
Metals, Pests, SVOCs	=	For soil, selected inorganics (arsenic, manganese, and beryllium), pesticides/PCBs, and semivolatile organic compound analysis using SW-846 methods.
Metals, Pests	=	For soil, selected inorganics (arsenic, manganese, and beryllium), and pesticides/PCBs analysis using SW-846 methods.
Pest, SVOCs	=	For soils, pesticides/PCBs and semivolatile organic compound analysis using SW-846 methods.
Metals, Pest/PCBs, VOCs	=	For groundwater, TAL inorganics, TCL pesticide/PCBs, volatile organic., and semivolatile organic compound analysis using CLP methods.
Metals, VOCs	=	For groundwater, selected inorganics (antimony, cadmium, nickel, manganese, and thallium), and volatile organic compound analysis using SW-846 methods.
Phys. Params.	=	For soil: total phosphorus, nitrate-n, TKN, heterotrophic plate count, TOC, and cation exchange capacity; for water: 5-day BOD, COD, hardness, TSS, alkalinity, total phosphorus, nitrate-n, TKN, and heterotropic plate count.
Grain Size	=	Aquifer media gram size.
Antimony	=	For groundwater, antimony only analysis using SW-846 methods.
TAL Metals, TCL VOCs	=	For groundwater, inorganic and volatile organic compounds analysis using CLP methods.
MW	=	Monitoring well
*	=	Duplicate sample
**	=	Phase III groundwater samples, all others are Phase II

Table 9-20
NAS-Pensacola
Site 24
Pensacola, Florida
Surface Soil COPC Screening

	Parameter		Frequency of	Range of Nondetected	Range of Detected	Average Detected	Screening Conc.		Num. Over Screen	Reference Conc.	Num. Over Ref.
	Aroclor-1260	UG/KG	2 / 22	16.5 - 355	100 - 280	190	319	RBC			
*	Benzo(a)pyrene equiv.	UG/KG	8 / 12	192.8 - 268.8	6.73 - 1084.5	224.1	88	RBC	3		
	6enzo(a)anthracene	UG/KG	7 / 12	170 - 210	18 - 785	172.7	880	RBC			
	Benzo(b)fluoranthene	UG/KG	a / 12	170 - 210	38 - 1045	238.9	880	RBC	1		
	Chrysene	UG/KG	8 / 12	170 - 210	27 - 880	196.7	88000	RBC			
	Indeno(1,2,3-cd)pyrene	UG/KG	5 / 12	165 - 210	20 - 370	142.6	880	RBC	1		
	Dibenz(a,h)anthracene	UG/KG	2 / 12	70 - 180	42 - 130	86	88	RBC			
	Benzo(k)fluoranthene	UG/KG	6 / 12	165 - 210	22 - 365	110.8	8800	RBC			
*	Benzo(a)pyrene	UG/KG	7 / 12	46 - 90	20 - 730	175.6	88	RBC	3		
*	Aluminum	MG/KG	8 / 8	-	1080 - 8550	3519	7800	RBC	1	3833.4	
	Antimony	MG/KG	1 / 8	0.9 - 1.1	2.4 - 2.4	2.4	3.1	RBC		9.49	
*	Arsenic	MG/KG	13 / 21	0.1 - 0.6	0.58 - 3.1	1.44	0.43	RBC	13	1.56	
	Barium	MG/KG	8 / 8	-	2.7 - 26.8	8.89	550	RBC		4.63	
	Berytlium	MG/KG	2 / 21	0.05 - 0.3	0.1 - 0.17	0.135	0.15	RBC	1	0.41	
	Cadmium	MG/KG	2 / 8	0.3 - 0.4	0.7 - 2.8	1.75	7.8	HBC		1	
	Calcium	MG/KG	8 / 8	-	126 - 50000	a844				912.4	
	Chromium	MG/KG	8 / 8	-	2.4 - 26.5	8·75	39	RBC		6.13	
	Cobalt	MG/KG	4 1 8	0.1 - 0.1	0.55 - 0.68	0.625	470	RBC		1.07	
	Copper	MG/KG	8 / 8	-	1.6 - 18.2	5+2	310	RBC		5.74	
	Cyanide	MG/KG	1 / 8	0.1 - 0.1	0.58 - 0.58	0.58	16Q	RBC		0.52	
•	Iron	MG/KG	8 1 8	-	796 - 6490	2401	2300	RBC	4	2745	
	Lead	MG/KG	8 / 8		2.2 - 97.7	43.9	400	RBC		7.32	
	Magnesium	MG/KG	8 / 8	-	33.6 - 987	268				133.3	
*	Manganese	MG/KG	21 / 21	-	5.3 - 377	66.5	360	RBC	▮	21.36	
	Mercury	MG/KG	6 t 8	0.05 - 0.05	0.01 - 0.11	0.05	2.3	RBC		0.1	
	Nickel	MG/KG	4 / 8	0.3 - 0.3	1.1 - 2.7	1.67	160	RBC		6.38	
	Potassium	MG/KG	8 / 8	-	20.9 - 151	58.3				460.7	
	Silver	MG/KG	1 / 8	0.2 - 0.2	0.69 - 0.69	0.69	39	RBC		2.07	
	Sodium	MG/KG	7 / 8	2.7 - 2.7	6 - 265	68.4				107.85	
	Vanadium	MG/KG	8 / 8	-	1.9 - 15.9	6.36	55	RBC		5.03	
	Zinc	MG/KG	8 / 8	-	2 - 49.2	16.2	2300	RBC		16.87	
	Aldrin	UG/KG	1 / 22	0.8 - 18	0.89 - 0.89	0.89	36	RBC			
	alpha-BHC	UG/KG	2 / 22	0.8 - 18	0.32 - 0.52	0.42	100	RBC			
*	alpha-Chlordane	UG/KG	16 / 22	0.8 - 1.1	0.52 - 240	20.58	470	RBC	1		
•	gamma-Chlordane	UG/KG	18 / 22	0.9 - 0.9	0.45 - 270	26.27	470	RBC	1		
	4,4'-DDD	UG/KG	16 / 22	1.7 - 1.8	1.3 - 1100	83.04	2700	RBC			
	4,4'-DDE	UG/KG	22 / 22	-	0.49 - 1600	140.4	1900	RBC			
	4,4'-DDT	UG/KG	21 / 22	1.7 - 1.7	1.7 - 1100	106.49	1900	RBC			
•	Dieldrin	UG/KG	18 / 22	1.7 - 1.8	0.72 - 100	16.86	40	RBC	2		
	Endosulfan I	UG/KG	13 / 22	0.8 - 0.9	0.72 - 22	5.03	47000	RBC			
	Endosulfan II	UG/KG	1 ī 22	1.6 - 35.5	4.35 - 4.35	4.35	47000	RBC			
	Endosulfan sulfate	UG/KG	8 / 22	1.6 - 35.5	0.88 - 78	15.35	47000	RBC			
	Endrin	UG/KG	4 / 22	1.6 - 9	1.3 - 16	6.6	2300	RBC			
	Endrin aldehyde	UG/KG	2 / 22	1.6 - 35.5	2.1 - 9.25	5.67	2300	RBC			
	Endrin ketone	UG/KG	5 / 22	1.7 - 35.5	0.3 - 26	0.21	2300	RBC			
	Heptachlor	UG/KG	1 / 22	0.8 - 18	1.5 - 3.5	1.5	140	RBC			
*	Heptachlor epoxide	UG/KG	e / 22	0.8 - 18	0.67 - 71	10.65	70	RBC	1		
	Methoxychlor	UG/KG	2 / 22	8.5 - 180	25 - 31	20	39000	RBC			
	Acenaphthene	UG/KG	1 / 12	165 - 210	195 - 195	195	470000	RBC			
	Anthracene	UG/KG	2 / 12	165 - 210	19 - 225	122	2300000	RBC			
	Benro(g,h,i)perylene	UG/KG	5 / 12	165 - 210	28 - 425	148.6	14000	CG			
	bis(2-Ethylhexyl)phthalate	UG/KG	4 / 12	165 - 295	360 - 5200	1965	46000	RBC			
	Butylbenzylphthalate	UG/KG	8 / 12	165 - 175	72 - 4700	1175.6	1600000	RBC			
	Carbazole	UG/KG	3 / 12	165 - 210	19 - 230	90.7	32000	RBC			
	Dibenzofuran	UG/KG	1 / 12	165 - 210	90.5 - 90.5	90.5	31000	RBC			
	Di-n-butylphthalate	UG/KG	4 / 12	165 - 210	19 - 58	39.3	780000	RBC			
	Fluoranthene	UG/KG	9 / 12	170 - 175	25 - 1400	274.8	310000	RBC			

Table 9-20
NAS-Pensacola
Site 24
Pensacola, Florida
Surface Soil COPC Screening

Parameter	units	Frequency of Detection	Range of Nondetected Upper Bounds	Range of Detected Concentrations	Average Detected Conc.	Screening Conc.	Num. Over Screen	Reference Conc.	Num. Over Ref.
Fluorene	UGIKG	2 / 12	165 - 210	5 - 150	77.5	310000 RBC			
2-Methylnaphthalene	UG/KG	1 / 12	165 - 210	41 - 41	41	310000 RBC			
Naphthalene	UG/KG	1 / 12	165 - 210	97.5 - 97.5	97.5	310000 RBC			
Phenanthrene	UGIKG	8 / 12	170 - 175	16 - 1300	220.3	310000 RBC			
Pyrene	UG/KG	9 / 12	170 - 175	32 - 1450	289.8	*230000* RBC			
Toluene	UG/KG	2 / 8	5 - 6.5	1 - 5	3	520000 CG			
Xylene (Total)	UG/KG	4 / 8	5 - 5	2 - 7	3.75	13000000 CG			

NOTES:

UG/KG	-	micrograms/kilogram
MG/KG	-	milligrams/kilogram
alpha&gamma Chlordane	-	the sum of the isomers at a single location exceeded the RBC.
RBC	-	risk-based concentration from USEPA Region III Risk-based Concentration Table, June 1996 (HI=0.1, ILCR=1E-6)
CG	-	Florida Cleanup Goal for Soil - Residential Scenario
ND	-	Not detected
NA	-	Not applicable
01 & 02	-	indicate the groundwater sampling round from which results were produced.

Table 9-21
NAS-Pensacola
Site 24
Pensacola, Florida
Shallow Groundwater COPC Screening

Parameter	Round	Units	Frequency of Detection	Range of Nondetected Upper Bounds	Range of Detected Concentrations	Average Detected Conc.	Screening Conc.	Num. Over Screen	Reference Conc.	Num. Over Ref.
Aluminum	01	UG/L	7/7	-	136 - 1030	515	3700 RBC		3882.8	
	02	UG/L	5/5	-	48 - 658	358.4	3700 RBC		3882.8	
	03	UG/L	1/1	-	-		3700 RBC		3882.8	
* Antimony	01	UG/L	5/9	1.1 - 1.7	3.6 - 65.8	20.59	1.5 RBC	5	30.2	1
	02	UG/L	4/6	1.7 - 1.7	3.7 - 67	20.6	1.5 RBC	4	30.2	1
	03	UG/L	1/1	-	25.4 - 25.4	25.4	1.5 R8C	1	30.2	
* Arsenic	01	UG/L	2/7	0.7- 1	2.6 - 10.6	616	0.045 RBC	2	2.8	1
	02	UG/L	3/5	1 - 1	2.2 - 5.4	4.1	0.045 RBC	3	2.8	2
	03	UG/L	1/1	-	1.5 - 1.5	1.5	0.045 RBC	1	2.0	
Barium	01	UG/L	7/7	-	3.5 - 106	86.1	260 RBC		13.2	6
	02	UG/L	5/5	-	19.1 - 191	95.42	260 RBC		13.2	5
	03	UG/L	1/1	-	28.45 - 28.45	28.45	260 RBC		13.2	1
Beryllium	0f	UG/L	2/7	0.02 - 0.2	0.51 - 0.515	0.5125	0.016 RBC	2	1.1	
	02	UG/L	5/5	-	0.61 - 0.76	0.678	0.016 RBC	5	1.1	
	03	UG/L	1/1	-	0.46 - 0.46	0.46	0.016 RBC	1	1.1	
* Cadmium	01	UG/L	4/9	0.1 - 0.7	1.7 - 6.2	3.7	1.8 RBC	3	3.4	2
	02	UG/L	4/5	0.1 - 0.1	1.3 - 15.5	7.42	1.8 RBC	3	3.4	2
	03	UG/L	0/1	1.3 - 1.3	-		1.8 RBC		3.4	
Calcium	01	UG/L	7/7	-	24100 - 123000	58714.29				
	02	UG/L	5/5	-	29200 - 132000	74060				
	03	UG/L	1/1	-	24000 - 24000	24000				
Chromium	01	UG/L	1/7	0.5 - 2.1	5.3 - 5.3	5.3	18 RBC		35	
	02	UG/L	3/5	0.5 - 0.5	1.8 - 2.2	2	18 RBC		35	
	03	UG/L	0/1	2 - 2	-		18 RBC		35	
Cobalt	01	UG/L	4/7	0.6 - 0.6	0.99 - 8.1	3.35	220 RBC		4.1	1
	02	UG/L	3/5	0.3- 0.3	0.82 - 11	4.27	220 RBC		4.1	1
	03	UG/L	0/1	0.9- 0.9	-		220 RBC		4.1	
Copper	01	UG/L	1/7	0.6 - 6.6	1.4 - 1.4	1.4	150 RBC		16.2	
	02	UG/L	1/5	0.6 - 1	5.7 - 5.7	5.7	150 RBC		16.2	
	03	UG/L	1/1	-	3.2 - 3.2	3.2	150 RBC		16.2	
* Iron	01	UG/L	4/7	11.5 - 46.5	50.5 - 18400	11113.9	1100 RBC	3	1707.8	3
	02	UG/L	5/5	-	109 - 20400	6631	1100 RBC	3	1707.8	3
	03	UG/L	1/1	-	80.25 - 80.25	80.25	1100 RBC		1707.8	
Lead	01	UG/L	6/7	0.6 - 0.6	0.7 - 12.2	4.72	15 RBC		1.6	4
	02	UG/L	3/5	0.6 - 0.6	1.4 - 5.1	3.67	15 RBC		1.6	2
	03	UG/L	0/1	0.3 - 0.3	-		15 RBC		1.6	
Magnesium	01	UG/L	7/7	-	1175 - 14000	4808.57				
	02	UG/L	5/5	-	1930 - 14700	6200				
	03	UG/L	1/1	-	2870 - 2870	2870				
* Manganese	01	UG/L	8/8	-	0.835 - 546	153.55	84 RBC	4	22	4
	02	UG/L	5/5	-	1.9 - 496	154.98	84 RBC	3	22	3
	03	UG/L	1/1	-	5.9 - 5.9	5.9	84 RBC		22	
Mercury	01	UG/L	4/7	? - ?	0.06 - 0.14	0.1	1.1 RBC		0.2	5
	02	UG/L	1/5	? - ?	0.02 - 0.02	0.02	1.1 RBC		0.2	
	03	UG/L	0/1	? - ?	-		1.1 RBC		0.2	
* Nickel	01	UG/L	5/8	0.6 - 1.5	1.4 - 42.8	10.62	73 RBC		39.9	1
	02	UG/L	4/5	0.6- 0.6	1.7 - 137	35.9	73 RBC	1	39.9	1
	03	UG/L	0/1	2.1 - 2.1	-		73 RBC		39.3	
Potassium	01	UG/L	7/7	-	2705 - 7000	4625.71				
	02	UG/L	5/5	-	3890 - 9500	6152				
	03	UG/L	1/1	-	855 - 855	8.55				
Sodium	01	UG/L	7/7	-	2000 - 8100	4567.14				
	02	UG/L	5/5	-	4270 - 13900	9092				
	03	UG/L	1/1	-	5550 - 5550	5550				
* Thallium	01	UG/L	1/8	0.3 - 1.4	6.1 - 6.1	6.1	0.29 RBC	1	3.6	1
	02	UG/L	2/5	1.4 - 1.4	3.1 - 3.5	3.3	0.29 RBC	2	3.6	
	03	UG/L	1/1	-	1.4 - 1.4	1.4	0.29 RBC	1	3.6	
Vanadium	01	UG/L	5/7	0.3 - 1	0.945 - 4.35	2,679	26 RBC		9.6	5
	02	UG/L	3/5	0.3- 0.3	2.6 - 4.4	3.63	26 RBC		9.6	
	03	UG/L	0/1	1.1 - 1.1	-		26 RBC		9.6	
* Zinc	01	UG/L	6/7	5.5 - 5.5	4.9 - 1200	226.64	1100 RBC	1	153.2	1
	02	UG/L	5/5	-	14.2 - 2050	466.46	1100 RBC	1	153.2	1
	03	UG/L	1/1	-	172.5 - 172.5	172.5	1100 RBC		153.2	1
Aldrin	01	UG/L	1/7	0.01 - 0.01	0.003 - 0.003	0.003	0.004 RBC			
	02	UG/L	0/5	0.05 - 0.05	-		0.004 RBC			
beta-BHC	01	UG/L	1/7	0.01 - 0.01	0.0058 - 0.0058	0.0058	0.037 RBC			
	02	UG/L	2/5	0.05 - 0.05	0.0062 - 0,012	0.0091	0.037 RBC			
alpha-BHC	01	UG/L	1/7	0.01 - 0.01	0.0007 - 0.0007	0.0007	0.011 RBC			
	02	UG/L	0/5	0.05- 0.05	-		0.011 RBC			
* delta-BHC	01	UG/L	1/7	0.01 - 0.01	0.0032 - 0.0032	0.0032	0.011 RBC	1		
	02	UG/L	1/5	0.05 - 0.05	0.013 - 0.013	0.013	0.011 RBC			
gamma-BHC	01	UG/L	1/7	0.01 - 0.01	0.0071 - 0.0071	0.0071	0.052 RBC			
	02	UG/L	0/5	0.05 - 0.05	-		0.052 RBC			
* alpha-Chlordane	01	UG/L	5/7	0.01 - 0.01	0.0018 - 0.041	0.0138	0.052 RBC	1		
	02	UG/L	3/5	0.05 - 0.05	0.0074 - 0.089	0.035	0.052 RBC			
* gamma-Chlordane	01	UG/L	4/7	0.01 - 0.01	0.0044 - 0.041	0.0151	0.052 RBC	1		
	02	UG/L	2/5	0.05 - 0.05	0.0094 - 0.081	0.0452	0.052 RBC			
4,4'-DDD	01	UG/L	2/7	0.02- 0.02	0.063 - 0.065	0.064	0.1 CARC			

Table 9-21
NAS-Pensacola
Site 24
Pensacola, Florida
Shallow Groundwater COPC Screening

	Parameter	Round	Units	Frequency of Detection	Range of Nondetected Upper Bounds	Range of Detected Concentrations	Average Detected Conc.	Screening Conc.	Num. Over Screen	Reference Conc.	Num. Over Ref.
		02	UG/L	1/5	0.1 - 0.1	0.059 - 0.059	0.059	0.1 CARC			
	4,4'-DDE	01	UG/L	3/7	0.02 - 0.02	0.0026 - 0.023	0.0112	0.1 CARC			
		02	UG/L	3/5	0.1 - 0.1	0.0023 - 0.021	0.0118	0.1 CARC			
	4,4'-DDT	01	UG/L	1/7	0.02 - 0.02	0.0075 - 0.0075	0.0073	0.1 CARC			
		02	UG/L	0/5	0.1 - 0.1	-		0.1 CARC			
•	Dieldrin	01	UG/L	5/7	0.02 - 0.02	0.0017 - 0.28	0.0689	0.0042 RBC	2		
		02	UG/L	2/5	0.1 - 0.1	0.031 - 0.34	0.186	0.0042 RBC	2		
	Endosulfan I	01	UG/L	0/7	0.01 - 0.01	-		0.35 SYS			
		02	UG/L	2/5	0.05 - 0.05	0.0083 - 0.1	0.0542	0.35 SYS			
	Endrin	01	UG/L	1/7	0.02- 0.02	0.0005 - 0.0005	0.0005	1.1 RBC			
		02	UG/L	0/5	0.1 - 0.1	-		1.1 RBC			
	Endrin aldehyde	01	UG/L	0/7	0.02 - 0.02	-		0.1 SYS			
		02	UG/L	1/5	0.1 - 0.1	0.0093 - 0.0093	0.0093	0.1 SYS			
	Endrin ketone	01	UG/L	1/7	0.02 - 0.02	0.0038 - 0.0038	0.0038	1.1 RBC			
		02	UG/L	0/5	0.1 - 0.1	-		1.1 RBC			
•	Heptachlor	01	UG/L	1/7	0.01 - 0.01	0.0048 - 0.0048	0.0048	0.0023 RBC	1		
		02	UG/L	1/5	0.05 - 0.05	0.0063 - 0.0063	0.0063	0.0023 RBC	1		
•	Heptachlor epoxide	01	UG/L	3/7	0.01 - 0.01	0.0047 - 0.029	0.0149	0.0012 RBC	3		
		02	UG/L	2/5	0.05 - 0.05	0.013 - 0.021	0.017	0.0012 RBC	2		
•	1,4-Dichlorobenzene	01	UG/L	0/7	0.5 - 0.5	-		0.44 RBC			
		02	UG/L	1/5	0.5 - 0.5	3 - 3	3	0.44 RBC			
		03	UG/L	0/1	0.5 - 0.5	-		0.44 RBC			
	Diethylphthalate	01	UG/L	1/7	0.5 - 0.5	2 - 2	2	2900 RBC			
	Dimethylphthalate	01	UG/L	1/7	0.5 - 0.5	1 - 1	1	37000 RBC			
•	Benzene	01	UG/L	1/8	0.5 - 0.5	1 - 1	1	0.36 RBC	1		
		02	UG/L	1/5	0.5 - 0.5	0.7 - 0.7	0.7	0.36 RBC	1		
		03	UG/L	0/1	0.5 - 0.5	-		0.36 RBC			
	2-Butanone (MEK)	01	UG/L	1/8	2.5 - 2.5	4.9 - 4.9	4.9	190 RBC			
		02	UG/L	0/5	2.5 - 2.5	-		190 RBC			
		03	UG/L	0/1	2.5 - 2.5	-		190 RBC			
	Carbon disulfide	01	UG/L	1/8	0.5 - 0.5	0.2 - 0.2	0.2	100 RBC			
		02	UG/L	0/5	0.5 - 0.5	-		100 RBC			
		03	UG/L	0/1	0.5 - 0+5	-		100 RBC			
	Chlorobenzene	01	UG/L	0/8	0.5 - 0.5	-		3.9 RBC			
		02	UG/L	1/5	0.5 - 0.5	0.8 - 0.8	0.8	3.9 RBC			
		03	UG/L	0/1	0.5 - 0.5	-		3.9 RBC			
	cis-1,2-Dichloroethene	01	UG/L	2/7	0.5 - 0.5	0.9 - 44	22.45	6.1 RBC	1		
		02	UG/L	2/5	0.5 - 0.5	0.5 - 19	9.75	6.1 RBC	1		
		03	UG/L	0/1	0.5 - 0.5	-		6.1 RBC			
	trans-1,2-Dichloroethene	01	UG/L	1/7	0.5 - 0.5	1 - 1	1	12 RBC			
		02	UG/L	1/5	0.5 - 0.5	0.7 - 0.7	0.7	12 RBC			
		03	UG/L	0/1	0.5 - 0.5	-		12 RBC			
•	1,1-Dichloroethene	01	UG/L	0/8	0.5 - 0.5	-		0.044 RBC			
		02	UG/L	1/5	0.5 - 0.5	0+2 - 0.2	0.2	0.044 R8C	1		
		03	UG/L	0/1	0.5 - 0.5	-		0.044 RBC			
	Ethylbenzene	01	UG/L	1/8	0.5 - 0.5	0.1 - 0.1	0.1	130 R8C			
		02	UG/L	0/5	0.5 - 0.5	-		130 RBC			
		03	UG/L	0/1	0.5 - 0.5	-		130 RBC			
•	Methylene chloride	01	UG/L	1/8	0.5 - 0.5	11 - 11	11	4.1 RBC	1		
		02	UG/L	0/5	1 - 1	-		4.1 RBC			
		03	UG/L	0/1	1 - 1	-		4.1 RBC			
	Styrene	01	UG/L	1/8	0.5 - 0.5	0.2 - 0.2	0.2	160 RBC			
		02	UG/L	0/5	0.5 - 0.5	-		160 RBC			
		03	UG/L	0/1	0.5 - 0.5	-		160 RBC			
	Tetrachloroethene	01	UG/L	3/8	0.5 - 0.5	0.3 - 3	1.2	1.1 RBC	1		
		02	UG/L	2/5	0.5 - 0.5	0.9 - 2	1.45	1.1 RBC	1		
		03	UG/L	0/1	0.5 - 0.5	-		1.1 RBC			
	Toluene	01	UG/L	2/8	0.5 - 0.5	0.1 - 2.45	1.275	75 RBC			
		02	UG/L	0/5	0.5 - 0.5	-		75 RBC			
		03	UG/L	1/1	0.5 - 0.5	0.2 - 0.2	0.2	75 RBC			
	Trichloroethene	01	UG/L	1/8	0.5 - 0.5	8 - 8	8	1.6 RBC	1		
		02	UG/L	1/5	0.5 - 0.5	5 - 5	5	1.6 RBC	1		
		03	UG/L	0/1	0.5 - 0.5	-		1.6 RBC			
	Vinyl chloride	01	UG/L	0/8	0.5 - 0.5	-		0.019 RBC			
		02	UG/L	1/5	0.5 - 0.5	4 - 4	4	0.019 RBC	1		
		03	UG/L	0/1	0.5 - 0.5	-		0.019 RBC			

Table 9-22
Exposure Pathways Summary — Site 24
NAS Pensacola
Pensacola, Florida

Medium and Exposure Pathway	Resident	Worker	Maintenance Worker	Reason for Selection or Exclusion
Air —Inhalation of gaseous contaminants emanating from sori	No	No	NU	Fate and transport analysis determined this to be an insignificant pathway.
Air — Inhalation of chemicals entrained in fugitive dust	NU	No	No	The potential tor significant exposure via this pathway is low relative to other exposure pathways assessed.
Groundwater — Ingestion of contaminants during potable or general use	Yes	Yes	No	COPCs were identified in groundwater based on the screening process described in Section 9.1.1.5.
Groundwater — Inhalation of volatilized contaminants during domestic use	Yes	Yes	No	COPCs were identified in groundwater based on the screening process described in Section 9.1.1.5.
Soil — Incidental ingestion'	Yes.	Yes	Yes	COPCs were identified subsequent to risk-based and background screening comparisons.
Soil — Dermal contact	Yes	Yes	Yes	COPCs were identified subsequent to risk-based and background screening comparisons.
Wild game or domestic animals — Ingestion of tissue impacted by media contamination	No	No	Nu	Hunting/taking of game and/or raising livestock is prohibited at NAS Pensacola.
Fruits and vegetables — Ingestion of plant tissues grown in media	NO	No	NO	The potential for significant exposure via this pathway is low relative to that of other exposure pathways assessed.

Table 9-23
Statistical Analysis of COPCs
Surface Soil at Site 24
Naval Air Station Pensacola
Pensacola, Florida

COPC	n	Natural Log Transformed mean	SD	H-stat	UCL (mg/kg)	MAX (mg/kg)	EPC (mg/kg)	
Aluminum	8	NA	NA	NA	NA	8550	8550	MAX Used
Arsenic	21	-0.364371	0.908459	2.443	1.7	3.1	3.1	MAX Used
Benzo(a)pyrene Equiv.	12	4.137221	1.288909	3.468	0.553	1.08	1.08	MAX Used
Chlordane	22	1.384322	1.961198	4.043	0.154	0.51	0.510	MAX Used
Dieldrin	22	1.337726	1.712554	3.630	0.064	0.1	0.100	MAX Used
Heptachlor epoxide	22	-0.349807	1.284843	2.958	0.004	0.071	0.071	MAX Used
Iron	8	NA	NA	NA	NA	6490	6490	MAX Used
Manganese	21	3.538407	1.195691	2.845	151	377	377	MAX Used

Notes:

mean Arithmetic mean of the log-transformed data
n Number of samples analyzed
SD Standard deviation for a sample of data
H-stat "H" statistic from Gilbert 1987; cuboidal interpolation was used to determine the value in accordance with USEPA Supplemental Guidance to RAGS, Calculating the Concentration Term
NA Not applicable
UCL 95 percentile upper confidence level mean

Table 9-24
Statistical Analysis of COPCs
Groundwater at Site 24
Naval Air Station, Pensacola
Pensacola, Florida

COPC	Number of Detects	Number of Exceedances	Number of Samples	Average ln(a)	Sample Standard Deviation sd(a)	H Statistic	Arithmetic Mean Detected Concentration (mg/L)	Mean Within Plume (mg/L)	Maximum Detected Conc. (mg/L)	EPC (mg/L)	
Arsenic (As)	5	2	8	NA	NA	NA	0.0038	0.0050	0.011	0.0050	Plume Mean
Benzene	1	1	8	NA	NA	NA	0.0009	0.0009	0.0010	0.0009	Plume Mean
Cadmium (Cd	4	2	9	NA	NA	NA	0.005	0.0069	0.016	0.0069	Plume Mean
1,4-Dichlorobenzene	1	1	8	NA	NA	NA	0.003	0.0030	0.00	0.0030	Plume Mean
1,1-Dichloroethene	1	1	8	NA	NA	NA	0.0002	0.0002	0.0002	0.0002	Plume Mean
1,2-Dichloroethene (cis)	2	1	8	NA	NA	NA	0.016	0.016	0.044	0.0161	Plume Mean
Iron (Fe)	7	3	8	NA	NA	NA	5.6	13	20	12.89	Plume Mean
Antimony (Sb)	7	1	10	NA	NA	NA	0.018	0.027	0.067	0.0267	Plume Mean
Manganese (Mn)	9	4	9	NA	NA	NA	0.121	0.215	0.546	0.2153	Plume Mean
Nickel (Ni)	6	1	9	NA	NA	NA	0.017	0.020	0.137	0.0199	Plume Mean
Tetrachloroethene	3	1	8	NA	NA	NA	0.001	0.001	0.003	0.0011	Plume Mean
Thallium (Tl)	4	1	9	NA	NA	NA	0.004	0.004	0.006	0.0042	Plume Mean
Trichloroethene	1	1	8	NA	NA	NA	0.0065	0.0065	0.008	0.0065	Plume Mean
Vinyl chloride	1	1	8	NA	NA	NA	0.004	0.004	0.004	0.004	Plume Mean
4,4'-DDD	2	1	7	NA	NA	NA	9.05E-05	9.05E-05	0.00012	9.1E-05	Plume Mean
Dieldrin	5	2	7	NA	NA	NA	7.23E-05	8.97E-05	0.00034	9.0E-05	Plume Mean
Heptachlor	1	1	7	NA	NA	NA	5.55E-06	5.55E-06	6.3E-06	5.6E-06	Plume Mean
Heptachlor epoxide	3	3	7	NA	NA	NA	1.498E-05	1.498E-05	2.9E-05	1.5E-05	Plume Mean
Chlordane (total)	5	1	7	NA	NA	NA	3.35E-05	4.08E-05	0.00017	4.1E-05	Plume Mean
delta-BHC	2	2	7	NA	NA	NA	1.05E-05	1.05E-05	1.3E-05	1.1E-05	Plume Mean
Zinc	8	1	8	NA	NA	NA	0.0705	0.58	2.05	0.58	Plume Mean

Notes:

mean	arithmetic mean of the log-transformed data
n	number of samples analyzed
SD	standard deviation for a sample of data
H-stat	"H" statistic from Gilbert 1987; cuboidal interpolation was used to determine the value n accordance with USEPA Supplemental Guidance to RAGS, Calculating the Concentration Term
NA	not applicable
ND	not determined
Mean within Plume	arithmetic mean of concentrations reported in wells found to contain at least one chemical in the corresponding group (metals, VOAs) in excess of applicable screening values. for Site 24, the plumes were defined as follows: Metals Wells GS-2, -3, -8, and 9R; Volatiles Wells GS-2, -3, and -4; Pesticides Wells GS-1, -2, -3, and -4
MAX	maximum reported concentration

Tal 3
Chronic Daily Intakes
Incidental Ingestion of Surface Soil
Site 24
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	FI *	Exposure Point Concentration (mg/kg)	Full Site Worker EPC Estimate (a) (mg/kg)	Future Resident adult H-CDI (mg/kg-day)	Future Resident child H-CDI (mg/kg-day)	Future Resident lwa C-CDI (mg/kg-day)	Future Worker adult H-CDI (mg/kg-day)	Future Worker adult C-CDI (mg/kg-day)	Current Adult Maint. Worker H-CDI (mg/kg-day)	Current Adult Maint. Worker C-CDI (mg/kg-day)
Aluminum	1	8550	8550	1.17E-02	1.09E-01		4.18E-03	1.49E-03	1.74E-03	6.21E-04
Arsenic	1	3.1	1.7	4.25E-06	3.96E-05		1.52E-06	5.42E-07	3.46E-07	1.24E-07
Benzo(a)pyrene Equiv.	1	1.08	0.55	1.48E-06	1.38E-05		5.28E-07	1.89E-07	1.13E-07	4.02E-08
Chlordane	1	0.51	0.15	6.99E-07	6.52E-06		2.50E-07	8.91E-08	3.13E-08	1.12E-08
Dieldrin	1	0.100	0.064	1.37E-07	1.28E-06		4.89E-08	1.75E-08	1.30E-08	4.65E-09
Heptachlor epoxide	1	0.071	0.004	9.73E-08	9.08E-07		3.47E-08	1.24E-08	8.14E-10	2.91E-10
Iron	1	6490	6490	8.89E-03	8.30E-02		3.18E-03	1.13E-03	1.32E-03	4.72E-04
Manganese	1	377	151	5.16E-04	4.82E-03		1.84E-04	6.59E-05	3.07E-05	1.10E-05

Notes:

lwa Lifetime weighted average; used to calculate carcinogenic CDI, RAGS Parts A and B
CDI Chronic Daily Intake in mg/kg-day
H-CDI CDI for hazard quotient
C-CDI CDI for excess cancer risk
* Reflects the estimated fraction of the site impacted by the corresponding COPC

Table 9-26
Chronic Daily Intakes
Dermal Contact with Surface Soil
Site 24
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	Exposure Point Concentration (mg/kg)	Full Site Worker EPC Estimate (a) (mg/kg)	FC *	Dermal Absorption Factor (unitless)	Future Resident adult H-CDI (mg/kg-day)	Future Resident child H-CDI (mg/kg-day)	Future Resident lwa C-CDI (mg/kg-day)	Future Worker adult H-CDI (mg/kg-day)	Future Worker adult C-CDI (mg/kg-day)	Current Adult Maint Worker H-CDI (mg/kg-day)	Current Adult Maint. Worker C-CDI (mg/kg-day)
Aluminum	8550	8550	1	0.001	4.80E-04	1.59E-03	3.01E-04	3.43E-04	1.23E-04	7.13E-05	2.55E-05
Arsenic	3.1	1.7	1	0.001	1.74E-07	5.75E-07	1.09E-07	1.24E-07	4.44E-08	1.42E-08	5.07E-09
Benzo(a)pyrene Equiv.	1.08	0.55	1	0.01	6.07E-07	2.00E-06	3.80E-07	4.33E-07	1.55E-07	4.61E-08	1.65E-08
Chlordane	0.51	0.15	1	0.01	2.86E-07	9.45E-07	1.79E-07	2.05E-07	7.31E-08	1.29E-08	4.59E-09
Dieldrin	0.10	0.064	1	0.01	5.62E-08	1.85E-07	3.52E-08	4.01E-08	1.43E-08	5.34E-09	1.91E-09
Heptachlor epoxide	0.07	0.004	1	0.01	3.99E-08	1.32E-07	2.50E-08	2.85E-08	1.02E-08	3.34E-10	1.19E-10
Iron	6490	6490	1	0.001	3.65E-04	1.20E-03	2.28E-04	2.60E-04	9.30E-05	5.42E-05	1.93E-05
Manganese	377	151	1	0.001	2.12E-05	6.99E-05	1.33E-05	1.51E-05	5.40E-06	1.26E-06	4.50E-07

Notes:

CDI Chronic Daily Intake in mg/kg-day
H-CDI CDI for hazard quotient
C-CDI CDI for excess cancer risk
- The dermal absorption factor was applied to the exposure point concentration to reflect the different trans-dermal migration of inorganic versus organic chemicals
* Reflects the estimated fraction of the site impacted by the corresponding COPC.

ble 9-27
Chronic Daily Intakes
Ingestion of COPCs in Groundwater
Site 24
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	Exposure Point Concentration (mg/liter)	Future Resident adult H-CDI (mg/kg-day)	Future Resident child H-CDI (mg/kg-day)	Future Resident lwa C-CDI (mg/kg-day)	Future Worker adult H-CDI (mg/kg-day)	Future Worker adult C-CDI (mg/kg-day)
Arsenic (As)	0.005	1.4E-04	3.2E-04	7.5E-05	4.9E-05	2.4E-05
Benzene	0.0009	2.3E-05	5.4E-05	1.3E-05	8.3E-06	4.1E-06
Cadmium (Cd)	0.0069	1.9E-04	4.4E-04	1.0E-04	6.7E-05	3.3E-05
1,4-Dichlorobenzene	0.0030	8.2E-05	1.9E-04	4.5E-05	2.9E-05	1.4E-05
1,1-Dichloroethene	0.0002	5.5E-06	1.3E-05	3.0E-06	2.0E-06	9.6E-07
1,2-Dichloroethene (cis)	0.0161	4.4E-04	1.0E-03	2.4E-04	1.6E-04	7.7E-05
Iron (Fe)	12.8870	3.5E-01	8.2E-01	1.9E-01	1.3E-01	6.2E-02
Antimony (Sb)	0.0267	7.3E-04	1.7E-03	4.0E-04	2.6E-04	1.3E-04
Manganese (Mn	0.2153	5.9E-03	1.4E-02	3.2E-03	2.1E-03	1.0E-03
Nickel (Ni)	0.0199	5.4E-04	1.3E-03	3.0E-04	1.9E-04	9.6E-05
Tetrachloroethene	0.0011	2.9E-05	6.7E-05	1.6E-05	1.0E-05	5.1E-06
Thallium (Tl)	0.0042	1.2E-04	2.7E-04	6.4E-05	4.1E-05	2.0E-05
Trichloroethene	0.0065	1.8E-04	4.2E-04	9.8E-05	6.4E-05	3.1E-05
Vinyl chloride	0.0040	1.1E-04	2.6E-04	6.0E-05	3.9E-05	1.9E-05
4,4'-DDD	9.1E-05	2.5E-06	5.8E-06	1.4E-06	8.9E-07	4.4E-07
Dieldrin	9.0E-05	2.5E-06	5.7E-06	1.4E-06	8.8E-07	4.3E-07
Heptachlor	5.6E-06	1.5E-07	3.5E-07	8.4E-08	5.4E-08	2.7E-08
Heptachlor epoxide	1.5E-05	4.1E-07	9.6E-07	2.3E-07	1.5E-07	7.2E-08
Chlordane (total)	4.1E-05	1.1E-06	2.6E-06	6.1E-07	4.0E-07	2.0E-07
delta-BHC	1.1E-05	2.9E-07	6.7E-07	1.6E-07	1.0E-07	5.1E-08
Zinc	0.58	1.6E-02	3.7E-02	8.7E-03	5.7E-03	2.8E-03

Notes:

H-CDI Noncarcinogenic hazard based Chronic Daily Intake
C-CDI Carcinogenic risk based Chronic Daily Inta e

Table 28
Toxicological Data base Information
for Chemicals of Potential Concern
Naval Air Station Pensacola
Site 24
Pensacola, Florida

	Non-Carcinogenic Toxicity Data								
Chemical	Oral Reference Dose (mg/kg/day)		Conf Level	Critical Effect	Uncertainty Factor Oral	Inhalation Reference Dose (mg/kg/day)		Conf. Level	Critical Effect	Uncertainty Factor Inhalation
Aluminum	1	d				ND				
Antimony	0.0004	a	L	increased mortality	1000	ND				
Arsenic	0.0003	a	M	hyperpigmentation	3	ND				
delta-BHC (as lindane)	0.0003		L	liver	1000	ND				
Benzene	0.00171	e		blood		0.00171	d			
Benzo(a)pyrene Equivalents	ND					ND				
Cadmium (food)	0.001	a	H	proteinuria	10	ND				
Cadmium (water)	0.0005	a	H	proteinuria	10	ND				
Chlordane	6E-05		M	liver hypertrophy	1000					
1,1-Dichloroethene	0.009	a	M	liver lesions	1000	ND				
1,2-Dichloroethene (cis)	0.01	b		blood dec. hematocrit		ND				
1,4-Dichlorobenzene	0.229	e		liver effects		0.229	a	M	increased liver weight	100
4,4'-DDD	ND					ND				
Dieldrin	5E-05	a	M	liver lesions	100	ND				
Heptachlor	0.0005	a	L	liver weight increase	300	ND				
Heptachlor epoxide	0.000013	a	L	liver weight increase	1000	ND				
Iron	0.3	d				ND				
Manganese (food)	0.047	a		neurological effects		ND				
Manganese (water)	0.023	a		neurological effects		1.43E-05	a	M	neurological effects	1000
Nickel	0.02	a	M	decreased body weight	300	ND				
Tetrachloroethene	0.01	a	M	hepatotoxicity	1000	ND				
Thallium	8E-05	a	L	liver/blood	3000	ND				
Trichloroethene	0.006	d				0.006	d			
Vinyl chloride	ND					ND				

	Carcinogenic Toxicity Data					
Chemical	Oral Slope Factor [(mg/kg/day)]-1		Inhalation Slope Factor [(mg/kg/day)]-1		Weight of Evidence	Tumor Type
Aluminum	ND		ND			
Antimony	ND		ND		D	
Arsenic	1.5	a	15.1	a	A	various
delta-BHC (as alpha-BHC)	6.3	a	ND		B2	hepatocellular carcinoma
Benzene	0.029	a	0.029	a	A	leukemia
Benzo(a)pyrene Equivalents	7.3	a	ND		B2	mutagen
Cadmium (food)	ND		6.3	a	B1	lung
Cadmium (water)	ND		6.3	a	B1	lung
Chlordane	1.3	a	1.29	a	B2	liver
1,1-Dichloroethene	0.6	a	0.175	a	C	kidney adenosarcoma
1,2-Dichloroethene (cis)	ND		ND		D	
1,4-Dichlorobenzene	0.024	b	0.024	e	B2	liver
4,4'-DDD	0.24	a	ND		B2	liver
Dieldrin	16	a	16.1	a	B2	hepatoma
Heptachlor	4.5	a	ND		B2	liver tumors
Heptachlor epoxide	9.1	a	ND		B2	liver carcinoma
Iron	ND		ND		D	
Manganese (food)	ND		ND		D	
Manganese (water)	ND		ND		D	
Nickel	ND		ND		D	
Tetrachloroethene	0.052	c	0.002	c	B2	
Thallium	ND		ND		D	
Trichloroethene	0.011	c	0.006	c	B2	forestomach tumors in mice
Vinyl chloride	1.9	b	0.3	b	A	hepatocellular carcinoma

Notes:
a Integrated Risk Information System (IRIS)
b Health Effects Assessment Summary Tables (HEAST)
c HEAST alternative method
d EPA Environmental Criteria and Assessment Office - Cincinnati (provisional)
e indicates ingestion value was substituted for inhalation or vice versa
ND Not determined due to lack of information

Tai 29
Hazard Quotients and Incremental Lifetime Excess Cancer Risk
Incidental Surface So I Ingestion
Site 24
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	Oral RfD ωsed (mg/kg-day)	Oral SF Used (mg/kg-day)-1	Future Resident adult Hazard Quotient	Future Resident child Hazard Quotient	Future Resident lwa ILCR	Future Worker adult Hazard Quotient	Future Worker adult ILCR	Current Adult Maint. Worker Hazard Quotient	Current Adult Maint. Worker ILCR
Aluminum	1	NA	0.01	0.11	ND	0.004	ND	0.	NI
Arsenic	0.0003	1.5	0.01	0.13	7.3E-06	0.005	8.1E-07	0.001	1.9E-0
Benzo(a)pyrene Equiv.	NA	7.3	ND	ND	1.2E-05	ND	1.4E-06	ND	2.9E-0
Chlordane	0.005	1.3	0.0001	0.001	1.0E-06	0.0000	1.2E-07	0 m0001	1.5E-0
Dieldrin	5E-05	16	0.003	0.026	2.5E-06	0.001	2.8E-07	0.0003	7.4E-0
Heptachlor epoxide	1.3E-05	9.1	0.007	0.070	1.0E-06	0.003	1.1E-07	0.000	2.6E-0
Iron	0.3	NA	0.030	0.28	ND	0.011	ND	0.004	NI
Manganese	0.047	NA	0.01	0.10	ND	0.004	ND	0.001	NI
SUM Hazard Index/ILCR			0.08	0.7	2E-05	0.03	3E-06	0.01	6E-0

Notes:

NA Not available
ND Not Determined due to lack of available information
lwa Lifetime weighted average; used to calculate excess carcinogenic risk derived from RAGS Part A

Table 9-30
Hazard Quotients and Incremental Lifetime Excess Cancer Risk
Dermal Contact With Surface Soil
Site 1
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	ABS	Oral RfD Used (mg/kg-day	Oral SF Used (mg/kg-day)-1	Future Resident adult Hazard Quotient	Future Resident child Hazard Quotient	Future Resident lwa ILCR	Future Worker adult Hazard Quotient	Future Worker adult ILCR	Current Adult Maint. Worker Hazard Quotient	Current Adult Maint. Worker ILCR
Aluminum	0.2	0.2	NA	0.002	0.008	ND	0.002	ND	0.0004	ND
Arsenic	0.2	6E-05	7.5	0.003	0.010	8.2E-07	0.002	3.3E-07	0.0002	3.8E-08
Benzo(a)pyrene Equiv.	0.5	NA	14.6	ND	ND	5.5E-06	ND	2.3E-06	ND	2.4E-07
Chlordane	0.5	0.0025	2.6	0.0001	0.0004	4.7E-07	0.0001	1.9E-07	0.00001	1.2E-08
Dieldrin	0.5	2.5E-05	32	0.002	0.007	1.1E-06	0.002	4.6E-07	0.0002	6.1E-08
Heptachlor epoxide	0.5	6.5E-06	18.2	0.006	0.020	4.5E-07	0.004	1.9E-07	0.000	2.2E-09
Iron	0.2	0.06	NA	0.006	0.020	ND	0.004	ND	0.001	ND
Manganese	0.2	0.0094	NA	0.002	0.007	ND	0.002	ND	0.0001	ND
SUM Hazard Index/ILCR				0.02	0.07	8E-06	0.016	3E-06	0.002	4E-07

Notes:

NA Not available
ND Not Determined due to lack of available information
lwa Lifetime weighted average; used to calculate excess carcinogenic risk derived from RAGS Part A
ABS Dermal to absorbed dose adjustment factor is applied to adjust for oral SF and RfD (i.e., the oral RfD is based on oral absorption efficiency which should not be applied to dermal exposure and dermal CDI)

Table 9-31
Hazard Quotients and Incremental Lifetime Excess Cancer Risk
Groundwater Ingestion
Site 24
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	Oral RfD Used (mg/kg-day)	Oral SF Used (mg/kg-day)-1	Future Resident adult Hazard Quotient	Future Resident child Hazard Quotient	Future Resident Iwa ILCR	Future Worker adult Hazard Quotient	Future Worker adult ILCR
Arsenic (As)	0.0003	1.5	0.45	1.1	1.1E-04	0.16	3.6E-05
Benzene	0.00171	0.029	0.01	0.03	3.7E-07	0.005	1.2E-07
Cadmium (Cd)	0.0005	NA	0.38	0.88	ND	0.13	ND
1,4-Dichlorobenzene	0.229	0.024	0.0004	0.001	1.1E-06	0.0001	3.5E-07
1,1-Dichloroethene	0.009	0.6	0.001	0.001	1.8E-06	0.0002	5.8E-07
1,2-Dichloroethene (cis)	0.01	NA	0.04	0.10	ND	0.02	ND
Iron (Fe)	0.3	NA	1.2	2.7	ND	0.42	ND
Antimony (Sb)	0.0004	NA	1.8	4.3	ND	0.65	ND
Manganese (Mn)	0.023	NA	0.26	0.60	ND	0.09	ND
Nickel (Ni)	0.02	NA	0.03	0.06	ND	0.01	ND
Tetrachloroethene	0.0	0.052	0.003	0.0	8.2E-07	0.001	2.6E-07
Thallium (Tl)	8E-05	NA	1.45	3.4	ND	0.52	ND
Trichloroethene	0.006	0.011	0.03	0.07	1.1E-06	0.01	3.4E-07
Vinyl chloride	NA	1.9	ND	ND	1.1E-04	ND	3.7E-05
4,4'-DDD	NA	0.24	ND	ND	3.3E-07	ND	1.0E-07
Dieldrin	5E-05	16	0.05	0.11	2.2E-05	0.02	6.9E-06
Heptachlor	0.0005	4.5	0.0003	0.001	3.8E-07	0.0001	1.2E-07
Heptachlor epoxide	1.3E-05	9.1	0.03	0.07	2.1E-06	0.01	6.6E-07
Chlordane (total)	6E-05	1.3	0.02	0.04	8.0E-07	0.01	2.6E-07
delta-BHC	0.0003	6.3	0.001	0.002	1.0E-06	0.0003	3.2E-07
Zinc	0.3	NA	0.053	0.12	ND	0.019	ND
SUM Hazard Index/ILCR			6	14	3E-04	2	8E-05

Notes:

NA Not available
ND Not Determined due to lack of available information
Iwa Lifetime weighted average; used to calculate excess carcinogenic risk derived from RAGS Part A

Table 9-32
Hazard Quotients and Incremental Lifetime Excess Cancer Risk
Inhalation of Contaminants in Groundwater due to Potable Use
Site 24
Naval Air Station, Pensacola
Pensacola, Florida

Chemical	Inhalation Rf Used (mg/kg-day)	Inhalation SF Used (mg/kg-day)-1	Future Resident adult Hazard Quotient	Future Resident child Hazard Quotient	Future Resident lwa ILCR	Future Worker adult Hazard Quotient	Future Worker adult ILCR
Benzene	0.00171	0.029	0.01	0.03	3.7E-07	0.005	1.2E-07
1,4-Dichlorobenzene	0.229	0.024	0.0004	0.0008	1.1E-06	0.0001	3.5E-07
1,1-Dichloroethene	0.009	0.175	0.0006	0.0014	5.3E-07	0.0002	1.7E-07
1,2-Dichloroethene (cis)	0.01	NA	0.04	0.1	ND	0.02	ND
Tetrachloroethene	0.01	0.00203	0.003	0.007	3.2E-08	0.001	1.0E-08
Trichloroethene	0.006	0.006	0.030	0.069	5.9E-07	0.01	1.9E-07
Vinyl chloride	NA	0.3	ND	ND	1.8E-05	ND	5.8E-06
SUM Hazard Index/ILCR			0.09	0.2	2E-05	0.03	7E-06

Notes:

NA Not available
ND Not Determined due to lack of available information
lwa Lifetime weighted average; used to calculate excess carcinogenic risk derived from RAGS Part A
Oral RfDs have been cross-assigned as Inhalation RfDs

Table 9-33
Summary of Risk and Hazard-Based Soil COCs
Site * *
Naval Air Station, Pensacola
Pensacola, Florida

Medium	Exposure Pathway		Future Resident Adult Hazard Quotient	Future Resident Child Hazard Quotient	Future Resident Lifetime ILCR	Site Worker Hazard Quotient	Site Worker ILCR	Identification of COCs	
Surface Soil	Incidental Ingestion	Aluminum	0.012	0.109	ND	0.004	ND		
		Arsenic	0.014	0.132	7.3E-06	0.005	8.1E-07	2	3
		Benzo(a)pyrene Equiv.	ND	ND	1.2E-05	ND	1.4E-06	2	3
		Chlordane	0.000	0.00	1.0E-06	0.00005	1.2E-07	2	
		Dieldrin	0.003	0.03	2.5E-06	0.001	2.8E-07	2	
		Heptachlor epoxide	0.007	0.07	1.0E-06	0.003	1.1E-07	2	
		Iron	0.03	0.3	ND	0.011	ND		
		Manganese	0.01	0.1	ND	0.004	ND		
	Dermal	Aluminum	0.002	0.008	ND	0.002	ND		
		Arsenic	0.003	0.010	8.2E-07	0.002	3.3E-07		
		Benzo(a)pyrene Equiv.	ND	ND	5.5E-06	ND	2.3E-06	2	3
		Chlordane	0.0001	0.000	4.7E-07	0.0001	1.9E-07		
		Dieldrin	0.002	0.007	1.1E-06	0.002	4.6E-07	2	
		Heptachlor epoxide	0.006	0.02	4.5E-07	0.004	1.9E-07		
		Iron	0.006	0.02	ND	0.004	ND		
		Manganese	0.002	0.007	ND	0.002	ND		
Surface Soil Pathway Sum			0.10	0.8	3E-05	0.04	6E-06		

Notes:
ND indicates not determined due to the lack of available risk information.
ILCR indicates incremental excess lifetime cancer risk
1- Chemical is a COC by virtue of projected child residence noncarcinogenic hazard.
2- Chemical is a COC by virtue of projected future resident lifetime ILCR.
3- Chemical is a COC by virtue of projected site worker ILCR.

Table 9-34
Summary of Risk and Hazard-Based Groundwater COCs
Site 24
Naval Air Station, Pensacola
Pensacola, Florida

Medium	Exposure Pathway		Future Resident Adult Hazard Quotient	Future Resident Child Hazard Quotient	Future Resident lwa ILCR	Site Worker Hazard Quotient	Site Worker ILCR	Identification of COCs			
Groundwater	Ingestion	Arsenic (As)	0.45	1.1	1.1E-04	0.16	3.6E-05	1	2	3	4
		Benzene	0.01	0.03	3.7E-07	0 005	1.2E-07				
		Cadmium (Cd)	0.38	0.9	ND	0.13	ND	1		3	
		1,4-Dichlorobenzene	0.0004	0.0008	1.1E-06	0.0001	3.5E-07		2		
		1,1-Dichloroethene	0.001	0.001	1.8E-06	0.0002	5.8E-07		2		
		1,2-Dichloroethene (cis)	0.044	0.10	ND	0.02	ND	1			
		Iron (Fe)	1.2	2.7	ND	0 4	ND	1		3	
		Antimony (Sb)	1.8	4.3	ND	0.7	ND	1		3	
		Manganese (Mn)	0.26	0.60	ND	0.09	ND	1			
		Nickel (Ni)	0.03	0.1	ND	0.01	ND				
		Tetrachloroethene	0.003	0.01	8.2E-07	0.001	2.6E-07				
		Thallium (Tl)	1.4	3.4	ND	0.52	ND	1		3	
		Trichloroethene	0.03	0.07	1.1E-06	0.01	3.4E-07		2		
		Vinyl chloride	ND	ND	1.1E-04	ND	3.7E-05		2		4
		4,4'-DDD	ND	ND	3.3E-07	ND	1.0E-07				
		Dieldrin	0.05	0.11	2.2E-05	0.02	6.9E-06	1	2		4
		Heptachlor	0.0003	0.0007	3.8E-07	0.0001	1.2E-07				
		Heptachlor epoxide	0.03	0.1	2.1E-06	0.01	6.6E-07		2		
		Chlordane (total)	0.02	0.04	8.0E-07	0.007	2.6E-07				
		delta-BHC	0.001	0.002	1.0E-06	0.0003	3.2E-07				
		Zinc	0.053	0.12	ND	0.019	ND	1			
Groundwater	Inhalation	Benzene	0.01	0.03	3.7E-07	0.005	1.2E-07				
		1,4-Dichlorobenzene	0.0004	0.0008	1.1E-06	0.00013	3.5E-07		2		
		1,1-Dichloroethene	0.001	0.001	5.3E-07	0.0002	1.7E-07				
		1,2-Dichloroethene (cis)	0.04	0.10	ND	0.02	ND	1			
		Tetrachloroethene	0.003	0.01	3.2E-08	0.001	1.0E-08				
		Trichloroethene	0.030	0.07	5.9E-07	0.01	1.9E-07				
		Vinyl chloride	ND	ND	1.8E-05	ND	5.8E-06		2		4
Groundwater Pathway Sum			6	14	3E-04	2	9E-05				

Notes:
ND indicates not determined due to the lack of available risk information.
ILCR indicates incremental excess lifetime cancer risk
1- Chemical is a COC by virtue of projected child residence noncarcinogenic hazard.
2- Chemical is a COC by virtue of projected future resident life time ILCR
3- Chemical is a COC by virtue of projected site worker noncarcinogenic hazard.
4- Chemical is a COC by virtue of projected site worker ILCR.

Table 9-35
Summary of Risk and Hazard
Site 24
Naval Air Station, Pensacola
Pensacola, Florida

Medium	Exposure Pathway	HI (Adult)	HI (Child)	ILCR (LWA)	HI (Worker)	ILCR (Worker)	HI (Maint. Worker)	ILCR (Maint. Worker)
Surface Soil	Incidental Ingestion	0.08	0.7	2E-05	0.03	3E-06	0.008	6E-07
	Dermal Contact	0.02	0.07	8E-06	0.02	3E-06	0.002	4E-07
Groundwater	Ingestion	6	14	3E-04	2	8E-05	NA	NA
	Inhalation	0.09	0.21	2E-05	0.03	7E-06	NA	NA

Table 9-36
Remedial Goal Options for Surface Soil
Site 24
Naval Air Station, Pensacola
Pensacola, Florida

Residential RGOs

Chemical	slope Factor (mg/kg-day)-1	Reference Dose (mg/kg-day)	EPC mg/kg	Hazard-Based Remedial Goal Options 3 mg/kg	1 mg/kg	0.1 mg/kg	Risk-Based Remedial Goal Options 1E-06 mg/kg	1E-05 mg/kg	1E-04 mg/kg	Background Concentration mg/kg	Florida Soil Cleanup Goal mg/kg
Arsenic	1.5	0.0003	3.1	70	23	2.3	0.38	3.8	38	1.56	0.7
Benzo(a)pyrene Equiv.	7.3	NA	1.1	ND	ND	ND	0.060	0.60	6	NA	0.14
Chlordane	1.3	0.005	0.51	1173	391	39.1	0.34	3.4	34	NA	0.8
Dieldrin	16	5E-05	0.10	12	4	0.4	0.028	0.28	3	NA	0.07
Heptachlor epoxide	9.1	1.3E-05	0.07	3	1	0.1	0.048	0.48	5	NA	0.1

Industrial RGOs

Chemical	Slope Factor (mg/kg-day)-1	Reference Dose (mg/kg-day)	EPC mg/kg	Hazard-Based Remedial Goal Options 3 mg/kg	1 mg/kg	0.1 mg/kg	Risk-Based Remedial Goal Options 1E-06 mg/kg	1E-05 mg/kg	1E-04 mg/kg	Background Concentration mg/kg	Florida Soil Cleanup Goal mg/kg
Arsenic	1.5	0.0003	3.1	1305	435	43.5	2.71	27.1	271	1.56	3
Benzo(a)pyrene Equiv.	7.3	NA	1.1	ND	ND	ND	0.30	3.0	30	NA	0.5

Notes:

NA Not applicable
ND Not determined
- Remedial goal options were based on the residential LWA for carcinogens and the child resident or site worker for noncarcinogens

Table 9-37
Remedial Goal Options Groundwater
Site 1
Naval Air Station, Pensacola
Pensacola, Florida

Residential RGOs

Chemical	Oral SF (mg/kg-day)-1	Oral RfD (mg/kg-day)	EPC mg/L	Hazard-Based Remedial Goal Options 0.1 mg/L	1.0 mg/L	3 mg/L	Risk-Based Remedial Goal Options 1E-06 mg/L	1E-05 mg/L	1E-04 mg/L	Background Concentration mg/L	ARAR mg/L
Arsenic (As)	1.5	0.0003	0.0050	0.00047	0.0047	0.014	4.4E-05	4.4E-04	0.0044	0.0028	0.05
Benzene	0.029	0.00171	0.001	0.001	0.01	0.04	0.001	0.01	0.11	NA	0.001
Cadmium (Cd)	NA	0.0005	0.007	0.0008	0.008	0.023	ND	ND	ND	0.0034	0.005
1,4-Dichlorobenzene	0.024	0.229	0.003	0.17911	1.8	5.373	0.001	0.01	0.14	NA	0.075
1,1-Dichloroethene	0.6	0.009	0.0002	0.00704	0.1	0.211	8.6E-05	8.6E-04	0.0086	NA	0.007
1,2-Dichloroethene (cis)	NA	0.01	0.016	0.0078	0.1	0.23	ND	ND	ND	NA	0.07
Iron (Fe)	NA	0.3	12.89	0.4693	4.693	14.08	ND	ND	ND	1.708	0.3
Antimony (Sb)	NA	0.0004	0.03	0.0006	0.006	0.02	ND	ND	ND	0.0302	0.006
Manganese (Mn)	NA	0.023	0.22	0.0360	0.360	1.08	ND	ND	ND	0.022	0.05
Nickel (Ni)	NA	0.02	0.020	0.03	0.3	1	ND	ND	ND	0.0399	0.1
Tetrachloroethene	0.052	0.01	0.001	0.008	0.08	0.2	0.001	0.01	0.12	NA	0.003
Thallium (Tl)	NA	8E-05	0.0042	0.0001	0.001	0.003	ND	ND	ND	0.0036	0.002
Trichloroethene	0.011	0.006	0.007	0.0047	0.047	0.14	0.004	0.04	0.39	NA	0.003
Vinyl chloride	1.9	NA	0.004	ND	ND	ND	3.0E-05	3.0E-04	0.003	NA	0.001
4,4'-DDD	0.24	NA	9.1E-05	ND	ND	ND	2.8E-04	2.8E-03	0.028	NA	0.0001
Dieldrin	16	5E-05	9.0E-05	7.8E-05	7.8E-04	0	4.1E-06	4.1E-05	0.0004	NA	0.0001
Heptachlor	4.5	0.0005	5.6E-06	7.8E-04	7.8E-03	0.023	1.5E-05	1.5E-04	0.0015	NA	0.0004
Heptachlor epoxide	9.1	1.3E-05	1.5E-05	2.0E-05	2.0E-04	0.0006	7.3E-06	7.3E-05	0.0007	NA	0.0002
Chlordane (total)	1.3	6E-05	4.1E-05	9.4E-05	9.4E-04	0.003	5.1E-05	5.1E-04	0.0051	NA	0.002
delta-BHC	6.3	0.0003	1.1E-05	0.0005	0.005	0.01	1.1E-05	1.1E-04	0.0011	NA	5E-05
Zinc	NA	0.3	0.58	0.4693	4.693	14.08	ND	ND	ND	0.153	5

Industrial RGOs

Chemical	Oral SF (mg/kg-day)-1	Oral RfD (mg/kg-day)	EPC mg/L	Hazard-Based Remedial Goal Options 0.1 mg/L	1 mg/L	3 mg/L	Risk Based Remedial Goal Options 1E-06 mg/L	1E-05 mg/L	1E-04 mg/L	Background Concentration mg/l	ARAR mg/l
Arsenic (As)	1.5	0.0003	0.0050	0.001	0.031	0.092	0.0004	0.0014	0.014	0.0028	0.05
Cadmium (Cd)	NA	0.0005	0.007	0.005	0.05	0.15	ND	ND	ND	0.0034	0.005
Iron (Fe)	NA	0.3	12.89	3.1	31	92	ND	ND	ND	1.708	0.3
Antimony (Sb)	NA	0.0004	0.03	0.004	0.04	0.12	ND	ND	ND	0.0302	0.006
Thallium (Tl)	NA	8E-05	0.004	0.0008	0.008	0.02	ND	ND	ND	0.0036	0.002
Vinyl chloride	1.9	NA	0.004	ND	ND	ND	00009	0.0009	0.009	NA	0.001
Dieldrin	16	5E-05	9.0E-05	0.0005	0.005	0.015	0.00001	0.0001	0.001	NA	0.0001

Notes:

NA Not applicable
ND Not determined
- Remedial goal options were based on the residential lifetime weighted average for carcinogens and the child resident or site worker for noncarcinogens

9.1.4 Toxicity Profiles for Chemicals of Potential Concern (COPCs)

As required for BRAs by USEPA Region IV, toxicological profiles are included for all COPCs. Most information fbr the brief profiles below was gleaned from the IRIS as a primary source, and the currently available HEAST, as referenced in the attached toxicological database information table. Other USEPA sources such as ECAO/NCEA and Agency for Toxic Substance and Disease Registry (ATSDR) profiles were used to supplement available data. Another source of information was Smith, R.L., *USEPA* Region *III* Risk-Based *Concentrations* Tile, June 1996 (and subsequent versions). Any additional references are noted specifically in the briefs below. The profiles summarize adverse effects of COPCs and the associated amount of the COPC. This means the inhalation reference dose (RfDi), oral reference dose (RfDo), inhalation slope factor (SFi), and oral slope factor (SFo) are included in the discussion where applicable.

1,1-Dichloroethene is a VOC, primarily toxic to the liver, central nervous system (CNS), and kidneys. The mucous membrane, skin, lung, and cornea (irritation) are also affected. 1,I-dichloroethene is more toxic than 1,2-dichloroethene (Dreisbach et al., 1987). This chlorinated compound is a USEPA group C carcinogen. The RfDo is 0.009 mg/kg-day, and the SFo and SFi are 0.6 and 0.175 $(mg/kg\text{-}day)^{-1}$, respectively.

delta-BHC (or deltabenzene hexachloride) is among the eight well-described stereoisomers of hexachlorocyclohexane. The gamma isomer is the active ingredient in most medicinal and pesticidal applications. Poisoning may occur by ingestion, inhalation, or percutaneous absorption. Acute exposure may lead to dizziness, headache, nausea, vomiting, diarrhea, tremors, weakness, convulsions, dyspnea, cyanosis, and circulatory collapse. USEPA has classified the BHC isomers as B2 carcinogens targeting hepatic system. No slope factors are specifically available for the delta isomer. As a result, the gamma isomer RfD (0.0003 mg/kg-day) and the alpha isomer Sfo of 6.3 $mg/kg\text{-}day^{-1}$ were applied as the most conservative estimates available.

Chlordane is a polycyclic chlorinated pesticide. Acute exposure to high doses of chlordane can cause tremors and convulsions. Chronic exposure can cause emotional and neuromuscular disturbances. Exposed individuals revert to normal approximately one week after the source is removed (Dreisbach et al., 1987). USEPA has established an RfDo of 6E-5 mg/kg-day and an SFo of 1.3 $(mg/kg\text{-}day)^{-1}$.

Heptachlor is an insecticide used to control flies, mosquitoes, and field insects. USEPA determined this compound to be a class B2 carcinogen, and determined the SFo to be 4.5 $(mg/kg\text{-}day)^{-1}$. As listed in IRIS (6/29/95), the classification is based on inadequate human data, but sufficient evidence from studies in which benign and malignant liver tumors were induced in three strains of mice of both sexes. Several structurally related compounds are liver carcinogens. The primary target organs for this pesticide are the liver and kidneys. USEPA determined the RfDo to be 0.0005 mg/kg-day. As listed in IRIS (6/29/95), the critical effect of this chemical is increased liver weight in males. The uncertainty factor was 300 and the modifying factor was determined to be 1. (Dreisbach et al., 1987).

Heptachlor epoxide is the more toxic form of the insecticide heptachlor. USEPA determined this compound to be a class B2 carcinogen, and determined the SFo to be 9.1 $(mg/kg\text{-}day)^{1}$. The primary target organs for this pesticide are the liver and kidneys, and USEPA determined the RfDo to be 1.3E-5 mg/kg-day (Dreisbach et al., 1987).

Tetrachloroethene (PCE) has been used as a solvent in industry and occurs as a volatile contaminant in other chlorinated hydrocarbons. Tetrachloroethene exposure can result in long-lasting narcosis with delayed onset and damage to the liver and kidneys. The principal manifestations of overexposure to this halogenated hydrocarbon are coma, jaundice, oliguria, and irritation of the eyes and nose followed by headache and nausea. Cyanosis and CNS depression progressing to coma appear one to four hours after the short-term exposure. Liver and kidney

damage after apparent recovery or after repeated exposures causes acute symptoms such as nausea, vomiting, abdominal pain, jaundice, oliguria, and uremia. PCE exposure via the inhalation and/or skin absorption exposure pathways could result in headache, tremor, dizziness, peripheral paresthesia, hypesthesia, or anesthesia. PCE is a carcinogen, but is currently under review by USEPA; it is currently classified as a B2-C carcinogen. The RfDo has been set to 0.01 mg/kg-day, and the SF_o and SF_i have been set to 0.052 and 0.00203 $(mg/kg\text{-}day)^{-1}$, respectively, by USEPA. As listed in IRIS (11/22/95), the critical effects of this chemical are hepatotoxicity in mice, and weight gain in rats. The uncertainty factor was 1,000 and the modifying factor was 1 (Dreisbach et al., 1987).

Trichloroethene (TCE) is a mobile, volatile liquid with the characteristic odor of chloroform. Inhalation, intravenous, and subcutaneous routes are all viable exposure pathways. TCE is a strong skin and eye irritant that is relatively less toxic if ingested. Inhalation of high concentrations causes narcosis and anesthesia. This compound targets the liver and other organs (Dreisbach et al., 1987). TCE is a B2 carcinogen, and the SFo and SFi have been set by USEPA to 0.011 and 0.006 $(mg/kg\text{-}day)^{-1}$, respectively. As listed in IRIS (11/22/95), the carcinogen assessment summary for this substance has been withdrawn following further review. A new carcinogen summary is being prepared. USEPA also set the RfDo to 0.006 mg/kg-day.

Aluminum is one of the most abundant metals in the earth's crust (7% aluminum), and it is ubiquitous in air and water as well as soil. This metal is water-soluble, silvery, and ductile, which suggests its usefulness in many processes. Ingesting aluminum can affect the absorption of other elements within the gastrointestinal tract and can alter intestinal function. Aluminum can potentially interfere with the absorption of essential nutrients and cholesterol. Another effect on the gastrointestinal system is the inhibition of acetylcholine-induced contractions. Aluminum dust is moderately flammable and explosive in heat. Inhaling this dust can cause fibrosis (aluminosis). No data are available on an applicable SF or the USEPA cancer group. The USEPA Region IV

Office of Health Assessment suggested using the provisional RfDo of 1.0 mg/kg-day. The aesthetic-based secondary SMCL for drinking water is 50 to 200 μg/L (Klaassen et al., 1986; Dreisbach et al., 1987).

Antimony belongs to the same periodic group as arsenic. This element is absorbed slowly through the gastrointestinal tract, which is the target of this element. Another target is the blood, where antimony concentrates. Due to frequent industrial use, the primary exposure route for antimony to the general population is food. Antimony is also a common air pollutant from industrial emissions (Klaassen et al., 1986). USEPA has not classified antimony as a carcinogen, and the RfDo is 0.0004 mg/kg-day. As listed in IRIS (6/28/95), the critical effect of this chemical is longevity, blood glucose, and cholesterol. The uncertainty factor was 1,000 and the modifying factor was 1.

Arsenic exposure via the ingestion route darkens and hardens the skin in chronically exposed humans. Inhalation exposure to arsenic causes neurological deficits, anemia, and cardiovascular effects. USEPA set 0.3 μg/kg-day as the RfD for arsenic based on a no observed adverse effects level (NOAEL) of 0.8 μg/kg-day in a human exposure study. Arsenic's effects on the nervous and cardiovascular systems are primarily associated with acute exposure to higher concentrations. Exposure to arsenic-containing materials causes cancer in humans. Inhaling these materials can lead to increased lung cancer risk, and ingestion is associated with increased skin cancer rates, Arsenic has been classified as a group A carcinogen by USEPA, which set the 1.75 $(mg/kg\text{-}day)^{-1}$ SF for arsenic. As listed in IRIS (9/1/95), the classification is based on sufficient evidence from human data. An increased lung cancer mortality was observed in multiple human populations exposed primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic. Human milk contains about 3 μg/L arsenic. The RBC for arsenic in tap water is 0.038 μg/L. As listed in IRIS, the critical

effect of this chemical is hyperpigmentation, keratosis, and possible vascular complications. The uncertainty factor was 3 and the modifying factor was 1. (Klaassen et al., 1986).

Barium is used in various alloys, paints, soap, and manufacture processes. Barium sulfate is used to aid X-ray diagnosis. This element is relatively abundant in nature and is found in plant and animal tissue. Brazil nuts contain 3 to 4 mg per gram nuts. The fatal absorbed dose of barium is approximately 1000 mg (for humans). Assuming an absorption efficiency of 5 % for barium, 20,000 mg ingested barium could be fatal (approximately 333 Brazil nuts, assuming 15 g/nut). Major toxic effects of this element are muscle stimulation, CNS effects, and effects on the heart (Dreisbach et al., 1987; Klaassen et al, 1986). USEPA determined the RfDo and RfDi to be 0.07 and 1.43E-4 mg/kg-day, respectively. As listed in IRIS (6/29/95), the critical effect of this chemical is increased blood pressure. The uncertainty factor was 3 and the modifying factor was 1.

Cadmium can upset the stomach, leading to vomiting and diarrhea in acute exposure; acute inhalation of cadmium-containing dust can irritate the lungs. Chronic exposure to cadmium, either via inhalation or ingestion, causes kidney damage (including kidney stones), emphysema, and high blood pressure. Other tissues reportedly injured by cadmium exposure in animals and humans include the lungs, testes, liver, immune system, blood, and the nervous system. An oral RfD of 0.001 (mg/kg-day) has been determined by USEPA, based on human studies (food) involving chronic exposure in which significant increased protein was found in the urine. A separate oral RfD for water has been determined by USEPA to be 0,0005 mg/kg-day. For inhalation exposure, cadmium has been classified by USEPA as a group B1, or probable human carcinogen, based on limited evidence from epidemiological studies in which an excess risk of lung cancer was observed in cadmium smelter workers. As listed in IRIS (6/28/95), the classification is based on limited evidence from occupational epidemiologic studies of cadmium is consistent across investigations and study populations. There is sufficient evidence of carcinogenicity in rats and mice by

inhalation and intramuscular and subcutaneous injection. Seven studies in rats and mice wherein cadmium salts (acetate, sulfate, and chloride) were administered orally have shown no evidence of carcinogenic response. There is sufficient evidence of increased risk of lung cancer in rats and mice exposed to cadmium via inhalation. Seven studies in which cadmium was administered orally to rats and mice have shown no evidence of carcinogenic response following exposure via this route. As listed in IRIS, the critical effect of this chemical in water is significant proteinuria. The uncertainty factor was 10 and the modifying factor was 1. The critical effect of this chemical in food is human studies involving chronic exposures. The uncertainty factor was determined to be 10 and the modifying factor was determined to be 1 (Klaassen et al., 1986).

Manganese is an essential nutrient. Chronic exposure to manganese, 0.8 mg/kg-day, causes mental disturbances. Studies have shown that manganese uptake from water is greater than manganese uptake from food, and the elderly appear to be more sensitive than children. Because of the different uptake rates in water and food, USEPA set two oral RfDs— one for water and one for food. These RfDs are 0.023 and 0.047 mg/kg-day, respectively. Inhalation of manganese dust causes neurological effects and increased incidence of pneumonia, and an RfD was set to 0.0000143 mg/kg-day. According to USEPA, manganese cannot be classified as to its carcinogenicity. Therefore, the cancer class for manganese is group D. As listed in IRIS (6/29/95), the classification is based on existing studies are inadequate to assess the carcinogenicity of manganese. Manganese is an essential nutrient. The typical vitamin supplement dose of manganese is 2.5 mg/day. As listed in IRIS, the critical effect of this chemical in water in the oral summary are CNS effects. The uncertainty factor was 1 and the modifying factor was 1. The critical effect of this chemical in food in the oral summary are CNS effects (Klaassen et al., 1986; Dreisbach et al., 1987). The uncertainty factor was 1 and the modifying factor was 1. As listed in IRIS, the critical effect of this chemical in the inhalation summary is impairment of neuro-behavioral function. The uncertainty factor was 1,000 and the modifying factor was 1. The IRIS RfC is 0.00005 mg/m^3.

Nickel is also an essential nutrient; a 5μg dose is typical of supplemental vitamins. USEPA set the RfDo to 0.02 mg/kg-day. Chronic exposure of rats to nickel caused decreased body and organ weights. For a chronically exposed individual, nickel salts would affect the gastrointestinal system, and would also target the liver and kidney. This element has been shown to be a sensitizer, an element that can produce allergic reactions. Sensitization of skin to nickel dust has been shown to occur in industry (Dreisbach et al., 1987). As listed in IRIS (6/28/95), the critical effect of this chemical is decreased body and organ weights. The uncertainty factor was 300 and the modifying factor was 1.

Thallium is readily absorbed through the gut and skin. Primary effects are stomach and bowel disturbances, kidney and liver damage, and neurological disturbances. Thallium was used as a rodenticide and ant killer, but these uses are now prohibited. This element remains in the body for a relatively long time, and could accumulate if the chronic dose is large (Klaasen et al., 1986; Dreisbach et al., 1987). USEPA's oral RfD for thallium is 0.00008 mg/kg-day.

Dieldrin is a polycyclic chlorinated pesticide. Short-term exposure to high doses of dieldrin causes tremors and convulsions. Chronic exposure can cause emotional and neuromuscular disturbances. Exposed individuals revert to normal approximately one week after the dieldrin source is removed,, As listed in IRIS (6/28/95), the B2 classification is based on dieldrin being carcinogenic in seven strains of mice when administered orally. Dieldrin is structurally related to compounds (aldrin, chlordane, heptachlor, heptachlor epoxide, and chlorendic acid) that produce tumors in rodents. Dieldrin's SFo, SFi, and RfDo were set to 16 $(mg/kg\text{-}day)^{-1}$, 16.1 $(mg/kg\text{-}day)^{-1}$, and 0.00005 mg/kg-day, respectively. As listed in IRIS, the critical effect of this chemical is liver lesions. The uncertainty factor was 100 and the modifying factor was 1 (Dreisbach et al., 1987).

Polyaromatic* Hydrocarbons *(PAHs) include the following COPCs:

Benzo(a)anthracene	**TEF**	***0.1***
Benzo(b)fluoranthene	**TEF**	**0.1**
Dibenz(a,h)anthracene	**TEF**	***1.0***
Benzo(k)fluoranthene	***TEF***	***0.01***
Benzo(a)pyrene	**TEF**	***1.0***
Indeno(1,2,3-cd)pyrene	***TEF***	**0.1**
Chrysene	**TEF**	**0.001**

Some PAHs are toxic to the liver, kidney, and blood. However, the toxic effects of the PAHs above have not been well established. There are no RfDs for the PAHs above due to a lack of data. All PAHs listed above are classified by USEPA as B2 carcinogens, and their carcinogenicity is addressed relative to that of benzo(a)pyrene, having a SF 7.3 $(mg/kg\text{-}day)^{-1}$.

Toxicity Equivalency Factors (TEF), also set by USEPA, are multipliers that are applied to the detected concentrations, which are subsequently used to calculate excess cancer risk. These multipliers are discussed further in the Exposure and Toxicity Assessment Sections.

Most carcinogenic PAHs have been classified as such due to animal studies using large doses of purified PAHs. There is some doubt as to the validity of these listings, and the SFs listed in USEPA's RBC table are provisional. However, these PAHs are carcinogens when the exposure involves a mixture of other carcinogenic substances (i.e., coal tar, soots, cigarette smoke, etc.).

As listed in IRIS (6/28/95), the benzo(a)pyrene B2 classification is based on human data specifically linking benzo(a)pyrene (BAP) to a carcinogenic effect are lacking. There are, however, 'multiple animal studies in many species demonstrating BAP to be carcinogenic following

administration by numerous routes. BAP has produced positive results in numerous genotoxicity assays. At the June 1992 CRAVE Work Group meeting, a revised risk estimate for benzo (a)pyrene was verified (see Additional Comments for Oral Exposure). This section provides information on three aspects of the carcinogenic risk assessment for the agent in question, the USEPA classification, and quantitative estimates of exposure. The classification reflects a weight-of-evidence judgment of the likelihood that the agent is a human carcinogen. The quantitative risk estimates are presented in application of a low-dose extrapolation procedure and is presented as the risk per (mg/kg)/day. The unit risk is the quantitative estimate in terms of either risk per μg/L drinking water or risk per $\mu g/m^3$ air breathed. The third form in which risk is presented is drinking water or air concentration providing cancer risks of 1 in 10,000 or 1 in 1 million. The Carcinogenicity Background Document provides details on the carcinogenicity values found in IRIS. Users are referred to the RfDo and Reference Concentration (RfC) sections for information on long-term toxic effects other than carcinogenicity. As listed in IRIS (search date 6/28/95), the basis for the dibenz(a,h)anthracene and benzo(b)fluoranthene B2 classification is no human data and sufficient data from animal bioassays. Benzo(b)fluoranthene produced tumors in mice after lung implantation, intraperitoneal. (i.p.) or subcutaneous (s.c.) injection, and skin painting. As listed in IRIS (search date 6/28), the basis for the benzo(a)anthracene B2 classification is no human data and sufficient data from animal bioassays. Benzo(a)anthracene produced tumors in mice exposed by gavage; intraperitoneal, subcutaneous or intramuscular injection; and topical application. Benzo(a)anthracene produced mutations in bacteria and in mammalian cells, and transformed mammalian cells in culture.

As listed in IRIS, the benzo(k)fluoranthene B2 classification is based on no human data but sufficient data from animal bioassays. Benzo(k)fluoranthene produced tumors after lung implantation in mice and when administered with a promoting agent in skin-painting studies. Equivocal results have been found in a lung adenoma assay in mice. Benzo(k)fluoranthene is mutagenic in bacteria (Klaassen et al., 1986).

Other PAHs – those not classified by USEPA as carcinogens – are toxic to the liver, kidney and blood. This group of PAHs includes *pyrene*, acenaphthene, *acenaphthylene*, *benzo(g,h,i)perylene*, and phenanthrene. USEPA determined RfDs for only two of these compounds. Pyrene's RfDo is 0.03 mg/kg-day, and this RfD is also used as a surrogate RfDo for phenanthrene. The RfDo for acenaphthene was determined to be 0.06 mg/kg-day.

Benzene is a VOC which has been associated with leukemia. This chemical has been used as a solvent in coal tar naphtha, rubber, and plastic cement. USEPA lists benzene as a group A carcinogen. As listed in IRIS (6/29/95), the classification is based on several studies of increased incidence of nonlymphocytic leukemia from occupational exposure, increased incidence of neoplasia in rats and mice exposed by inhalation and gavage, and some supporting data. In large doses, benzene depresses the CNS, and chronic exposure depresses bone marrow. The SFo for benzene was set by USEPA as 2.9E-2 $(mg/kg\text{-}day)^{-1}$, and an RfDo has not been set. Occupational inhalation exposure to benzene is acceptable by OSHA at 3.25 mg/m^3 or 1 ppm in air (Dreisbach et al., 1987; NIOSH, 1990).

Magnesium, potassium, iron, *calcium*, and sodium are all essential nutrients. These elements were eliminated from formal assessment because they are essential elements. These nutrients would be expected to be indigenous to the soil. In vitamin supplements, 100, 40, 18, and 162 mg are the daily dose for magnesium, potassium, iron, and calcium, and approximately 70 mg of sodium is found in the typical soda.

Lead has been classified as a group B2 carcinogen by USEPA based on animal data. No RfD or SF has been set by USEPA. However, an action level for soil has k e n proposed by USEPA Region IV, 400 mg/kg. As listed in IRIS (10/17/95), the classification is based on sufficient animal evidence. Ten rat bioassays and one mouse assay have shown statistically significant increases in renal tumors with dietary and subcutaneous exposure to several soluble lead salts.

Animal assays provide reproducible results in several laboratories in multiple rat strains with some evidence of multiple tumor sites. Short-term studies show that lead affects gene expression. Human evidence is inadequate. An RfD and SF have not been set because of the confounding nature of lead toxicity. Lead accumulates in fat tissue, affects the brain, blood, and mental development of children. RfD's are based on the assumption that a threshold must be exceeded to result in toxic effects (other than carcinogenicity). Once lead accumulates in the body, other influences cause the actual levels in the blood to fluctuate. Sometimes the lead is attached to binding sites, and sometimes lead is free-flowing. If an exposed individual has previously been exposed to lead, this individual could lose weight, and set fat-bound lead free. This fluctuation and lack of previous lead exposure data are two of the reasons lead effects are difficult to predict (Klaassen et al., 1986).

Zinc is an essential, ubiquitous element present in food, water, and soil. The average American daily intake is approximately 12 to 15 mg, and the recommended daily allowance (RDA) is 15 mg. Excessive exposure to zinc is relatively uncommon and requires exposure to high concentrations. This element does not accumulate under chronic exposure conditions, and body content is self-regulated by zinc liver levels and absorption mechanisms. Inhalation of zinc dust can cause metal fume fever, and the primary effect of zinc ingestion (at toxic concentrations) is gastrointestinal disturbance and irritation. Other effects on the blood, liver, and kidney are possible at higher concentrations. Twelve grams of elemental zinc per day were not shown to elicit effects other than gastrointestinal disturbances over two days. Experimental animals have been given 100 times the dietary requirements without discernible effects (Klaassen et al., 1986). As listed in IRIS (6/28/95), the D classification is based on inadequate evidence in humans and animals. USEPA determined that the RfDo is 0.3mg/kg-day. As listed in IRIS, the critical effect of this chemical is a 47% decrease in erythrocyte superoxide dismutase concentration in adult females after 10 weeks of zinc exposure.

Vinyl chloride is a volatile organic that can cause Raynaud's Phenomenon or white finger disease. It has been shown to cause angiosarcoma, a cancer. It has been also been associated with reproductive dysfunction in men and women. The primary target organs for noncarcinogenic effects are the liver, kidney, and CNS. This compound inhibits one of the main metabolic pathways of the body (a group of enzymes), and can influence the toxicity of other compounds because of this effect. Due to the carcinogenicity of this compound, USEPA classified vinyl chloride as a class A carcinogen and set the SFi and SFo to 0.3 and 1.9 $(mg/kg\text{-}day)^{-1}$, respectively (Klaassen et al., 1986; Dreisbach et al., 1987).

1,4-Dichlorobenzene is a CLP semivolatile organic compound; however, it was evaluated for the inhalation pathway as a volatile due to its Henry's law constant. This compound affects the CNS, causes liver and kidney damage, and irritation of the mucous membranes, skin, and eyes. This cornpound is classified by USEPA as a B2 carcinogen, with a SFo of 0.024 $(mg/kg\text{-}day)^{-1}$. The RfDi was set to 0.229 mg/kg-day. As listed in IRIS (6/29/95), the critical effect of this chemical is increased liver weights in PI males. The uncertainty factor was 100 and the modifying factor was 1. The IRIS RfC is 0.8 mg/m^3 (Dreisbach et al., 1987).

4,4'-DDD, a by-product of the pesticide DDT, is a compound typical of halobenzene derivatives. It is soluble in fat, but not in water, and its target organ is the brain. This analog of DDT is the least toxic of the three primary DDT analogues (i.e., the least likely to cause cancer). Other DDD effects could include cell death in the liver, fatty change of heart muscles, and kidney damage. In a study mentioned in Dreisbach et al., workers historically exposed to DDT had up to *648* ppm DDT in their body fat; no adverse health effects were observed. If an individual loses body fat, DDD concentrations are not stored at sufficient concentrations to induce toxic effects. This compound is listed as a €32 carcinogen, and USEPA set the SFo for DDD to 0.24 $(mg/kg\text{-}day)^{-1}$ (Dreisbach et al., 1987).

1,2-Dichloroethene, or 1,2-dichloroethylene, is a halogenated hydrocarbon associated with toxicity to the mucous membrane, skin, lung, cornea (irritation), and liver, This compound is less toxic than its alkane counterparts, and is neither mutagenic nor carcinogenic (Dreisbach et al., 1987). There is no USEPA carcinogenicity listing for this compound. However, the RfDo has been set to 0.009 mg/kg-day by USEPA (HEAST RfDo for total 1,2-dichloroethene). As listed in IRIS (6/29/95), the critical effect of this chemical is increased serum alkaline phosphatase in male mice. The uncertainty factor was 1,000 and the modifying factor was 1. The IRIS RfD for trans-1,2-dichloroethene is 0.02 mg/kg/day.

9.2 Ecological Risk Assessment

9.2.1 Introduction

The ecological risk assessment (ERA)is a key componenet of the BRA. Its purpose is to develop a qualitative and/or quantitative ecological appraisal of the actual and/or potential effects of Site 15 contamination on the surrounding ecosystem. The assessment considers environmental media and exposure pathways that could result in unacceptable levels of exposure to flora and fauna now or in the foreseeable future, The approach to assessing risk components at Site 8 and 24 was based on USEPA Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting *Ecological* Risk Assessments (Interim Final, USEPA; 1997), Supplemental Guidance *to* RAGS: Region 4 Bulletins - *Ecological* Risk Assessment, Draft (November 1995), and Framework for Ecological Risk Assessment (USEPA, 1992).

Sites 8 and 24 are in a historically well developed portion of the Base. Site 8 is essentially parking lots and buildings with minor amounts of grassy lawn between roads and buildings. Site 24 is well maintained grassy lawn as an extension of the Barrancas National Military Cemetery. These sites are high traffic areas for pedestrian, vehicles , and lawn maintenance activities, Rabbits and passerine birds are common to these areas as opportunistic grazers.

Other small mammals such as voles, shrews, and mice *can* be expected in these areas. To this extent, occasional predators such as predatory birds and reptiles are possible but have nut been observed. The lack of cover for opportunistic grazers appears to minimize these areas as potential habitat.

9.2.2 Exposure Pathways and Assessment

For terrestrial wildlife species, exposure would include direct dermal contact, ingestion of soil particles and food-chain transfer. Small mammals could contact contaminated soil if the area is used as a migratory corridor or if animals burrow into it. The contact time, and thus exposure, will be limited when animals are crossing the area, but could be lengthy if burrows are established. Dermal contact by small reptiles and amphibians would be similar to that for mammals. For insect populations, direct exposure to ground-dwelling species could provide a link for contaminant transfer to higher-level predators.

9.2.3 Ecological Effects Assessment

The assessment endpoint selected for terrestrial wildlife is the maintenance of well-balanced terrestrial wildlife: populations and communities. As a measure of the assessment endpoint selected, results of laboratory toxicity studies in literature that relate the oral dose of a contaminant with adverse response to growth, reproduction, or survival were used. Selected measurement endpoint species include: short-tailed shrew (*Blarina brevicauda*); Eastern cottontail rabbit (*Sylvilagus floridanus*); and American robin (*Turdus migratorius*). All of these species are likely to occur within the designated site boundaries.

To assess biotransfer of contaminants along food chains, a total potential dietary exposure (PDE) has been modeled for representative wildlife species (Table 9-38). PDEs are calculated based on predicted concentrations of the contaminants in food items that the species would consume, the amount of soil it wuuld ingest, the relative amount of different food items in its diet, body weight, and food ingestion rate (Table 9-39). The concentrations of contaminants in food items are estimated based upon literature-reported bioaccumulation factors (BAFs), which are a ratio of the

ecological chemical of potential concern (ECPC) concentration in dietary items to the concentration in soil. The BAFs reported for avian and mammalian species are reported ratios of contaminants in the tissue of the animals to the concentrations of contaminants in their diets. BAFs are presented in Table 9-40.

The site foraging factor (SFF) considers the frequency of feeding in the site area by estimating its acreage relative to the receptors' feeding range and by considering the fraction of the year the receptor would be exposed to site contaminants.

9.2.4 Risk Characterization

Risks to wildlife potentially occurring at Sites 8 and 24 have been evaluated by taking the PDE, based on the maximum concentrations detected, and then comparing these dietary concentrations to toxicological benchmarks (Sample et al., 1996) which represent a potential for adverse effects. The two benchmark levels used are the estimated no-observed-adverse-effect level (NOAEL) and lowest-observed-adverse-effect level (LOAEL). Sample et al. (1996) determined these benchmark values from laboratory test species and then, through a series of calculations, adjusted them for specific wildlife species. Table 9-41 provides information on the potential receptor species at Sites 8 and 24; contaminants of concern, PDE values, and benchmarks provided from the literature. Exceedances of benchmark levels are in bold type.

Table 9-38
Wildlife Contaminant Exposure Model for Surface Soil
Sites 8 and 24

Food Contaminant Concentration (mg/kg) = BAF[1] X Soil Contaminant Concentration (mg/kg)

Soil Exposure (SE) (mg/kg) = (% of diet as soil) X Soil Contaminant Concentration (mg/kg)

PDE (mg contaminant/kg BW/day) = $\frac{[P_1 \times T_1 + P_2 \times T_2 + \ldots P_n \times T_n + SE] \times IR_{diet} \times SFF}{BW}$

where:

P_n = percent of diet composed of food item N,

T_n = tissue concentration in food item N (mg/kg), (Food Contaminant Concentration)

IR_{diet} = food ingestion rate of receptor (kg of food per day)

SFF = site foraging factor (cannot exceed 1)

BW = receptor body weight (kg)

[1] = BAF from Table 9-40

PDE = Potential Dietary Exposure

Table 9-39
Exposure Parameters and Assumptions for Representative Wildlife Species at Sites 8 and 24

Representative Wildlife Species	Trophic Status	Prey in Diet (%) Inverts	Plants	Small Mammals	Herpeto-fauna	Small Birds	Incidental Soil Ingestion (%)	Home Range (acres)	ED	Site Foraging Frequency (SFF)	Ingestion Rate (kg/day)	Body Weight (kg)
American Robin[a]	Small Carnivorous Bird	83	7	0	0	0	10	1.04	1	1.00E+00	0.01	0.077
Eastern Cottontail[b]	Small Herbivorous Mammal	0	97	0	0	0	3	9.3	1	1.00E+00	0.08	1.2
Short-tailed Shrew[c]	Small Carnivorous Mammal	78	12	0	0	0	10	0.96	1	1.00E+00	0.0025	0.018
SITE AREA:	8 acres (approximate)											

Notes:

a
- Diet assumptions based on data from Hamilton, 1943, and Wheelwright, 1986.
- Food ingestion rate (FI) from formula: FI (kg/day) = 0.0582 $Wt^{0.651}$ (kg) (Nagy, 1987).
- Body weight from Clench and Leberman, 1978.
- Home range reflects interpolated values from Howell, 1942, and Weatherherd and McRae, 1990.

b
- Diet assumptions based on data from Dusi, 1952, and Spencer and Chapman, 1986.
- Food ingestion rate (FI) from formula: FI (kg/day) = 0.0687 x $Wt^{0.822}$ (kg) (Nagy, 1987).
- Body weight reflects interpolated values from Chapman and Morgan 1973, Pelton and Jenkins, 1970.
- Home range reflects interpolated values from Althoff and Storm, 1989, and Dixon et al., 1981.

c
- Diet assumption based on data from Whitaker and Ferraro, 1963.
- Food ingestion rate (FI) from formula: FI (g/day) = 0.0687 x $wt^{0.822}$ (kg) (Nagy, 1987).
- Body weight from Lomolino, 1984.
- Home range value from Buckner, 1966.

ED = Exposure Duration (percentage of year receptor is expected to be found at study area expressed as a factor, i.e., 100% = 1.0)
SFF = Site area (acres) times exposure duration (ED) divided by Home Range (HR); cannot exceed 1.0.

Table 9-40
Bioaccumulation Data[1]
Ecological Risk Assessment
Sites 8 and 24
NASP

Analyte	Log K_{ow}	Bioaccumulation or Biotransfer Factor (unitless)			
		Plant	Terrestrial Invertebrate	Mammal	Bird
Semivolatiles					
Anthracene	4.4 [c]	NA	0.005 [d]	6.30E-04 [a]	1 [ab]
Benzo(a)anthracene	5.74 [c]	0.019 [e]	0.0125 [d]	1.38E-02 [a]	1 [ab]
Benzo(a)pyrene	6.[illegible] [c]	0.012 [e]	0.0042 [d]	2.95E-02 [a]	1 [ab]
Benzo(b)fluoranthene	6.32 [c]	0.008 [e]	0.032 [d]	5.25E-02 [a]	1 [ab]
Benzo(g,h,i)perylene	7 [c]	0.003 [e]	0.[illegible] [d]	2.50E-01 [a]	1 [ab]
Benzo(k)fluoranthene	6.45 [c]	0.007 [e]	0.025 [d]	7.08E-02 [a]	1 [ab]
Bis(2-ethylhexyl)phthalate (BEHP)	5.3 [f]	0.033 [e]	0.022 [aj]	5.00E-03 [a]	1 [ab]
Butylbenzylphthalate	4.78 [ ]	0.049 [e]	0.022 [aj]	1.50E-03 [a]	1 [ab]
Chrysene	5.71 [ ]	0.019 [e]	0.031 [d]	1.29E-02 [a]	1 [ab]
Dibenzo(a,h)anthracene	6.42 [c]	0.008 [e]	0.022 [aj]	6.61E-02 [a]	1 [ab]
Di-n-butylphthalate	4.8 [h]	NA	0.022 [aj]	1.60E-03 [a]	1 [ab]
Fluoranthene	5.25 [c]	0.036 [e]	0.007 [d]	4.50E-03 [a]	1 [ab]
Indeno(1,2,3-cd)pyrene	7.7 [c]	0.0014 [e]	0.042 [d]	1.26E+00 [a]	1 [ab]
Phenanthrene	4.43 [c]	NA	0.012 [d]	6.70E-04 [a]	1 [ab]
Pyrene	5.09 [c]	0.044 [e]	0.015 [d]	3.10E-03 [a]	1 [ab]

Table 9-40
Bioaccumulation Data[1]
Ecological Risk Assessment
Sites 8 and 24
NASP

Analyte	Log K_{ow}	Bioaccumulation or Biotransfer Factor (unitless)			
		Plant	Terrestrial Invertebrate	Mammal	Bird
Pesticides/PCBs/Dioxins					
Aroclor-1248	6 [c]	0.013 [e]	1.2 [i]	1.00E+00 [ak]	1 [ab]
Aroclor-1254	6.02 [c]	0.013 [e]	1.2 [i]	1.00E+00 [ak]	1 [ab]
Aroclor-1260	6 [c]	0.013 [e]	1.2 [i]	1.00E+00 [ak]	1 [ab]
alpha-Chlordane	2.78 [f]	0.027 [ac]	0.8 [j]	7.10E-01 [ak]	0.71 [ai]
gamma-Chlordane	3.32 [f]	0.027 [ac]	0.8 [j]	7.10E-01 [ak]	0.71 [ai]
4,4'-DDE	5.69 [f]	0.02 [e]	0.98 [v]	2.91E+00 [ak]	2.91 [l]
4,4'-DDT	4.48 [f]	0.027 [ac]	0.98 [v]	2.91E+00 [ak]	2.91 [l]
Dieldrin	4.95 [f]	0.049 [e]	1.2 [m]	7.10E-01 [ak]	0.71 [n]
2,3,7,8 TCDD	6.80 [am]	0.005 [e]	5.0 [b]	8.40E-01 [an]	1 [ab]
Inorganics					
Arsenic	NA	0.3 [p]	0.77 [ae]	3.60E-01 [ag]	0.45 [ah]
Barium	NA	0.56 [ag]	0.77 [ae]	3.40E-01 [af]	0.45 [ah]
Cadmium	NA	33 [q]	1.4 [k]	2.06E+00 [r]	0.38 [s]
Copper	NA	0.78 [t]	0.16 [i]	6.00E-01 [q]	0.45 [ah]
Lead	NA	0 [q]	0.22 [u]	5.40E-01 [w]	0.45 [ah]
Manganese	NA	0.56 [ag]	0.77 [ae]	3.40E-01 [ag]	0.45 [ah]
Mercury	NA	0.56 [ag]	0.34 [x]	1.00E-02 [aa]	2.33 [aa]

Table 9-40
Bioaccumulation Data[1]
Ecological Risk Assessment
Sites 8 and 24
NASP

Analyte	Log K_{ow}	Bioaccumulation or Biotransfer Factor (unitless)			
		Plant	Terrestrial Invertebrate	Mammal	Bird
Selenium	NA	0.009 [y]	0.77 [ae]	3.40E-01 [af]	0.51 [z]
Zinc	NA	0.61 [t]	1.77 [i]	2.06E+00 [w]	0.45 [ah]

Notes:

[a] = Calculated using the following equation (Travis and Arms, 1988), unless otherwise noted: log BAF - log K_{ow}-7.6; result multiplied by average of ingestion rates for nonlactating and lactating test animals. There is an uncertainty involved in using this equation for SVOCs, because this study did not use any SVOCs in the regression analysis.
[b] = Reinecke and Nash (1984).
[c] = Geometric mean of values from USEPA (1986).
[d] = Marquerie et al. (1987) as cited in Beyer (1990). Mean of values. Converted to wet weight assuming 90% body weight as water.
[e] = Calculated using the following equation in Travis and Arms (1988) for analytes with log K_{ow}s > 5: log (Plant Uptake Factor) = 1.588-0.578 log K_{ow}.
[f] = From USEPA (1986).
[g] = Value from Verschueren (1983).
[h] = Value from Howard (1990).
[i] = BCF for earthworms from Diercxsens, et al. (1985).
[j] = Value from Gish (1970).
[k] = Mean of values reported for soil invertebrates in MacFadyen (1980) converted from dry weight to wet weight.
[l] = Whole body pheasant BAF for 4,4'-DDT presented in USEPA (1985), derived from Kenaga (1973).
[m] = Average of values reported for soil invertebrates in Edwards and Thompson (1973).
[n] = Jeffries and Davis (1968).
[o] = Value reported for endrin from Gish (1970).
[p] = Average of BAF values reported from Wang et al. (1984), Sheppard et al. (1985), and Merry et al. (1986).
[q] = Levine et al. (1989).
[r] = Mean of values reported for *Sorex araneus* in MacFadyen (1980).
[s] = Based on accumulation of cadmium in kidneys of European quail in Pimentel et al. (1984).
[t] = Median of values reported from Levine et al. (1989).
[u] = Geometric mean of BAF values (fresh st. worm/dry st. soil) for worms and woodlice (USEPA, 1985). Fresh weight tissue concentrations calculated assuming 90% body water content.
[v] = Beyer and Gish (1980) reported dry weight to wet weight ratio.
[w] = Mean of values for *Microtus agrestis* and *Apodemus sylvaticus* in MacFadyen (1980).
[x] = Value from USEPA (1985) sludge document.
[y] = Based on reported ratio of selenium in plant tissue and iron fly ash amended soil (Stoewsand et al., 1978).

[z]	=	Based on average of reported ratio of selenium in diet to liver, kidney, and breast tissue of chickens (Ort and Lafshaw, 1977).
[aa]	=	USEPA, 1985.
[ab]	=	Assumption.
[ac]	=	Assumed value based on average of BAFs calculated for other pesticides and PCBs.
[ad]	=	Assumed value base on average of BAFs for Aroclor-1260, alpha-chlordane, 4,4'-DDE, dieldrin, and endrin ketone.
[ae]	=	Assumed value based on average of BAFs reported for other metals.
[af]	=	Assumed value based on average of reported BAFs for Cd, Cu, Pb, and Hg.
[ag]	=	Assumed value based on average of reported BAFs for As, Cu, Hg, and Zn.
[ah]	=	Assumed value based on average of reported BAF values for Cd and Se.
[ai]	=	Assumed value based on reported BAF for dieldrin.
[aj]	=	Assumed value based on average of BAFs for semivolatiles.
[ak]	=	Value for mammal unavailable. Bioaccumulation assumed to be the same as values reported for birds.
[am]	=	Polder et al. (1995).
[an]	=	Rose et al. (1976).
NA	=	Not available
[1]	=	Table adapted from BRA, NAS Cecil Field, Jacksonville, Florida.

Table 9-41
Comparison of Dietary Exposures of Potential Wildlife Species at Sites 8 and 24, to Effects Levels from Sample et al., 1996

		Short-tailed Shrew	Eastern Cottontail Rabbit	American Robin
Benzo(a)pyrene[a]	PDE	0.0015	0.0023	0.014
[0.83]	NOAEL	1.19	0.40	NA
	LOAEL	11.9	3.98	NA
Lead[b]	PDE	3.7	**0.19**	**3.58**
[97.7]	NOAEL	17.58	*5.88*	**1.13**
	LOAEL	175.83	**58.79**	11.30
DDD[c]	PDE	0.13	0.0041	0.13
[1.1]	NOAEL	1.76	0.59	**0.003**
	LOAEL	8.79	2.94	**0.028**
Aroclor 1260[d]	PDE	0.004	0.0008	0.04
[0.28]	NOAEL	**0.067**	0.022	0.180
	LOAEL	0.67	0.22	1.8

Notes:
a = Benzo(a)pyrene is typically considered the most toxic polycyclic aromatic hydrocarbon; effects information is more abundant than for other SVOCs.
b = NOAELS and LOAELS from data on lead acetate.
c = DDD concentration used for exposure but LOAELs and NOAELs represent DDT and metabolite information.
d = Effects levels for Aroclor 1260 were not available, LOAELs and NOAELs are for Aroclor-1254.
PDE = Potential Dietary Exposure (mg/kg/bw/day); See Table 9-2.1.
[ ] = Represent maximum concentration (mg/kg).
NA = Data Not Available
Bold numbers indicate an exceedance of that effects level by the estimated dietary exposure concentration (PDE).

The PDE fur robins exceeded both the estimated NOAEL and/or LOAEL benchmarks, based on maximum lead and DDD concentrations. The most pronounced exceedance was for DDD, where the PDE was approximately 43 times higher than the NOAEL. DDT and its metabolites

Lead has been shown to cause sublethal effects in birds (robin). The limited spatial extent of elevated lead concentrations at the site, and the probable depauperate infaunal community within the grass fields, should mitigate the potential effects predicted by the model.

9.2.5 Uncertainty

General inherent uncertainties are associated with risk assessments at the screening level. Table 9-42 provides information on the types of uncertainties which could impact final risk calculations. In order to provide a quantitative perspective to these, a plus (+) or minus (-) is assuciated with each uncertainty. A plus suggests that the uncertainty has most likely resulted in an overestimation of risk, A minus suggests that the uncertainty has most likely resulted in an underestimation of risk. When both signs are given, this indicates that the uncertainty has the potential to either under or over estimate the risk.

9.2.6 Risk Summary

Based on a model prediction of receptor species dietary exposure to detected soil parameters, it appears that contaminant uptake may present a risk. The maximum lead surface soil concentration exceeded the literature-based NOAEL for dietary exposure to the robin. However, the NOAEL is a level that typically provides a low degree of confidence; therefore, the fact that the concentration does not exceed the established LOAEL value is more significant. DDD concentration resulted in a robin PDE value which exceeded both the NOAEL and LOAEL.

Risk tu potential receptors from dermal exposure of contaminants is expected to be negligible. Food chain biomagnification of lead is also considered unlikely and it has been reported that forms of lead other than "shot" are unlikely to cause clinical signs of poisoning in birds (Eisler, 1988). Biouptake of other inorganic constituents at the site by small mammals is not

Table 9-42
Uncertainties Associated with the Ecological Risk Assessment at NASP Sites 8 and 24

Uncertainty h u e	Affect on ERA
Checmical degradation for selected ECPCs	+
Specific effects to biota within study area	+ or -
Effects data not available on some ECPCs	-
Synergistic or antagonistic effect of ECPCs	+ or -
Assumption for effects from similar compounds	+ or -
Use of related species for risk to selected receptor species	-
Dermal or inhalation pathways not evaluated	-
Maximum concentions used in exposure model	+
Assumed BAFs due to lack of information	+ or -
Actual occurrence of wildlife species within contaminated area	+
Use of literature generated ingestion rates	+ or -
Exposure assumed to be 100%	+
Actual bioavailability not measured (assumed to be 100%)	+
Use of NOAEL as basis of risk determination for birds	+
The most bioavailable form of a chemical was used in the screening assessment	+

expected to represent a significant pathway due to the limited infaunal community associated with the grass field, in addition to the lack of floral diversity.

It is important to note that the models used for this screening assessment are very conservative and represent a worst-case exposure scenario (i.e., exposure to maximum detected concentrations is assumed), Also, the model does not take into account whether food sources actually occur at the site. It is based solely on contaminant concentrations, and an assumption that animals will occur in the are and take all of their food from the location of highest detected concentration. Actual exposure potentials are generally much lower than the model prediction.

10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 Conclusions

Nature and Extent of Contamination —Site 8

Inorganic and organic parameters exceeding PRGs were detected in Site 8 soil samples. Past waste disposal and later construction activities have disturbed the upper several feet of soil across the site, as indicated by the debris (charred metal, glass, and plastic fragments) occasionally encountered in the unsaturated subsurface soil at Sites 8 and 24. Barium, cadmium, and lead subsurface exceedances at boring 08S01 are suspected to be associated with past waste disposal. However, aluminum and iron surface exceedances are attributable to the red clayey road base fill beneath the asphalt pavement. Most arsenic surface soil PRG exceedances were below the RC, indicating they represent background conditions at NAS Pensacola. The few slight arsenic RC exceedances are also attributable to background conditions, and/or the red clayey road base beneath the asphalt.

All organic soil exceedances were detected in samples from the site's northern portion. The single SVOC exceedance, and other nonexceedance SVOC detections in surface soil, are suspected to be associated with fragments of the overlying asphalt in the surficial interval. Pesticide soil exceedances (dieldrin and aldrin) detected in samples collected around the building are attributable to either past waste disposal onsite, or the previous handling of pesticide rinsates at Building 3561. However, as noted in the site description, land surface at all soil exceedance locations is paved with asphalt.

Only cadmium, manganese, and an isolated lead concentration exceeded both PRGs and RCs in site groundwater. All exceedances occurred in samples collected from the site's north and northeast portion, extending toward the cemetery. This distribution is consistent with past disposal of metallic-alloy aircraft refuse or other metallic material around Building 3561's current location, and the site's north-northeasterly shallow groundwater flow. The extent of this shallow

groundwater impact does extend to Site 24, **but does not extend beyond the OU13 downgradient boundary.** No organic PRG exceedances were detected in Site 8 groundwater samples.

Nature and Extent of Contamination —Site 24

Inorganic soil exceedances (aluminum, arsenic, iron, and manganese) were limited to surface soil at Site 24, Aluminum, iron, and manganese commonly occur as "essential nutrients" in fertilizers; arsenic-based compounds are common ingredients of herbicides and pesticides. Because the site is mostly a maintained grass field, exceedances in maintained areas are attributable to routine herbicide, fertilizer, and pesticide application. The slight inorganic PRG/RC exceedances in the site's southern portion are attibutable to background conditions at NAS Pensacola, and/or the red clayey road base fill beneath the asphalt and crushed shell pavement.

Relatively low concentration exceedances of the pesticides dieldrin and heptachlor epoxide in surface and subsurface soil samples at Site 24 are consistent with past routine use of these materials. PCBs and SVOCs detected in a limited number of surface soil sample locations at the site's western margin are suspected to be the result of past waste oil application for dust control along previously unpaved John Tower Road.

PRG and RC exceedances of iron and manganese detected in shallow groundwater at Site 24 can be attributed to fertilizer application, which commonly contains water-soluble forms of these inorganics as essential nutrients. Metal fragments were found in the subsurface soil north of Building 3678, indicating that site 8 fill activities extended, or have been reworked, onto Site 24. Based on this evidence, sporadic antimony, cadmium, nickel, and thallium exceedances in shallow groundwater can be attributed to metal-alloy debris disposal at Site 8 and/or 24. Relatively low chlorinated solvent VOC concentrations slightly exceeding PRGs in shallow Site 24 groundwater are also suspected to be the result of past disposal activities at Site 8 and/or 24.

The single dieldrin groundwater exceedance near the dieldrin soil exceedance locations indicates that soil concentrations have leached to groundwater in a limited area. However, the extent of all organic PRG exceedances is limited to the Site 24 area.

Fate and Transport

Transport of parameters detected at Sites 8 and 24 is generally downward from surface soil through subsurface soil to groundwater. Shallow groundwater moves generally north-northeastward across the combined Sites 8 and 24 area. The primary receiving body of site impact is the surficial zone of the Sand-and-Gravel Aquifer. The surficial zone is a porous and permeable unconfined aquifer with relatively small amounts of organic carbon, all of which make it a viable migration pathway for dissolved and entrained contaminants, particularly organic compounds. However, it is not used as a water-supply source in the Pensacola area due to its high iron and aluminum content and its susceptibility to local contamination. The extent of inorganic and organic parameter exceedances in shallow groundwater is generally limited to the combined site area, indicating substantial contaminant migration **to offsite receptors** is not occurring.

A potential receptor of surficial aquifer zone contamination from Site 8 and 24 is the main producing zone, which underlies the surficial zone and serves as a potable water source for wells north and upgradient in Escambia County. Water from the main producing zone is not used as a potable supply at NAS Pensacola because of its high iron and aluminum content, but is used as a supplementary water source for fire control at the base. The main producing zone is separated from the surficial zone by a low-permeability clay layer. A low-permeability sandy clay was documented at a depth of 65 feet bls at nearby well location 01GI66 (approximately 250 feet west-northwest of Site 24), corresponding to the low permeability zone which separates the surficial from the main producing zone. Given that PRG exceedances in Sites 8 and 24 shallow groundwater are relatively low in magnitude, groundwater from the low permeability and main

producing zones is not expected to be impacted by site activities and was not sampled for this investigation.

Other potential receptors of surficial zone contaminants are downgradient surface waters Bayou Grande and associated tidal ponds. However, given the significant distance of the sites to the these features, coupled with the limited magnitude and extent of detected groundwater constituents, impact to these receptors is highly unlikely.

Human Health Risk Assessment

Several inorganic and organic parameters have been identified as contaminants of concern (COCs) in the human health component of the BRA with regard tu specific land use scenarios. It should be noted that not all exposure scenarios used in the human health BRA are realistic given the site's current and projected use. However, this analysis has been performed for risk management decision-making purposes. Given the detected parameter concentrations in site media, the state of Florida's goal of 10^{-6} *excess* risk threshold, and the USEPA's 10^{-4} to 10^{6} acceptable risk-range, estimated risk associated with detected parameters in site soil and groundwater is as follows:

Site 8

- Arsenic, dieldrin, and BEQ contribute to the risk estimated for the one or more of the soil exposure pathways evaluated for Site 8. The total site risk associated with soil pathways was computed as 3E-5 with dieldrin contributing the majority; arsenic and BEQs were relatively minor contributors. For site workers, the combined soil pathway incremental lifetime cancer risk (ILCR) was computed to be 4E-6 with dieldrin as the sole COC. The maximum arsenic concentration (2.2 ppm) was only marginally above the 1.56 pprn RC, and is well within the naturally-occurring range expected in Florida soil. Dieldrin and BEQs surface soil concentrations were each detected in only single samples, suggesting the extent of related impacts is quite limited. Furthermore, each were reported in samples

collected beneath the asphalt parking lot. As a result, there is little potential for current worker exposure if existing site features are maintained.

- Cadmium, barium, iron, manganese, and zinc each contribute to the risk estimated for the groundwater ingestion exposure pathway at Site 8. No carcinogenic COCs were identified in Site 8 groundwater. The hazard indices for future child and adult residents were projected to be 4.3 and 1.8, respectively for the ingestion pathway. Cadmium contributed approximately 60 percent of the hazard computed for each scenario. Barium, iron, manganese:, and zinc were secondary contributors to groundwater pathway-related hazard indices. For site workers, a hazard index (HI) of 0.7 was computed indicating that current groundwater conditions are protective.

Site 24

- BEQs, arsenic, chlordane, dieldrin, and heptachlor epoxide each contribute to the risk estimated for the one or more of the soil exposure pathways evaluated for Site 24. Three exposure groups were considered in the evaluation for Site 24: future site workers, current adult maintenance workers and hypothetical future residents (child and adult). Based on RI results, a small, approximately 0.5 acre subarea along John H. Tower Road on the western boundary of the site represented roughly by soil samples from borings 024S03 and 024S10 through 024S12 was the primary area of impact for most soil contaminants of potential concern (COPCs). As a result, exposure was evaluated assuming focused residential and occupational use of this limited area. For the maintenance worker scenario, exposure was assumed to be uniform across the entire site. For the most conservative resident scenario, no non-carcinogenic COCs were identified. An ILCR of 3E-5 was projected for the combined soil pathway; the principle contributor of which was BEQs. Arsenic, chlordane, dieldrin, and heptachlor epoxide were secondary contributors. Arsenic and BEQs 'were the only carcinogenic COCs identified relative to future site workers with

workers with a projected combined ILCR of 6E-6. No soil pathway-related COCs were identified under the current maintenance worker based scenario. It should be considered that the maximum arsenic concentration (3.1 ppm) is within the naturally-occurring range fur Florida soil (Dragun and Chiasson, 1991) although it is approximately two times the NASP RC.

- Several inorganics and organics contribute to the risk estimated for the groundwater ingestion exposure pathway at Site 24. For the future site resident scenario, the following non-carcinogenic COCs were identified based on combined (ingestion and inhalation pathway) hazard indices of 14 and 6, respectively, for child and adult receptors: arsenic, cadmium, iron, antimony, manganese, thallium, and dieldrin. Iron, antimony and thallium were the primary contributors. The following chemicals were identified as COCs based on their contribution to the combined ILCR of 3E-4: arsenic, zinc, 1,4-dichlorobenzene, 1,1-dichloroethene, trichloroethene, vinyl chloride, dieldrin, heptachlor epoxide, and delta-BHC. Arsenic and vinyl chloride were the primary contributors. For future site workers, a combined groundwater pathway HI of 2 was computed and iron, antimony, and thallium were the primary contributors. Arsenic, vinyl chloride and dieldrin were the only carcinogenic *COCs* identified for this scenario with a combined ILCR of 9E-5. Maximum concentrations of the following Site 24 groundwater COCs were below their respective FGGCs: arsenic, heptachlor epoxide, delta-BHC, benzene and tetrachloroethene. Groundwater impacts were generally isolated tu monitoring wells 24GS01 through 24GS04, although limited detections were also noted in 24GS06, 24GS08 and 24GR09. Because shallow groundwater is not currently used at NAS Pensacola, the exposure pathways evaluated are not completed. As a result, no risk or hazard is posed by groundwater impacts assuming conditions do nut change.

The extent of impacted media driving the excess risk at Sites 8 and 24 is limited. The magnitude of this contamination is also low relative tu most ARARs. This human heath risk analysis should be qualified based on factors that affect the exposure potential of humans to impacted media at these sites. The surface soil exposure pathways at Site 8 are effectively non-existent due to widespread asphalt pavement. Additionally, the shallow groundwater of the surficial zone at both sites is not currently, nor is it expected in the future to be a potable groundwater source due to its poor ambient quality. These two factors greatly reduce the actual exposure potential to Site 8 surface soil, and Sites 8 and 24 groundwater.

Ecological Risk Assessment

Based on a model prediction of receptor species dietary exposure to detected soil parameters, it appears that contaminant uptake may present a risk, Maximum DDD and lead surface soil concentrations exceeded the literature based NOAELs for dietary exposure to the robin. However, the NOAEL is a level that typically provides a low degree of confidence; therefore, the fact that these concentrations do not exceed the established LOAEL values is more significant.

Risk to potential receptors from dermal exposure of contaminants is expected to be negligible. Food chain biomagnification of lead is also considered unlikely and it has been reported that forms of lead other than "shot" are unlikely to cause clinical signs of poisoning in birds (Eisler, 1988). Bio-uptake of other inorganic constituents at the site by small mammals is not expected to represent a significant pathway due to the limited infaunal community associated with the grass field, in addition to the lack of floral diversity.

It is important to note that the models used for this ecological risk screening assessment are very conservative and represent a worst-case exposure scenario (i.e., exposure to maximum detected concentrations is assumed). Also, the model does not take into account whether food sources actually occur at the site. It is based solely on contaminant concentrations, and an assumption that

animals will occur in the area and take all of their food from the location of highest detected concentration. Actual exposure potentials are generally much lower than the model prediction.

10.2 Recommendation

Site contamination has been evaluated and used to calculate the risk estimates for Sites 8 and 24. The Navy recommends a Focused Feasibility Study be performed to select appropriate risk management alternatives and actions for portions of Site 24 contributing to the surface soil exposure risk. **Additonally, the Navy recommends no further action for Site 8 soil, given the limited exposure potential due to pavement. No further action is recommended for OU13 groundwater, contingent on limiting exposure through institutional control.**

animals will occur in the area and take all of their food from the location of highest detected concentration. Actual exposure potentials are generally much lower than the model prediction.

10.2 Recommendation

Site contamination has been evaluated and used to calculate the risk estimates for Sites 8 and 24. The Navy recommends a Focused Feasibility Study be performed to select appropriate risk management alternatives and actions for portions of Site 24 contributing to the surface soil exposure risk. Additionally, the Navy recommends no further action for Site 8 soil, and Sites 8 and 24 groundwater, given the limited exposure potential to these media.

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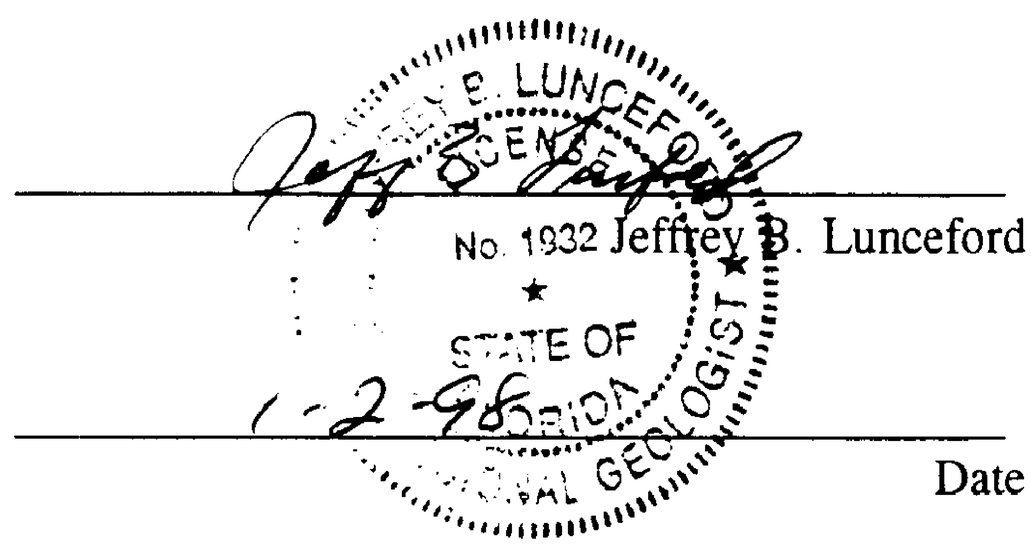
12.0 FLORIDA PROFESSIONAL GEOLOGIST SEAL

I have read and approve of this Remedial Investigation Report for NAS Pensacola Sites 8 and 24, Pensacola, Florida, and seal it in accordance with Chapter 492 of the Florida Statutes. In sealing this document, I certify the geological information contained in it is true to the best of my knowledge and the geological methods and procedures included herein are consistent with currently accepted geological practices.

Name:	Jeffrey B. Lunceford
License Number:	1932
State:	Florida
Expiration Date:	July 31, 1998

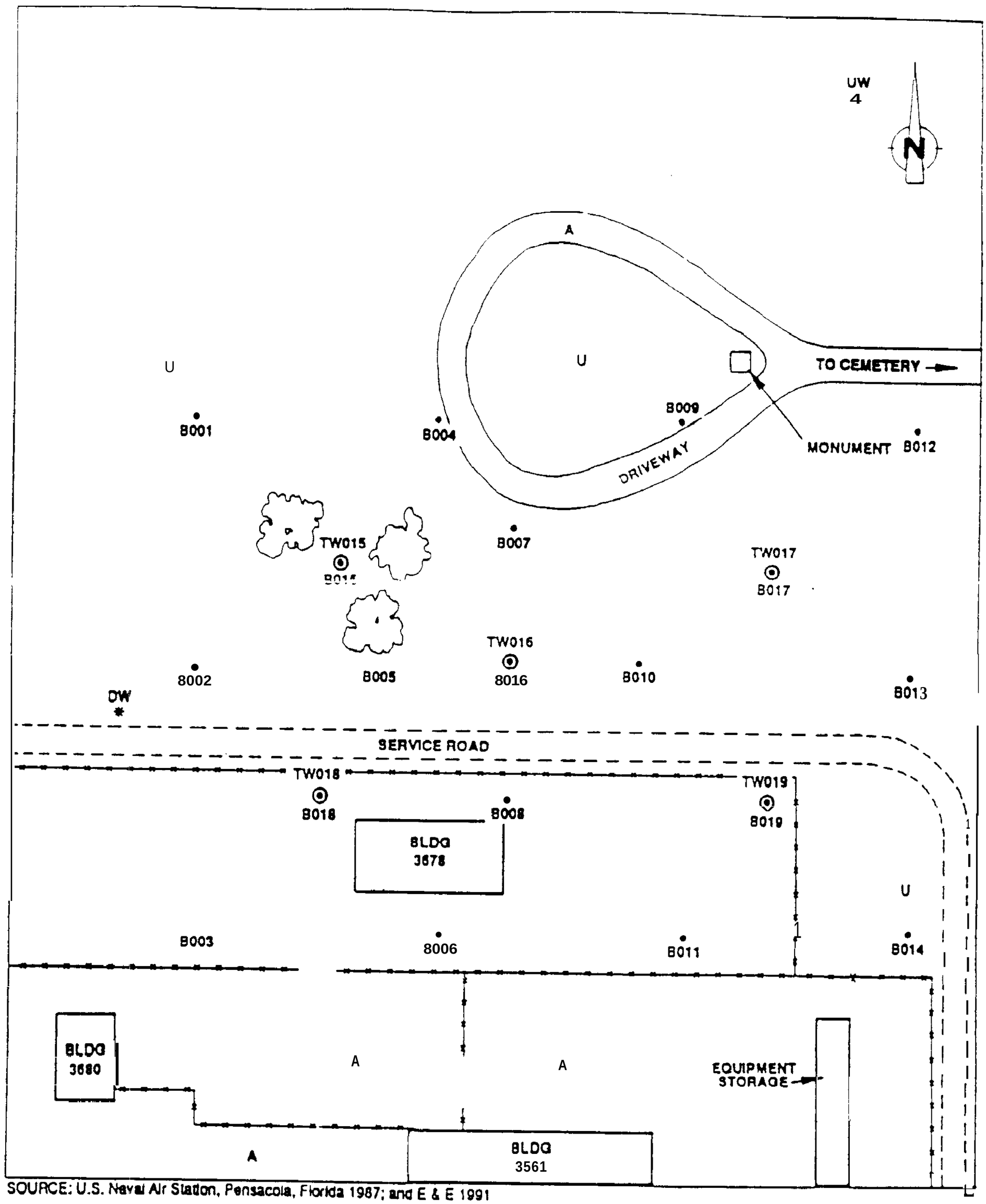


No. 1932 Jeffrey B. Lunceford

Date

Appendix A

Previous Investigation Analytical Results Summaries



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1987; and E & E 1991

SCALE

0 100 200 FEET

KEY:

	Tree	DW/UW	Downwind/Upwind		Temporary Monitoring Well
BLDG 3678	Building		Asphalt Paved Area	•	Soil Boring
	Fence	U	Unpaved Area	TW015	Monitoring Well Number
*	Particulate Air Sampling Location		Unpaved Road	B015	Soil Boring Number

Figure 2-2 PARTICULATE AIR SAMPLING, SOIL BORING, AND TEMPORARY MONITORING WELL LOCATIONS — NAS PENSACOLA SITE 24

Table 3-2

SUMMARY ANALYTICAL SCREENING RESULTS FOR SOIL SAMPLES
NAS PENSACOLA SITE 24
(All results in µg/kg, unless noted)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)							
		P24S001A (B001A)	P24S001B (B001B)	P24S001C (B001C)	P24S002A (B002A)	P24S002B (B002B)	P24S002C (B002C)	P24S003A (B003A)	P24S003B (B003B)
Chromium (mg/kg)	1	1.1	2.0	4.8	1.2	1.5	--	5.1	1.6
Zinc (mg/kg)	2	1.6	--	--	--	--	--	37	6.6
Lead (mg/kg)	4	39	--	--	--	--	--	15	7.3
Cadmium (mg/kg)	0.5	--	--	--	--	--	--	.1	0.68
Nickel (mg/kg)	4	--	--	--	--	--	--	--	--
Copper (mg/kg)	2.5	13	3.4	--	--	--	--	22	2.7
TRPHs (mg/kg)	5	--	--	--	--	7.0	--	--	--
Toluene	1,000	--	--	--	1,300	1,300	1,200	1,400	1,400
Methylene Chloride	1,000	--	--	--	--	--	--	--	--
Total PAHs as Benzo-a-pyrene	1,000	--	--	--	--	--	--	--	--
Fluometuron	1,000]	--	--	--	--	--	--	--	--

14[NASP]UH6047:T0234/223/5

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[Bold items enclosed in brackets denote

Table 3-2 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)							
		P24S003C (B003C)	P24S004A (B004A)	P24S004B (B004B)	P24S004C (B004C)	P24S005A (B005A)	P24S005AD[a] (B005A)	P24S005B (B005B)	P24S005C (B005C)
Chromium (mg/kg)	1	1.7	2.2	3.7	1.6	1.5	1.4	1.6	1.8
Zinc (mg/kg)	2	--	5.1	5.8	37	--	--	--	--
Lead (mg/kg)	4	--	14	44	5.3	--	--	--	--
Cadmium (mg/kg)	0.5	--	--	--	0.86	--	--	--	--
Nickel (mg/kg)	4	--	--	--	--	--	--	--	--
Copper (mg/kg)	2.5	--	3.2	11	--	--	--	--	--
RPHs (mg/kg)	5	--	--	--	--	--	12	--	--
Toluene	1,000	1,300	--	--	--	1,300	1,300	1,300	1,200
Methylene Chloride	1,000	--	--	--	--	--	--	--	--
Total BTHs as B	1,000	--	--	--	(L)	--	--	--	--
Monoeturon	1,000]	--	--	--	--	--	--	1,200	--

14[NASP]UH6047:T0234/223/5

Key at end of table.

[Bold items enclosed ackets denote changes to the last of document]

Table 3-2 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)							
		P24S006A (B006A)	P24S006B (B006B)	P24S006C (B006C)	P24S006D (B006D)	P24S007A (B007A)	P24S007B (B007B)	P24S007C (B007C)	P24S008A (B008A)
Chromium (mg/kg)	1	1.9	33	5.8	3.0	3.4	12	6.5	3.8
Zinc (mg/kg)	2	8.2	55	56	6.1	4.1	43	80	4.3
Lead (mg/kg)	4	7.5	57	26	--	--	76	18	8.6
Cadmium (mg/kg)	0.5	--	1.9	3.2	0.60	0.65	1.2	0.71	--
Nickel (mg/kg)	4	--	14	--	—	--	--	--	--
Copper (mg/kg)	2.5	--	10	5.2	--	--	24	23	4.8
TRPHs (mg/kg)	5	43	36	14	--	--	--	41	--
Toluene	1,000	1,300	1,300	1,200	1,200	-	--	--	1,200
Methylen Chloride	1,000	--	--	--	--	-	--	--	2,500
Total PAHs as Benzo-a-pyrene	1,000	1,300	--	--	--	--	(L)	(L)	(L)
Fluometuron	1 000]	--	--	--	--	--	--	--	--

14[NASP]UH6047:T0234/223/5

Key at end of table.

[Bold items enclosed in brackets denote changes to the last version of document]

Table 3-2 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)							
		P24S008B (B008B)	P24S008C (B008C)	P24S009A (B009A)	P24S009B (B009B)	P24S009C (B009C)	P24S010A (B010A)	P24S010AD[b] (B010A)	P24S010B (B010B)
Chromium (mg/kg)	1	1.4	4.8	3.4	2.9	5.3	1.2	1.2	--
Zinc (mg/kg)	2	3.4	6.9	9.3	10	6.4	--	--	--
Lead (mg/kg)	4	--	--	240	770	120	--	--	--
Cadmium (mg/kg)	0.5	--	--	--	--	--	--	--	--
Nickel (mg/kg)	4	--	--	--	--	--	--	--	--
Copper (mg/kg)	2.5	--	--	29	140	21	--	--	--
TRPHs (mg/kg)	5	11	--	--	--	--	9.5	--	8.5
Toluene	1,000	--	1,200	--	--	--	1,100	1,100	1,200
Methylene Chloride	1,000	2,600	2,100	--	--	--	2,900	2,900	3,000
Total PAHs as Benzo-a-pyrene	1,000	--	--	--	--	--	--	--	--
Fluometuron	1,000]	--	--	--	--	--	--	--	--

14[NASP]UH6047:T0234/223/5

Key at end of table.

[Bold items enclose changes to the last brackets denote of document]

Table 3-2 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)								
		P24S010C (B010C)	P24S011A (B011A)	P24S011B (B011B)	P24S011C (B011C)	P24S012A (B012A)	P24S012B (B012B)	P24S012C (B012C)	P24S013A (B013A)	P24S013B (B013B)
Chromium (mg/kg)	1	1.1	2.9	--	3.0	4.8	6.1	2.6	1.2	2.8
Zinc (mg/kg)	2	5.2	17	2.6	34	17	3.4	--	--	2.7
Lead (mg/kg)	4	--	360	--	7.6	450	13	13	--	5.6
Cadmium (mg/kg)	0.5	--	--	--	0.73	--	1.0	--	--	--
Nickel (mg/kg)	4		--	--	--	--	--	--	--	--
Copper (mg/kg)	2.5						74	100	160	59
TRPHs (mg/kg)	5	9.0	--							
Toluene	,000	1,000	--	1,100	1,200	--	--	--	--	--
Methylene Chloride	,000	2,800	2,300	1,600(B)	2,400	--	--	--	--	--
Total PAHs as Benzo-a-pyrene	.00ɯ	--	(L)	--	--	--	--	--	--	--
Fluometuron	,000]	--	--	--	--	--	--	--	--	20,000

14[NASP]UH6047:T0234/223/5

Key at end of table.

[Bold items enclosed in brackets denote changes to the last version of document]

Table 3-2 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)								
		P24S013C (B013C)	P24S014A (B014A)	P24S014B (B014B)	P24S014C (B014C)	P24S015A (B015A)	P24S015B (B015B)	P24S016A (B016A)	P24S016B (B016B)	P24S016C (B016C)
Chromium (mg/kg)	1	4.6	1.6	2.0	--	1.8	15	1.1	1.4	2.0
Zinc (mg/kg)	2	3.1	9.1	10	3.6	12	360	--	--	--
Lead (mg/kg)	4	--	150	--	--	27	140	--	--	--
Cadmium (mg/kg)	0.5	--	--	0.65	--	--	11	--	--	--
Nickel (mg/kg)	4	--	--	--	--	--	9.4	--	--	--
Copper (mg/kg)	2.5	--	--	--	--	--	60	--	--	--
TRPHs (mg/kg)	5	51	56	56	52	--	92	--	--	--
Toluene	1,000	--	--	1,200	1,400	1,100	--	1,100	--	1,000
Methylene Chloride	1,000	--	--	--	--	2,900(B)	3,200(B)	2,400(B)	2,100(B)	2,900(B)
Total PAHs as Benzo-a-pyrene	1,000	--	(L)	--	--	--	1,600	--	--	--
Fluometuron	1,000]	--	--	--	--	--	--	--	--	--

14[NASP]UH6047:T0234/223/5

Key at end of table.

[Bold items enclosed ackets denote
changes to the last of document]

Table 3-2 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)								
		P24S017A (B017A)	P24S017B (B017B)	P24S018A (B018A)	P24S018B (B018B)	P24S018C (B018C)	P24S018D (B018D)	P24S019A (B019A)	P24S019B (B019B)	P24S019C (B019C)
Chromium (mg/kg)	1	2.3	7.9	4.6	4.5	[illegible].0	3.6	3.9	1.1	1.5
Zinc (mg/kg)	2	9.3	310	61	87	24	10	16	6.1	8.9
Lead (mg/kg)	4	13	2,900	89	41	12	--	400	--	--
Cadmium (mg/kg)	0.5	--	1.8	1.5	3.6	0.84	0.67	--	--	0.63
Nickel (mg/kg)	4	--	5.6	--	--	--	--	--	--	--
Copper (mg/kg)	2.5	--	180	48	12	4.6	--	3.7	--	--
TRPHs (mg/kg)	5	--	54	42	12	--	--	21	--	--
Toluene	1,000	1,100	1,000	--	--	1,[illegible]00	1,400	1,200	1,400	1,300
Methylene Chloride	1,000	4,100(B)	3,500(B)	1,400(B)	1,200(B)	1,[illegible]00(B)	--	--	--	--
Total PAHs as Benzo-a-pyrene	1,000	(L)	(L)	(L)	(L)	--	--	(L)	--	--
Fluometuron	1,000]	--	--	--	--	--	--	--	--	--

14[NASP]UH6047:T0234/223/5

Note: These results were reported on a wet-weight basis.

Key:

[a]Duplicate of sample P24S005A.
[b]Duplicate of sample P24S010A.

Dash (--) indicates compound not detected.

Qualifiers:
(B) = Compound also present in method blank.
(L) = Present below stated detection limit.

Source: Ecology and Environment, Inc., 1991.

[Bold items enclosed in brackets denote changes to the last version of document]

Table 3-4

SUMMARY ANALYTICAL SCREENING RESULTS FOR GROUNDWATER SAMPLES
(FROM TEMPORARY MONITORING WELLS)
NAS PENSACOLA SITE 24
(All results in µg/L, unless noted)

Parameter	[Detection Limit	Slaple Number (Location) P24GW015 (TW015)	P24GW015D[a] (TW015)	P24GW016 (TW016)	P24GW017 (TW017)	P24GW018 (TW018)	P24GW019 (TW019)	[FPDWS/ FSDWS
Chromium	10	790	*820*	140	36Q	430	280	50
Zinc	*20*	35,000	52,000	73	*50,000*	880	8,000	5,000
Lead	40	710	2,000	130	*2,600*	770	190	50
Cadmium	5	120	260	--	110	36	310	10
Nickel	40	780	1,100	--	000	55	180	
Copper	2s	*320*	630	77	860	360	140	1,000
TRPHs (mg/L)	1	--	1.4	1.2	--	--	--	
Tetrachloroethene	10	--	--	--	--	--	17	3]
Total PAHs as Benzo-a-pyrene	100	(L)	(L)	--	--	--	--	
Methomyl	100]	--	--	(L)	(L)	(L)	(L)	

14[NASP]UH6047:T0234/259/5

Key:

[a]Duplicate of sample P24GW015.

[FPDWS = Florida Primary Drinking Water Standard.
FSDWS = Florida Secondary Drinking Water Standard.]
Dash (--) indicates compound not detected.

Qualifier:

[Bold items enclosed in brackets denote changes to the last version of document]

Appendix B

Soil Boring Logs and Well Construction Diagrams

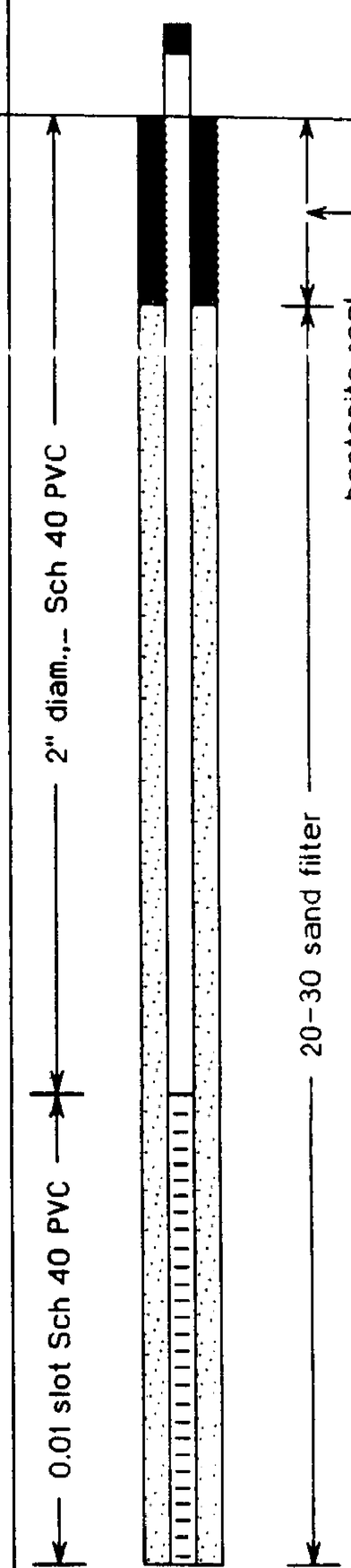
EnSafe/Allen & Hoshall

Monitoring Well 08S01/08GR01

Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Surface Elevation: *feet msl*
Started at *12:00 on 3-26-96*	TOC Elevation: *28.03 feet msl*
Completed at *13:20 on 3-26-96*	Depth to Groundwater: *10.36 feet* Measured: *5-21-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.67 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15.40 feet*
Geologist: *C. Smith*	Well Screen: *10.40* to *15.40* feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			SS-1		0		CL	Surface Conditions: **Red** clayey **sand,**	
5			SS-2		0			Light **brown** to **brown** fine to medium **grained** quartz **sand,** little clay, **some silt.**	
10			SS-3		0		SP	Light brown fine to medium grained quartz sand.	
15					0			Light **brown fine** to **medium grained quartz sand, becoming buff white sand. Wet at 11' bls.**	
20								Notes: SS = split spoon Soil boring, **with temporary** well **installed,** Split spoon **soil samples** collected (3-26-96): 008S000101 008S000106 008S000109 Groundwater sample collected (5-07-96): 008GGR0101	

WELL DIAGRAM



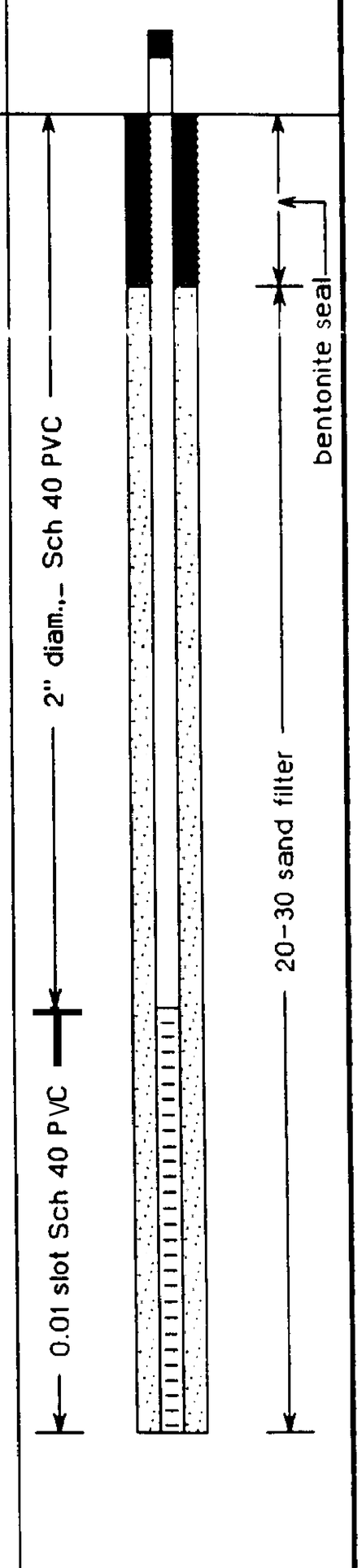
EnSafe/Allen & Hoshall

Monitoring Well 08GR02

Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Surface Elevation: *feet msl*
Started at *09:00 on 3-21-96*	TOC Elevation: *28.53 feet msl*
Completed at *10:00 on 3-21-96*	Depth to Groundwater: *11.04 feet* Measured: 5-2-96
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.49 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15.45 feet*
Geologist: *C. Smith*	Well Screen: *10.45 to 15.45 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		CL	Surface Conditions: **Asphalt** pavement, **Reddish brown** clayey **sand,**	
5							SP	Brown fine to medium grained quartz **sand,** little clay. **Some metal and glass debris.**	
10					0			Light **brown** fine **to medium grained** quartz **sand.** Wet at 11' bls.	
15									
20								Notes: Temporary well. Groundwater sample collected (5-07-96): 008GGR0101	

WELL DIAGRAM



EnSafe/Allen & Hoshall

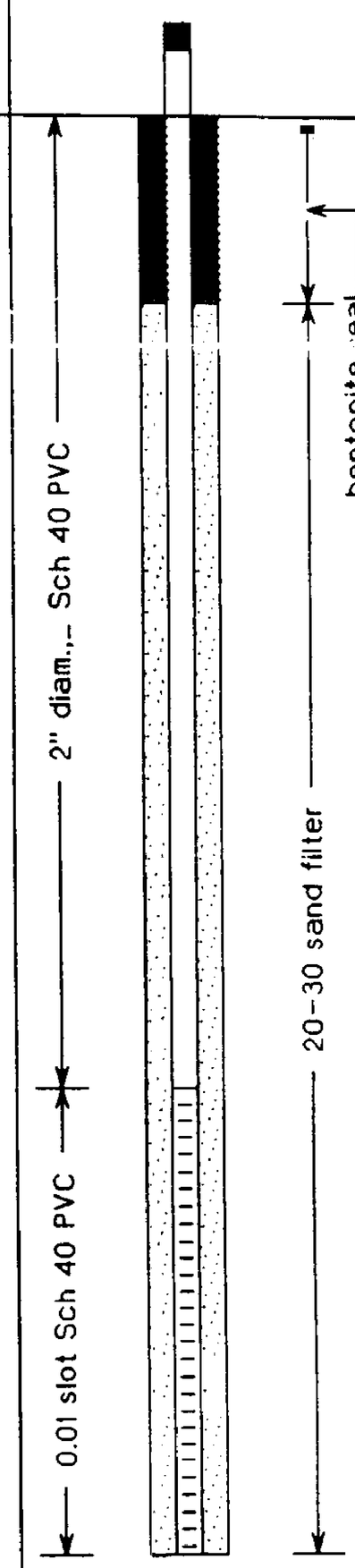
Monitoring Well 08S03/08GR03

Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Surface Elevation: *feet msl*
Started at *13:50 on 3-26-96*	TOC Elevation: *28.20 feet msl*
Completed at *15:20 on 3-26-96*	Depth to Groundwater: *10.66 feet* Measured: *5-21-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.54* feet *msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15.37 feet*
Geologist: *C. Smith*	Well Screen: *10.37 to* E37 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			SS-1		0		SC	Surface Conditions; Asphalt pavement, covering **red** clayey **sand**	
5								Light brown to brown fine to medium grained quartz **sand,** little clay.	
			SS-2		0		SP	Buff white fine to **medium grained** quartz **sand.**	
10			SS-3		0			**Buff** white fine to medium grained quartz **sand** Wet at 11' bls.	
15					0				
20									

Notes;
Soil boring, with temporary well installed.
Split spoon soil samples collected (3-26-96):
008S000301
008S000307
008S000311
Groundwater sample collected (5-07-96):
008GGR0301

WELL DIAGRAM



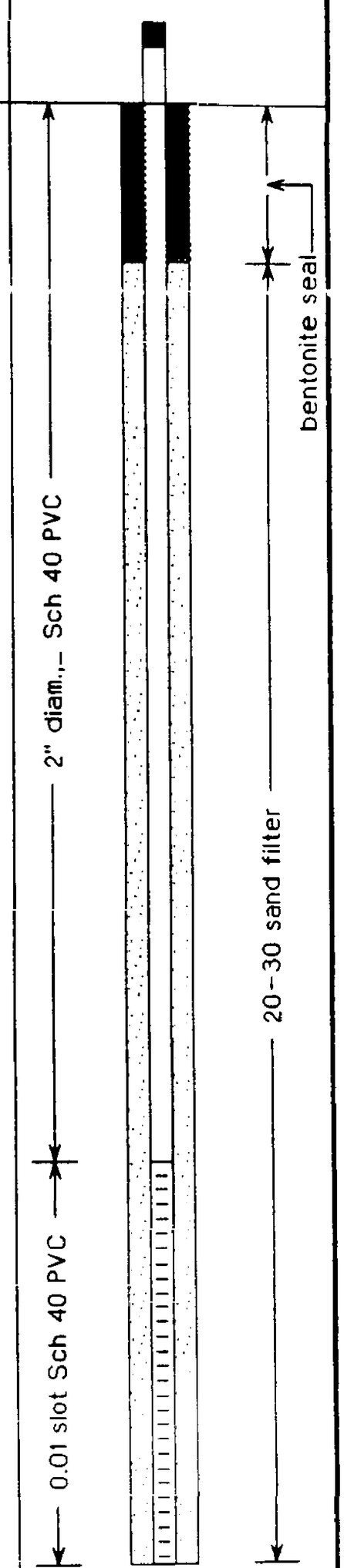
EnSafe/Allen & Hoshall

Monitoring Well 08GR04

Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Surface Elevation: *feet msl*
Started at *14:00 on 3-22-96*	TOC Elevation: *32.90 feet msl*
Completed at *15:00 on 3-22-96*	Depth to Groundwater: *12.62 feet* Measured: *5-21-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *20.28 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *18.14 feet*
Geologist: *C. Smith*	Well Screen: *13.14 to 18.14 feet*

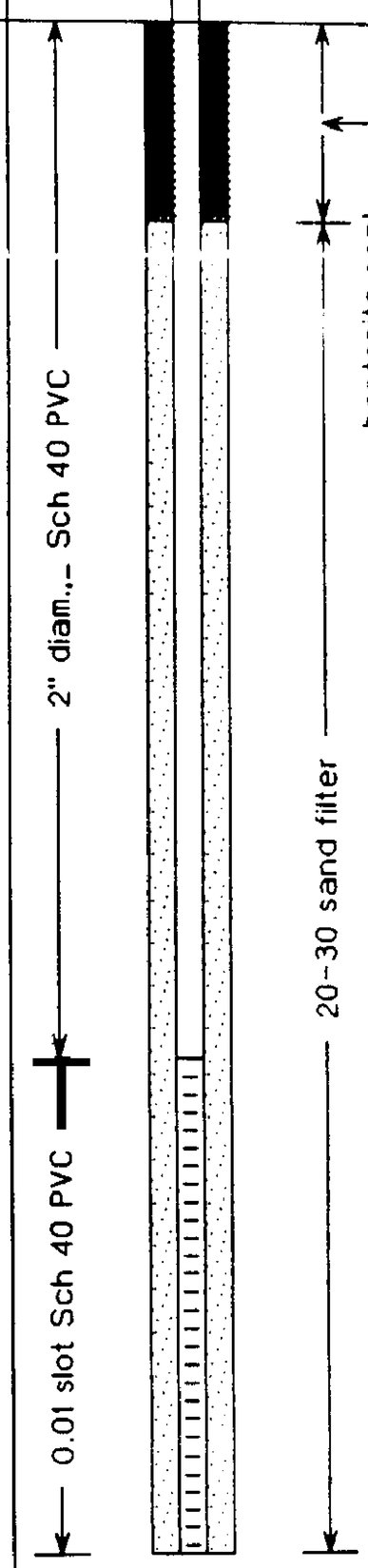
DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							CL	Surface Conditions: **Grassy** turf. Brown clayey **sand,** little silt,	
					0				
5								Light Brown fine to medium grained quartz sand, little clay.	
					0				
								Buff white fine to **medium** grained quartz **sand.**	
10							SP		
					0			Light **brown** coarse to fine sand. Wet at 12' bls.	
					0			Dark **brown** fine to medium grained quartz **sand,** with a little silt.	
15								Notes: Temporary well. Groundwater sample collected (5-07-96): 008GGR0101	
20									

WELL DIAGRAM



EnSafe/Allen & Hoshall	Monitoring Well 08GR05
Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Surface Elevation: *feet msl*
Started at *11:45 on 3-29-96*	TOC Elevation: *28.42 feet msl*
Completed at *12:25 on 3-29-96*	Depth to Groundwater: *11.06 feet* Measured: *5-21-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.36 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15.40 feet*
Geologist: *C Smith*	Well Screen: *10.40 to* **E40** *feet*

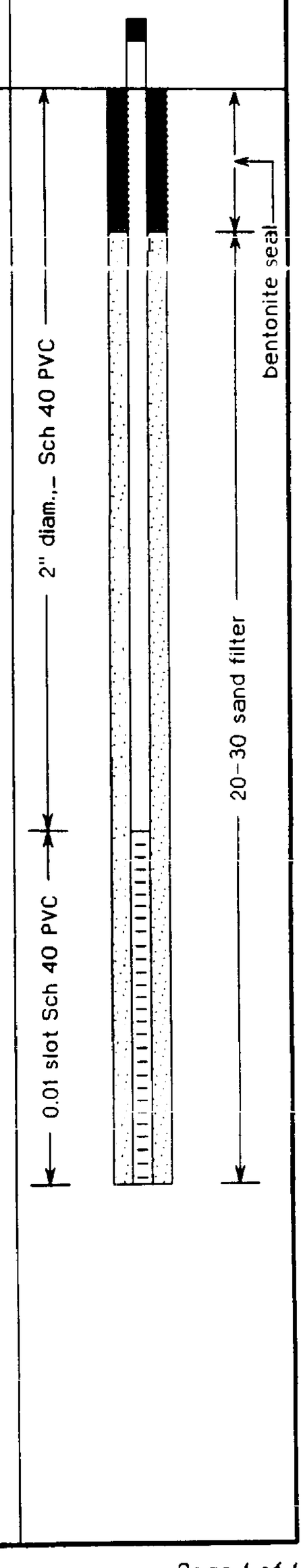
DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)	WELL DIAGRAM
							sp	Surface Conditions: Grassy turf. Brown fine to medium grained quartz **sand,** little **clay.**		
					0					
5										
					0		SP	Light tan to **brown fine to medium grained** quartz **sand,** little silt. Wet at 10.45' bls.		
10										
					0			Dark **brown** fine to **medium grained** quartz **sand, little** silt,		
15										
								Notes: Temporary well, Groundwater **sample** collected (5-14-96): 008GGR0501		
20										



EnSafe/Allen & Hoshall	Monitoring Well 08GR06
Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Surface Elevation: *feet msl*
Started at *10:45 on 3-29-96*	TOC Elevation: *28.34 feet msl*
Completed at *11:30 on 3-29-96*	Depth to Groundwater: *11.02 feet* Measured: *5-21-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.32 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15.45* feet
Geologist: *C. Smith*	Well Screen: *10.45 to 15.45 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	≈LEV. (ft-msl)
					0		sp	Surface Conditions: Grassy turf. Brown fine to medium **grained** quartz **sand.**	
5							SP	Light tan to **buff** fine to medium grained quartz **sand,** little silt. **Wet** at 11' bls.	
10					0			Dark **brown** fine to **medium grained** quartz **sand,** little silt/clay.	
15					0				
20								Notes: Temporary well. Groundwater sample collected (5-14-96): 008GGR0601	

WELL DIAGRAM



EnSafe/Allen & Hoshall

Monitoring Well 08GR07

Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Surface Elevation: *feet msl*
Started at *1230 on 3-28-97*	TOC Elevation: *feet msl*
Completed at *1400 on 3-28-97*	Depth to Groundwater: *11.2 BTOC feet* Measured: *4-2-97*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *13.0 feet*
Geologist: *J. Lunceford*	Well Screen: *3.0 to 13.0 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)	WELL DIAGRAM
							SM	Surface Conditions: **Level, grassy, land surface within Barrancas National** Cemetery **burial** area, Brown to **reddish** brown **clayey** silty sandy **fill** soil with minor **oyster shell** fragments **intermixed**, 0 to 3 ft. bls.		2" diam. Sch.40 PVC
5							SP	Light tan to **tan** fine to **medium grained** quart **sand** becoming light tan to **buff** white at **4 ft.** through **9.5 ft. bls.**		0.01 slot PVC screen Natural sand backfill
10								Light **grey** moist fine to **medium** grained quartz **sand.** **Medium grey fine to medium grained** quartz **sand** becoming **saturated** at 11.5 ft. bls. BOH = 13 ft. bls.		
15								Notes; USCS (visual only) No samples collected during **well** installation. Lithology **described from soil** cuttings **return/disturbed sample.**		
20										

EnSafe/Allen & Hoshall

Boring 08S04

Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Geologist: *J. Lunceford*
Started at *on 4-4-96*	Surface Elevation:
Completed at *on 4-4-96*	Depth to Groundwater: Measured:
Drilling Method: *Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *N/A*	Total Depth: *7 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
	X		HA-1				SP	Surface Conditions: Grassy turf. Brown fine to **medium** grained quartz **sand,**	
							SP	Tan fine to medium **grained** quartz **sand,**	
5								Light tan fine to **medium** grained quartz **sand.**	
			HA-2					Buff white fine to **medium grained quartz sand. Wet** at 7' bls.	
10								Notes: This **boring co-located** with **well** 08GR04 **HA** = hand auger **Samples** collected (4-4-96): 008S000401 008S000407	
15									
20									

EnSafe/Allen & Hoshall

Boring 08S06

Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Geologist: *J. Lunceford*
Started at *on 4-4-96*	Surface Elevation:
Completed at *on 4-4-96*	Depth to Groundwater: Measured:
Drilling Method: *Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *N/A*	Total Depth: *7 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
	X		HA-1				CL	Surface **Conditions: Asphalt** pavement. Red **clayey sandy** fill.	
							SP	Brown to gray fine **to** medium grained quartz sand, over **dark gray** silty **sand.**	
5			HA-2					Tan to **black** fine to **medium grained** quartz **sand. Wet** at **6.5' bls.**	
10								**Notes:** This **boring co-located with well 08GR02** **HA** = **hand** auger **Samples collected** (4-4-96): 008S000601 008S000607	
15									
20									

EnSafe/Allen & Hoshall

Boring 08S07

Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Geologist: *J. Lunceford*
Started at *on 4-4-96*	Surface Elevation:
Completed at *on 4-4-96*	Depth to Groundwater: Measured:
Drilling Method: *Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *N/A*	Total Depth: *7 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
	X	◣	HA-1				CL	Surface **Conditions: Asphalt** pavement, **Red** clayey **sandy fill.**	
							SP	Tan to **dark gray, silty,** fine to medium **grained** quartz **sand+**	
5	X	◣	HA-2					Light tan colored fine **to medium grained** quartz **sand.**	
								Gray sandy matrix with ground up **slag and debris fragments. Wet at 7'** bls.	
10									
15									
20									

Notes:
HA = **hand** auger
Samples collected **(4-4-98):**
008S000701
008S000707

EnSafe/Allen & Hoshall

Boring 08S08

Project: *Site 8*	Location: *NAS Pensacola*
Project No.: *0970-00030*	Geologist: *J. Lunceford*
Started at *on 4-4-96*	Surface Elevation:
Completed at *on 4-4-96*	Depth to Groundwater: Measured:
Drilling Method: *Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *N/A*	Total Depth: *7 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
	X		HA-1				CL	Surface **Conditions: Asphalt** pavement. Red clayey fill,	
5	X		HA-2				SP	Tan to **brown** fine to **medium** grained **quartz sand, over dark Wet at** 6.5' bls.	
10								Notes; **HA** = **hand** auger **Samples** collected (4-4-96): 008S000801 008S000807	
15									
20									

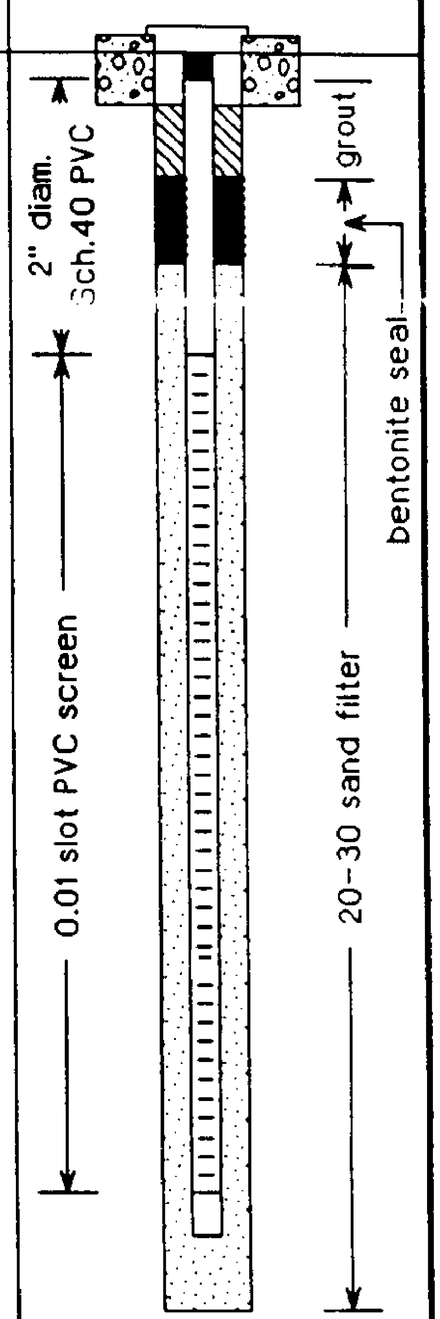
EnSafe/Allen & Hoshall	Monitoring Well 24GS01
Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *23.99 feet msl*
Started at *14:00 on 8-29-95*	TOC Elevation: *23.81 feet msl*
Completed at *16:00 on 8-29-95*	Depth to Groundwater: *6.23 BTOC feet* Measured: 03-95
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.58 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *3.6 to 13.6 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1		0			Surface Conditions: **Level, grass** covered land **surface.** Tan fine to **medium** grained quartz **sand.**	
								Tan quartz sand becoming buff white at 3.5'bls. Water table at approximately 6.0'bls. bls.	
5			HA-2		0				
							SP	Same quartz **sand as above** becoming wet **and dark** gray **at water table.**	
10									
15									9
20									
25									

NOTES:
HA = **Hand Auger** Sample

SAMPLES COLLECTED:
0245000101
0245000105
024SUG0106

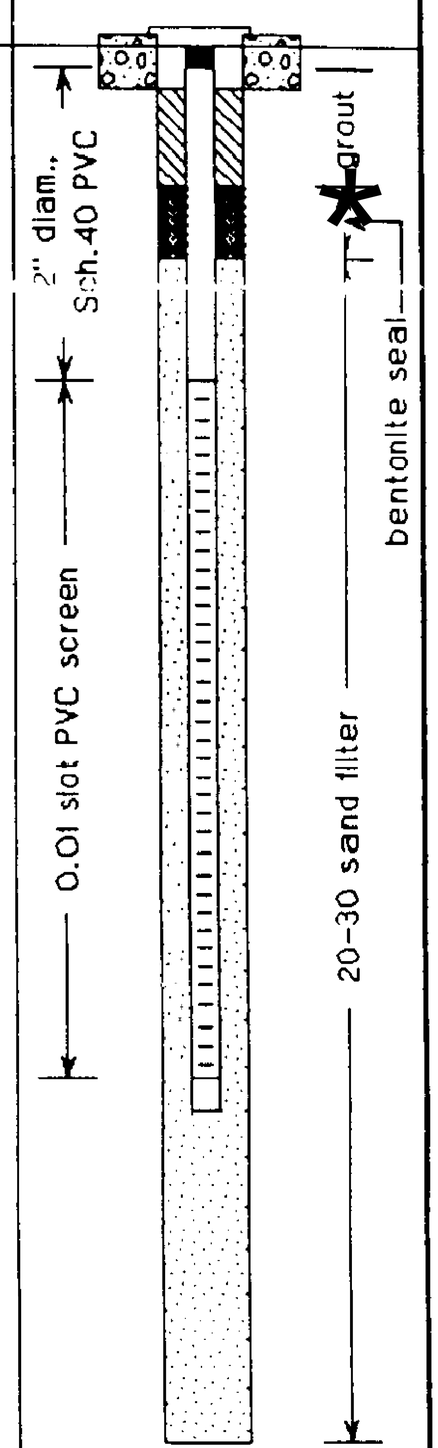
WELL DIAGRAM



EnSafe/Allen & Hoshall	Monitoring Well 24GS02
Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *25.73 feet msl*
Started at *13:05 on 8-29-95*	TOC Elevation: *25.51 feet msl*
Completed at *14:00 on 8-29-95*	Depth to Groundwater: *7.94 BTOC feet* Measured: *10-3-95*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.57 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *20 feet*
Geologist: *J. Lunceford*	Well Screen: *4.75 to 14.75 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	Pa (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
	X		HA-1		0			Surface Conditions: Level, grass covered land surface. Brown to tan fine to medium grained quartz sand.	
	X							Tan to buff white fine to medium grained quartz sand. Water level at approximately 7.5'bls.	
5			HA-2		0				
								Brown fine to medium grained slightly silty quartz sand.	
10			SS-1		0		SP		
								Brown fine to medium grained quartz sand. Saturated cuttings.	
15									
20									5.7
25								NOTES: HA = Hand Auger Sample SS = Split Spoon Sample	
								SAMPLES COLLECTED: 024S000201 024S000205 024S000210 024SDG0206 - Physical Parameters	
30									

WELL DIAGRAM



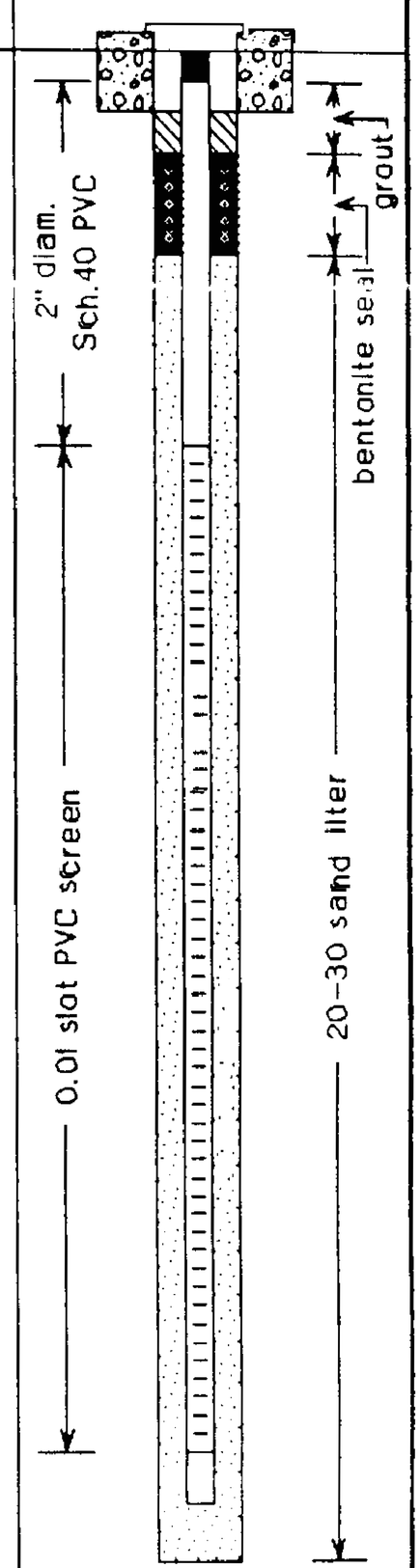
EnSafe/Allen & Hoshall

Monitoring Well 24GS03

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *24.31 feet msl*
Started at *08:30 on 8-30-95*	TOC Elevation: *24.45 feet msl*
Completed at *09:30 on 8-30-95*	Depth to Groundwater: *6.78 BTOC feet* Measured: *10-3-95*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.67 feet msl*
Drilling Company: *G. Z. A Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *3.9 to 13.9 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
	X	■	HA-1		0			Surface Conditions: Level, grass covered land surface. Brown to tan fine to medium grained slightly silty quartz sand.	
5	X	■	HA-2		0			Tan fine to medium grained quartz sand becoming buff white at 3.5'bls. Buff white to tan sand becoming dark brown to gray, organic stained at the water table. Water level at approximately 8'bls.	
10							SP		
15								9.3	
20									

WELL DIAGRAM



NOTES:
HA = Hand Auger Sample

SAMPLES COLLECTED:
024S000301
024S000305

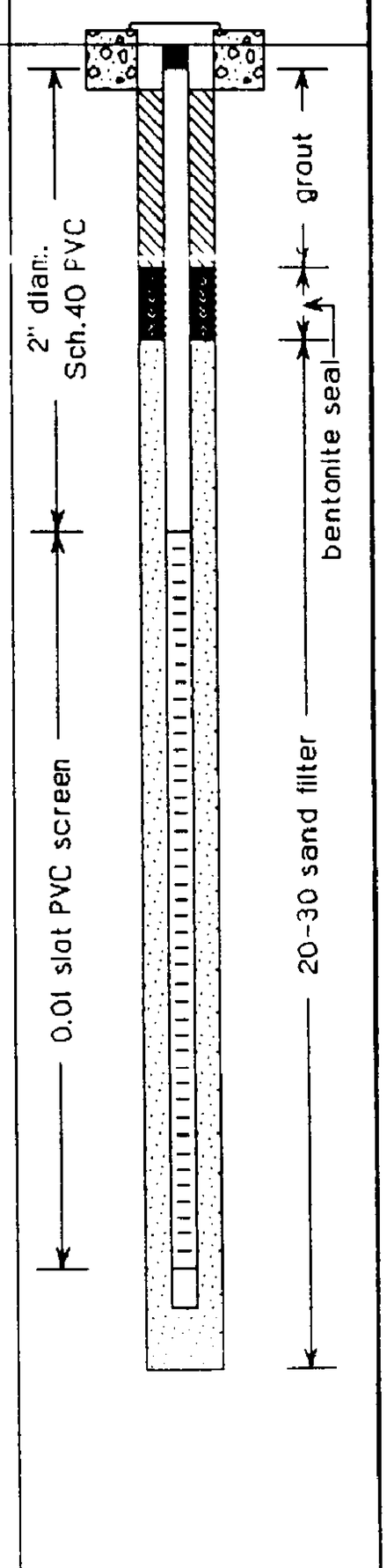
EnSafe/Allen & Hoshall

Monitoring Well 24GS04

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *27.21 feet msl*
Started at *13:00 on 8-30-95*	TOC Elevation: *27.01 feet msl*
Completed at *14:15 on 8-30-95*	Depth to Groundwater: *9.21 BTOC feet* Measured: *10-3-95*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.8 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *18 feet*
Geologist: *J. Lunceford*	Well Screen: *6.6 to 16.6 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOV	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
	X	■	HA-1		0		SC	Surface Conditions: **Crushed** gravel. **Red** clayey **silty sand** filt **from** .3-.8'bls.	26.6
							SM SP	Brown fine to **medium grained silty** quartz **sand.**	24.2
5	X	■	HA-2		0			Same fine to **medium** grained **sand** as **above** turning tan at 4'bls. Tan fine to **medium** grained **sand** becoming buff white at 8'bls.	
10							SP	**Moist sand at 8'bls.** Water **table** at approximately **8.5'bls.** Brown to tan fine to **medium** grained quartz **sand from** 8-18'bls.	
15									9.2
20								NOTES: **HA** = Hand Auger Sample	
25								SAMPLES COLLECTED: 024S000401 024S000405 024S000418 - Grain Size Only	

WELL DIAGRAM



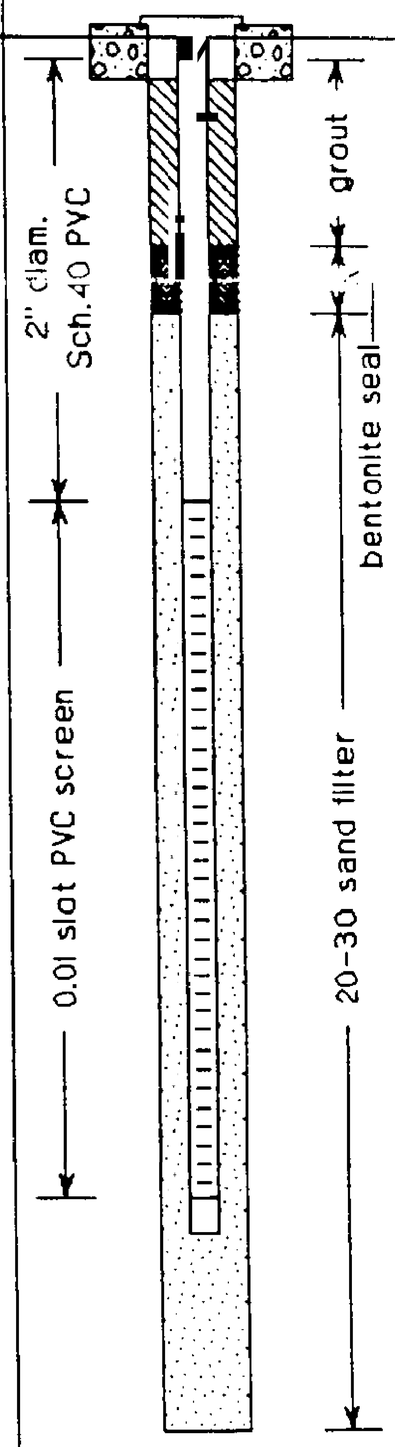
EnSafe/Allen & Hoshall	Monitoring Well 24GS05
Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *28.10 feet msl*
Started at *10:00 on 8-30-95*	TOC Elevation: *27.79 feet msl*
Completed at *11:30 on 8-30-95*	Depth to Groundwater: *9.84 BTOC feet* Measured: *10-3-95*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.95 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *20 feet*
Geologist: *J. Lunceford*	Well Screen: *6.7 to 16.7 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
	X	◥	HA-1		0		SC SM	Surface conditions: Level asphalt paved. Red clayey silty road base fill sand from .0-.3'bls.	
								Brown fine to medium grained quartz sand.	
5	X	◥	HA-2		0			Same brown to tan fine to medium grained quartz sand from 3-5'bls.	
10	▌	◥	SS-1		0		SP	Tan to buff white fine to medium grained quartz sand slightly moist. Water level at approximately 9.5'bls.	
15									
	▌	◥	SS-2		0				
20									8
25									
30									

NOTES:
HA = Hand Auger Sample
SS = Split Spoon Sample

SAMPLES COLLECTED:
024S000501
024S000505
024S000510
024S000519 - Grain Size Only

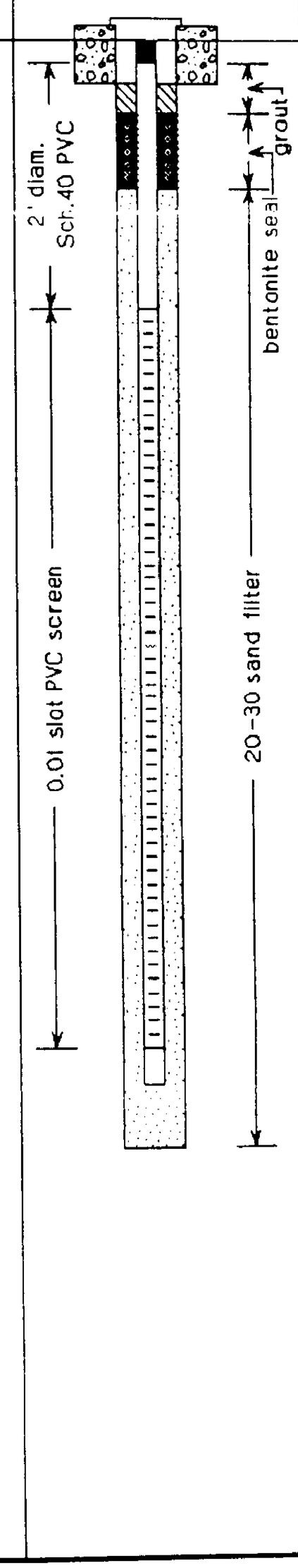
WELL DIAGRAM



EnSafe/Allen & Hoshall	Monitoring Well 24GS06
Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *25.50 feet msl*
Started at *14:00 on 9-8-95*	TOC Elevation: *25.30 feet msl*
Completed at *15:00 on 9-8-95*	Depth to Groundwater: *7.86 BTOC feet* Measured: *10-3-95*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.50 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *3.65 to 13.65 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0			Surface conditions: Level grassy open area, Brown to tan fine to medium grained quartz sand,	
5					0		SP	Tan to light tan fine to medium grained quartz sand. Water level at approximately 7.5'bls.	
10									
15									10.5
								No samples collected.	
20									

WELL DIAGRAM



EnSafe/Allen & Hoshall

Boring 24S07, 24S08, 24S09

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Lunceford*
Started at *16:00 on 9-29-95*	Surface Elevation:
Completed at *16:30 on 9-29-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *1 feet*

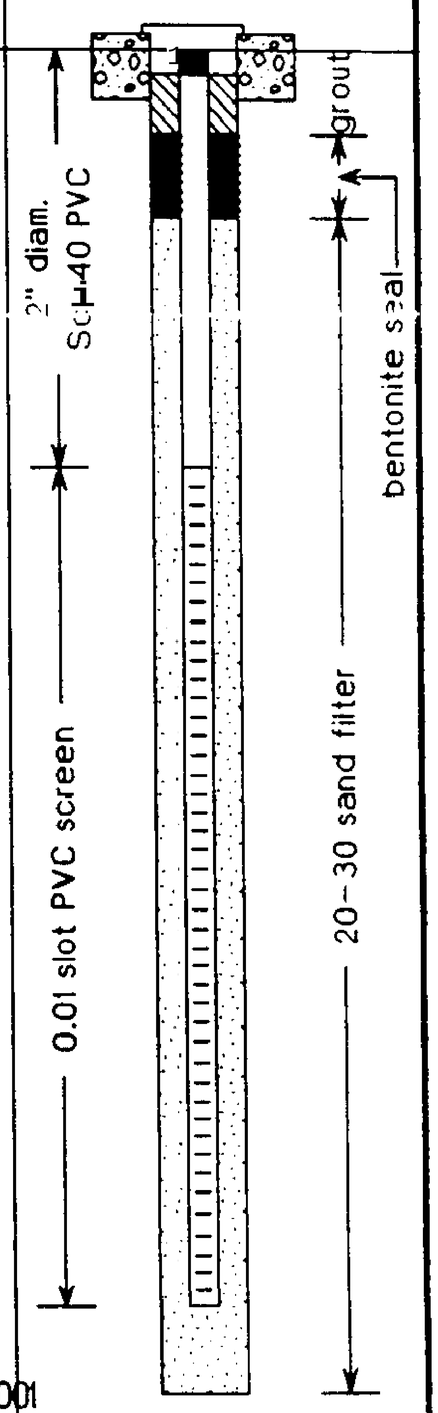
DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1		0		SP SM	Surface conditions: Grass covered land surface. Tan to brown to light gray fine to medium grained silty quartz sand. End of boring at 1'bls. Groundwater not encountered.	21.7
5									
10									

Notes:
HA = Hand Auger Sample
Samples Collected:
024S000701
024S000801
024S000801

EnSafe/Allen & Hoshall	Monitoring Well 24GS07
Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *25.41 feet msl*
Started at *15:45 on 3-13-96*	TOC Elevation: *25.21 feet msl*
Completed at *16:15 on 3-13-96*	Depth to Groundwater: *8.19 BTOC feet* Measured: *05-24-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *17.02 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *5.0 to 15.0 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV (ft-msl)
					0			Surface Conditions: Level, grass covered **land surface,** **Reddish brown,** silty clayey **sand** fill 0 to 1 foot **bls.** Tan quartz **sand, find** tu **medium** grained, 1 through 9 feet bls	
5					0				
							SP		
10								**Same** tan **sand turns light** gray **at approximatly 9 ft bls and** continues through to **end** of boring at 16 feet **bls.**	
15									9.400001
								NOTES: No samptes collected. Lithology **described** from soil cuttings **return/disturbed sample.**	
20									
25									

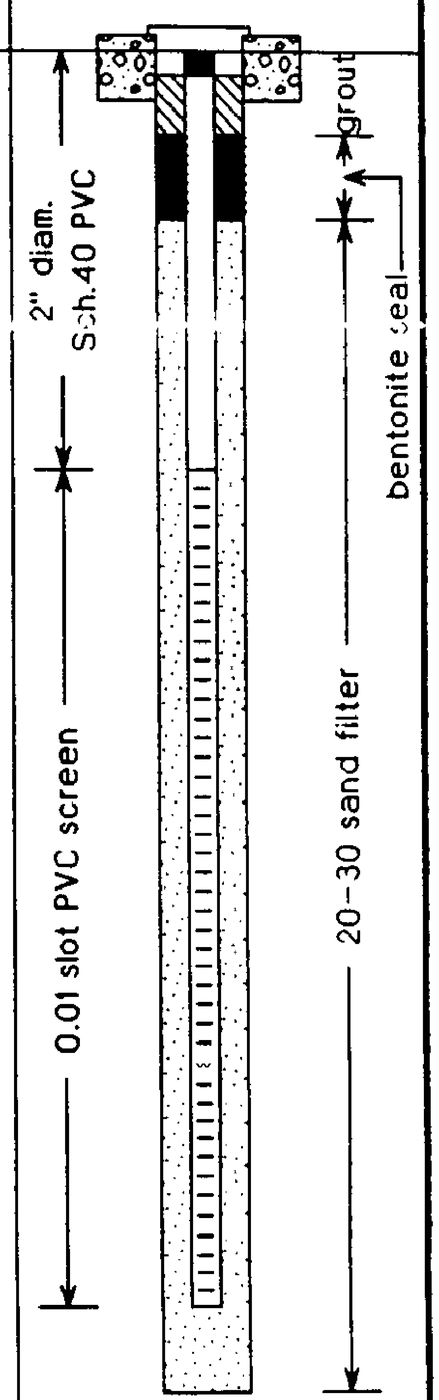
WELL DIAGRAM



EnSafe/Allen & Hoshall	Monitoring Well 24GS08
Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *26.75 feet msl*
Started at *14:15 on 3-13-96*	TOC Elevation: *26.63 feet msl*
Completed at *15:15 on 3-13-96*	Depth to Groundwater: *9.73 BTOC feet* Measured: *05-24-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *16.90* feet *msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *16 feet*
Geologist: *J. Lunceford*	Well Screen: *5.0 to 15.0 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0			Surface Conditions: **Level, grass covered land** surface, Hard **packed, reddish brown,** silty slighlty clayey **sandy** fill 0-3 feet bls.	
5					0			Tan fine to **medium grained** quartz **sand** 3 -9 **feet** bls.	
							SP		
10								Lt. tan, fine to **medium grained** quartz **sand,** turning light to **medium** gray near water table (approx. **9-10** feet bls) and continuing through the **end** of **the** boring at 16 feet bls.	
15									4.7
								NOTES: No **samples** collected. Lithology **described** from soil cuttings **return/disturbed sample.**	
20									
25									

WELL DIAGRAM



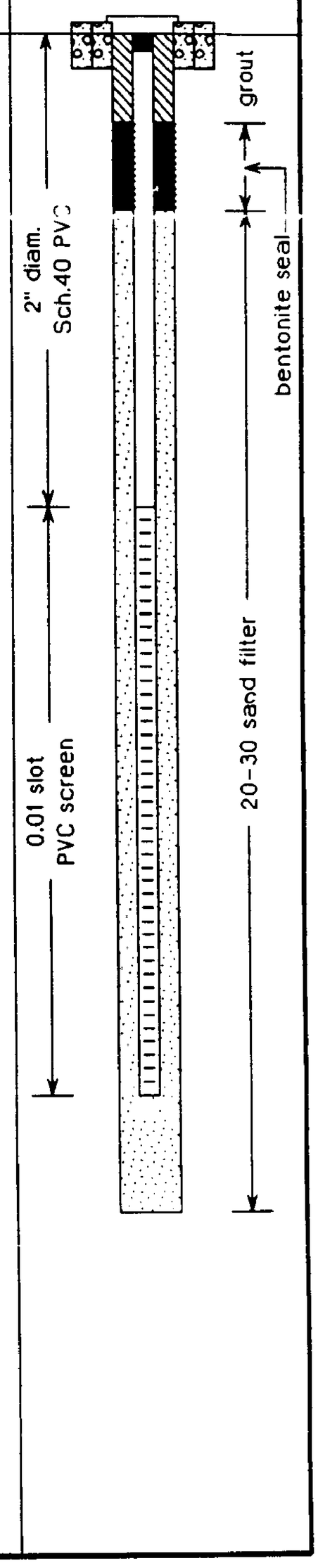
EnSafe/Allen & Hoshall

Monitoring Well 24GS09

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: feet *msl*
Started at *0800 on 7-11-96*	TOC Elevation: *27.60 feet msl*
Completed at *0905 on 7-11-96*	Depth to Groundwater: *12.49 BTOC feet* Measured: *8-13-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *15.11 feet msl*
Drilling Company: *G & E*	Total Depth: *20* feet
Geologist: *J. Lunceford*	Well Screen: *8 to 18 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		SM	Surface Conditions: Level, **grassy, land surface.** **Red** to **brown siity** clayey **sand fill.**	
5							SP	Tan to light tan fine to **medium** grained quartz sand.	
10									
15									
20								BOH = 20 feet bls.	
25								Notes: USCS (visual only) **Same** location as 24GR10. Lithology **described** from soil **cuttings** return/disturbed sample,	

WELL DIAGRAM



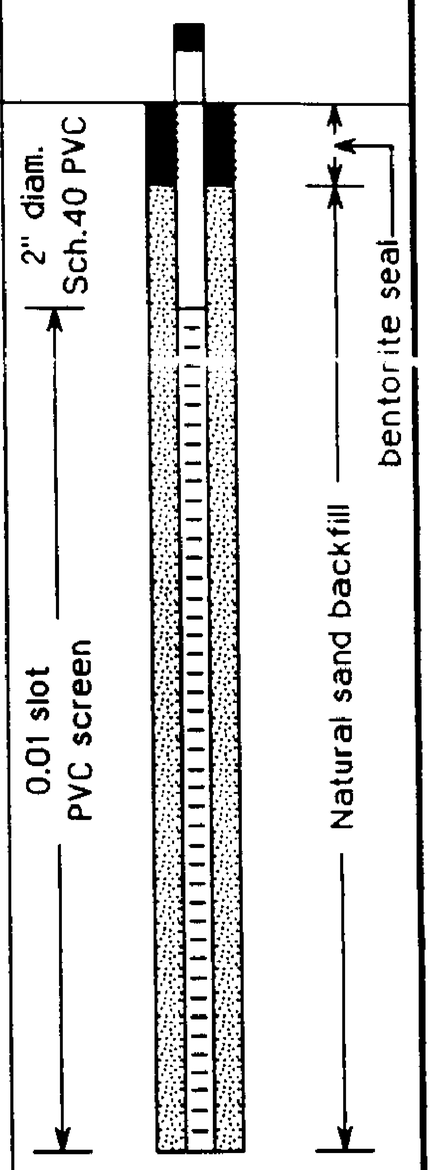
EnSafe/Allen & Hoshall

Monitoring Well 24GR09

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *feet msl*
Started at *10:00 on 6-6-96*	TOC Elevation: *feet msl*
Completed at *11:00 on 6-6-96*	Depth to Groundwater: *BTOC feet* Measured:
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *12.5 feet*
Geologist: *J. Hagan*	Well Screen: *2.5 to 12.5 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE #	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions; Grassy, sandy, level land surface.	
								Brown and red silty, clayey fill sand to 1.5 ft bls.	
5							SP	Tan to brown fine to medium grained quartz sand to 10 ft bls.	
10								Dark brown fine to medium grained quartz sand to 10.5 ft bls. Brown quartz sand, groundwater saturated, BOH = 12 feet bls.	
15								Notes: USCS (visual only) No samples collected during well installation. Lithology described from soil cuttings return/disturbed sample.	
20									
25									

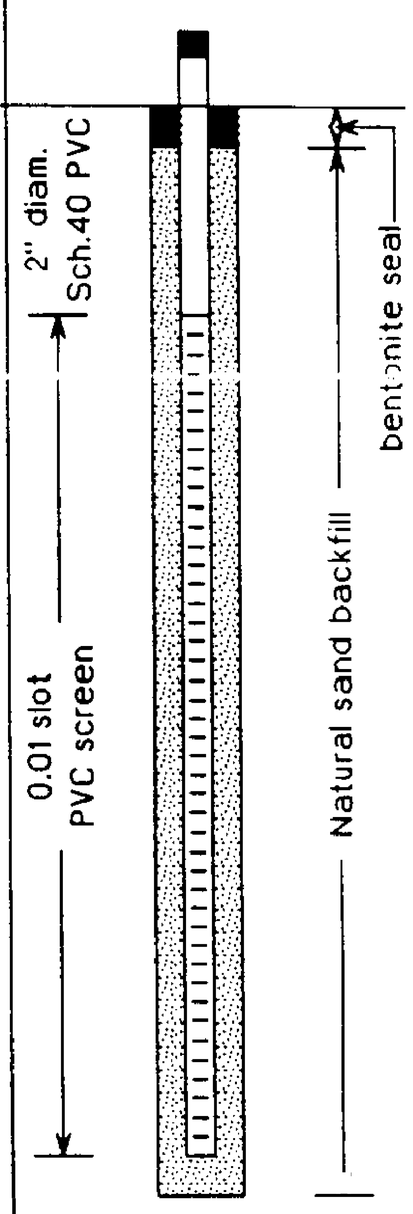
WELL DIAGRAM



EnSafe/Allen & Hoshall	Monitoring Well 24GR10
Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *feet msl*
Started at *1320 on 7-2-96*	TOC Elevation: *feet msl*
Completed at *on 7-2-96*	Depth to Groundwater: *BTOC feet* Measured:
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *13 feet*
Geologist: *J. Lunceford*	Well Screen: *2.5 to 12.5 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Level, grassy, land surface. Brown silty sandy soil. Red clayey sand fill.	
5							SP	Tan fine to medium grained quartz sand.	
								Buff white fine to medium grained quartz sand.	
10								Light gray quartz sand, slightly moist.	
								Light gray fine to medium grained quartz sand, groundwater saturated. BOH = 13 feet bls.	
15								Notes: USCS (visual only)	
20									
25									

WELL DIAGRAM



EnSafe/Allen & Hoshall

Boring 24S10

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *09:30 on 4-2-96*	Surface Elevation:
Completed at *09:50 on 4-2-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *6.5 feet*

DEPTH INFET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SP	Surface **conditions: Sandy grassy land** surface. Brown organic rich silty quartz **sand** from 0-2 feet bls. Tan to orange fine to **medium grained** quartz **sand** from **2-4** feet bls. Tan to light tan fine to medium grained quartz **sand** from 4-6 feet bls.	
5			HA-2					Light gray moist **to wet** f.to **medium** grained **quartz sand.** BOH = **6.5 feet** bls.	$8.5
10								Notes; **HA** = Hand **Auger** Sample **Samples** Collected: 024S001001 024C001001 024S001007	
15									
2d									

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Boring 24S11

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *09:50 on 4-2-96*	Surface Elevation:
Completed at *10:10 on 4-2-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation *NA* feet *msl*
Drilling Company: *NA*	Total Depth: *6.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SP	Surface conditions: Sandy grassy **land** surface, Brown organic rich silty quartz **sand** from 0-2 feet bls. Tan fine to **medium grained** quartz **sand** from 2-5 feet bls.	
			HA-2						
5								Buff white fine to **medium** grained **quartz sand** from 5-6 feet bls, Moist/wet at 6 feet bls. BOH = **8.0** feet bls.	
									9.7
10								Notes: **HA** = Hand **Auger** Sample **Samples** Collected: **0245001101** 024S001106	
15									
20									

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Boring 24S12

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *10:10 on 4-2-96*	Surface Elevation:
Completed at *10:30 on 4-2-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *6.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SP	Surface conditions: **Sandy grassy land** surface, Dark **brown** silty quartz **sand** from **0-2** feet bls. Tan fine to medium grained quartz **sand** from 2-4 feet bls.	
			HA-2						
5								Buff white fine **tu** medium **grained** quartz **sand** from 4-6 feet bls, turning gray **and** moist/wet at 6 feet bls. BOH = **6.0** feet bls.	
									18.4
10								Notes: **HA** = Hand Auger Sample **Samples** Collected: 024S001201 024S001206	
15									
20									

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Boring 24S13

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *12:30 on 4-3-96*	Surface Elevation:
Completed at *13:00 on 4-3-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *7.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM	Surface conditions: Sandy **grassy land** surface. Tan to brown slightly **silty sandy** soil from 0-4.5 feet bls.	
5			HA-2				SP	Buff white fine to **medium grained** quartz **sand** from 4.5 to 7.0 feet bls. Moist/wet at 7.0 feet bls. BOH = 7 feet bls.	2t2 18.7
10								Notes: **HA = Hand Auger** Sample **Samples** Collected: 024S001301 024S001307	
15									
20									

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Boring 24S14

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *13:20 on 4-2-96*	Surface Elevation:
Completed at *14:00 on 4-2-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *7.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM	Surface conditions: Sandy grassy land surface. Brown organic rich silty sand soil from 0-.5 feet bls. Red silty, clayey sand fill from .5-1.0 feet bls. br. Brown silty sand from 1.0-2.5 feet bls. br. Dark gray silty organic rich sand from 2.5-3.0 feet bls.	
								Tan fine to medium grained quartz sand from 3-5 feet bls.	22.9
5							SP	Tan to brown mottled sand with metal, glass, and platic debris and charred/burned material BOH = 7 feet bls.	
			HA-2						18.9
10								Notes: HA = Hand Auger Sample Samples Collected: 024S001401 024S001407	
15									
20									

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Boring 24S15

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *13:20 on* **4-2-56**	Surface Elevation:
Completed at *14:00 on 4-2-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA* feet *msl*
Drilling Company: *NA*	Total Depth: *7.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface conditions: Level asphalt paved land surface.	267
			HA-1					**Red** silty, clayey **sand** fill from 0-0.7 feet bls. br. Tan fine to **medium** grained quartz **sand** 0.7-2.5 feet bls. br. Dark brown fine to **medium** grained quartz **sand** from 2.5-3.5 **feet** bls.	
							SP	Tan fine to medium grained quartz **sand** from 3.5-5 feet bls.	
5								Tan to light tan quartz **sand with stringers** of **dark** gray silty organics-no **odors, moist** at **7** feet bls. BOH = 7 feet bls.	
			HA-2						20.4
10								Notes: **HA** = Hand **Auger** Sample Samples Collected: 024S001501 024S001507	
15									
20									

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Boring 24S16

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *13:20 on 4-2-96*	Surface Elevation:
Completed at *14:00 on 4-2-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *7.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM	Surface conditions: Level asphalt **paved** land surface. **Red** silty, clayey **sand** fill from 0-1.5 feet bls. Brown silty **sandy** fill 1.5-3.0 feet bls.	
								Tan to light tan fine to medium grained sand from 3.0-7.0 feet bls.	24.0
5							SP		
			HA-2					**Moist** at 7 feet bls, no odor, BOH.	20.9
10								Notes: **HA** = **Hand Auger** Sample **Samples** Collected: 024S001601 024S001607	
15									

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Boring 24S17

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *11:15 on 4-3-96*	Surface Elevation:
Completed at *12:30 on 4-3-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *7.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SP	Surface conditions: Sandy grassy land surface. Orangish tan fine to medium grained quartz sand from 0-0.8 feet bls. Brownish gray fine to medium grained quartz sand from 0.8 to 3 feet. Tan fine to medium grained quartz sand. Moist/wet at 7.0 feet bls.	
5			HA-2					BOH = 7 feet bts.	19.8
								Notes: HA = Hand Auger Sample Samples Collected: 024S001701 024S001707	
10									
15									
20									

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Boring 24S18

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *11:15 on 4-3-96*	Surface Elevation:
Completed at *12:30 on 4-3-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *7.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	≈LEV. (ft-msl)
			HA-1				SM	Surface conditions: Sandy grassy land surface, Brown silty fine to medium grained quartz **sand** from 0-1.0 feet bls.	
								Red clayey silty **fill sand** from 1.0 to **2.0** feet bls.	23.4
							SP	Tan fine to medium grained quartz sand from 2.0 to 5.0 feet bls.	
5								Buff white fine to **medium** grained quartz **sand** to **7.0** feet bls, moist/wet at 7.0. BOH = 7 feet bls.	
			HA-2						18.4
10									
15									
20									

Notes;
HA = **Hand** Auger Sample

Samples **Collected:**
024S001801
024S001807

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Boring 24S19

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *11:15 on 4-3-96*	Surface Elevation:
Completed at *12:30 on 4-3-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *7.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM	Surface conditions: Sandy **grassy land** surface. Brown silty fine to medium grained quartz **sand** from 0-2.5 feet bls.	22.8
							SP	Tan fine to medium grained quartz sand from 2.5 to 5.0 feet bls.	
5								Buff white fine to medium grained quartz **sand** to **7.0** feet bls, moist/wet at 7.0. BOH = 7 feet bls.	
			HA-2						18.3
10								Notes: **HA** = **Hand Auger** Sample **Samples** Collected; 0245001801 024S001907	
15									
20									

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Boring 24S20

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *15:00 on 4-3-96*	Surface Elevation:
Completed at *16:30 on 4-3-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *6.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM	Surface conditions; Sandy **grassy** land **surface,** Brown silty fine to medium grained quartz **sand** from 0-.2 feet bls. **Reddish** orange silty clayey **sand** from 0.2 to 13 feet bls. Brown to tan silty **sand** from 1.3 to **4.0** feet bls. Orange silty clayey sand fill from 4.0 to 4.5 feet bls.	
5			HA-2				SP	Tan fine to medium grained quartz **sand** to 6.0 feet bls. Moist/wet at 6.0, BOH.	23 215
								Notes: **HA** = **Hand Auger** Sample Samples Collected: 024S002001 024S002006	
10									
15									
20									

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Boring 24S21

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *15:00 on 4-3-96*	Surface Elevation:
Completed at *16:30 on* **4-3-96**	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *6.0 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM	Surface conditions: Sandy grassy **land** surface. **Reddish** brown silty slightly clayey **sand from** 0.0 to 1.5 feet bls.	
								Brown to gray silty sand **from 1.5** to 2.0 feet bls.	-24.3
5			HA-2				SP	Tan fine to medium grained quartz sand with dark organic stringers to 6.0 feet bls, **moist** /wet at 6.0, BOH.	-20.3
								Notes: **HA** = **Hand Auger** Sample Samples Collected: 0245002101 024S002106	
10									
15									
20									

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Boring 24S22

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *15:00 on 4-3-96*	Surface Elevation:
Completed at *16:30 on 4-3-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *6.5 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM	Surface conditions: Sandy grassy **land** surface.	
								Brown silty **sand** from 0 to 0.3 feet bls.	24.3
								Red silty **slightly** clayey **sand** from 0.3 to 1.0 feet bls.	
								Tan fine to **medium** grained quartz **sand** to 4.5 feet bls.	
							SP		
5								Buff white fine to medium quartz **sand** to 6.5 **feet** bls, moist /wet at **6.5**, BOH.	
			HA-2						18.8
10									
15									
20									

Notes:
HA = **Hand** Auger Sample

Samples Collected:
024S002201
024S002207

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Boring 24S23

Project: *Site 24*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *John Hagan*
Started at *14:00 on* 6-13-96	Surface Elevation:
Completed at *15:00 on 6-13-96*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *8.5 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM	Surface conditions: Sandy grassy **land** surface. Red silty slightly clayey **sand** from 0 to 10 feet bls.	
								Brown fine to medium **grained** quarts **sand** to 5 ft bls.	
5			HA-2				SP	Buff white fine to medium grained quartz **sand** to 7 ft bls. Gray fine to medium grained **quartz sand** to 8 feet bls. Dark gray, almost **black** fine to **medium** quartz **sand** to 9 feet bls, moist /wet at 8, BOH=8 ft bls.	
10								Notes: **HA** = **Hand** Auger Sample **Samples** Collected: 024S002301 024C002301 024S002307	
15									
20									

Appendix C

Specific Capacity Test Results

****
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF SPECIFIC CAPACITY TESTS
****

Copied from: Bradbury, K. R. and Rothschild, E, R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), PP. 240-246.

WELL NUMBER 024GS02

WELL DIAMETER (IN) =	2	
STATIC WATER LEVEL (FT) =	10.1	
DEPTH TO WATER DURING TEST (FT) =		11.53
THE LENGTH OF THE TEST (HR) =		.2
PUMPING RATE (GPM) =	4.1	
THICKNESS OF AQUIFER, (FT) =		30
OPEN INTERVAL (FT) =	10	
STORAGE COEFFICIENT =	.25	
WELL-LOSS COEFFICIENT =	2	

SPECIFIC CAPACITY (GPM/FT) = 2.867469

TRANSMISSIVITY: (FT*FT/SEC) = .0135275
(FT*FT/DAY) = 1160.776
(GAL/DAY/FT) = a743.03
USING A STORAGE COEFFICIENT = .25
NUMBER OF ITERATIONS = 4

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 4.509168E-04
(FT/DAY) = 38.95921
(GAL/DAY/FT*FT) = 258.8262

****

DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF SPECIFIC CAPACITY TESTS

****

Copied from: Bradbury, K. R. and Rothschild, E. R., 1.985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), PP. 240-246.

WELL NUMBER 024GS03

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) _ 8.95
DEPTH TO WATER DURING TEST (FT) = 10.26
THE LENGTH OF THE TEST (HR) = .17
PUMPING KATE (GPM) = 3
THICKNESS OF AQUIFER (FT) = 30
OPEN INTERVAL (FT) = 10
STORAGE COEFFICIENT = .25
WELL-LOSS COEFFICIENT = 2

SPECIFIC CAPACITY (GPM/FT) = 2,290232

TRANSMISSIVITY: (FT*FT/SEC) = 1.064095E-02
(FT*FT/DAY) = 919.3784
(GAL/DAY/FT) = 6877.41
USING A STORAGE COEFFICIENT = .25
NUMBER OF ITERATIONS = 4

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 3.546985E-04
(FT/DAY) = 30.64595
(GAL/DAY/FT*FT) = 203.5969

Appendix D

Preliminary Remediation Goals for Soil and Groundwater

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for teaching	NASP Reference Concentration
Inorganics (mg/kg)						
7429-90-5	Aluminum (At) N	7,800	NA	75,000	NA	3,833
7440-36-0	Antimony (Sb) N	3.1	NA	26	NA	2.912
7440-38-2	Arsenic (As) C	0.43	15	0.8	NA	1.56
7440-39-3	Barium (Ba) N	550	32	5,200	NA	4.63
7440-41-7	Beryllium (Be) C	0.15	180	0.2	NA	0.41
7440-42-8	Boron N	700	NA	7,000	NA	NA
7440-43-9	Cadmium (Cd) N	3.9	6	37	NA	1
7440-70-2	Calcium (Ca)	NA	NA	NA	NA	912.37
7440-47-3	Chromium (Cr) N	7,800	NA	66,000	NA	6.13
18540-29-9	Chromium (Hexavalent) N	39	19	290	NA	NA
7440-48-4	Cobalt (Co) N	470	NA	4,700	NA	1.87
7440-50-8	Copper (Cu) N	310	NA	NA	NA	5.74
57-12-5	Cyanide (CN) N	160	NA	1,600	NA	0.52
7439-89-6	Iron (Fe) N	2,300	NA	NA	NA	2,745
7439-92-1	Lead (Pb) C	400	400	500	NA	7.32
7439-95-4	Magnesium (Mg)	NA	NA	NA	NA	133.33
7439-96-5	Manganese (Mn) N	180	NA	370	NA	21.36
7439-97-6	Mercury (Hg) N	2.3	3	23	NA	0.1
7439-98-7	Molybdenum (Mo) N	39	NA	390	NA	NA
7440-02-0	Nickel (Ni) N	160	21	1,500	NA	6.38

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for teaching	NASP Reference Concentretion
Inorganics (mg/kg)						
7440-09-7	Potassium (K) N	NA	NA	NA	NA	460.67
7782-49-2	Selenium (Se) N	39	3	390	NA	0.62
7440-22-4	Silver (Ag) N	39	NA	390	NA	2.07
7440-23-5	Sodium (Ha) N	NA	NA	NA	NA	107.85
7440-24-6	Strontium N	4,700	NA	47,000	NA	NA
7440-28-0	Thallium (Tl) N	0.63	0.4	NA	NA	0.82
7440-31-5	Tin (Sn) N	4,700	NA	44,000	NA	NA
7440-62-2	Vanadium (V) N	55	HA	490	NA	5.83
7440-66-6	Zinc (Zn) N	2,300	42,000	23,000	NA	16-87

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Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leeching	NASP Reference Concentration
Pesticides (µg/kg)						
93-76-5	2,4,5-T [N]	78,000	NA	NA	NA	NA
93-72-1	2,4,5-TP (Silvex) [N]	63,000	NA	NA	NA	NA
94-75-7	2,4-D [N]	78,000	1,700	NA	NA	NA
94-82-6	2,4-DB [N]	63,000	NA	NA	NA	NA
72-54-8	4,4'-DDD [C]	2,700	700	4,500	200	NA
72-55-9	4,4'-DDE [C]	1,900	500	3,000	200	NA
50-29-3	4,4'-DDT [C]	1,900	1,000	3,100	500	NA
309-00-2	Aldrin [C]	38	5	60	50	MA
12674-11-2	Armlor-1016 [N]	320	NA	NA	NA	NA
11104-28-2	Aroclor-1221 [C]	320	NA	900	44,000	NA
11141-16-5	Aroclor-1232 [C]	320	NA	900	44,000	NA
53469-21-9	Arcodor-1242 [C]	320	NA	900	44,000	NA
12672-29-6	Aroclor-1248 [C]	320	NA	900	44,000	NA
11097-69-1	Aroclor-1254 [N]	320	NA	900	44$000	NA
11096-82-5	Aroclor-1260 [C]	320	HA	900	44,000	NA
57-74-P	Chlordane [C]	490	2,000	800	2,100	NA
510-15-6	Chlorobenzilate [C]	2,400	NA	NA	HA	NA
2303-16-4	Diallate [C]	10,000	NA	NA	NA	NA
60-57-1	Dietdrin [C]	40	1	70	20	NA
60-51-5	Dimethoate [N]	1,600	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leeching	NASP Reference Concentration
Pesticides (µg/kg)						
88-85-7	Dinoseb N	7,800	NA	43,000	400	NA
298-04-4	Disulfoton N	310	NA	2,800	10	NA
959-98-8	Endosulfan I N	47,000	*3,000*	390,000	700	NA
33213-65-9	Endosulfan II N	47,000	3,000	390,000	700	NA
1031-07-8	Endosulfan sulfate N	47,000	3,000	390,000	700	NA
72-20-8	Endrin N	2,300	400	*23,000*	400	NA
7421-93-4	Endrin aldehyde N	2,300	400	23,000	50	NA
53494-70-5	Endrin ketone N	*2,300*	400	23,000	400	NA
52-85-7	Famphur	NA	NA	NA	NA	NA
76-44-8	Heptachlor C	140	60	200	60	MA
1024-57-3	Heptachlor epoxide C	70	*30*	100	*30*	NA
465-73-6	Isodrin P	NA	NA	NA	NA	NA
143-50-0	Kepone C	35	NA	NA	NA	NA
72-43-5	Methoxychlor N	39,000	62,000	380,000	62,000	NA
298-00-0	Methyl parathion N	2,000	41	19,000	100	NA
126-68-1	O,O,O-Triethylphosphorothioate	NA	NA	NA	NA	NA
56-38-2	Parathion N	47,000	*3,900*	450,000	3,900	NA
298-02-2	Phorate N	1,600	NA	14,000	50	NA
3689-24-5	Sulfotep N	3,900	NA	NA	NA	MA
297-97-2	Thionazin	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Pesticides (µg/kg)						
8001-35-2	Toxaphene	580	40	900	40	NA
319-84-6	alpha-BHC [C]	100	0.4	200	2	NA
5103-71-9	alpha-Chlordane [C]	490	*2,000*	800	2,100	NA
319-85-7	beta-BHC [C]	350	2	600	5	NA
319-86-8	delta-BHC [C]	NA	NA	23,000	7	NA
58-89-9	gamma-BHC (Lindane) [C]	490	6	800	6	NA
5103-74-2	gama-Chlordane [C]	490	2,000	800	2,100	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
634-66-2	1,2,3,4-Tetrachlorobenzene N	2,300	690	NA	NA	NA
634-90-2	1,2,3,5-Tetrachlorobenzene N	2,300	690	NA	NA	NA
87-61-6	1,2,3-Trichlorobenzene N	78,000	2,000	NA	NA	NA
95-94-3	1,2,4,5-Tetrachlorobenzene N	2,300	690	NA	NA	NA
120-82-1	1,2,4-Trichlorobenzene N	78,000	2,000	590,000	2,300	NA
95-50-1	1,2-Dichlorobenzene N	700,000	6,000	820,000	5,800	NA
122-66-7	1,2-Diphenylhydrazine C	800	NA	NA	NA	NA
108-70-3	1,3,5-Trichlorobenzene N	78,000	2,000	590,000	2,300	NA
99-35-4	1,3,5-Trinitrobenzene N	390	NA	NA	N	NA
541-73-1	1,3-Dichlorobenzene N	700,000	NA	1,700,000	400	NA
99-65-0	1,3-Dinitrobenzene N	780	NA	NA	NA	NA
106-46-7	1,4-Dichlorobenzene C	27,000	1,000	7,500	900	NA
130-15-4	1,4-Naphthoquinone	NA	NA	NA	NA	NA
90-13-1	1-Chloronaphthalene N	630,000	140,000	560,000	57,000	NA
90-12-0	1-Methyl naphthalene N	NA	NA	930,000	NA	NA
134-32-7	1-Naphthylamine	NA	NA	NA	NA	NA
108-60-1	2,2'-oxybis(1-Chloropropane)	NA	NA	NA	NA	NA
58-90-2	2,3,4,6-Tetrachlorophenol N	230,000	NA	NA	NA	NA
95-95-4	2,4,5-Trichlorophenol N	780,000	120,000	7,100,000	100	NA
88-06-2	2,4,6-Trichlorophenol C	58,000	60	87,000	80	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
120-83-2	2,4-Dichlorophenol [N]	23,000	500	220,000	20	NA
105-67-9	2,4-Dimethylphenol [N]	160,000	3,000	1,200,000	1,800	NA
51-28-5	2,4-Dinitrophenol [N]	16,000	100	NA	NA	NA
121-14-2	2,4-Dinitrotoluene [N]	16,000	200	130,000	0.6	NA
87-65-0	2,6-Dichlorophenol [N]	23,000	500	220,000	20	NA
606-20-2	2,6-Dinitrotoluene [N]	7,800	100	71,000	0.6	NA
91-58-7	2-Chloronaphthalene [N]	630,000	140,000	560,000	57,000	NA
95-57-8	2-Chlorophenol [N]	39,000	2,000	280,000	300	NA
99-55-8	2-Methyl-5-nitroaniline [C]	19,000	NA	NA	NA	NA
95-53-4	2-Methylaniline [C]	2,700	NA	NA	NA	NA
636-21-5	2-Methylaniline hydrochloride [C]	3,500	NA	NA	NA	NA
91-57-6	2-Methylnaphthalene [N]	NA	NA	960,000	NA	NA
95-48-7	2-Methylphenol (o-Cresol) [N]	390,000	6,000	2,600,000	1,100	NA
91-59-8	2-Naphthylamine [C]	4.9	NA	NA	NA	NA
88-74-4	2-Nitroaniline [N]	470	NA	4,000	20	NA
88-75-5	2-Nitrophenol [N]	480	NA	NA	NA	NA
109-06-8	2-Picoline	NA	NA	NA	NA	NA
91-94-1	3,3'-Dichlorobenzidine [C]	1,400	10	NA	NA	NA
119-90-4	3,3'-Dimethoxybenzidine [C]	46,000	NA	NA	NA	NA
119-93-7	3,3-Dimethylbenzidine [C]	69	0.39	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
56-49-5	3-Methylcholanthrene	MA	NA	NA	NA	NA
108-39-4	3-Methylphenol (m-Cresol) [N]	390,000	NA	3,600,000	4,200	NA
99-09-2	3-Nitroaniline [N]	23,000	NA	NA	MA	NA
101-14-4	4,4'-Methylene bis(2-chloroaniline) [C]	4,900	NA	NA	NA	NA
534-52-1	4,6-Dinitro-2-methylphenol	HA	NA	NA	NA	NA
92-67-1	4-Aminobiphenyl	NA	NA	NA	NA	NA
101-55-3	4-Bromophenyl-phenylether [N]	450,000	NA	NA	NA	NA
59-50-7	4-Chloro-3-methylphenol	NA	NA	140,000,000	42,000	NA
106-47-8	4-Chloroaniline [N]	31,000	300	240,000	80	NA
7005-72-3	4-Chlorophenyl-phenylether	NA	NA	NA	NA	NA
106-44-5	4-Methylphenol (p-Cresol) [N]	39,000	NA	340,000	400	NA
100-01-6	4-Nitroaniline [N]	23,000	NA	230,000	NA	NA
100-02-7	4-Nitrophenol [N]	480,000	NA	MA	NA	NA
56-57-5	4-Nitroquinoline 1-oxide	NA	NA	NA	MA	NA
57-97-6	7,12-Dimethylbenz(a)anthracene [C]	NA	NA	NA	NA	NA
83-32-9	Acenaphthene [N]	470,000	200,000	2,800,000	2,000	NA
208-96-8	Acenaphthylene [N]	470,000	200,000	670,000	11,000	NA
53-96-3	Acetamidofluorene	NA	NA	NA	NA	NA
98-86-2	Acetophenone [N]	780,000	NA	NA	NA	NA
62-53-3	Aniline [C]	110,000	31	NA	MA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
120-12-7	Anthracene [N]	2,300,000	4,300,000	20,000,000	890,000	NA
140-57-8	Aramite [C]	26,000	NA	NA	NA	NA
103-33-3	Azobenzene [C]	5,800	NA	NA	NA	NA
98-87-3	Benzal chloride	NA	NA	NA	NA	NA
92-87-5	Benzidine [C]	2.8	0.0011	NA	NA	NA
56-55-3	Benzo(a)anthracene [C]	880	700	1,400	29,000	NA
50-32-8	Benzo(a)pyrene [C]	88	4,000	100	3,700	NA
205-99-2	Benzo(b)fluoranthene [C]	880	4,000	1,400	71,000	NA
191-24-2	Benzo(g,h,i)perylene [N]	230,000	1,400,000	14,000	320,000	NA
207-08-9	Benzo(k)fluoranthene [C]	8,800	4,000	14,000	44,000	NA
65-85-0	Benzoic acid [N]	31,000,000	280,000	130,000,000	56,000	NA
98-07-7	Benzotrichloride [C]	49	0.073	NA	NA	NA
100-51-6	Benzyl alcohol [N]	2,300,000	NA	NA	HA	NA
39638-32-9	Bis(2-Chloroisopropyl)Ethcr [C]	9,100	NA	NA	NA	NA
85-68-7	Butylbenzylphthalate [N]	1,600,000	68,000	15,000,000	960,000	NA
86-74-8	Carbazole [C]	32,000	500	42,000	400	NA
218-01-9	Chrysene [C]	88,000	1,000	140,000	31,000	NA
6055-19-2	Cyclophosphamide	NA	NA	NA	NA	NA
84-74-2	Di-n-butylphthalate [N]	780,000	120,000	7,300,000	23,000	NA
117-84-0	Di-n-octyl phthalate [N]	160,000	1,000,000,000	1,500,000	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
53-70-3	Dibenz(a,h)anthracene C	88	11,000	100	7,200	NA
224-42-0	Dibenzo(a,j)acridine	NA	NA	NA	NA	NA
132-64-9	Dibenzofuran N	31,000	120,000	240,000	NA	NA
84-66-2	Diethylphthalate N	6,300,000	110,000	56,000,000	20,000	NA
131-11-3	Dimethyl phthalate N	78,000,000	1,200,000	630,000,000	200,000	N
122-39-4	Diphenylamine N	200,000	NA	NA	NA	N
97-63-2	Ethyl methacrylate N	700,000	NA	NA	NA	NA
62-50-0	Ethyl methanesulfonate	NA	NA	NA	NA	NA
206-44-0	Fluoranthene N	310,000	980,000	2,900,000	280,000	NA
86-73-7	Fluorene N	310,000	16 ,000	2,400,000	45,000	NA
118-74-1	Hexachlorobenzene C	400	800	600	800	NA
87-68-3	Hexachlorobutadiene C	8,200	100	3,100	2,100	N
77-47-4	Hexachlorocyclopentadiene N	55,000	10,000	NA	NA	NA
67-72-1	Hexachloroethane C	46,000	200	27,000	400	NA
70-30-4	Hexachlorophene N	2,300	N	NA	NA	NA
1888-71-7	Hexachloropropene	NA	NA	NA	NA	NA
193-39-5	Indeno(1,2,3-cd)pyrene C	880	35,000	1,400	17,000	NA
78-59-1	Isophorone C	670,000	200	NA	NA	NA
120-58-1	Isosafrole	NA	NA	NA	NA	NA
91-80-5	Methapyrilene	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
80-62-6	Methyl methacrylate [N]	630,000	NA	NA	NA	NA
66-27-3	Methyl methanesulfonate	NA	NA	NA	NA	NA
10595-95-6	N-Nitroso-N-methylethylamine [C]	29	NA	NA	NA	NA
621-64-7	N-Nitroso-di-n-propylamine [C]	91	0.02	20	9	NA
924-16-3	N-Nitrosodi-n-butylamine [C]	120	NA	NA	NA	NA
55-18-5	N-Nitrosodiethylamine [C]	4.3	NA	NA	NA	NA
62-75-9	N-Nitrosodimethylamine [C]	13	NA	3	20	NA
86-30-6	N-Nitrosodiphenylamine [C]	130,000	200	73,000	60	NA
59-89-2	N-Nitrosomorpholine	NA	NA	NA	NA	NA
100-75-4	N-Nitrosopiperidine	NA	NA	NA	NA	NA
930-55-2	N-Nitrosopytrolidine [C]	300	NA	NA	NA	MA
91-20-3	Naphthalene [N]	310,000	30,000	1,300,000	100	NA
98-95-3	Nitrobenzene [N]	3,900	90	22,000	40	NA
123-63-7	Paraldehyde	NA	NA	NA	NA	NA
608-93-5	Pentachlorobenzene [N]	6,300	48,000	NA	NA	NA
76-03-7	Pentachloroethane	NA	NA	NA	NA	NA
82-68-8	Pentachloronitrobenzene [C]	2,500	NA	NA	NA	NA
87-86-5	Pentachlorophenol [C]	5,300	200	5,400	10	NA
62-44-2	Phenacetin	NA	NA	NA	NA	NA
85-01-8	Phenanthrene [N]	230,000	1,400,000	1,700,000	2,800	NA

Preliminary Remediation Goals (PRGs)
for Soil contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for teaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
108-95-2	Phenol [N]	4,700,000	49,000	34,000,000	20	HA
23950-58-5	Pronamide [N]	590,000	NA	NA	NA	NA
129-00-0	Pyrene [N]	230,000	1,400,000	2,200,000	290,000	NA
110-86-1	Pyridine [N]	*7,800*	NA	500	20	NA
94-59-7	Safrole	NA	NA	NA	NA	NA
122-09-8	alpha, alpha-Dimethylphenethylamine	NA	NA	NA	NA	NA
111-91-1	bis(2-Chloroethoxy)methane	NA	NA	170,000	30	NA
111-44-4	bis(2-Chloroethyl)ether [C]	580	0.3	500	5	NA
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP) [C]	46,000	11,000	48,000	11,000	NA
60-11-7	p-Dimethylaminoazobenzene	NA	NA	NA	NA	NA
106-50-3	p-Phenylenediamine [N]	1,500,000	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Volatiles (µg/kg)						
106-93-4	1, 2-Dibromoethane C	7.5	0.18	10	0.06	NA
630-20-6	1,1,1,2-Tetrachloroethane C	25,000	HA	5,900	3	NA
811-97-2	1,1,1,2-Tetrafluoroethane	NA	NA	NA	NA	NA
71-55-6	1,1,1-Trichloroethane N	270,000	900	610,000	900	MA
354-58-S	1,1,1-trichlora-2,2,2-trifloromethane	NA	NA	NA	NA	MA
79-34-5	1,1,2,2-Tetrachloroethane C	3,200	1	900	0.7	MA
79-00-5	1,1,2-Trichloroethane C	11,000	10	2,000	20	NA
75-34-3	1,1-Dichloroethane N	780,000	11,000	310,000	2,300	NA
75-3s-4	1,1-Dichloroethene C	1,100	30	100	30	NA
96-18-4	1,2,3-Trichloropropane C	91	0.006	NA	NA	NA
96-19-5	1,2,3-Trichloropropene N	39,000	NA	NA	NA	NA
615-54-3	1,2,4-Tribromobenzene N	39,000	NA	NA	NA	NA
120-82-1	1,2,4-Trichlorobenzene N	78,000	2,000	590,000	2,300	NA
96-12-8	1,2-Dibromo-3-Chloropropane C	460	0.61	NA	NA	NA
107-06-2	1,2-Dichloroethane C	7,000	10	700	8	NA
540-59-0	1,2-Dichloroethene [total). N	70,000	NA	NA	NA	NA
78-87-5	1,2-Dichloropropane C	9,400	20	800	20	NA
106-99-0	1,3-Butadiene	NA	0.072	NA	HA	NA
542-75-6	1,3-Dichloropropene C	3,700	1	300	3	NA
106-37-6	1,4-Dibromobenzene N	78,000	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Volatiles (µg/kg)						
764-41-0	1,4-Dichloro-2-butene	NA	NA	NA	NA	NA
123-91-1	1,4-Dioxane C	58,000	NA	NA	NA	NA
75-68-3	1-Chloro-1,1-difluoroethane	NA	NA	NA	NA	NA
109-69-3	1-Chlorobutane N	3,100,000	NA	NA	NA	NA
78-93-3	2-Butanone (MEK) N	4,700,000	NA	2,200,000	8,700	NA
126-99-8	2-Chloro-1,3-butadiene N	160,000	NA	NA	NA	NA
110-75-8	2-Chloroethyl vinyl ether N	200,000	NA	100,000	2	NA
591-78-6	2-Hexanone	NA	NA	NA	NA	NA
101-68-8	4,4'-Methylenediphenyl isocyanate	NA	NA	NA	NA	NA
108-10-1	4-Methyl-2-Pentanone (MIBK) N	630,000	NA	520,000	1,100	NA
67-64-1	Acetone N	780,000	8,000	260,000	1,400	NA
75-05-8	Acetonitrile N	47,000	NA	NA	NA	NA
107-02-8	Acrolein N	160,000	NA	400	300	NA
107-13-1	Acrylonitrile C	1,200	NA	100	20	NA
107-05-1	Allyl chloride N	390,000	NA	NA	NA	NA
100-52-7	Benzaldehyde N	780,000	NA	NA	NA	NA
71-43-2	Benzene C	22,000	20	1,400	3	NA
95-63-6	Benzene, 1,2,4-trimethyl N	390,000	NA	6,200	*200*	NA
108-67-8	Benzene, 1,3,5-trimethyl- N	390,000	NA	3,700	100	NA
100-44-7	Benzyl chloride C	3,800	0.36	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Volatiles (µg/kg)						
542-88-1	Bis(chloromethyl)ether [C]	2.9	0.0001	MA	NA	NA
75-27-4	Bromodichloromethane [C]	10,000	300	700	2	NA
593-60-2	Bromoethene	NA	NA	NA	NA	NA
75-25-2	Bromoform [C]	81,000	*500*	65,000	20	NA
74-83-9	Bromomethane [N]	11,000	100	NA	NA	NA
75-15-0	Carbon disulfide [N]	*780,000*	14,000	5,200	2,500	NA
56-23-5	Carbon tetrachloride [C]	4,900	*30*	600	20	NA
108-90-7	Chlorobenzene [N]	160,000	600	44,000	*600*	NA
75-45-6	Chlorodifluoromethane	NA	NA	NA	NA	NA
75-00-3	Chloroethane [N]	3,100,000	33,000	NA	NA	NA
67-66-3	Chloroform [C]	100,000	300	600	20	NA
74-87-3	Chloromethane [C]	49,000	6.6	200	10	NA
1476-11-5	Cis-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA
123-73-9	Crotonaldehyde, (E) [C]	340	NA	NA	NA	NA
108-94-1	Cyclohexanone [N]	39,000,000	NA	HA	NA	NA
1163-19-5	Decabromodiphenyl ether [N]	*78,000*	NA	NA	NA	NA
124-48-1	Dibromochloromethane [C]	NA	NA	1,200	4	NA
75-71-8	Dichlorodifluoromethane [N]	1,600,000	*7,500*	NA	NA	NA
77-73-6	Dicyclopentadiene [N]	230,000	NA	NA	NA	NA
107-12-0	Ethyl cyanide	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Volatiles (µg/kg)						
60-29-7	Ethyl ether [N]	1,600,000	NA	NA	NA	NA
100-41-4	Ethylbenzene [N]	780,000	5,000	1,400,000	200	NA
87-82-1	Hexabromobenzene [N]	16,000	NA	NA	NA	NA
78-83-1	Isobutanol [N]	2,306,000	NA	NA	NA	NA
126-98-7	Methacrylonitrile [N]	780	NA	NA	NA	NA
74-88-4	Methyl iodide	NA	NA	NA	NA	NA
1634-04-4	Methyl tert-butyl ether [N]	39,000	NA	3,800,000	100	NA
74-95-3	Methylene bromide [N]	78,000	NA	NA	NA	NA
75-09-2	Methylene chloride [C]	85,000	10	16,000	10	NA
100-42-5	Styrene [N]	1,600,000	2,000	4,100,000	2,000	NA
127-18-4	Tetrachloroethene [C]	12,000	40	12,000	30	NA
109-99-9	Tetrahydrofuran	NA	NA	NA	NA	NA
108-88-3	Toluene [N]	1,600,000	5,000	520,000	200	NA
79-01-6	Trichloroethene [C]	58,000	20	6,500	10	NA
75-69-4	Trichlorofluoromethane [N]	2,300,000	13,000	6,600	400,000	NA
598-77-6	Trichloropropane, 1,1,2- [N]	39,000	140	HA	NA	NA
76-13-1	Trichlorotrifluoroethane (Freon 113) [N]	100,000,000	3,100,000	NA	NA	NA
108-05-4	Vinyl acetate [N]	7,800,000	84,000	180,000	500	NA
75-01-4	Vinyl chloride [C]	340	10	5	5	NA
1330-20-7	Xylene (Total) [N]	16,000,000	74,000	13,000,000	100	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Volatiles (µg/kg)						
98-83-9	alpha-Methylstyrene [N]	550,000	7,500	NA	NA	NA
156-59-2	cis-1,2-Dichloroethene [N]	78,000	200	26,000	200	NA
10061-01-5	cis-1,3-Dichloropropene [C]	3,700	1	300	3	NA
99-08-1	m-Nitrotoluene [N]	78,000	420	NA	NA	NA
108-38-3	m-Xylene	16,000,000	240,000	NA	NA	NA
104-51-8	n-Butylbenzene [N]	78,000	270	NA	NA	NA
110-54-3	n-Hexane [N]	470,000	13,000	76,000	1,000	NA
88-73-3	o-Chloronitrobenzene [C]	26,000	NA	NA	NA	NA
95-49-8	o-Chlorotoluene [N]	160,000	5,600	NA	NA	NA
88-72-2	o-Nitrotoluene [N]	78,000	420	NA	NA	NA
95-47-6	o-Xylene [N]	16,000,000	150,000	NA	NA	NA
5216-25-1	p,a,a,a-Tetrachlorotoluene [C]	32	NA	NA	NA	NA
100-00-5	p-Chloronitrobenzene [C]	35,000	NA	NA	NA	NA
99-99-0	p-Nitrotoluene [N]	78,000	420	NA	NA	NA
106-42-3	p-Xylene	NA	220,000	NA	NA	NA
135-98-8	sec-Butylbenzene [N]	78,000	270	NA	NA	NA
156-60-5	trans-1,2-Dichloroethene [N]	160,000	300	62,000	300	NA
10061-02-6	trans-1,3-Dichloropropene [C]	3,700	1	300	3	NA
110-57-6	trans-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Inorganics (µg/l)								
7429-90-5	Aluminum (Al) N	NA	NA	50	200	NA	3,700	3,882.8
7440-36-0	Antimony (Sb) N	6	6	NA	NA	NA	1.5	30.2
7440-38-2	Arsenic {As) N	*50*	50	NA	NA	NA	0.045	2.8
7440-39-3	Barium (Ba) N	2,000	2,000	NA	NA	NA	*260*	13.2
7440-41-7	Beryllium (Be) C	4	4	NA	NA	NA	0.016	1.1
7440-44-9	Cadmium (Cd) N	5	5	NA	NA	NA	1.8	3.4
7440-70-2	Calcium (Ca)	NA	NA	NA	NA	NA	NA	17,560
7440-47-3	Chromium (Cr) N	100	100	NA	NA	NA	18	35
18540-29-9	Chromium (Hexavalent) N	NA	NA	NA	NA	NA	18	NA
7440-48-4	Cobalt (Co) N	NA	NA	NA	NA	NA	220	4.1
7440-50-8	copper (Cu) N	1,300	NA	1,000	1,000	NA	150	16.2
57-12-5	Cyanide (CN) N	200	*200*	NA	NA	NA	*73*	NA
7439-89-6	Iron (Fe) N	NA	NA	300	300	NA	1,100	1,707.8
7439-92-1	Lead (Pb)	15	15	NA	NA	NA	15	1.6
7439-95-4	Magnesium (Mg)	NA	NA	NA	NA	NA	NA	2,872.6
7439-96-5	Manganese (Mn) N	NA	NA	50	50	NA	a4	22
7439-97-6	Mercury (Hg) N	2	2	NA	NA	MA	1.1	0.2
7440-02-0	Nickel (Ni) N	100	100	NA	NA	NA	*73*	39.9
7440-09-7	Potassium (K)	NA	NA	NA	NA	NA	NA	12,167.6
7782-49-2	Selenium (Se) N	*50*	50	NA	NA	NA	18	3.9

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Inorganics (µg/l)								
7440-22-4	Silver (Ag) [N]	NA	NA	100	100	NA	18	4
7440-23-5	Sodium (Na)	NA	160,000	NA	NA	NA	NA	18,345
7440-28-0	Thallium (Tl)	2	2	NA	NA	NA	0.29	3.6
7440-31-5	Tin (Sn) [N]	NA	NA	NA	NA	NA	2,200	NA
7440-62-2	Vanadium (V) [N]	NA	NA	NA	NA	49	26	9.6
7440-66-6	Zinc (Zn) [N]	NA	NA	5,000	5,000	NA	1,100	153.2

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Pesticides (µg/l)								
93-72-1	2,4,5-TP (Silvex) N	50	50	NA	NA	NA	29	NA
93-76-5	2,4,5-Trichlorophenoxyacetic ac	NA	NA	NA	NA	NA	37	MA
94-75-7	2,4-Dichlorophenoxyacetic Acid N	NA	NA	NA	NA	NA	6.1	NA
72-54-8	4,4'-DDD C	NA	NA	NA	NA	0.1	0.28	NA
72-55-9	4,4'-DDE C	NA	NA	NA	NA	0.1	0.2	NA
50-29-3	4,4'-DDT C	NA	NA	NA	NA	0.1	0.2	NA
94-82-6	4-(2,4-Dichlorophenoxy)butyric N	NA	NA	NA	NA	NA	29	NA
309-00-2	Aldrin C	NA	NA	NA	NA	0.05	0.004	NA
12674-11-2	Aroclor-1016 C	0.5	0.5	NA	NA	NA	0.03	NA
11104-28-2	Aroclor-1221 C	0.5	0.5	NA	MA	NA	0.03	NA
11141-16-5	Aroclor-1232 C	0.5	0.5	NA	NA	NA	0.03	NA
53469-21-9	Aroclor-1242 C	0.5	0.5	NA	NA	NA	0.03	NA
12672-29-6	Aroclor-1248 C	0.5	0.5	NA	NA	NA	0.03	NA
11097-69-1	Aroclor-1254 C	0.5	O S	NA	NA	NA	0.03	NA
11096-82-5	Aroclor-1260 C	0.5	0.5	NA	MA	NA	0.03	NA
57-74-9	Chlordane C	2	2	NA	NA	NA	0,052	NA
510-15-6	Chlorobenzilate C	NA	NA	NA	NA	0.13	0.25	NA
2303-16-4	Diallate C	NA	NA	NA	NA	os7	0.17	NA
60-57-1	Dieldrin C	NA	NA	NA	NA	1	0.0042	NA
60-51-5	Dimethoate N	NA	NA	NA	NA	5	0.73	MA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Pesticides (µg/l)								
88-85-7	Dinoseb [N]	7	7	NA	NA	NA	3.7	NA
298-04-4	Disulfoton [N]	MA	NA	NA	NA	0.5	0.15	NA
959-98-8	Endosulfan I	MA	NA	NA	NA	0.35	22	NA
33213-65-9	Endosulfan II [N]	NA	MA	NA	NA	0.35	22	NA
1031-07-8	Endosulfan sulfate [N]	MA	WA	NA	HA	0.3	22	NA
72-20-8	Endrin [N]	2	2	NA	NA	NA	1.1	NA
7421-93-4	Endrin aldehyde [N]	NA	NA	NA	NA	0.1	1.1	NA
53494-70-5	Endrin ketone [N]	MA	NA	NA	NA	NA	1.1	NA
52-85-7	Famphur	MA	MA	NA	NA	NA	NA	NA
76-44-8	Heptachlor [C]	0.4	0.4	NA	NA	NA	0.0023	NA
1024-57-3	Heptachlor epoxide [C]	0.2	0.2	NA	NA	NA	0.0012	NA
465-73-6	Isodrin [P]	HA	NA	NA	NA	NA	NA	NA
143-50-0	Kepone [C]	HA	NA	NA	NA	NA	0.0037	MA
72-43-5	Methoxychlor [N]	40	40	NA	NA	NA	18	NA
298-00-0	Methyl parathion [N]	NA	NA	NA	NA	10	0.91	NA
126-68-1	O,O,O-Triethylphosphorothioate	NA	NA	MA	NA	NA	NA	NA
56-38-2	Parathion [N]	MA	NA	NA	NA	42	22	NA
298-02-2	Phorate [N]	MA	NA	NA	NA	1.4	0.73	NA
3689-24-5	Sulfotep [N]	MA	NA	NA	NA	3.5	1.8	NA
297-97-2	Thionazin	NA	NA	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Pesticides (µg/l)								
8001-35-2	Toxaphene [C]	3	3	NA	NA	NA	0.061	NA
319-84-6	alpha-BHC [C]	NA	NA	NA	NA	0.05	0.011	NA
5103-71-9	alpha-Chlordane [C]	2	2	NA	NA	NA	0,052	NA
319-85-7	beta-BHC [C]	NA	NA	NA	NA	0.1	0.037	NA
319-86-8	delta-BHC [C]	NA	NA	NA	NA	0.05	0.011	NA
58-89-9	gamma-BHC (Lindane) [C]	0.2	0.2	NA	NA	HA	0.052	NA
5103-74-2	gamma-Chlordane [C]	2	2	NA	NA	NA	0.052	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGCC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
634-66-2	1,2,3,4-Tetrachlorobenzene	NA	NA	NA	NA	NA	0.18	NA
634-90-2	1,2,3,5-Tetrachlorobenrene	NA	NA	MA	NA	MA	0.18	NA
87-61-6	1,2,3-Trichlorobenrene	NA	NA	NA	NA	NA	19	NA
95-94-3	1,2,4,5-tetrachlorobenrene N	NA	NA	NA	NA	4	0.18	NA
120-82-1	1,2,4-Trichlorobenzene	70	70	NA	NA	NA	19	NA
95-50-1	1,2-Dichlorobenrene N	600	600	NA	NA	NA	27	NA
108-70-3	1,3,5-Trichlorobenzene	NA	NA	NA	MA	NA	19	NA
99-35-4	1,3,5-Trinitrobenzene N	NA	NA	NA	NA	60	0.18	WA
541-73-1	1,3-Dichlorobenzene N	600	NA	NA	NA	10	54	NA
99-65-0	1,3-Dinitrobenzene N	NA	NA	NA	NA	50	0.37	WA
106-46-7	1,4-Dichlorobenzene C	75	75	NA	NA	NA	0.44	MA
130-15-4	1,4-Naphthoquinone	NA	NA	NA	NA	NA	NA	NA
90-13-1	1-Chloronapthalene	NA	NA	NA	NA	NA	290	NA
90-12-0	!-Methylnaphthalene N	NA	NA	NA	NA	NA	NA	HA
134-32-7	1-Naphthylamine	NA	NA	NA	NA	NA	0.0005	NA
108-60-1	2,2'-oxybis(1-Chloropropane)	NA	NA	NA	NA	NA	NA	NA
58-90-2	2,3,4,6-Tetrachlorophenol N	NA	NA	NA	NA	210	110	NA
95-95-4	2,4,5-Trichlorophenol N	NA	NA	NA	NA	4	370	NA
88-06-2	2,4,6-Trichlorophenol C	NA	NA	NA	NA	10	6.1	NA
120-83-2	2,4-Dichlorophenol N	NA	NA	NA	NA	4	11	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
105-67-9	2,4-Dimethylphenol [N]	NA	NA	NA	NA	400	73	NA
51-28-5	2,4-Dinitrophenol [N]	NA	NA	NA	NA	30	7.3	NA
121-14-2	2,4-Dinitrotoluene [N]	NA	NA	NA	NA	0.2	7.3	NA
87-65-0	2,6-Dichlorophenol [N]	NA	NA	NA	NA	4	11	MA
606-20-2	2,6-Dinitrotoluene [N]	NA	NA	NA	NA	0.2	3.7	NA
91-58-7	2-Chloronaphthalene [N]	NA	NA	NA	NA	560	290	NA
95-57-8	2-Chlorophenol [N]	NA	NA	NA	NA	35	18	NA
99-55-8	2-Methyl-5-nitroaniline [C]	NA	NA	NA	NA	NA	2	HA
636-21-5	2-Methylaniline hydrochloride [C]	NA	NA	NA	NA	NA	0.37	MA
91-57-6	2-Methylnaphthalene [N]	NA	NA	NA	NA	NA	150	NA
95-48-7	2-Methylphenol (o-Cresol) [N]	MA	NA	NA	NA	350	180	NA
91-59-8	2-Naphthylamine [C]	MA	NA	NA	NA	NA	0.0005	NA
88-74-4	2-Nitroaniline [N]	NA	NA	NA	NA	7.5	0.22	NA
88-75-5	2-Nitrophenol [N]	NA	NA	NA	NA	20	230	NA
109-06-8	2-Picoline	NA	NA	NA	NA	NA	NA	NA
91-94-1	3,3'-Dichlorobenzidine [C]	NA	NA	NA	NA	7.5	0.15	NA
119-9014	3,3'-Dimethoxybenzidine [C]	NA	NA	NA	NA	250	4.8	NA
119-93-f	3,3-Dimethylbenzidine [C]	NA	NA	NA	NA	250	0.0073	NA
56-49-5	3-Methylcholanthrene	NA	NA	NA	NA	NA	NA	NA
108-39-4	3-methyl phenol (m-Cresol)	NA	NA	NA	NA	350	180	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	WASP Reference Concentration
Semivolatiles (µg/l)								
99-09-2	3-Nitroaniline [N]	NA	NA	NA	NA	NA	11	NA
534-52-1	4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA
92-67-1	4-Aminobiphenyl	NA	NA	NA	NA	NA	NA	NA
101-55-3	4-Bromophenyl-phenylether [N]	NA	NA	NA	NA	NA	210	NA
59-so-7	4-Chloro-3-methylphenol	NA	NA	NA	NA	3,000	NA	NA
106-47-8	4-Chloroaniline [N]	NA	NA	NA	NA	28	15	NA
7005-72-3	4-Chlorophenylphenylether	NA	NA	NA	HA	10	NA	NA
106-44-5	4-Methylphenol (p-Cresol) [N]	NA	MA	NA	NA	35	18	NA
100-01-6	4-Nitroaniline [N]	NA	NA	NA	NA	NA	11	NA
100-02-f	4-Nitrophenol [N]	NA	NA	NA	NA	15	230	MA
56-57-5	4-Nitroquinoline 1-oxide	NA	NA	NA	NA	NA	NA	NA
57-97-6	7,12-Dimethybenz(a)anthracene [C]	NA	NA	NA	NA	NA	0.092	NA
83-32-9	Acenaphthene [N]	NA	NA	NA	NA	20	220	NA
208-96-8	Acenaphthylene [N]	NA	NA	NA	NA	10	150	NA
53-96-3	Acetamidofluorene	NA	NA	NA	NA	NA	NA	NA
98-86-2	Acetophenone [N]	NA	NA	NA	NA	700	0.0042	NA
62-53-3	Aniline [C]	NA	NA	NA	MA	6	1	NA
120-f2-7	Anthracene [N]	NA	NA	NA	NA	2,100	1,100	NA
140-57-8	Aramite [C]	NA	NA	NA	NA	NA	2.7	NA
103-33-3	Azobenzene [C]	NA	NA	NA	NA	4	0.61	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
98-87-3	Benzal chloride	NA	NA	NA	NA	NA	NA	NA
101-14-4	Benzenamine, 4,4'-methylenebis[C	NA	NA	NA	NA	50	0.52	NA
92-87-5	Benzidine C	NA	NA	MA	NA	250	0.0002	NA
56-55-3	Benzo(a)anthracene	NA	NA	NA	NA	4	0.092	NA
50-32-8	Benzo(a)pyrene	2	0.2	NA	NA	NA	0.0092	NA
205-99-2	Benzo(b)fluoranthene	NA	NA	NA	NA	4	0.092	NA
191-24-2	Benzo(g,h,i)perylene N	NA	NA	NA	NA	10	150	NA
207-08-9	Benzo(k)fluoranthene	NA	NA	NA	NA	4	0.92	NA
65-85-0	Benzoic acid N	NA	NA	NA	NA	28,000	15,000	NA
98-07-7	Benzotrichloride C	NA	NA	NA	NA	NA	0.0052	NA
100-51-6	Benzyl alcohol N	NA	NA	MA	NA	2,100	1,100	NA
39638-32-9	Bis(2-Chloroisopropyl)Ether C	NA	NA	NA	NA	7.5	0.26	NA
85-68-7	Butylbenzylphthalate N	NA	MA	MA	NA	1,400	730	NA
86-74-8	Carbazole	NA	NA	NA	NA	7.5	3.4	NA
218-01-9	Chrysene	NA	NA	NA	NA	5	9.2	NA
6055-19-2	Cyclophosphamide	NA	NA	NA	NA	NA	NA	NA
84-74-2	Di-n-butylphthalate N	NA	NA	NA	NA	700	370	NA
117-84-0	Di-n-octyl phthalate N	NA	NA	NA	NA	140	73	NA
53-70-3	Dibenz(a,h)anthracene	NA	NA	NA	NA	7.5	0,0092	NA
224-42-0	Dibenzo(a,j)acridine	NA	NA	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS *	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	WASP Reference Concentration
Semivolatiles (µg/l)								
132-64-9	Dibenzofuran N	NA	NA	NA	NA	NA	15	NA
84-66-2	Diethylphthalate N	NA	NA	NA	NA	5,600	2,900	NA
131-11-3	Dimethyl phthalate N	NA	NA	NA	NA	70,000	37,000	NA
122-39-4	Diphenylamine T	NA	NA	NA	NA	17s	91	NA
97-63-2	Ethyl methacrylate N	NA	NA	NA	NA	630	330	NA
62-SO-0	Ethyl methanesulfonate	NA	NA	NA	NA	NA	NA	NA
206-44-0	Fluoranthene N	NA	NA	NA	NA	280	150	NA
86-73-7	Fluorene N	NA	NA	NA	NA	280	150	NA
118-74-1	Hexachlorobenzene C	1	1	NA	NA	NA	0.0066	NA
87-68-3	Hexachlorobutadiene C	NA	NA	NA	NA	15	0.14	NA
77-47-4	Hexachlorocyclopentadiene N	50	50	NA	NA	NA	0.15	NA
67-72-1	Hexachloroethane C	NA	NA	NA	NA	10	0.75	NA
70-30-4	Hexachlorophene N	NA	NA	MA	NA	6	1.1	NA
1888-71-7	Hexachloropropene	NA	NA	NA	NA	NA	NA	NA
122-66-7	Hydrazine, 1,2-diphenyl C	NA	MA	NA	NA	10	0.084	NA
193-39-5	Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	7.5	0.092	NA
78-59-1	Isophorone C	NA	NA	NA	NA	40	71	NA
120-58-1	Isosafrole	NA	NA	NA	NA	NA	NA	NA
91-80-5	Methapyrilene	NA	NA	NA	NA	NA	NA	NA
80-62-6	Methyl methacrylate N	NA	NA	NA	NA	25	290	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
66-27-3	Methyl methanesulfonate	NA	NA	NA	NA	NA	NA	NA
924-16-3	N-Nitroso-di-n-butylamine C	NA	NA	NA	NA	4	0.012	NA
621-64-7	N-Nitroso-di-n-propylamine C	NA	NA	NA	NA	4	0.0096	NA
55-18-5	N-Nitrosodiethylamine C	NA	NA	NA	NA	4	0.0004	NA
62-75-9	N-Nitrosodimethylamine C	NA	NA	NA	NA	7.5	0.0013	NA
86-30-6	N-Nitrosodiphenylamine C	NA	NA	NA	NA	7	14	NA
10595-95-6	N-Nitrosomethylethylamine C	NA	NA	NA	NA	7.5	0.0031	NA
59-89-2	N-Nitrosomorpholine	NA	NA	NA	NA	NA	NA	NA
100-75-4	N-Nitrosopiperidine	NA	NA	NA	NA	NA	NA	NA
930-55-2	N-Nitrosopyrrolidine C	NA	NA	NA	NA	4	0.032	NA
91-20-3	Naphthalene N	NA	NA	NA	NA	6.8	150	NA
98-95-3	Nitrobenzene N	NA	NA	NA	NA	9.5	0.34	NA
123-63-7	Paraldehyde	NA	NA	NA	NA	NA	NA	NA
608-93-5	Pentachlorobenzene N	NA	NA	NA	NA	5.6	0.49	NA
76-01-7	Pentachloroethane	NA	NA	NA	NA	NA	NA	NA
82-68-8	Pentachloronitrobenzene C	NA	NA	NA	NA	15	0.041	NA
87-86-5	Pentachlorophenol C	1	1	NA	NA	NA	0.56	NA
62-44-2	Phenacetin	NA	NA	NA	NA	NA	NA	NA
85-01-8	Phenanthrene N	NA	NA	NA	NA	10	150	NA
108-95-2	Phenol N	NA	NA	NA	NA	10	2,200	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
23950-58-5	Pronamide [N]	NA	NA	NA	NA	525	270	NA
129-00-0	Pyrene [N]	MA	NA	NA	NA	210	110	NA
110-86-1	Pyridine [N]	MA	NA	MA	NA	7	3.7	NA
94-59-7	Safrole	MA	NA	NA	NA	NA	NA	NA
122-09-8	alpha, alpha-Dimethylphenethyla	MA	NA	NA	NA	NA	WA	NA
111-91-1	bis(2-Chloroethoxy)methane	NA	NA	NA	NA	10	NA	NA
111-44-4	bis(2-Chloroethyl)ether [C]	NA	NA	NA	NA	1.5	0.0092	NA
117-81-7	bis(2-Ethylhexyl)phthalate (BEH [C]	NA	NA	NA	NA	NA	4.8	NA
95-53-4	o-Toluidine [C]	NA	NA	NA	NA	50	0.28	NA
60-11-7	p-Dimethylaminoazobenzene	NA	NA	NA	NA	NA	NA	NA
106-50-3	p-Phenylenediamine [N]	NA	NA	NA	HA	1,330	690	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Volatiles (µg/l)								
106-93-4	1, 2-Dibromoethane C	0.02	0.02	NA	NA	NA	0.0007	NA
630-20-6	1,1,1,2-Tetrachloroethane C	NA	NA	NA	NA	1	0.41	NA
811-97-2	1,1,1,2-Tetrafluoroethane	NA	NA	NA	NA	NA	NA	NA
71-55-6	1,1,1-Trichloroethane N	200	200	NA	NA	NA	79	NA
354-58-5	1,1,1-trichlora-2,2,2-triflorom	NA	NA	NA	NA	NA	NA	NA
79-34-5	1,1,2,2-Tetrachloroethane C	NA	NA	NA	NA	NA	0.052	NA
76-13-1	1,1,2-Trichloro-1,2,2- trifluor N	NA	NA	NA	NA	NA	5,900	NA
79-00-5	1,1,2-Trichloroethane C	5	5	NA	MA	NA	0.19	NA
598-77-6	1,I,2-Trichloropropane N	NA	NA	NA	NA	NA	3	NA
75-34-3	1,1-Dichloroethane N	NA	NA	NA	NA	700	81	NA
75-35-4	1,1-Dichloroethene C	7	7	NA	NA	NA	0.044	NA
75-37-6	1,1-Difluoroethane	NA	NA	NA	NA	NA	NA	NA
96-18-4	1,2,3-Trichloropropane C	NA	NA	NA	NA	42	0.0015	NA
96-19-5	1,2,3-Trichloropropene N	NA	NA	NA	NA	NA	3	NA
615-54-3	1,2,4-Tribromobenzene N	NA	NA	NA	NA	NA	3	NA
120-82-1	1,2,4-Trichlorobenzene N	70	70	NA	MA	NA	19	MA
96-12-8	3,2-Dibromo-3-Chloropropane C	0.2	[illegible]	NA	NA	NA	0.048	NA
107-06-2	1,2-Dichloroethane C	5	3	NA	NA	NA	0.12	NA
540-59-0	1,2-Dichloroethene (total) N	70	70	NA	NA	NA	5.5	NA
78-87-5	1,2-Dichloropropane C	5	5	NA	NA	NA	0.16	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Volatiles (µg/l)								
106-99-0	1,3-Butadiene	NA	NA	NA	NA	NA	0.011	NA
542-75-6	1,3-Dichloropropene C	NA	NA	NA	NA	1	0.077	NA
106-37-6	1,4-Dibromobenzene N	NA	NA	NA	NA	NA	6.1	NA
764-41-0	1,4-Dichloro-2-butene	NA	NA	NA	NA	NA	0,0011	NA
123-91-1	1,4-Dioxane C	NA	NA	NA	NA	5	6.1	NA
75-68-3	1-Chloro-1,1-diftuoroethane	NA	NA	NA	NA	NA	8,700	NA
109-69-3	1-Chlorobutane N	NA	NA	NA	NA	NA	240	NA
78-93-3	2-Butanone (MEK) N	NA	NA	NA	NA	4,200	190	NA
126-99-8	2-Chloro-1,3-butadiene N	NA	NA	NA	NA	NA	1.4	NA
110-75-8	2-Chloroethyl vinyl ether N	NA	NA	NA	NA	1	15	NA
75-29-6	2-Chloropropane	NA	NA	NA	NA	NA	NA	NA
591-78-6	2-Hexanone	NA	NA	NA	NA	NA	NA	NA
101-68-8	4,4'-Methylenediphenyl isocyana	MA	NA	NA	NA	NA	0.0035	NA
108-10-1	4-Methyl-2-Pentanone (MIBK) N	NA	NA	NA	NA	350	290	NA
67-64-1	Acetone N	NA	NA	NA	NA	700	370	NA
75-05-8	Acetonitrile N	NA	NA	NA	NA	500	22	NA
107-02-8	Acrolein N	NA	NA	NA	NA	110	73	NA
107-13-1	Acrylonitrile C	NA	NA	NA	NA	8	0.12	NA
107-05-1	Allyl chloride N	MA	NA	NA	NA	MA	180	NA
100-52-7	Benzaldehyde N	NA	NA	NA	NA	700	61	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Volatiles (µg/l)								
71-43-2	Benzene [C]	5	1	NA	NA	1	0.36	NA
95-63-6	Benzene, 1,2,4-trimethyl [N]	NA	NA	NA	NA	10	30	NA
108-67-8	Benzene, 1,3,5-trimethyl- [N]	NA	NA	NA	NA	10	30	MA
100-44-7	Benzyl chloride [C]	NA	NA	NA	NA	0.5	0.062	NA
542-88-1	Bis(chloromethyl)ether [C]	NA	NA	NA	NA	10	0.0001	HA
75-27-4	Bromodichloromethane [C]	100	NA	NA	NA	0.6	0.17	NA
593-60-2	Bromoethene	NA	NA	NA	NA	NA	0.096	NA
75-25-2	Bromoform [C]	100	NA	NA	NA	4	2.4	NA
74-83-9	Bromomethane [N]	NA	NA	NA	NA	10	0.87	NA
75-15-0	Carbon disulfide [N]	NA	NA	NA	NA	700	100	NA
56-23-5	Carbon tetrachloride [C]	5	3	NA	NA	3	0.16	NA
108-90-7	Chlorobenzene [N]	NA	NA	NA	NA	NA	3,P	NA
75-45-6	Chlorodifluoromethane	NA	NA	NA	NA	NA	8,700	NA
75-00-3	Chloroethane [N]	NA	NA	NA	NA	140	860	NA
67-66-3	Chloroform [C]	100	NA	NA	NA	6	0.15	NA
74-87-3	Chloromethane [C]	NA	NA	NA	NA	2.7	1.4	NA
1476-11-5	Cis-I,4-Dichloro-2-butene	NA	NA	NA	NA	NA	0.0011	NA
4170-30-3	Crotonaldehyde	NA	NA	NA	NA	NA	NA	NA
108-94-1	Cyclohexanone [N]	NA	NA	NA	NA	35,000	3,000	NA
1163-19-5	Decabromodiphenyl ether [N]	NA	NA	NA	NA	NA	6.1	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Volatiles (µg/l)								
124-48-1	Dibromochloromethane [C]	NA	NA	NA	NA	1	0.13	NA
75-71-8	Dichlorodifluoromethane [N]	NA	NA	NA	NA	1,400	39	NA
77-73-6	Dicyclopentadiene [N]	NA	NA	NA	NA	NA	0.042	NA
60-29-7	Diethyl ether [N]	NA	NA	NA	NA	750	120	NA
107-12-0	Ethyl cyanide	NA	NA	NA	NA	NA	NA	NA
100-41-4	Ethylbenzene [N]	700	700	NA	30	NA	130	NA
87-82-1	Hexabromobenzene [N]	NA	NA	NA	NA	NA	1.2	NA
78-83-1	Isobutyl alcohol [N]	NA	NA	NA	NA	2,100	180	NA
126-98-7	Methacrylonitrile [N]	NA	NA	NA	NA	50	0.37	NA
74-88-4	Methyl iodide	NA	NA	NA	NA	NA	NA	NA
98-83-9	Methyl styrene (alpha) [N]	NA	NA	NA	NA	NA	43	NA
25013-15-4	Methyl styrene (mixture) [N]	NA	NA	NA	NA	NA	NA	NA
1634-04-4	Methyl tert-butyl ether [N]	NA	NA	NA	NA	50	18	NA
74-95-3	Methylene bromide [N]	NA	NA	NA	NA	NA	6.1	NA
75-09-2	Methylene chloride [C]	5	5	NA	NA	NA	4.1	NA
100-42-5	Styrene [N]	100	100	NA	NA	NA	160	NA
127-18-4	Tetrachloroethene [C]	5	3	NA	NA	NA	1.1	NA
109-99-9	Tetrahydrofuran	NA	NA	NA	NA	NA	NA	NA
108-88-3	Toluene [N]	1,000	1,000	NA	40	NA	75	NA
79-01-6	Trichloroethene [C]	5	3	NA	NA	NA	1.6	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	WASP Reference Concentration
Volatiles (µg/l)								
75-69-4	Trichlorofluoromethane [N]	NA	NA	NA	NA	2,100	130	NA
108-05-4	Vinyl acetate [N]	NA	NA	NA	NA	250	3,700	NA
75-01-4	Vinyl chloride [C]	2	1	NA	NA	NA	0.019	NA
1330-20-7	Xylene (Total) [H]	10,000	10,000	NA	20	NA	1,200	NA
156-59-2	cis-1,2-Dichloroethene [N]	70	70	NA	NA	NA	6.1	NA
10061-01-5	cis-1,3-Dichloropropene [C]	NA	NA	NA	NA	1	0.077	NA
99-08-1	m-Nitrotoluene [N]	NA	NA	NA	NA	NA	6.1	NA
108-38-3	m-Xylene	10,000	10,000	NA	20	NA	140	NA
110-54-3	n-Hexane [N]	NA	NA	NA	NA	10	35	NA
95-49-8	o-Chlorotoluene [N]	NA	NA	NA	NA	140	12	NA
88-72-2	o-Nitrotoluene [N]	NA	NA	NA	NA	NA	6.1	NA
95-47-6	o-Xylene [N]	10,000	10,000	NA	20	NA	140	NA
5216-25-1	p,a,a,a-Tetrachlorotoluene [C]	NA	NA	NA	NA	NA	0.0005	NA
99-99-0	p-Nitrotoluene [N]	NA	NA	NA	NA	NA	6.1	MA
106-42-3	p-Xylene	10,000	10,000	NA	20	NA	52	NA
135-98-8	sec-Butylbenzene [N]	NA	NA	NA	NA	NA	6.1	NA
104-51-8	tert-Butylbenzene [N]	NA	NA	NA	NA	NA	6.1	NA
156-60-5	trans-I,2-Dichloroethene [N]	100	100	NA	HA	NA	12	HA
10061-02-6	trans-1,3-Dichloropropene [C]	NA	NA	NA	NA	1	0.077	NA
110-57-6	trans-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA	0.0011	NA

Appendix D

Key:

Parameter Superscripts

C = Carcinogen
N = Non-carcinogen
P = Possible carcinogen

Preliminary Remediation Goal Acronyms

RBC	=	Risk Based Concentration.
RBC TAP	=	Risk Based Concentration Tap Water.
SSL	=	Soil Screening Level (subsurface soil).
CG	=	Soil Cleanup Goal.
CG for Leaching	=	Soil Cleanup Goal (subsurface soil).
MCL	=	Maximum Contaminant Level
SMCL	=	Secondary Maximum Contaminant Level
FPDWS	=	Florida Primary Drinking Water Standard
FSDWS	=	Florida Secondary Drinking Water Standard

Appendix E

Summary Analytical Results, Soil and Groundwater Samples Exceeding PRGs

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 08

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (mg/kg)							
7429-90-5 Aluminum (Al) N							
	008-S-0001-01	03/26/96	8,250.	J	7,800,	USEPA-RBC	1,661.
	008-S-0003-01	03/26/96	15,400,	J	7,800.	USEPA-RBC	1,661.
	008-S-0007-01	04/04/96	10,500.	J	7,800,	USEPA-RBC	1,661.
	008-S-0008-01	04/04/96	8,750.	J	7,800.	USEPA-RBC	1,661.
7440-38-2 Arsenic (As) C							
	008-S-0001-01	03/26/96	1.3	3	0.43	USEPA-RBC	1.56
	008-S-0003-01	03/26/96	2.1	3	0.43	USEPA-RBC	1.56
	008-S-0004-01	04/04/96	0.51	J	0.43	USEPA-RBC	1.56
	008-S-0006-01	04/04/96	1.	J	0.43	USEPA-RBC	1.56
	008-5-0007-01	04/04/96	2.2	J	0.43	USEPA-RBC	1.56
	008-S-0008-01	04/04/96	1.4	J	0.43	USEPA-RBC	1.56
7440-39-3 Barium (Ba) N							
	008-S-0001-06	03/28/96	52.1	J	32.	USEPA-SSL	4.63
	008-S-0001-09	03/28/96	168.	J	32.	USEPA-SSL	4.63
7440-43-9 Cadmium (Cd) N							
	008-S-0001-06	03/28/96	10.9		6.	USEPA-SSL	1.
	008-S-0001-09	03/28/96	15.9		6.	USEPA-SSL	1.
7439-89-6 Iron (Fe) N							
	008-S-0001-01	03/26/96	4,250.	J	2,300.	USEPA-RBC	2,745.
	008-S-0003-01	03/26/96	9,140.	J	2,300.	USEPA-RBC	2,745.
	008-S-0006-01	04/04/96	3,330.	J	2,300.	USEPA-RBC	2,745,
	008-S-0007-01	04/04/96	8,130.	J	2,300.	USEPA-RBC	2,745.
	008-S-0008-01	04/04/96	4,910.	J	2,300.	USEPA-RBC	2,745.
7439-92-1 Lead (Pb) C							
	008-S-0001-09	03/28/96	648.	J	400.	USEPA-SSL	7-32

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 08

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/kg)							
No Exceedances Found							

PRB_PENSI
06/09/97

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 08

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	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/kg)							
50-32-8 Benzo(a)pyrene C	008-S-0006-01	04/04/96	180.		88.	USEPA-RBC	NA

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 08

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/kg)							
309-00-2 Aldrin [C]							
	008-S-0003-07	03/26/96	21.	J	5.	USEPA-SSL	NA
	008-S-0003-11	03/26/96	9.06	J	5.	USEPA-SSL	NA
60-57-1 Dieldrin [C]							
	008-S-0001-09	03/28/96	3.48	J	1.	USEPA-SSL	NA
	008-S-0003-01	03/26/96	2,010.	DJ	40.	USEPA-RBC	NA
	008-S-0003-07	03/26/96	496.	D	1.	USEPA-SSL	NA
	008-S-0003-11	03/26/96	134.	D	1.	USEPA-SSL	NA

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 08

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)								
7429-90-5	Aluminum (Al) N							
		008-G-GR01-01	05/07/96	341.		50.	EPA SMCL	3,882.8
		008-G-GR04-01	05/07/96	1,320.		50.	EPA SMCL	3,882.8
		008-G-GR05-01	/ /	225.	J	50.	EFA SMCL	3,882.8
		008-G-GR06-01	/ /	667.	J	50.	EPA SMCL	3,882.8
7440-36-0	Antimony (Sb) N							
		008-G-GR03-03	05/07/96	15.		6.	FPDWS	30.2
		008-G-GR04-01	05/07/96	12.5		6.	FPDUS	30.2
7440-43-9	Cadmium (Cd) N							
		008-G-GR01-01	05/07/96	23.7		5.	FPDWS	3.4
		008-G-GR02-01	05/07/96	19.		5.	FPDUS	3.4
		008-G-GR03-01	05/07/96	22.2		5.	FPDWS	3.4
		008-G-GR05-01	/ /	32.		5.	FPDWS	3.4
7439-89-6	Iron (Fe) N							
		008-G-GR01-01	05/07/96	1,100.		300.	FSDWS	1,707.8
		008-G-GR02-01	05/07/96	9,950.		300.	FSDUS	1,707.8
		008-G-GR04-01	05/07j96	348.		300.	FSDWS	1,707.8
7439-92-1	Lead (Pb)							
		008-G-GR03-01	05/07/96	18.6		15.	FPDWS	1.6
7439-96-5	Manganese (Mn) N							
		008-G-GR01-01	05/07/96	368.		50.	FSDWS	22.
		008-G-GR02-01	05/07/96	602.		50.	FSDWS	22.

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 08

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 08

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/l)							
No Exceedances Found							

PRB_PENGI
06/09/97

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants PENSACOLA, SITE 08

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/l)							
No Exceedances Found							

PRB_PENGI
06/09/97

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants PENSACOLA, SITE 08, PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)							
7440-43-9 Cadmium (Cd) N	008-G-GR05-02	04/02/97	27.4		5.	FPDWS	3.4

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 24

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (mg/kg)								
7429-90-5	Aluminum (Al) N							
		024-S-0004-01	08/30/95	*8,550.*		7,800.	USEPA-RBC	1,661.
7440-41-7	Beryllium (Be) C							
		024-S-0003-01	08/30/95	0.17		0.15	USEPA-RBC	0.41
7439-89-6	Iron (Fe) N							
		024-S-0002-01	08/26/95	2,890.		2,300.	USEPA-RBC	2,745.
		024-S-0003-01	08f30/95	2,400.		2,300.	USEPA-RBC	2,745.
		024-S-0004-01	08/30/95	6,490.		2,300.	USEPA-RBC	2,745.
		024-S-0005-01	08/30/95	3,310.		2,300.	USEPA-RBC	2,745.

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 24 PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (mg/kg)							
7440-38-2 Arsenic (As) C							
	024-S-0010-01	04/02/96	2.8	J	0.43	USEPA-RBC	1.56
	024-S-0011-01	04/02/96	3.1	J	0.43	USEPA-RBC	1.56
	024-S-0012-01	04/02/96	1.2	J	0.43	USEPA-RBC	1.56
	024-S-0013-01	04/03/96	0.58		0.43	USEPA-RBC	1.56
	024-S-0014-01	04/02/96	1.6	J	0.43	USEPA-RBC	1.56
	024-S-0015-01	04/02/96	2.2	J	0.43	USEPA-RBC	1.56
	024-S-0016-01	04/02/96	0.97	J	0.43	USEPA-RBC	1.56
	024-S-0017-01	04/03/96	0.81		0.43	USEPA-RBC	1.56
	024-S-0018-01	04/03/96	1.5		0.43	USEPA-RBC	1.56
	024-S-0019-01	04/03/96	0.64		0.43	USEPA-RBC	1.56
	024-S-0020-01	04/03/96	1.6		0.43	USEPA-RBC	1 56
	024-S-0021-01	04/03/96	1.1		0.43	USEPA-RBC	1.56
	024-S-0022-01	04/03/96	0.94		0.43	USEPA-RBC	1.56
7439-96-5 Manganese (Mn) N							
	024-S-0010-01	04/02/96	220.		180.	USEPA-RBC	21.36
	024-S-0011-01	04/02/96	377.		180.	USEPA-RBC	21.36

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 24

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/kg)							
No Exceedances found							

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 24

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/kg)							
50-32-8 Benzo(a)pyrene [C]	024-S-0003-01	08/30/95	180.		88.	USEPA-RBC	NA

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 24 PHASE II

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/kg)								
50-32-8	Benzo(a)pyrene C							
		024-S-0010-01	04/02/96	630.		88.	USEPA-RBC	NA
		024-S-0012-01	04/02/96	160.		88.	USEPA-RBC	NA
205-99-2	Benzo(b)fluoranthene C							
		024-S-0010-01	04/02/96	990.		880.	USEPA-RBC	NA
53-70-3	Dibenz(a,h)anthracene C							
		024-S-0010-01	04/02/96	100.	J	88.	USEPA-RBC	NA

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/kg)							
60-57-1 Dieldrin [C]							
	024-S-0001-05	08/29/95	2.3	J	1.	USEPA-SSL	NA
	024-S-0002-10	08/29/95	3.3	J	1.	USEPA-SSL	NA

Exce ds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 24 PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/kg)							
60-57-1 Dieldrin [C]							
	024-S-0010-01	04/02/96	58.	D	40.	USEPA-RBC	NA
	024-S-0010-07	04/02/96	22.	DJ	1.	USEPA-SSL	NA
	024-S-0012-01	04/02/96	100.	J	40.	USEPA-RBC	NA
	024-S-0012-06	04/02/96	4.2	J	1.	USEPA-SSL	NA
	024-S-0015-07	04/02/96	18.	DJ	1.	USEPA-SSL	NA
1024-57-3 Heptachlor epoxide [C]							
	024-S-0021-01	04/03/96	71.	D	70.	USEPA-RBC	NA

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 24

		Sample ID	Oate	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)								
7429-90-5	Aluminum (Al) N							
		024-G-GS01-01	09/19/95	263.	J	SO.	EPA SMCC	3,882.8
		024-G-GS02-01	09/19/95	1,020.	J	50.	EPA SMCL	3,882.8
		024-G-GS03-01	09/18/95	521.	J	50.	EPA SMCL	3,882.8
		024-G-GS04-01	09/19/95	518.	J	50.	EPA SMCL	3,882.8
		024-G-GS05-01	09/15/95	786.	J	50.	EPA SMCL	3,882.8
		024-G-GS06-01	09/18/95	136.	J	50.	EPA SMCL	3,882.8
7440-36-0	Antimony (Sb) N							
		024-G-GS01-01	09/19/95	13.8		6.	FPDWS	30.2
		024-G-GS06-01	09/18/95	7.1		6.	FPDWS	30.2
7440-43-9	Cadmium (Cd) N							
		024-G-GS01-01	09/19/95	5.9		5.	FPDWS	3.4
7439-89-ti	Iron (Fe) N							
		024-G-GS01-01	09/19/95	6,110.		300.	FSDWS	1,707.8
		024-G-GS02-01	09/19/95	17,700.		300.	FSDWS	1,707.8
		024-G-GS03-01	09/1a/95	18,400.		300.	FSDUS	1,707.8
		024-G-GS05-01	09/15/95	785.		300.	FSDWS	1,707.8
7439-96-5	Manganese (Mn) N							
		024-G-GS01-01	09/19/95	146.		50.	FSDWS	22.
		024-G-GS02-01	09/19/95	546,		50.	FSDUS	22.
		024-G-GS03-01	09/18/95	311.		50.	FSDUS	22
		024-G-GS05-01	09/15/95	173.		50.	FSDWS	22.

Exceeds Preliminary Remediation Goals (PRGs) far Groundwater Contaminants

PENSACOLA, SITE 24 PHASE II

	Sample ID	Date	Result	VQual	PUG	Reason	NASP Reference Concentration
Inorganics (µg/l)							
7429-90-5 Aluminum (Al) N							
	024-G-GS01-02	04/17/96	312.		50.	EPA SMCL	3,882.8
	024-G-GS02-02	04/17/96	499.		50.	EPA SMCL	3,882.8
	024-G-GS04-02	04/19/96	658.		50.	EPA SMCL	3,882.8
	024-G-GS05-02	04/17/96	171.	J	50.	EPA SMCL	3,882.8
	024-G-GS06-02	04/17/96	275.		50.	EPA SMCL	3,882.8
	024-G-GS07-01	04/18/96	187.	3	50.	EPA SMCL	3,882.8
	024-G-GS08-01	04/18/96	1,030.		50.	EPA SMCL	3,882.8
7440-36-0 Antimony (Sb) N							
	024-G-GR09-01	06/07/96	65.9		6.	FPDWS	30.2
	024-G-GR09-02	06/24/96	67.		6.	FPDWS	30.2
	024-G-GR10-01	07/02/96	13.		6.	FPDUS	30.2
	024-G-GS01-02	04/17/96	6.4		6.	FPDUS	30.2
7440-43-9 Cadmium (Cd) N							
	024-G-GS01-02	04/17/96	11.		5.	FPDWS	3.4
	024-G-GS02-02	04/17/96	15.5		5.	FPDUS	3.4
	024-G-GS05-02	04/17/96	5.1		5.	FPDWS	3.4
7439-89-6 Iron (Fe) N							
	024-G-GS01-02	04/17/96	5,110.		300.	FSDWS	1,707.8
	024-G-GS02-02	04/17/96	20,400.		300.	FSDWS	1,707.8
	024-G-GS03-02	04/17/96	7,410.		300.	FSDWS	1,707.8
	024-G-GS05-02	04/17/96	2,970.		300.	FSDWS	1,707.8
7439-96-5 Manganese (Mn) N							
	024-G-GS01-02	04/17/96	129.		50.	FSDWS	22.
	024-G-GS02-02	04/17/96	496.		50.	FSDWS	22.
	024-G-GS03-02	04/17/96	145.		50.	FSDUS	22.
	024-G-GS05-02	04/17/96	284.		50.	FSDWS	22.
	024-G-GS08-01	04/18/96	158.		50.	FSDWS	22.
7440-02-0 Nickel (Ni) N							
	024-G-GS02-02	04/17/96	137.		100.	FPDWS	39.9

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 24 PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)							
7440-28-0 Thallium (Tl)							
	024-G-GS01-02	04/17/96	3.5	J	2.	FPDWS	3.6
	024-G-GS02-02	04/17/96	3.1	J		FPDWS	3.6
	024-G-GS05-02	04/17/96	3.8	J	2.	FPDWS	3.6
	024-G-GS08-01	04/18/96	6.1	J	2.	FPDWS	3.6

PRB_PENGI
06/10/97

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 24, PHASE III

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Ref Concentration
Inorganics (µg/l)								
7429-90-5	Aluminum (Al) N	024-G-GS09-03	07/29/96	226.		50.	EPA SMCL	3,882.8
7440-36-0	Antimony (Sb) N	024-G-GS09-03	07/29/96	27.1		6.	FPDWS	30.2

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants PENSACOLA, SITE 24

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/l)								
71-43-2	Benzene [C]	024-G-GS03-01	09/18/95	1.		1.	FGGC	NA
75-09-2	Methylene chloride [C]	024-G-GS06-01	09/18/95	11.		5.	FPDWS	NA
127-18-4	Tetrachloroethene [C]	024-G-GS04-01	09/19/95	3.		3.	FPDWS	NA
79-01-6	Trichloroethene [C]	024-G-GS02-01	09/19/95	8.		3.	FPDWS	NA

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 24 PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/l)							
79-01-6 Trichloroethene [C]	024-G-GS02-02	04/17/96	5.		3.	FPDWS	NA
75-01-4 Vinyl chloride [E]	024-G-GS02-02	04/17/96	4.		1.	FPDWS	NA

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 24, PHASE III

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA SITE 24

	Sample ID	Date	Result	VQual	PUG	Reason	NASP Reference Concentration
Semivolatiles (µg/l)							
No fxeeedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants PENSACOLA, SITE 24 PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/l)							
No Exceedances Found							

PRB_PENGI
06/10/97

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 24

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (fig/[ )							
60-57-1 Dieldrin C	024-G-GS01-01	09/19/95	*0.26*		0.1	FGGC	NA

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 24 PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/l)							
60-57-1 Dieldrin ε	024-G-GS01-02	04/17/96	0.34		0.1	FGGC	NA

Appendix F

Complete Analytical Results, Soil and Groundwater Samples

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 m y or 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.

PENSACOLA, SITE 08
Phase I Soil
Inorganics

LOWMETAL													
	SAMPLE ID ------->	008-S-0001-01		008-S-0001-06		008-S-0001-09		008-S-0003-01		008-S-0003-07		008-S-0003-11	
	ORIGINAL ID ----->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	LAB SAMPLE ID --->	5597-01		5597-02		5597-03		5597-04		5597-05		5597-06	
	ID FROM REPORT -->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	SAMPLE DATE ----->	03/26/96		03/28/96		03/28/96		03/26/96		03/26/96		03/26/96	
	DATE EXTRACTED -->	04/11/96		04/11/96		04/11/96		04/11/96		04/11/96		04/11/96	
	DATE ANALYZED --->	04/16/96		04/16/96		04/16/96		04/16/96		04/16/96		04/16/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
7429-90-5	Aluminum (Al)	8250.	J	4910.	J	2530.	J	15400.	J	1570.	J	1910.	J
7440-36-0	Antimony (Sb)	0.19	UJ	4.4	J	7.1	J	0.75	J	0.18	UJ	0.2	J
7440-38-2	Arsenic (As)	1.3	J	0.94	J	2.5	J	2.1	J	0.53	J	1.1	J
7440-39-3	Barium (Ba)	5.7	J	52.1	J	168.	J	27.2	J	4.1	J	5.3	J
7440-41-7	Beryllium (Be)	0.04	U	0.04	U	0.04	U	0.05	J	0.04	U	0.04	U
7440-43-9	Cadmium (Cd)	0.09	J	10.9		15.9		1.7		0.68		0.71	
7440-70-2	Calcium (Ca)	491.	J	641.	J	841.	J	2890.	J	2570.	J	8280.	J
7440-47-3	Chromium (Cr)	7.5	J	20.5	J	28.5	J	16.6	J	3.4	J	6.1	J
7440-48-4	Cobalt (Co)	0.22	U	1.8		2.		0.46	J	0.21	U	0.28	J
7440-50-8	Copper (Cu)	3.9	J	168.	J	256.	J	30.5	J	3.9	J	7.3	J
7439-89-6	Iron (Fe)	4250.	J	7120.	J	13900.	J	9140.	J	3130.	J	9010.	J
7439-92-1	Lead (Pb)	14.2	J	273.	J	648.	J	82.4	J	32.2	J	16.	J
7439-95-4	Magnesium (Mg)	102.	J	94.	J	126.	J	244.	J	77.7	J	328.	J
7439-96-5	Manganese (Mn)	18.	J	65.2	J	106.	J	33.7	J	10.7	J	24.6	J
7439-97-6	Mercury (Hg)	0.1	U	0.53		0.45		0.11		0.21		0.32	
7440-02-0	Nickel (Ni)	1.5	J	11.9	J	17.2	J	4.4	J	1.6	J	4.1	J
7440-09-7	Potassium (K)	66.7	J	44.2	J	57.6	J	128.		18.5	J	45.	J
7782-49-2	Selenium (Se)	0.41	UJ	0.4	UJ	0.39	UJ	0.41	UJ	0.39	UJ	0.41	UJ
7440-22-4	Silver (Ag)	0.15	U	3.2		6.9		0.83	J	0.14	U	0.15	U
7440-23-5	Sodium (Na)	56.4	U	78.1	J	51.9	U	50.3	U	36.	U	39.4	U
7440-28-0	Thallium (Tl)	0.41	U	0.4	U	0.39	U	0.41	U	0.39	U	0.41	U
7440-62-2	Vanadium (V)	11.6	J	9.7	J	6.3	J	21.6	J	2.5	J	3.3	J
7440-66-6	Zinc (Zn)	11.4	J	347.	J	600.	J	69.7	J	19.4	J	33.5	J
57-12-5	Cyanide (CN)	0.54	U	0.53	U	0.53	U	0.54	U	0.52	U	0.53	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
Inorganics

LOWMETAL													
	SAMPLE ID ------->	008-S-0004-01		008-S-0004-07		008-S-0006-01		008-C-0006-01		008-S-0006-07		008-S-0007-01	
	ORIGINAL ID ----->	008S000401		008S000407		008S000601		008C000601		008S000607		008S000701	
	LAB SAMPLE ID --->	5602-02		5602-03		5602-04		5602-01		5602-05		5602-06	
	ID FROM REPORT -->	008S000401		008S000407		008S000601		008C000601		008S000607		008S000701	
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		04/04/96	
	DATE EXTRACTED -->	04/11/96		04/11/96		04/11/96		04/11/96		04/11/96		04/11/96	
	DATE ANALYZED --->	04/16/96		04/16/96		04/16/96		04/16/96		04/16/96		04/16/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
7429-90-5	Aluminum (Al)	2050.	J	370.	J	5140.	J	5350.	J	1970.	J	10500.	J
7440-36-0	Antimony (Sb)	0.23	J	0.19	UJ	0.38	J	0.77	J	0.72	J	0.19	UJ
7440-38-2	Arsenic (As)	0.51	J	0.27	UJ	1.	J	0.94	J	0.87	J	2.2	J
7440-39-3	Barium (Ba)	4.2	J	0.6	J	9.1	J	12.9	J	13.2	J	8.5	J
7440-41-7	Beryllium (Be)	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.05	J
7440-43-9	Cadmium (Cd)	0.12		0.03	U	0.68		1.3		2.3		0.12	
7440-70-2	Calcium (Ca)	155.	J	26.7	J	628.	J	2330.	J	411.	J	456.	J
7440-47-3	Chromium (Cr)	2.	J	0.3	J	5.9	J	6.5	J	8.8	J	12.5	J
7440-48-4	Cobalt (Co)	0.22	U	0.22	U	0.23	U	0.22	U	0.31	J	0.22	U
7440-50-8	Copper (Cu)	2.	J	0.13	U	4.8	J	6.4	J	42.6	J	7.7	J
7439-89-6	Iron (Fe)	1240.	J	231.	J	3330.	J	3900.	J	5820.	J	8130.	J
7439-92-1	Lead (Pb)	68.	J	1.9	J	58.	J	76.3	J	137.	J	23.7	J
7439-95-4	Magnesium (Mg)	88.8	J	15.7	J	82.7	J	131.	J	64.2	J	80.8	J
7439-96-5	Manganese (Mn)	10.5	J	0.7	J	15.2	J	21.5	J	19.7	J	19.1	J
7439-97-6	Mercury (Hg)	0.15		0.12		0.11		0.17		0.31		0.11	
7440-02-0	Nickel (Ni)	0.82	J	0.19	U	1.5	J	2.3	J	5.	J	1.4	J
7440-09-7	Potassium (K)	41.2	J	9.5	J	48.1	J	72.8	J	25.2	J	64.	J
7782-49-2	Selenium (Se)	0.4	UJ	0.4	UJ	0.41	UJ	0.4	UJ	0.4	UJ	0.39	UJ
7440-22-4	Silver (Ag)	0.15	U	0.15	U	0.15	U	0.15	U	0.17	J	0.14	U
7440-23-5	Sodium (Na)	36.4	U	18.2	U	32.9	U	35.4	U	31.3	U	39.9	U
7440-28-0	Thallium (Tl)	0.4	U	0.4	U	0.41	U	0.4	U	0.4	U	0.39	U
7440-62-2	Vanadium (V)	3.1	J	0.52	J	8.1	J	7.8	J	3.7	J	21.8	J
7440-66-6	Zinc (Zn)	8.7	J	0.86	J	21.2	J	46.8	J	94.1	J	13.2	J
57-12-5	Cyanide (CN)	0.54	U	0.52	U	0.54	U	0.53	U	0.53	U	0.54	U

*** Validation Complete ***

DATALCP3
06/10/97

PENSACOLA, SITE 08
Phase I Soil
Inorganics

LOWMETAL									
	SAMPLE ID ------->	008-S-0007-07		008-S-0008-01					
	ORIGINAL ID ----->	008S000707		008S000801					
	LAB SAMPLE ID --->	5602-07		5602-08					
	ID FROM REPORT -->	008S000707		008S000801					
	SAMPLE DATE ----->	04/04/96		04/04/96					
	DATE EXTRACTED -->	04/11/96		04/11/96					
	DATE ANALYZED --->	04/16/96		04/16/96					
	MATRIX ---------->	Soil		Soil					
	UNITS ---------->	MG/KG		MG/KG					
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL		
7429-90-5	Aluminum (Al)	720.	J	8750.	J	1860.	J		
7440-36-0	Antimony (Sb)	0.9	J	0.19	UJ	0.19	UJ		
7440-38-2	Arsenic (As)	1.8	J	1.4	J	0.28	J		
7440-39-3	Barium (Ba)	26.1	J	4.4	J	10.1	J		
7440-41-7	Beryllium (Be)	0.04	U	0.04	U	0.04	U		
7440-43-9	Cadmium (Cd)	5.7		0.03	J	0.7			
7440-70-2	Calcium (Ca)	299.	J	146.	J	92.9	J		
7440-47-3	Chromium (Cr)	11.7	J	8.3	J	1.8	J		
7440-48-4	Cobalt (Co)	0.35	J	0.22	U	0.22	U		
7440-50-8	Copper (Cu)	47.4	J	2.8	J	3.9	J		
7439-89-6	Iron (Fe)	4430.	J	4910.	J	892.	J		
7439-92-1	Lead (Pb)	160.	J	6.	J	3.3	J		
7439-95-4	Magnesium (Mg)	71.4	J	73.2	J	71.4	J		
7439-96-5	Manganese (Mn)	18.4	J	9.8	J	5.9	J		
7439-97-6	Mercury (Hg)	0.25		0.19		0.15			
7440-02-0	Nickel (Ni)	6.3	J	1.3	J	1.3	J		
7440-09-7	Potassium (K)	17.6	J	56.5	J	41.1	J		
7782-49-2	Selenium (Se)	0.4	UJ	0.4	UJ	0.4	UJ		
7440-22-4	Silver (Ag)	4.6		0.15	U	0.15	U		
7440-23-5	Sodium (Na)	28.8	U	33.	U	25.8	U		
7440-28-0	Thallium (Tl)	0.4	U	0.4	U	0.4	U		
7440-62-2	Vanadium (V)	1.2	J	13.7	J	2.6	J		
7440-66-6	Zinc (Zn)	100.	J	5.	J	41.8	J		
57-12-5	Cyanide (CN)	0.53	U	0.53	U	0.52	U		

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
VOCs

LOWVOA													
	SAMPLE ID ------->	008-S-0001-01		008-S-0001-06		008-S-0001-09 RE		008-S-0003-01		008-S-0003-07		008-S-0003-11	
	ORIGINAL ID ----->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	LAB SAMPLE ID --->	5597-01		5597-02		5597-03RE		5597-04		5597-05		5597-06	
	ID FROM REPORT -->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	SAMPLE DATE ----->	03/26/96		03/28/96		03/28/96		03/26/96		03/26/96		03/26/96	
	DATE EXTRACTED -->			04/04/96		04/02/96		04/04/96		04/04/96		04/04/96	
	DATE ANALYZED --->	04/01/96		04/01/96		04/01/96		04/01/96		04/01/96		04/01/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
74-97-5	Chlorobromomethane	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ
74-87-3	Chloromethane	0.6	UJ	0.6	UJ	0.6	UJ	0.6	UJ	0.5	UJ	0.6	UJ
74-83-9	Bromomethane	1.	UJ	1.	UJ	1.	UJ	1.	UJ	1.	UJ	1.	UJ
75-01-4	Vinyl chloride	0.9	UJ	0.9	UJ	0.9	UJ	0.9	UJ	0.9	UJ	0.9	UJ
75-00-3	Chloroethane	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ
75-09-2	Methylene chloride	0.9	UJ	0.9	UJ	0.9	UJ	0.9	UJ	0.8	UJ	0.9	UJ
67-64-1	Acetone	55.	J	8.	J	8.	J	55.	J	110.	J	83.	J
75-15-0	Carbon disulfide	0.7	UJ	0.7	UJ	0.7	UJ	0.7	UJ	0.7	UJ	0.7	UJ
75-35-4	1,1-Dichloroethene	1.	UJ	1.	UJ	1.	UJ	1.	UJ	1.	UJ	1.	UJ
75-34-3	1,1-Dichloroethane	0.4	UJ	0.4	UJ	0.4	UJ	0.4	UJ	0.4	UJ	0.4	UJ
156-59-2	cis-1,2-Dichloroethene	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ
156-60-5	trans-1,2-Dichloroethene	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ
67-66-3	Chloroform	0.4	UJ	0.3	UJ	0.3	UJ	0.4	UJ	0.3	UJ	0.4	UJ
107-06-2	1,2-Dichloroethane	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ
78-93-3	2-Butanone (MEK)	2.	UJ	2.	UJ	2.	UJ	2.	UJ	2.	UJ	2.	UJ
71-55-6	1,1,1-Trichloroethane	0.4	U	0.4	UJ	0.4	U	0.4	U	0.4	U	0.4	U
56-23-5	Carbon tetrachloride	0.5	U	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	1.	U	1.	UJ	1.	U	1.	U	1.	U	1.	U
78-87-5	1,2-Dichloropropane	0.2	U	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.3	U	0.3	UJ	0.3	U	0.3	U	0.3	U	0.3	U
79-01-6	Trichloroethene	0.8	U	0.8	UJ	0.8	U	0.8	U	0.8	U	2.	
124-48-1	Dibromochloromethane	0.5	U	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	0.3	U	0.3	UJ	0.3	U	0.3	U	0.3	U	0.3	U
71-43-2	Benzene	0.8	U	0.8	UJ	0.8	U	0.8	U	0.7	U	0.8	U
10061-02-6	trans-1,3-Dichloropropene	0.7	U	0.6	UJ	0.6	U	0.7	U	0.6	U	0.6	U
75-25-2	Bromoform	0.5		0.4	UJ	0.4	U	0.4	U	0.4	U	0.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.	U	1.	UJ	1.	U	1.	U	1.	U	1.	U
591-78-6	2-Hexanone	2.	U	2.	UJ	2.	U	2.	UJ	2.	UJ	2.	U
127-18-4	Tetrachloroethene	0.9	U	0.8	UJ	0.8	U	0.9	UJ	1.	J	2.	
79-34-5	1,1,2,2-Tetrachloroethane	0.8	U	0.8	UJ	0.8	U	0.8	UJ	0.8	UJ	0.8	U
106-93-4	1,2-Dibromoethane	1.	U	1.	UJ	1.	U	1.	UJ	0.9	UJ	1.	U
108-88-3	Toluene	0.3	U	0.4	J	0.4		0.3	UJ	0.5	J	0.3	U
108-90-7	Chlorobenzene	0.2	U	0.2	UJ	0.2	U	0.2	UJ	0.2	UJ	0.2	U
100-41-4	Ethylbenzene	0.3	U	0.3	UJ	0.3	U	0.3	UJ	0.3	UJ	0.3	U
100-42-5	Styrene	0.2	U	0.2	UJ	0.2	U	0.2	UJ	0.2	UJ	0.2	U
1330-20-7	Xylene (Total)	0.2	U	0.2	UJ	0.2	U	0.2	UJ	0.8	J	0.9	

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
VOCs

LOWVOA													
	SAMPLE ID ------->	008-S-0001-01		008-S-0001-06		008-S-0001-09 RE		008-S-0003-01		008-S-0003-07		008-S-0003-11	
	ORIGINAL ID ----->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	LAB SAMPLE ID --->	5597-01		5597-02		5597-03RE		5597-04		5597-05		5597-06	
	ID FROM REPORT -->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	SAMPLE DATE ----->	03/26/96		03/28/96		03/28/96		03/26/96		03/26/96		03/26/96	
	DATE EXTRACTED -->			04/04/96		04/02/96		04/04/96		04/04/96		04/04/96	
	DATE ANALYZED --->	04/01/96		04/01/96		04/01/96		04/01/96		04/01/96		04/01/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
541-73-1	1,3-Dichlorobenzene	0.5	U	0.4	UJ	0.4	U	0.5	UJ	0.4	UJ	0.5	U
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	UJ	0.3		0.2	UJ	0.2	UJ	0.2	U
95-50-1	1,2-Dichlorobenzene	0.4	U	0.4	UJ	0.4	U	0.4	UJ	0.4	UJ	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	1.	UJ	1.	U	1.	UJ	0.9	UJ	1.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
VOCs

LOWVOA													
	SAMPLE ID ------->	008-S-0004-01		008-S-0004-07		008-S-0006-01		008-C-0006-01		008-S-0006-07		008-S-0007-01 RE	
	ORIGINAL ID ----->	008S000401		008S000407		008S000601		008C000601		008S000607		008S000701	
	LAB SAMPLE ID --->	5602-02		5602-03		5602-04		5602-01		5602-05		5602-06RE	
	ID FROM REPORT -->	008S000401		008S000407		008S000601		008C000601		008S000607		008S000701	
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		04/04/96	
	DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96		04/04/96		04/06/96		04/06/96	
	DATE ANALYZED --->	04/06/96		04/06/96		04/06/96		04/06/96		04/06/96		04/07/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
74-97-5	Chlorobromomethane	0.1	UJ	0.1	UJ	0.1	UJ	0.1	U	0.1	UJ	0.1	U
74-87-3	Chloromethane	0.6	UJ	0.6	UJ	0.6	UJ	0.6	U	0.6	UJ	0.6	U
74-83-9	Bromomethane	1.	UJ	1.	UJ	1.	UJ	1.	U	1.	UJ	1.	U
75-01-4	Vinyl chloride	0.9	UJ	0.9	UJ	0.9	UJ	0.9	U	0.9	UJ	0.9	U
75-00-3	Chloroethane	0.3	UJ	0.3	UJ	0.3	UJ	0.3	U	0.3	UJ	0.3	U
75-09-2	Methylene chloride	0.9	UJ	0.9	UJ	0.9	UJ	0.9	U	0.9	UJ	0.9	U
67-64-1	Acetone	19.	UJ	25.	UJ	20.	J	36.		11.	UJ	1.	U
75-15-0	Carbon disulfide	0.7	UJ	0.7	UJ	0.7	UJ	0.7	U	0.7	UJ	0.8	U
75-35-4	1,1-Dichloroethene	1.	UJ	1.	UJ	1.	UJ	1.	U	1.	UJ	1.	U
75-34-3	1,1-Dichloroethane	0.4	UJ	0.4	UJ	0.4	UJ	0.4	U	0.4	UJ	0.4	U
156-59-2	cis-1,2-Dichloroethene	0.3	UJ	0.3	UJ	0.3	UJ	0.3	U	0.3	UJ	0.3	U
156-60-5	trans-1,2-Dichloroethene	0.3	UJ	0.3	UJ	0.3	UJ	0.3	U	0.3	UJ	0.3	U
67-66-3	Chloroform	0.4	UJ	0.3	UJ	0.4	UJ	0.4	U	0.3	UJ	0.4	U
107-06-2	1,2-Dichloroethane	0.5	UJ	0.5	UJ	0.5	UJ	0.5	U	0.5	UJ	0.5	U
78-93-3	2-Butanone (MEK)	2.	UJ	2.	UJ	2.	UJ	2.	U	2.	UJ	2.	
71-55-6	1,1,1-Trichloroethane	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
56-23-5	Carbon tetrachloride	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
78-87-5	1,2-Dichloropropane	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
79-01-6	Trichloroethene	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
124-48-1	Dibromochloromethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
71-43-2	Benzene	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
10061-02-6	trans-1,3-Dichloropropene	0.7	U	0.6	U	0.7	U	0.6	U	0.6	U	0.7	U
75-25-2	Bromoform	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
591-78-6	2-Hexanone	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
127-18-4	Tetrachloroethene	0.9	U	0.8	U	0.9	U	0.8	U	0.8	U	0.9	U
79-34-5	1,1,2,2-Tetrachloroethane	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
106-93-4	1,2-Dibromoethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
108-88-3	Toluene	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
108-90-7	Chlorobenzene	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
100-41-4	Ethylbenzene	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
100-42-5	Styrene	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1330-20-7	Xylene (Total)	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil

LOWVOA							
	SAMPLE ID ------->	008-S-0004-01	008-S-0004-07	008-S-0006-01	008-C-0006-01	008-S-0006-07	008-S-0007-01 RE
	ORIGINAL ID ----->	008S000401	008S000407	008S000601	008C000601	008S000607	008S000701
	LAB SAMPLE ID --->	5602-02	5602-03	5602-04	5602-01	5602-05	5602-06RE
	ID FROM REPORT -->	008S000401	008S000407	008S000601	008C000601	008S000607	008S000701
	SAMPLE DATE ----->	04/04/96	04/04/96	04/04/96	04/04/96	04/04/96	04/04/96
	DATE EXTRACTED -->	04/06/96	04/06/96	04/06/96	04/04/96	04/06/96	04/06/96
	DATE ANALYZED --->	04/06/96	04/06/96	04/06/96	04/06/96	04/06/96	04/07/96
	MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
	UNITS ---------->	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
CAS #	Parameter	SITE08 VAL	SITE08 VAL	SITE08 VAL	SITE08 VAL	SITE08 VAL	SITE08 VAL
541-73-1	1,3-Dichlorobenzene	0.5 U	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
95-50-1	1,2-Dichlorobenzene	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
96-12-8	1,2-Dibromo-3-Chloropropane	1. U	1. U	1. U	1. U	1. U	1. U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
VOCs

LOWVOA										
	SAMPLE ID ------->	008-S-0007-07 RE		008-S-0008-01		008-S-0008-07				
	ORIGINAL ID ----->	008S000707		008S000801		008S000807				
	LAB SAMPLE ID --->	5602-07RE		5602-08		5602-09				
	ID FROM REPORT -->	008S000707		008S000801		008S000807				
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96				
	DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96				
	DATE ANALYZED --->	04/07/96		04/06/96		04/06/96				
	MATRIX ---------->	Soil		Soil		Soil				
	UNITS ---------->	UG/KG		UG/KG		UG/KG				
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL			
74-97-5	Chlorobromomethane	0.1	U	0.1	UJ	0.1	UJ			
74-87-3	Chloromethane	0.6	U	0.6	UJ	0.6	UJ			
74-83-9	Bromomethane	1.	U	1.	UJ	1.	UJ			
75-01-4	Vinyl chloride	0.9	U	0.9	UJ	0.9	UJ			
75-00-3	Chloroethane	0.3	U	0.3	UJ	0.3	UJ			
75-09-2	Methylene chloride	0.9	U	0.9	UJ	0.9	UJ			
67-64-1	Acetone	33.		21.	UJ	25.	UJ			
75-15-0	Carbon disulfide	0.7	U	0.7	UJ	0.7	UJ			
75-35-4	1,1-Dichloroethene	1.	U	1.	UJ	1.	UJ			
75-34-3	1,1-Dichloroethane	0.4	U	0.4	UJ	0.4	UJ			
156-59-2	cis-1,2-Dichloroethene	0.3	U	0.3	UJ	0.3	UJ			
156-60-5	trans-1,2-Dichloroethene	0.3	U	0.3	UJ	0.3	UJ			
67-66-3	Chloroform	0.3	U	0.3	UJ	0.3	UJ			
107-06-2	1,2-Dichloroethane	0.5	U	0.5	UJ	0.5	UJ			
78-93-3	2-Butanone (MEK)	3.		2.	UJ	2.	UJ			
71-55-6	1,1,1-Trichloroethane	0.4	U	0.4	U	0.4	U			
56-23-5	Carbon tetrachloride	0.5	U	0.5	U	0.5	U			
75-27-4	Bromodichloromethane	1.	U	1.	U	1.	U			
78-87-5	1,2-Dichloropropane	0.2	U	0.2	U	0.2	U			
10061-01-5	cis-1,3-Dichloropropene	0.3	U	0.3	U	0.3	U			
79-01-6	Trichloroethene	0.8	U	0.8	U	0.8	U			
124-48-1	Dibromochloromethane	0.5	U	0.5	U	0.5	U			
79-00-5	1,1,2-Trichloroethane	0.3	U	0.3	U	0.3	U			
71-43-2	Benzene	0.8	U	0.8	U	0.8	U			
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.6	U	0.6	U			
75-25-2	Bromoform	0.4	U	0.4	U	0.4	U			
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.	U	1.	U	1.	U			
591-78-6	2-Hexanone	2.	U	2.	U	2.	U			
127-18-4	Tetrachloroethene	0.8	U	0.8	U	0.8	U			
79-34-5	1,1,2,2-Tetrachloroethane	0.8	U	0.8	U	0.8	U			
106-93-4	1,2-Dibromoethane	1.	U	1.	U	1.	U			
108-88-3	Toluene	0.3	U	0.3	U	0.3	U			
108-90-7	Chlorobenzene	0.2	U	0.2	U	0.2	U			
100-41-4	Ethylbenzene	0.3	U	0.3	U	0.3	U			
100-42-5	Styrene	0.2	U	0.2	U	0.2	U			
1330-20-7	Xylene (Total)	0.2	U	0.2	U	0.2	U			

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
VOCs

LOWVOA								
	SAMPLE ID ------->	008-S-0007-07 RE		008-S-0008-01		008-S-0008-07		
	ORIGINAL ID ----->	008S000707		008S000801		008S000807		
	LAB SAMPLE ID --->	5602-07RE		5602-08		5602-09		
	ID FROM REPORT -->	008S000707		008S000801		008S000807		
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96		
	DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96		
	DATE ANALYZED --->	04/07/96		04/06/96		04/06/96		
	MATRIX ---------->	Soil		Soil		Soil		
	UNITS ---------->	UG/KG		UG/KG		UG/KG		
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	
541-73-1	1,3-Dichlorobenzene	0.4	U	0.4	U	0.4	U	
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	U	0.2	U	
95-50-1	1,2-Dichlorobenzene	0.4	U	0.4	U	0.4	U	
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	1.	U	1.	U	

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
SVOCs

LOWSVOA													
	SAMPLE ID ------->	008-S-0001-01		008-S-0001-06		008-S-0001-09		008-S-0003-01		008-S-0003-07		008-S-0003-11	
	ORIGINAL ID ----->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	LAB SAMPLE ID --->	5597-01RX		5597-02RX		5597-03RX		5597-04RX		5597-05RX		5597-06RX	
	ID FROM REPORT -->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	SAMPLE DATE ----->	03/26/96		03/28/96		03/28/96		03/26/96		03/26/96		03/26/96	
	DATE EXTRACTED -->	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		04/04/96	
	DATE ANALYZED --->	04/08/96		04/08/96		04/08/96		04/08/96		04/08/96		04/08/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
108-95-2	Phenol	37.	U	36.	U	36.	U	37.	U	36.	U	37.	U
111-44-4	bis(2-Chloroethyl)ether	55.	U	54.	U	54.	U	55.	U	53.	U	55.	U
95-57-8	2-Chlorophenol	37.	U	36.	U	36.	U	37.	U	36.	U	37.	U
95-48-7	2-Methylphenol (o-Cresol)	34.	U	33.	U	33.	U	34.	U	33.	U	34.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	31.	U	30.	U	30.	U	31.	U	30.	U	31.	U
106-44-5	4-Methylphenol (p-Cresol)	38.	U	37.	U	37.	U	38.	U	36.	U	37.	U
621-64-7	N-Nitroso-di-n-propylamine	62.	U	60.	U	60.	U	62.	U	59.	U	61.	U
67-72-1	Hexachloroethane	79.	U	78.	U	78.	U	80.	U	76.	U	79.	U
98-95-3	Nitrobenzene	38.	U	38.	U	38.	U	39.	U	37.	U	38.	U
78-59-1	Isophorone	36.	U	36.	U	36.	U	36.	U	35.	U	36.	U
88-75-5	2-Nitrophenol	34.	U	34.	U	34.	U	35.	U	33.	U	34.	U
105-67-9	2,4-Dimethylphenol	40.	U	40.	U	40.	U	41.	U	39.	U	40.	U
111-91-1	bis(2-Chloroethoxy)methane	37.	U	36.	U	36.	U	37.	U	36.	U	37.	U
120-83-2	2,4-Dichlorophenol	67.	U	66.	U	66.	U	67.	U	65.	U	67.	U
120-82-1	1,2,4-Trichlorobenzene	36.	U	36.	U	36.	U	37.	U	35.	U	36.	U
91-20-3	Naphthalene	36.	U	36.	U	36.	U	37.	U	35.	U	36.	U
106-47-8	4-Chloroaniline	45.	U	44.	U	44.	U	45.	U	43.	U	44.	U
87-68-3	Hexachlorobutadiene	42.	U	41.	U	41.	U	42.	U	40.	U	41.	U
59-50-7	4-Chloro-3-methylphenol	30.	U	30.	U	30.	U	30.	U	29.	U	30.	U
91-57-6	2-Methylnaphthalene	35.	U	35.	U	35.	U	35.	U	34.	U	35.	U
77-47-4	Hexachlorocyclopentadiene	130.	U	130.	U	130.	U	130.	U	120.	U	130.	U
88-06-2	2,4,6-Trichlorophenol	31.	U	31.	U	31.	U	31.	U	30.	U	31.	U
95-95-4	2,4,5-Trichlorophenol	44.	U	43.	U	43.	U	44.	U	42.	U	44.	U
91-58-7	2-Chloronaphthalene	39.	U	38.	U	38.	U	39.	U	37.	U	38.	U
88-74-4	2-Nitroaniline	31.	U	30.	U	30.	U	31.	U	30.	U	31.	U
131-11-3	Dimethyl phthalate	36.	U	36.	U	36.	U	37.	U	35.	U	36.	U
208-96-8	Acenaphthylene	38.	U	37.	U	37.	U	38.	U	37.	U	38.	U
606-20-2	2,6-Dinitrotoluene	39.	U	38.	U	38.	U	39.	U	38.	U	39.	U
99-09-2	3-Nitroaniline	42.	U	41.	U	41.	U	42.	U	40.	U	41.	U
83-32-9	Acenaphthene	25.	U	24.	U	24.	U	25.	U	24.	U	25.	U
51-28-5	2,4-Dinitrophenol	170.	U	160.	U	160.	U	170.	U	160.	U	160.	U
100-02-7	4-Nitrophenol	200.	U	200.	U	200.	U	200.	U	190.	U	200.	U
132-64-9	Dibenzofuran	27.	U	26.	U	26.	U	27.	U	26.	U	27.	U
121-14-2	2,4-Dinitrotoluene	28.	U	27.	U	27.	U	28.	U	27.	U	28.	U
84-66-2	Diethylphthalate	32.	U	32.	U	32.	U	33.	U	31.	U	32.	U
7005-72-3	4-Chlorophenylphenylether	38.	U	37.	U	37.	U	38.	U	36.	U	37.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
SVOCs

LOWSVOA													
	SAMPLE ID ------->	008-S-0001-01		008-S-0001-06		008-S-0001-09		008-S-0003-01		008-S-0003-07		008-S-0003-11	
	ORIGINAL ID ----->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	LAB SAMPLE ID --->	5597-01RX		5597-02RX		5597-03RX		5597-04RX		5597-05RX		5597-06RX	
	ID FROM REPORT -->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	SAMPLE DATE ----->	03/26/96		03/28/96		03/28/96		03/26/96		03/26/96		03/26/96	
	DATE EXTRACTED -->	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		04/04/96	
	DATE ANALYZED --->	04/08/96		04/08/96		04/08/96		04/08/96		04/08/96		04/08/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
86-73-7	Fluorene	36.	U	36.	U	36.	U	36.	U	35.	U	36.	U
100-01-6	4-Nitroaniline	47.	U	46.	U	46.	U	47.	U	45.	U	47.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	180.	U	180.	U	180.	U	180.	U	170.	U	180.	U
86-30-6	N-Nitrosodiphenylamine	37.	U	37.	U	37.	U	38.	U	36.	U	37.	U
101-55-3	4-Bromophenyl-phenylether	61.	U	60.	U	60.	U	61.	U	59.	U	61.	U
118-74-1	Hexachlorobenzene	50.	U	49.	U	49.	U	50.	U	48.	U	50.	U
87-86-5	Pentachlorophenol	140.	U	130.	U	130.	U	140.	U	130.	U	130.	U
85-01-8	Phenanthrene	35.	U	34.	U	34.	U	35.	U	34.	U	35.	U
120-12-7	Anthracene	37.	U	36.	U	36.	U	37.	U	36.	U	37.	U
86-74-8	Carbazole	42.	U	41.	U	41.	U	42.	U	40.	U	42.	U
84-74-2	Di-n-butylphthalate	41.	U	79.		140.		41.	U	120.		170.	
206-44-0	Fluoranthene	39.	U	38.	U	38.	U	39.	U	37.	U	39.	U
129-00-0	Pyrene	39.	U	38.	U	38.	U	39.	U	37.	U	38.	U
85-68-7	Butylbenzylphthalate	34.	U	33.	U	33.	U	34.	U	33.	U	34.	U
91-94-1	3,3'-Dichlorobenzidine	110.	U	100.	U	100.	U	110.	U	100.	U	100.	U
56-55-3	Benzo(a)anthracene	50.	U	49.	U	49.	U	50.	U	48.	U	50.	U
218-01-9	Chrysene	40.	U	39.	U	39.	U	40.	U	39.	U	40.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	52.	U	51.	U	260.		53.	U	140.		250.	
117-84-0	Di-n-octyl phthalate	42.	U	41.	U	41.	U	42.	U	41.	U	42.	U
205-99-2	Benzo(b)fluoranthene	84.	U	82.	U	82.	U	84.	U	81.	U	83.	U
207-08-9	Benzo(k)fluoranthene	55.	U	54.	U	53.	U	55.	U	53.	U	54.	U
50-32-8	Benzo(a)pyrene	51.	U	50.	U	50.	U	51.	U	49.	U	51.	U
193-39-5	Indeno(1,2,3-cd)pyrene	51.	U	50.	U	50.	U	52.	U	49.	U	51.	U
53-70-3	Dibenz(a,h)anthracene	42.	U	42.	U	41.	U	42.	U	41.	U	42.	U
191-24-2	Benzo(g,h,i)perylene	42.	U	41.	U	41.	U	42.	U	40.	U	42.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
SVOCs

LOWSVOA													
	SAMPLE ID ------->	008-S-0004-01		008-S-0004-07		008-S-0006-01		008-C-0006-01		008-S-0006-07		008-S-0007-01	
	ORIGINAL ID ----->	008S000401		008S000407		008S000601		008C000601		008S000607		008S000701	
	LAB SAMPLE ID --->	5602-02		5602-03		5602-04		5602-01		5602-05		5602-06	
	ID FROM REPORT -->	008S000401		008S000407		008S000601		008C000601		008S000607		04/04/9601	
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96			
	DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96		04/06/96		04/06/96		04/06/96	
	DATE ANALYZED --->	04/09/96		04/09/96		04/08/96		04/08/96		04/09/96		04f 09/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		sui 1	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
108-95-2	Phenol	37.	U	36.	U	37.	U	37.	U	37.	U	38.	U
111-44-4	bis(2-Chloroethyl)ether	55.	U	53.	U	55.	U	54.	U	54.	U	56.	U
95-57-8	2-Chlorophenol	37.	U	36.	U	37.	U	37.	U	36.	U	38.	U
95-48-7	2-Methylphenol (o-Cresol)	34.	U	33.	U	34.	U	34.	U	34.	U	35.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	31.	U	30.	U	31	U	30.	U	30.	U	31.	U
106-44-5	4-Methylphenol (p-Cresol)	33.	U	37.	U	3%	U	37.	U	37.	U	38.	U
621-64-7	N-Nitroso-di-n-propylamine	62.	U	60.	U	61.	U	61.	U	61.	U	62.	U
67-72-1	Hexachloroethane	80.	U	77.	U	79.	U	78.	U	78.	U	80.	U
98-95-3	Nitrobenzene	39.	U	37.	U	38.	U	38.	U	38.	U	39.	U
78-59-1	Isophorone	37.	U	35.	U	36.	U	36.	U	36.	U	37.	U
88-75-5	2-Nitrophenol	35.	U	34.	U	34.	U	34.	U	34.	U	35.	U
105-67-9	2,4-Dimethylphenol	41.	U	39.	U	4u.	U	40.	U	40.	U	41.	U
111-91-1	bis(2-Chloroethoxy)methane	37.	U	36.	U	37.	U	37.	U	37.	U	38.	U
120-83-2	2,4-Dichlorophenol	68.	U	65.	U	67.	U	66.	U	66.	U	68.	U
120-82-1	1,2,4-Trichlorobenrene	37.	U	36.	U	36.	U	36.	U	36.	U	37.	U
91-20-3	Naphthalene	37.	U	36.	U	36.	U	36.	U	36.	U	37.	U
106-47-8	4-Chloroaniline	45.	U	43.	U	44.	U	44.	U	44.	U	45.	U
87-68-3	Hexachlorobutadiene	42.	U	41.	U	42.	U	41.	U	41.	U	42.	U
59-50-7	4-Chloro-3-methylphenol	30.	U	30.	U	30	U	30.	U	30.	U	31.	U
91-57-6	2-Methylnaphthalene	36.	U	34.	U	35.	U	35.	U	35.	U	36.	U
77-47-4	Hexachlorocyclopentadiene	130.	U	130,	U	130.	U	130.	U	130.	U	130.	U
88-06-2	2,4,6-Trichlorophenol	32.	U	31.	U	31.	U	31.	U	31.	U	32.	U
95-95-4	2,4,5-Trichlorophenol	44.	U	43.	U	44.	U	44.	U	43.	U	45.	U
91-58-7	2-Chloronaphthalene	39.	U	38.	U	38.	U	38.	U	$8.	U	39.	U
88-74-4	2-Nitroaniline	31.	U	30.	U	31	U	30.	U	30.	U	31.	U
131-11-3	Dimethyl phthalate	37.	U	3s.	U	36h	U	36.	U	36.	U	37.	U
208-96-8	Acenaphthylene	38.	U	37.	U	36.	U	38.	U	38.	U	39.	U
606-20-2	2,6-Dinitrotoluene	39.	U	38.	U	39.	U	39.	U	39.	U	40.	U
99-09-2	3-Nitroaniline	42.	U	40.	U	41.	U	41.	U	41.	U	42.	U
83-32-9	Acenaphthene	25.	U	24.	U	25.	U	17.	3	24.	U	25.	U
51-28-5	2,4-Dinitrophenol	170.	U	160.	U	160.	U	160.	U	160.	U	170.	U
100-02-7	4-Nitrophenol	200.	U	200.	U	200.	U	200.	U	200.	U	200.	U
132-64-9	Dibenzofuran	27.	U	26.	U	27.	U	26.	U	26.	U	27.	U
121-14-2	2,4-Dinitrotoluene	28.	U	27.	U	28.	U	28.	U	28.	U	28.	U
84-66-2	Diethylphthalate	33.	U	32.	U	32	U	32.	U	32.	U	33.	U
7005-72-3	4-Chlorophenylphenylether	38.	U	36.	U	37.	U	37*	U	37.	U	38.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
SVOCS

LOWSVOA													
	SAMPLE ID ------->	008-S-0004-01		008-S-0004-07		008-S-0006-01		008-C-0006-01		008-S-0006-07		008-S-0007-01	
	ORIGINAL ID ----->	008S000401		008S000407		008S000601		008C000601		008S000607		008S000701	
	LAB SAMPLE ID --->	5602-02		5602-03		5602-04		5602-01		5602-05		5602-06	
	ID FROM REPORT -->	008S000401		008S000407		008S000601		008C000601		008S000607		008S000701	
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		04/04/96	
	DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96		04/06/96		04/06/96		04f06/96	
	DATE ANALYZED --->	04/09/96		04/09/96		04/08/96		04/08/96		04/09/96		04/09/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
86-73-7	Fluorene	37.	U	35.	U	36.	U	11.	J	36.	U	37.	U
100-01-6	4-Nitroaniline	47.	U	46.	U	47.	U	46.	U	46.	U	47.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	180.	U	180.	U	180.	U	180.	U	180.	U	180.	U
86-30-6	N-Nitrosodiphenylamine	38*	U	36.	U	37.	U	37.	U	37.	U	38.	U
101-55-3	4-Bromophenyl-phenylether	62.	U	60.	U	61.	U	61.	U	60.	U	62.	U
118-74-1	Hexachlorobenzene	51.	U	49.	U	50.	U	50.	U	50.	U	51.	U
87-86-5	Pentachlorophenol	140.	U	130.	U	140.	U	130,	U	130.	U	140.	U
85-01-8	Phenanthrene	35.	U	34.	U	43.		320.		34.	U	35.	U
120-12-7	Anthracene	37.	U	36.	U	37.	U	52.		36.	U	37.	U
86-74-8	Carbazole	42.	U	41.	U	42.	U	84.		41.	U	42.	U
84-74-2	Di-n-butylphthalate	41.	U	40.	U	41.	U	40.	U	300.		41.	U
206-44-0	Fluoranthene	39.	U	38.	U	180.		940.		SO.		39.	U
129-00-0	Pyrene	39.	U	38.	U	200.		940.		46.		39.	U
a5-68-7	Butylbenzylphthalate	34.	U	33.	U	34.	U	63.		34.	U	34.	U
91-94-1	3,3'-Dichlorobenzidine	110.	U	100.	U	110.	U	100.	U	100.	U	110.	U
56-55-3	Benzo(a)anthracene	51.	U	49.	U	140.		640.		50.	U	51.	U
218-01-9	Chrysene	40.	U	39.	U	170.		770.		39.	U	41.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	53.	U	51.	U	52.	U	52.	U	52.	U	53.	U
117-84-0	Di-n-octyl phthalate	42.	U	41.	U	42.	U	42.	U	42.	U	43.	U
205-99-2	Benzo(b)fluoranthene	84.	U	82.	U	230.		880.		82.	U	85.	U
207-08-9	Benzo(k)fluoranthene	55.	U	53.	U	200.		990.		54.	U	55.	U
50-32-8	Benzo(a)pyrene	51.	U	50.	U	180.		810.		50.	U	52.	U
193-39-5	Indeno(1,2,3-cd)pyrene	52.	U	50.	U	51.	U	270.		51.	U	52.	U
53-70-3	Dibenz(a,h)anthracene	43.	U	41.	U	42.	U	42.	U	42.	U	43.	U
191-24-2	Benzo(g,h,i)perylene	42.	U	41.	U	42.	U	240.		41.	U	42.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
SVOCs

	SAMPLE ID ------->	008-S-0007-07		008-S-0008-01		008-S-0008-07					
	ORIGINAL ID ----->	008S000707		008S000801		008S000807					
	LAB SAMPLE ID --->	5602-07		5602-08		5602-09					
	ID FROM REPORT -->	008S000707		008S000801		008S000807					
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96					
	DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96					
	DATE ANALYZED --->	04/09/96		04/09/96		04/09/96					
	MATRIX ---------->	Soil		Soil		Soil					
	UNITS ---------->	UG/KG		UG/KG		UG/KG					
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL				
108-95-2	Phenol	36.	U	36.	U	36.	U				
111-44-4	bis(2-Chloroethyl)ether	54.	U	54.	U	54.	U				
95-57-8	2-Chlorophenol	36.	U	36.	U	36.	U				
95-48-7	2-Methylphenol (o-Cresol)	33.	U	34.	U	33.	U				
108-60-1	2,2'-oxybis(1-Chloropropane)	30.	U	30.	U	30.	U				
106-44-5	4-Methylphenol (p-Cresol)	37.	U	37.	U	37.	U				
621-64-7	N-Nitroso-di-n-propylamine	60.	U	60.	U	60.	U				
67-72-1	Hexachloroethane	78.	U	78.	U	77.	U				
98-95-3	Nitrobenzene	38.	U	38.	U	38.	U				
78-59-1	Isophorone	36.	U	36.	U	35.	U				
88-75-5	2-Nitrophenol	34.	U	34.	U	34.	U				
105-67-9	2,4-Dimethylphenol	40.	U	40.	U	40.	U				
111-91-1	bis(2-Chloroethoxy)methane	36.	U	36.	U	36.	U				
120-83-2	2,4-Dichlorophenol	66.	U	66.	U	66.	U				
120-82-1	1,2,4-Trichlorobenzene	36.	U	36.	U	36.	U				
91-20-3	Naphthalene	36.	U	36.	U	36.	U				
106-47-8	4-Chloroaniline	44.	U	44.	U	43.	U				
87-68-3	Hexachlorobutadiene	41.	U	41.	U	41.	U				
59-50-7	4-Chloro-3-methylphenol	30.	U	30.	U	30.	U				
91-57-6	2-Methylnaphthalene	35.	U	35.	U	34.	U				
77-47-4	Hexachlorocyclopentadiene	130.	U	130.	U	130.	U				
88-06-2	2,4,6-Trichlorophenol	31.	U	31.	U	31.	U				
95-95-4	2,4,5-Trichlorophenol	43.	lit	43.	U	43.	U				
91-58-7	2-Chloronaphthalene	38.	U	38.	U	38.	U				
88-74-4	2-Nitroaniline	30.	U	30.	U	30.	U				
131-11-3	Dimethyl phthalate	Sa.	U	36.	U	36.	U				
208-96-8	Acenaphthylene	37.	U	37.	U	37,	U				
606-20-2	2,6-Dinitrotoluene	33.	U	38.	U	38.	U				
99-09-2	3-Nitroaniline	41.	U	41.	U	41.	U				
83-32-9	Acenaphthene	24.	U	24.	U	24.	U				
51-28-5	2,4-Dinitrophenol	160.	U	160.	U	160.	U				
100-02-7	4-Nitrophenol	200.	U	200.	U	200.	U				
132-64-9	Dibenzofuran	26.	U	26.	U	26.	U				
121-14-2	2,4-Dinitrotoluene	27.	U	28.	U	27,	U				
84-66-2	Diethylphthalate	32.	U	32.	U	32.	U				
7005-72-3	4-Chlorophenylphenylether	37.	U	37*	U	37.	U				

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
SVOCs

LOWSVOA								
	SAMPLE ID ------->	008-S-0007-07		008-S-0008-01		008-S-0008-07		
	ORIGINAL ID ----->	008S000707		008S000801		008S000807		
	LAB SAMPLE ID --->	5602-07		5602-08		5602-09		
	ID FROM REPORT -->	008S000707		008S000801		008S000807		
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96		
	DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96		
	DATE ANALYZED --->	04/09/96		04/09/96		04/09/96		
	MATRIX ---------->	Soil		Soil		Soil		
	UNITS ----------->	UG/KG		UG/KG		UG/KG		
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	
86-73-7	Fluorene	36.	U	36.	U	35.	U	
100-01-6	4-Nitroaniline	46.	U	46.	U	46.	U	
534-52-1	2-Methyl-4,6-Dinitrophenol	180.	U	180.	U	180.	U	
86-30-6	N-Nitrosodiphenylamine	37.	U	37.	U	36.	U	
101-55-3	4-Bromophenyl-phenylether	60.	U	60.	U	60.	U	
118-74-1	Hexachlorobenzene	49.	U	49.	U	49.	U	
87-86-5	Pentachlorophenol	130.	U	130.	U	130.	U	
85-01-8	Phenanthrene	34.	U	34.	U	34.	U	
120-12-7	Anthracene	36.	U	36.	U	36.	U	
86-74-8	Carbazole	41.	U	41.	U	41.	U	
84-74-2	Di-n-butylphthalate	99.		40.	U	40.	U	
206-44-0	Fluoranthene	38.	U	38.	U	38.	U	
129-00-0	Pyrene	38.	U	38.	U	38.	U	
85-68-7	Butylbenzylphthalate	33.	U	33.	U	33.	U	
91-94-1	3,3'-Dichlorobenzidine	100.	U	100.	U	100.	U	
56-55-3	Benzo(a)anthracene	49.	U	49.	U	49.	U	
218-01-9	Chrysene	39.	U	39.	U	39.	U	
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	150.		52.	U	51.	U	
117-84-0	Di-n-octyl phthalate	41.	U	41.	U	41.	U	
205-99-2	Benzo(b)fluoranthene	82.	U	82.	U	82.	U	
207-08-9	Benzo(k)fluoranthene	53.	U	54.	U	53.	U	
50-32-8	Benzo(a)pyrene	50.	U	50.	U	50.	U	
193-39-5	Indeno(1,2,3-cd)pyrene	50.	U	50.	U	50.	U	
53-70-3	Dibenz(a,h)anthracene	41.	U	42.	U	41.	U	
191-24-2	Benzo(g,h,i)perylene	41.	U	41.	U	41.	U	

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
Pesticides/PCBs

LOWPEST													
	SAMPLE ID ------->	008-S-0001-01		008-S-0001-06		008-S-0001-09		008-S-0003-01		008-S-0003-07		008-S-0003-11	
	ORIGINAL ID ----->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	LAB SAMPLE ID --->	5597-01		5597-02		5597-03		5597-04		5597-05		5597-06	
	ID FROM REPORT -->	008S000101		008S000106		008S000109		008S000301		008S000307		008S000311	
	SAMPLE DATE ----->	03/26/96		03/28/96		03/28/96		03/26/96		03/26/96		03/26/96	
	DATE EXTRACTED -->	04/02/96		04/02/96		04/02/96		04/02/96		04/02/96		04/02/96	
	DATE ANALYZED --->	04/04/96		04/04/96		04/04/96		04/05/96		04/05/96		04/05/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
319-84-6	alpha-BHC	0.776	U	0.757	U	0.756	U	0.775	U	0.744	U	0.769	U
319-85-7	beta-BHC	0.625	U	0.61	U	0.609	U	0.625	U	0.6	U	0.619	U
319-86-8	delta-BHC	0.743	U	0.726	U	0.725	U	0.743	U	0.714	U	0.737	U
58-89-9	gamma-BHC (Lindane)	0.851	U	0.831	U	0.83	U	0.851	U	0.817	U	0.844	U
76-44-8	Heptachlor	0.733	U	0.715	U	0.714	U	0.732	U	0.703	U	0.726	U
309-00-2	Aldrin	0.743	U	0.726	U	0.924	J	19.3	J	21.	J	9.06	J
1024-57-3	Heptachlor epoxide	1.06	U	1.03	U	1.25	J	1.06	U	1.01	U	1.06	J
959-98-8	Endosulfan I	0.98	U	0.957	U	0.956	U	0.98	U	0.941	U	0.972	U
60-57-1	Dieldrin	1.81	U	1.77	U	3.48	J	2010.	DJ	496.	D	134.	D
72-55-9	4,4'-DDE	12.4		3.09	J	2.53	J	1.41	U	1.35	U	1.4	U
72-20-8	Endrin	1.76	U	1.71	U	3.9	J	4.61	J	1.93		3.75	
33213-65-9	Endosulfan II	1.63	U	1.59	U	1.87	J	1.63	U	1.56	U	1.61	U
72-54-8	4,4'-DDD	1.79	U	1.75	U	1.74	U	1.79	U	1.72	U	1.77	U
1031-07-8	Endosulfan sulfate	1.41	U	1.38	U	1.38	U	1.41	U	1.35	U	1.4	U
50-29-3	4,4'-DDT	1.89	J	9.67	J	1.76	U	12.	J	1.74	U	1.79	U
72-43-5	Methoxychlor	21.	UJ	20.7	J	20.5	UJ	21.	UJ	20.2	UJ	20.8	UJ
53494-70-5	Endrin ketone	1.43	U	1.4	U	1.4	U	18.1	J	10.6	J	2.11	J
7421-93-4	Endrin aldehyde	2.84	U	2.78	U	2.77	U	2.84	U	2.73	U	2.82	U
5103-71-9	alpha-Chlordane	0.711	U	0.716	J	1.15	J	0.711	U	0.682	U	1.04	
5103-74-2	gamma-Chlordane	0.725	J	0.673	U	0.672	U	1.89	J	0.662	U	1.13	J
8001-35-2	Toxaphene	165.	U	161.	U	161.	U	165.	U	158.	U	163.	U
12674-11-2	Aroclor-1016	35.6	U	34.7	U	34.7	U	35.5	U	34.1	U	35.2	U
11104-28-2	Aroclor-1221	71.1	U	69.4	U	69.3	U	71.1	U	68.2	U	70.5	U
11141-16-5	Aroclor-1232	35.6	U	34.7	U	34.7	U	35.5	U	34.1	U	35.2	U
53469-21-9	Aroclor-1242	35.6	U	34.7	U	34.7	U	35.5	U	34.1	U	35.2	U
12672-29-6	Aroclor-1248	35.6	U	34.7	U	34.7	U	35.5	U	34.1	U	35.2	U
11097-69-1	Aroclor-1254	35.6	U	34.7	U	34.7	U	35.5	U	34.1	U	35.2	U
11096-82-5	Aroclor-1260	35.6	U	34.7	U	85.2		35.5	U	34.1	U	35.2	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
Pesticides/PCBs

LOWPEST													
	SAMPLE ID ------->	008-S-0004-01		008-S-0004-07		008-S-0006-01		008-C-0006-01		008-S-0006-07		008-S-0007-01	
	ORIGINAL ID ----->	008S000401		008S000407		008S000601		008C000601		008S000607		008S000701	
	LAB SAMPLE ID --->	5602-02RE		5602-03RE		5602-04RE		5602-01RE		5602-05RE		5602-06RE	
	ID FROM REPORT -->	008S000401		008S000407		008S000601		008C000601		008S000607		008S000701	
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		04/04/96	
	DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96		04/06/96		04/06/96		04/06/96	
	DATE ANALYZED --->	04/10/96		04/10/96		04/10/96		04/10/96		04/10/96		04/10/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
319-84-6	alpha-BHC	0.779	U	0.754	U	0.772	U	0.767	U	0.762	U	0.783	U
319-85-7	beta-BHC	0.627	U	0.607	U	0.622	U	0.618	U	0.614	U	0.631	U
319-86-8	delta-BHC	0.746	U	0.722	U	0.74	U	0.735	U	0.73	U	0.75	U
58-89-9	gamma-BHC (Lindane)	0.854	U	0.827	U	0.847	U	0.841	U	0.836	U	0.859	U
76-44-8	Heptachlor	0.735	U	0.712	U	0.729	U	0.724	U	0.72	U	0.74	U
309-00-2	Aldrin	0.746	U	0.722	U	0.74	U	0.735	U	0.73	U	1.92	J
1024-57-3	Heptachlor epoxide	1.06	U	1.03	U	1.05	U	1.04	U	1.04	U	1.07	U
959-98-8	Endosulfan I	0.984	U	0.952	U	0.976	U	0.969	U	0.963	U	0.99	U
60-57-1	Dieldrin	2.06		1.76	U	2.03	J	1.79	U	1.78	U	4.9	
72-55-9	4,4'-DDE	1.42	U	1.37	U	23.1	J	15.5		11.3	J	10.3	
72-20-8	Endrin	1.76	U	1.71	U	1.75	U	1.74	U	1.72	U	1.77	U
33213-65-9	Endosulfan II	1.63	U	1.58	U	1.62	U	1.61	U	1.6	U	1.64	U
72-54-8	4,4'-DDD	1.8	U	1.74	U	2.11	J	1.77	U	3.36	J	1.8	U
1031-07-8	Endosulfan sulfate	1.42	U	1.37	U	2.54	J	1.39	U	1.39	U	1.42	U
50-29-3	4,4'-DDT	1.82	U	1.76	U	3.13	J	1.79	U	2.3	J	1.83	U
72-43-5	Methoxychlor	21.1	UJ	20.4	UJ	20.9	UJ	20.8	UJ	20.6	UJ	21.2	UJ
53494-70-5	Endrin ketone	1.44	U	1.39	U	1.43	U	1.42	U	1.41	U	1.45	U
7421-93-4	Endrin aldehyde	2.86	U	2.76	U	2.83	U	2.81	U	2.79	U	2.87	U
5103-71-9	alpha-Chlordane	0.714	U	0.691	U	0.728	J	0.703	U	0.698	U	0.718	U
5103-74-2	gamma-Chlordane	0.692	U	0.67	U	0.686	U	0.681	U	0.677	U	1.81	
8001-35-2	Toxaphene	165.	U	160.	U	164.	U	163.	U	162.	U	166.	U
12674-11-2	Aroclor-1016	35.7	U	34.5	U	35.4	U	35.1	U	34.9	U	35.9	U
11104-28-2	Aroclor-1221	71.4	U	69.1	U	70.8	U	70.3	U	69.8	U	71.8	U
11141-16-5	Aroclor-1232	35.7	U	34.5	U	35.4	U	35.1	U	34.9	U	35.9	U
53469-21-9	Aroclor-1242	35.7	U	34.5	U	35.4	U	35.1	U	34.9	U	35.9	U
12672-29-6	Aroclor-1248	35.7	U	34.5	U	35.4	U	35.1	U	34.9	U	35.9	U
11097-69-1	Aroclor-1254	35.7	U	34.5	U	35.4	U	35.1	U	34.9	U	35.9	U
11096-82-5	Aroclor-1260	35.7	U	34.5	U	35.4	U	35.1	U	34.9	U	35.9	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil
Pesticides/PCBs

LOWPEST

SAMPLE ID ------->	008-S-0007-07		008-S-0008-01		008-S-0008-07								
ORIGINAL ID ----->	008S000707		008S000801		008S000807								
LAB SAMPLE ID --->	5602-07RE		5602-08RE		5602-09RE								
ID FROM REPORT -->	008S000707		008S000801		008S000807								
SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96								
DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96								
DATE ANALYZED --->	04/10/96		04/10/96		04/10/96								
MATRIX ---------->	Soil		Soil		Soil								
UNITS ---------->	UG/KG		UG/KG		UG/KG								
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL						
319-84-6	alpha-BHC	0.757	U	0.759	U	0.755	U						
319-85-7	beta-BHC	0.61	U	0.611	U	0.608	U						
319-86-8	delta-BHC	0.726	U	0.727	U	0.723	U						
58-89-9	gamma-BHC (Lindane)	0.831	U	0.833	U	0.828	U						
76-44-8	Heptachlor	0.715	U	0.717	U	0.713	U						
309-00-2	Aldrin	2.91	J	0.727	U	0.723	U						
1024-57-3	Heptachlor epoxide	1.03	U	1.03	U	1.03	U						
959-98-8	Endosulfan I	0.957	U	0.959	U	0.954	U						
60-57-1	Dieldrin	1.77	U	1.77	U	1.76	U						
72-55-9	4,4'-DDE	6.35		5.77		1.37	U						
72-20-8	Endrin	1.71	U	1.72	U	1.71	U						
33213-65-9	Endosulfan II	1.59	U	1.59	U	1.58	U						
72-54-8	4,4'-DDD	6.28		1.75	U	1.74	U						
1031-07-8	Endosulfan sulfate	1.38	U	1.38	U	1.37	U						
50-29-3	4,4'-DDT	1.77	U	1.93	J	1.76	U						
72-43-5	Methoxychlor	20.5	UJ	20.6	UJ	20.4	UJ						
53494-70-5	Endrin ketone	1.4	U	1.4	U	1.39	U						
7421-93-4	Endrin aldehyde	2.78	U	2.78	U	2.77	U						
5103-71-9	alpha-Chlordane	1.1		0.696	U	0.692	U						
5103-74-2	gamma-Chlordane	0.827	J	0.675	U	0.671	U						
8001-35-2	Toxaphene	161.	U	161.	U	160.	U						
12674-11-2	Aroclor-1016	34.7	U	34.8	U	34.6	U						
11104-28-2	Aroclor-1221	69.4	U	69.6	U	69.2	U						
11141-16-5	Aroclor-1232	34.7	U	34.8	U	34.6	U						
53469-21-9	Aroclor-1242	34.7	U	34.8	U	34.6	U						
12672-29-6	Aroclor-1248	34.7	U	34.8	U	34.6	U						
11097-69-1	Aroclor-1254	34.7	U	34.8	U	34.6	U						
11096-82-5	Aroclor-1260	34.7	U	34.8	U	34.6	U						

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
Inorganics

LOWMETAL													
	SAMPLE ID ------->	008-G-GR01-01		008-G-GR02-01		008-G-GR03-01		008-G-GR04-01		008-G-GR05-01		008-G-GR06-01	
	ORIGINAL ID ----->	008GGR0101		008GGR0201		008GGR0301		008GGR0401		008GGR0501		008GGR060 I	
	LAB SAMPLE ID --->	5648-01		5648-02		5648-03		5648-04		5671-01		5671-02	
	ID FROM REPORT -->	008GGR0101		008GGR0201		008GGR0301		008GGR0401		008GGR0501		008GGR060 I	
	SAMPLE DATE ----->	05/07/96		05/07/96		05/07/96		05/07/96					
	DATE EXTRACTED -->	05/21/96		05/21/96		05/21/96		05/21/96					
	DATE ANALYZED --->	05/21/96		05/21/96		05/21/96		05/21/96					
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITEW8	VAL	SITEW8	VAL
7429-90-5	Aluminum (Al)	341.		129.	U	241.	U	1320.		225.	J	667.	J
7440-36-0	Antimony (Sb)	1.6	U	1.6	U	15.		12.5		3m3	U	1.8	U
7440-38-2	Arsenic (As)	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
7440-39-3	Barium (Ba)	274.		411.		155.		10.8	U	109.	J	7.2	J
7440-41-7	Beryllium (Be)	0.22	U	0.22	U	0.22	U	0.22	U	0.46	U	0.43	U
7440-43-9	Cadmium (Cd)	23.7		19.		22.2		0.33	U	32.		0.33	UJ
7440-70-2	Calcium (Ca)	87500.		40000.		43700.		14300.		34500.		27700.	
7440-47-3	Chromium (Cr)	4.	U	4.	U	4.	U	4.	U	1.2	U	1.9	J
7440-48-4	Cobalt (Co)	0.67	UJ	2.1	J	0.67	UJ	0.67	UJ	0.67	UJ	0.67	UJ
7440-50-8	Copper (Cu)	8.4	J	3.8	J	8.3	J	0.92	J	11.7	J	0.92	J
7439-89-6	Iron (Fe)	1100.		9950.		76.4	J	348.		9.9	U	131.	J
7439-92-1	Lead (Pb)	14.8		2.4	U	18.6		4.8		2.p		2.4	U
7439-95-4	Magnesium (Mg)	10600.		6240.		7130.		1750.		3560.		1720.	
7439-96-5	Manganese (Mn)	368.		602.		8.2	3	1.2	UJ	28.	J	5.5	J
7439-97-6	Mercury (Hg)	0.2	U	0.2	U	0.2	U	0.22		0.2	U	0.2	U
7440-02-0	Nickel (Ni)	8.	J	14.2	J	0.67	UJ	0.67	UJ	11.3	J	0.67	u
7440-09-7	Potassium (K)	6230.		6150.		4490.		981.		1260.		516.	J
7782-49-2	Selenium (Se)	4.3	U	4.3	U	4.3	U	4.3	U	4*3	UJ	4.3	UJ
7440-22-4	Silver (Ag)	0.67	UJ	0.67	UJ	0.67	UJ	0.67	UJ	1.9	J	1.8	J
7440-23-5	Sodium (Na)	11900.		12200.		32300.		9250.		16900.		9870.	
7440-28-0	Thallium (Tl)	5.3	U	5.3	U	5.3	U	5.3	U	5.3	U	s.3	U
7440-62-2	Vanadium (V)	0.53	J	0.44	U	u.44	U	2.	J	0.64	J	1.1	J
7440-66-6	Zinc (Zn)	416.		815.		210.		3.9	U	1700.	J	2.7	J
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
Inorganics

SAMPLE ID ------->	008-H-GR06-01
ORIGINAL ID ----->	008HGR060
LAB SAMPLE ID --->	5671-03
ID FROM REPORT -->	008HGR060
SAMPLE DATE ----->	05/14/96
DATE EXTRACTED -->	05/24/96
DATE ANALYZED --->	05/31/96
MATRIX ---------->	Water
UNITS ----------->	UG/L

CAS #	Parameter	SITEW8	VAL
7429-90-5	Aluminum (Al)	437.	B
7440-36-0	Antimony (Sb)	3.	U
7440-38-2	Arsenic (As)	4.	U
7440-39-3	Barium (Ba)	6.7	J
7440-41-7	Beryllium (Be)	0.52	U
7440-43-9	Cadmium (Cd)	0.33	UJ
7440-70-2	Calcium (Ca)	27300.	
7440-47-3	Chromium (Cr)	1.5	J
7440-48-4	Cobalt (Co)	0.67	UJ
7440-50-8	Copper (Cu)	0.44	UJ
7439-89-6	Iron (Fe)	67.2	J
7439-92-1	Lead (Pb)	2.4	U
7439-95-4	Magnesium (Mg)	1680.	
7439-96-5	Manganese (Mn)	5.5	J
7439-97-6	Mercury (Hg)	0.2	U
7440-02-0	Nickel (Ni)	0.67	U
7440-09-7	Potassium (K)	518.	J
7782-49-2	Selenium (Se)	4.3	UJ
7440-22-4	Silver (Ag)	2.3	J
7440-23-5	Sodium (Na)	9660.	
7440-28-0	Thallium (Tl)	5.3	U
7440-62-2	Vanadium (V)	0.84	B
7440-66-6	Zinc (Zn)	4.	J
57-12-5	Cyanide (CN)	10.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
VOCs

		008-G-GR01-01 008GGR010[illegible] 5648-01 008GGR010[illegible] 05/07/96 05/08/96 Water UG/L		008-G-GR02-01 008GGR0201 5648-02 008GGR0201 05/07/96 05/08/96 Water UG/L		008-G-GR03-01 008GGR0301 5648-03 008GGR0301 05/07/96 05/08/96 Water UG/L		008-G-GR04-01 008GGR0401 5648-04 008GGR0401 05/07/96 05/08/96 Water UG/L		008-G-GR05-01 008GGR0501 5671-01 008GGR0501 05/14/96 05/17/96 Water UG/L		008-G-GR06-01 008GGR0601 5671-02 008GGR0601 05/14/96 05/17/96 Soil UG/L	
CAS #	Parameter	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITEW8	VAL	SITEW8	VAL
74-97-5	Chlorobromomethane	0.[illegible]	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
74-87-3	Chloromethane	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
74-83-9	Bromomethane	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
75-01-4	Vinyl chloride	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
75-00-3	Chloroethane	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
75-09-2	Methylene chloride	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
67-64-1	Acetone	0.3	UR	0.3	UR	0.3	UR	0.3	UR	3.	UR	4.	UR
75-15-0	Carbon disulfide	0.2	U	0.2	U	0.3		0.2	U	0.2	U	0.2	U
75-35-4	1,1-Dichloroethene	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
75-34-3	1,1-Dichloroethane	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
156-59-2	cis-1,2-Dichloroethene	0.4		0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
156-60-5	trans-1,2-Dichloroethene	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
67-66-3	Chloroform	0.1	U	0.1	U	0.1	U	0.2		0.1	U	0.1	U
107-06-2	1,2-Dichloroethane	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
78-93-3	2-Butanone (MEK)	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR
71-55-6	1,1,1-Trichloroethane	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
56-23-5	Carbon tetrachloride	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
75-27-4	Bromodichloromethane	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
78-87-5	1,2-Dichloropropane	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
79-01-6	Trichloroethene	1.		0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
124-48-1	Dibromochloromethane	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
79-00-5	1,1,2-Trichloroethane	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
71-43-2	Benzene	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
10061-02-6	trans-1,3-Dichloropropene	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
75-25-2	Bromoform	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
591-78-6	2-Hexanone	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
127-18-4	fetrachloroethene	0.2	U	0.2	U	1.		0.2	U	0.2	U	0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
106-93-4	1,2-Dibromoethane	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
108-88-3	Toluene	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
108-90-7	Chlorobenzene	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
100-41-4	Ethylbenzene	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
100-42-5	Styrene	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1330-20-7	Xylene (Total)	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
541-73-1	1,3-Dichlorobenzene	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
VOCs

∞													
	SAMPLE ID ------->	-01		008-G-GR02-01		008-G-GR03-01		008-G-GR04-01		008-G-GR05-01		008-G-GR06-01	
	ORIGINAL ID ----->			008GGR0201		008GGR0301		W08GGR0401		008GGR0501		008GGR0601	
	LAB SAMPLE ID --->			5648-02		5648-03		5648-04		5671-01		5671-02	
	ID FROM REPORT -->			008GGR0201		008GGR0301		008GGR0401		008GGR0501		008GGR0601	
	SAMPLE DATE ----->			05/07/96		05/07/96		05/07/96		05/14/96		05/14/96	
	DATE ANALYZED --->			05/08/96		05/08/96		05/08/96		05/17/96		05/17/96	
	MATRIX ---------->			Water		Water		Water		Water		Soil	
	UNITS ---------->			UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITEW8	VAL	SITEW8	VAL
106-46-7	1,4-Dichlorobenzene	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.8	UR	0.8	UR	0.8	UR	0.8	UR	0.8	U	0.8	U

*** Validation Complete ***

LOWVOA

SAMPLE ID -------->	008-H-GR06-01
ORIGINAL ID ----->	008HGR0601
LAB SAMPLE ID --->	5671-03
ID FROM REPORT -->	008HGR0601
SAMPLE DATE ----->	05/14/96
DAT: ANALYZED --->	05/17/96
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	SITEW8	VAL
74-97-5	Chlorobromomethane	0.1	U
74-87-3	Chloromethane	0.2	U
74-83-9	Bromomethane	0.2	U
75-01-4	Vinyl chloride	0.2	U
75-00-3	Chloroethane	0.2	U
75-09-2	Methylene chloride	1.	U
67-64-1	Acetone	4.	UR
75-15-0	Carbon disulfide	0.2	U
75-35-4	1,1-Dichloroethene	0.2	U
75-34-3	1,1-Dichloroethane	0.1	U
156-59-2	cis-1,2-Dichloroethene	0.3	U
156-60-5	trans-1,2-Dichloroethene	0.3	U
67-66-3	Chloroform	0.1	U
107-06-2	1,2-Dichloroethane	0.1	U
78-93-3	2-Butanone (MEK)	0.2	UR
71-55-6	1,1,1-Trichloroethane	0.1	U
56-23-5	Carbon tetrachloride	0.2	U
75-27-4	Bromodichloromethane	0.1	U
78-87-5	1,2-Dichloropropane	0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.1	U
79-01-6	Trichloroethene	0.1	U
124-48-1	Dibromochloromethane	0.3	U
79-00-5	1,1,2-Trichloroethane	0.3	U
71-43-2	Benzene	0.1	U
10061-02-6	ra -1,3-Dichloroprope e	0.2	U
75-25-2	r form	0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.2	U
591-78-6	2-Hexanone	0.4	U
127-18-4	Tetrachloroethene	0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U
106-93-4	1,2-Dibromoethane	0.6	U
108-88-3	Toluene	0.1	U
108-90-7	Chlorobenzene	0.1	U
100-41-4	Ethylbenzene	0.1	U
100-42-5	Styrene	0.1	U
1330-20-7	Xylene (Total)	0.1	U
541-73-1	1,3-Dichlorobenzene	0.3	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
VOCs

LOWVOA

SAMPLE ID -------->	008-H-GR06-01
ORIGINAL ID ----->	008HGR060
LAB SAMPLE ID --->	5671-03
ID FROM REPORT -->	008HGR060
SAMPLE DATE ----->	05/14/96
DATE ANALYZED --->	05/17/96
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS *	Parameter	SITEW8	VAL
106-46-7	1,4-Dichlorobenzene	0.4	U
95-50-1	1,2-Dichlorobenzene	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.8	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
SVOCs

LOWSVOA													
	SAMPLE ID ------->	008-G-GR01-01		008-G-GR02-01		008-G-GR03-01		008-G-GR04-01		008-G-GR05-01		008-G-GR06-01	
	ORIGINAL ID ----->	008GGR0101		008GGR0201		008GGR0301		008GGR0401		008GGR0501		008GGR0601	
	LAB SAMPLE ID --->	5648-01		5648-02		5648-03		5648-04		5671-01		5671-02	
	ID FROM REPORT -->	008GGR0101		008GGR0201		008GGR0301		008GGR0401		008GGR0501		008GGR0601	
	SAMPLE DATE ----->	05/07/96		05/07/96		05/07/96		05/07/96		05/14/96		05/14/96	
	DATE EXTRACTED -->	05/08/96		05/08/96		05/08/96		05/08/96		05/20/96		05/20/96	
	DATE ANALYZED --->	05/13/96		05/13/96		05/13/96		05/13/96		05/23/96		05/23/96	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITEW8	VAL	SITEW8	VAL
108-95-2	Phenol	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
111-44-4	bis(2-Chloroethyl)ether	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
95-57-8	2-Chlorophenol	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
95-48-7	2-Methylphenol (o-Cresol)	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U
108-60-1	2,2'-oxybis(1-Chloropropane)	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
106-44-5	4-Methylphenol (p-Cresol)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
621-64-7	N-Nitroso-di-n-propylamine	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U
67-72-1	Hexachloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
98-95-3	Nitrobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
78-59-1	Isophorone	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
88-75-5	2-Nitrophenol	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
105-67-9	2,4-Dimethylphenol	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
111-91-1	bis(2-Chloroethoxy)methane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
120-83-2	2,4-Dichlorophenol	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
120-82-1	1,2,4-Trichlorobenzene	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
91-20-3	Naphthalene	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U
106-47-8	4-Chloroaniline	9.	U	9.	U	9.	U	9.	U	9.	U	9.	U
87-68-3	Hexachlorobutadiene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
59-50-7	4-Chloro-3-methylphenol	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
91-57-6	2-Methylnaphthalene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
77-47-4	Hexachlorocyclopentadiene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
88-06-2	2,4,6-Trichlorophenol	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
95-95-4	2,4,5-Trichlorophenol	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
91-58-7	2-Chloronaphthalene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
88-74-4	2-Nitroaniline	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
131-11-3	Dimethyl phthalate	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
208-96-8	Acenaphthylene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
606-20-2	2,6-Dinitrotoluene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
99-09-2	3-Nitroaniline	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
83-32-9	Acenaphthene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
51-28-5	2,4-Dinitrophenol	15.	U	15.	U	15.	U	15.	U	15.	U	15.	U
100-02-7	4-Nitrophenol	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
132-64-9	Dibenzofuran	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
121-14-2	2,4-Dinitrotoluene	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
84-66-2	Diethylphthalate	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
7005-72-3	4-Chlorophenylphenylether	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Walidation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
SVOCs

LOWSVOA													
	SAMPLE ID ------->	008-G-GR01-01		008-G-GR02-01		008-G-GR03-01		008-G-GR04-01		008-G-GR05-01		008-G-GR06-01	
	ORIGINAL ID ----->	008GGR0101		008GGR0201		008GGR0301		008GGR0401		008GGR0501		008GGR0601	
	LAB SAMPLE ID --->	5648-01		5648-02		5648-03		5648-04		5671-01		5671-02	
	ID FROM REPORT -->	008GGR0101		008GGR0201		008GGR0301		008GGR0401		008GGR0501		008GGR0601	
	SAMPLE DATE ----->	05/07/96		05/07/96		05/07/96		05/07/96		05/14/96		05/14/96	
	DATE EXTRACTED -->	05/08/96		05/08/96		05/08/96		05/08/96		05/20/96		05/20/96	
	DATE ANALYZED --->	05/13/96		05/13/96		05/13/96		05/13/96		05/23/96		05/23/96	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITEW8	VAL	SITEW8	VAL
86-73-7	Fluorene	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
100-01-6	4-Nitroaniline	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
86-30-6	N-Nitrosodiphenylamine	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
101-55-3	4-Bromophenyl-phenylether	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
118-74-1	Hexachlorobenzene	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
87-86-5	Pentachlorophenol	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
85-01-8	Phenanthrene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
120-12-7	Anthracene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
86-74-8	Carbazole	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
84-74-2	Di-n-butylphthalate	2.	U	2.	U	2.	J	2.	U	2.	U	2.	U
206-44-0	Fluoranthene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
129-00-0	Pyrene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
85-68-7	Butylbenzylphthalate	3.	U	1.	J	3.	J	3.	U	3.	U	3.	U
91-94-1	3,3'-Dichlorobenzidine	9.	U	9.	U	9.	U	9.	U	9.	U	9.	U
56-55-3	Benzo(a)anthracene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
218-01-9	Chrysene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEXP)	2.	U	2.	U	1.	J	2.	U	2.	U	2.	U
117-84-0	Di-n-octyl phthalate	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
205-99-2	Benzo(b)fluoranthene	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
207-08-9	Benzo(k)fluoranthene	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
50-32-8	Benzo(a)pyrene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53-70-3	Dibenz(a,h)anthracene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
191-24-2	Benzo(g,h,i)perylene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
SVOCs

LOWSVOA

SAMPLE ID ------->	008-H-GR06-01
ORIGINAL ID ----->	008HGR0601
LAB SAMPLE ID --->	5671-03
ID FROM REPORT -->	008HGR0601
SAMPLE DATE ----->	05/14/96
DATE EXTRACTED -->	05/20/96
DATE ANALYZED --->	05/23/96
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	SITEW8	VAL
108-95-2	Phenol	1.	U
111-44-4	bis(2-Chloroethyl)ether	0.7	U
95-57-8	2-Chlorophenol	1.	U
95-48-7	2-Methylphenol (o-Cresol)	0.9	U
108-60-1	2,2'-oxybis(1-Chloropropane)	0.8	U
106-44-5	4-Methylphenol (p-Cresol)	1.	U
621-64-7	N-Nitroso-di-n-propylamine	0.9	U
67-72-1	Hexachloroethane	1.	U
98-95-3	Nitrobenzene	1.	U
78-59-1	Isophorone	0.8	U
88-75-5	2-Nitrophenol	1.	U
105-67-9	2,4-Dimethylphenol	2.	U
111-91-1	bis(2-Chloroethoxy)methane	1.	U
120-83-2	2,4-Dichlorophenol	1.	U
120-82-1	1,2,4-Trichlorobenzene	0.8	U
91-20-3	Naphthalene	0.9	U
106-47-8	4-Chloroaniline	9.	U
87-68-3	Hexachlorobutadiene	1.	U
59-50-7	4-Chloro-3-methylphenol	1.	U
91-57-6	2-Methylnaphthalene	1.	U
77-47-4	Hexachlorocyclopentadiene	1.	U
88-06-2	2,4,6-Trichlorophenol	1.	U
95-95-4	2,4,5-Trichlorophenol	1.	U
91-58-7	2-Chloronaphthalene	1.	U
88-74-4	2-Nitroaniline	1.	U
131-11-3	Dimethyl phthalate	1.	U
208-96-8	Acenaphthylene	1.	U
606-20-2	2,6-Dinitrotoluene	1.	U
99-09-2	3-Nitroaniline	4.	U
83-32-9	Acenaphthene	1.	U
51-28-5	2,4-Dinitrophenol	15.	U
100-02-7	4-Nitrophenol	2.	U
132-64-9	Dibenzofuran	1.	U
121-14-2	2,4-Dinitrotoluene	2.	U
84-66-2	Diethylphthalate	2.	U
7005-72-3	4-Chlorophenylphenylether	1.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
SVOCs

LOWSVOA

SAMPLE ID -------->	008-H-GR06-01
ORIGINAL ID ----->	008HGR0601
LAB SAMPLE ID --->	5671-03
ID FROM REPORT -->	008HGR0601
SAMPLE DATE ----->	05/14/96
DATE EXTRACTED -->	05/20/96
DATE ANALYZED --->	05/23/96
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	SITEW8	VAL
86-73-7	Fluorene	2.	U
100-01-6	4-Nitroaniline	2.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	2.	U
86-30-6	N-Nitrosodiphenylamine	2.	U
101-55-3	4-Bromophenyl-phenylether	2.	U
118-74-1	Hexachlorobenzene	2.	U
87-86-5	Pentachlorophenol	2.	U
85-01-8	Phenanthrene	1.	U
120-12-7	Anthracene	1.	U
86-74-8	Carbazole	2.	U
84-74-2	Di-n-Butylphthalate	2.	U
206-44-0	Fluoranthene	1.	U
129-00-0	Pyrene	1.	U
85-68-7	Butylbenzylphthalate	3.	U
91-94-1	3,3'-Dichlorobenzidine	9.	U
56-55-3	Benzo(a)anthracene	1.	U
218-01-9	Chrysene	1.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEXP)	2.	U
117-84-0	Di-n-Octyl phthalate	2.	U
205-99-2	Benzo(b)fluoranthene	2.	U
207-08-9	Benzo(k)fluoranthene	4.	U
50-32-8	Benzo(a)pyrene	1.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.	U
53-70-3	Dibenz(a,h)anthracene	1.	U
191-24-2	Benzo(g,h,i)perylene	1.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
Pesticides/PCBs

LOWPEST

SAMPLE ID ------->	008-G-GR01-01		008-G-GR02-01		008-G-GR03-01		008-G-GR04-01		008-G-GR05-01		008-G-GR06-01	
ORIGINAL ID ----->	008GGR0101		008GGR0201		008GGR0301		008GGR0401		008GGR0501		008GGR0601	
LAB SAMPLE ID --->	5648-01		5648-02		5648-03		5648-04		5671-01		5671-02	
ID FROM REPORT -->	008GGR0101		008GGR0201		008GGR0301		008GGR0401		008GGR0501		008GGR0601	
SAMPLE DATE ----->	05/07/96		05/07/96		05/07/96		05/07/96		05/14/96		05/14/96	
DATE EXTRACTED -->	05/08/96		05/13/96		05/08/96		05/08/96		05/20/96		05/20/96	
DATE ANALYZED --->	05/14/96		05/14/96		05/14/96		05/14/96		05/25/96		05/25/96	
MATRIX ---------->	Water		Water		Water		Water		Water		Water	
UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS # Parameter	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITE8W	VAL	SITEW8	VAL	SITEW8	VAL
319-84-6 alpha-BHC	0.04	U	0.04	U	0.04	U	0.04	U	0.04	UJ	0.04	UJ
319-85-7 beta-BHC	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U
319-86-8 delta-BHC	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U
58-89-9 gamma-BHC (Lindane)	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
76-44-8 Heptachlor	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
309-00-2 Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3 Heptachlor epoxide	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U
959-98-8 Endosulfan I	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
60-57-1 Dieldrin	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
72-55-9 4,4'-DDE	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U
72-20-8 Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
33213-65-9 Endosulfan II	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U
72-54-8 4,4'-DDD	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
1031-07-8 Endosulfan sulfate	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U
50-29-3 4,4'-DDT	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
72-43-5 Methoxychlor	0.35	U	0.35	U	0.35	U	0.35	U	0.35	UJ	0.35	UJ
53494-70-5 Endrin ketone	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U
7421-93-4 Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
5103-71-9 alpha-Chlordane	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U
5103-74-2 gamma-Chlordane	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U
8001-35-2 Toxaphene	4.8	U	4.8	U	4.8	U	4.8	U	4.8	U	4.8	U
12674-11-2 Aroclor-1016	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
11104-28-2 Aroclor-1221	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
11141-16-5 Aroclor-1232	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
53469-21-9 Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6 Aroclor-1248	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
11097-69-1 Aroclor-1254	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
11096-82-5 Aroclor-1260	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Groundwater
Pesticides/PCBs

LOWPEST

SAMPLE ID -------->	008-H-GR06-01
ORIGINAL ID ----->	008HGR060[illegible]
LAB SAMPLE ID --->	5671-03
ID FROM REPORT -->	008HGR060[illegible]
SAMPLE DATE ----->	05/14/96
DATE EXTRACTED -->	05/20/96
DATE ANALYZED --->	05/25/96
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	SITEW8	VAL
319-84-6	alpha-BHC	0.04	UJ
319-85-7	beta-BHC	0.03	U
319-86-8	delta-BHC	0.03	U
58-89-9	gamma-BHC (Lindane)	0.04	U
76-44-8	Heptachlor	0.04	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.03	U
959-98-8	Endosulfan I	0.04	U
60-57-1	Dieldrin	0.08	U
72-55-9	4,4'-DDE	0.06	U
72-20-8	Endrin	0.[illegible]	U
33213-65-9	Endosulfan II	0.06	U
72-54-8	4,4'-DDD	0.08	U
1031-07-8	Endosulfan sulfate	0.06	U
50-29-3	4,4'-DDT	0.08	U
72-43-5	Methoxychlor	0.35	UJ
53494-70-5	Endrin ketone	0.06	U
7421-93-4	Endrin aldehyde	0.[illegible]	U
5103-71-9	alpha-Chlordane	0.03	U
5103-74-2	gamma-Chlordane	0.03	U
8001-35-2	Toxaphene	4.8	U
12674-11-2	Aroclor-1016	0.2	U
11104-28-2	Aroclor-1221	0.4	U
11141-16-5	Aroclor-1232	0.2	U
53469-21-9	Aroclor-1242	1.	U
12672-29-6	Aroclor-1248	0.2	U
11097-69-1	Aroclor-1254	0.2	U
11096-82-5	Aroclor-1260	0.2	U

*** Validation Complete ***

PENSACOLA, SITE 08
PHASE II Groundwater
Sb, Cd, Tl (Plus QA/QC Samples)

CD, SB, TL											
	SAMPLE ID ------->	008-G-GR05-02		008-H-GR05-02		008-G-GR07-01		BLK-0-JL15-01			
	ORIGINAL ID ----->	008GGR0502		008HGR0502		008GGR0701		MBLANK1			
	LAB SAMPLE ID --->	S771827*2		S771827*3		S771827*1		S7PJL15*1			
	ID FROM REPORT -->	008GGR0502		008HGR0502		008GGR0701		MBLANK1			
	SAMPLE DATE ----->	04/02/97		04/02/97		04/02/97					
	DATE EXTRACTED -->	04/07/97		04/07/97		04/07/97		04/07/97			
	DATE ANALYZED --->	04/08/97		04/08/97		04/08/97		04/08/97			
	MATRIX ---------->	Water		Water		Water		Water			
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L			
CAS #	Parameter	PJL15	VAL	PJL15	VAL	PJL15	VAL	PJL15	VAL		
7440-36-0	Antimony (Sb)	5.2	N	2.2	U	3.1	J	2.2	U		
7440-43-9	Cadmium (Cd)	27.4		25.6		0.23	U	0.23	U		
7440-28-0	Thallium (Tl)	0.9	N	0.7	J	0.9	J	0.5	B		

*** Validation Complete ***

DATALCP3
06/09/97

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWMETAL			
	SAMPLE ID ------->	008-G-GR06-01 MS	008-G-GR06-01 RE
	ORIGINAL ID ----->	008GGR0601	008GGR0601
	LAB SAMPLE ID --->	5671-02MS	5671-02RE
	ID FROM REPORT -->	008GGR0601	008GGR0601
	SAMPLE DATE ----->		
	MATRIX ---------->	Water	Water
	UNITS ---------->	UG/L	UG/L

CAS #	Parameter	SITEW8	V L	SITEW8	VAL
7429-90-5	Aluminum (Al)	NR		NR	
7440-36-0	Antimony (Sb)	NR		NR	
7440-38-2	Arsenic (As)	NR		NR	
7440-39-3	Barium (Ba)	NR		NR	
7440-41-7	Beryllium (Be)	NR		NR	
7440-43-9	Cadmium (Cd)	NR		NR	
7440-70-2	Calcium (Ca)	NR		NR	
7440-47-3	Chromium (Cr)	NR		NR	
7440-48-4	Cobalt (Co)	NR		NR	
7440-50-8	Copper (Cu)	NR		NR	
7439-89-6	Iron (Fe)	NR		NR	
7439-92-1	Lead (Pb)	NR		NR	
7439-95-4	Magnesium (Mg)	NR		NR	
7439-96-5	Manganese (Mn)	NR		NR	
7439-97-6	Mercury (Hg)	NR		NR	
7440-02-0	Nickel (Ni)	NR		NR	
7440-09-7	Potassium (K)	NR		NR	
7782-49-2	Selenium (Se)	NR		NR	
7440-22-4	Silver (Ag)	NR		NR	
7440-23-5	Sodium (Na)	NR		NR	
7440-28-0	Thallium (Tl)	NR		NR	
7440-62-2	Vanadium (V)	NR		NR	
7440-66-6	Zinc (Zn)	NR		NR	
57-12-5	Cyanide (CN)	44.9		10.	U

*** Validation Complete ***

PENSACOLA, SITE 08
e I Soil and Groundwater
QA/QC Samples

LOWPEST															
	SAMPLE ID ------->	008-S-0003-01 DL		008-S-0003-07 DL		008-S-0003-11 DL		008-G-GR06-01 MS		008-G-GR06-01 MSD		BLK-O-TE08-01	
	ORIGINAL ID ----->	008S00030[illegible]		008S00030[illegible]7		008S00031[illegible]		008GGR0601		008GGR0601		EBS0402	
	LAB SAMPLE ID --->	5597-04DL		5597-05DL		5597-06DL		5671-02MS		5671-02MSD		EBS0402	
	ID FROM REPORT -->	008S000301		008S000307		008S000311		008GGR0601		008GGR0601		EBS0402	
	SAMPLE DATE ----->	03/26/96		03/26/96		03/26/96		05/14/96		05/14/96			
	DATE EXTRACTED -->	04/02/96		04/02/96		04/02/96		05/20/96		05/20/96		04/02/96	
	DATE ANALYZED --->	04/04/96		04/04/96		04/04/96		05/25/96		05/25/96		04/04/96	
	MATRIX ---------->	Soil		Soil		Soil		Water		Water		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/L		UG/L		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITEW8	VAL	SITEW8	VAL	SITE08	VAL
319-84-6	alpha-BHC	38.8	UR	14.9	UR	7.69	UR	0.04	U	0.04	U	0.718	U
319-85-7	beta-BHC	31.2	UR	12.	UR	6.19	UR	0.03	U	0.03	U	0.578	U
319-86-8	delta-BHC	37.2	UR	14.3	UR	7.37	UR	0.03	U	0.03	U	0.688	U
58-89-9	gamma-BHC (Lindane)	42.5	UR	16.3	UR	8.44	UR	0.067		0.07		0.788	U
76-44-8	Heptachlor	36.6	UR	14.1	UR	7.26	UR	0.04	U	0.04	U	0.678	U
309-00-2	Aldrin	37.2	UR	31.	UR	12.5	UR	0.05	U	0.05	U	0.688	U
1024-57-3	Heptachlor epoxide	52.8	UR	20.3	UR	10.5	UR	0.074		0.075		0.977	U
959-98-8	Endosulfan I	49.	UR	18.8	UR	9.72	UR	0.04	U	0.04	U	0.908	U
60-57-1	Dieldrin	2010.	D	496.	D	134.	D	0.153		0.159		1.68	U
72-55-9	4,4'-DDE	70.5	UR	27.1	UR	14.	UR	0.136		0.142		1.31	U
72-20-8	Endrin	87.8	UR	33.7	UR	17.4	UR	0.158		0.163	U	1.63	U
33213-65-9	Endosulfan II	81.3	UR	31.2	UR	16.1	UR	0.06	U	0.06	U	1.51	U
72-54-8	4,4'-DDD	89.4	UR	34.3	UR	17.7	UR	0.08	U	0.08	U	1.66	U
1031-07-8	Endosulfan sulfate	70.5	UR	27.1	UR	14.	UR	0.142		0.147		1.31	U
50-29-3	4,4'-DDT	90.5	UR	34.7	UR	17.9	UR	0.08	U	0.08	U	1.68	U
72-43-5	Methoxychlor	1050.	UR	403.	UR	208.	UR	0.35	U	0.35	U	19.5	U
53494-70-5	Endrin ketone	71.6	UR	27.5	UR	14.2	UR	0.06	U	0.06	U	1.33	U
7421-93-4	Endrin aldehyde	142.	UR	54.6	UR	28.2	UR	0.1	U	0.1	U	2.63	U
5103-71-9	alpha-Chlordane	35.5	UR	13.6	UR	7.05	UR	0.03	U	0.03	U	0.658	U
5103-74-2	gamma-Chlordane	34.5	UR	13.2	UR	6.83	UR	0.072		0.075		0.638	U
8001-35-2	Toxaphene	8240.	UR	3160.	UR	1630.	UR	4.8	U	4.8	U	153.	U
12674-11-2	Aroclor-1016	1780.	UR	682.	UR	352.	UR	0.2	U	0.2	U	32.9	U
11104-28-2	Aroclor-1221	3550.	UR	1360.	UR	705.	UR	0.4	U	0.4	U	65.8	U
11141-16-5	Aroclor-1232	1780.	UR	682.	UR	352.	UR	0.2	U	0.2	U	32.9	U
53469-21-9	Aroclor-1242	1780.	UR	682.	UR	352.	UR	1.	U	1.	U	32.9	U
12672-29-6	Aroclor-1248	1780.	UR	682.	UR	352.	UR	0.2	U	0.2	U	32.9	U
11097-69-1	Aroclor-1254	1780.	UR	682.	UR	352.	UR	0.2	U	0.2	U	32.9	U
11096-82-5	Aroclor-1260	1780.	UR	682.	UR	352.	UR	0.2	U	0.2	U	32.9	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWPEST											
	SAMPLE ID ------->	BLK-0-TE08-03		BLK-0-TE8W-01		BLK-0-TE8W-02					
	ORIGINAL ID ----->	EBS0406RE		EBW0508		EBW0513					
	LAB SAMPLE ID --->	EBS0406RE		EBW0508		EBW0513					
	ID FROM REPORT -->	EBS0406RE		EBW0508		EBW0513					
	SAMPLE DATE ----->										
	DATE EXTRACTED -->	04/06/96		05/08/96		05/33/96		05/20/96			
	DATE ANALYZED --->	04/10/96		05/13/96		05/14/96		05/25/96			
	MATRIX --------->	Soil		Water		Mater		Water			
	UNITS ---------->	UG/KG		UG/L		UG/L		UG/L			
CAS #	Parameter	SITE08	VAL	SITE8W	VAL	SITE8W	VAL	SITEW8	VAL		
319-84-6	alpha-BHC	0.72	U	0.04	U	0.04	U	0.04	U		
319-85-7	beta-BHC	0.58	U	0.03	U	0.03	U	0.03	U		
319-86-8	delta-BHC	0.69	U	0.03	U	0.03	U	0.03	U		
58-89-9	gamma-BHC (Lindane)	0.789	U	0.04	U	0.04	U	0.04	U		
76-44-8	Heptachlor	0.68	U	0.04	U	0.04	U	0.04	U		
309-00-2	Aldrin	0.69	U	0.05	U	0.05	U	0.05	U		
1024-57-3	Heptachlor epoxide	0.979	U	0.03	U	0.03	U	0.03	U		
959-98-8	Endosulfan I	0.909	U	0.04	U	0.04	U	0.04	U		
60-57-1	Dieldrin	1.68	U	0.08	U	0.08	U	0.08	U		
72-55-9	4,4'-DDE	1.31	U	0.06	U	0.06	U	0.06	U		
72-20-8	Endrin	1.63	U	0.1	U	0.1	U	0.1	U		
33213-65-9	Endosulfan II	1.31	U	0.06	U	0.06	U	0.06	U		
72-54-8	4,4'-DDD	1.66	U	0.08	U	0.08	U	0.08	U		
1031-07-8	Endosulfan sulfate	1.31	U	0.06	U	0.06	U	0.06	U		
50-29-3	4,4'-DDT	1.68	U	0.08	U	0.08	U	0.08	U		
72-43-5	Methoxychlor	19.5	U	0.35	U	0.35	U	0.35	U		
53494-70-5	Endrin ketone	1.33	U	0.06	U	0.06	U	0.06	U		
7421-93-4	Endrin aldehyde	2.64	U	0.1	U	0.1	U	0.1	U		
5103-71-9	alpha-Chlordane	0.66	U	0.03	U	0.03	U	0.03	U		
5103-74-2	gamma-Chlordane	0.64	U	0.03	U	0.03	U	0.03	U		
8001-35-2	Toxaphene	153,	U	4.8	U	4.8	U	4.8	U		
12674-31-2	Aroclor-1016	33.	U	0.2	U	0.2	U	0.2	U		
11104-28-2	Aroclor-1221	66.	U	0.4	U	0.4	U	0.4	U		
11141-16-5	Aroclor-1232	33.	U	0.2	U	0.2	U	0.2	U		
53469-21-9	Aroclor-1242	33.	U	1.	U	1.	U	1.	U		
12672-29-6	Aroclor-1248	33.	U	0.2	U	0.2	U	0.2	U		
11097-69-1	Aroclor-1254	33.	U	0.2	U	0.2	U	0.2	U		
11096-82-5	Aroclor-1260	33.	U	0.2	U	0.2	U	0.2	U		

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWSVOA													
	SAMPLE ID ------->	008-G-GR06-01 MS		008-G-GR06-01 MSD		BLK-0-TE08-02		BLK-0-TE08-09		BLK-0-TE8W-01		BLK-0-TEW8-01	
	ORIGINAL ID ----->	008GGR0601		008GGR0601		EBS0404		EBS0406		EBW0508		EBW0520	
	LAB SAMPLE ID --->	5671-02MS		5671-02MSD		EBS0404		EBS0406		EBW0508		EBW0520	
	ID FROM REPORT -->	008GGR0601		008GGR0601		EBS0404		EBS0406		EBW0508		EBW0520	
	SAMPLE DATE ----->	05/14/96		05/14/96									
	DATE EXTRACTED -->	05/20/96		05/20/96		04/04/96				05/08/96		05/20/96	
	DATE ANALYZED --->	05/23/96		05/23/96		04/08/96		04/08/96		05/13/96		05/22/96	
	MATRIX ---------->	Water		Water		Soil		Soil		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/KG		UG/KG		UG/L		UG/L	
CAS #	Parameter	SITEW8	VAL	SITEW8	VAL	SITE08	VAL	SITE08	VAL	SITE8W	VAL	SITEW8	VAL
108-95-2	Phenol	26.		28.		35.	U	34.	U	1.	U	1.	U
111-44-4	bis(2-Chloroethyl) ther	14.		15.		51.	U	51.	U	0.7	U	0.7	U
95-57-8	2-Chlorophenol	28.		29.		34.	U	34.	U	1.	U	1.	U
95-48-7	2-Methylphenol (o-Cresol)	0.9	U	0.9	U	32.	U	32.	U	0.9	U	0.9	U
108-60-1	2,2'-oxybis(1-Chloropropane)	0.8	U	0.8	U	29.	U	29.	U	0.8	U	0.8	U
106-44-5	4-Methylphenol (p-Cresol)	1.	U	1.	U	35.	U	35.	U	1.	U	1.	U
621-64-7	N-Nitroso-di-n-propylamine	14.		15.		57.	U	57.	U	0.9	U	0.9	U
67-72-1	Hexachloroethane	14.		14.		74.	U	74.	U	1.	U	1.	U
98-95-3	Nitrobenzene	1.	U	1.	U	36.	U	36.	U	1.	U	1.	U
78-59-1	Isophorone	14.		15.		34.	U	34.	U	0.8	U	0.8	U
88-75-5	2-Nitrophenol	1.	U	1.	U	32.	U	32.	U	1.	U	1.	U
105-67-9	2,4-Dimethylphenol	2.	U	2.	U	38.	U	38.	U	2.	U	2.	U
111-91-1	bis(2-Chloroethoxy)methane	1.	U	1.	U	35.	U	34.	U	1.	U	1.	U
120-83-2	2,4-Dichlorophenol	1.	U	1.	U	62.	U	62.	U	1.	U	1.	U
120-82-1	1,2,4-Trichlorobenzene	14.		14.		34.	U	34.	U	0.8	U	0.8	U
91-20-3	Naphthalene	15.		15.		34.	U	34.	U	0.9	U	0.9	U
106-47-8	4-Chloroaniline	21.		22.		41.	U	41.	U	9.	U	9.	U
87-68-3	Hexachlorobutadiene	1.	U	1.	U	39.	U	39.	U	1.	U	1.	U
59-50-7	4-Chloro-3-methylphenol	1.	U	1.	U	28.	U	28.	U	1.	U	1.	U
91-57-6	2-Methylnaphthalene	1.	U	1.	U	33.	U	33.	U	1.	U	1.	U
77-47-4	Hexachlorocyclopentadiene	1.	U	1.	U	120.	U	120.	U	1.	U	1.	U
88-06-2	2,4,6-Trichlorophenol	24.		26.		29.	U	29.	U	1.	U	1.	U
95-95-4	2,4,5-Trichlorophenol	1.	U	1.	U	41.	U	41.	U	1.	U	1.	U
91-58-7	2-Chloronaphthalene	1.	U	1.	U	36.	U	36.	U	1.	U	1.	U
88-74-4	2-Nitroaniline	1.	U	1.	U	29.	U	29.	U	1.	U	1.	U
131-11-3	Dimethyl phthalate	1.	U	1.	U	34.	U	34.	U	1.	U	1.	U
208-96-8	Acenaphthylene	1.	U	1.	U	35.	U	35.	U	1.	U	1.	U
606-20-2	2,6-Dinitrotoluene	1.	U	1.	U	36.	U	36.	U	1.	U	1.	U
99-09-2	3-Nitroaniline	4.	U	4.	U	39.	U	39.	U	4.	U	4.	U
83-32-9	Acenaphthene	1.	U	1.	U	23.	U	23.	U	1.	U	1.	U
51-28-5	2,4-Dinitrophenol	15.	U	15.	U	150.	U	150.	U	15.	U	15.	U
100-02-7	4-Nitrophenol	2.	U	2.	U	190.	U	190.	U	2.	U	2.	U
132-64-9	Dibenzofuran	1.	U	1.	U	25.	U	25.	U	1.	U	1.	U
121-14-2	2,4-Dinitrotoluene	11.		12.		26.	U	26.	U	2.	U	2.	U
84-66-2	Diethylphthalate	14.		15.		30.	U	30.	U	2.	U	2.	U
7005-72-3	4-Chlorophenylphenylether	1.	U	1.	U	35.	U	35.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWSVOA													
	SAMPLE ID ------->	008-G-GR06-01 MS		008-G-GR06-01 MSD		BLK-0-TE08-02		BLK-0-TE08-09		BLK-0-TE8W-01		BLK-0-TEW8-01	
	ORIGINAL ID ----->	008GGR0601		008GGR0601		EBS0404		EBS0406		EBW0508		EBW0520	
	LAB SAMPLE ID --->	5671-02MS		5671-02MSD		EBS0404		EBS0406		EBW0508		EBW0520	
	ID FROM REPORT -->	008GGR0601		008GGR0601		EBS0404		EBS0406		EBW0508		EBW0520	
	SAMPLE DATE ----->	05/14/96		05/14/96									
	DATE EXTRACTED -->	05/20/96		05/20/96		04/04/96				05/08/96		05/20/96	
	DATE ANALYZED --->	05/23/96		05/23/96		04/08/96		04/08/96		05/13/96		05/22/96	
	MATRIX ---------->	Water		Water		Soil		Soil		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/KG		UG/KG		UG/L		UG/L	
CAS #	Parameter	SITEW8	VAL	SITEW8	VAL	SITE08	VAL	SITE08	VAL	SITE8W	VAL	SITEW8	VAL
86-73-7	Fluorene	2.	U	2.	U	34.	U	34.	U	2.	U	2.	U
100-01-6	4-Nitroaniline	2.	U	2.	U	44.	U	44.	U	2.	U	2.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	2.	U	2.	U	170.	U	170.	U	2.	U	2.	U
86-30-6	N-Nitrosodiphenylamine	14.		15.		35.	U	35.	U	2.	U	2.	U
101-55-3	4-Bromophenyl-phenyl ether	2.	U	2.	U	57.	U	57.	U	2.	U	2.	U
118-74-1	Hexachlorobenzene	15.		15.		47.	U	47.	U	2.	U	2.	U
87-86-5	Pentachlorophenol	2.	U	2.	U	130.	U	130.	U	2.	U	2.	U
85-01-8	Phenanthrene	1.	U	1.	U	32.	U	32.	U	1.	U	1.	U
120-12-7	Anthracene	1.	U	1.	U	34.	U	34.	U	1.	U	1.	U
86-74-8	Carbazole	2.	U	2.	U	39.	U	39.	U	2.	U	2.	U
84-74-2	Di-n-butylphthalate	2.	U	2.	U	38.	U	38.	U	2.	U	2.	U
206-44-0	Fluoranthene	1.	U	1.	U	36.	U	36.	U	1.	U	1.	U
129-00-0	Pyrene	1.	U	1.	U	36.	U	36.	U	1.	U	1.	U
85-68-7	Butylbenzylphthalate	3.	U	3.	U	32.	U	32.	U	3.	U	3.	U
91-94-1	3,3'-Dichlorobenzidine	9.	U	9.	U	98.	U	98.	U	9.	U	9.	U
56-55-3	Benzo(a)anthracene	1.	U	1.	U	47.	U	47.	U	1.	U	1.	U
218-01-9	Chrysene	1.	U	1.	U	37.	U	37.	U	1.	U	1.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	2.	U	2.	U	49.	U	49.	U	2.	U	2.	U
117-84-0	Di-n-octyl phthalate	2.	U	2.	U	39.	U	39.	U	2.	U	2.	U
205-99-2	Benzo(b)fluoranthene	2.	U	2.	U	78.	U	78.	U	2.	U	2.	U
207-08-9	Benzo(k)fluoranthene	4.	U	4.	U	51.	U	51.	U	4.	U	4.	U
50-32-8	Benzo(a)pyrene	8.		10.		47.	U	47.	U	1.	U	1.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.	U	1.	U	48.	U	48.	U	1.	U	1.	U
53-70-3	Dibenz(a,h)anthracene	1.	U	1.	U	39.	U	39.	U	1.	U	1.	U
191-24-2	Benzo(g,h,i)perylene	1.	U	1.	U	39.	U	39.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWVOA													
	SAMPLE ID ------->	008-S-0001-06 RE		008-S-0001-09		008-S-0003-01 RE		008-S-0003-07 RE		008-S-0003-11 RE		008-S-0004-01 RE	
	ORIGINAL ID ----->	008S000106		008S000109		008S000301		008S000307		008S000311		008S000401	
	LAB SAMPLE ID --->	5597-02RE		5597-03		5597-04RE		5597-05RE		5597-06RE		5602-02RE	
	ID FROM REPORT -->	008S000106		008S000109		008S000301		008S000307		008S000311		008S000401	
	SAMPLE DATE ----->	03/28/96		03/28/96		03/26/96		03/26/96		03/26/96		04/04/96	
	DATE EXTRACTED -->	04/02/96		04/04/96		04/02/96		04/02/96		04/02/96		04/06/96	
	DATE ANALYZED --->	04/01/96		04/01/96		04/01/96		04/01/96		04/01/96		04/07/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
74-97-5	Chlorobromomethane	0.1	UR	0.1	UR	0.1	UR	0.1	UR	0.1	UR	0.1	UR
74-87-3	Chloromethane	0.6	UR	0.6	UR	0.6	UR	0.5	UR	0.6	UR	0.6	UR
74-83-9	Bromomethane	1.	UR	1.	UR	1.	UR	1.	UR	1.	UR	1.	UR
75-01-4	Vinyl chloride	0.9	UR	0.9	UR	0.9	UR	0.9	UR	0.9	UR	0.9	UR
75-00-3	Chloroethane	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR
75-09-2	Methylene chloride	0.9	UR	0.9	UR	0.9	UR	0.8	UR	0.9	UR	0.9	UR
67-64-1	Acetone	14.	UR	11.	UR	60.	UR	71.	UR	180.	UR	1.	UR
75-15-0	Carbon disulfide	0.7	UR	0.7	UR	0.7	UR	0.7	UR	0.7	UR	0.7	UR
75-35-4	1,1-Dichloroethene	1.	UR	1.	UR	1.	UR	1.	UR	1.	UR	1.	UR
75-34-3	1,1-Dichloroethane	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.4	UR
156-59-2	cis-1,2-Dichloroethene	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR
156-60-5	trans-1,2-Dichloroethene	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR
67-66-3	Chloroform	0.3	UR	0.3	UR	0.4	UR	0.3	UR	0.4	UR	0.4	UR
107-06-2	1,2-Dichloroethane	0.5	UR	0.5	UR	0.5	UR	0.5	UR	0.5	UR	0.5	UR
78-93-3	2-Butanone (MEK)	2.	UR	2.	UR	2.	UR	2.	UR	2.	UR	2.	UR
71-55-6	1,1,1-Trichloroethane	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.4	UR
56-23-5	Carbon tetrachloride	0.5	UR	0.5	UR	0.5	UR	0.5	UR	0.5	UR	0.5	UR
75-27-4	Bromodichloromethane	1.	UR	1.	UR	1.	UR	1.	UR	1.	UR	1.	UR
78-87-5	1,2-Dichloropropane	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR
10061-01-5	cis-1,3-Dichloropropene	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR
79-01-6	Trichloroethene	0.8	UR	0.8	UR	0.8	UR	0.7	UR	0.8	UR	0.8	UR
124-48-1	Dibromochloromethane	0.5	UR	0.5	UR	0.5	UR	0.5	UR	0.5	UR	0.5	UR
79-00-5	1,1,2-Trichloroethane	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR
71-43-2	Benzene	0.8	UR	0.8	UR	0.8	UR	0.7	UR	0.8	UR	0.8	UR
10061-02-6	trans-1,3-Dichloropropene	0.6	UR	0.6	UR	0.7	UR	0.6	UR	0.6	UR	0.7	UR
75-25-2	Bromoform	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.4	UR
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.	UR	1.	UR	1.	UR	1.	UR	1.	UR	1.	UR
591-78-6	2-Hexanone	2.	UR	2.	UR	2.	UR	2.	UR	2.	UR	2.	UR
127-18-4	Tetrachloroethene	0.8	UR	0.8	UR	0.9	UR	1.	UR	0.9	UR	0.9	UR
79-34-5	1,1,2,2-Tetrachloroethane	0.8	UR	0.8	UR	0.8	UR	0.8	UR	0.8	UR	0.8	UR
106-93-4	1,2-Dibromoethane	1.	UR	1.	UR	1.	UR	0.9	UR	1.	UR	1.	UR
108-88-3	Toluene	0.6	UR	0.8	UR	0.3	UR	0.4	UR	0.4	UR	0.3	UR
108-90-7	Chlorobenzene	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR
100-41-4	Ethylbenzene	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.3	UR
100-42-5	Styrene	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR
1330-20-7	Xylene (Total)	0.6	UR	0.2	UR	0.2	UR	0.6	UR	1.	UR	0.2	UR

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWVOA													
	SAMPLE ID ------->	008-S-0001-06 RE		008-S-0001-09		008-S-0003-01 E		008-S-0003-07 RE		008-S-0003-11 RE		008-S-0004-01 RE	
	ORIGINAL ID ----->	008S000106		008S000109		008S000301		008S000307		008S000311		008S000401	
	LAB SAMPLE ID --->	5597-02RE		5597-03		5597-04RE		5597-05RE		5597-06RE		5602-02RE	
	ID FROM REPORT -->	008S000106		008S000109		008S000301		008S000307		008S000311		008S000401	
	SAMPLE DATE ----->	03/28/96		03/28/96		03/26/96		03/26/96		03/26/96		04/04/96	
	DATE EXTRACTED -->	04/02/96		04/04/96		04/02/96		04/02/96		04/02/96		04/06/96	
	DATE ANALYZED --->	04/01/96		04/01/96		04/01/96		04/01/96		04/01/96		04/07/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
541-73-1	1,3-Dichlorobenzene	0.4	UR	0.4	UR	0.5	UR	0.4	UR	0.5	UR	0.5	UR
106-46-7	1,4-Dichlorobenzene	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR
95-50-1	1,2-Dichlorobenzene	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.4	UR
96-12-8	1,2-Dibromo-3-Chloropropane	1.	UR	1.	UR	1.	UR	0.9	UR	1.	UR	1.	UR

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

OWVOA

SAMPLE ID -------->	008-S-0006-01 RE		008-S-0006-07 RE		008-S-0007-01		008-S-0007-07		008-S-0008-01 RE		008-G-GR06-01 MS	
ORIGINAL ID ----->	008S000607		008S000607		008S000701		008S000707		008S000801		008GGR0601	
LAB SAMPLE ID --->	5602-04RE		5602-05RE		5602-06		5602-07		5602-08RE		5671-02MS	
ID FROM REPORT -->	008S000607		008S000607		008S000701		008S000707		008S000801		008GGR0601	
SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		05/14/96	
DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96		04/06/96		04/06/96			
DATE ANALYZED --->	04/07/96		04/07/96		04/06/96		04/06/96		04/07/96		05/17/96	
MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Water	
UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/L	
CAS # Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITEW8	VAL
74-97-5 Chlorobromomethane	0.1	UR	0.1	UR	0.1	UR	0.1	UR	0.1	UR	0.1	U
74-87-3 Chloromethane	0.6	UR	0.6	UR	0.6	UR	0.6	UR	0.4	UR	0.2	U
74-83-9 Bromomethane	1.	UR	1.	UR	1.	UR	1.	UR	1.	UR	0.2	U
75-01-4 Vinyl chloride	0.9	UR	0.9	UR	0.9	UR	0.9	UR	0.6	UR	5.	
75-00-3 Chloroethane	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.2	UR	0.2	U
75-09-2 Methylene chloride	0.9	UR	0.9	UR	0.9	UR	0.9	UR	0.6	UR	1.	U
67-64-1 Acetone	14.	UR	14.	UR	41.	UR	43.	UR	13.	UR	5.	
75-15-0 Carbon disulfide	0.7	UR	0.7	UR	0.8	UR	0.7	UR	0.5	UR	0.2	U
75-35-4 1,1-Dichloroethene	1.	UR	1.	UR	1.	UR	1.	UR	0.9	UR	0.2	U
75-34-3 1,1-Dichloroethane	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.3	UR	0.1	U
156-59-2 cis-1,2-Dichloroethene	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.2	UR	0.3	U
156-60-5 trans-1,2-Dichloroethene	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.2	UR	0.3	U
67-66-3 Chloroform	0.4	UR	0.3	UR	0.4	UR	0.3	UR	0.2	UR	0.1	U
107-06-2 1,2-Dichloroethane	0.5	UR	0.5	UR	0.5	UR	0.5	UR	0.4	UR	5.	
78-93-3 2-Butanone (MEK)	2.	UR	2.	UR	3.	UR	8.	UR	1.	UR	0.2	U
71-55-6 1,1,1-Trichloroethane	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.3	UR	0.1	U
56-23-5 Carbon tetrachloride	0.5	UR	0.5	UR	0.5	UR	0.5	UR	0.4	UR	5.	
75-27-4 Bromodichloromethane	1.	UR	1.	UR	1.	UR	1.	UR	0.8	UR	0.1	U
78-87-5 1,2-Dichloropropane	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.1	UR	5.	
10061-01-5 cis-1,3-Dichloropropene	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.2	UR	4.	
79-01-6 Trichloroethene	0.8	UR	0.8	UR	0.8	UR	0.8	UR	0.6	UR	5.	
124-48-1 Dibromochloromethane	0.5	UR	0.5	UR	0.5	UR	0.5	UR	0.4	UR	0.3	U
79-00-5 1,1,2-Trichloroethane	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.2	UR	5.	
71-43-2 Benzene	0.8	UR	0.8	UR	0.8	UR	0.8	UR	0.6	UR	5.	
10061-02-6 trans-1,3-Dichloropropene	0.7	UR	0.6	UR	0.7	UR	0.6	UR	0.5	UR	0.2	U
75-25-2 Bromoform	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.3	UR	4.	
108-10-1 4-Methyl-2-Pentanone (MIBK)	1.	UR	1.	UR	1.	UR	1.	UR	0.9	UR	0.2	U
591-78-6 2-Hexanone	2.	UR	2.	UR	2.	UR	2.	UR	2.	UR	0.4	U
127-18-4 Tetrachloroethene	0.9	UR	0.8	UR	0.9	UR	0.8	UR	0.6	UR	5.	
79-34-5 1,1,2,2-Tetrachloroethane	0.8	UR	0.8	UR	0.8	UR	0.8	UR	0.6	UR	0.2	U
106-93-4 1,2-Dibromoethane	1.	UR	1.	UR	1.	UR	1.	UR	0.7	UR	5.	
108-88-3 Toluene	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.2	UR	0.1	U
108-90-7 Chlorobenzene	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.1	U
100-41-4 Ethylbenzene	0.3	UR	0.3	UR	0.3	UR	0.3	UR	0.2	UR	0.1	U
100-42-5 Styrene	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.1	UR	0.1	U
1330-20-7 Xylene (Total)	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.1	UR	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWVOA													
	SAMPLE ID ------->	008-S-0006-01 RE		008-S-0006-07 RE		008-S-0007-01		008-S-0007-07		008-S-0008-01 RE		008-G-GR06-01 MS	
	ORIGINAL ID ----->	008S000601		008S000607		008S000701		008S000707		008S000801		008GGR0601	
	LAB SAMPLE ID --->	5602-04RE		5602-05RE		5602-06		5602-07		5602-08RE		5671-02MS	
	ID FROM REPORT -->	008S000601		008S000607		008S000701		008S000707		008S000801		008GGR0601	
	SAMPLE DATE ----->	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		05/14/96	
	DATE EXTRACTED -->	04/06/96		04/06/96		04/06/96		04/06/96		04/06/96			
	DATE ANALYZED --->	04/07/96		04/07/96		04/06/96		04/06/96		04/07/96		05/17/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Water	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/L	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITEW8	VAL
541-73-1	1,3-Dichlorobenzene	0.5	UR	0.5	UR	0.5	UR	0.4	UR	0.3	UR	0.3	U
106-46-7	1,4-Dichlorobenzene	0.2	UR	0.2	UR	0.2	UR	0.2	UR	0.1	UR	4.	
95-50-1	1,2-Dichlorobenzene	0.4	UR	0.4	UR	0.4	UR	0.4	UR	0.3	UR	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.	UR	1.	UR	1.	UR	1.	UR	0.7	UR	0.8	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWVOA													
	SAMPLE ID ------->	008-G-GR06-01 MSD		008-T-S001-01		008-T-S002-01		BLK-0-TE08-04		BLK-0-TE08-05		BLK-0-TE08-06	
	ORIGINAL ID ----->	008GGR0601		008TS00101		008TS00201		VBS0401A		VBS0406A		VBS0407A	
	LAB SAMPLE ID --->	5671-02MSD		5597-07		5602-10		VBS0401A		VBS0406A		VBS0407A	
	ID FROM REPORT -->	008GGR0601		008TS00101		008TS00201		VBS0401A		VBS0406A		VBS0407A	
	SAMPLE DATE ----->	05/14/96		03/28/96		04/04/96							
	DATE EXTRACTED -->			04/04/96		04/06/96		04/06/96		04/06/96		04/06/96	
	DATE ANALYZED --->	05/17/96		04/01/96		04/08/96		04/01/96		04/06/96		04/07/96	
	MATRIX ---------->	Water		Water		Water		Soil		Soil		Soil	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITEW8	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
74-97-5	Chlorobromomethane	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
74-87-3	Chloromethane	0.2	U	0.2	U	0.2	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	0.2	U	0.2	U	0.2	U	1.	U	1.	U	1.	U
75-01-4	Vinyl chloride	5.		0.2	U	0.2	U	0.8	U	0.8	U	0.8	U
75-00-3	Chloroethane	0.2	U	0.2	U	0.2	U	0.3	U	0.3	U	0.3	U
75-09-2	Methylene chloride	1.	U	1.		1.		0.8	U	0.8	U	0.8	U
67-64-1	Acetone	4.		0.3	U	3.		1.	U	1.	U	1.	U
75-15-0	Carbon disulfide	0.2	U	0.5		0.3		0.7	U	0.7	U	0.7	U
75-35-4	1,1-Dichloroethene	0.2	U	0.2	U	0.2	U	1.	U	1.	U	1.	U
75-34-3	1,1-Dichloroethane	0.1	U	0.1	U	0.1	U	0.4	U	0.4	U	0.4	U
156-59-2	cis-1,2-Dichloroethene	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
156-60-5	trans-1,2-Dichloroethene	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
67-66-3	Chloroform	0.1	U	0.1		0.1	U	0.3	U	0.3	U	0.3	U
107-06-2	1,2-Dichloroethane	5.		0.1	U	0.1	U	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone (MEK)	0.2	U	0.2	U	0.2	U	2.	U	2.	U	2.	U
71-55-6	1,1,1-Trichloroethane	0.1	U	0.1	U	0.1	U	0.4	U	0.4	U	0.4	U
56-23-5	Carbon tetrachloride	5.		0.2	U	0.2	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	0.1	U	0.1	U	0.2		1.	U	1.	U	1.	U
78-87-5	1,2-Dichloropropane	5.		0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
10061-01-5	cis-1,3-Dichloropropene	5.		0.1	U	0.1	U	0.3	U	0.3	U	0.3	U
79-01-6	Trichloroethene	5.		0.1	U	0.1	U	0.7	U	0.7	U	0.7	U
124-48-1	Dibromochloromethane	0.3	U	0.3	U	0.3	U	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	6.		0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
71-43-2	Benzene	5.		0.1	U	0.1	U	0.7	U	0.7	U	0.7	U
10061-02-6	trans-1,3-Dichloropropene	0.2	U	0.2	U	0.2	U	0.6	U	0.6	U	0.6	U
75-25-2	Bromoform	4.		0.2	U	0.2	U	0.4	U	0.4	U	0.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.2	U	0.2	U	0.2	U	1.	U	1.	U	1.	U
591-78-6	2-Hexanone	0.4	U	0.4	U	0.4	U	2.	U	2.	U	2.	U
127-18-4	Tetrachloroethene	5.		0.2	U	0.2	U	0.8	U	0.8	U	0.8	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	U	0.2	U	0.8	U	0.8	U	0.8	U
106-93-4	1,2-Dibromoethane	5.		0.6	U	0.6	U	0.9	U	0.9	U	0.9	U
108-88-3	Toluene	0.1	U	0.1	U	0.1	U	0.3	U	0.3	U	0.3	U
108-90-7	Chlorobenzene	0.1	U	0.1	U	0.1	U	0.2	U	0.2	U	0.2	U
100-41-4	Ethylbenzene	0.1	U	0.1	U	0.1	U	0.3	U	0.3	U	0.3	U
100-42-5	Styrene	0.1	U	0.1	U	0.1	U	0.2	U	0.2	U	0.2	U
1330-20-7	Xylene (Tota	0.1	U	0.1	U	0.1	U	0.2	U	0.2	U	0.2	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWVOA													
	SAMPLE ID ------->	008-G-GR06-01 MSD		008-T-S001-01		008-T-S002-01		BLK-0-TE08-04		BLK-0-TE08-05		BLK-0-TE08-06	
	ORIGINAL ID ----->	008GGR0601		008TS00101		008TS00201		VBS0401A		VBS0406A		VBS0407A	
	LAB SAMPLE ID --->	5671-02MSD		5597-07		5602-10		VBS0401A		VBS0406A		VBS0407A	
	ID FROM REPORT -->	008GGR0601		008TS00101		008TS00201		VBS0401A		VBS0406A		VBS0407A	
	SAMPLE DATE ----->	05/14/96		03/28/96		04/04/96							
	DATE EXTRACTED -->			04/04/96		04/06/96		04/06/96		04/06/96		04/06/96	
	DATE ANALYZED --->	05/17/96		04/01/96		04/08/96		04/01/96		04/06/96		04/07/96	
	MATRIX ---------->	Water		Water		Water		Soil		Soil		Soil	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	SITEW8	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL	SITE08	VAL
541-73-1	1,3-Dichlorobenzene	0.3	U	0.3	U	0.3	U	0.4	U	0.4	U	0.4	U
106-46-7	1,4-Dichlorobenzene	4.		0.4	U	0.4	U	0.2	U	0.2	U	0.2	U
95-50-1	1,2-Dichlorobenzene	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.8	U	0.8	U	0.8	U	0.9	U	0.9	U	0.9	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWVOA									
	SAMPLE ID ------->	BLK-0-TE08-07		BLK-0-TE08-08		BLK-0-TE8W-03		BLK-0-TEW8-01	
	ORIGINAL ID ----->	VBW0401D		VBW0408A		VBW0508A		VBW0516A	
	LAB SAMPLE ID --->	VBW0401D		VBW0408A		VBW0508A		VBW0516A	
	ID FROM REPORT -->	VBW0401D		VBW0408A		VBW0508A		VBW0516A	
	SAMPLE DATE ----->								
	DATE EXTRACTED -->	04/06/96		04/06/96					
	DATE ANALYZED --->	04/01/96		04/08/96		05/08/96		05/16/96	
	MATRIX ---------->	Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE8W	VAL	SITEW8	VAL
74-97-5	Chlorobromomethane	0.1	U	0.1	U	0.1	U	0.1	U
74-87-3	Chloromethane	0.2	U	0.2	U	0.2	U	0.2	U
74-83-9	Bromomethane	0.2	U	0.2	U	0.2	U	0.2	U
75-01-4	Vinyl chloride	0.2	U	0.2	U	0.2	U	0.2	U
75-00-3	Chloroethane	0.2	U	0.2	U	0.2	U	0.2	U
75-09-2	Methylene chloride	1.	U	1.	U	1.	U	1.	U
67-64-1	Acetone	0.3	U	0.3	U	0.3	U	0.3	U
75-15-0	Carbon disulfide	0.2	U	0.2	U	0.2	U	0.2	U
75-35-4	1,1-Dichloroethene	0.2	U	0.2	U	0.2	U	0.2	U
75-34-3	1,1-Dichloroethane	0.1	U	0.1	U	0.1	U	0.1	U
156-59-2	cis-1,2-Dichloroethene	0.3	U	0.3	U	0.3	U	0.3	U
156-60-5	trans-1,2-Dichloroethene	0.3	U	0.3	U	0.3	U	0.3	U
67-66-3	Chloroform	0.1	U	0.1	U	0.1	U	0.1	U
107-06-2	1,2-Dichloroethane	0.1	U	0.1	U	0.1	U	0.1	U
78-93-3	2-Butanone (MEK)	0.2	U	0.2	U	0.2	U	0.2	U
71-55-6	1,1,1-Trichloroethane	0.1	U	0.1	U	0.1	U	0.1	U
56-23-5	Carbon tetrachloride	0.2	U	0.2	U	0.2	U	0.2	U
75-27-4	Bromodichloromethane	0.1	U	0.1	U	0.1	U	0.1	U
78-87-5	1,2-Dichloropropane	0.2	U	0.2	U	0.2	U	0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.1	U	0.1	U	0.1	U	0.1	U
79-01-6	Trichloroethene	0.1	U	0.1	U	0.1	U	0.1	U
124-48-1	Dibromochloromethane	0.3	U	0.3	U	0.3	U	0.3	U
79-00-5	1,1,2-Trichloroethane	0.3	U	0.3	U	0.3	U	0.3	U
71-43-2	Benzene	0.1	U	0.1	U	0.1	U	0.1	U
10061-02-6	trans-1,3-Dichloropropene	0.2	U	0.2	U	0.2	U	0.2	U
75-25-2	Bromoform	0.2	U	0.2	U	0.2	U	0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.2	U	0.2	U	0.2	U	0.2	U
591-78-6	2-Hexanone	0.4	U	0.4	U	0.4	U	0.4	U
127-18-4	Tetrachloroethene	0.2	U	0.2	U	0.2	U	0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	U	0.2	U	0.2	U
106-93-4	1,2-Dibromoethane	0.6	U	0.6	U	0.6	U	0.6	U
108-88-3	Toluene	0.1	U	0.1	U	0.1	U	0.1	U
108-90-7	Chlorobenzene	0.1	U	0.1	U	0.1	U	0.1	U
100-41-4	Ethylbenzene	0.1	U	0.1	U	0.1	U	0.1	U
100-42-5	Styrene	0.1	U	0.1	U	0.1	U	0.1	U
1330-20-7	Xylene (Total)	0.1	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 08
Phase I Soil and Groundwater
QA/QC Samples

LOWVOA											
	SAMPLE ID ------->	BLK-0	17	BLK-0-TE08-08		BLK-0-TE8W-03		BLK-0-TEW8-01			
	ORIGINAL ID ----->	VBW04		VBW0408A		VBW0508A		VBW0516A			
	LAB SAMPLE ID --->	VBW04		VBW0408A		VBW0508A		VBW0516A			
	ID FROM REPORT -->	VBW04		VBW0408A		VBW0508A		VBW0516A			
	SAMPLE DATE ----->										
	DATE EXTRACTED -->	04/06		04/06/96							
	DATE ANALYZED --->	04/01		04/08/96		05/08/96		05/16/96			
	MATRIX ---------->	Water		Water		Water		Water			
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L			
CAS #	Parameter	SITE08	VAL	SITE08	VAL	SITE8W	VAL	SITEW8	VAL		
541-73-1	1,3-Dichlorobenzene	0.3	U	0.3	U	0.3	U	0.3	U		
106-46-7	1,4-Dichlorobenzene	0.4	U	0.4	U	0.4	U	0.4	U		
95-50-1	1,2-Dichlorobenzene	0.4	U	0.4	U	0.4	U	0.4	U		
96-12-8	1,2-Dibromo-3-Chloropropane	0.8	U	0.8	U	0.8	U	0.8	U		

*** Validation Complete ***

DATALCP3
06/10/97

PENSACOLA, SITE 24
Phase I Soil
Inorganics

Time: 14:41

	SAMPLE ID ------->	024-C-0001-01		024-S-0001-05		024-S-0002-01		024-S-0002-05		024-S-0003-01		024-S-0003-05	
	ORIGINAL ID ----->	024C000101		024S000105		024S000201		024S000205		024S000301		024S000305	
	LAB SAMPLE ID --->	S554814*2		S554814*3		S554814*7		S554814*4		S554814*10		S554814*11	
	ID FROM REPORT -->	024C000101		024S000105		024S000201		024S000205		024S000301		024S000305	
	SAMPLE DATE ----->	08/29/95		08/29/95		08/26/95		08/29/95		08/30/95		08/30/95	
	DATE ANALYZED --->	09/15/95		09/15/95		09/15/95		09/15/95		09/15/95		09/15/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENPO2	VAL	ENPO2	VAL	ENPO2	VAL	ENPO2	VAL	ENPO2	VAL	ENPO2	VAL
7440-38-2	Arsenic (As)	0.37	U	0.22	U	0.61	U	0.31	U	0.57	U	0.22	U
7439-97-6	Mercury (Hg)	0.03	J	0.01	U	0.03	J	0.01	U	0.1		0.12	
7439-92-1	Lead (Pb)	60.6		7.9		24.9		4.5		97.7		11.	
7782-49-2	Selenium (Se)	0.28	UJ	0.29	U	0.35	U	0.29	U	0.29	US	0.29	U
57-12-5	Cyanide (CN)	0.25	U	0.26	U	0.32	U	0.26	U	0.58		0.26	U
7429-90-5	Aluminum (Al)	1080.		608.		4380,		619.		4000.		838.	
7440-36-0	Antimony (Sb)	1.9	U	1.9	U	2.3	U	1.9	U	1.9	U	2.2	J
7440-39-3	Barium (Ba)	3.	J	1.3	3	6.5	J	2.4	J	18.5	J	3.	J
7440-41-7	Beryllium (Be)	0.06	U	0.06	U	0.08	U	0.06	U	0.17		0.06	U
7440-43-9	Cadmium (Cd)	0.7	J	0.66	U	0.8	U	0.66	U	2.8		0.74	J
7440-70-2	Calcium (Ca)	563.	J	69.5	3	342.	J	54.5	J	10800.		177.	J
7440-47-3	Chromium (Cr)	5.5		2.2		5.		1.3	J	26.5		3.9	
7440-48-4	Cobalt (Co)	0.32	U	0.33	U	0.63	J	0.33	U	0.68	J	0.33	U
7440-50-8	Copper (Cu)	5.2		1.2	U	2.9	J	1.2	U	18.2		3.3	J
7439-09-6	Iron (Fe)	805.		267.		2890.		486.		2400.		295.	
7439-95-4	Magnesium (Mg)	52.9	J	17.6	J	119.	3	11.9	J	768.	J	18.6	3
7439-96-5	Manganese (Mn)	6.3		6.2		64.4		2.2	J	96.5		1.2	J
7440-02-0	Nickel (Ni)	0.77	U	0.79	U	1.1	J	0.79	U	2.7	3	0.8	U
7440-09-7	Potassium (K)	23.5	3	12.1	U	47.4	J	12.	U	133.	J	12.2	U
7440-22-4	Silver (Ag)	0.45	U	0.46	U	0.56	U	0.46	U	0.46	U	0.46	U
7440-23-5	Sodium (Na)	6.2	J	8.5	J	9.2	J	5.5	U	101.	3	7.	J
7440-62-2	Vanadium (V)	1.9	J	0.45	J	7.2	J	1.4	J	9.3	3	1.3	3
7440-66-6	Zinc (Zn)	7.2		3.	J	7.9		19.7		49.2		24.2	
7440-28-0	Thallium (Tl)	0.1	U	0.14	U	0.13	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
Inorganics

CLP METAL													
		SAMPLE ID ------->	024-S-0004-01		024-S-0004-05		024-S-0005-01				024-S-0007-01		024-S-0008-01	
		ORIGINAL ID ----->	024S000401		024S000405		024S000501				024S000701		024S000801	
		LAB SAMPLE ID --->	S554814*13		S554814*12		S554814*8				S554814*5		S554814*1	
		ID FROM REPORT -->	024S000401		024S000405		024S000501				024S000701		024S000801	
		SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95				08/29/95		08/29/95	
		DATE ANALYZED --->	09/15/95		09/15/95		09/15/95				09/15/95		09/19/95	
		MATRIX ---------->	Soil		Soil		Soil				Soil		Soil	
		UNITS ---------->	MG/KG		MG/KG		MG/KG				MG/KG		MG/KG	
CAS #	Parameter		ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
7440-38-2	Arsenic (As)		1.2	U	0.22	U	0.67	U	0.31	U	0.46	U	0.44	U
7439-97-6	Mercury (Hg)		0.01	J	0.01	U	0.01	U	0.01	U	0.11		0.02	J
7439-92-1	Lead (Pb)		27.2		0.72		2.2		62.8		41.6		63.2	
7782-49-2	Selenium (Se)		1.5	UJ	0.29	UJ	0.29	U	0.29	U	0.28	U	0.2%	U
57-12-5	Cyanide (CN)		0.27	U	0.26	U	0.26	U	0.26	U	0.26	U	0.26	U
7429-90-5	Aluminum (Al)		0550,		1070.		5890.		1510.		1440.		1600.	
7440-36-0	Antimony (Sb)		2.	U	1.9	U	1.9	U	1.9	U	2.4	J	1.9	U
7440-39-3	Barium (Ba)		26.8	J	2.4	J	3+2	J	1.3	3	4.4	J	6.	J
7440-41-7	Beryllium (Be)		0.5	J	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U
7440-43-9	Cadmium (Cd)		0.68	U	0.66	U	0.67	U	0.65	U	0.65	U	0.65	U
7440-70-2	Calcium (Ca)		50000.		83.2	J	126.	J	123.	J	212.	J	259.	3
7440-47-3	Chromium (Cr)		10.3		0.73	U	6.		1.4	J	10.6		3.7	
7440-48-4	Cobalt (Co)		0.64	J	0.33	U	0.55	J	0.32	U	0.32	U	0.32	U
7440-50-8	Copper (Cu)		5.1	3	1.2	U	1.8	J	3.2	U	2.8	J	3.7	J
7439-89-6	Iron (Fe)		6490.		623.		3310,		1170.		796.		1600.	
7439-95-4	Magnesium (Mg)		p87.	J	30.	J	51.7	J	29.7	3	33.6	J	52.1	3
7439-96-5	Manganese (Mn)		105,		3.5		5.3		2.4	3	8.2		29.4	
7440-02-0	Nickel (Ni)		3.7	J	0.78	U	1.2	J	0.78	U	0.77	U	0.77	U
7440-09-7	Potassium (K)		151.	J	12.	U	36.2	J	18.6	J	20.9	J	28.9	J
7440-22-4	Silver (Ag)		0.47	U	0.46		0.46	U	0.45	U	0.69	J	0.45	U
7440-23-5	Sodium (Na)		265.	J	8.1	J	10.3	3	6.7	3	5.4	U	6.	J
7440-62-2	Vanadium (V)		15.9		1.2	J	9.5	3	3.	J	2.3	J	2.8	J
7440-66-6	Zinc (Zn)		25.7		3.2	J	2.	J	2.4	J	17,		15.1	
7440-28-0	Thallium (Tl)		0.11	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
Inorganics

CLP METAL							
	SAMPLE ID ------->	024-S-0009-01					
	ORIGINAL ID ----->	024S000901					
	LAB SAMPLE ID --->	S554814*6					
	ID FROM REPORT -->	024S000901					
	SAMPLE DATE ----->	08/29/95					
	DATE ANALYZED --->	09/15/95					
	MATRIX ---------->	Soil					
	UNITS ---------->	MG/KG					
CAS #	Parameter	ENP02					
7440-38-2	Arsenic (As)	0.4	U				
7439-97-6	Mercury (Hg)	0.01	U				
7439-92-1	Lead (Pb)	33.4					
7782-49-2	Selenium (Se)	0.28	U				
57-12-5	Cyanide (CN)	0.25	U				
7429-90-5	Aluminum (Al)	1210.					
7440-36-0	Antimony (Sb)	1.9	W				
7440-39-3	Barium (Ba)	2.7	-				
7440-41-7	Beryllium (Be)	0.06	W				
7440-43-9	Cadmium (Cd)	0.64	W				
7440-70-2	Calcium (Ca)	8450.					
7440-47-3	Chromium (Cr)	2.4					
7440-48-4	Cobalt (Co)	0.32	U				
7440-50-8	Copper (Cu)	1.6	J				
7439-89-6	Iron (Fe)	918.					
7439-95-4	Magnesium (Mg)	77.1	J				
7439-96-5	Manganese (Mn)	15.9					
7440-02-0	Nickel (Ni)	0.77	U				
7440-09-7	Potassium (K)	25.2	J				
7440-22-4	Silver (Ag)	0.44	U				
7440-23-5	Sodium (Na)	81.	J				
7440-62-2	Vanadium (V)	2.	J				
7440-66-6	Zinc (Zn)	5.8					
7440-28-0	Thallium (Tl)	0.1	U				

*** Validation Complete ***

DATALCP3
06/10/97

PENSACOLA, SITE 24
Phase I Soil
VOCs

CLP VOA													
	SAMPLE ID ------->	024-C-0001-01		024-S-0001-05		024-S-0002-01		024-S-0002-05		024-S-0003-01		024-S-0003-05	
	ORIGINAL ID ----->	024C000101		024S000105		024S000201		024S000205		024S000301		024S000305	
	LAB SAMPLE ID --->	S554814*2		S554814*3		S554814*7		S554814*4		S554814*10		S554814*11	
	ID FROM REPORT -->	024C000101		024S000105		024S000201		024S000205		024S000301		024S000305	
	SAMPLE DATE ----->	08/29/95		08/29/95		08/26/95		08/29/95		08/30/95		08/30/95	
	DATE ANALYZED --->	09/08/95		09/08/95		09/08/95		09/08/95		09/08/95		09/11/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	13.	U	10.	U	10.	UJ	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	13.	U	10.	U	10.	UJ	10.	U
108-10-1	4-Methyl-2-pentanone (MIBK)	10.	U	10.	U	13.	U	10.	U	10.	UJ	10.	U
67-64-1	Acetone	10.	U	33.	U	13.	U	36.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	13.	U	10.	U	10.	UJ	10.	UR
67-66-3	Chloroform	10.	U	10.	U	13.	U	10.	U	10.	UR	10.	U
74-87-3	Chloromethane	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	13.	U	10.	U	10.	UJ	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	13.	U	10.	U	10.	UJ	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U	13.	U	10.	U	10.	UJ	10.	U
108-88-3	Toluene	1.	J	10.	U	13.	U	10.	U	10.	UJ	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	4.	U	4.	U	5.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	3.	J	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropen	10.	U	10.	U	13.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
VOCs

CLP VOA													
		SAMPLE ID ------->	024-S-0004-01		024-S-0004-05		024-S-0005-01		024-S-0005-05		024-S-0007-01		024-S-0008-01	
		ORIGINAL ID ----->	024S000401		024S000405		024S000501		024S000505		024S000701		024S000801	
		LAB SAMPLE ID --->	S554814*13		S554814*12		S554814*8		S554814*9		S554814*5		S554814*1	
		ID FROM REPORT -->	024S000401		024S000405		024S000501		024S000505		024S000701		024S000801	
		SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95		08/30/95		08/29/95		08/29/95	
		DATE ANALYZED --->	09/09/95		09/08/95		09/08/95		09/08/95		09/08/95		09/08/95	
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter		ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
71-55-6	1,1,1-Trichloroethane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone		11.	U	10.	U	65.	U	20.	U	10.	U	10.	U
71-43-2	Benzene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane		11.	UR	10.	UR	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-87-3	Chloromethane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride		4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)		2.	J	0.6	J	10.	U	10.	U	10.	U	3.	
10061-01-5	cis-1,3-Dichloropropene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene		11.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
VOCs

CLP VOA							
	SAMPLE ID ------->	024-S-0009-01					
	ORIGINAL ID ----->	024S000901					
	LAB SAMPLE ID --->	S554814*6					
	ID FROM REPORT -->	024S000901					
	SAMPLE DATE ----->	08/29/95					
	DATE ANALYZED --->	09/12/95					
	MATRIX ---------->	Soil					
	UNITS ---------->	UG/KG					
CAS #	Parameter	ENP02	VAL				
71-55-6	1,1,1-Trichloroethane	10.	U				
79-34-5	1,1,2,2-Tetrachloroethane	10.	U				
79-00-5	1,1,2-Trichloroethane	10.	U				
75-34-3	1,1-Dichloroethane	10.	U				
75-35-4	1,1-Dichloroethene	10.	U				
107-06-2	1,2-Dichloroethane	10.	U				
78-87-5	1,2-Dichloropropane	10.	U				
78-93-3	2-Butanone (MEK)	10.	U				
591-78-6	2-Hexanone	10.	U				
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U				
67-64-1	Acetone	10.	U				
71-43-2	Benzene	10.	U				
75-27-4	Bromodichloromethane	10.	U				
75-25-2	Bromoform	10.	U				
74-83-9	Bromomethane	10.	U				
75-15-0	Carbon disulfide	10.	U				
56-23-5	Carbon tetrachloride	10.	U				
108-90-7	Chlorobenzene	10.	U				
75-00-3	Chloroethane	10.	U				
67-66-3	Chloroform	10.	U				
74-87-3	Chloromethane	10.	U				
540-59-0	1,2-Dichloroethene (total)	10.	U				
124-48-1	Dibromochloromethane	10.	U				
100-41-4	Ethylbenzene	10.	U				
75-09-2	Methylene chloride	10.	U				
100-42-5	Styrene	10.	U				
127-18-4	Tetrachloroethene	10.	U				
108-88-3	Toluene	5.	J				
79-01-6	Trichloroethene	10.	U				
75-01-4	Vinyl chloride	4.	U				
1330-20-7	Xylene (Total)	7.					
10061-01-5	cis-1,3-Dichloropropene	10.	U				
10061-02-6	trans-1,3-Dichloropropene	10.	U				

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
SVOCs

CLP SVOA													
	SAMPLE ID ------->	024-C-0001-01		024-S-0001-05		024-S-0002-01		024-S-0002-05		024-S-0002-10		024-S-0003-01	
	ORIGINAL ID ----->	024C000101		0245000105		024S000201		024S000205		024S000210		024S000301	
	LAB SAMPLE ID --->	S554814*2		S554814*3		S554814*7		S554814*4		S554814*14		S554814*10	
	ID FROM REPORT -->	024C000101		024S000105		024S000201		024S000205		024S000210		024S000301	
	SAMPLE DATE ----->	08/29/95		08/29/95		08/26/95		08/29/95		08/29/95		08/30/95	
	DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/06/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/11/95		09/11/95		09/11/95		09/11/95		09/12/95		09/21/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
120-82-1	1,2,4-Trichlorobenzene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
95-50-1	1,2-Dichlorobenzene	330.	U	340.	U	42b.	U	340.	U	350,	U	340.	U
541-73-1	1,3-Dichlorobenzene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
106-46-7	1,4-Dichlorobenzene	33Q.	U	340.	U	420.	U	340.	U	350.	U	340.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
95-95-4	2,4,5-Triehlorophenol	810.	U	830.	U	3000.	U	830.	U	840.	U	830.	U
88-06-2	2,4,6-Trichlorophenol	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
120-83-2	2,4-Dichlorophenol	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
105-67-9	2,4-Dimethylpheno1	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
51-28-5	2,4-Dinitrophenol	810,	U	830.	U	1000.	U	830.	U	840.	U	830.	U
121-14-2	2,4-Dinitrotoluene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
606-20-2	2,6-Dinitrotoluene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
91-58-7	2-Chloronaphthalene	330.	U	340,	U	420.	U	340.	U	350.	U	340.	U
95-57-8	2-Chlorophenol	330.	U	340.	U	420.		340.	U	350.	U	340.	U
91-57-6	2-Methylnaphthalene	330.	U	340.	U	420.	U	340.	U	350.	U	34Q.	U
95-48-7	2-Methylphenol (o-Cresol)	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
88-74-4	2-Nitroaniline	810.	U	830.	U	1000.	U	830.	U	840.	U	830.	U
88-75-5	2-Nitrophenol	330.	U	340.	U	426.	U	340.	U	350.	U	340.	U
91-94-1	3,3'-Dichlorobenzidine	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
99-09-2	3-Nitroaniline	810.	U	830.	U	1000.	U	830.	U	840.	U	830.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	810.	U	830.	U	1000.	U	830.	U	840.	U	830.	U
101-55-3	4-Bromophenyl-phenylether	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
59-50-7	4-Chloro-3-methylphenol	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
106-47-8	4-ChloroaniLine	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
7005-72-3	4-Chlorophenylphenylether	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
100-01-6	4-Nitroaniline	810.	U	830.	U	1000.	U	830.	U	840.	U	830.	U
100-02-7	4-Nitrophenol	810.	U	830.	U	1000.	U	830.	U	840.	U	830.	U
83-32-9	Acenaphthene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
208-96-8	Acenaphthylene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
120-12-7	Anthracene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
56-55-3	Benzo(a)anthracene	38,	3	340.	U	420.	U	340.	U	350.	U	180.	J
50-32-8	Benzo(a)pyrene	20.	3	150.	U	180.	U	150.	U	150.	U	180.	
205-99-2	Benzo(b)fluoranthene	38.	3	340.	U	420.	U	340.	U	350.	U	280.	J
191-24-2	Benzo(g,h,i)perylene	330.	U	340.	U	420.	U	340.	U	350.	U	87.	J
207-08-9	Benzo(k)fluoranthene	330.	U	340,	U	420.	U	340.	U	350.	U	100.	J
85-68-7	Butylbenzylphthalate	680.	J	24.	J	73.	J	340.	UJ	350.	UJ	4700.	D

*** Validation Complete ***

PENSACULA, SITE 24
Phase I Soil
SVOCs

CLP SVOA													
	SAMPLE ID ------->	024-C-0001-01		024-S-0001-05		024-S-0002-01		024-S-0002-05		024-S-0002-10		024-S-0003-01	
	ORIGINAL ID ----->	024C000101		024S000105		024S000201		024S000205		024S000210		024S000301	
	LAB SAMPLE ID --->	S554814*2		S554814*3		S554814*7		S554814*4		S554814*14		S554814*10	
	ID FROM REPORT -->	024C000101		024S000105		024S000201		024S000205		024S000210		024S000301	
	SAMPLE DATE ----->	08/29/95		08/29/95		08/26/95		08/29/95		08/29/95		08/30/95	
	DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/06/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/11/95		09/11/95		09/11/95		09/11/95		09/12/95		09/21/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
86-74-8	Carbazole	330.	U	340.	U	420.	U	340.	U	350.	U	23.	J
218-01-9	Chrysene	27.	J	340.	U	420,	U	340.	U	350.	U	200.	J
84-74-2	Di-n-butylphthalate	26.	J	340.	U	420.	U	340.	U	37.	J	54.	J
117-84-0	Di-n-octyl phthalate	330.	UJ	340.	UJ	420.	UJ	340.	UJ	350.	UJ	340.	U
53-70-3	Dibenz(a,h)anthracene	140,	U	150.	U	180.	U	150.	U	150.	U	150.	U
132-64-9	Dibenzofuran	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
84-66-2	Diethylphthalate	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
131-It-3	Dimethyl phthalate	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
206-44-0	Fluoranthene	36.	J	340.	U	41.	J	340.	U	350.	U	280.	J
86-73-7	Fluorene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
118-74-1	Hexachlorobenzene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
87-68-3	Hexachlorobutadiene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
77-47-4	Hexachlorocyclopentadiene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
67-72-1	Hexachloroethane	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U	340.	U	420.	U	340.	U	350.	U	140.	J
78-59-1	Isophorone	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
621-64-7	N-Nitroso-di-n-propylamine	61.	U	62.	U	76.	U	62.	U	63.	U	62.	U
122-39-4	Diphenylamine	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
91-20-3	Naphthalene	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
98-95-3	Nitrobenzene	330.	U	340.	U	420.	U	340.	U	350.	U	340,	U
87-86-5	Pentachlorophenol	810.	U	830.	U	1000.	U	830.	U	840.	U	830.	U
85-01-8	Phenanthrene	18.	J	340.	U	17.	J	340.	U	350.	U	98.	J
108-95-2	Phenol	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
129-00-0	Pyrene	46.	J	340.	U	45.	J	340.	U	350.	U	220.	3
111-91-1	bis(2-Chloroethoxy)methane	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
111-44-4	bis(2-Chloroethyl)ether	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	330.	U	340.	U	420,	U	340.	U	350.	U	1000.	
108-394	3-Methylphenol (m-Cresol)	330.	U	340.	U	420.	U	340.	U	350.	U	340.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
SVOCs

CLP SVOA													
	SAMPLE ID ------->	024-S-0003-05		024-S-0004-01		024-S-0004-05		024-S-0005-01		024-S-0005-05		024-S-0005-10	
	ORIGINAL ID ----->	024S000305		024S000401		024S000405		024S000501		024S000505		024S000510	
	LAB SAMPLE ID --->	S554814*11		$554814*13		S554814*12		S554814*8		S554814*9		S554814*15	
	ID FROM REPORT -->	024S000305		024S000401		024S000405		024S000501		024S000505		024S000510	
	SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95		08/30/95		08/30/95		08/30/95	
	DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/06/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/12/95		09/12/95		09/17/95		09/12/95		09/12/95		09/12/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
120-82-1	1,2,4-Trichlorobenzene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
95-50-1	1,2-Dichlorobenzene	35u.	U	350.	U	340,	U	350.	U	340.	U	340.	U
541-73-1	1,3-Dichlorobenzene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
106-46-7	I,4-Dichtorobenzene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	35u.	U	350.	U	340.	U	350.	U	340.	U	340.	U
95-95-4	2,4,5-Trichlorophenol	840.	U	860.	U	830.	U	840.	U	820.	U	030.	U
88-06-2	2,4,6-Trichlorophenol	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
120-83-2	2,4-Dichlorophenol	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
105-67-9	2,4 -Dimethylphenol	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
51-28-5	2,4-Dinitrophenol	840.	U	860.	U	830.	U	840.	U	820.	U	830.	U
121-14-2	2,4-Dinitrotoluene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
606-20-2	2,6-Dinitrotoluene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
91-58-7	2-Chloronaphthatene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
95-57-8	2-Chlorophenol	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
91-57-6	2-Methylnaphthalene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
95-48-7	2-Methylphenol (o-Cresol)	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
88-74-4	2-Nitroaniline	840.	U	860.	U	830.	U	840.	U	820.	U	830.	U
88-75-5	2-Nitrophenol	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
91-94-1	3,3'-Dichlorobenzidine	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
99-09-2	3-NitroaniLine	840.	U	860.	U	830.	U	840.	U	am.	U	830.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	840.	U	860.	U	830.	U	840.	U	820.	U	830.	U
101-55-3	4-Bromophenyt-phenylether	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
59-50-7	4-Chloro-3-methylphenol	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
106-47-8	4-Chloroanitine	350.	U	350.	U	$40.	U	350.	U	340.	U	340.	U
7005-72-3	4-Chlorophenylphenylether	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
100-01-6	4-Nitroaniline	840.	U	860.	U	830.	U	840.	U	820.	U	830.	U
100-02-7	4-Nitrophenol	840.	U	860.	U	830.	U	840.	U	820.	U	830.	U
83-32-9	Acenaphthene	35u.	U	350.	U	340.	U	350.	U	340.	U	340.	U
208-96-8	Acenaphthylene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
120-12-7	Anthracene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
56-55-3	Benzo(a)anthracene	350.	U	350.	U	340.	U	25.	J	340.	U	340.	U
50-32-8	Benzo(a)pyrene	150.	U	150.	U	150.	U	150.	U	140.	U	150.	U
205-99-2	Benzo(b)fluoranthene	350.	U	350.	U	340.	U	42.	J	340.	U	340.	U
191-24-2	Benzo(g,h,i)perylene	350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
207-08-9	Benzo(k)fluoranthene	350.	U	350.	U	340,	U	350.	U	340.	U	340.	U
85-68-7	Butylbenzylphthalate	350.	UJ	350.	UJ	340.	U	350.	UJ	18.	J	340.	UJ

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
SVOCs

CLP S A													
		SAMPLE ID ------->	024-S-0003-05		024-S-0004-01		024-S-0004-05		024-S-0005-01		024-S-0005-05		024-S-0005-10	
		ORIGINAL ID ----->	024S000305		024S000401		024S000405		024S000501		024S000505		024S000510	
		LAB SAMPLE ID --->	S554814*11		S554814*13		S554814*12		S554814*8		S554814*9		S554814*15	
		ID FROM REPORT -->	024S000305		024S000401		024S000405		024S000501		024S000505		024S000510	
		SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95		08/30/95		08/30/95		08/30/95	
		DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/06/95		09/06/95		09/06/95	
		DATE ANALYZED --->	09/12/95		09/12/95		09/17/95		09/12/95		09/12/95		09/12/95	
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter		ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
86-74-8	Carbazole		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
218-01-9	Chrysene		350.	U	350.	U	340.	U	30.	J	340.	U	340.	U
84-74-2	Di-n-butylphthalate		37.	J	350.	U	340.	U	350.	U	340.	U	28.	J
117-84-0	Di-n-octyl phthalate		350.	UJ	350.	UJ	340.	U	350.	U	340.	UJ	340.	UJ
53-70-3	Dibenz(a,h)anthracene		150.	U	150.	U	150.	U	150.	U	140.	U	150.	U
132-64-9	Dibenzofuran		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
84-66-2	Diethylphthalate		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
131-11-3	Dimethyl phthalate		350.	U	350.	U	340.	U	350.	U	34u.	U	340.	U
206-44-0	Fluoranthene		350.	U	350.	U	340.	U	25.	J	340.	U	340.	U
86-73-7	Fluorene		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
118-74-1	Hexachlorobenzene		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
87-68-3	Hexachlorobutadiene		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
77-47-4	Hexachlorocyclopentadiene		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
67-72-1	Hexachloroethane		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
78-59-1	Isophorone		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
621-64-7	N-Nitroso-di-n-propylamine		63.	U	64.	U	62.	U	63.	U	62.	U	62.	U
122-39-4	Diphenylamine		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
91-20-3	Naphthalene		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
98-95-3	Nitrobenzene		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
87-86-5	Pentachlorophenol		840.	U	860.	U	830.	U	840.	U	820.	U	830.	U
85-01-8	Phenanthrene		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
108-95-2	Phenol		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
129-00-0	Pyrene		350.	U	350.	U	340.	U	32.	J	340.	U	340.	U
111-91-1	bis(2-Chloroethoxy)methane		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
111-44-4	bis(2-Chloroethyl)ether		35u.	U	350.	U	340.	U	350.	U	340.	U	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U
108-39-4	3-Methylphenol (m-Cresol)		350.	U	350.	U	340.	U	350.	U	340.	U	340.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
SVUCS

CLP SVOA											
		SAMPLE ID ------->	024-S-0007-01		024-S-0008-01		024-S-0009-01				
		ORIGINAL ID ----->	024S000701		024S000801		024S000901				
		LAB SAMPLE ID --->	S554814*5		S554814*1		S554814*6				
		ID FROM REPORT -->	024S000701		024S000801		024S000901				
		SAMPLE DATE ----->	08/29/95		08/29/95		08/29/95				
		DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95				
		DATE ANALYZED --->	09/11/95		09/11/95		09/11/95				
		MATRIX ---------->	Soil		Soil		Soil				
		UNITS ---------->	UG/KG		UG/KG		UG/KG				
CAS #	Parameter		ENP02	VAL	ENP02	VAL	ENP02	VAL			
120-82-1	1,2,4-Trichlorobenzene		340.	U	340.	U	330.	U			
95-50-1	1,2-Dichlorobenzene		340.	U	340.	U	330.	U			
541-73-1	1,3-Dichlorobenzene		340.	U	340.	U	330.	U			
106-46-7	1,4-Dichlorobenzene		340.	U	340.	U	330.	U			
39638-32-9	Bis(2-Chloroisopropyl)Ether		340.	U	340.	U	330.	U			
95-95-4	2,4,5-Trichlorophenol		820.	U	820.	U	810.	U			
88-06-2	2,4,6-Trichlorophenol		340.	U	340.	U	330.	U			
120-83-2	2,4-Dichlorophenol		340.	U	340.	U	330.	U			
105-67-9	2,4-Dimethylphenol		340.	U	340.	U	330.	U			
51-28-5	2,4-Dinitrophenol		820.	U	820.	U	810.	U			
121-14-2	2,4-Dinitrotoluene		340.	U	340.	U	330.	U			
606-20-2	2,6-Dinitrotoluene		340.	U	340.	U	330.	U			
91-58-7	2-Chloronaphthalene		340.	U	340.	U	330.	U			
95-57-8	2-Chlorophenol		340.	U	340.	U	330.	U			
91-57-6	2-Methylnaphthalene		340.	U	340.	U	330.	U			
95-48-7	2-Methylphenol (o-Cresol)		340.	U	340.	U	330.	U			
88-74-4	2-Nitroaniline		820.	U	820.	U	810.	U			
88-75-5	2-Nitrophenol		340.	U	340.	U	330.	U			
91-94-1	3,3'-Dichlorobenzidine		340.	U	340.	U	330.	U			
99-09-2	3-Nitroanitine		820.	U	820.	U	810.	U			
534-52-1	2-Methyl-4,6-Dinitrophenol		820.	U	820.	U	810.	U			
701-55-3	4-Bromophenyl-phenylether		340.	U	340.	U	330.	U			
59-50-7	4-Chloro-3-methylphenol		340.	U	340.	U	330.	U			
106-47-8	4-Chloroanitine		340.	U	340.	U	330.	U			
7005-72-3	4-Chlorophenylphenylether		340.	U	340.	U	330.	U			
100-01-6	4-Nitroaniline		820.	U	820.	U	810.	U			
100-02-7	4-Nitrophenol		820.	U	820.	U	810.	U			
83-32-9	Acenaphthene		340.	U	340.	U	330.	U			
208-96-8	Acenaphthylene		340.	U	340.	U	330.	U			
120-12-7	Anthracene		340.	U	340.	U	330.	U			
56-55-3	Benzo(a)anthracene		340.	U	31.	J	70.	J			
50-32-8	Benzo(a)pyrene		140.	U	29.	J	54.	J			
205-99-2	Benzo(b)fluoranthene		340.	U	58.	J	150.	J			
191-24-2	Benzo(g,h,i)perylene		340.	U	340.	U	28.	J			
207-08-9	Benzo(k)fluoranthene		340.	U	22.	J	58.	J			
85-68-7	Butylbenzylphthalate		140.	J	180.	J	330.	UJ			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
SVOCs

CLP SVOA									
	SAMPLE ID ------->	024-S-0007-01		024-S-0008-01		024-S-0009-01			
	ORIGINAL ID ----->	024S000701		024S000801		024S000901			
	LAB SAMPLE ID --->	S554814*5		S554814*1		S554814*6			
	ID FROM REPORT -->	024S000701		024S000801		024S000901			
	SAMPLE DATE ----->	08/29/95		08/29/95		08/29/95			
	DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95			
	DATE ANALYZED --->	09/11/95		09/11/95		09/11/95			
	MATRIX ---------->	Soil		Soil		Soil			
	UNITS ---------->	UG/KG		UG/KG		UG/KG			
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL		
86-74-8	Carbazole	340.	U	340.	U	19.	J		
218-01-9	Chrysene	340.	U	43.	J	190.	J		
84-74-2	Di-n-butylphthalate	340.	U	340.	U	330.	U		
117-84-0	Di-n-octyl phthalate	340.	UJ	340.	UJ	330.	UJ		
53-70-3	Dibenz(a,h)anthracene	140.	U	140.	U	140.	U		
132-64-9	Dibenzofuran	340.	U	340.	U	330.	U		
84-66-2	DiethylphthaLate	340.	U	340.	U	330.	U		
131-11-3	Dimethyl phthalate	340.	U	340.	U	330.	U		
206-44-0	Fluoranthene	340.	U	64.	J	400.			
86-73-7	Fluorene	340.	U	340.	U	5.	J		
118-74-1	Hexachlorobenzene	340.	U	340.	U	330.	U		
87-68-3	Hexachlorobutadiene	340.	U	340.	U	330.	U		
77-47-4	Hexachlorocyclopentadiene	340.	U	340.	U	330.	U		
67-72-1	Hexachloroethane	340.	U	340.	U	330.	U		
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U	340.	U	45.	J		
78-59-1	Isophorone	340.	U	340.	U	330.	U		
621-64-7	N-Nitroso-di-n-propylamine	61.	U	61.	U	61.	U		
122-39-4	Diphenylamine	340.	U	340.	U	330.	U		
91-20-3	Naphthalene	340.	U	340.	U	330.	U		
98-95-3	Nitrobenzene	340.	U	340.	U	330.	U		
87-86-5	Pentachlorophenol	820.	U	820.	U	810.	U		
85-01-8	Phenanthrene	340.	U	16.	J	200.	J		
108-95-2	Phenol	340.	U	340.	U	330.	U		
129-00-0	Pyrene	340.	U	98.	J	410.	J		
111-91-1	bis(2-Chloroethoxy)methane	340.	U	340.	U	330.	U		
111-44-4	bis(2-Chloroethyl)ether	360.	U	340.	U	330.	U		
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	U	340.	U	590.	U		
108-39-4	3-Methylphenol (m-Cresol)	340.	U	340.	U	330.	U		

*** Validation Complete ***

DATALCP3
06/10/97

PENSACOLA, SITE 24
Phase I Soil
Pesticides/PCBs

CLP PEST													
	SAMPLE ID ------->	024-C-0001-01		024-S-0001-05		024-S-0002-01		024-S-0002-05		024-S-0002-10		024-S-0003-01	
	ORIGINAL ID ----->	024C000101		024S000105		024S000201		024S000205		024S000210		024S000301	
	LAB SAMPLE ID --->	S554814*2		S554814*3		S554814*7		S554814*4		S554814*14		S554814*10	
	ID FROM REPORT -->	024C000101		024S000105		024S000201		024S000205		024S000210		024S000301	
	SAMPLE DATE ----->	08/29/95		08/29/95		08/26/95		08/29/95		08/29/95		08/30/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE ANALYZED --->	09/20/95		09/20/95		09/20/95		09/20/95		09/20/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
72-54-8	4,4'-DDD	26.	J	3.1	J	2.7	J	3.4	UJ	3.5	UJ	99.	J
72-55-9	4,4'-DDE	97.	D	6.3	J	36.	J	3.4	UJ	13.	J	240.	D
50-29-3	4,4'-DDT	120.	D	3.6	J	48.	J	3.4	UJ	27.	J	300.	D
309-00-2	Aldrin	1.7	U	1.8	UJ	2.2	UJ	1.8	UJ	1.8	UJ	1.8	UJ
12674-11-2	Aroclor-1016	33.	U	34.	UJ	42.	UJ	34.	UJ	35.	UJ	34.	UJ
11104-28-2	Aroclor-1221	68.	U	70.	UJ	85.	UJ	70.	UJ	70.	UJ	70.	UJ
11141-16-5	Aroclor-1232	33.	U	34.	UJ	42.	UJ	34.	UJ	35.	UJ	34.	UJ
53469-21-9	Aroclor-1242	33.	U	34.	UJ	42.	UJ	34.	UJ	35.	UJ	34.	UJ
12672-29-6	Aroclor-1248	33.	U	34.	UJ	42.	UJ	34.	UJ	35.	UJ	34.	UJ
11097-69-1	Aroclor-1254	33.	U	34.	UJ	42.	UJ	34.	UJ	35.	UJ	34.	UJ
11096-82-5	Aroclor-1260	33.	U	34.	UJ	42.	UJ	34.	UJ	130.	J	100.	J
60-57-1	Dieldrin	12.	J	2.3	J	1.	J	3.4	UJ	3.3	J	36.	J
959-98-8	Endosulfan I	1.7	U	1.8	UJ	1.5	J	1.8	UJ	1.8	UJ	1.8	UJ
33213-65-9	Endosulfan II	3.3	U	3.4	UJ	4.2	UJ	3.4	UJ	3.5	UJ	3.4	UJ
1031-07-8	Endosulfan sulfate	3.3	U	3.4	UJ	4.2	UJ	3.4	UJ	3.5	UJ	3.4	UJ
72-20-8	Endrin	3.3	U	3.4	UJ	4.2	UJ	3.4	UJ	3.5	UJ	3.4	UJ
7421-93-4	Endrin aldehyde	3.3	U	3.4	UJ	4.2	UJ	3.4	UJ	3.5	UJ	3.4	UJ
53494-70-5	Endrin ketone	0.3	J	3.4	UJ	4.2	UJ	3.4	UJ	3.5	UJ	3.4	UJ
76-44-8	Heptachlor	1.7	U	1.8	UJ	2.2	UJ	1.8	UJ	1.8	UJ	1.8	UJ
1024-57-3	Heptachlor epoxide	1.7	U	1.8	UJ	1.9	J	1.8	UJ	1.8	UJ	1.8	UJ
72-43-5	Methoxychlor	17.	U	18.	UJ	22.	UJ	18.	UJ	18.	UJ	18.	UJ
8001-35-2	Toxaphene	170.	U	180.	UJ	220.	UJ	180.	UJ	180.	UJ	180.	UJ
319-84-6	alpha-BHC	1.7	UJ	1.8	UJ	2.2	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	22.		1.6	J	2.2	UJ	1.8	UJ	1.8	UJ	25.	J
319-85-7	beta-BHC	1.7	U	1.8	UJ	2.2	UJ	1.8	UJ	1.8	UJ	1.8	UJ
319-86-8	delta-BHC	1.7	U	1.8	UJ	2.2	UJ	1.8	UJ	1.8	UJ	1.8	UJ
58-89-9	gamma-BHC (Lindane)	1.7	U	1.8	UJ	2.2	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-74-2	gamma-Chlordane	22.		1.8	J	1.6	J	1.8	UJ	1.8	UJ	23.	J

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
Pesticides/PCBs

CLP PEST													
	SAMPLE ID ------->	024-S-0003-05		024-S-0004-01		024-S-0004-05		024-S-0005-01		024-S-0005-05		024-S-0005-10	
	ORIGINAL ID ----->	024S000305		024S000401		024S000405		024S000501		024S000505		024S000510	
	LAB SAMPLE ID --->	S554814*11		S554814*13		S554814*12		S554814*8		S554814*9		S554814*15	
	ID FROM REPORT -->	024S000305		024S000401		024S000405		024S000501		024S000505		024S000510	
	SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95		08/30/95		08/30/95		08/30/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE ANALYZED --->	09/20/95		09/20/95		09/20/95		09/20/95		09/20/95		09/22/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
72-54-8	4,4'-DDD	16.	J	16.	J	3.4	UJ	3.5	UJ	3.4	U	3.4	U
72-55-9	4,4'-DDE	3.1	J	46.	J	0.8	J	0.49	J	0.36	J	3.5	
50-29-3	4,4'-DDT	2.3	J	80.	J	1.3	J	3.5	UJ	3.4	U	2.1	J
309-00-2	Aldrin	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	U	1.8	U
12674-11-2	Aroclor-1016	35.	UJ	35.	UJ	34.	UJ	35.	UJ	34.	U	34.	U
11104-28-2	Aroclor-1221	70.	UJ	72.	UJ	70.	UJ	70.	UJ	69.	U	70.	U
11141-16-5	Aroclor-1232	35.	UJ	35.	UJ	34.	UJ	35.	UJ	34.	U	34.	U
53469-21-9	Aroclor-1242	35.	UJ	35.	UJ	34.	UJ	35.	UJ	34.	U	34.	U
12672-29-6	Aroclor-1248	35.	UJ	35.	UJ	34.	UJ	35.	UJ	34.	U	34.	U
11097-69-1	Aroclor-1254	35.	UJ	35.	UJ	34.	UJ	35.	UJ	34.	U	34.	U
11096-82-5	Aroclor-1260	22.	J	35.	UJ	34.	UJ	35.	UJ	34.	U	34.	U
60-57-1	Dieldrin	3.5	UJ	3.1	J	3.4	UJ	3.5	UJ	3.4	U	3.4	U
959-98-8	Endosulfan I	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	U	1.8	U
33213-65-9	Endosulfan II	3.5	UJ	3.5	UJ	3.4	UJ	3.5	UJ	3.4	U	3.4	U
1031-07-8	Endosulfan sulfate	3.5	UJ	3.5	UJ	3.4	UJ	3.5	UJ	3.4	U	3.4	U
72-20-8	Endrin	3.5	UJ	3.5	UJ	3.4	UJ	3.5	UJ	3.4	U	3.4	U
7421-93-4	Endrin aldehyde	3.5	UJ	3.5	UJ	3.4	UJ	3.5	UJ	3.4	U	3.4	U
53494-70-5	Endrin ketone	3.5	UJ	3.5	UJ	3.4	UJ	3.5	UJ	3.4	U	3.4	U
76-44-8	Heptachlor	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	U	1.8	U
1024-57-3	Heptachlor epoxide	1.8	UJ	1.8	UJ	0.88	J	1.8	UJ	1.8	U	1.8	U
72-43-5	Methoxychlor	18.	UJ	18.	UJ	18.	UJ	18.	UJ	18.	U	18.	U
8001-35-2	Toxaphene	180.	UJ	180.	UJ	180.	UJ	180.	UJ	180.	U	180.	U
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	1.8	UJ	7.5	J	0.87	J	1.8	UJ	1.8	U	1.8	U
319-85-7	beta-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	U	1.8	U
319-86-8	delta-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	U	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	U	1.8	U
5103-74-2	gamma-Chlordane	1.8	UJ	5.2	J	0.65	J	1.8	UJ	1.8	U	1.8	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil
Pesticides/PCBs

CLP PEST											
		SAMPLE ID ------->	024-S-0007-01		024-S-0008-01		024-S-0009-01				
		ORIGINAL ID ----->	024S000701		024S000801		024S000901				
		LAB SAMPLE ID --->	S554814*5		S554814*1		S554814*6				
		ID FROM REPORT -->	024S000701		024S000801		024S000901				
		SAMPLE DATE ----->	08/29/95		08/29/95		08/29/95				
		DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95				
		DATE ANALYZED --->	09/20/95		09/20/95		09/20/95				
		MATRIX ---------->	Soil		Soil		Soil				
		UNITS ---------->	UG/KG		UG/KG		UG/KG				
CAS #	Parameter		ENP02	VAL	ENP02	VAL	ENP02	VAL			
72-54-8	4,4'-DDD		3.6	J	3.5	J	1.3	J			
72-55-9	4,4'-DDE		26	J	38.	J	16.	J			
50-29-3	4,4'-DDT		48.	J	42.	J	16.	J			
309-00-2	Aldrin		1.7	UJ	3,7	UJ	1.7	UJ			
12674-11-2	Aroclor-1016		34.	UJ	34.	UJ	33.	UJ			
11104-28-2	Aroclor-1221		68.	UJ	68.	UJ	68.	UJ			
11141-16-5	Aroclor-1232		34.	UJ	34.	UJ	33.	UJ			
53469-21-9	Aroclor-1242		34.	UJ	34.	UJ	33.	UJ			
12672-29-6	Aroc1or-1248		34	UJ	34.	UJ	33.	UJ			
11097-69-1	Aroclor-1254		34.	UJ	34.	US	33.	UJ			
11096-82-5	Aroclor-1260		34.	UJ	34.	UJ	33.	UJ			
60-57-1	Dieldrin		2.3	J	2.	3	0.72	J			
959-98-8	Endosulfan I		1.7	UJ	1.2	J	1.7	UJ			
33213-64-9	Endosulfan if		3.4	UJ	3.4	UJ	3.3	UJ			
1031-07-8	Endosulfan sulfate		3.4	UJ	3.6	UJ	3.3	UJ			
72-20-8	Endrin		3*4	UJ	3.4	UJ	3.3	UJ			
7421-93-4	Endrin aldehyde		3.4	UJ	3.4	UJ	3m3	UJ			
53494-70-5	Endrin ketone		3.4	UJ	3.4	UJ	0.31	J			
76-44-8	Heptachlor		1.7	UJ	1.7	UJ	1.7	UJ			
1024-57-3	Heptachlor epoxide		1.7	UJ	1.3	J	1.7	UJ			
72-43-5	Methoxychlor		17.	UJ	17.	UJ	17.	UJ			
8001-35-2	toxaphene		170,	UJ	170.	UJ	170.	UJ			
319-84-6	alpha-BHC		1.7	UJ	3.7	UJ	1.7	UJ			
5103-71-9	alpha-Chlordane		1.4	J	0.79	J	1.7	UJ			
319-85-7	beta-BHC		1.7	UJ	1.7	UJ	1.7	UJ			
319-8618	delta-BHC		1.7	UJ	147	UJ	1.7	UJ			
58-89-9	gamma-BHC (Lindane)		1.7	UJ	1.7	UJ	1.7	UJ			
5103-74-2	gamma-Chlordane		1.4	3	1.7	3	0.45	J			

*** Validation Complete ***

PENSACOLA, SIITE 24
Phase I Soil
Physical Parameters

CEC	SAMPLE ID ------->	024-S-DG02-06					
	ORIGINAL ID ----->	024SDG0206					
	LAB SAMPLE ID --->	S555087B*6					
	ID FROM REPORT -->	024SDG0206					
	SAMPLE DATE ----->	09/11/95					
	DATE ANALYZED --->	09/27/95					
	MATRIX ---------->	Soil					
	UNITS ---------->	MEQ/1					
CAS #	Parameter	ENP02					
9999900-04-3	Cation Exchange Capacity	0.56					

PENSACOLA, SITE 24
Phase I Soil
Physical Parameters

KJELDAHL							
	SAMPLE ID ------->	024-S-DG02-06					
	ORIGINAL ID ----->	024SDG0206					
	LAB SAMPLE ID --->	S555087B*6					
	ID FROM REPORT -->	024SDG0206					
	SAMPLE DATE ----->	09/11/95					
	DATE ANALYZED --->	09/22/95					
	MATRIX ---------->	Soil					
	UNITS ---------->	MG/KG					
CAS #	Parameter	ENP02					
999-99-9	Kjeldahl Nitrogen-N (Invalid CAS #)	NR					
9999000-72-6	Kjeldahl Nitrogen, Total	77.					

PENSACOLA, SITE 24
Phase I Soil
Physical Parameters

NITRATE							
	SAMPLE ID ------->	024-S-DG02-06					
	ORIGINAL ID ----->	024SDG0206					
	LAB SAMPLE ID --->	S555087B*6					
	ID FROM REPORT -->	024SDG0206					
	SAMPLE DATE ----->	09/11/95					
	DATE ANALYZED --->	09/24/95					
	MATRIX ---------->	Soil					
	UNITS ---------->	MG/KG					
CAS #	Parameter	ENP02					
9999900-03-4	Nitrate-N (use 14797-55-8)	NR					
14797-55-8	Nitrate (as N)	5.2 U					

PENSACOLA, SITE 24
Phase I Soil
Physical Parameters

PHOSPHORUS							
	SAMPLE ID ------->	024-S-DG02-06					
	ORIGINAL ID ----->	024SDG0206					
	LAB SAMPLE ID --->	S555087B*6					
	ID FROM REPORT -->	024SDG0206					
	SAMPLE DATE ----->	09/11/95					
	DATE ANALYZED --->	09/27/95					
	MATRIX ---------->	Soil					
	UNITS ---------->	MG/KG					
CAS #	Parameter	ENP02					
22569-71-7	Total phosphorus	26.					

PENSACOLA, SITE 24
Phase I Soil
Physical Parameters

PLATECOUNT	SAMPLE ID ------->	06					
	ORIGINAL ID ----->						
	LAB SAMPLE ID --->						
	ID FROM REPORT -->						
	SAMPLE DATE ----->						
	DATE ANALYZED --->						
	MATRIX ---------->						
	UNITS ---------->						
CAS #	er	ENP02					
9999900-03-6	d Plate Count	85000.					

PENSACOLA, SITE 24
Phase I Soil
Physical Parameters

TOC							
	SAMPLE ID ------->	024-S-DG02-06					
	ORIGINAL ID ----->	024SDG0206					
	LAB SAMPLE ID --->	S555087B*6					
	ID FROM REPORT -->	024SDG0206					
	SAMPLE DATE ----->	09/11/95					
	DATE ANALYZED --->	09/21/95					
	MATRIX ---------->	Soil					
	UNITS ---------->	MG/KG					
CAS #	...eter	ENP02					
9999900-01-4	Total Organic Carbon (TOC)	2000.					

PENSACOLA, SITE 24
Phase I Groundwater
Physical Parameters

ALKALINITY							
	SAMPLE ID ------->	024-G-GS01-01					
	ORIGINAL ID ----->	024GGS0101					
	LAB SAMPLE ID --->	S555208A*1					
	ID FROM REPORT -->	024GGS0101					
	SAMPLE DATE ----->	09/19/95					
	DATE ANALYZED --->	09/27/95					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	ENP02					
9999900-03-9	Alkalinity as CaCO3 (bad CAS #)	NR					
471-34-1	Alkalinity (as CaCO3)	190.					

PENSACOLA, SITE 24
Phase I Groundwater
Physical Parameters

BOD-5 DAY							
	SAMPLE ID ------->	024-G-GS01-01					
	ORIGINAL ID ----->	024GGS0101					
	LAB SAMPLE ID --->	S555208A*1					
	ID FROM REPORT -->	024GGS0101					
	SAMPLE DATE ----->	09/19/95					
	DATE ANALYZED --->	09/20/95					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	ENP02					
9999900-03-8	Biochemical Oxygen Demand (5-day)	2. U					

PENSACOLA, SITE 24
Phase I Groundwater
Physical Parameters

COD	SAMPLE ID ------->	024-G-GS01-01					
	ORIGINAL ID ----->	024GGS0101					
	LAB SAMPLE ID --->	S555208A*1					
	ID FROM REPORT -->	024GGS0101					
	SAMPLE DATE ----->	09/19/95					
	DATE ANALYZED --->	09/25/95					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	ENP02					
9999900-04-0	Chemical Oxygen Demand	20. U					

PENSACOLA, SITE 2 *
Phase I Groundwater
Physical Parameters

HARDNESS		SAMPLE ID ------->	024-G-GS01-01					
		ORIGINAL ID ----->	024GGS0101					
		LAB SAMPLE ID --->	S555208A*1					
		ID FROM REPORT -->	024GGS0101					
		SAMPLE DATE ----->	09/19/95					
		DATE ANALYZED --->	10/01/95					
		MATRIX ---------->	Water					
		UNITS ---------->	MG/L					
	ter		ENP02					
9999900-03-3	ss as CaCO3		190.					

PENSACOLA, SITE 24
Phase I Groundwater
Physical Parameters

KJELDAHL							
	SAMPLE ID ------->	024-G-GS01-01					
	ORIGINAL ID ----->	024GGS0101					
	LAB SAMPLE ID --->	S555208A*1					
	ID FROM REPORT -->	024GGS0101					
	SAMPLE DATE ----->	09/19/95					
	DATE ANALYZED --->	09/25/95					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	ENP02					
999-99-9	Kjeldahl Nitrogen-N (Invalid CAS #)	NR					
9999000-72-6	Kjeldahl Nitrogen, Total	0.62					

PENSACOLA, SITE 24
Phase I Groundwater
Physical Parameters

NITRATE							
		SAMPLE ID ------->	024-G-GS01-01				
		ORIGINAL ID ----->	024GGS0101				
		LAB SAMPLE ID --->	S555208A*1				
		ID FROM REPORT -->	024GGS0101				
		SAMPLE DATE ----->	09/19/95				
		DATE ANALYZED --->	09/20/95				
		MATRIX ---------->	Water				
		UNITS ---------->	MG/L				
CAS #	Parameter		ENP02				
9999900-03-4	Nitrate-N (use 14797-55-8)		NR				
14797-55-8	Nitrate (as N)		2.7				

PENSACOLA, SITE 24
Phase I Groundwater
Physical Parameters

PHOSPHORUS							
	SAMPLE ID ------->	024-G-GS01-01					
	ORIGINAL ID ----->	024GGS0101					
	LAB SAMPLE ID --->	S555208A*1					
	ID FROM REPORT -->	024GGS0101					
	SAMPLE DATE ----->	09/19/95					
	DATE ANALYZED --->	09/28/95					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	ENP02					
22569-71-7	Total phosphorus	0.2					

PENSACOLA, SITE 24
Phase I Groundwater
Physical Parameters

PLATECOUNT							
	SAMPLE ID ------->	024-G-GS01-01					
	ORIGINAL ID ----->	024GGS0101					
	LAB SAMPLE ID --->	S555208A*1					
	ID FROM REPORT -->	024GGS0101					
	SAMPLE DATE ----->	09/19/95					
	DATE ANALYZED --->	09/20/95					
	MATRIX ---------->	Water					
	UNITS ---------->	CFU/M					
CAS #	Parameter	ENP02					
9999900-03-6	Standard Plate Count	450.					

PENSACOLA, SIITE 24
Phase I Groundwater
Physical Parameters

TSS							
		SAMPLE ID ------->	024-G-GS01-01				
		ORIGINAL ID ----->	024GGS0101				
		LAB SAMPLE ID --->	S555208A*1				
		ID FROM REPORT -->	024GGS0101				
		SAMPLE DATE ----->	09/19/95				
		DATE ANALYZED --->	09/21/95				
		MATRIX ---------->	Water				
		UNITS ---------->	MG/L				
CAS #	Parameter		ENP02				
9999900-03-7	Total Suspended Solids (TSS)		17.				

DATALCP3
06/10/97

PENSACOLA, SITE 24
Phase I Groundwater
Inorganics

Time: 10:30

CLP METAL		024-G-GS01-01 024GGS0101 S555208*1 024GGS0101 09/19/95 09/25/95 10/09/95 Water UG/L		024-H-GS01-01 024HGS0101 S555208*2 024HGS0101 09/19/95 09/25/95 10/09/95 Water UG/L		024-G-GS02-01 024GGS0201 S555208*3 024GGS0201 09/19/95 09/25/95 10/09/95 Water UG/L		024-G-GS03-01 024GGS0301 S555182B*1 024GGS0301 09/18/95 09/25/95 10/11/95 Water UG/L		024-G-GS04-01 024GGS0401 S555208*4 024GGS0401 09/19/95 09/25/95 10/09/95 Water UG/L		024-G-GS05-01 024GGS0501 S555208*5 024GGS0501 09/15/95 09/25/95 10/09/95 Water UG/L	
CAS #	Parameter	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL
7440-38-2	Arsenic (As)	1.5	U	1.5	U	1.5	U	10.6		1.5	U	1.5	U
7439-97-6	Mercury (Hg)	0.06		0.06	3	0.14	J	0.13	3	0.07	J	0.1	J
7439-92-1	Lead (Pb)	1.5	J	0.9	3	12.2		5.4		0.7	J	1.7	J
7782-49-2	Selenium (Se)	1.2	UJ	1.2	UJ	1.2	UJ	1.2	UJ	1.2	U	?*2	U
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
7429-90-5	Aluminum (Al)	263.	3	126.	J	1020.	J	521.	J	518.	J	786.	J
7440-36-0	Antimony (Sb)	13.8		13.1		2.3	U	2.3	U	2.3	U	2.3	U
7440-39-3	Barium (Ba)	62.	J	77.	3	186.	J	183.	3	49.4	J	154.	J
7440-41-7	Beryllium (Be)	0.14	U	0.14	U	0.14	U	0.45	U	0.14	U	0.14	U
7440-43-9	Cadmium (Cd)	5.9		6.5		4.9	J	1.7	J	1.4	U	3.6	J
7440-70-2	Calcium (Ca)	71300.		75400.		31000.		123000.		110000.		69300.	
7440-47-3	Chromium (Cr)	4.2	U	4.2	U	5.3	J	4.2	U	4.2	U	4.2	U
7440-48-4	Cobalt (Co)	1.2	U	1.2	U	8.1	J	2.4	J	1.2	U	1.2	U
7440-50-8	Copper (Cu)	4.7	U	4.2	U	13.3	U	5.5	U	2.3	U	2.3	U
7439-89-6	Iron (Fe)	6110.		10500.		17700.		18400.		93.	U	785.	
7439-95-4	Magnesium (Mg)	4120.	J	4390.	J	1840.	J	14000.		7690.		6400.	
7439-96-5	Manganese (Mn)	146.		233.		546.		311.		7.2	J	173.	
7440-02-0	Nickel (Ni)	3.2	J	3.	U	42.8		3.1	J	3.	U	3.9	J
7440-09-7	Potassium (K)	6680.		6710.		3840.	3	5220.		3170,	J	5200,	
7440-22-4	Silver (Ag)	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
7440-23-5	Sodium (Na)	2950.	J	2750.	3	2000.	3	6480.		8100.		6550.	
7440-62-2	Vanadium (V)	5m7	J	3.	J	3.4	J	2.5	J	2.2	J	2.1	U
7440-66-6	Zinc (Zn)	37.3	3	52.4	J	1200.	J	84.3	J	37.6	J	128.	J
7UU-28-0	Thallium (Tl)	0.74	UJ	0m74	UJ	0.74	UJ	0.74	UJ	0.76	UJ	0.74	UJ

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwater
Inorganics

CLP METAL

SAMPLE ID -------->	024-G-GS06-01
ORIGINAL ID ----->	024GGS0601
LAB SAMPLE ID --->	S555182B*2
ID FROM REPORT -->	024GGS0601
SAMPLE DATE ----->	09/18/95
DATE EXTRACTED -->	09/25/95
DATE ANALYZED --->	10/09/95
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	ENP14	VAL
7440-38-2	Arsenic (As)	1.5	U
7439-97-6	Mercury (Hg)	0.06	U
7439-92-1	Lead (Pb)	5.8	
7782-49-2	Selenium (Se)	1.2	U
57-12-5	Cyanide (CN)	10.	U
7429-90-5	Aluminum (Al)	136.	J
7440-36-0	Antimony (Sb)	7.1	
7440-39-3	Barium (Ba)	17.2	J
7440-41-7	Beryllium (Be)	0.14	U
7440-43-9	Cadmium (Cd)	1.4	U
7440-70-2	Calcium (Ca)	24800.	
7440-47-3	Chromium (Cr)	4.2	U
7440-48-4	Cobalt (Co)	1.2	U
7440-50-8	Copper (Cu)	4.	U
7439-89-6	Iron (Fe)	35.4	U
7439-95-4	Magnesium (Mg)	2330.	J
7439-96-5	Manganese (Mn)	6.4	J
7440-02-0	Nickel (Ni)	3.	U
7440-09-7	Potassium (K)	3750.	J
7440-22-4	Silver (Ag)	1.5	U
7440-23-5	Sodium (Na)	3130.	J
7440-62-2	Vanadium (V)	2.1	U
7440-66-6	Zinc (Zn)	11.1	U
7440-28-0	Thallium (Tl)	0.74	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwater
VOCs

LOWVOA													
	SAMPLE ID ------->	024-G-GS01-01		024-H-GS01-01		024-G-GS02-01		024-G-GS03-01		024-G-GS04-01		024-G-GS05-01	
	ORIGINAL ID ----->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	LAB SAMPLE ID --->	S555208*1		S555208*2		S555208*3		S555182B*1		S555208*4		S555208*5	
	SD FROM REPORT -->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	SAMPLE DATE ----->	09/19/95		09/19/95		09/19/95		09/18/95		09/19/95		09/15/95	
	DATE ANALYZED --->	09/28/95		09/28/95		09/28/95		09/28/95		09/28/95		09/28/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL
71-55-6	1,1,1-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-34-3	1,1-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-35-4	1,1-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
107-06-2	1,2-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
78-87-5	1,2-Dichloropropane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
78-93-3	2-Butanone (MEK)	5.	UR	5.	UR	5.	UR	5.	UR	5.	UR	5.	UR
591-78-6	2-Hexanone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	5.	UR	5.	UR	5.	UR	5.	UR	5.	UR	5.	UR
71-43-2	Benzene	1.	U	1.	U	1.	U	1.		1.	U	1.	U
75-27-4	Bromodichloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-25-2	Bromoform	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
74-83-9	Bromomethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-15-0	Carbon disulfide	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
56-23-5	Carbon tetrachloride	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
108-90-7	Chlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-00-3	Chloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
67-66-3	Chloroform	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
74-87-3	Chloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
124-48-1	Dibromochloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
100-41-4	Ethylbenzene	1.	U	1.	U	1.	U	0.1	J	1.	U	1.	U
75-09-2	Methylene chloride	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
100-42-5	Styrene	0.2	J	1.	U	1.	U	1.	U	1.	U	0.2	J
127-18-4	Tetrachloroethene	1.	U	1.	U	0.3	J	1.	U	3.		1.	U
108-88-3	Toluene	1.	U	1.	U	1.	U	0.1	J	1.	U	1.	U
79-01-6	Trichloroethene	1.	U	1.	U	8.		1.	U	1.	U	1.	U
75-01-4	Vinyl chloride	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
1330-20-7	Xylene (Total)	1.	U	1.	U	1.	UR	1.	U	1.	U	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
106-93-4	1,2-Dibromoethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwater
VOCs

LOWVOA													
	D ------->	024-G-GS01-01		024-H-GS01-01		024-G-GS02-01		024-G-GS03-01		024-G-GS04-01		024-G-GS05-01	
	ID ----->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	LE ID --->	S555208*1		S555208*2		S555208*3		S555182B*1		S555208*4		S555208*5	
	REPORT -->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	ATE ----->	09/19/95		09/19/95		09/19/95		09/18/95		09/19/95		09/15/95	
	LYZED --->	09/28/95		09/28/95		09/28/95		09/28/95		09/28/95		09/28/95	
	--------->	Water		Water		Water		Water		Water		Water	
	--------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP14	VAL	ENP14	VAL	ENP14	VAL	NP14	VAL	ENP14	VAL	ENP14	VAL
74-97-5	Chlorobromomethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
156-59-2	cis-1,2-Dichloroethene	0.9	J	1.	U	42.	D	1.	U	1.	U	2.	
156-60-5	trans-1,2-Dichloroethene	1.	U	1.	U	1.		1.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwater
VOCs

LOWVOA			
	SAMPLE ID ------->	024-G-GS06-01	
	ORIGINAL ID ----->	024GGS0601	
	LAB SAMPLE ID --->	S555182B*2	
	ID FROM REPORT -->	024GGS0601	
	SAMPLE DATE ----->	09/18/95	
	DATE ANALYZED --->	09/28/95	
	MATRIX ---------->	Water	
	UNITS ---------->	UG/L	

CAS #	Parameter	ENP14	VAL
71-55-6	1,1,1-Trichloroethane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
75-34-3	1,1-Dichloroethane	1.	U
75-35-4	1,1-Dichloroethene	1.	U
107-06-2	1,2-Dichloroethane	1.	U
78-87-5	1,2-Dichloropropane	1.	U
78-93-3	2-Butanone (MEK)	5.	UR
593-78-6	2-Hexanone	5.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U
67-64-1	Acetone	5.	UR
71-43-2	Benzene	3.	U
75-27-4	Bromodichloromethane	1.	U
75-25-2	Bromoform	1.	U
74-83-9	Bromomethane	1.	U
75-15-0	Carbon disulfide	1.	U
56-23-5	Carbon tetrachloride	1.	U
108-90-7	Chlorobenzene	1.	U
75-00-3	Chloroethane	1.	U
67-66-3	Chloroform	1.	U
74-87-3	Chloromethane	1.	U
124-48-3	Dibromochloromethane	1.	U
100-41-4	Ethylbenzene	1.	U
75-09-2	Methylene chloride	11.	
100-42-5	Styrene	1.	U
127-18-4	Tetrachloroethene	1.	U
108-88-3	Toluene	1.	U
79-01-6	Trichloroethene	1.	U
75-01-4	Vinyl chloride	1.	U
1330-20-7	Xylene (Total)	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U
106-93-4	1,2-Dibromoethane	3.	U
95-50-1	1,2-Dichlorobenzene	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwater
VOCs

LOWVOA	SAMPLE ID ------->	024-G-GS06-01					
	ORIGINAL ID ----->	024GGS0601					
	LAB SAMPLE ID --->	S555182B*2					
	ID FROM REPORT -->	024GGS0601					
	SAMPLE DATE ----->	09/18/95					
	DATE ANALYZED --->	09/28/95					
	MATRIX ---------->	Water					
	UNITS ---------->	UG/L					
CAS #	Parameter	ENP14	VAL				
74-97-5	Chlorobromomethane	1.	U				
156-59-2	cis-1,2-Dichloroethene	1.	U				
156-60-5	trans-1,2-Dichloroethene	1.	U				

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwater
SVOCs

LOWSVOA													
	SAMPLE ID ------->	024-G-GS01-01		024-H-GS01-01		024-G-GS02-01		024-G-GS03-01		024-G-GS04-01		024-G-GS05-01	
	ORIGINAL ID ----->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	LAB SAMPLE ID --->	S555208*1		S555208*2		S555208*3		S555182B*1		S555208*4		S555208*5	
	ID FROM REPORT -->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	SAMPLE DATE ----->	09/19/95		09/19/95		09/19/95		09/18/95		09/19/95		09/15/95	
	DATE EXTRACTED -->	09/21/95		09/21/95		09/21/95		09/20/95		09/21/95		09/21/95	
	DATE ANALYZED --->	10/06/95		10/12/95		10/07/95		10/05/95		10/08/95		10/09/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL
120-82-1	1,2,4-Trichlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
95-95-4	2,4,5-Trichlorophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
88-06-2	2,4,6-Trichlorophenol	5.	U	5.	U	5.	U	5.	U	[illegible]	U	5.	U
120-83-2	2,4-Dichlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
105-67-9	2,4-Dimethylphenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
51-28-5	2,4-Dinitrophenol	20.	U	20.	U	20.	U	20.	U	20.	UJ	20.	UJ
121-14-2	2,4-Dinitrotoluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
606-20-2	2,6-Dinitrotoluene	51	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-58-7	2-Chloronaphthalene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
95-57-8	2-Chlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-57-6	2-Methylnaphthalene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
95-48-7	2-Methylphenol (o-Cresol)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
88-74-4	2-Nitroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
88-75-5	2-Nitrophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-94-1	3,3'-Dichlorobenzidine	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
99-09-2	3-Nitroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
101-55-3	4-Bromophenyl-phenylether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
59-50-7	4-Chloro-3-methylphenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
106-47-8	4-Chloroaniline	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
7005-72-3	4-Chlorophenylphenylether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-01-6	4-Nitroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
IOU-02-7	4-Nitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
83-32-9	Acenaphthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
208-96-8	Acenaphthylene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
120-12-7	Anthracene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-55-3	Benzo(a)anthracene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
50-32-8	Benzo(a)pyrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
205-99-2	Benzo(b)fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
191-24-2	Benzo(g,h,i)perylene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
207-08-9	Benzo(k)fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
85-68-7	Butylbenzylphthalate	5.	U	5.	U	5.	U	5.	U	5.	UJ	5.	U
218-01-9	Chrysene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
84-74-2	Di-n-butylphthalate	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
117-84-0	Di-n-octyl phthalate	5.	U	5.	U	5.	UJ	5.	UR	5.	UR	5.	UR

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwater
SVOCs

	SAMPLE ID ------->	024-G-GS01-01		024-H-GS01-01		024-G-GS02-01		024-G-GS03-01		024-G-GS04-01		024-G-GS05-01	
	ORIGINAL ID ----->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	LAB SAMPLE ID --->	S555208*1		S555208*2		S555208*3		S5551828*1		S555208*4		S555208*5	
	ID FROM REPORT -->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	SAMPLE DATE ----->	09/19/95		09/19/95		09/19/95		09/18/95		09/19/95		09/15/95	
	DATE EXTRACTED -->	09/21/95		09/21/95		09/21/95		09/20/95		09/21/95		09/21/95	
	DATE ANALYZED --->	10/06/95		10/12/95		10/07/95		10/05/95		10/08/95		10/09/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL
53-70-3	Dibenz(a,h)anthracene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
132-64-9	Dibenzofuran	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
84-66-2	Diethylphthalate	5.	U	5.	U	5.	U	2.	J	5.	U	5.	U
131-11-3	Dimethyl phthalate	5.	U	5.	U	5.	U	1.	J	5.	U	5.	U
206-44-0	Fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
86-73-7	Fluorene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
118-74-1	Hexachlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
87-68-3	Hexachlorobutadiene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
77-47-4	Hexachlorocyclopentadiene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-72-1	Hexachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-59-1	Isophorone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
621-64-7	N-Nitroso-di n-propylamine	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
122-39-4	Diphenylamin	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-20-3	Naphthalene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
98-95-3	Nitrobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
87-86-5	Pentachlorophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
85-01-8	Phenanthrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-95-2	Phenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
129-00-0	Pyrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
111-91-1	bis(2-Chloroethoxy)methane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
111-44-4	bis(2-Chloroethyl)ether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	5.	U	5.	U	5.	U	5.	UJ	5.	UJ	5.	UJ
9999900-32-2	3-Methylphenol/4-Methylphenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwater
SVOCs

LOWSVOA

SAMPLE ID -------->	024-G-GS06-01
ORIGINAL ID ----->	024GGS0601
LAB SAMPLE ID --->	S555182B*2
ID FROM REPORT -->	024GGS0601
SAMPLE DATE ----->	09/18/95
DATE EXTRACTED -->	09/20/95
DATE ANALYZED --->	10/05/95
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	ENP14	VAL
120-82-7	1,2,4-Trichlorobenzene	5.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	5.	U
95-95-4	2,4,5-Trichlorophenol	20.	U
88-06-2	2,4,6-Trichlorophenol	5.	U
120-83-2	2,4-Dichlorophenol	5.	U
105-67-9	2,4-Dimethylphenol	5.	U
51-28-5	2,4-Dinitrophenol	20.	U
121-14-2	2,4-Dinitrotoluene	5.	U
606-20-2	2,6-Dinitrotoluene	5.	U
91-58-7	2-Chloronaphthalene	5.	U
95-57-8	2-Chlorophenol	5.	U
91-57-6	2-Methylnaphthalene	5.	U
95-48-7	2-Methylphenol (o-Cresol)	5.	U
88-74-4	2-Nitroaniline	20.	U
88-75-5	2-Nitrophenol	5.	U
91-94-1	3,3'-Dichlorobenzidine	5.	U
99-09-2	3-Nitroaniline	20.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	20.	U
101-55-3	4-Bromophenyl-phenylether	5.	U
59-50-7	4-Chloro-3-methylphenol	5.	U
106-47-8	4-Chloroaniline	5.	U
7005-72-3	4-Chlorophenylphenylether	5.	U
100-01-6	4-Nitroaniline	20.	U
100-02-7	4-Nitrophenol	20.	U
83-32-9	Acenaphthene	5.	U
208-96-8	Acenaphthylene	5.	U
120-12-7	Anthracene	5.	U
56-55-3	Benzo(a)anthracene	5.	U
50-32-8	Benzo(a)pyrene	5.	U
205-99-2	Benzo(b)fluoranthene	5.	U
191-24-2	Benzo(g,h,i)perylene	5.	U
207-08-9	Benzo(k)fluoranthene	5.	U
85-68-7	Butylbenzylphthalate	5.	U
218-01-9	Chrysene	5.	U
84-74-2	Di-n-butylphthalate	5.	U
117-84-0	Di-n-octyl phthalate	5.	UR

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwater
SVOCs

SAMPLE ID ------->	024-G-GS06-01
ORIGINAL ID ----->	024GGS0601
LAB SAMPLE ID --->	S555182B*2
ID FROM REPORT -->	024GGS0601
SAMPLE DATE ----->	09/18/95
DATE EXTRACTED -->	09/20/95
DATE ANALYZED --->	10/05/95
MATRIX ---------->	Water
UNITS ----------->	UG/L

CAS #	Parameter	ENP14	VAL
53-70-3	Dibenz(a,h)anthracene	5.	U
132-64-9	Dibenzofuran	5.	U
84-66-2	Diethylphthalate	5.	U
131-11-3	Dimethyl phthalate	5.	U
206-44-0	Fluoranthene	5.	U
86-73-7	Fluorene	5.	U
118-74-1	Hexachlorobenzene	5.	U
87-68-3	Hexachlorobutadiene	5.	U
77-47-4	Hexachlorocyclopentadiene	5.	U
67-72-1	Hexachloroethane	5.	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.	U
78-59-1	Isophorone	5.	U
621-64-7	N-Nitroso-di-n-propylamine	5.	U
122-39-4	Diphenylamine	5.	U
91-20-3	Naphthalene	5.	U
98-95-3	Nitrobenzene	5.	U
87-86-5	Pentachlorophenol	20.	U
85-01-8	Phenanthrene	5.	U
108-95-2	Phenol	5.	U
129-00-0	Pyrene	5.	U
111-91-1	bis(2-Chloroethoxy)methane	5.	U
111-44-4	bis(2-Chloroethyl)ether	5.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	5.	UJ
9999900-32-2	3-Methylphenol/4-Methylphenol	5.	U

*** Validation Complete ***

DATALCP3
06/10/97

PENSACOI . SITE 24
Phase I Groundwater
Pesticides/PCBs

LOWPEST													
	SAMPLE ID ------->	024-G-GS01-01		024-H-GS01-01		024-G-GS02-01		024-G-GS03-01		024-G-GS04-01		024-G-GS05-01	
	ORIGINAL ID ----->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	LAB SAMPLE ID --->	S555208*1		S555208*2		S555208*3		S555182B*1		S555208*4		S555208*5	
	ID FROM REPORT -->	024GGS0101		024HGS0101		024GGS0201		024GGS0301		024GGS0401		024GGS0501	
	SAMPLE DATE ----->	09/19/95		09/19/95		09/19/95		09/18/95		09/19/95		09/15/95	
	DATE EXTRACTED -->	09/21/95		09/21/95		09/21/95		09/20/95		09/21/95		09/21/95	
	DATE ANALYZED --->	09/29/95		09/29/95		09/29/95		09/28/95		09/29/95		09/29/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL
72-54-8	4,4'-DDD	0.01	J	0.12	J	0.02	U	0.063	J	0.02	U	0.02	U
72-55-9	4,4'-DDE	0.0077	J	0.0082	J	0.02	U	0.023	J	0.0026	J	0.02	U
50-29-3	4,4'-DDT	0.02	U	0.02	U	0.02	U	0.0075	J	0.02	U	0.02	U
309-00-2	Aldrin	0.01	U	0.003	J	0.01	U	0.01	UJ	0.01	U	0.01	U
12674-11-2	Aroclor-1016	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	U	0.2	U
11104-28-2	Aroclor-1221	0.4	U	0.4	U	0.4	U	0.4	UJ	0.4	U	0.4	U
11141-16-5	Aroclor-1232	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	U	0.2	U
53469-21-9	Aroclor-1242	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	U	0.2	U
12672-29-6	Aroclor-1248	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	U	0.2	U
11097-69-1	Aroclor-1254	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	U	0.2	U
11096-82-5	Aroclor-1260	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	U	0.2	U
60-57-1	Dieldrin	0.26		0.3		0.0017	J	0.057	J	0.0031	J	0.02	U
959-98-8	Endosulfan I	0.01	U	0.01	U	0.01	U	0.01	UJ	0.01	U	0.01	U
33213-65-9	Endosulfan II	0.02	U	0.02	U	0.02	U	0.02	UJ	0.02	U	0.02	U
1031-07-8	Endosulfan sulfate	0.02	U	0.02	U	0.02	U	0.02	UJ	0.02	U	0.02	U
72-20-8	Endrin	0.02	U	0.02	U	0.0005	J	0.02	UJ	0.02	U	0.02	U
7421-93-4	Endrin aldehyde	0.02	U	0.02	U	0.02	U	0.02	UJ	0.02	U	0.02	U
53494-70-5	Endrin ketone	0.02	U	0.0038	J	0.02	U	0.02	UJ	0.02	U	0.02	U
76-44-8	Heptachlor	0.01	U	0.01	U	0.01	U	0.0048	J	0.01	U	0.01	U
1024-57-3	Heptachlor epoxide	0.0043	J	0.0051	J	0.01	U	0.01	UJ	0.029		0.01	U
72-43-5	Methoxychlor	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	U
8001-35-2	Toxaphene	1.	U	1.	U	1.	U	1.	UJ	1.	U	1.	U
319-84-6	alpha-BHC	0.01	UJ	0.01	UJ	0.01	U	0.01	UJ	0.0007	J	0.01	UJ
5103-71-9	alpha-Chlordane	0.041		0.041		0.01	UJ	0.0081	J	0.014		0.01	U
319-85-7	beta-BHC	0.01	U	0.01	U	0.01	U	0.0058	J	0.01	U	0.01	U
319-86-8	delta-BHC	0.01	U	0.01	U	0.01	U	0.0032	J	0.01	U	0.01	U
58-89-9	gamma-BHC (Lindane)	0.01	U	0.01	U	0.01	U	0.0071	J	0.01	U	0.01	U
5103-74-2	gamma-Chlordane	0.04		0.042		0.01	U	0.0065	J	0.0083	J	0.01	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Groundwat r
Pesticides/PCBs

LOWPEST

SAMPLE ID -------->	024-G-GS06-01
ORIGINAL ID ----->	024GGS0601
LAB SAMPLE ID --->	S555182B*2
ID FROM REPORT -->	024GGS0601
SAMPLE DATE ----->	09/18/95
DATE EXTRACTED -->	09/20/95
DATE ANALYZED --->	09/28/95
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	ENP14	VAL
72-54-8	4,4'-DDD	0.02	U
72-55-9	4,4'-DDE	0.02	U
50-29-3	4,4'-DDT	0.02	U
309-00-2	Aldrin	0.01	U
12674-11-2	Aroclor-1016	0.2	U
11104-28-2	Aroclor-1221	0.4	U
11141-16-5	Aroclor-1232	0.2	U
53469-21-9	Aroclor-1242	0.2	U
12672-29-6	Aroclor-1248	0.2	U
11097-69-1	Aroclor-1254	0.2	U
11096-82-5	Aroclor-1260	0.2	U
60-57-1	Dieldrin	0.02	U
959-98-8	Endosulfan I	0.01	U
33213-65-9	Endosulfan II	0.02	U
1031-07-8	Endosulfan sulfate	0.02	U
72-20-8	Endrin	0.02	U
7421-93-4	Endrin aldehyde	0.02	U
53494-70-5	Endrin ketone	0.02	U
76-44-8	Heptachlor	0.01	U
1024-57-3	Heptachlor epox de	0.011	
72-43-5	Methoxychlor	0.1	U
8001-35-2	Toxaphene	1.	U
319-84-6	alpha-BHC	0.01	UN
5103-71-9	alpha-Chlordane	0.0018	J
319-85-7	beta-BHC	0.01	U
319-86-8	delta-BHC	0.01	U
58-89-9	gamma-BHC (Lindane)	0.01	U
5103-74-2	gamma-Chlordane	0.0044	J

*** Validation Complete ***

DATALCP3
06/10/97

PENSACOLA, SITE 24
Phase II Soil
As, Be, and Mn

AS BE MN													
	SAMPLE ID ------->	024-S-0010-01		024-C-0010-01		024-S-0010-07		024-S-0011-01		024-S-0011-06		024-S-0012-01	
	ORIGINAL ID ----->	024S001001		024C001001		024S001007		024S001101		024S001106		024S001201	
	LAB SAMPLE ID --->	S681860*2		S681860*1		S681860*3		S681860*4		S681860*5		S681860*6	
	ID FROM REPORT -->	024S001001		024C001001		024S001007		024S001101		024S001106		024S001201	
	SAMPLE DATE ----->	04/02/96		04/02/96		04/02/96		04/02/96		04/02/96		04/02/96	
	DATE EXTRACTED -->	04/03/96		04/03/96		04/03/96		04/03/96		04/03/96		04/03/96	
	DATE ANALYZED --->	04/05/96		04/05/96		04/05/96		04/05/96		04/05/96		04/05/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL
7440-38-2	Arsenic (As)	2.8	J	2.4	J	0.25	J	3.1	J	0.21	UJ	1.2	J
7440-41-7	Beryllium (Be)	0.4	U	0.43	U	0.07	U	0.64	U	0.05	U	0.44	U
7439-96-5	Manganese (Mn)	220.		232.		9.1		377.		3.1		104.	

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Soil
As, Be, and Mn

AS BE MN													
	SAMPLE ID ------->	024-S-0012-06		024-S-0013-01		024-S-0013-07		024-S-0014-01		024-S-0014-07		024-S-0015-01	
	ORIGINAL ID ----->	024S001206		024S001301		024S001307		024S001401		024S001407		024S001501	
	LAB SAMPLE ID --->	S681860*7		S681943*2		S681943*3		S681860*8		S681860*9		S681860*10	
	ID FROM REPORT -->	024S001206		024S001301		024S001307		024S001401		024S001407		024S001501	
	SAMPLE DATE ----->	04/02/96		04/03/96		04/03/96		04/02/96		04/02/96		04/02/96	
	DATE EXTRACTED -->	04/03/96		04/05/96		04/05/96		04/03/96		04/03/96		04/03/96	
	DATE ANALYZED --->	04/05/96		04/09/96		04/09/96		04/05/96		04/05/96		04/05/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	PJL05	VAL	PJL06	VAL	PJL06	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL
7440-38-2	Arsenic (As)	0.29	J	0.58		0.2	U	1.6	J	0.96	J	2.2	J
7440-41-7	Beryllium (Be)	0.06	U	0.09	U	0.03	U	0.1	U	0.1	U	0.13	U
7439-96-5	Manganese (Mn)	2.7		36.		1.9		22.7		42.4		16.9	

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Soil
As, Be, and Mn

AS BE MN													
		SAMPLE ID ------->	024-S-0015-07		024-S-0016-01		024-S-0016-07		024-S-0017-01		024-S-0017-07		024-S-0018-01
		ORIGINAL ID ----->	024S001507		024S001601		024S001607		024S001701		024S001707		024S001801
		LAB SAMPLE ID --->	S681860*11		S681860*12		S681860*13		S681943*4		S681943*5		S681943*6
		ID FROM REPORT -->	024S001507		024S001601		024S001607		024S001701		024S001707		024S001801
		SAMPLE DATE ----->	04/02/96		04/02/96		04/02/96		04/03/96		04/03/96		04/03/96
		DATE EXTRACTED -->	04/03/96		04/03/96		04/03/96		04/05/96		04/05/96		04/05/96
		DATE ANALYZED --->	04/05/96		04/05/96		04/05/96		04/09/96		04/09/96		04/09/96
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil
		UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG
CAS #	Parameter		PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL
7440-38-2	Arsenic (As)		0.35	J	0.97	J	0.37	J	0.81		0.21	U	1.5	
7440-41-7	Beryllium (Be)		0.07	U	0.09	U	0.07	U	0.04	U	0.04	U	0.07	U
7439-96-5	Manganese (Mn)		3.7		11.6		4.6		6.5		1.2		27.9	

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Soil
As, Be, and Mn

AS BE MN													
	SAMPLE ID ------->	024-S-0018-07		024-S-0019-01		024-S-0019-07		024-S-0020-01		024-S-0020-06		024-S-0021-01	
	ORIGINAL ID ----->	024S001807		024S001901		024S001907		024S002001		024S002006		024S002101	
	LAB SAMPLE ID --->	S681943*7		S681943*8		S681943*9		S681943*10		S681943*11		S681943*12	
	ID FROM REPORT -->	024S001807		024S001901		024S001907		024S002001		024S002006		024S002101	
	SAMPLE DATE ----->	04/03/96		04/03/96		04/03/96		04/03/96		04/03/96		04/03/96	
	DATE EXTRACTED -->	04/05/96		04/05/96		04/05/96		04/05/96		04/05/96		04/05/96	
	DATE ANALYZED --->	04/09/96		04/09/96		04/09/96		04/09/96		04/09/96		04/09/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	PJL06	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL
7440-38-2	Arsenic (As)	0.21	U	0.64		0.2	U	1.6		0.28	J	1.1	
7440-41-7	Beryllium (Be)	0.04	U	0.07	U	0.04	U	0.11	U	0.04	U	0.11	U
7439-96-5	Manganese (Mn)	0.81	J	25.7		1.9		85.5		2.7		68.1	

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Soil
As, Be, and Mn

AS BE MN											
		SAMPLE ID ------->	024-S-0021-06		024-S-0022-01		024-C-0022-01		024-S-0022-07		
		ORIGINAL ID ----->	024S002106		024S002201		024C002201		024S002207		
		LAB SAMPLE ID --->	S681943*13		S681943*14		S681943*1		S681943*15		
		ID FROM REPORT -->	024S002106		024S002201		024C002201		024S002207		
		SAMPLE DATE ----->	04/03/96		04/03/96		04/03/96		04/03/96		
		DATE EXTRACTED -->	04/05/96		04/05/96		04/05/96		04/05/96		
		DATE ANALYZED --->	04/09/96		04/09/96		04/09/96		04/09/96		
		MATRIX ---------->	Soil		Soil		Soil		Soil		
		UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		
CAS #	Parameter		PJL06	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL	
7440-38-2	Arsenic (As)		0.21	U	0.94		0.64		0.[illegible]	U	
7440-41-7	Beryllium (Be)		0.05	U	0.08	U	0.06	U	0.05	U	
7439-96-5	Manganese (Mn)		4.1		41.2		74.8		0.79	J	

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Soil
SVOCs

SVOA-8270						
SAMPLE ID ------->	024-S-0010-01	024-C-0010-01	024-S-0010-07	024-S-0011-01	024-S-0011-06	024-S-0012-01
ORIGINAL ID ----->	024S001001	024C001001	024S001007	024S001101	024S001106	024S001201
LAB SAMPLE ID --->	S681860*2	S681860*1	S681860*3	S681860*4	S681860*5	S681860*6
ID FROM REPORT -->	024S001001	024C001001	024S001007	024S001101	024S001106	024S001201
SAMPLE DATE ----->	04/02/96	04/02/96	04/02/96	04/02/96	04/02/96	04/02/96
DATE EXTRACTED -->	04/04/96	04/03/96	04/03/96	04/03/96	04/03/96	04/03/96
DATE ANALYZED --->	04/05/96	04/05/96	04/04/96	04/04/96	04/05/96	04/05/96
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ----------->	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG

CAS #	Parameter	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL
120-82-1	1,2,4-Trichlorobenzene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
95-50-1	1,2-Dichlorobenzene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
541-73-1	1,3-Dichlorobenzene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
106-46-7	1,4-Dichlorobenzene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
95-95-4	2,4,5-Trichlorophenol	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
88-06-2	2,4,6-Trichlorophenol	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
120-83-2	2,4-Dichlorophenol	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
105-67-9	2,4-Dimethylphenol	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
51-28-5	2,4-Dinitrophenol	1900.	U	1900.	U	1800.	U	1800.	U	1800.	U	1800.	U
121-14-2	2,4-Dinitrotoluene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
606-20-2	2,6-Dinitrotoluene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
91-58-7	2-Chloronaphthalene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
95-57-8	2-Chlorophenol	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
91-57-6	2-Methylnaphthalene	360.	U	41.	J	350.	U	360.	U	350.	U	350.	U
95-48-7	2-Methylphenol (o-Cresol)	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
88-74-4	2-Nitroaniline	1900.	U	1900.	U	1800.	U	1800.	U	1800.	U	1800.	U
88-75-5	2-Nitrophenol	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
91-94-1	3,3'-Dichlorobenzidine	720.	U	730.	U	690.	U	720.	U	690.	U	710.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
99-09-2	3-Nitroaniline	1900.	U	1900.	U	1800.	U	1800.	U	1800.	U	1800.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	1900.	U	1900.	U	1800.	U	1800.	U	1800.	U	1800.	U
101-55-3	4-Bromophenyl-phenylether	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
59-50-7	4-Chloro-3-methylphenol	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
106-47-8	4-Chloroaniline	720.	U	730.	U	690.	U	720.	U	690.	U	710.	U
7005-72-3	4-Chlorophenylphenylether	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
100-01-6	4-Nitroaniline	1900.	U	1900.	U	1800.	U	1800.	U	1800.	U	1800.	U
100-02-7	4-Nitrophenol	1900.	U	1900.	U	1800.	U	1800.	U	1800.	U	1800.	U
83-32-9	Acenaphthene	160.	J	230.	J	350.	U	360.	U	350.	U	350.	U
208-96-8	Acenaphthylene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
120-12-7	Anthracene	190.	J	260.	J	350.	U	360.	U	350.	U	19.	J
56-55-3	Benzo(a)anthracene	670.		900.		350.	U	360.	U	350.	U	100.	J
50-32-8	Benzo(a) yrene	630.		830.		93.	U	56.	J	93.	U	160.	
205-99-2	Benzo(b)fluoranthene	990.		1100.		350.	U	88.	J	350.	U	210.	J
191-24-2	Benzo(g,h,i)perylene	310.	J	540.		350.	U	33.	J	350.	U	170.	J
207-08-9	Benzo(k)fluoranthene	300.	J	430.		350.	U	32.	J	350.	U	88.	J

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Soil
SVOCs

SVOA-8270													
	SAMPLE ID ------->	024-S-0010-01		024-C-0010-01		024-S-0010-07		024-S-0011-01		024-S-0011-06		024-S-0012-01	
	ORIGINAL ID ----->	024S001001		024C001001		024S001007		024S001101		024S001106		024S001201	
	LAB SAMPLE ID --->	S681860*2		S681860*1		S681860*3		S681860*4		S681860*5		S681860*6	
	ID FROM REPORT -->	024S001001		024C001001		024S001007		024S001101		024S001106		024S001201	
	SAMPLE DATE ----->	04/02/96		04/02/96		04/02/96		04/02/96		04/02/96		04/02/96	
	DATE EXTRACTED -->	04/04/96		04/03/96		04/03/96		04/03/96		04/03/96		04/03/96	
	DATE ANALYZED --->	04/05/96		04/05/96		04/04/96		04/04/96		04/05/96		04/05/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJtu5	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL
85-68-7	Butylbenzylphthalate	160.	J	160.	J	350.	U	72.	3	350.	U	3400.	
86-74-8	Carbazole	200.	J	260.	3	550,	U	360.	U	350.	U	350.	U
218-01-9	Chrysene	760.		1000.		350.	U	64.	J	350.	U	140.	J
84-74-2	Di-n-butylphthalate	360.	U	370.	U	350.	U	58.	J	350.	U	350.	U
117-84-0	Di-n-octyl phthalate	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
53-70-3	Dibenz(a,h)anthracene	100.	J	160.	J	350.	U	360.	U	350.	U	42.	J
132-64-9	Dibenzofuran	71.	J	110.	J	350.	U	360.	U	350.	U	350.	U
84-66-2	Diethylphthalate	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
131-11-3	Dimethyl phthalate	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
206-44-0	Fluoranthene	1300.		1500.		14.	3	87.	J	350.	U	140.	3
86-73-7	Fluorene	120.	J	180.	J	350.	U	360.	U	350.	U	350.	U
118-74-1	Hexachlorobenzene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
87-68-3	Hexachlorobutadiene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
77-47-4	Hexachlorocyclopentadiene	360.	U	370.	U	350.	U	360.	U	350.	U	350,	U
67-72-1	Hexachloroethane	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	270.	J	470.		350.	U	28.	J	350.	U	130.	J
78-59-1	Isophorone	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
621-64-7	N-Nitroso-di-n-propylamine	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
86-30-6	N-Nitrosodiphenylamine	360.	U	370.	U	350.	U	360.	U	350,	U	350.	U
91-20-3	Naphthalene	75.	J	120.	J	350.	U	360.	U	350.	U	350.	U
98-95-3	Nitrobenzene	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
87-86-5	Pentachlorophenol	1900.	U	1900.	U	1800.	U	1800.	U	1800.	U	1800.	U
85-01-8	Phenanthrene	1100.		1500.		350.	U	43.	J	350.	U	70.	3
108-95-2	Phenol	360.	U	370.	U	350.	U	360.	U	350.	U	350,	U
129-00-0	Pyrene	1100.		1800.		13.	J	87.	J	350.	U	220.	J
111-91-1	bis(2-Chloroethoxy)methane	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
111-44-4	bis(2-Chloroethyl)ether	360.	U	370.	U	350.	U	360.	U	350.	U	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	330.	J	390.		37.	J	5200.		350.	U	1300.	
122-39-4	Diphenylamine	NR		NR		NR		NR		NR		NR	
108-39-4	3-Methylphenol (m-Cresol)	NR		NR		NR		NR		NU		NR	

+ Validation Complete *

PENSACOLA, SITE 24
Phase II Soil
SVOCs

SVOA-8270											
		SAMPLE ID ------->	024-S-0012-06		024-S-0023-01		024-C-0023-01		024-S-0023-07		
		ORIGINAL ID ----->	024S001206		024S002301		024C002301		024S002307		
		LAB SAMPLE ID --->	S681860*7		S683346*2		S683346*1		S683346*3		
		ID FROM REPORT -->	024S001206		024S002301		024C002301		024S002307		
		SAMPLE DATE ----->	04/02/96		06/07/96		06/07/96		06/07/96		
		DATE EXTRACTED -->	04/03/96		06/11/96		06/11/96		06/11/96		
		DATE ANALYZED --->	04/05/96		06/12/96		06/12/96		06/12/96		
		MATRIX ---------->	Soil		Soil		Soil		Soil		
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		
CAS #	Parameter		PJL05	VAL	PJL10	VAL	PJL10	VAL	PJL10	VAL	
120-82-1	1,2,4-Trichlorobenzene		350.	U	350.	U	340.	U	340.	U	
95-50-1	1,2-Dichlorobenzene		350.	U	350.	U	340.	U	340.	U	
541-73-1	1,3-Dichlorobenzene		350.	U	350.	U	340.	U	340.	U	
106-46-7	1,4-Dichlorobenzene		350.	U	350.	U	340.	U	340.	U	
108-60-1	2,2'-oxybis(1-Chloropropane)		350.	U	350.	U	340.	U	340.	U	
95-95-4	2,4,5-Trichlorophenol		350.	U	350.	U	340.	U	340.	U	
88-06-2	2,4,6-Trichlorophenol		350.	U	350.	U	340.	U	340.	U	
120-83-2	2,4-Dichlorophenol		350.	U	350.	U	340.	U	340.	U	
105-67-9	2,4-Dimethylphenol		350.	U	350.	U	340.	U	340.	U	
51-28-5	2,4-Dinitrophenol		1800.	U	1800.	U	1800.	U	1800.	U	
121-14-2	2,4-Dinitrotoluene		350.	U	350.	U	340.	U	340.	U	
606-20-2	2,6-Dinitrotoluene		350.	U	350.	U	340.	U	340.	U	
91-58-7	2-Chloronaphthalene		350.	U	350.	U	340.	U	340.	U	
95-57-8	2-Chlorophenol		350.	U	350.	U	340.	U	340.	U	
91-57-6	2-Methylnaphthalene		350.	U	350.	U	340.	U	340.	U	
95-48-7	2-Methylphenol (o-Cresol)		350.	U	350.	U	340.	U	340.	U	
88-74-4	2-Nitroaniline		1800.	U	1800.	U	1800.	U	1800.	U	
88-75-5	2-Nitrophenol		350.	U	350.	U	340.	U	340.	U	
91-94-1	3,3'-Dichlorobenzidine		710.	U	690.	U	690.	U	680.	U	
99999-00-32-2	3-Methylphenol/4-Methylphenol		350.	U	350.	U	340.	U	340.	U	
99-09-2	3-Nitroaniline		1800.	U	1800.	U	1800.	U	1800.	U	
534-52-1	2-Methyl-4,6-Dinitrophenol		1800.	U	1800.	U	1800.	U	1800.	U	
101-55-3	4-Bromophenyl-phenylether		350.	U	350.	U	340.	U	340.	U	
59-50-7	4-Chloro-3-methylphenol		350.	U	350.	U	340.	U	340.	U	
106-47-8	4-Chloroaniline		710.	U	690.	U	690.	U	680.	U	
7005-72-3	4-Chlorophenylphenylether		350.	U	350.	U	340.	U	340.	U	
100-01-6	4-Nitroaniline		1800.	U	1800.	U	1800.	U	1800.	U	
100-02-7	4-Nitrophenol		1800.	U	1800.	U	1800.	U	1800.	U	
83-32-9	Acenaphthene		350.	U	350.	U	340.	U	340.	U	
208-96-8	Acenaphthylene		350.	U	350.	U	340.	U	340.	U	
120-12-7	Anthracene		350.	U	350.	U	340.	U	340.	U	
56-55-3	Benzo(a)anthracene		350.	U	350.	U	340.	U	340.	U	
50-32-8	Benzo(a)pyrene		95.	U	93.	U	92.	U	91.	U	
205-99-2	Benzo(b)fluoranthene		350.	U	350.	U	340.	U	340.	U	
191-24-2	Benzo(g,h,i)perylene		350.	U	350.	U	340.	U	340.	U	
207-08-9	Benzo(k)fluoranthene		350.	U	350.	U	340.	U	340.	U	

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Soil
SVOCs

SVOA-8270											
	SAMPLE ID ------->	024-S-0012-06		024-S-0023-01		024-C-0023-01		024-S-0023-07			
	ORIGINAL ID ----->	024S001206		024S002301		024C002301		024S002307			
	LAB SAMPLE ID --->	S681860*7		S683346*2		S683346*1		S683346*3			
	ID FROM REPORT -->	024S001206		024S002301		024C002301		024S002307			
	SAMPLE DATE ----->	04/02/96		06/07/96		06/07/96		06/07/96			
	DATE EXTRACTED -->	04/03/96		06/11/96		06/11/96		06/11/96			
	DATE ANALYZED --->	04/05/96		06/12/96		06/12/96		06/12/96			
	MATRIX ---------->	Soil		Soil		Soil		Soil			
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG			
CAS #	Parameter	PJL05	VAL	PJL10	VAL	PJL10	VAL	PJL10	VAL		
85-68-7	Butylbenzylphthalate	140.	J	350.	U	340.	U	340.	U		
86-74-8	Carbazole	350.	U	350.	U	340.	U	340.	U		
218-01-9	Chrysene	350.	U	350.	U	340.	U	340.	U		
84-74-2	Di-n-butylphthalate	350.	U	350.	U	19.	J	340.	U		
117-84-0	Di-n-octyl phthalate	350.	U	350.	U	340.	U	340.	U		
53-70-3	Dibenz(a,h)anthracene	350.	U	350.	U	340.	U	340.	U		
132-64-9	Dibenzofuran	350.	U	350.	U	340.	U	340.	U		
84-66-2	Diethylphthalate	350.	U	350.	U	340.	U	340.	U		
131-11-3	Dimethyl phthalate	350.	U	350.	U	340.	U	340.	U		
206-44-0	Fluoranthene	12.	J	350.	U	340.	U	340.	U		
86-73-7	Fluorene	350.	U	350.	U	340.	U	340.	U		
118-74-1	Hexachlorobenzene	350.	U	350.	U	340.	U	340.	U		
87-68-3	Hexachlorobutadiene	350.	U	350.	U	340.	U	340.	U		
77-47-4	Hexachlorocyclopentadiene	350.	U	350.	U	340.	U	340.	U		
67-72-1	Hexachloroethane	350.	U	350.	U	340.	U	340.	U		
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U	350.	U	340.	U	340.	U		
78-59-1	Isophorone	350.	U	350.	U	340.	U	340.	U		
621-64-7	N-Nitroso-di-n-propylamine	350.	U	3501	U	340.		340.	U		
86-30-6	N-Nitrosodiphenylamine	350.	U	NR		NR		NR			
91-20-3	Naphthalene	350.	U	350.	U	340.	U	340.	U		
98-95-3	Nitrobenzene	350.	U	350.	U	340.	U	340.	U		
87-86-5	Pentachlorophenol	1800.	U	1800.	U	1300.	U	1800.	U		
85-01-8	Phenanthrene	350.	U	350,	U	340.	U	340.	U		
108-95-2	Phenol	350.	U	350.	U	340.	U	340.	U		
129-00-0	Pyrene	14.	J	350.	U	340.	U	340.	U		
111-91-1	bis(2-Chloroethoxy)methane	350.	U	350.	U	340.	U	340.	U		
111-44-4	bis(2-Chloroethyl)ether	350.	U	350.	U	340.	U	340.	U		
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	48.	J	350.	U	340.	U	340.	U		
122-39-4	Diphenylamine	NR		350.	U	340.	U	340.	U		
108-39-4	3-Methylphenol (m-Cresol)	NR		NR		NR		NR			

*** Validation Complete ***

DATALCP3
06/10/97

PENSACOLA, SITE 24
Phase II Soil
Pesticides/PCBs

PEST-8080													
	SAMPLE ID ------->	024-C-0010-01		024-S-0010-07		024-S-0011-01		024-S-0011-06		024-S-0012-01		024-S-0012-06	
	ORIGINAL ID ----->	024C001001		024S001007		024S001101		024S001106		024S001201		024S001206	
	LAB SAMPLE ID --->	S681860*1		S681860*3		S681860*4		S681860*5		S681860*6		S681860*7	
	ID FROM REPORT -->	024C001001		024S001007		024S001101		024S001106		024S001201		024S001206	
	SAMPLE DATE ----->	04/02/96		04/02/96		04/02/96		04/02/96		04/02/96		04/02/96	
	DATE EXTRACTED -->	04/03/96		04/03/96		04/03/96		04/03/96		04/03/96		04/03/96	
	DATE ANALYZED --->	04/08/96		04/08/96		04/08/96		04/04/96		04/09/96		04/08/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL
72-54-8	4,4'-DDD	44.	J	17.		7.2	J	3.5	U	1100.		55.	
72-55-9	4,4'-DDE	250.	D	48.		290.		3.8		1600.	D	83.	
50-29-3	4,4'-DDT	150.	D	12.		140.	D	2.2	J	1100.	D	130.	D
309-00-2	Aldrin	0.84	J	1.8	U	9.2	U	1.8	U	36.	U	9.1	U
12674-11-2	Aroclor-1016	37.	U	35.	U	180.	U	35.	U	710.	U	180.	U
11104-28-2	Aroclor-1221	74.	U	70.	U	360.	U	70.	U	1400.	U	360.	U
11141-16-5	Aroclor-1232	37.	U	35.	U	180.	U	35.	U	710.	U	180.	U
53469-21-9	Aroclor-1242	37.	U	35.	U	180.	U	35.	U	710.	U	180.	U
12672-29-6	Aroclor-1248	37.	U	35.	U	180.	U	35.	U	710.	U	180.	U
11097-69-1	Aroclor-1254	37.	U	35.	U	180.	U	35.	U	710.	U	180.	U
11096-82-5	Aroclor-1260	37.	U	35.	U	280.		35.	U	710.	U	180.	U
60-57-1	Dieldrin	66.	D	22.	DJ	32.	J	0.76	J	100.	J	4.2	J
959-98-8	Endosulfan I	6.6	J	0.65	J	3.5	J	1.8	U	13.	J	9.	J
33213-65-9	Endosulfan II	4.	J	3.5	U	18.	U	3.5	U	71.	U	18.	U
1031-07-8	Endosulfan sulfate	5.4	J	0.93	J	78.	J	3.5	U	71.	U	18.	U
72-20-8	Endrin	7.8	J	0.43	J	18.	U	3.5	U	16.	J	18.	U
7421-93-4	Endrin aldehyde	9.3	J	3.5	U	18.	U	3.5	U	71.	U	18.	U
53494-70-5	Endrin ketone	28.	J	3.5	U	18.	U	3.5	U	71.	U	18.	U
76-44-8	Heptachlor	1.9	U	1.8	U	9.2	U	1.8	U	36.	U	9.1	U
1024-57-3	Heptachlor epoxide	1.4	J	1.8	U	9.2	U	1.8	U	36.	U	9.1	U
72-43-5	Methoxychlor	26.	J	18.	U	92.	U	18.	U	360.	U	91.	U
8001-35-2	Toxaphene	190.	U	180.	U	920.	U	180.	U	3600.	U	910.	U
319-84-6	alpha-BHC	1.9	U	1.8	U	9.2	U	1.8	U	36.	U	9.1	U
5103-71-9	alpha-Chlordane	6.9	J	3.6		3.6	J	1.8	U	240.		9.3	J
319-85-7	beta-BHC	1.9	U	1.8	U	9.2	U	1.8	U	36.	U	9.1	U
319-86-8	delta-BHC	1.9	U	1.8	U	9.2	U	1.8	U	36.	U	9.1	U
58-89-9	gamma-BHC (Lindane)	1.9	U	1.8	U	9.2	U	1.8	U	36.	U	9.1	U
5103-74-2	gamma-Chlordane	8.	J	4.	J	6.7	J	1.8	U	270.		9.2	J

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Soil
Pesticides/PCBs

PEST-8080													
		SAMPLE ID ------->	024-S-0013-01		024-S-0013-07		024-S-0014-01		024-S-0014-07		024-S-0015-01		024-S-0015-07	
		ORIGINAL ID ----->	024S001301		024S001307		024S001401		024S001407		024S001501		024S001507	
		LAB SAMPLE ID --->	S681943*2		S681943*3		S681860*8		S681860*9		S681860*10		S681860*11	
		ID FROM REPORT -->	024S001301		024S001307		024S001401		024S001407		024S001501		024S001507	
		SAMPLE DATE ----->	04/03/96		04/03/96		04/02/96		04/02/96		04/02/96		04/02/96	
		DATE EXTRACTED -->	04/05/96		04/05/96		04/03/96		04/03/96		04/03/96		04/03/96	
		DATE ANALYZED --->	04/09/96		04/09/96		04/05/96		04/09/96		04/05/96		04/05/96	
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter		PJL06	VAL	PJL06	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL
72-54-8	4,4'-DDD		17.	D	3.4	U	3.1	J	18.	U	3.5	U	3.4	U
72-55-9	4,4'-DDE		240.	D	1.	J	36.		4.3	J	9.9	J	18.	J
50-29-3	4,4'-DDT		73.	D	3.4	U	22.		27.	J	2.5	J	3.	J
309-00-2	Aldrin		1.8	U	3.8	U	1.8	U	9.4	U	1.8	U	1.6	J
12674-11-2	Aroclor-1016		34.	U	34.	U	36.	U	180.	U	35.	U	34.	U
11104-28-2	Aroclor-1221		70.	U	69.	U	73.	U	370.	U	72.	U	69.	U
11141-16-5	Aroclor-1232		34.	U	34.	U	36.	U	180,	U	35.	U	34.	U
53469-21-9	Aroclor-1242		34.	U	34.	U	36.	U	180.	U	35.	U	34.	U
12672-29-6	Aroclor-1248		34.	U	34.	U	36.	U	180.	U	35.	U	34.	U
11097-69-1	Aroclor-1254		34.	U	34.	U	36.	U	180.	U	35.	U	34.	U
11096-82-5	Aroclor-1260		34.	U	34.	U	36.	U	160.	3	35.	U	34.	U
60-57-1	Dieldrin		3.4	U	3.4	U	2.1	J	18.	U	3.5	U		DJ
959-98-8	Endosulfan I		1.8	U	1.8	U	0.87	3	9.4	U	1.9	J	0.7	3
33213-65-9	Endosulfan II		3.4	U	3.4	U	3.6	U	18.	U	3.5	U	3.4	U
1031-07-8	Endosulfan sulfate		3.3	J	3.4	U	2.2	3	18.	U	1.3	J	2.9	J
72-20-8	Endrin		3.4	U	3.4	U	1.3	J	18.	U	1.6	J	3.5	J
7427-93-4	Endrin aldehyde		3.4	U	3.4	U	2.1	3	18.	U	3.5	U	3.4	U
53494-70-5	Endrin ketone		3.4	U	3.4	U	3.6	U	18.	U	140	3	25.	
76-44-8	Heptachlor		1.8	U	1.8	U	1.8	U	9.4	U	1.8	U	1.8	U
1024-57-3	Heptachlor epoxide		1.8	U	1.8	U	1.8	U	9.4	U	0.73	J	5.6	J
72-43-5	Methoxychlor		18.	U	18.	U	18.	U	94.	U	31.	J	110.	3
8001-35-2	Toxaphene		180.	U	180.	U	180.	U	940.	U	180.	U	180.	U
319-84-6	alpha-BHC		1.8	U	1.8	U	1.8	U	9.4	U	1.8	U	1.8	U
5103-71-9	alpha-Chlordane		1.8	U	1.8	U	0.91	J	9m4	U	2.	3	0.79	J
319-85-7	beta-BHC		1.8	U	1.8	U	1.8	U	9.4	U	1.8	U	1.8	U
319-8618	delta-BHC		1.8	U	1.8	U	1.8	U	9.4	U	1.8	U	2.	3
58-89-9	gamma-BHC (Lindane)		1.8	U	1.8	U	1.8	U	9.6	U	1.8	U	1.8	U
5103-74-2	gamma-Chlordane		0.93	3	1.8	U	1.2	J	9.4	U	1.8	U	1.8	U

*** Validation Complete ***

PENSACOLA, SIITE 24
Phase II Soil
Pesticides/PCBs

PEST-8080													
	SAMPLE ID ------->	024-S-0016-01		024-S-0016-07		024-S-0017-01		024-S-0017-07		024-S-0018-01		024-S-0018-07	
	ORIGINAL ID ----->	024S001601		024S001607		024S001701		024S001707		024S001801		024S001807	
	LAB SAMPLE ID --->	S681860*12		S681860*13		S681943*4		S681943*5		S681943*6		S681943*7	
	ID FROM REPORT -->	024S001601		024S001607		024S001701		024S001707		024S001801		024S001807	
	SAMPLE DATE ----->	04/02/96		04/02/96		04/03/96		04/03/96		04/03/96		04/03/96	
	DATE EXTRACTED -->	04/03/96		04/03/96		04/05/96		04/05/96		04/05/96		04/05/96	
	DATE ANALYZED --->	04/05/96		04/05/96		04/09/96		04/09/96		04/09/96		04/09/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL05	VAL	PJL05	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL
72-54-8	4,4'-DDD	2.4	J	3.4	U	3.5	U	3.4	U	3.6	U	3.4	U
72-55-9	4,4'-DDE	48.		1.8	J	6.1	J	3.4	U	10.	J	3.4	U
50-29-3	4,4'-DDT	19.	J	1.5	J	3.	J	3.4	U	3.3	J	3.4	U
309-00-2	Aldrin	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
12674-11-2	Aroclor-1016	35.	U	34.	U	35.	U	34.	U	36.	U	34.	U
11104-28-2	Aroclor-1221	71.	U	69.	U	71.	U	70.	U	73.	U	70.	U
11141-16-5	Aroclor-1232	35.	U	34.	U	35.	U	34.	U	36.	U	34.	U
53469-21-9	Aroclor-1242	35.	U	34.	U	35.	U	34.	U	36.	U	34.	U
12672-29-6	Aroclor-1248	35.	U	34.	U	35.	U	34.	U	36.	U	34.	U
11097-69-1	Aroclor-1254	35.	U	34.	U	35.	U	34.	U	36.	U	34.	U
11096-82-5	Aroclor-1260	35.	U	34.	U	35.	U	34.	U	36.	U	34.	U
60-57-1	Dieldrin	13.	J	3.4	U	4.5	J	3.4	U	3.4	J	3.4	U
959-98-8	Endosulfan I	1.8	U	1.8	U	1.8	U	1.8	U	3.8	J	1.8	U
33213-65-9	Endosulfan II	3.5	U	3.4	U	3.5	U	3.4	U	3.6	U	3.4	U
1031-07-8	Endosulfan sulfate	1.7	J	3.4	U	0.88	J	3.4	U	3.6	U	3.4	U
72-20-8	Endrin	3.5	U	3.4	U	3.5	U	3.4	U	3.6	U	3.4	U
7421-93-4	Endrin aldehyde	3.5	U	3.4	U	3.5	U	3.4	U	3.6	U	3.4	U
53494-70-5	Endrin ketone	3.5	U	3.4	U	3.5	U	3.4	U	3.6	U	3.4	U
76-44-8	Heptachlor	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U	1.8	U	0.73	J	1.8	U	1.8	U	1.8	U
72-43-5	Methoxychlor	18.	U	18.	U	18.	U	18.	U	18.	U	18.	U
8001-35-2	Toxaphene	180.	U	180.	U	180.	U	180.	U	180.	U	180.	U
319-84-6	alpha-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
5103-71-9	alpha-Chlordane	1.8	U	1.8	U	1.8	U	1.8	U	0.87	J	1.8	U
319-85-7	beta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
319-86-8	delta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
5103-74-2	gamma-Chlordane	1.3	J	1.8	U	0.49	J	1.8	U	1.8	U	1.8	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Soil
Pesticides/PCBs

PEST-8080													
		SAMPLE ID ------->	024-S-0019-01		024-S-0019-07		024-S-0020-01		024-S-0020-06		024-S-0021-01		024-S-0021-06	
		ORIGINAL ID ----->	024S001901		024S001907		024S002001		024S002006		024S002101		024S002106	
		LAB SAMPLE ID --->	S681943*8		S681943*9		S681943*10		S681943*11		S681943*12		S681943*13	
		ID FROM REPORT -->	024S001901		024S001907		024S002001		024S002006		024S002101		024S002106	
		SAMPLE DATE ----->	04/03/96		04/03/96		04/03/96		04/03/96		04/03/96		04/03/96	
		DATE EXTRACTED -->	04/05/96		04/05/96		04/05/96		04/05/96		04/05/96		04/05/96	
		DATE ANALYZED --->	04/09/96		04/09/96		04/09/96		04/09/96		04/10/96		04/09/96	
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter		PJL06	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL	PJL06	VAL
72-54-8	4,4'-DDD		3.5	U	3.4	U	3.6	U	3.5	U	6.6	J	3.4	U
72-55-9	4,4'-DDE		8.8	J	3.6	U	4.9		0.4	J	33.	J	1.4	J
50-29-3	4,4'-DDT		3.6	J	3.4	U	1.7	J	3.5	U	25.		0.65	J
309-00-2	Aldrin		1.8	U	1.8	U	1.8	U	1.8	U	1.9	U	1.8	U
12674-11-2	Aroclor-1016		35.	U	34.	U	36.	U	35.	U	36.	U	34.	U
11104-28-2	Aroclor-1221		71.	U	70.	U	73.	U	70.	U	74.	U	70.	U
11141-16-5	Aroclor-1232		35.	U	34.	U	36.	U	35.	U	36.	U	34.	U
53469-21-9	Aroclor-1242		35.	U	34.	U	36.	U	35.	U	36.	U	34.	U
12672-29-6	Aroclor-1248		35.	U	34.	U	36.	U	35.	U	36.	U	34.	U
11097-69-1	Aroclor-1254		35.	U	34.	U	36.	U	35.	U	36.	U	34.	U
11096-82-5	Aroclor-1260		35.	U	34.	U	36.	U	35.	U	36.	U	34.	U
60-57-1	Dieldrin		2.3	J	3.4	U	3.6	U	3.5	U	3.5	J	3.6	U
959-98-8	Endosulfan I		2.6	J	1.8	U	5.4	J	1.8	U	22.	J	1.8	U
33213-65-9	Endosulfan II		3.5	U	3.4	U	3.6	U	3.5	U	3.6	U	3.4	U
1031-07-8	Endosulfan sulfate		3.5	U	0.85	J	3.6	U	3.5	U	2.9	J	3.4	U
72-20-8	Endrin		3.5	U	3.4	U	3.6	U	3.5	U	3.6	U	3.4	U
7421-93-4	Endrin aldehyde		3.5	U	3.4	U	3.6	U	3.5	U	3.6	U	3.4	U
53494-70-5	Endrin ketone		3.5	U	3.4	U	3.6	U	3.5	U	0.45	J	3.4	U
76-44-8	Heptachlor		1.0	U	1.8	U	1.8	U	1.8	U	1.5	J	1.8	U
1024-57-3	Heptachlor epoxide		1.8	U	1.8	U	7.5		1.8	U	71.	D	0.57	J
72-43-5	Methoxychlor		18.	U	18.	U	18.	U	18.	U	19.	U	18.	U
8001-35-2	Toxaphene		180.	U	180.	U	180.	U	180.	U	190.	U	180.	U
319-84-6	alpha-BHC		0.32	J	1.8	U	0.52	J	1.8	U	1.9	U	1.8	U
5103-71-9	alpha-Chlordane		0.52	J	1.8	U	1.1	J	1.8	U	14.	J	1.8	U
319-85-7	beta-BHC		1.8	U	3.8	U	1.8	U	1.8	U	1.9	U	1.8	U
319-86-8	delta-BHC		1.8	U	3.8	U	1.8	U	1.8	U	1.9	U	1.8	U
58-89-9	gamma-BHC (Lindane)		1.8	U	3.8	U	1.8	U	1.8	U	1.9	U	1.8	U
5103-74-2	gamma-Chlordane		0.92	J	1.8	U	6.3	J	1.8	U	120.	D	1.1	J

*** Validation Complete ***

PENSACOLA, 24
Phase II
Pesticides/PCBs

PEST-8080															
	SAMPLE ID ------->	024-S-0022-01		024-C-0022-01		024-S-0022-07		024-S-0023-01		024-C-0023-01		024-S-0023-07	
	ORIGINAL ID ----->	024S002201		024C002201		024S002207		024S002301		024C002301		024S002307	
	LAB SAMPLE ID --->	S681943*14		S681943*1		S681943*15		S683346*2		S683346*1		S683346*3	
	ID FROM REPORT -->	024S002201		024C002201		024S002207		024S002301		024C002301		024S002307	
	SAMPLE DATE ----->	04/03/96		04/03/96		04/03/96		06/07/96		06/07/96		06/07/96	
	DATE EXTRACTED -->	04/05/96		04/05/96		04/05/96		06/11/96		06/11/96		06/11/96	
	DATE ANALYZED --->	04/09/96		04/09/96		04/09/96		06/13/96		06/13/96		06/13/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL06	VAL	PJL06	VAL	PJL06	VAL	PJL10	VAL	PJL10	VAL	PJL10	VAL
72-54-8	4,4'-DDD	2.4	J	2.2	J	3.4	U	3.4	J	3.5	J	3.4	U
72-55-9	4,4'-DDE	24.	J	22.	J	0.55	J	16.	J	13.	J	3.4	U
50-29-3	4,4'-DDT	22.		22.		3.4	U	25.		20.		3.4	U
309-00-2	Aldrin	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
12674-11-2	Aroclor-1016	35.	U	35.	U	34.	U	35.	U	34.	U	34.	U
11104-28-2	Aroclor-1221	70.	U	70.	U	70.	U	70.	U	70.	U	69.	U
11141-16-5	Aroclor-1232	35.	U	35.	U	34.	U	35.	U	34.	U	34.	U
53469-21-9	Aroclor-1242	35.	U	35.	U	34.	U	35.	U	34.	U	34.	U
12672-29-6	Aroclor-1248	35.	U	35.	U	34.	U	35.	U	34.	U	34.	U
11097-69-1	Aroclor-1254	35.	U	35.	U	34.	U	35.	U	34.	U	34.	U
11096-82-5	Aroclor-1260	35.	U	35.	U	34.	U	35.	U	34.	U	34.	U
60-57-1	Dieldrin	17.		15.		3.4	U	8.4		6.8		3.4	U
959-98-8	Endosulfan I	2.		1.3	J	1.8	U	0.72	J	1.8	U	1.8	U
33213-65-9	Endosulfan II	3.5	U	3.5	U	3.4	U	3.5	U	3.4	U	3.4	U
1031-07-8	Endosulfan sulfate	3.5	U	42.		1.3	J	3.5	U	3.4	U	3.4	U
72-20-8	Endrin	3.5	U	3.5	U	3.4	U	3.5	U	3.4	U	3.4	U
7421-93-4	Endrin aldehyde	3.5	U	3.5	U	3.4	U	3.5	U	3.4	U	3.4	U
53494-70-5	Endrin ketone	3.5	U	3.5	U	3.4	U	3.5	U	3.4	U	3.4	U
76-44-8	Heptachlor	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U	1.8	U	1.8	U	0.67	J	1.8	U	1.8	U
72-43-5	Methoxychlor	18.	U	18.	U	18.	U	18.	U	18.	U	18.	U
8001-35-2	Toxaphene	180.	U	180.	U	180.	U	180.	U	180.	U	180.	U
319-84-6	alpha-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
5103-71-9	alpha-Chlordane	1.7	J	1.2	J	1.8	U	0.65	J	1.8	U	1.8	U
319-85-7	beta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
319-86-8	delta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
5103-74-2	gamma-Chlordane	1.8	U	1.8	U	1.8	U	0.91	J	0.9	J	1.8	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
Inorganics

METAL-6010															
	SAMPLE ID ------->	024-G-GS01-02		024-G-GS02-02		024-G-GS03-02		024-G-GS04-02		024-G-GS05-02		024-G-GS06-02	
	ORIGINAL ID ----->	024GGS0102		024GGS0202		024GGS0302		024GGS0402		024GGS0502		024GGS0602	
	LAB SAMPLE ID --->	S682239*4		S682239*5		S682239*6		S682262*3		S682239*7		S682239*8	
	ID FROM REPORT -->	024GGS0102		024GGS0202		024GGS0302		024GGS0402		024GGS0502		024GGS0602	
	SAMPLE DATE ----->	04/17/96		04/17/96		04/17/96		04/19/96		04/17/96		04/17/96	
	DATE EXTRACTED -->	04/25/96		04/25/96		04/25/96		04/25/96		04/25/96		04/25/96	
	DATE ANALYZED --->	04/26/96		04/26/96		04/26/96		04/26/96		04/26/96		04/26/96	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL
7440-36-0	Antimony (Sb)	6.4		3.4	U	3.7	J	3.4	U	3.4	U	5.3	3
7440-38-2	Arsenic (As)	2.2	3	4.7	J	5.4	J	2.	U	2.	U	2.	U
7439-97-6	Mercury (Hg)	0.02	U	0.02	J	0.02	U	0.02	U	0.02	J	0.02	U
7439-92-1	Lead (Pb)	1.4	J	4.5		1.3	U	1.3	U	1.3	U	5.1	
7782-49-2	Selenium (Se)	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U
7429-90-4	Aluminum (Al)	312.		499.		48.	J	658.		171.	J	275.	
7440-39-3	Barium (Ba)	19.9	J	179.	J	191.	J	68.1	J	103.	J	19.1	J
7440-41-7	Beryllium (Be)	0.61	3	0.63	J	0.68	J	0.76	J	0.68	J	0.71	J
7440-43-9	Cadmium (Cd)	11.		15.5		1.9	J	1.3	J	5.1		0.35	U
7440-70-2	Calcium (Ca)	78800.		33500.		132000.		96800.		40600.		29200.	
7440-47-3	Chromium (Cr)	1.8	J	2m2	J	2.	J	1.1	U	1.1	U	1.1	U
7440-48-4	Cobalt (Co)	0.82	J	11.	J	1.	J	0.71	U	1.2	J	0.71	U
7440-50-8	Copper (Cu)	2.	U	5.7	J	1.8	U	1.3	U	1.3	U	1.4	U
7439-89-6	Iron (Fe)	5110.		20400.		7410.		126.		2970.		109.	
7439-95-4	Magnesium (Mg)	4300.	J	1930.	J	14700.		7480.		5270.		2590.	J
7439-96-5	Manganese (Mn)	129.		496.		145.		1.9	J	284.		3.	J
7440-02-0	Nickel (Ni)	1.9	J	137.		3.	J	1.7	J	2.	3	1.3	U
7440-09-7	Potassium (K)	6160.		3890.	3	6280.		4930.	J	3680.	J	9500.	
7440-22-4	Silver (Ag)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
7440-23-5	Sodium (Na)	7510.		4270.	J	7380.		13900.		4860.	J	12400.	
7440-62-2	Vanadium (V)	4.4	J	2.6	J	3.9	J	0.79	U	0.79	U	0.79	U
7440-66-6	Zinc (Zn)	22.1	J	2050.	J	130.	J	14.2	J	202.	J	116.	J
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
7440-28-0	Thallium (Tl)	3.5	J	3.1	J	2.8	U	2.8	U	3.8	J	2.8	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
Inorganics

METAL-6010											
		SAMPLE ID ------->	024-G-GS07-01		024-H-GS07-01		024-G-GS08-01				
		ORIGINAL ID ----->	024GGS0701		024HGS0701		024GGS0801				
		LAB SAMPLE ID --->	S682239*1		S682239*2		S682239*3				
		ID FROM REPORT -->	024GGS0701		024HGS0701		024GGS0801				
		SAMPLE DATE ----->	04/18/96		04/18/96		04/18/96				
		DATE EXTRACTED -->	04/25/96		04/25/96		04/25/96				
		DATE ANALYZED --->	04/26/96		04/26/96		04/26/96				
		MATRIX ---------->	Water		Water		Water				
		UNITS ---------->	UG/L		UG/L		UG/L				
CAS #	Parameter		PJL08	VAL	PJL08	VAL	PJL08	VAL			
7440-36-0	Antimony (Sb)		3.6	J	3.4	U	3.4	U			
7440-38-2	Arsenic (As)		2.6	J	2.	U	2.	U			
7439-97-6	Mercury (Hg)		0.02	U	0.02	U	0.02	U			
7439-92-1	Lead (Pb)		1.3	U	3.3	U	3.	J			
7782-49-2	Selenium (Se)		2.6	U	2.6	U	2.6	U			
7429-90-5	Aluminum (Al)		187.	J	192,	J	1030.				
7440-39-3	Barium (Ba)		3.6	J	3.4	J	94.1	J			
7440-41-7	Beryllium (Be)		0.61	J	0.42	J	0.51	J			
7440-43-9	Cadmium (Cd)		0.35	U	0.35	U	2.	J			
7440-70-2	Calcium (Ca)		24500.		25000.		24100.				
7440-47-3	Chromium (Cr)		1.1	U	1.1	U	1.1	U			
7440-48-4	Cobalt (Co)		0.99	J	0.71	U	1.9	J			
7440-50-8	Copper (Cu)		1.3	U	1.3	U	1.4	J			
7439-89-6	Iron (Fe)		65.8	J	35.2	J	23.	U			
7439-95-4	Magnesium (Mg)		1160.	J	1190.	J	2370.	J			
7439-96-5	Manganese (Mn)		1.	J	0.67	J	158.				
7440-02-0	Nickel (Ni)		1.3	U	1.3	U	1.4	J			
7440-09-7	Potassium (K)		2690.	J	2720.	J	7000.				
7440-22-4	Silver (Ag)		1.	U	1.	U	1.	U			
7440-23-5	Sodium (Na)		3880.	J	3940.	J	5500.				
7440-62-2	Vanadium (V)		1.	J	0.89	J	0.79	U			
7440-66-6	Zinc (Zn)		5.1	J	4.7	J	8.2	J			
57-12-5	Cyanide (CN)		10.	U	10.	U	10.	U			
7440-28-0	Thallium (Tl)		2.8	U	2.8	U	6.1	J			

*** Validation Complete ***

PENSACOLA, SIITE 24
Phase II Groundwater
Inorganics

6010-METAL								
	SAMPLE ID ------->	024-G-GR09-01		024-H-GR09-01				
	ORIGINAL ID ----->	024GGR0901		024HGR0901				
	LAB SAMPLE ID --->	S683346*4		S683346*5				
	ID FROM REPORT -->	024GGR0901		024HGR0901				
	SAMPLE DATE ----->	06/07/96		06/07/96				
	DATE EXTRACTED -->	06/10/96		06/10/96				
	DATE ANALYZED --->	06/11/96		06/11/96				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	PJL10	VAL	PJL10	VAL			
7440-36-0	Antimony (Sb)	65.9		65.7				
7440-43-9	Cadmium (Cd)	0.35	U	0.35	U			
7439-96-5	Manganese (Mn)	8.6	J	10.4				
7440-02-0	Nickel <Ni)	1.3	U	2.6	J			
7440-28-0	Thallium (Tl)	1.	U	1.	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
Sb

SB							
	SAMPLE ID ------->	024-G-GR09-02		024-G-GR10-01			
	ORIGINAL ID ----->	024GGR0902		024GGR1001			
	LAB SAMPLE ID --->	93691-1		83859-1			
	ID FROM REPORT -->	024GGR0902		024GGR1001			
	SAMPLE DATE ----->	06/24/96		07/02/96			
	DATE ANALYZED --->	06/28/96		07/08/96			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	ug/l		ug/l			
CAS #	Parameter	83491	VAL	83859	VAL		
7440-36-0	Antimony (Sb)	67.		13.			

*** Validation Complete ***

DATALCP3
06/10/97

PENSACOLA, SITE 24
Phase II Groundwater
VOCs

LOWVOA													
	SAMPLE ID ------->	024-G-GS01-02		024-G-GS02-02		024-G-GS03-02		024-G-GS04-02		024-G-GS05-02		024-G-GS06-02	
	ORIGINAL ID ----->	024GGS0102		024GGS0202		024GGS0302		024GGS0402		024GGS0502		024GGS0602	
	LAB SAMPLE ID --->	S682239*4		S682239*5		S682239*6		S682262*3		S682239*7		S682239*8	
	ID FROM REPORT -->	024GGS0102		024GGS0202		024GGS0302		024GGS0402		024GGS0502		024GGS0602	
	SAMPLE DATE ----->	04/17/96		04/17/96		04/17/96		04/19/96		04/17/96		04/17/96	
	DATE ANALYZED --->	04/26/96		04/26/96		04/25/96		04/26/96		04/25/96		04/25/96	
	MATRIX ---------->	Water		Water		Water		Water		water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL
67-64-1	Acetone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
74-97-5	Chlorobromomethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
156-59-2	cis-1,2-Dichloroethene	0.5	J	19.		1.	U	1.	U	3.		1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U	0.7	J	1.	U	1.	U	0.5	J	1.	U
74-87-3	Chloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-01-4	Vinyl chloride	1.	U	4.		1.	U	1.	U	1.	U	1.	U
74-83-9	Bromomethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-00-3	Chloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-35-4	1,1-Dichloroethene	1.	U	0.2	J	1.	U	1.	U	1.	U	1.	U
75-09-2	Methylene chloride	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
75-34-3	1,1-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
67-66-3	Chloroform	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
71-55-6	1,1,1-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
56-23-5	Carbon tetrachloride	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
71-43-2	Benzene	1.	U	1.	U	0.7	J	1.	U	1.	U	1.	U
107-06-2	1,2-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-01-6	Trichloroethene	1.	U	5.		1.	U	1.	U	1.		1.	U
78-87-5	1,2-Dichloropropane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-27-4	Bromodichloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
108-88-3	Toluene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	3,	U
127-18-4	Tetrachloroethene	1.	U	0.9	J	1.	U	2.		1.	U	1.	U
124-48-1	Dibromochloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
106-93-4	1,2-Dibromoethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
108-90-7	Chlorobenzene	1.	U	1.	U	0.8	J	1.	U	1.	U	1.	U
100-41-4	Ethylbenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
100-42-5	Styrene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-25-2	Bromoform	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-15-0	Carbon disulfide	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
78-93-3	2-Butanone (MEK)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
591-78-6	2-Hexanone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
1330-20-7	Xylene (Total)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** **Validation** Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
VOCs

LOWVOA													
	SAMPLE ID ------->	024-G-GS01-02		024-G-GS02-02		024-G-GS03-02		024-G-GS04-02		024-G-GS05-02		024-G-GS06-02	
	ORIGINAL ID ----->	024GGS0102		024GGS0202		024GGS0302		024GGS0402		024GGS0502		024GGS0602	
	LAB SAMPLE ID --->	S682239*4		S682239*5		S682239*6		S682262*3		S682239*7		S682239*8	
	ID FROM REPORT -->	024GGS0102		024GGS0202		024GGS0302		024GGS0402		024GGS0502		024GGS0602	
	SAMPLE DATE ----->	04/17/96		04/17/96		04/17/96		04/19/96		04/17/96		04/17/96	
	DATE ANALYZED --->	04/26/96		04/26/96		04/25/96		04/26/96		04/25/96		04/25/96	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL
541-73-1	1,3-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U	1.	U	3.		1.	U	1.	U	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
VOCs

LOWVOA											
	SAMPLE ID ------->	024-G-GS07-01		024-H-GS07-01		024-G-GS08-01					
	ORIGINAL ID ----->	024GGS0701		024HGS0701		024GGS0801					
	LAB SAMPLE ID --->	S682239*1		S682239*2		S682239*3					
	ID FROM REPORT -->	024GGS0701		024HGS0701		024GGS0801					
	SAMPLE DATE ----->	04/18/96		04/18/96		04/18/96					
	DATE ANALYZED --->	04/26/96		04/25/96		04/26/96					
	MATRIX ---------->	Water		Water		Water					
	UNITS ---------->	UG/L		UG/L		UG/L					
CAS #	Parameter	PJL08	VAL	PJL08	VAL	PJL08	VAL				
67-64-1	Acetone	5.	U	5.	U	5.	U				
74-97-5	Chlorobromomethane	1.	U	1.	U	1.	U				
156-59-2	cis-1,2-Dichloroethene	1.	U	1.	U	1.	U				
156-60-5	trans-1,2-Dichloroethene	1.	U	1.	U	1.	U				
74-87-3	Chloromethane	1.	U	1.	U	1.	U				
75-01-4	Vinyl chloride	1.	U	1.	U	1.	U				
74-83-9	Bromomethane	1.	U	1.	U	1.	U				
75-00-3	Chloroethane	1.	U	1.	U	1.	U				
75-35-4	1,1-Dichloroethene	1.	U	1.	U	1.	U				
75-09-2	Methylene chloride	2.	U	2.	U	2.	U				
75-34-3	1,1-Dichloroethane	1.	U	1.	U	1.	U				
67-66-3	Chloroform	1.	U	1.	U	1.	U				
71-55-6	1,1,1-Trichloroethane	1.	U	1.	U	1.	U				
56-23-5	Carbon tetrachloride	1.	U	1.	U	1.	U				
71-43-2	Benzene	1.	U	1.	U	1.	U				
107-06-2	1,2-Dichloroethane	1.	U	1.	U	1.	U				
79-01-6	Trichloroethene	1.	U	1.	U	1.	U				
78-87-5	1,2-Dichloropropane	1.	U	1.	U	1.	U				
75-27-4	Bromodichloromethane	1.	U	1.	U	1.	U				
108-88-3	Toluene	1.	U	1.	U	1.	U				
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U	1.	U				
127-18-4	Tetrachloroethene	0.3	J	1.	U	1.	U				
124-48-1	Dibromochloromethane	1.	U	1.	U	1.	U				
106-93-4	1,2-Dibromoethane	1.	U	1.	U	1.	U				
108-90-7	Chlorobenzene	1.	U	1.	U	1.	U				
100-41-4	Ethylbenzene	1.	U	1.	U	1.	U				
100-42-5	Styrene	1.	U	1.	U	1.	U				
75-25-2	Bromoform	1.	U	1.	U	1.	U				
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U	1.	U				
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	1.	U	1.	U				
75-15-0	Carbon disulfide	1.	U	1.	U	0.2	J				
78-93-3	2-Butanone (MEK)	5.	U	5.	U	5.	U				
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U	5.	U	5.	U				
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U	1.	U				
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U	1.	U				
591-78-6	2-Hexanone	5.	U	5.	U	5.	U				
1330-20-7	Xylene (Total)	1.	U	1.	U	1.	U				

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
VOCs

LOWVOA								
	SAMPLE ID ------->	024-G-GS07-01		024-H-GS07-01		024-G-GS08-01		
	ORIGINAL ID ----->	024GGS0701		024HGS0701		024GGS0801		
	LAB SAMPLE ID --->	S682239*1		S682239*2		S682239*3		
	ID FROM REPORT -->	024GGS0701		024HGS0701		024GGS0801		
	SAMPLE DATE ----->	04/18/96		04/18/96		04/18/96		
	DATE ANALYZED --->	04/26/96		04/25/96		04/26/96		
	MATRIX ---------->	Water		Water		Water		
	UNITS ---------->	UG/L		UG/L		UG/L		
CAS #	Parameter	PJL08	VAL	.08	VAL	PJL08	VAL	
541-73-1	1,3-Dichlorobenzene	1.	U	1.	U	1.	U	
106-46-7	1,4-Dichlorobenzene	1.	U	1.	U	1.	U	
95-50-1	1,2-Dichlorobenzene	1.	U	1.	U	1.	U	

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
VOCs

VOA-8240								
	SAMPLE ID ------->	024-G-GR09-01		024-H-GR09-01				
	ORIGINAL ID ----->	024GGR0901		024HGR0901				
	LAB SAMPLE ID --->	S683346*4		S683346*5				
	ID FROM REPORT -->	024GGR0901		024HGR0901				
	SAMPLE DATE ----->	06/07/96		06/07/96				
	DATE ANALYZED --->	06/12/96		06/12/96				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	PJL10	VAL	PJL10	VAL			
67-64-1	Acetone	10.	U	10.	U			
74-87-3	Chloromethane	1.	U	1.	U			
75-01-4	Vinyl chloride	1.	U	1.	U			
74-83-9	Bromomethane	1.	U	1.	U			
75-00-3	Chloroethane	1.	U	1.	U			
75-35-4	1,1-Dichloroethene	1.	U	1.	U			
75-09-2	Methylene chloride	1.	U	1.	U			
75-34-3	1,1-Dichloroethane	1.	U	1.	U			
67-66-3	Chloroform	1.	U	1.	U			
71-55-6	3,1,1-Trichloroethane	1.	U	1.	U			
56-23-5	Carbon tetrachloride	1.	U	1.	U			
71-43-2	Benzene	1.	U	1.	U			
107-06-2	1,2-Dichloroethane	1.	U	1.	U			
79-01-6	Trichloroethene	1.	U	1.	U			
78-87-5	1,2-Dichloropropane	1.	U	1.	U			
75-27-4	Bromodichloromethane	1.	U	1.	U			
108-88-3	Toluene	2.8		2.1				
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U			
127-18-4	Tetrachloroethene	1.	U	1.	U			
124-48-1	Dibromochloromethane	1.	U	1.	U			
108-90-7	Chlorobenzene	1.	U	1.	U			
100-41-4	Ethylbenzene	1.	U	1.	U			
100-42-5	Styrene	1.	U	1.	U			
75-25-2	Bromoform	1.	U	1.	U			
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U			
75-15-0	Carbon disulfide	1.	U	1.	U			
78-93-3	2-Butanone (MEK)	5.8	J	4.	J			
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U			
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U			
10061-02-6	trans-3,3-Dichloropropene	1.	U	1.	U			
591-70-6	2-Hexanone	10.	U	10.	U			
1330-20-7	Xylene (Total)	1.	U	1.	U			
540-59-0	1,2-Dichloroethene (total)	1.	U	1.	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
SVOCs

SVOA-8270										
	SAMPLE ID ------->	024-G-GS07-01		024-H-GS07-01		024-G-GS08-01				
	ORIGINAL ID ----->	024GGS0701		024HGS0701		024GGS0801				
	LAB SAMPLE ID --->	S682239*1		S682239*2		S682239*3				
	ID FROM REPORT -->	024GGS0701		024HGS0701		024GGS0801				
	SAMPLE DATE ----->	04/18/96		04/18/96		04/18/96				
	DATE EXTRACTED -->	04/25/96		04/25/96		04/25/96				
	DATE ANALYZED --->	04/27/96		04/27/96		04/27/96				
	MATRIX ---------->	Water		Water		Water				
	UNITS ---------->	UG/L		UG/L		UG/L				
CAS #	Parameter	PJL08	VAL	PJL08	VAL	PJL08	VAL			
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U			
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U			
541-73-1	1,3-Dic lorobenzene	10.	U	10.	U	10.	U			
106-46-7	1,4-Dic lorobenzene	10.	U	10.	U	10.	U			
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U	10.	U			
95-95-4	2,4,5-Trichlorophenol	25.	U	25.	U	25.	U			
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U			
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U			
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U			
51-28-5	2,4-Dinitrophenol	25.	U	25.	U	25.	U			
121-14-2	2,4-Dinitrotoluene	1.	U	1.	U	1.	U			
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U			
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U			
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U			
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U			
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U			
88-74-4	2-Nitroaniline	25.	U	25.	U	25.	U			
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U			
91-94-1	3,3'-Dichlorobenzidine	10.	U	10.	U	10.	U			
9999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	U	10.	U			
99-09-2	3-Nitroaniline	25.	U	25.	U	25.	U			
534-52-1	2-Methyl-4,6-Dinitrophenol	25.	U	25.	U	25.	U			
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U	10.	U			
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U			
106-47-8	4-Chloroaniline	10	U	10.	U	10.	U			
7005-72-3	4-Chlorophenylphenylether	10.	U	10.	U	10.	U			
100-01-6	4-Nitroaniline	25.	U	25.	U	25.	U			
100-02-7	4-Nitrophenol	25.	U	25.	U	25.	U			
83-32-9	Acenaphthene	10.	U	10.	U	10.	U			
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U			
120-12-7	Anthracene	10.	U	10.	U	10.	U			
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U			
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U			
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U			
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U			
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
SVOCS

SVOA-8270											
	SAMPLE ID ------->	024-G-GS07-01		024-H-GS07-01		024-G-GS08-01					
	ORIGINAL ID ----->	024GGS0701		024HGS0701		024GGS0801					
	LAB SAMPLE ID --->	S682239*1		S682239*2		S682239*3					
	ID FROM REPORT -->	024GGS0701		024HGS0701		024GGS0801					
	SAMPLE DATE ----->	04/18/96		04/18/96		04/18/96					
	DATE EXTRACTED -->	04/25/96		04/25/96		04/25/96					
	DATE ANALYZED --->	04/27/96		04/27/96		04/27/96					
	MATRIX ---------->	Water		Water		Water					
				UG/L		UG/L					
CAS #	Parameter	PJL08	VAC	PJL08	VAL	PJL08	VAL				
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U				
86-74-8	Carbazole	10.	U	10.	U	10.	U				
218-01-9	Chrysene	10.	U	10.	U	10.	U				
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U				
117-84-0	Di-n-octyl phthalate	10.	U	10.	U	10.	U				
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U	10.	U				
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U				
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U				
131-11-3	Dimethyl phthalate	10.	U	10.	U	10.	U				
206-44-0	Fluoranthene	10.	U	10.	U	10.	U				
86-73-7	Fluorene	10.	U	10.	U	10.	U				
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U				
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U				
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U	10.	U				
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U				
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U				
78-59-1	Isophorone	10.	U	10.	U	10.	U				
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U				
86-30-6	N-Nitrosodiphenylamine	NR		NR		NR					
91-20-3	Naphthalene	10.	U	10.	U	10.	U				
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U				
87-86-5	Pentachlorophenol	25.	U	25.	U	25.	U				
85-01-8	Phenanthrene	10.	U	10.	U	10.	U				
108-95-2	Phenol	10.	U	10.	U	10.	U				
129-00-0	Pyrene	10.	U	10.	U	10.	U				
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U				
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U				
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U				
122-39-4	Diphenylamine	10.	U	10.	U	10.	U				
108-39-4	3-Methylphenol (m-Cresol)	NR		NR		NR					

*** Validation Complete ***

DATALCP3
06/10/97

PENSACOLA, SITE 24
Phase II Groundwater
Pesticides/PCBs

PEST-8080													
	SAMPLE ID ------->	024-G-GS01-02		024-G-GS02-02		024-G-GS03-02		024-G-GS04-02		024-G-GS05-02		024-G-GS06-02	
	ORIGINAL ID ----->	024GGS0102		024GGS0202		024GGS0302		024GGS0402		024GGS0502		024GGS0602	
	LAB SAMPLE ID --->	S682239*4		S682239*5		S682239*6		S682262*3		S682239*7		S682239*8	
	ID FROM REPORT -->	024GGS0102		024GGS0202		024GGS0302		024GGS0402		024GGS0502		024GGS0602	
	SAMPLE DATE ----->	04/17/96		04/17/96		04/17/96		04/19/96		04/17/96		04/17/96	
	DATE EXTRACTED -->	04/23/96		04/23/96		04/23/96		04/23/96		04/23/96		04/23/96	
	DATE ANALYZED --->	04/30/96		04/30/96		04/30/96		04/30/96		04/30/96		04/30/96	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL	PJL08	VAL
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.059	J	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.012	J	0.1	U	0.021	J	0.0023	J	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	2.		2.	U	2.	U	2.	U	2.	U	2.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
60-57-1	Dieldrin	0.34		0.1	U	0.031	J	0.1	U	0.1	U	0.1	U
959-98-8	Endosulfan I	0.1		0.05	U	0.0083	J	0.05	U	0.05	U	0.05	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7621-93-4	Endrin aldehyde	0.1	U	0.1	U	0.0093	J	0.1	U	0.1	U	0.1	U
53494-70-5	Endrin ketone	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.0063	J	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	01013	J	0.05	U	0.05	U	0.021	3	0.05	U	0.05	U
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
8001-35-2	Toxaphene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-71-9	alpha-Chlordane	0.089		0.05	U	0.0074	3	0,0085	3	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.0062	J	0.012	J	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.013	J	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-74-2	gamma-Chlordane	0.081		0.05	U	0.05	U	0.0094	3	0.05	U	0.05	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase II Groundwater
Pesticides/PCBs

PEST-8080											
		SAMPLE ID ------->	024-G-GS07-01		024-H-GS07-01		024-G-GS08-01				
		ORIGINAL ID ----->	024GGS0701		024HGS0701		024GGS0801				
		LAB SAMPLE ID --->	S682239*1		S682239*2		S682239*3				
		ID FROM REPORT -->	024GGS0701		024HGS0701		024GGS0801				
		SAMPLE DATE ----->	04/18/96		04/18/96		04/18/96				
		DATE EXTRACTED -->	04/23/96		04/23/96		04/23/96				
		DATE ANALYZED --->	04/30/96		04/30/96		04/30/96				
		MATRIX ---------->	Water		Water		Water				
		UNITS ----------->	UG/L		UG/L		UG/L				
CAS #	Parameter		PJL08	VAL	PJL08	VAL	PJL08	VAL			
72-54-8	4,4'-DDD		0.1	U	0.1	U	0.1	U			
72-55-9	4,4'-DDE		0.1	U	0.1	U	0.1	U			
50-29-3	4,4'-DDT		0.1	U	0.1	U	0.1	U			
309-00-2	Aldrin		0.05	U	0.05	U	0.05	U			
12674-11-2	Aroclor-1016		1.	U	1.	U	1.	U			
11104-28-2	Aroclor-1221		2.	U	2.	U	2.	U			
11141-16-5	Aroclor-1232		1.	U	1.	U	1.	U			
53469-21-9	Aroclor-1242		1.	U	1.	U	1.	U			
12672-29-6	Aroclor-1248		1.	U	1.	U	1.	U			
11097-69-1	Aroclor-1254		1.	U	1.	U	1.	U			
11096-82-5	Aroclor-1260		1.	U	1.	U	1.	U			
60-57-1	Dieldrin		0.0027	J	0.1	U	0.1	U			
959-98-8	Endosulfan I		0.05	U	0.05	U	0.05	U			
33213-65-9	Endosulfan II		0.1	U	0.1	U	0.1	U			
1031-07-8	Endosulfan sulfate		0.1	U	0.1	U	0.1	U			
72-20-8	Endrin		0.1	U	0.1	U	0.1	U			
7421-93-4	Endrin aldehyde		0.1	U	0.1	U	0.1	U			
53494-70-5	Endrin ketone		0.1	U	0.1	U	0.1	U			
76-44-8	Heptachlor		0.05	U	0.05	U	0.05	U			
1024-57-3	Heptachlor epoxide		0.05	U	0.05	U	0.05	U			
72-43-5	Methoxychlor		0.5	U	0.5	U	0.5	U			
8001-35-2	Toxaphene		5.	U	5.	U	5.	U			
319-84-6	alpha-BHC		0.05	U	0.05	U	0.05	U			
5103-71-9	alpha-Chlordane		0.0043	J	0.05	U	0.05	U			
319-85-7	beta-BHC		0.05	U	0.05	U	0.05	U			
319-86-8	delta-BHC		0.05	U	0.05	U	0.05	U			
58-89-9	gamma-BHC (Lindane)		0.05	U	0.05	U	0.05	U			
5103-74-2	gamma-Chlordane		0.05	U	0.05	U	0.05	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase III Groundwater
Inorganics

CLP FTAL								
	SAMPLE ID ------->	024-G-GS09-03		024-H-GS09-03				
	ORIGINAL ID ----->	024GGS0903		024HGS0903				
	LAB SAMPLE ID --->	S684387*1		S684387*2				
	ID FROM REPORT -->	024GGS0903		024HGS0903				
	SAMPLE DATE ----->	07/29/96		07/29/96				
	DATE EXTRACTED -->	08/12/96		08/06/96				
	DATE ANALYZED --->	08/13/96		08/07/96				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	PJL12	VAL	PJL12	VAL			
7429-90-5	Aluminum (Al)	226.		186.	J			
7440-36-0	Antimony (Sb)	27.1		23.7				
7440-38-2	Arsenic (As)	1.5	U	1.	U			
7440-39-3	Barium (Ba)	31.2		25.7				
7440-41-7	Beryllium (Be)	0.46	J	0.19	UJ			
7440-43-9	Cadmium (Cd)	2.6	U	2.6	U			
7440-70-2	Calcium (Ca)	25700.		22300.				
7440-47-3	Chromium (Cr)	4.1	U	4.1	U			
7440-48-4	Cobalt (Co)	1.9	U	1.9	U			
7440-50-8	Copper (Cu)	3.2	U	3.7	U			
7439-89-6	Iron (Fe)	99.5	U	61.	U			
7439-92-1	Lead (Pb)	0.6	U	0.6	U			
7439-95-4	Magnesium (Mg)	3090.		2650.				
7439-96-5	Manganese (Mn)	7.1	U	4.7	U			
7439-97-6	Mercury (Hg)	0.03	UJ	0.03	UJ			
7440-02-0	Nickel (Ni)	4.2	U	4.2	U			
7440-09-7	Potassium (K)	902.	J	808.	J			
7782-49-2	Selenium (Se)	1.6	UJ	1.6	UJ			
7440-22-4	Silver (Ag)	1.1	U	1.1	UJ			
7440-23-5	Sodium (Na)	599u.		5110.				
7440-28-0	Thallium (Tl)	1.4	J	1.4	J			
7440-62-2	Vanadium (V)	2.3	U	2.3	U			
7440-66-6	Zinc (Zn)	188.		157.				
57-12-5	Cyanide (CN)	10.	U	10.	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase 111 Groundwater
VOCs

	SAMPLE ID ------->	024-G-GS09-03		024-H-GS09-03				
	ORIGINAL ID ----->	024GGS0903		024HGS0903				
	LAB SAMPLE ID --->	S684387*1		S684387*2				
	ID FROM REPORT -->	024GGS0903		024HGS0903				
	SAMPLE DATE ----->	07/29/96		07/29/96				
	DATE ANALYZED --->	08/23/96		08/23/96				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	PJL12	VAL	PJL12	VAL			
74-87-3	Chloromethane	1.	U	1.	U			
74-83-9	Bromomethane	1.	U	1.	U			
75-01-4	Vinyl chloride	1.	U	1.	U			
75-00-3	Chloroethane	1.	U	1.	U			
75-09-2	Methylene chloride	2.	U	2.	U			
67-64-1	Acetone	5.	U	5.	U			
75-15-0	Carbon disulfide	1.	U	1.	U			
75-35-4	1,1-Dichloroethene	1.	U	1.	U			
75-34-3	1,1-Dichloroethane	1.	U	1.	U			
156-59-2	cis-1,2-Dichloroethene	1.	U	1.	U			
156-60-5	trans-1,2-Dichloroethene	1.	U	1.	U			
67-66-3	Chloroform	1.	U	1.	U			
107-06-2	1,2-Dichloroethane	1.	U	1.	U			
78-93-3	2-Butanone (MEK)	5.	U	5.	U			
74-97-5	Chlorobromomethane	1.	U	1.	U			
71-55-6	1,1,3-Trichloroethane	1.	U	1.	U			
56-23-5	Carbon tetrachloride	1.	U	1.	U			
75-27-4	Bromodichloromethane	1.	U	1.	U			
78-87-5	1,2-Dichloropropane	1.	U	1.	U			
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U			
79-01-6	Trichloroethene	1.	U	1.	U			
124-48-1	Dibromochloromethane	1.	U	1.	U			
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U			
71-43-2	Benzene	1.	U	1.	U			
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U			
75-25-2	Bromoform	1.	U	1.	U			
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U	5.	U			
591-78-6	2-Hexanone	4.	U	5.	U			
127-18-4	Tetrachloroethene	1.	U	1.	U			
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U			
106-93-4	1,2-Dibromoethane	1.	U	1.	U			
108-88-3	Toluene	0.2	J	1.	U			
108-90-7	Chlorobenzene	1.	U	1.	U			
100-41-4	Ethylbenzene	1.	U	1.	U			
100-42-5	Styrene	1.	U	1.	U			
1330-20-7	Xylene (Total)	1.	U	1.	U			
541-73-1	1,3-Dichlorobenzene	1.	U	1.	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase III Groundwater
VOCs

LOWVOA								
	SAMPLE ID ------->	024-G-GS09-03		024-H-GS09-03				
	ORIGINAL ID ----->	024GGS0903		024HGS0903				
	LAB SAMPLE ID --->	S684387*1		S684387*2				
	ID FROM REPORT -->	024GGS0903		024HGS0903				
	SAMPLE DATE ----->	07/29/96		07/29/96				
	DATE ANALYZED --->	08/23/96		08/23/96				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	PJL12	VAL	PJL12	VAL			
106-46-7	1,4-Dichlorobenzene	1.	U	1.	U			
95-50-1	1,2-Dichlorobenzene	1.	U	1.	U			
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	1.	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

CLP METAL															
	SAMPLE ID ------->	024-E-S000-01		071-D-IB00-01		MBL-0-NP02-01		MBL-0-NP02-02		MBL-0-NP02-06		MBL-0-NP14-04	
	ORIGINAL ID ----->	024ES00001		071DIB0001		MBLK1		MBLK2		MBLK3		MBLK1	
	LAB SAMPLE ID --->	S554781*1		S554781*2		S554781*4		S554814*18		S554814*19		S555182B*3	
	ID FROM REPORT -->	024ES00001		071DIB0001		MBLK1		MBLK2		MBLK3		MBLK1	
	SAMPLE DATE ----->	08/29/95		08/29/95									
	DATE EXTRACTED -->											09/25/95	
	DATE ANALYZED --->	09/11/95		09/11/95		09/11/95		09/19/95		09/06/95		10/11/95	
	MATRIX ---------->	Water		Water		Water		Soil		Soil		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		MG/KG		MG/KG		UG/L	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP14	VAL
7440-38-2	Arsenic (As)	1.	U	1.	U	2.2	B	0.26	8	NU		1.5	U
7439-97-6	Mercury (Hg)	0.04	U	0.04	U	0.035	U	0.009	U	NR		0.055	U
7439-92-1	Lead (Pb)	0.48	U	0.48	U	0.48	U	0.097	U	1.5	U	0.44	U
7782-49-2	Selenium (Se)	1.4	UW	1.4	UW	1.4	U	0.28	U	NR		1.2	U
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	0.25	U	NR		10.	U
7429-90-5	Aluminum (Al)	25.3	B	9.9	B	19.8	B	3.9	0	NR		9.6	U
7440-36-0	Antimony (Sb)	9.3	U	9.3	U	9.4	B	1.9	U	NU		2.3	U
7440-39-3	Barium (Ba)	2.5	B	2.3	B	0.54	U	0.11	U	WR		0.5	U
7440-41-7	Beryllium (Be)	0.3	U	0.3	U	0.3	U	0,059	U	NR		0.14	U
7440-43-9	Cadmium (Cd)	3.2	U	3.2	U	3.2	U	0.63	U	NR		1.4	U
7440-70-2	Calcium (Ca)	249.	B	146.	B	67.1	B	5.5	B	MU		48.9	B
7440-47-3	Chromium (Cr)	3.5	U	3.5	U	3.5	U	0.7	U	NR		4.2	U
7440-48-4	Cobalt (Co)	1.6	U	1.6	U	7.6	U	0.31	U	NR		1.2	U
7440-50-8	Copper (Cu)	5.6	U	5.6	U	5.6	U	1.1	U	NR		2.3	U
7439-89-6	Iron (Fe)	14.3	B	8.3	B	4.	U	1.3	B	NR		5.8	U
7439-95-4	Magnesium (Mg)	32.6	U	12.6	U	12.6	U	2.5	U	NR		12.8	U
7439-96-5	Manganese (Mn)	0.98	U	0.98	U	0.98	U	0.2	U	NR		1.1	U
7440-02-0	Nickel (Ni)	3.8	U	3.8	U	3.8	U	0.76	U	NR		3.	U
7440-09-7	Potassium (K)	57.7	U	57.7	U	57.7	U	12.5	B	NR		65.5	U
7440-22-4	Silver (Ag)	2.2	U	2.2	U	[illegible]	U	0.44	U	NR		3.5	U
7440-23-5	Sodium (Na)	69.6	B	45.9	B	26.5	U	5.3	U	NR		64.6	B
7440-62-2	Vanadium (V)	1.2	U	1.4	B	1.2	U	0.25	U	NR		2.	U
7440-66-6	Zinc (Zn)	18.9	B	14.2	0	4.1	B	0.21	0	NR		1.9	0
7440-28-0	Thallium (Tl)	0.5	U	0.5	U	0.5	U	0.16	B	NR		0.74	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Sampl s

CLP METAL

SAMPLE ID -------->	MBL-0-NP14-06
ORIGINAL ID ----->	MBLK1
LAB SAMPLE ID --->	S555208*7
ID FROM REPORT -->	MBLK1
SAMPLE DATE ----->	
DATE EXTRACTED -->	09/25/95
DATE ANALYZED --->	10/09/95
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	ENP14	VAL
7440-38-2	Arsenic (As)	1.5	U
7439-97-6	Mercury (Hg)	0.055	U
7439-92-1	Lead (Pb)	0.44	U
7782-49-2	Selenium (Se)	1.2	U
57-12-5	Cyanide (CN)	10.	U
7429-90-5	Aluminum (Al)	9.6	U
7440-36-0	Antimony (Sb)	2.3	U
7440-39-3	Barium (Ba)	0.5	U
7440-41-7	Beryllium (Be)	0.14	U
7440-43-9	Cadmium (Cd)	1.4	U
7440-70-2	Calcium (Ca)	48.9	B
7440-47-3	Chromium (Cr)	4.2	U
7440-48-4	Cobalt (Co)	1.2	U
7440-50-8	Copper (Cu)	2.3	U
7439-89-6	Iron (Fe)	5.8	U
7439-95-4	Magnesium (Mg)	12.8	U
7439-96-5	Manganese (Mn)	1.1	U
7440-02-0	Nickel (Ni)	3.	U
7440-09-7	Potassium (K)	65.5	U
7440-22-4	Silver (Ag)	1.5	U
7440-23-5	Sodium (Na)	64.6	B
7440-62-2	Vanadium (V)	2.1	U
7440-66-6	Zinc (Zn)	1.9	B
7440-28-0	Thallium (Tl)	0.74	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

CLP PEST															
		SAMPLE ID ------->	024-C-0001-01 DL		024-S-0003-01 DL		024-S-0004-01 DL		024-E-S000-01		071-D-IB00-01		MBL-0-NP02-01		
		ORIGINAL ID ----->	024C000101		024S000301		024S000401		024ES00001		071DIB0001		MBLK1		
		LAB SAMPLE ID --->	S554814*24		S554814*20		S554814*25		S554781*1		S554781*2		S554781*4		
		ID FROM REPORT -->	024C000101		024S000301		024S000401		024ES00001		071DIB0001		MBLK1		
		SAMPLE DATE ----->	08/29/95		08/30/95		08/30/95		08/29/95		08/29/95				
		DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		08/31/95		08/31/95		08/31/95		
		DATE ANALYZED --->	09/22/95		09/22/95		09/22/95		09/12/95		09/12/95		09/11/95		
		MATRIX ---------->	Soil		Soil		Soil		Water		Water		Water		
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/L		UG/L		UG/L		
CAS #	Parameter		ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	
72-54-8	4,4'-DDD		17.	UR	86.	UR	15.	UR	0.11	U	0.11	U	0.1	U	
72-55-9	4,4'-DDE		97.	D	240.	D	44.	UR	0.11	U	0.11	U	0.1	U	
50-29-3	4,4'-DDT		120.	D	300.	D	83.	UR	0.11	U	0.11	U	0.1	U	
309-00-2	Aldrin		8.6	UR	18.	UR	9.1	UR	0.055	U	0.055	U	0.05	U	
12674-11-2	Aroclor-1016		170.	UR	340.	UR	180.	UR	1.1	U	1.1	U	1.	U	
11104-28-2	Aroclor-1221		340.	UR	700.	UR	360.	UR	2.2	U	2.2	U	2.	U	
11141-16-5	Aroclor-1232		170.	UR	340.	UR	180.	UR	1.1	U	1.1	U	1.	U	
53469-21-9	Aroclor-1242		170.	UR	340.	UR	180.	UR	1.1	U	1.1	U	1.	U	
12672-29-6	Aroclor-1248		170.	UR	340.	UR	180.	UR	1.1	U	1.1	U	1.	U	
11097-69-1	Aroclor-1254		170.	UR	340.	UR	180.	UR	1.1	U	1.1	U	1.	U	
11096-82-5	Aroclor-1260		170.	UR	110.	UR	180.	UR	0.41	J	1.1	U	1.	U	
60-57-1	Dieldrin		11.	UR	32.	UR	2.6	UR	0.11	U	0.11	U	0.1	U	
959-98-8	Endosulfan I		8.6	UR	18.	UR	9.1	UR	0.055	U	0.055	U	0.05	U	
33213-65-9	Endosulfan II		17.	UR	34.	UR	18.	UR	0.11	U	0.11	U	0.1	U	
1031-07-8	Endosulfan sulfate		17.	UR	34.	UR	18.	UR	0.11	U	0.11	U	0.1	U	
72-20-8	Endrin		17.	UR	34.	UR	18.	UR	0.11	U	0.11	U	0.1	U	
7421-93-4	Endrin aldehyde		17.	UR	34.	UR	18.	UR	0.11	U	0.11	U	0.1	U	
53494-70-5	Endrin ketone		17.	UR	34.	UR	18.	UR	0.11	U	0.11	U	0.1	U	
76-44-8	Heptachlor		8.6	UR	18.	UR	9.1	UR	0.02	J	0.055	U	0.05	U	
1024-57-3	Heptachlor epoxide		8.6	UR	18.	UR	9.1	UR	0.055	U	0.055	U	0.05	U	
72-43-5	Methoxychlor		86.	UR	180.	UR	91.	UR	0.55	U	0.55	U	0.5	U	
8001-35-2	Toxaphene		860.	UR	1800.	UR	910.	UR	5.5	U	5.5	U	5.	U	
319-84-6	alpha-BHC		8.6	UR	18.	UR	9.1	UR	0.055	UJ	0.055	UJ	0.05	U	
5103-71-9	alpha-Chlordane		6.2	UR	20.	UR	7.7	UR	0.055	U	0.055	U	0.05	U	
319-85-7	beta-BHC		8.6	UR	18.	UR	9.1	UR	0.02	J	0.02	J	0.05	U	
319-86-8	delta-BHC		8.6	UR	18.	UR	9.1	UR	0.055	U	0.055	U	0.05	U	
58-89-9	gamma-BHC (Lindane)		8.6	UR	18.	UR	9.1	UR	0.055	U	0.055	U	0.05	U	
5103-74-2	gamma-Chlordane		21.	UR	23.	UR	5.7	UR	0.055	U	0.055	U	0.05	U	

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

CLP PEST

SAMPLE ID -------->	MBL-0-NP02-02
ORIGINAL ID ----->	MBLK2
LAB SAMPLE ID --->	S554814*18
ID FROM REPORT -->	MBLK2
SAMPLE DATE ----->	
DATE EXTRACTED -->	09/05/95
DATE ANALYZED --->	09/20/95
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	ENP02	VAL
72-54-8	4,4'-DDD	3.3	U
72-55-9	4,4'-DDE	3.3	U
50-29-3	4,4'-DDT	3.3	U
309-00-2	Aldrin	1.7	U
12674-11-2	Aroclor-1016	33.	U
11104-28-2	Aroclor-1221	67.	U
11141-16-5	Aroclor-1232	33.	U
53469-21-9	Aroclor-1242	33.	U
12672-29-6	Aroclor-1248	33.	U
11097-69-1	Aroclor-1254	33.	U
11096-82-5	Aroclor-1260	33.	U
60-57-1	Dieldrin	3.3	U
959-98-8	Endosulfan I	1.7	U
33213-65-9	Endosulfan II	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
72-20-8	Endrin	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
53494-70-5	Endrin ketone	3.3	U
76-44-8	Heptachlor	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
72-43-5	Methoxychlor	17.	U
8001-35-2	Toxaphene	170.	U
319-84-6	alpha-BHC	1.7	U
5103-71-9	alpha-Chlordane	1.7	U
319-85-7	beta-BHC	1.[illegible]	[illegible]
319-86-8	delta-BHC	1.[illegible]	U
58-89-9	gamma-BHC (Lindane)	1.7	U
5103-74-2	gamma-Chlordane	1.7	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

CLP SVOA													
	SAMPLE ID ------->	024-S-0003-01 DL		024-E-S000-01		071-D-IB00-01		MBL-0-NP02-01		MBL-0-NP02-02		MBL-0-NP02-06	
	ORIGINAL ID ----->	024S000301		024ES00001		071DIB0001		MBLK1		MBLK2		MBLK3	
	LAB SAMPLE ID --->	S554814*20		S554781*1		S554781*2		S554781*4		S554814*18		S554814*19	
	ID FROM REPORT -->	024S000301		024ES00001		071DIB0001		MBLK1		MBLK2		MBLK3	
	SAMPLE DATE ----->	08/30/95		08/29/95		08/29/95							
	DATE EXTRACTED -->	09/06/95		08/31/95		08/31/95		08/31/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/26/95		09/05/95		09/05/95		09/05/95		09/11/95		09/11/95	
	MATRIX ---------->	Soil		Water		Water		Water		Soil		Soil	
	UNITS ---------->	UG/KG		UG/L		UG/L		UG/L		UG/KG		UG/KG	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
120-82-1	1,2,4-Trichlorobenzene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
95-50-1	1,2-Dichlorobenzene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
541-73-1	1,3-Dichlorobenzene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
106-46-7	1,4-Dichlorobenzene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
95-95-4	2,4,5-Trichlorophenol	3300.	UR	27.	U	27.	U	25.	U	800.	U	800.	U
88-06-2	2,4,6-Trichlorophenol	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
120-83-2	2,4-Dichlorophenol	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
105-67-P	2,4-Dimethylphenol	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
51-28-5	2,4-Dinitrophenol	3300.	UR	27.	U	27.	U	25.	U	800.	U	800.	U
121-14-2	2,4-Dinitrotoluene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
606-20-2	2,6-Dinitrotoluene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
91-58-7	2-Chloronaphthalene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
95-57-8	2-Chlorophenol	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
91-57-6	2-Methylnaphthalene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
95-48-7	2-Methylphenol (o-Cresol}	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
88-74-4	2-Nitroaniline	3300.	UR	27.	U	27.	U	25.	U	800.	U	800.	U
88-75-5	2-Nitrophenol	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
91-94-1	3,3'-Dichlorobenzidine	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
99-09-2	3-Nitroaniline	3300.	UR	27.	U	27.	U	25.	U	800.	U	800.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	3300.	UR	27.	U	27.	U	25.	U	800.	U	800.	U
101-55-3	4-Bromophenyl-phenylether	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
59-50-7	4-Chloro-3-methylphenol	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
706-47-8	4-Chloroaniline	1400.	UR	17.	U	11.	U	10.	U	330.	U	330.	U
7005-72-3	4-Chlorophenylphenylether	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
100-01-6	4-Nitroaniline	3300.	UR	27.	U	27.	U	25.	U	800.	U	800.	U
100-02-7	4-Nitrophenol	3300.	UR	27.	U	27.	U	25.	U	800.	U	800.	U
83-32-9	Acenaphthene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
208-96-8	Acenaphthylene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
120-12-7	Anthracene	1400.	UR	11,	U	11.	U	10.	U	330.	U	330.	U
56-55-3	Benzo(a)anthracene	200.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
50-32-8	Benzo(a)pyrene	180.	UR	11,	U	11.	U	10.	U	140.	U	140.	U
205-99-2	Benzo(b)fluoranthene	310.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
191-24-2	Benzo(g,h,i)perylene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
207-08-9	Benzo(k)fluoranthene	110.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
85-68-7	Butylbenzylphthalate	4700.	D	11.	U	11.	U	10.	U	330.	U	330.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

CLP SVOA															
	SAMPLE ID ------->	024-S-0003-01 DL		024-E-S000-01		071-D-IB00-01		HBL-0-NP02-01		MBL-0-NP02-02		MBL-0-NP02-06	
	ORIGINAL ID ----->	024S000301		024ES00001		071DIB0001		HBLK1		MBLK2		MBLK3	
	LAB SAMPLE ID --->	S554814*20		S554781*1		S554781*2		S554781*4		S554814*18		S554814*19	
	ID FROM REPORT -->	024S000301		024ES00001		071DIB0001		HBLK1		MBLK2		MBLK3	
	SAMPLE DATE ----->	08/30/95		08/29/95		08/29/95							
	DATE EXTRACTED -->	09/06/95		08/31/95		08/31/95		08/31/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/26/95		09/05/95		09/05/95		09/05/95		09/11/95		09/11/95	
	MATRIX ---------->	Soil		Water		Water		Water		Soil		Soil	
	UNITS ---------->	UG/KG		UG/L		UG/L		UG/L		UG/KG		UG/KG	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
86-74-8	Carbazole	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
218-01-9	Chrysene	230.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
84-74-2	Di-n-butylphthalate	1400.	UR	11.	U	11.	U	10.	U	8.	J	330.	U
117-84-0	Di-n-octyl phthalate	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
53-70-3	Dibenz(a,h)anthracene	580.	UR	11.	U	11.	U	10.	U	140.	U	140.	U
132-64-9	Dibenzofuran	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
84-66-2	Diethylphthalate	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
131-11-3	Dimethyl phthalate	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
206-44-0	Fluoranthene	330.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
86-73-7	Fluorene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
118-74-1	Hexachlorobenzene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
87-68-3	Hexachlorobutadiene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
77-47-4	Hexachlorocyclopentadiene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
67-72-1	Hexachloroethane	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	120.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
78-59-1	Isophorone	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
621-64-7	N-Nitroso-di-n-propylamine	250.	UR	11.	U	11.	U	10.	U	60.	U	60.	U
122-39-4	Diphenylamine	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
91-20-3	Naphthalene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
98-95-3	Nitrobenzene	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
87-86-5	Pentachlorophenol	3300.	UR	27.	U	27.	U	25.	U	800.	U	800.	U
85-01-8	Phenanthrene	110.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
108-95-2	Phenol	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
129-00-0	Pyrene	330.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
111-91-1	bis(2-Chloroethoxy)methane	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
111-44-4	bis(2-Chloroethyl)ether	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	1400.	UR	11.	U	11.	U	10.	U	46.	J	58.	J
108-39-4	3-Methylphenol (m-Cresol)	1400.	UR	11.	U	11.	U	10.	U	330.	U	330.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

CLP VOA													
	SAMPLE ID ------->	024-T-0001-01		024-S-0003-01 RE		024-E-S000-01		024-T-T010-00		071-D-IB00-01		MBL-0-NP02-01	
	ORIGINAL ID ----->	024T000101		024S000301		024ES00001		024ST01000		071DIB0001		MBLK1	
	LAB SAMPLE ID --->	S554781*3		S554814*21		S554781*1		S554814*16		S554781*2		S554781*4	
	ID FROM REPORT -->	024T000101		024S000301		024ES00001		024ST01000		071DIB0001		MBLK1	
	SAMPLE DATE ----->	08/29/95		08/30/95		08/29/95		08/30/95		08/29/95			
	DATE ANALYZED --->	09/08/95		09/11/95		09/08/95		09/08/95		09/08/95		09/08/95	
	MATRIX ---------->	Water		Soil		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/KG		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
71-55-6	1,1,1-Trichloroethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	10.	U	10.	UR	30.		10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
56-23-5	Car tetrachloride	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
74-87-3	Chloromethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	0.4	UR	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	4.	U	4.	UR	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	10.	U	6.	UR	10.	U	10.	U	10.	U	1.	J
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	UR	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

CLP VOA											
	SAMPLE ID ------->	MBL-0-NP02-01		MBL-0-NP02-02		MBL-0-NP02-06		MBL-0-NP02-09		MBL-0-NP02-10	
	ORIGINAL ID ----->	MBLK1		MBLK2		MBLK3		MBLK4		MBLK5	
	LAB SAMPLE ID --->	S554814*17		S554814*18		S554814*19		S554814*22		S554814*23	
	ID FROM REPORT -->	MBLK1		MBLK2		MBLK3		MBLK4		MBLK5	
	SAMPLE DATE ----->										
	DATE ANALYZED --->	09/12/95		09/12/95		09/12/95		09/12/95		09/12/95	
	MATRIX ---------->	Water		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/L		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL	ENP02	VAL
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	7.	J	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	3.	J	10.	U
67-64-1	Acetone	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	1.	J	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	10.	U	10.	U
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	0.9	J	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10	U	10.	U	10.	U	1.	J	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	0.6	J	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	1.	J	10.	U	0.4	J	3.	J	0.9	J
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

LOWPEST												
	SAMPLE ID ------->	024-G-GS03-01 RE		MBL-0-NP14-01		MBL-0-NP14-05		M3L-0-NP14-07				
	ORIGINAL ID ----->	024GGS0301		MBLK1		MBLK2		M8LK1				
	LAB SAMPLE ID --->	S555182B*4		S555182B*3		S555182B*5		S555208*7				
	ID FROM REPORT -->	024GGS0301		MBLK1		MBLK2		M8LK1				
	SAMPLE DATE ----->	09/18/95										
	DATE EXTRACTED -->	10/10/95		10/10/95		10/10/95		09/21/95				
	DATE ANALYZED --->	10/13/95		10/13/95		10/13/95		09/29/95				
	MATRIX ---------->	Water		Water		Water		Water				
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L				
CAS #	Parameter	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL			
72-54-8	4,4'-DDD	0.081	UR	0.02	U	0.02	U	0.02	U			
72-55-9	4,4'-DDE	0.038	UR	0.02	U	0.02	U	0.02	U			
50-29-3	4,4'-DDT	0.0094	UR	0.02	U	0.02	U	0.02	U			
309-00-2	Aldrin	0.01	UR	0.01	U	0.01	U	0.01	U			
12674-11-2	Aroclor-1016	0.2	UR	0.2	U	0.2	U	0.2	U			
11104-28-2	Aroclor-1221	0.4	UR	0.4	U	0.4	U	0.4	U			
11141-16-5	Aroclor-1232	0.2	UR	0.2	U	0.2	U	0.2	U			
53469-21-9	Aroclor-1242	0.2	UR	0.2	U	0.2	U	0.2	U			
12672-29-6	Aroclor-1248	0.2	UR	0.2	U	0.2	U	0.2	U			
11097-69-1	Aroclor-1254	0.2	UR	0.2	U	0.2	U	0.2	U			
11096-82-5	Aroclor-1260	0.2	UR	0.2	U	0.2	U	0.2	U			
60-57-1	Dieldrin	0.06	UR	0.02	U	0.02	U	0.02	U			
959-98-8	Endosulfan I	0.01	UR	0.01	U	0.01	U	0.01	U			
33213-65-9	Endosulfan II	0.02	UR	0.02	U	0.02	U	0.02	U			
1031-07-8	Endosulfan sulfate	0.02	UR	0.02	U	0.02	U	0.02	U			
72-20-8	Endrin	0.02	UR	0.02	U	0.02	U	0.02	U			
7421-93-4	Endrin aldehyde	0.0043	UR	0.02	U	0.02	U	0.02	U			
53494-70-5	Endrin ketone	0.02	UR	0.02	U	0.02	U	0.02	U			
76-44-8	Heptachlor	0.01	UR	0.01	U	0.01	U	0.01	U			
1024-57-3	Heptachlor epoxide	0.01	UR	0.01	U	0.01	U	0.01	U			
72-43-5	Methoxychlor	0.1	UR	0.1	U	0.1	U	0.1	U			
8001-35-2	Toxaphene	1.	UR	1.	U	1.	U	1.	U			
319-84-6	alpha-BHC	0.0028	UR	0.01	UJ	0.01	U	0.01	U			
5103-71-9	alpha-Chlordane	0[illegible]	UR	0.01	U	0.01	U	0.01	U			
319-85-7	beta-BHC	0[illegible]	[illegible]	0.01	U	0.01	U	0.01	U			
319-86-8	delta-BHC	0.[illegible]	[illegible]	0.01	U	0.01	U	0.01	U			
58-89-9	gamma-BHC (Lindane)	0.0[illegible]	UR	0.01	U	0.01	U	0.01	U			
5103-74-2	gamma-Chlordane	0.0057	UR	0.01	U	0.01	U	0.01	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

LOWSVOA									
		SAMPLE ID ------->	MBL-0-NP14-02		MBL-0-NP14-08				
		ORIGINAL ID ----->	MBLK1		MBLK1				
		LAB SAMPLE ID --->	S555182B*3		S555208*7				
		ID FROM REPORT -->	MBLK1		MBLK1				
		SAMPLE DATE ----->							
		DATE EXTRACTED -->	09/20/95		09/21/95				
		DATE ANALYZED --->	09/25/95		10/09/95				
		MATRIX ---------->	Water		Water				
		UNITS ---------->	UG/L		UG/L				
CAS #	Parameter		ENP14	VAL	ENP14	VAL			
120-82-1	1,2,4-Trichlorobenzene		5.	U	5.	U			
39638-32-9	Bis(2-Chloroisopropyl)Ether		5.	U	5.	U			
95-95-4	2,4,5-Trichlorophenol		20.	U	20.	U			
88-06-2	2,4,6-Trichlorophenol		5.	U	5.	U			
120-83-2	2,4-Dichlorophenol		5.	U	5.	U			
105-67-9	2,4-Dimethylphenol		5.	U	5.	U			
51-28-5	2,4-Dinitrophenol		20.	U	20.	U			
121-14-2	2,4-Dinitrotoluene		5.	U	5.	U			
606-20-2	2,6-Dinitrotoluene		5.	U	5.	U			
91-58-7	2-Chloronaphthalene		5.	U	5.	U			
95-57-8	2-Chlorophenol		5.	U	5.	U			
91-57-6	2-Methylnaphthalene		5.	U	5.	U			
95-48-7	2-Methylphenol (o-Cresol)		5.	U	5.	U			
88-74-4	2-Nitroaniline		20.	U	20.	U			
88-75-5	2-Nitrophenol		5.	U	5.	U			
91-94-1	3,3'-Dichlorobenzidine		5.	U	5.	U			
99-09-2	3-Nitroaniline		20.	U	20.	U			
534-52-1	2-Methyl-4,6-Dinitrophenol		20.	U	20.	U			
101-55-3	4-Bromophenyl-phenylether		5.	U	5.	U			
59-50-7	4-Chloro-3-methylphenol		5.	U	5.	U			
106-47-8	4-Chloroaniline		5.	U	5.	U			
7005-72-3	4-Chlorophenylphenylether		5.	U	5.	U			
100-01-6	4-Nitroaniline		20.	U	20.	U			
100-02-7	4-Nitrophenol		20.	U	20.	U			
83-32-9	Acenaphthene		5	U	5.	U			
208-96-8	Acenaphthylene		5	U	5.	U			
120-12-7	Anthracene		5.	U	5.	U			
56-55-3	Benzo(a)anthracene		5.	U	5.	U			
50-32-8	Benzo(a)pyrene		5.	U	5.	U			
205-99-2	Benzo(b)fluoranthene		5.	U	5.	U			
191-24-2	Benzo(g,h,i)perylene		5.	U	5.	U			
207-08-9	Benzo(k)fluoranthene		5.	U	5.	U			
85-68-7	Butylbenzylphthalate		5.	U	5.	U			
218-01-9	Chrysene		5.	U	5.	U			
84-74-2	Di-n-butylphthalate		5.	U	5.	U			
117-84-0	Di-n-octyl phthalate		5.	U	5.	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Ground ter
QA/QC Samples

	SAMPLE ID ------->	MBL-0-NP14-02		MBL-0-NP14-08				
	ORIGINAL ID ----->	MBLK1		MBLK1				
	LAB SAMPLE ID --->	S555182B*3		S555208*7				
	ID FROM REPORT -->	MBLK1		MBLK1				
	SAMPLE DATE ----->							
	DATE EXTRACTED -->	09/20/95		09/21/95				
	DATE ANALYZED --->	09/25/95		10/09/95				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	ENP14	VAL	ENP14	VAL			
53-70-3	Dibenz(a,h)anthracene	5.	U	5.	U			
132-64-9	Dibenzofuran	5.	U	5.	U			
84-66-2	Diethylphthalate	5.	U	5.	U			
131-11-3	Dimethyl phthalate	5.	U	5.	U			
206-44-0	Fluoranthene	5.	U	5.	U			
86-73-7	Fluorene	5.	U	5.	U			
118-74-1	Hexachlorobenzene	5.	U	5.	U			
87-68-3	Hexachlorobutadiene	5.	U	5.	U			
77-47-4	Hexachlorocyclopentadiene	5.	U	5.	U			
67-72-1	Hexachloroethane	5.	U	5.	U			
193-39-5	Indeno(1,2,3-cd)pyrene	5.	U	5.	U			
78-59-1	Isophorone	5.	U	5.	U			
621-64-7	N-Nitroso-di-n-propylamine	5.	U	5.	U			
122-39-4	Diphenylamine	5.	U	5.	U			
91-20-3	Naphthalene	5.	U	5.	U			
98-95-3	Nitrobenzene	5.	U	5.	U			
87-86-5	Pentachlorophenol	20.	U	20.	U			
85-01-8	Phenanthrene	5.	U	5.	U			
108-95-2	Phenol	5.	U	5.	U			
129-00-0	Pyrene	5.	U	5.	U			
111-91-1	bis(2-Chloroethoxy)methane	5.	U	5.	U			
111-44-4	bis(2-Chloroethyl)ether	5.	U	5.	U			
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	5.	U	5.	U			
9999900-32-2	3-Methylphenol/4-Methylphenol	5.	U	5.	U			

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

LOWVOA												
	SAMPLE ID ------->	024-T-G001-01		024-G-GS02-01 DL		MBL-0-NP14-03		MBL-0-NP14-09		MBL-0-NP14-10		
	ORIGINAL ID ----->	024TG00101		024GGS0201		MBLK1		MBLK1		MBLK2		
	LAB SAMPLE ID --->	S555208*6		S555208*8		S555182B*3		S555208*7		S555208*9		
	ID FROM REPORT -->	024TG00101		024GGS0201		MBLK1		MBLK1		MBLK2		
	SAMPLE DATE ----->	09/19/95		09/19/95								
	DATE ANALYZED --->	09/28/95		09/28/95		09/28/95		09/28/95		09/28/95		
	MATRIX ---------->	Water		Water		Water		Water		Water		
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		
CAS #	Parameter	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	UAL	
71-55-6	1,1,1-Trichloroethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
79-00-5	1,1,2-Trichloroethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
75-34-3	1,1-Dichloroethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
75-35-4	1,1-Dichloroethene	1.	U	4.	UR	1.	U	1.	U	1.	U	
107-06-2	1,2-Dichloroethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
78-87-5	1,2-Dichloropropane	1.	U	4.	UR	1.	U	1.	U	1.	U	
78-93-3	2-Butanone (MEK)	5.	UR	20.	UR	5.	U	5.	U	5.	U	
591-78-6	2-Hexanone	5.	U	20.	UR	5.	U	5.	U	5.	U	
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U	20.	UR	5.	U	5.	U	5.	U	
67-64-1	Acetone	5.	UR	20.	UR	5.	U	5.	U	5.	U	
71-43-2	Benzene	0.2	J	4.	UR	1.	U	1.	U	1.	U	
75-27-4	Bromodichloromethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
75-25-2	Bromoform	1.	U	4.	UR	1.	U	1.	U	1.	U	
74-83-9	Bromomethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
75-15-0	Carbon disulfide	1.	U	4.	UR	1.	U	1.	U	1.	U	
56-23-5	Carbon tetrachloride	1.	U	4.	UR	1.	U	1.	U	1.	U	
108-90-7	Chlorobenzene	1.	U	4.	UR	1.	U	1.	U	1.	U	
75-00-3	Chloroethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
67-66-3	Chloroform	1.	U	4.	UR	1.	U	1.	U	1.	U	
74-87-3	Chloromethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
124-48-1	Dibromochloromethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
100-41-4	Ethylbenzene	1.	U	4.	UR	1.	U	1.	U	1.	U	
75-09-2	Methylene chloride	2.	U	8.	UR	2.	U	2.	U	2.	U	
100-42-5	Styrene	0.5	J	4.	UR	1.	U	1.	U	1.	U	
127-18-4	Tetrachloroethene	1	U	4.	UR	1.	U	1.	U	1.	U	
108-88-3	Toluene	1.	[illegible]	4.	UR	1.	U	1.	U	1.	U	
79-01-6	Trichloroethene	1.	U		UR	1.	U	1.	U	1.	U	
75-01-4	Vinyl chloride	1.	U	4.	UR	1.	U	1.	U	1.	U	
1330-20-7	Xylene (Total)	1.	U	4.	UR	1.	U	1.	U	1.	U	
10061-01-5	cis-1,3-Dichloropropene	1.	U	4.	UR	1.	U	1.	U	1.	U	
10061-02-6	trans-1,3-Dichloropropene	1.	U	4.	UR	1.	U	1.	U	1.	U	
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	4.	UR	1.	U	1.	U	1.	U	
106-93-4	1,2-Dibromoethane	1.	U	4.	UR	1.	U	1.	U	1.	U	
95-50-1	1,2-Dichlorobenzene	1.	U	4.	UR	1.	U	1.	U	1.	U	
541-73-1	1,3-Dichlorobenzene	1.	U	4.	UR	1.	U	1.	U	1.	U	
106-46-7	1,4-Dichlorobenzene	1.	U	4.	UR	1.	U	1.	U	1.	U	

*** Validation Complete ***

PENSACOLA, SITE 24
Phase I Soil and Groundwater
QA/QC Samples

WVOA											
	SAMPLE ID ------->	024-T-G001-01		024-G-GS02-01 DL		MBL-0-NP14-03		MBL-0-NP14-09		MBL-0-NP14-10	
	ORIGINAL ID ----->	024TG00101		024GGS0201		MBLK1		MBLK1		MBLK2	
	LAB SAMPLE ID --->	S555208*6		S555208*8		S555182B*3		S555208*7		S555208*9	
	ID FROM REPORT -->	024TG00101		024GGS0201		MBLK1		MBLK1		MBLK2	
	SAMPLE DATE ----->	09/19/95		09/19/95							
	DATE ANALYZED --->	09/28/95		09/28/95		09/28/95		09/28/95		09/28/95	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL	ENP14	VAL
74-97-5	Chlorobromomethane	1.	U	4.	UR	1.	U	1.	U	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U	42.	UR	1.	U	1.	U	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U	1.	UR	1.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

6010-METAL

SAMPLE ID -------->	BLK-0-\L10-01
ORIGINAL ID ----->	MBLANK1
LAB SAMPLE ID --->	S683346*7
ID FROM REPORT -->	MBLANK1
SAMPLE DATE ----->	
DATE EXTRACTED -->	06/10/96
DATE ANALYZED --->	06/11/96
---------->	Water
---------->	UG/L

CAS #	Parameter	PJL10	VAL
7440-36-0	Antimony (Sb)	3.4	U
7440-43-9	Cadmium (Cd)	-0.41	B
7439-96-5	Manganese (Mn)	0.28	U
7440-02-0	Nickel (Ni)	-5.3	B
7440-28-0	Thallium (Tl)	1.	U

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE 11 Soil and Groundwater
QA/QC Samples

8080-PEST

SAMPLE ID ------->	024-F-S001-02
ORIGINAL ID ----->	024FS00102
LAB SAMPLE ID --->	S681943*16
ID FROM REPORT -->	024FS00102
SAMPLE DATE ----->	04/04/96
DATE EXTRACTED -->	04/05/96
DATE ANALYZED --->	04/09/96
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	PJL06	VAL
72-54-8	4,4'-DDD	0.1	U
72-55-9	4,4'-DDE	0.1	U
50-29-3	4,4'-DDT	0.1	U
309-00-2	Aldrin	0.05	U
12674-11-2	Aroclor-1016	1.	U
11104-28-2	Aroclor-1221	2.	U
11141-16-5	Aroclor-1232	1.	U
53469-21-9	Aroclor-1242	1.	U
12672-29-6	Aroclor-1248	1.	U
11097-69-1	Aroclor-1254	1.	U
11096-82-5	Aroclor-1260	1.	U
60-57-1	Dieldrin	0.1	U
959-98-8	Endosulfan I	0.05	U
33213-65-9	Endosulfan II	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U
72-20-8	Endrin	0.1	U
7421-93-4	Endrin aldehyde	0.1	U
53494-70-5	Endrin ketone	0.1	U
76-44-8	Heptachlor	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
72-43-5	Methoxychlor	0.5	U
8001-35-2	Toxaphene	5.	U
319-84-6	alpha-BHC	0.05	U
5103-71-9	alpha-Chlordane	0.05	U
319-85-7	beta-BHC	[illegible]	U
319-86-8	delta-BHC	[illegible]	U
58-89-9	gamma-BHC (lindane)	0.05	U
5103-74-2	gamma-Chlordane	0.05	U

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

AS BE MN

SAMPLE ID -------->	024-E-S001-02	BLK-0-JL05-03	BLK-0-JL06-02
ORIGINAL ID ----->	024ES00102	MBLANK1	MBLANK1
LAB SAMPLE ID --->	S681943*17	S6PJL05*6	S6PJL06*6
ID FROM REPORT -->	024ES00102	MBLANK1	MBLANK1
SAMPLE DATE ----->	04/04/96		
DATE EXTRACTED -->	04/05/96	04/03/96	04/05/96
DATE ANALYZED --->	04/08/96	04/05/96	04/09/96
MATRIX ---------->	Water	Soil	Soil
UNITS ---------->	UG/L	MG/KG	MG/KG

CAS #	Parameter	PJL06	VAL	PJL05	VAL		VAL
7440-38-2	Arsenic (As)	2.	U	0.2	U	0.2	U
7440-41-7	Beryllium (Be)	0.45	B	0.026	B	0.018	B
7439-96-5	Manganese (Mn)	0.56	B	0.19	B	0.086	B

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

LOWVOA											
	SAMPLE ID ------->	024-T-B001-02		024-T-G001-02		024-T-G002-02		024-F-S001-02		BLK-0-JL06-01	
	ORIGINAL ID ----->	024TB00102		024TG00102		024TG00202		024FS00102		MBLANK2	
	LAB SAMPLE ID --->	S681943*18		S682239*9		S682262*4		S681943*16		S6PJL06*10	
	ID FROM REPORT -->	024TB00102		024TG00102		024TG00202		024FS00102		MBLANK2	
	SAMPLE DATE ----->	04/04/96		04/18/96		04/19/96		04/04/96			
	DATE ANALYZED --->	04/09/96		04/25/96		04/26/96		04/09/96		04/09/96	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL06	VAL	PJL08	VAL	PJL08	VAL	PJL06	VAL	PJL06	VAL
67-64-1	Acetone	10.	U	5.	U	5.	U	10.	U	10.	U
74-97-5	Chlorobromomethane	NR		1.	U	1.	U	NR		NR	
156-59-2	cis-1,2-Dichloroethene	NR		1.	U	1.	U	NR		NR	
156-60-5	trans-1,2-Dichloroethene	NR		1.	U	1.	U	NR		NR	
74-87-3	Chloromethane	1.	U	1.	U	1.	U	1.	U	1.	U
75-01-4	Vinyl chloride	1.	U	1.	U	1.	U	1.	U	1.	U
74-83-9	Bromomethane	1.	U	1.	U	1.	U	1.	U	1.	U
75-00-3	Chloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
75-35-4	1,1-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U
75-09-2	Methylene chloride	1.	U	2.	U	2.	U	1.	U	1.	U
75-34-3	1,1-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
67-66-3	Chloroform	1.	U	0.1	J	1.	U	1.	U	1.	U
71-55-6	1,1,1-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
56-23-5	Carbon tetrachloride	1.	U	1.	U	1.	U	1.	U	1.	U
71-43-2	Benzene	1.	U	1.	U	1.	U	1.	U	1.	U
107-06-2	1,2-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
79-01-6	Trichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U
78-87-5	1,2-Dichloropropane	1.	U	1.	U	1.	U	1.	U	1.	U
75-27-4	Bromodichloromethane	1.	U	1.	U	1.	U	1.	U	1.	U
108-88-3	Toluene	1.	U	0.4	J	0.3	J	1.	U	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
127-18-4	Tetrachloroethene	1.	U	1.	U	1.	U	1.	U	1.	U
124-48-1	Dibromochloromethane	1.	U	1.	U	1.	U	1.	U	1.	U
106-93-4	1,2-Dibromoethane	NR		1.	U	1.	U	NR		NR	
108-90-7	Chlorobenzene	1	U	1.	U	1.	U	1.	U	1.	U
100-41-4	Ethylbenzene	1	U	1.	U	1.	U	1.	U	1.	U
100-42-5	Styrene	1		1.	U	1.	U	1.	U	1.	U
75-25-2	Bromoform	1.	U	1.	U	1.	U	1.	U	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
96-12-8	1,2-Dibromo-3-Chloropropane	NR		1.	U	1.	U	NR		NR	
75-15-0	Carbon disulfide	1.	U	1.	U	1.	U	1.	U	1.	U
78-93-3	2-Butanone (MEK)	10.	U	5.	U	5.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	5.	U	5.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U
591-78-6	2-Hexanone	10.	U	5.	U	5.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

∞											
	SAMPLE ID ------->		024-T-G001-02		024-T-G002-02		024-F-S001-02		BLK-0-JL06-01		
	ORIGINAL ID ----->		024TG00102		024TG00202		024FS00102		MBLANK2		
	LAB SAMPLE ID --->		S682239*9		S682262*4		S681943*16		S6PJL06*10		
	ID FROM REPORT -->		024TG00102		024TG00202		024FS00102		MBLANK2		
	SAMPLE DATE ----->		04/18/96		04/19/96		04/04/96				
	DATE ANALYZED --->		04/25/96		04/26/96		04/09/96		04/09/96		
	MATRIX ---------->		Water		Water		Water		Water		
	UNITS ---------->		UG/L		UG/L		UG/L		UG/L		
CAS #	Parameter	VAL	PJL08	VAL	PJL08	VA	PJL06	VAL	PJL06	VAL	
541-73-1	1,3-Dichlorobenzene		1.	U	1.	U	NR		NR		
106-46-7	1,4-Dichlorobenzene		1.	U	1.	U	NR		NR		
95-50-1	1,2-Dichlorobenzene		1.	U	1.	U	NR		NR		
540-59-0	1,2-Dichloroethene (total)	U	NR		NR		1.	U	1.	U	

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

METAL-6010											
	SAMPLE ID ------->	024-F-S001-02		BLK-0-JL06-01		BLK-0-JL06-01					
	ORIGINAL ID ----->	024FS00102		MBLANK2		MBLANK2					
	LAB SAMPLE ID --->	S681943*16		S6PJL06*10		S6PJL06*10					
	ID FROM REPORT -->	024FS00102		MBLANK2		MBLANK2					
	SAMPLE DATE ----->	04/04/96									
	DATE EXTRACTED -->	04/05/96		04/05/96		04/08/96					
	DATE ANALYZED --->	04/08/96		04/08/96		04/09/96					
	MATRIX ---------->	Water		Water		Water					
	UNITS ---------->	UG/L		UG/L		UG/L					
CAS #	Parameter	PJL06	VAL	PJL06	VAL	PJL06	VAL				
7460-36-0	Antimony (Sb)	5.6	B	3+4	U	3.4	U				
7440-38-2	Arsenic (As)	2.	U	2.	U	2.	U				
7439-97-6	Mercury (Hg)	NR		NR		NR					
7439-92-1	Lead (Pb)	1.3	U	1.3	U	1.3	U				
7782-49-2	Selenium (Se)	2.6	U	2.6	U	2.6	U				
7429-90-5	Aluminum (Al)	8.5	U	8.5	U	8.5	U				
7440-39-3	Barium (Ba)	6.2	B	0.24	U	0.24	U				
7440-41-7	Beryllium (Be)	0.31	B	0.u59	U	0.059	U				
7440-43-9	Cadmium (Cd)	0.35	U	0.35	U	0.35	U				
7440-70-2	Calcium (Ca)	97.8	B	32.4	B	32.4	B				
7440-47-3	Chromium (Cr)	1.1	U	1.1	U	1.1	U				
7440-48-4	Cobalt (Co)	0.71	U	0.71	U	0.71	U				
7440-50-8	Copper (Cu)	1.3	U	1.3	U	1.3	U				
7439-89-6	Iron (Fe)	23.	U	23.	U	23.	U				
7439-95-4	Magnesium (Mg)	8.7	U	8.8	B	8.8	B				
7439-%-5	Manganese (Mn)	0.56	B	0.28	U	0.28	U				
7440-02-0	Nickel (Ni)	1.8	B	1.3	U	1.3	U				
7440-09-7	Potassium (K)	70.3	U	70.3	U	7Q.3	U				
7440-22-4	Silver (Ag)	1.	U	1.	U	1.	U				
7440-23-5	Sodium (Na)	23.3	B	18.3	B	18.3	B				
7440-62-2	Vanadium (V)	0.79	U	0.84	B	0.84	B				
7440-66-6	Zinc (Zn)	3.6	B	2.9	B	2.9	B				
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U				
7440-28-0	Thallium (Tl)	2	U	-4.2	B	-6.2	B				

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

PEST-8080													
	SAMPLE ID ------->	024-S-0010-01 DL		024-C-0010-01 DL		024-S-0010-07 DL		024-S-0011-01 DL		024-S-0012-01 DL		024-S-0012-06 DL	
	ORIGINAL ID ----->	024S001001		024C001001		024S001007		024S001101		024S001201		024S001206	
	LAB SAMPLE ID --->	S681860*2*DL		S681860*1*DL		S681860*3*DL		S681860*4*DL		S681860*6*DL		S681860*7*DL	
	ID FROM REPORT -->	024S001001		024C001001		024S001007		024S001101		024S001201		024S001206	
	SAMPLE DATE ----->	04/02/96		04/02/96		04/02/96		04/02/96		04/02/96		04/02/96	
	DATE EXTRACTED -->	04/04/96		04/03/96		04/03/96		04/03/96		04/03/96		04/03/96	
	DATE ANALYZED --->	04/08/96		04/08/96		04/08/96		04/08/96		04/09/96		04/08/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL	PJL05	VAL
72-54-8	4,4'-DDD	42,	DP	22.	DJP	20.	D	36.	U	1200.	D	42.	D
72-55-9	4,4'-DDE	280.	D	250.	D	48.	D	240.	D	1600,	D	63.	D
50-29-3	4,4'-DDT	140.	D	150.	D	15.	DJ	140,	D	1100.	D	130.	D
309-00-2	Aldrin	19.	U	19.	U	8.9	U	18.	U	360.	U	18.	U
12674-11-2	Aroclor-1016	360.	U	370.	U	170.	U	360.	U	7100.	U	350.	U
11104-28-2	Aroclor-1221	740.	U	740.	U	350.	U	730.	U	14000.	U	720.	U
11141-16-5	Aroclor-1232	360.	U	370.	U	170.	U	360.	U	7100.	U	350.	U
53469-21-9	Aroclor-1242	360.	U	370,	U	170.	U	360.	U	7100.	U	350.	U
12672-29-6	Aroclor-1248	360.	U	370.	U	170.	U	360.	U	7100.	U	350.	U
11097-69-1	Aroclor-1254	360.	U	370.	U	170.	U	360.	U	7100.	U	350.	U
11096-82-5	Aroclor-1260	360.	U	370.	U	170.	U	160.	DJP	7100,	U	350.	U
60-57-1	Dieldrin	58.	D	49.	D	22.	DP	26.	DJP	100.	DJP	35.	U
959-98-8	Endosulfan I	19.	U	19.	U	8.9	U	18.	U	240.	DJP	7.4	DJP
33213-65-9	Endosulfan II	36.	U	37.	U	17.	U	36.	U	710.	U	35.	U
1031-07-8	Endosulfan sulfate	36.	U	37.	U	17.	U	66.	DP	710.	U	35.	U
72-20-8	Endrin	5.6	DJP	6.	DJP	17.	U	36.	U	710.	U	35.	U
7421-93-4	Endrin aldehyde	36.	U	37.	U	17.	U	36.	U	710.	U	35.	U
53494-70-5	Endrin ketone	36.	U	37.	U	17.	U	36,	U	710.	U	35.	U
76-44-8	Heptachlor	19.	U	19.	U	8.9	U	18.	U	360.	U	18.	U
1024-57-3	Heptachlor epoxide	19.	U	19.	U	8.9	U	18.	U	360.	U	18.	U
72-43-5	Methoxychlor	190.	U	190.	U	89.	U	180.	U	3600.	U	180.	U
8001-35-2	Toxaphene	1900.	U	1900.	U	890.	U	1800.	U	36000.	U	1800.	U
319-84-6	alpha-BHC	19.	U	19.	U	8.9	U	18.	U	360.	U	18.	U
5103-71-9	alpha-Chlordane	5.9	DJP	5.2	DJP	3.4	DJP	18.	U	240.	DJP	7.7	DJ
319-85-7	beta-BHC	19.	U	19.	U	8.9	U	18.	U	360.	U	18.	U
319-86-8	delta-BHC	19.		19.	U	8.9	U	18.	U	360.	U	18.	U
58-89-9	gamma-BHC (Lindane)	19.	U	19.	U	8.9	U	18.	U	360.	U	18.	U
5103-74-2	gamma-Chlordane	7.8	DJP	6.4	DJ	3.9	DJP	5.2	DJP	250.	DJP	7.9	DJP

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

PEST-8080															
		SAMPLE ID ------->	024-S-0013-01 DL		024-S-0015-07 DL		024-S-0021-01 DL		024-C-0023-01 MS		024-C-0023-01 MSD		024-E-S001-02	
		ORIGINAL ID ----->	024S001301		024S001507		024S002101		024C002301		024C002301		024ES00102	
		LAB SAMPLE ID --->	S681943*2*DL		S681860*11*D		S681943*12*D		S683346*1MS		S683346*1MSD		S681943*17	
		ID FROM REPORT -->	024S001301		024S001507		024S002101		024C002301		024C002301		024ES00102	
		SAMPLE DATE ----->	04/03/96		04/02/96		04/03/96						04/04/96	
		DATE EXTRACTED -->	04/05/96		04/03/96		04/05/96		06/11/96		06/11/96		04/05/96	
		DATE ANALYZED --->	04/09/96		04/09/96		04/10/96		06/13/96		06/13/96		04/09/96	
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Water	
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/L	
CAS #	Parameter		PJL06	VAL	PJL05	VAL	PJL06	VAL	PJL10	VAL	PJL10	VAL	PJL06	VAL
72-54-8	4,4'-DDD		17.	D	6.8	U	13.	DJP	14.	P	9.4	P	0.1	U
72-55-9	4,4'-DDE		240.	D	28.	DP	53.	D	16.	P	17.	P	0.1	U
50-29-3	4,4'-DDT		73.	D	1.4	DJP	30.	DJ	65.	P	67.	P	0.1	U
309-00-2	Aldrin		8.8	U	3.5	U	19.	U	5.2		5.6		0.05	U
12674-11-2	Aroclor-1016		170.	U	68.	U	360.	U	34.	U	34.	U	1.	U
11104-28-2	Aroclor-1221		350.	U	140.	U	740.	U	70.	U	70.	U	2.	U
11141-16-5	Aroclor-1232		170.	U	68.	U	360.	U	34.	U	34.	U	1.	U
53469-21-9	Aroclor-1242		170.	U	68.	U	360.	U	34.	U	34.	U	1.	U
12672-29-6	Aroclor-1248		170.	U	68.	U	360.	U	34.	U	34.	U	1.	U
11097-69-1	Aroclor-1254		170.	U	68.	U	360.	U	34.	U	34.	U	1.	U
11096-82-5	Aroclor-1260		170.	U	68.	U	360.	U	34.	U	34.	U	1.	U
60-57-1	Dieldrin		4.2	DJP	18.	DP	4.4	DJP	62.	P	42.	P	0.1	U
959-98-8	Endosulfan I		8.8	U	3.5	U	27.	D	1.3	J	1.8	U	0.05	U
33213-65-9	Endosulfan II		17.	U	6.8	U	36.	U	3.4	U	3.4	U	0.1	U
1031-07-8	Endosulfan sulfate		4.3	DJP	6.8	U	36.	U	3.4	U	3.4	U	0.1	U
72-20-8	Endrin		17.	U	4.9	DJP	36.	U	25.	P	24.	P	0.1	U
7421-93-4	Endrin aldehyde		17.	U	6.8	U	36.	U	3.4	U	1.8	JP	0.1	U
53494-70-5	Endrin ketone		17.	U	28.	D	36.	U	3.4	U	3.4	U	0.1	U
76-44-8	Heptachlor		8.8	U	3.5	U	19.	U	5.		5.7		0.05	U
1024-57-3	Heptachlor epoxide		8.8	U	5.2	DP	71.	D	0.88	JP	1.8	U	0.05	U
72-43-5	Methoxychlor		88.	U	40.	DP	190.	U	18.	U	18.	U	0.5	U
8001-35-2	Toxaphene		880.	U	350.	U	1900.	U	180.	U	180.	U	5.	U
319-84-6	alpha-BHC		8.8	U	3.5	U	19.	U	1.8	U	1.8	U	0.05	U
5103-71-9	alpha-Chlordane		8.8	U	3.5	U	25.	D	1.3	J	1.8	U	0.05	U
319-85-7	beta-BHC		8.8	U	3.5	U	19.	U	1.8	U	1.8	U	0.05	U
319-86-8	delta-BHC		8	U	3.5	U	19.	U	1.8	U	1.8	U	0.05	U
58-89-9	gamma-BHC (Lindane)		8.8	U	3.5	U	19.	U	5.5		6.2		0.05	U
5103-74-2	gamma-Chlordane		8.8	U	3.5	U	120.	D	1.7	J	1.1	JP	0.05	U

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

PEST-8080											
		SAMPLE ID ------->	BLK-0-JL05-02		BLK-0-JL05-03		BLK-0-JL06-01		BLK-0-JL06-02		BLK-0-JL10-03	
		ORIGINAL ID ----->	MBLANK3		MBLANK1		MBLANK2		MBLANK1		MBLANK2	
		LAB SAMPLE ID --->	S6PJL05*16		S6PJL05*6		S6PJL06*10		S6PJL06*6		S683346*8	
		ID FROM REPORT -->	MBLANK3		MBLANK1		MBLANK2		MBLANK1		MBLANK2	
		SAMPLE DATE ----->										
		DATE EXTRACTED -->	04/04/96		04/03/96		04/05/96		04/05/96		06/11/96	
		DATE ANALYZED --->	04/04/96		04/05/96		04/08/96		04/08/96		06/13/96	
		MATRIX ---------->	Soil		Soil		Water		Soil		Soil	
		UNITS ---------->	UG/KG		UG/KG		UG/L		UG/KG		UG/KG	
CAS #	Parameter		PJL05	VAL	PJL05	VAL	PJL06	VAL	PJL06	VAL	PJL10	VAL
72-54-8	4,4'-DDD		3.3	U	3.3	U	0.1	U	3.3	U	3.3	U
72-55-9	4,4'-DDE		3.3	U	3.3	U	0.1	U	3.3	U	3.3	U
50-29-3	4,4'-DDT		3.3	U	3.3	U	0.1	U	3.3	U	3.3	U
309-00-2	Aldrin		1.7	U	1.7	U	0.05	U	1.7	U	1.7	U
12674-11-2	Aroclor-1016		33.	U	33.	U	1.	U	33.	U	33.	U
11104-28-2	Aroclor-1221		67.	U	67.	U	2.	U	67.	U	67.	U
11141-16-5	Aroclor-3232		33.	U	33.	U	1.	U	33.	U	33.	U
53469-21-9	Aroclor-1242		33.	U	33.	U	1.	U	33.	U	33.	U
12672-29-6	Aroclor-1248		33.	U	33.	U	1.	U	33.	U	33.	U
11097-69-3	Aroclor-1254		33.	U	33.	U	1.	U	33.	U	33.	U
11096-82-5	Aroclor-1260		33.	U	33.	U	1.	U	33.	U	33.	U
60-57-1	Dieldrin		3.3	U	3.3	U	0.1	U	313	U	3.3	U
959-98-8	Endosulfan I		1.7	U	1.7	U	0.05	U	1.7	U	1.7	U
33213-65-9	Endosulfan II		3.3	U	3.3	U	0.1	U	3.3	U	3.3	U
1031-07-8	Endosulfan sulfate		3.3	U	3.3	U	0.1	U	3.3	U	3.3	U
72-20-8	Endrin		3.3	U	3.3	U	0.1	U	3.3	U	3.3	U
7421-93-4	Endrin aldehyde		3.3	U	3.3	U	0.1	U	3.3	U	3.3	U
53494-70-5	Endrin ketone		3b3	U	3.3	U	0.1	U	3.3	U	3.3	U
76-44-8	Heptachlor		3.7	U	1.7	U	0.05	U	1.7	U	1.7	U
1024-57-3	Heptachlor epoxide		1.7	U	1.7	U	0.05	U	1.7	U	1.7	U
72-43-5	Methoxychlor		17.	U	17.	U	0.5	U	17.	U	17.	U
8001-35-2	Toxaphene		170.	U	170,	U	5.	U	170.	U	170.	U
319-84-6	alpha-BHC		1.7	U	1.7	U	0.05	U	1.7	U	1.7	U
5103-71-9	alpha-Chlordane		1.7	U	3.7	U	0.05	U	1.7	U	1.7	U
319-85-7	beta-BHC		1.7	U	1.7	U	0.05	U	1.7	U	1.7	U
319-86-8	delta-BHC		1.7	U	3.7	U	0.05	U	1.7	U	1.7	U
58-89-9	gamma-BHC (Lindane)		1.7	U	1.7	U	0.05	U	1.7	U	1.7	U
5103-74-2	gamma-Chlordane		1.7	U	1.7	U	0.05	U	1.7	U	1.7	U

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

SVOA-8270													
	SAMPLE ID ------->	024-C-0023-01 MS		024-C-0023-01 MSD		024-S-0023-07 RE		BLK-O-JL05-01		BLK-O-JL05-03		BLK-O-JL10-02	
	ORIGINAL ID ----->	024C002301		024C002301		024S002307		MBLANK2		MBLANK1		MBLANK2	
	LAB SAMPLE ID --->	S683346*1MS		S683346*1MSD		S683346*3*RE		S6PJL05*12		S6PJL05*6		S683346*8	
	ID FROM REPORT -->	024C002301		024C002301		024S002307		MBLANK2		MBLANK1		MBLANK2	
	SAMPLE DATE ----->					06/07/96							
	DATE EXTRACTED -->	06/11/96		06/11/96		06/11/96		04/04/96		04/03/96		06/11/96	
	DATE ANALYZED --->	06/12/96		06/12/96		06/12/96		04/04/96		04/05/96		06/11/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL10	VAL	PJL10	VAL	PJL10	VAL	PJL05	VAL	PJL05	VAL	PJL10	VAL
120-82-1	1,2,4-Trichlorobenzene	1200.		1200.		340.	U	330.	U	330.	U	330.	U
95-50-1	1,2-Dichlorobenzene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
541-73-1	1,3-Dichlorobenzene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
106-46-7	1,4-Dichlorobenzene	920.		900.		340.	U	330.	U	330.	U	330.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
95-95-4	2,4,5-Trichloro enol	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
88-06-2	2,4,6-Trichlorophenol	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
120-83-2	2,4-Dichlorophenol	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
105-67-9	2,4-Dimethylphenol	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
51-28-5	2,4-Dinitrophenol	1800.	U	1800.	U	1800.	U	1700.	U	1700.	U	1700.	U
121-14-2	2,4-Dinitrotoluene	1200.		1200.		340.	U	330.	U	330.	U	330.	U
606-20-2	2,6-Dinitrotoluene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
91-58-7	2-Chloronaphthalene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
95-57-8	2-Chlorophenol	1900.		2000.		340.	U	330.	U	330.	U	330.	U
91-57-6	2-Methylnaphthalene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
95-48-7	2-Methylphenol (o-Cr sol)	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
88-74-4	2-Nitroaniline	1800.	U	1800.	U	1800.	U	1700.	U	1700.	U	1700.	U
88-75-5	2-Nitrophenol	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
91-94-1	3,3'-Dichlorobenzidine	690.	U	690.	U	680.	U	660.	U	660.	U	660.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	NR		NR		340.	U	330.	U	330.	U	330.	U
99-09-2	3-Nitroaniline	1800.	U	1800.	U	1800.	U	1700.	U	1700.	U	1700.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	1800.	U	1800.	U	1800.	U	1700.	U	1700.	U	1700.	U
101-55-3	4-Bromophenyl-phenylether	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
59-50-7	4-Chloro-3-methylphenol	2200.		2300.		340.	U	330.	U	330.	U	330.	U
106-47-8	4-Chloroaniline	690.	U	690.	U	680.	U	660.	U	660.	U	660.	U
7005-72-3	4-Chlorophenyl-phenylether	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
100-01-6	4-Nitroaniline	1800.	U	1800.	U	1800.	U	1700.	U	1700.	U	1700.	U
100-02-7	4-Nitrophenol	1700.	J	1700.	J	1800.	U	1700.	U	1700.	U	1700.	U
83-32-9	Acenaphthene	1100.		1100.		340.	U	330.	U	330.	U	330.	U
208-96-8	Acenaphthylene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
120-12-7	Anthracene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
56-55-3	Benzo(a)anthracene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
50-32-8	Benzo(a)pyrene	92.	U	92.	U	91.	U	330.	U	88.	U	88.	U
205-99-2	Benzo(b)fluoranthene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
191-24-2	Benzo(g,h,i)perylene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
207-08-9	Benzo(k)fluoranthene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

SVOA-8270						
SAMPLE ID ------->	024-C-0023-01 MS	024-C-0023-01 MSD	024-S-0023-07 RE	BLK-0-JL05-01	BLK-0-JL05-03	BLK-0-JL10-02
ORIGINAL ID ----->	02663002301	024C002301	024S002307	MBLANK2	MBLANK1	MBLANK2
LAB SAMPLE ID --->	S683346*1MS	S683346*1MSD	S683346*3*RE	S6PJL05*12	S6PJL05*6	S683346*8
ID FROM REPORT -->	024C002301	024C002301	024S002307	MBLANK2	MBLANK1	MBLANK2
SAMPLE DATE ----->			06/07/96			
DATE EXTRACTED -->	06/11/96	06/11/96	06/11/96	04/04/96	04/03/96	06/11/96
DATE ANALYZED --->	06/12/96	06/12/96	06/12/96	04/04/96	04/05/96	06/11/96
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG

CAS #	Parameter	PJL10	VAL	PJL10	VAL	PJL10	VAL	PJL05	VAL	PJL05	VAL	PJL10	VAL
85-68-7	Butylbenzylphthalate	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
86-74-8	Carbazole	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
218-01-9	Chrysene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
84-74-2	Di-n-butylphthalate	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
117-84-0	Di-n-octyl phthalate	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
53-70-3	Dibenz(a,h)anthracene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
132-64-9	Dibenzofuran	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
84-66-2	Diethylphthalate	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
131-11-3	Dimethyl phthalate	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
206-44-0	Fluoranthene	340.	U	340.	U	340.	U	330.	U	33u.	U	330+	U
86-73-7	Fluorene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
118-74-1	Hexachlorobenzene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
87-68-3	Hexachlorobutadiene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
77-47-4	Hexachlorocyclopentadiene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
67-72-1	Hexachloroethane	340.	U	340.	U	340.	U	330.	U	330.	U		
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U	340,	U	340.	U	330.	U	330.	U	330.	U
78-59-1	Isophorone	340,	U	340.	U	340.	U	330.	U	330.	U	330.	U
621-64-7	N-Nitroso-di-n-propylamine	920		890.		340.	U	330.	U	330.	U	330.	U
86-30-6	N-Nitrosodiphenylamine	NR		NR		NR		330.	U	330.	U	NR	
91-20-3	Naphthalene	340.	U	340.	U	340.	U	43.	J	330.	U	330.	U
98-95-3	Nitrobenzene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
87-86-5	Pentachlorophenol	1300.	J	1200.	J	1800.	U	1700.	U	1700.	U	1700.	U
85-01-8	Phenanthrene	340.	U	340.	U	340.	U	330.	U	330.	U	330.	U
108-95-2	Phenol	1800.		1800.		340.	U	330.	U	330.	U	330.	U
129-00-0	Pyrene	1200.		1200.		340.	U	330.	U	330.	U	330.	U
111-91-1	bis(2-Chloroethoxy)methane	340.		340.	U	340.	U	330.	U	330.	U	330.	U
111-44-4	bis(2-Chloroethyl)ether	340.		340.	U	340.	U	330.	U	330.	U	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	340,	U	340.	U	340.	U	330*	U	330,	U	330.	U
122-39-4	Diphenylamine	340.	U	340.	U	340.	U	NR		NR		330.	U
108-39-4	3-Methylphenol (m-Cresol)	340.	U	340.	U	WR		NR		NR		NR	

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE II Soil and Groundwater
QA/QC Samples

VOA-8240								
	SAMPLE ID ------->	024-T-G607-96		BLK-0-JL10-01				
	ORIGINAL ID ----->	024TG60796		MBLANK1				
	LAB SAMPLE ID --->	S683346*6		S683346*7				
	ID FROM REPORT -->	024TG60796		MBLANK1				
	SAMPLE DATE ----->	06/07/96						
	DATE ANALYZED --->	06/12/96		06/12/96				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	PJL10	VAL	PJL10	VAL			
67-64-1	Acetone	10.	U	10.	U			
74-87-3	Chloromethane	1.	U	1.	U			
75-01-4	Vinyl chloride	1.	U	1.	U			
74-83-9	Bromomethane	1.	U	1.	U			
75-00-3	Chloroethane	1.	U	1.	U			
75-35-4	1,1-Dichloroethene	1.	U	1.	U			
75-09-2	Methylene chloride	2.		1.	U			
75-34-3	1,1-Dichloroethane	1.	U	1.	U			
67-66-3	Chloroform	1.	U	1.	U			
71-55-6	1,1,1-Trichloroethane	1.	U	1.	U			
56-23-5	Carbon tetrachloride	1.	U	1.	U			
71-43-2	Benzene	1.	U	1.	U			
107-06-2	1,2-Dichloroethane	1.	U	1.	U			
79-01-6	Trichloroethene	1.	U	1.	U			
78-87-5	1,2-Dichloropropane	1.	U	1.	U			
75-27-4	Bromodichloromethane	1.	U	1.	U			
108-88-3	Toluene	1.	U	1.	U			
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U			
127-18-4	Tetrachloroethene	1.	U	1.	U			
124-48-1	Dibromochloromethane	1.	U	1.	U			
108-90-7	Chlorobenzene	1.	U	1.	U			
100-41-4	Ethylbenzene	1.	U	1.	U			
100-42-5	Styrene	1.	U	1.	U			
75-25-2	Bromoform	1.	U	1.	U			
79-34-5	1,1,2,2-Tetrachloroethane	1	U	1.	U			
75-15-0	Carbon disutfide	1	U	1.	U			
78-93-3	2-Butanone (MEK)	10		10.	U			
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U			
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U			
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U			
591-78-6	2-Hexanone	10.	U	10.	U			
1330-20-7	Xylene (Total)	1.	U	1.	U			
540-59-0	1,2-Dichloroethene (total)	1.	U	1.	U			

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE III Soil and Groundwater
QA/QC samples

CLP METAL								
	SAMPLE ID ------->	BLK-0-JL12-01		BLK-0-JL12-02				
	ORIGINAL ID ----->	MBLANK1		MBLANK2				
	LAB SAMPLE ID --->	S6PJL12*1		S6PJL12*2				
	ID FROM REPORT -->	MBLANK1		MBLANK2				
	SAMPLE DATE ----->							
	DATE EXTRACTED -->	08/06/96		08/12/96				
	DATE ANALYZED --->	08/07/96		08/03/96				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	PJL12	VAL	PJL12	VAL			
7429-90-5	Aluminum (Al)	41.1	B	0.5	U			
7440-36-0	Antimony (Sb)	3.	U	3.	U			
7440-38-2	Arsenic (As)	1.5	B	NR				
7440-39-3	Barium (Ba)	0.47	U	0.47	U			
7440-41-7	Beryllium (Be)	-0.88	B	0.46	B			
7440-43-9	Cadmium (Cd)	2.6	U	2.6	U			
7440-70-2	Calcium (Ca)	90.	B	39.6	B			
7440-67-3	Chromium (Cr)	4.1	U	4.1	U			
7440-48-4	Cobalt (Co)	1.9	U	3.4	B			
7440-50-8	Copper (Cu)	3.	B	1.7	U			
7439-89-6	Iron (Fe)	22.1	B	10.	B			
7439-92-3	Lead (Pb)	*0.6*	U	NR				
7439-95-4	Magnesium (Mg)	54.9	B	13.6	U			
7439-96-5	Manganese (Mn)	0.84	U	NR	B			
7439-97-6	Mercury (Hg)	*0.03*	U	NR				
7440-02-0	Nickel (Ni)	4.2	U	4.2	U			
7440-09-7	Potassium (K)	74.9	U	74.9	U			
7782-49-2	Selenium (Se)	1.6	U	NR				
7440-22-4	Silver (Ag)	1.1	U	1.3	B			
7440-23-5	Sodium (Na)	23.6	B	24.8	B			
7440-28-0	Thallium (Tl)	*0.86*	U	NR				
7440-62-2	Vanadium (V)	2.3	U	2.3	B			
7440-66-6	Zinc (Zn)	1.8	U	2.8	B			
57-12-5	Cyanide (CN)	10.	U	NR				

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE III Soil and Groundwater
QA/QC Samples

LOWVOA													
	SAMPLE ID ------->	024-T-G001-03		024-T-G001-03 RE		024-G-GS09-03 RE		024-H-GS09-03 RE		BLK-0-JL12-01		BLK-0-JL12-02	
	ORIGINAL ID ----->	024TG00103		024TG00103		024GGS0903		024HGS0903		MBLANK1		MBLANK2	
	LAB SAMPLE ID --->	S684387*3		S684387*3*RE		S684387*1*RE		S684387*2*RE		S6PJL12*1		S6PJL12*2	
	ID FROM REPORT -->	024TG00103		024TG00103		024GGS0903		024HGS0903		MBLANK1		MBLANK2	
	SAMPLE DATE ----->	07/29/96		07/29/96		07/29/96		07/29/96					
	DATE ANALYZED --->	08/23/96		08/23/96		08/23/96		08/23/96		08/01/96		08/22/96	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL12	VAL	PJL12	VAL	PJL12	VAL	PJL12	VAL	PJL12	VAL	PJL12	VAL
74-87-3	Chloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
74-83-9	Bromomethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-01-4	Vinyl chloride	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-00-3	Chloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-09-2	Methylene chloride	1.	J	1.	J	2.	U	2.	U	2.	U	2.	U
67-64-1	Acetone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-15-0	Carbon Disulfide	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-35-4	1,1-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-34-3	1,1-Dic loroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
67-66-3	Chloroform	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
107-06-2	1,2-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
78-93-3	2-Butanone (MEK)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
74-97-5	Chlorobromomethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
71-55-6	1,1,1-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
56-23-5	Carbon tetrachloride	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-27-4	Bromodichloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
78-87-5	1,2-Dichloropropane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-01-6	Trichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
124-48-1	Dibromochloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
71-43-2	Benzene	1.		1.		1.	U	1.	U	1.	U	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-25-2	Bromoform	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)			5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
127-18-4	Tetrachloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
106-93-4	1,2-Dibromoethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
108-88-3	Toluene	1.	U	0.4	J	0.4	J	0.4	J	1.	U	1.	U
108-90-7	Chlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
100-41-4	Ethylbenzene	1.	U	0.3	J	1.	U	1.	U	1.	U	1.	U
100-42-5	Styrene	3.		3.		1.	U	1.	U	1.	U	1.	U
1330-20-7	Xylene (Total)	7.		7.		0.1	J	0.1	J	1.	U	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 24
PHASE III Soil and Groundwater
QA/QC Samples

LOWVOA													
	SAMPLE ID ------->	024-T-G001-03		024-T-G001-03 RE		024-G-GS09-03 RE		024-H-GS09-03 RE		BLK-0-JL12-01		BLK-0-JL12-02	
	ORIGINAL ID ----->	024TG00103		024TG00103		024GGS0903		024HGS0903		MBLANK1		MBLANK2	
	LAB SAMPLE ID --->	S684387*3		S684387*3*RE		S684387*1*RE		S684387*2*RE		S6PJL12*1		S6PJL12*2	
	ID FROM REPORT -->	024TG00103		024TG00103		024GGS0903		024HGS0903		MBLANK1		MBLANK2	
	SAMPLE DATE ----->	07/29/96		07/29/96		07/29/96		07/29/96					
	DATE ANALYZED --->	08/23/96		08/23/96		08/23/96		08/23/96		08/01/96		08/22/96	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL12	VAL	PJL12	VAL	PJL12	VAL	PJL12	VAL	PJL12	VAL	PJL12	VAL
106-46-7	1,4-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

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				Mean Concentration	RC (2xMC)
		01GS67	01GI68	01GS69	01GI70		
Aluminum	200*	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
Cadmium	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
Cobelt	—	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	1.8
Magnesium	—	795.0 U	665.0 U	1255.0 U	3030.0	1438.3	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	—	5300.0	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	4.0
Sodium	186,000	10700.0	8350.0	7830.0	9810.0	9172.5	18345.0

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)
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 detected, value reported equals one-half detection limit.
RC	=	Reference concentration, calculated as two times the mean concentrations (MC).
FPDWS	=	Florida and/or USEPA Primary Drinking Water Standard (lower of the two) MCL.
*	=	Florida Secondary Drinking Water 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 Sits 3				
Parameter	Minimum Detected Concentration	Maximum Detected Concentration	Mean Concentration (MC)	Reference Concentration (2 X MC)
Metals (mg/kg)				
Aluminum	95.20	12400.00	1916.68	3833.36
Arsenic	1.70	2.40	0.78	1.56
Barium	1.20	10.10	2.32	4.63
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	385.60	66.67	133.33
Manganese	1.70	63.70	10.88	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 us 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		Water		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.		53501		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
METAL	Copper	10.8	U	10.8	U	10.8	U	16.2	
METAL	Iron	942.		53.3	U	677.		1770.	
METAL	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
METAL	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	
METAL	Vanadium	1.5	U	7.5	U	7.9		7.5	U
METAL	Zinc	7.8	U	7.5	U	17.5	U	290.	

*** Validation Complete ***

DATALCP3
10/13/94

NAS PENSACOLA, (GROUND
SOIL SAMPLES
1993 DATA

SAMPLE ID ------->	001-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			
HEXACHLOROCYCLOPENTADIENE 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 ---------->	sei1		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	VAG	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.		&mu		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.		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		3t	
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.		9s.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.T	
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
METAC	Lead	0.44		1.1		0.6		0.41	U	0.41	U	6.7	
METAL	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	ti	1.5	U	1.4	U	1.5	U	2.5	
METAL	Zinc	7.3		6.		29.		19.9		17.2		8.2	

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			
	ORIGINAL ID ----->	01S6903		01S6905		01S6907		01S6909		01S6911			
	LAB.SAMPLE ID --->	552867		552868		552869		552870		552871			
	SAMPLE DATE ----->												
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil			
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG			
Method	Parameter	731446	VAL	731446	VAL	731446	VAL	731446	VAL	731446	VAL	731446	V
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	
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.	
METAL	Cyanide	0.51	U	0.52	U	0.52	U	0.51	U	0.52	U	0.52	
METAL	Cobalt	1.8	U	1.9	U	1.9	U	1.8	U	1.9	U	1.9	
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	
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	
METAL	Potassium	456.	U	465.	U	463.	U	457.	U	463.	U	466.	
METAL	Magnesium	97.1	U	99.	U	98.7	U	97.2	U	98.7	U	99.2	
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	
METAL	Nickel	6.3	U	6.4	U	6.4	U	6.3	U	6.4	U	6.5	
METAL	Lead	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	
METAL	Selenium	0.61	U	0.62	U	0.62	U	0.61	U	0.62	U	0.62	
METAL	Thallium	0.82	U	0.83	U	0.83	U	0.82	U	0.83	U	0.83	
METAL	Vanadium	1.7		1.6		1.5	U	1.4	U	1.5	U	1.5	
METAL	Zinc	4.6		3.6	U	2.	U	2.4	U	1.6	U	3.	

*** 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		01S6710067-11	
	ORIGINAL ID ----->	01S6701		01S6703		01S6705		01S6707		01S6709			
	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		06f16/93		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	3.6	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	3m4	U	3.4	U
PEST	alpha-Chlordane	1+?	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	f.3	U	3+4	U	3.3	U	3.4	U	3.4	U	3.4	U
PEST	Methoxychlor	17.	U	it.	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	3.6	U	3.6	U
PEST	Endrin aldehyde	1 4	[illegible]	3.4	U	0.62	J	3.4	U	3.4	U	3.6	U
PEST	Heptachlor	1.7	[illegible]	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
?EST	Toxaphene	17[illegible]		170.	U	170.	U	180.	U	170.	U	180.	U
PEST	Endosulfan I	[illegible]		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		01S6719		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	3
PEST	Endosulfan sulfate	3.4	U	3.4	U	3.4	U	3i4	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	1.8	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	3m4	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.c	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	3	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	3.4	U	3.4	U	2.6	J
PEST	Endrin aldehyde	[illegible]	[illegible]	3.4	U	3.4	U	3.4	U	3.4	U	3.3	U
PEST	Heptachlor	[illegible]		1.8	U	1.8	U	1.8	U	0.55	3	1.7	U
PEST	Toxaphene	[illegible]		180.	U	180.	U	180.	U	180.	U	170.	U
PEST	Endosulfan I	[illegible]		1.8	U	1.8	U	1.8	U	1.8	U	1.7	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 -->	06/04/93		06/04/93		06/04/93		06/04/93		06/04/93		06/04/93	
	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	[illegible]	[illegible]	3.4	U	3.4	U	3.3	U	3.4	U	3.4	U
PEST	Heptachlor	[illegible]		1.7	U	1.7	U	1.7	U	1.8	U	1.7	U
PEST	Toxaphene	[illegible]		170.	U	170.	U	170.	U	180.	U	170.	U
PEST	Endosulfan I	[illegible]	[illegible]	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U

*** Validation Complete ***

NAS PE ACOLA, 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		06/14/93		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		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,C-Trichlorobenzene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2, -Dichlorophenol	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2 C-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
SVOA	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
SVOA	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		06/14/93		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		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
SVOA	4-Chlorophenyl-phenylether	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Hexachlorocyclopentadiene	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	Hexachlorobutadiene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Pentachlorophenol	810.	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	3[illegible]		340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	3-Nitroaniline	8		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		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	t20	VAL	2	VAL	120	VAL	32	VAL
SVOA	4-Nitroaniline	a30.	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.	I).	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	$40.	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
SYOA	Fluoranthene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVUA	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	360.	U	330.	U
SVOA	Chrysene	3		340.	U	340,	U	340.	U	340.	U	330.	U
SVOA	Bis(2-chloroisopropyl)ether	34		340.	U	340.	U	340.	U	360.	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 ----->	01S6713		01S6717		01S6719		01S6721		01S6723		01S6901	
	LAB.SAMPLE ID --->	553120		553121		553193		553124		553130		552059	
	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
SVUA	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		820.	U	830.	U	820.	U	020.	U	800.	U
SVOA	Nitrobenzene	3		340.	U	340.	U	34u.	U	340.	U	330.	U
SVOA	3-Nitroaniline	8		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		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		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		SOW		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
SVUA	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
SVQA	2,4-Dimethylphenol	330.	U	340.	U	340.	U	330.	U	346.	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
SVQA	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	34u.	U	330.	U	340.	U	340.	U
SVQA	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	346,	U	330.	U	340.	U	340.	U
SVOA	Hexechlorobenzene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Anthracene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	1,2,4-Trichlorobenzene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVQA	2,4-Dichlorophenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2,4-Dinitrotoluene	330.	U	340.	U	340.	U	33Q.	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	3401	U
SVOA	Benzo(k)fluoranthene	330.		340.	U	340.	U	330.	U	340.	U	340.	U
SVQA	Acenaphthylene	3[illegible]		340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Chrysene	3[illegible]		340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Bis(2-chloroisopropyl)ether	33[illegible]		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
SVUA	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
SVQA	2,6-Dinitrotoluene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	N-Nitroso-di-n-propylamine	f30.	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 -->	06/04/93		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	33u.	U	340.	U	340.	U
SVOA	Acenaphthene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Diethylphthelate	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Di-n-butylphthalate	330.	U	340.	U	340.	U	330.	U	34u.	U	340.	U
SVOA	Phenanthrene	330.	U	340.	U	340.	U	330.	U	340.	U	340,	U
SVOA	Butylbcnrylphthalate	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	N-Nitrosodiphenylamine	330.	U	340.	U	340.	U	330.	U	360,	U	340.	U
SVOA	Fluorene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Carbazole	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Hexachlorobutadiene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Pentachlorophenol	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVQA	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
SVOA	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
SVQA	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	340.	U	340.	U
SVOA	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
SVOA	2,4,5-Trichlorophenol	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVOA	Nitrobenzene	330		340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	3-Nitroaniline	8		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
VOA	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Dibr[redacted]hloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Tetrachloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Xylene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	1,2-Dichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Acetone	10.	U	7.	U	11.	U	17.	U	15.	U	13.
VOA	Chloroform	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Methylene chloride	8.	U	8.	U	6.	U	6.	U	10.	U	9.
VOA	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Bromodichloromethane	10.		10.	U	10.	U	10.	U	10.	U	10.
VOA	1,1-Dichloroethane			10.	U	10.	U	10.	U	10.	U	10.
VOA	1,1-Dichloroethylene	10.		10.	U	10.	U	10.	U	10.	U	10.
VOA	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	Trichloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.
VOA	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.

*** Validation Complete ***

DATALCP3
10/13/94

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0067-13		001-S-0067-17		001-S-0067-19		C01-S-0067-21		001-S-0067-23		001-S-0069-01	
	ORIGINAL ID ----->	01S6713		01S6717		01S6719		C1S6721		01S6723		01S6901	
	LAB SAMPLE ID --->	553120		553121		553193		553124		553130		552859	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/03/93		06/05/93				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
VOA	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Acetone	21.	U	27.	U	4s.	U	22.	U	25.	U	10.	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	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	1[illegible]		10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Bromodichloromethane	[illegible]		10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1-Dichloroethane	[illegible]		10.	U	10.	U	10.	U	10.	U	10.	U
VQA	1,1-Dichloroethylene	10	[illegible]	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
VQA	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
VQA	1,1,2,2-letrachloroethane	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-0069-03		001-S-0069-OS		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 -->	06/03/93		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
VQA	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
VQA	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
VQA	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-Diehloroethent	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
VQA	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
VQA	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
VUA	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	[illegible]	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Bromodichloromethane	[illegible]	[illegible]	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1-Dichloroethane			10.	U	10.	U	10.	U	10.	U	10.	U
VUA	1,1-Dichloroethylene	[illegible]		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 **+

Appendix H

Physical Parameter Samples Results

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • savannah, GA 31404 • (912) 354-7858 • Fax (912)352-0165

LOG NO: S5-55087B

Received: 14 SEP 95

Purchase Order: 0766/95

Mr. Jeff Lunceford
Ensafe/Allen & Hoshall
2114 Airport; Blvd., Suite 1150
Pensacola, FL 32504

Project: 0071-00030 NAS Pensacola
Sampled BY: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED
55087B-1	024S000416	09-11-95/1000
55087B-2	024S000519	09-11-95/1030

PARAMETER	55087B-1	55087B-2
Grain Size (ASTM D421/422/1140)		
% Passing sieve No.4	100.0	100.0
% Passing sieve No.10	100.0	100.0
% Passing sieve No.20	99.9	99.9
% Passing sieve No.40	91.8	90.0
% Passing sieve No.60	38.6	34.2
% Passing sieve No.100	2.5	5.9
% Passing sieve No.200	1.6	4.7
Date Analyzed	10.02.95	10.02.95

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S5-55208A

Received; 20 SEP 95

:Purchase Order: 0766/95

Mr. Jeff Lunceford
Ensafe/Allen & Hoshall
2114 Airport Blvd., Suite 1150
Pensacola, FL 32504

Project: 0071-00030 NAS Pensacola/Site 24
sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION, LIQUID SAMPLES	DATE/ TIME SAMPLED
55208A-1	024GGS0101	09-19-95/1030

PARAMETER	55208A-1
Biochemical Oxygen Demand (507/5210)	
Biochemical Oxygen Demand (507/5210), mg/l	<2.0
Date Analyzed	09.20.95
Suspended Solids (160.2)	
Suspended Solids (160.2), mg/l	17
Date Analyzed	09.21.95
Alkalinity (to pH 4.5) as CaCO3 (310.1)	
Alkalinity (to pH 4.5) as CaCO3, mg/l	190
Date Analyzed	09-27.95
Nitrate-N (353.2)	
Nitrate-N, mg/l	2.7
Date Analyzed	09.20.95
Total Kjeldahl Nitrogen (351.2)	
Total Kjeldahl Nitrogen-N, mg/l	0.62
Date Analyzed	09.25.95
Total Phosphorous (365.4)	
Total Phosphorus (365.4), mg/l	0.20
Date Analyzed	09.28.95
Chemical Oxygen Demand (508/5220)	
Chemical Oxygen Demand (508/5220), mg/l	<20
Date Analyzed	09.25.95
Hardness as CaCO3 (6010)	
Hardness as CaCO3, mg/l	190
Date Analyzed	10.01.95

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LUG NO: S5-55208A

Received: 20 SEP 95

Mr. Jeff Lunceford
Ensafe/Allen & Hoshall
2114 Airport Blvd., Suite 1150
Pensacola, FL 32504

Purchase Order: 0766/95

Project: 0071-00030 NAS Pensacola/Site 24
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
55208A-1	024CGS0101	09-19-95/1030

PARAMETER	55208A-1
Standard Plate Count	
Standard Plate Count, CFU/ml	450
Date **Analyzed**	09.20.95

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S5-55208A

Received: 20 SEP 95

Mr. Jeff Lunceford
Ensafe/Allen & Hoshall
2114 Airport Blvd., Suite 1150
Pensacola, FL 32504

Purchase Order: 0766/95

Project: 0071-00030 NAS Pensacola/Site 24
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
55208A-2	Method Blank
55208A-3	LCS/LCS Duplicate % Recovery
55208A-4	LCS % RPD

PARAMETER	55208A-2	55208A-3	55208A-4
Biochemical Oxygen Demand (507/5210)			
Biochemical Oxygen Demand (507/5210), mg/l	<2.0	112/112 %	0 %
Date Analyzed	09.20.95	---	---
Suspended Solids (160.2)			
Suspended Solids ('160.2) mg/l	<5.0	101/101 %	0 %
Date Analyzed	09.21.95	---	---
Alkalinity (to pH 4.5) as CaCO3 (310.1)			
Alkalinity (to pH 4.5) as CaCO3, mg/l	<1.0	101/102 %	0.98 %
Date Analyzed	09.27.95	---	---
Nitrate-N (353.2)			
Nitrate-N, mg/l	<0.050	99/100 %	1.0 %
Date Analyzed	09.20.95	---	---
Total Kjeldahl Nitrogen (351.2)			
Total Kjeldahl Nitrogen-N, mg/l	<0.10	[illegible]	1.3 %
Date Analyzed	09.25.95		---
Total Phosphorous (365.4)			
Total Phosphorus (365.4) , mg/l	<0.10	10[illegible]	3.0 %
Date Analyzed	09.28.95	---	---
Chemical Oxygen Demand (508/5220)			
Chemical Oxygen Demand (508/5220), mg/l	<20	98/98%	0%
Date Analyzed	09.25.95	---	---
Hardness as CaCO3 (6010)			
Hardness as CaCO3, mg/l	<3.3	---	---
Date Analyzed	10.01.95	---	---

SL *SAVANNAH LABORATORIES*
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S5-55208A

Received: 20 SEP 95

Purchase Order: 0766/95

Mr. Jeff Lunceford
Ensafe/Allen & Hoshall
2114 Airport Blvd., Suite 1150
Pensacola, FL 32504

Project: 0071-00030 NAS Pensacola/Site 24
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
55208A-2	Method Blank
55208A-3	LCS/LCS Duplicate % Recovery
55208A-4	LCS % RPD

PARAMETER	55208A-2	55208A-3	55208A-4
Standard Plate Count			
Standard Plate Count, CFU/ml	<1	---	---
Date Analyzed	09.20.95	---	---

Methods: EPA 40 CFR Part 136 and Standard Methods 16th Edition.

Linda A. Wolfe
Linda A. Wolfe

Final Page Of Report

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S5-55087B

Received: 14 SEP 95

Mr. Jeff Lunceford
Ensafe/Allen & Hoshall
2114 Airport: Blvd., Suite 1150
Pensacola, FL 32504

Purchase Order: 0766/95

Project: 0071-00030 NAS Pensacola
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TXME SAMPLED
55087B-6	024SDG0206	09-11-95/1100
55087B-7	024SUG0106	09-11-95/1045
55087B-8	028S000105	09-12-95/1345
55087B-9	028S000303	09-12-95/1515

PARAMETER	55087B-6	55087B-7	55087B-8	55087B-9
Standard Plate Counts				
Standard Plate Count, cfu/g **dw**	85000	5800000	1200000	1500000
Date **Analyzed**	09.20.95	09.20.95	09.20.95	09.20.95
Total **Phosphorous** (365.4)				
Total **Phosphorus** (365.4) , mg/kg dw	26	76	<25	<26
Date Analyzed	09.27.95	09.27.95	09.27.95	09.28.95
Nitrate-N (353.2)				
Nitrate-N, mg/kg dw	<5.2	<6.3	<5.1	<5.2
Date **Analyzed**	09.24.95	09.2435	09.24.95	09.24.95
Total Kjeldahl Nitrogen **(351**.2)				
Total Kjeldahl Nitrogen-N, mg/kg **dw**	77	97	<25	<26
Date **Analyzed**	09.22.95	09.22.95	09.[illegible]5	09.22.95
Total Organic Carbon (9060)				
Total **Organic** Carbon (9060), mg/kg dw	2000	370	[illegible]	1100
Date Analyzed	09.21.95	09.21.95	09.[illegible]	09.21.95
Cation Exchange Capacity				
Cation Exchange Capacity, meq/100g	0.56	**0.34**	0.013	0.049
Date Analyzed	09.27+95	09.27.95	09.27.95	09.27.95
Percent **Solids (160.3)**, %	95	79	98	96

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S5-55087B

Received: 14 SEP 95

Mr. Jeff Lunceford
Ensafe/Allen & Hoshall
2114 Airport Blvd., Suite 1150
Pensacola, FL 32504

Purchase Order: 0766/95

Project: 0071-00030 NAS Pensacola
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
550878-10	Method Blank
55087B 11	LCS/LCS Duplicate % Recovery
55087B-12	LCS % RPD

PARAMETER	55087B-10	55087B-11	55087B-12
Standard Plate Count			
Standard Plate Count, CFU/g dw	<1	---	---
Date Analyzed	9.20-21.95	---	---
Total Phosphorous (365.4)			
Total Phosphorus (365.4) , mg/kg dw	<25	93/101 %	8.6 %
Date Analyzed	09.28.95	---	---
Nitrate-N (353.2)			
Nitrate-N, mg/kg dw	<5.0	101 %	5.0 %
Date Analyzed	09.24.95	---	---
Total Kjeldahl Nitrogen (351.2)			
Total Kjeldahl Nitrogen-N, mg/kg dw	<25	96 %	4.2 %
Date Analyzed	09.22.95	-	---
Total Organic Carbon (9060)			
Total Organic Carbon (9060), mg/kg dw	<100	10[illegible]	1.0 %
Date Analyzed	09.21.95		---
Cation Exchange Capacity			
Cation Exchange Capacity, meq/100g	<0.0033	113/[illegible]	0.88 %
Date Analyzed	09.27.95	---	---

Methods: EPA SW-846, ASTM Standards and Standard Methods 16th Edition.

Linda A. Wolfe

Linda A. Wolfe

Final Page Of Report

EnSafe 1915

CHAIN OF CUSTODY RECORD
PENSACOLA, SITE 24

95256-JB

Page: 1 of 1

To include all this list

Address: 5724 Summer Trees Drive
Memphis, TN 38134

Project Manager: Brian
Telephone No.: (901) 372-7962
Fax No.: (901) 372-2454

Project Number 0071-~~24001~~ 00030

Samplers: (Signature): [signature]

Site 24 Physical Parameter Samples

Field Sample Number	Date	Time	Sample Type	Type/Size of Container	Preservation TEMP.	Preservation Chemical	No. of Containers	GRAIN SIZE only	PHYSICAL PARAMS (TOC, Bulk Dens.)	Total Phos., NO3, TKN,	TOC, CEC, Bulk Den., Moisture Content						Remarks
024S000416	09/11/95	10:00	Soil	1 LITER POLY	4ø C		1	X									
024S000519	09/11/95	10:30	Soil	1 LITER POLY	4a C		1	X									
024SDG0206	09/11/95	11:00	Soil	250 ML POLY	4ø C		2		X								
024SUG0106	09/11/95	10:45	Soil	250 ML POLY	4ø C		2		X								
018S000704	9/12/95	1350	Soil	Poly	"		1	X									
018S000704	"	"	"	"	"		2		X								
018S000804	9/12/95	1400	Soil	poly	"		1	X									
018S000804	"	"	"	"			2		X								
028S000101	9/12/95	[redacted]	[redacted]	Poly			2	X	X								
028S000105	9/12/95	1345	Soil	poly			2		X								
028S000303	9/12/95	1515					2		X								

RELINQUISHED BY:	DATE	RECEIVED BY:	DATE	RELINQUISHED BY:	DATE	RELINQUISHED BY:	DATE
Signature: [signature]	09/13/95	Signature: [signature]	9/14/95	Signature:		Signature:	
Printed: Jeffrey		Printed:		Printed:		Printed:	
Company: E/A&H	TIME 17:00	Company: SCES	TIME 9:35	Company:	TIME	Company:	TIME
Reason: Ship to Lab		Reason: SS-55087(D)		Reason:		Reason:	

Method of Shipment: Fed Ex
Shipment No.: 7021306714
Special Instruction:

Comments: 9/14 per Jeff, transferred samples do not require bulk density or moisture content test [illegible]

Send only all physical samples

After Analysis, Samples are to be:
___ Disposed of (Additional Fee)
___ Stored (90 days Max)
___ Stored Over 90 Days (Additional Fee)
___ Returned to Customer

95262-JWH

CHAIN OF CUSTODY RECORD
PENSACOLA, SITE 24

Page: 1 of 1

EnSafe

1915

Address: 5724 Summer Trees Drive
Memphis, TN 38134

Project Manager: Brian
Telephone No.: (901) 372-7962
Fax No.: (901) 372-2454

Project Number 0071-24001

Samplers: (Signature): DB Hardy

Field Sample Number	Date	Time	Sample Type	Type/Size Of Container	Preservation TEMP.	Preservation Chemical	No. of Containers	BTAN-N	CTTP	HARDNESS	HPC						Remarks
024GGS0101	09/19/95	10:30	Water		4ø C		7	X	X	X	X						PHYSICAL PARAMETERS

RELINQUISHED BY:	DATE	RELINQUISHED BY:	DATE	RELINQUISHED BY:	DATE	RELINQUISHED BY:	DATE
Signature: John Hagan	09/19/95	Signature: Received Bonds	9-20-95	Signature:		Signature:	
Printed: John Hagan		Printed:		Printed:		Printed:	
Company: EA&H	TIME 17:00	Company:	TIME 9:32 am	Company:	TIME	Company:	TIME
Reason: Ship to Lab		Reason:		Reason:		Reason:	

Method of Shipment: Fed Ex
Shipment No.: 4889671732
Special Instruction:

Comments:

After Analysis, Samples are to be:
___ Disposed of (Additional Fee)
___ Stored (90 days Max)
___ Stored Over 90 Days (Additional Fee)
___ Returned to Customer

Appendix I

Responses to USEPA Comments

OU13 Draft RI Report

USEPA Comments

1.0 GENERAL COMMENTS

1. Section 6.0, Page 6-1, Paragraph 2 indicates that Florida and/or EPA's RBCs, guidance concentrations and promulgated standards have been defined as PRGs for this investigation. For the groundwater, the PRGs are EPA's MCLs/SMCLs and Florida drinking water standards. However, it should be noted that Region 4 requires RBCs as criteria for COPC screening. Since MCL/SMCL are not regarded as risk-based values, these values should not be used for the COPC screening. This section should be revised to follow the Region 4 guidance.

RESPONSE:
The PRG screening discussed in Section 6, Nature and Extent, was used to guide the contaminant assessment process, and was not intended to define COPCs (which was performed in the BRA). The PRGs were agreed upon early in the investigation to function as a threshold limit value for identifying contaminants of potential significance that require delineation sampling.

2. Section 6.0, Page 6-1, Paragraph 2 discusses the use of the RBCs as PRGs to screen potential contaminants prior to discussion of the nature and extent of contamination. However, it is the Region 4 policy not to use human risk-based screening in the nature and extent of contamination section because such approach may overlook the [illegible] logical risks. Furthermore, the use of the term PRG at this point is inappropriate beca[illegible] Gs should be used after contaminants of concern have been developed. This section [illegible] e re-written accordingly.

RESPONSE:
See the response to USEPA general comment 1.

3. Section 6.1.1, Page 6-8, Paragraph 1, Sentence 2 states that benzo(a)pyrene (BAP) exceeded its PRG in Site 8 soils. However, a review of SVOC tables in Appendix F revealed that other carcinogenic PAHs were detected. It is suggested that all carcinogenic PAHs be selected if one is selected. The screening should be revised, and the figures should be re-drawn,

   This comment also applies to the PAH issue in Site 24,

RESPONSE:
Cumulative effects for all carcinogenic PAHs was calculated as part of the BRA, Section 9. As described in the RI, the NAS Pensacola project utilizes a set of PRGs that includes appropriate screening values for individual PAHs. This set of PRGs incorporates the lowest value from several different replatow-based data sets. Assumably, these data sets encompass cumulative effects. The PRGs were agreed upon early in the investigation to function as threshold limit values for delineation only; it was also agreed that only exceedances of these values would be presented. Please see the response to USEPA General Comment 1.

4. Section 6.1.2, Page 6-10, Paragraph 2, Sentence 2 states that there were two antimony exceedances of the MCL, below RC of 30.2 ppb. However, this high RC concentration may have eliminated antimony as a COPC. This issue should be revisited.

RESPONSE:
The background samples representative of NASP background, from which the RC is derived, were appropriately chosen and agreed upon early on for NASP investigations. Regulatory exceedances below site-specific background were not addressed as contamination.

5. Figure 6-1 shows background sample locations. However, the background sample location that relates to samples 01GS69, 01G170 and DSW51 may have been improperly located. Groundwater flows north northeast at the site. As such, this may have an effect at the subject location which is situated cross gradient of the area of concern. Using this location fur background samples should be revisited to ensure that the background location is free of contamination.

RESPONSE:
Background sample locations were established independent of known cor [illegible] n sources. Simply because a background location is across gradient from a site is not rea[illegible] h to doubt the integrity of a background sample. It is theoretically impossible, given [illegible] site-specific hydrogeologogy (including hydraulic conductivity?flow direction, flow velocity?and transverse and longitudinal dispersivities), and the fact that OU13 is approximately 2500 feet away from the background location, that low level inorganic concentrations from OU13 affect the cited background well cluster.

6. Figure 6-2 shows inorganics detected in soil samples exceeding PRGs. However, according to the Region 4 guidance, inorganic screening should be conducted by comparing the 2x mean background results. However, since arsenic has its PRG as 0.43 ppm and its 2x mean background as 1.56 ppm (see Appendix D). Arsenic is not an exceedance where the 2x mean background is used for the screening. The figure should be revised accordingly.

This comment also applies to other figures in Section 6.

6) This comment is noted; however, the RC is NOT considered a PRG, which are the lowest values denved from several regulatory-based data sets, and are used for delineation purposes only. Furthermore, the figure clearly denotes that arsenic exceedances exceeding the PRG were actually below the RC. Without additional specific examples, the second part of this comment is unclear.

7. Section 10.2, Page 10-8, Paragraph 1, Sentence 3 states that the Navy recommends "no further action" for Site 8 soil, and Sites 8 and 24 groundwater give the limited exposure potential to these media. However, the text needs to discuss in greater detail what is meant by "the limited exposure potential to these media" as it relates to contamination of soil at Site 8 and soil and groundwater at Sites 8 and 24. The "no further action" recommendation should be clearly justified. The text should be revised accordingly.

7) The limited exposure potential refers to the paving at Site 8 (limiting soil exposure) and the non-use of groundwater at both Sites 8 and 24. These limits are clearly explained at numerous locations within the RI (for example, in the Abstract, the Executive Summary, and on page 10-7 in the summation for the HHRA). As a result, the logic follows that there simply are no receptors to these media. If the RI is examined, it does not follow that this needs to be justified further within the document.

2.0 SPECIFIC COMMENTS

1. <u>Section 3</u>.
This document does not have a map showing the surface and groundwater flow and topography of the site. Maps showing the aforementioned characteristics s ıld be included in the document.

1) There are no surface waters involved with the OU13 area. Groundwater i: : :scribed and mapped in Section 5. Page 2-4 clearly states that the topography at the site is ~ c ı .ally flat, with relief across the site approximately only two feet.

2. <u>Section 4.1, Page 4-4, Paragraph 0, Sentence 1</u>.
The text states that Phase II sampling activities were designed to delineate concentrations exceeding PRGs of interest. However, the text does not indicate which PRG is being used in the comparison. The text should state that the RBC in the appendix was compared to the sample analytical results.

RESPONSE:
Section 6 provides the sources for all PRGs used; the document clearly states that the lowest of ANY applicable PRG (RBC, MCL, etc.) is utilized in the assessment comparisons. Additionally, the figures utilized in Section 6 note the PRG used for any given parameter.

3. **Table 5-1, Page 5-4**.
Table 5-1 summarizes monitoring well construction information and water level elevations. However, there are several dashes on the table. It is not clear what the dashes signify. The dashes should be removed and "Not Applicable" or "Not Available" added to the table as deemed appropriate. An explanation regarding the water level should be added to the text.

RESPONSE:
The dashes refer to the fact that the wells were unavailable for measurement; that is to say they were not installed at that time. The table will be revised.

4. **Section 7.1.3, Pages 7-5 and 7-6**.
This section discusses blanks indicating the use of 10x and 5x rules to determine the positive detections. However, in a discussion of acetone concentration in Site 8, the text gives the impression that the 10x rule does not apply to the detection of acetone due to the potential cross-contamination (See page 7-6, paragraph 1). If acetone in Site 8 can be an exception to the 10x rule, this section should be revised or clarified accordingly.

RESPONSE:
The text does not state that acetone is an exception to the 10x rule. It provides rationale for the presence of acetone in several investigative samples as potentially being related to lab cross-contamination OR degradation of IPA used in the field decontamination process. Given that this is not an uncommon occurrence in any lab (the lab used WAS CLP-certified by the USEPA), the presentation of this rationale was quite thorough. It is not felt that further clarification is necessary.

5. **Section 10.1, Page 10-3, Paragraph 0, Sentence 1**.
The text states that the extent of all organic PRG exceedances is limited [illegible] te 24 area. However, this statement is inaccurate because Figure 6-3 shows orga[illegible] ted in soil samples exceeding PRGs at Site 8. The discrepancy should be resolved.

RESPONSE:
This statement referred to PRG exceedances on Site 24. As clearly presented in Section 10, nature and extent is summarized for sites 8 and 24 seperately.

6. **Section 10.0**.
The text draws various conclusions from this RI. However, the text lacks references to tables, figures, and comparisons to support the conclusions. The conclusion summary should be revised to provide reference data that supports the results of the investigation and conclusions drawn from the report of the site.

RESPONSE:
Conclusions are drawn from an integration of ALL the data presented within the body of the report. It is felt that all statements within the summary are supported and fully explained, and the sources of data are obvious. Without specific examples provided in the comment, the need for additional clarification cannot be established. The reviewer is referred to appropriate sections, with acompanying explanations, as included in the report

7. **Appendix B**.
Well construction diagrams and soil boring logs are presented in Appendix B. However, the groundwater levels are not shown graphically in the logs. These levels should be shown on all monitoring logs.

RESPONSE:
This comment is noted; however, such a technique is normally designed to denote groundwater occurrences relative to different lithologic units. Given the homogeneity of OU13 subsurface, this was not deemed to be necessary, and better represented on a two-dimensional horizontal format. Groundwater levels for all wells ARE presented in the log text (see the top of the log forms) and are presented in both tabular and graphical format in Section 5.

8. **Appendix D**.
Appendix D tabulates the Preliminary Remediation Goals (PRGs) for soil and groundwater contaminants. However, the NASP reference concentration given for aluminum in soil does not match that in Appendix G. In addition, to be consistent "reference concentration" in Appendix G should read as "NASP reference concentration."

RESPONSE:
The aluminum citation will be revised. ALL citations for "reference concentra[illegible] consistent with this report, are obviously limited to NASP. The document is not in[illegible] establish reference concentrations outside of its inherent responsibilities; appendices should [illegible]e taken out of context of the report.

9. **Appendix D**.
Appendix D presents the Preliminary Concentration Goals. However, footnotes explaining the superscripts "N", "C", and "CG" should be included in the table. In addition, the references for the listed EPA and FDEP values should be given at the end of the table along with an explanation for the NASP reference concentration.

RESPONSE:
A key will be added to the appendix tables to explain superscripts. References for the FDEP and USEPA PRGs, and an explanation for the reference values are provided in Section 6 of the main body of the report. Again, the appendix should not be taken out of context of the report; they are

intended to support the report, not to be stand-alone documents..

10. **Appendix E**.
This section displays only the contaminants and the samples in which the PRGs were exceeded. However, an appendix should present the data for all analytical results for all samples, including the samples which had non-detected values for the detected contaminants. This appendix should be revised accordingly.

RESPONSE:
Appendix F provides the complete set of analytical results; Appendix E was intended only to present PRG exceedances.

11. **Appendix F**.
Sampling results are presented in tabular form in Appendix F. However, a key to match sample I.D.s in the appendix with the samples to figures in the report is missing. A key for the sample designation should be presented.

RESPONSE:
There is no difference between sample designations in the appendix and those used in report figures, therefore a key is unnecessary. The procedure for sample designations is provided on page 4-1 of the text, and is consistent with the CSAP .

12. **Appendix G**.
Appendix G includes a summary table of background groundwater sample results. However, sample number DSW50 and DSW51 (background) identified on Figure 6-1 missing from the aforementioned table. An explanation should be given for excluding the object sample numbers from the table.

RESPONSE:
These samples were obtained from the deeper Main Producing Zone wells. In that there are no deep wells on OU13, and the investigation was limited to the shallow surficial zone, the inclusion of these samples in the appendix served no useful purpose.

13. **Appendix G**
Appendix G includes a summary of analytical results for background soil samples. However, the table lacks sample numbers. The sample numbers for the soil samples should be included in the table.

RESPONSE:
The background groundwater and soil sample analytical results, including sample numbers ARE located in this appendix. They immediately follow the noted summary table.

14. **Appendix G.**
It was observed that the stated antimony detection limit (30 ug/L) for the background samples is greater than the FPDWS (6 ug/L). However, it is noted that lower detection limits for antimony can be achieved through graphite furnace atomic absorption where a detection limit of 5 ug/L can be achieved. Therefore, it is suggested that these wells be re-sampled for antimony and analyzed by the graphite furnace method.

RESPONSE:
The reviewers point is well made. The Navy recognizes that technological advances will occur during the course of a long-term project such as NASP. However, the rule of diminishing returns needs to be applied at some point. In this case, site-specific background levels were determined using the best available technology and approved methods at the the time the samples were collected. Further, these analytical methods and results were agreed upon for use as background at NASP.

RISK ASSESSMENT

1.0 GENERAL COMMENTS

1. Section *6.0,* Page 6-1, Paragraph 2 discusses the use of RBCs as PRGs to screen potential contaminants prior to discussion of the nature and extent of contamination. However, it is the Region 4 policy not to use human risk-based screening in the nature and extent of contamination section because ecological impacts can be ignored by such an approach. Furthermore, the use of the term PRG at this point is inappropriate. PRGs should be used after contaminants of Concern have been developed. This section should be written and the RBC screening should be removed accordingly.

RESPONSE:
Section *6* presents the PRGs and how they were used to evaluate data in the Nature and Extent discussion. The reviewer should revisit this section to familiarize themselves with nature and extent screening versus BRA screening. The PRGs used in Section *6* are referenced in bulleted text on pages 6-1 and *6-2.* Screening for PRGs at the nature and extent phase of the investigation is intended only to provide a point of reference. The actual COPC/ECOPC screening processes are performed in !Section 9 for the human health and ecological risk assessments, respectively. The HHRA screening was performed according to guidance using the sitespecific PRGs for surface soil. The risk to groundwater is recognized by the use of leachability-based PRGs as noted in the text for chemical contamination assessment. The pathway for human consumption of groundwater is incomplete, as there are no current users of this groundwater, nor is it reasonable to assume there will be. Ecological assessment screening, while cognizant of the PRGs used for nature and extent screening, did not rely solely on them but rather encompassed a review

of all the available data.

2. Section 9.1.2.1, Page 9-40 discusses the sampling at Site 8. However, after reviewing the data for Site 24, it is apparent that some samples labeled as Site24 samples are, in fact, Site 8 samples (Site 24 samples are located on Site 8). These samples are shown on Figure 6-6 as 24S04, 24S05, 24S13, 24S14, 24S15, 24S16, and 24S17. Since dieldrin was detected in this soil group, the text should have adequate discussions for the site- wide dieldrin contamination. Because of this sampling error and lack of discussions on dieldrin contamination, the soil portion of the risk assessment for these sites is not acceptable.

RESPONSE:
The crossover, or lapping, of samples is due to the segragated nature of the site assessments (Site 24 was completed.before Site 8; it was only after it appeared they may be related that they were combined to form OU13). However, the dieldrin present in the cited samples did not exceed the appropriate PRG (RBC). Given that the Site 8 BRA utilized the maximum detection of dieldrin (which was not associated with the cited samples, but located elsewhere on the site) to develop the exposure estimator, the evaluation of risk on this site is both very conservative and acceptable. In other words, the dieldrin exposure estimated for Site 8 is far greater than that represented by the locations cited by the reviewer.

3. Section 9.2., Page 9-117, Paragraph *2* is the introductory paragraph for the ecological risk assessment:. However, a list of the references used as guidance sources for this section is not provided. The text should be revised to include a list of the guidelines used as references for the ecological section of this document.

RESPONSE:
References used as guidance sources will be added tu this paragraph

4. Section 9.2.1, Page 9-117, Paragraph 3 states that only pesticides, PCBs, i . and SVOCs were the only "significantly elevated soil constituents at the sites." However, it is unsure what criteria were used to determine which constituents were "significantly elevated". The text should be revised to screen COPCs using the Region 4 guidance (EPA, 1995). Any COPCs that exceed the screening criteria must be included in a full ecological risk assessment.

RESPONSE:
Based on EPA (1997) guidance for screening assessments, contaminants of concern were selected based on site history and environmental setting. The contaminants selected for the ERA (including those that were "elevated") were above background or were related to known site activities. It is felt that selection of the ECPCs was appropriate and conservative considering the nature of the sites.

5. Section 9.2.2, Page 9-1 18, Paragraph 0 states that insect populations may be at risk from contaminants at the site due to direct exposure. However, the text should be modified to include a brief discussion of other potential terrestrial invertebrates at the site such as earthworms.

RESPONSE:
The sandy soil does not make establishment of earthworm populations feasible. Ground-dwelling insects are much more common at the site.

6. Section 9.2.3., Page 9-118, Paragraph 1 states that the assessment endpoint selected for terrestrial wildlife is the maintenance of well-balanced terrestrial wildlife populations and communities. However, this endpoint is too vague and should be modified to select an appropriate assessment endpoint which is an "explicit expression of the actual environmental value that is tu be protected" (EPA, 1992a). In addition, according to EPA guidance, the assessment endpoint(s) should be selected based on: 1) the constituents present and their concentrations, 2) mechanisms of toxicity to different groups of organisms, 3) potential species present, and 4) potential complete exposure pathways. Therefore, the assessment endpoints should be revised to incorporate the criteria stated in EPA guidance.

RESPONSE:
As stated in EPA's (1997) guidance document; Section 1.2.5, "For the screening-level ERA, assessment endpoints are any adverse effects on ecological receptors, where receptors are plants and animal populations and communities...Adverse effects on populations can be inferred from measures related to impaired reproduction, growth, and survival. Many of the screening ecotoxicity values now available or likely to be available in the future for the Superfund program are [illegible] ed on generic assessment endpoints and are assumed to be widely applicable to sites around [illegible] "

Representative wildlife species were selected as endpoints based on their expo[illegible] ential at the site (they occur at the site), their feeding regimes (both herbivorous and omnivor[illegible] species), and the potential reproductive effects from suspected or known contaminants at the site. No sensitive receptors occur at the site, Knowledge of the site and understanding of the terrestrial community was used to objectively determine which endpoint species would be used in the risk assessment. It is not felt that discussion of the EPA criteria is necessary.

7. Section 9.2.3, Page 9-126, Paragraph 2 discusses the effects of lead and the uncertainty associated. with its potential risk to receptors. However, although this discussion is appropriate for inclusion in the ERA, this discussion should be included in a separate uncertainty section. The text should be moved to the uncertainty section of the document.

RESPONSE:
It is felt that the discussion on lead is appropriate for characterization of the risk potential to birds. However, an uncertainty section has also been added **to quantify** these issues.

8. Section 9.2.4, Page 9-126, Paragraph 3, Sentence 3 **states** that the 'NOAEL is a level that typically provides a low degree of confidence. However, this statement is not necessarily true and the rationale supporting this statement should be included in the text. If no rationale can be provided, then this statement should be removed from the text.

RESPONSE:
This statement was a subjective assessment of the two effects endpoints selected for the **risk** assessment. The basis is **as** follows: **Sample** et **al.** (1996) **states** "The NOAEL-based benchmarks...represent values *believed* to' be nonhazardous for the listed wildlife species; the LOAEL-based benchmarks represent threshold **levels at** which **adverse** effects are *likely* to become evident." **Thus** NOAELs **are** not observed effect **levels,** and may or may not be truly **applicable** because they **are** typically derived **from** LOAEL values with an uncertainty factor applied but, LOAELs are effect levels that have been observed and thus provide **a** greater degree of confidence to the user.

9. Section 9.2.4, Page 9-126, Paragraph 3 **states** that the **fact** that these maximum **lead** and DDD concentrations do not **exceed** the established LOAEL **values** is **more significant**. However, this statement is incorrect **for** DDD. Specifically, Table 9-41 shows **that the DDD** values were PDE-0.13, NOAEL-0.003, **and** the LOAEL-0.028 for the American Robin. The PDE for the American Robin **exceeds** both the NOAEL and LOAEL for DDD. Therefore, the text should be revised to appropriately address risk to the American Robin fro DDD.

RESPONSE:
This comment is :noted. **This issue will** be modified in the **text.**

2.0 SPECIFIC COMMENTS

1. **Section 6.1.1, Page 6-8, Paragraph 1, Sentence 2**.
This sentence **states that** benzo(a)pyrene (BAP) **exceeded** its PRG in Site 8 soils, However, a review of the SVOCs **table** in **Appendix** F revealed **that** other carcinogenic PAHs were detected. Since it is **likely** that the PAHs act at least additively, all carcinogenic PAHs should be selected **if one is** selected. To do so, a TEF concentration **equivalent** could be calculatedl and used. The screening should **be** revised and the **figures** should **be re-drawn**. This comments **also applies** to the **same** issue in Site **24.**

RESPONSE:
Please see the response to USEPA General Comment 3.

2. **Section 6.1.2, Page 6-10, Paragraph 2, Sentence 2.**
This sentence states that there are two antimony exceedances of the MCL below the reference concentration (RC) of 30.2 ppb, so antimony is not a chemical of concern. However, according to the Region 4 guidance, if the level of a chemical in a given medium exceeds a state or federal chemical specific ARAR, that chemical should be a COC (EPA, 1995). 'Therefore,antimony should be a COC due to its exceedance of MCL. This comment also applies the same issue in Section 9.1.3.3,

RESPONSE:
The assessment screening utilized incorporates the use of NASP-specific background levels ("reference concentrations") as well as set of regulatory levels. Derivation of background is described in Section 6. The background analyses, performed early in the NASP investigations utilized an antimony CRDL of 60ug/L, in accordance with the CLP 9/91 SOW. By default, background concentrations become the point of departure for further assessment of any kind. Regulatory levels below the resulting background levels fall out of further screening.

3. **Figure 6-5 — e 6-11**
This figure only shows the concentrations that exceeded the respective screening concentrations. However, once a constituent exceeds a screening concentrations, all concentrations should be displayed for all samples because such approach will help to define the plumes. This comment applies to all concentration figures.

RESPONSE:
The screening concentrations (PRGs) incorporate a number of regulatory data se [illegible] and represent levels of chemicals that may be a concern. Assumably, levels below PRG [illegible] ot represent significant concern.. Therefore, these levels are used as assessment threshold cr [illegible] ond which assessment is considered complete. It has been agreed that report assessment [illegible] resent only PRG exceedances. Where discreetly defined plumes do exist (as in other NASP [illegible] s) efforts are made to completely portray them. In the case of OU13, there are no discreet plumes. If a reviewer has a need for additional information, the complete data set is presented in the appendices.

4. **Section 9.1.1.1, Page 9-5, Paragraph 2, Sentence 5.**
This sentence states that the subsurface soil results were evaluated in Section 8 with respect to contaminant migration from soil to groundwater or air. However, a review of Section 8 revealed that the soil to air and soil to groundwater RBCs and/or SSLs were not discussed nor used in this evaluation. All detected compounds and analytes should be compared to either site-specific SSLs or default SSLs regardless whether or not they have been previously screened out. Thus, Section 8.3.1 should be revised accordingly.

RESPONSE:
The soil to groundwater pathway was evaluated in Section 6 through the use of NASP-specific PRGs, which do include appropriate leachability default values for subsurface soil contaminants. The surface soil to air pathway screening is conducted for VOCs only, and given that Site 8 surface soil is covered, was conducted only for Site 24. This is aptly described in Section 8.3. Section 8.3 will be revised to elaborate on the soil to groundwater screening.

5. **Section 9.1.1.3, Page 9-6, Paragraph 1, Sentence 5**.
This sentence states that when the maximum detected concentration was higher than one-half the detection limit, this could result in a high bias when one-half the detection limit was substituted for a non-detected result. However, this statement is not correct as the maximum detected concentration should have no relation to the detection limit except in a diluted sample. In general, the Region 4 policy is that the rule of substituting one-half the detection limit should be followed and the substituting of one-half of the minimum detected value is not codified in guidance. (This approach was confirmed by Dr. Ted Simon of Region 4 in a telephone conversation).

RESPONSE:
When the maximum detected concentration is lower than one-half the detection or reporting limit, utilizing one-half the minimum detected concentration for ND values removes the high bias of blindly using the CRDL. Clearly, if technology is capable of lower detections, the appropriate use of this technology has merit. Dr. Simon, in fact, endorsed this approach for use at other federal facilities when the quantitation limit did not reflect the detection limit

6. **Section 9.1.1.5, Page 9-8, Paragraph 2, Sentence 3 & 4**.
These sentences introduce the subject of COCs in the middle of the CC discussion. However, introduction of the subject of COCs at this point serves no u[illegible] pose. It is suggested that these two sentences be removed.

RESPONSE:
This comment is noted; however, the inclusion of COCs at this point certainly does no harm.

7. **Section 9.1.1.5, Page 9-9, Paragraph 2**.
This paragraph discusses the derivation of the risk-based screening values. However, the language in this paragraph implies that the risk-based values were re-calculated by the risk assessor. It is suggested that the text be modified to show that tables of data were the sources of the screening concentrations.

RESPONSE:
This comment is noted, and the text will be revised.

8. **Section 9.1.1.7, Page 9-12, ,Paragraph2, Sentence 2**.
This sentence lists the receptors for the sites. However, cemetery workers is a receptor that is not addressed. In a previous section, the text states that cemetery workers uncovered debris in constructing graves. If the cemetery were to be expanded, then these on-site workers could be exposed. Therefore, this receptor should be addressed.

RESPONSE:
The current maintenance worker was included for this purpose. The scenario developed for the current worker assumed chronic exposure to reasonable maximum soil concentrations of each COPC. The analytical data indicate that impacts were greatest in surface soil at Site 24; cemetery workers would be exposed to lower average concentrations. Given that risk and hazard projections for the maintenance worker were found to be acceptable, revision of the document to incorporate a less conservative scenario will not be performed. See the response to USEPA Comments 9 and 10+

9. **Section 9.1.1.7, Page 9-12?Paragraph 2, Sentence 3**.
This sentence states that worker-related exposure was addressed exclusively fur maximally exposed site workers. The implication is that risk estimates were not prepared for current site workers. However, this decision does not present a reasonable picture of current site risk. Even though the current worker may have limited contact with contaminated media, the exposure of the current worker should be estimated. This approach will provide the risk manager information to decide the need for immediate action and/or ranking for future action. Therefore, the current site worker should be added as the receptor.

RESPONSE:
As it pertains to Site 24, please refer to the responses to USEPA Comments 8 and [illegible] At Site 8, the presence of pavement eliminates the exposure pathway to current workers.

10. **Section 9.1.1.7, Page 9-13?Paragraph 1, Sentence 4**.
This sentence states that construction workers would not disturb the soil b[illegible]w 2 feet deep because the water table is generally close to the surface. However, the depth to the water table is not stated and it is noted that subsurface soil samples were collected from a depth of 11 feet at Site 8. Therefore, the issue of the depth should be clarified, and the exposure of construction workers to subsurface soils should be considered.

RESPONSE:
This comment is noted, and the text will be clarified. At Site 8, the concentrations of BEQ, dieldrin, and arsenic decreased (or were non-detect) at depth. The implication is that a construction worker would be exposed to lower (or no) levels of the COPCs and only if engaged in activities restricted to the immediate vicinity of the building foundation, Furthermore, these individuals would be exposed at a lower frequency and for a shorter duration than the hypothetical workers assessed. As a result, it may be concluded that short-term construction activities would not pose a significant risk

to associated workers.

At Site 24, each COPC was either not detected in subsurface soil or reported concentrations were below residential screening **values.** Furthermore, any individual **exposed** to subsurface soil would do so at a lower frequency and shorter duration than the maintenance workers and industrial workers formally assessed. **As** a result, it may be concluded that cemetery workers would not be exposed to significant levels of contaminants.

11. **Section 9.1.1.7, Page 9-15, Paragraph 3.** Sentente 3.
This sentence states **that** many of the COPCs were not in **a** well-defined plume. However, because of the use of PRG screening **in** the nature and extent section, there is minimal delineation and discussion of the **plumes.** Additional information is necessary and further discussion is needed in Section *6,* before Section 9 can state that there are no well-defined plumes. The issue of **defined plumes** should be re-examined after the revisions to Section 6.

RESPONSE:
Although PRGs were used for comparative **purposes in** Section *6,* they were not used to eliminate contaminants from futher consideration. The conclusions relative no defined plumes were made based **upon a** review of the **data. Please see** the response to USEPA Comment 3.

12* **Table 9-1, Page 9-17.**
This **table** lists 100 mg/day as the soil ingestion rate for the maintenance worker. However, the maintenance worker (particularly when performing grounds maintenance) is **likely** to have a much higher soil ingestion rate. According to Region 4 guidance (EPA, 1995), a suggested ingestion rate of 480 mg/day can be used. This table should be revised accordingly.

RESPONSE:
The 480 mg/day soil ingestion rate suggested was recommended for contact intensive activities and acute exposures. The 100 mg/day ingestion rate used to **compute** worker exposure is considered an appropriate estimator of chronic **soil** contact.

13, **Section 9.1.1.10, Page 9-36?Paragraph 4.**
This paragraph discusses the **use** of the H statistic **in** estimating the UCL of **a** log distribution and implies that, because of the use of **exponential** and log transformations, the log UCL often overestimates the UCL and it is greater than the maximum value. However, the reason that the log UCL is often **greater** than the maximum **is** because the distribution is not log-normal. In particular, the log UCL will be **an** overestimate when the sample distribution is uniform. That is, the concentration values are equally spaced and there is not a "bell" curve. Therefore, if the log UCL is greater than the maximum, then the sample distribution **is** not log-normal, and the form of sample distribution should be checked. If it is determined that

the sample distribution is normal, then the normal UCL should be used. A simple test using the coefficient of variation can be found in Gilbert's 1987 publication (page 144). Thus, this paragraph as well as the second and third paragraphs on page 9-37 should be revised accordingly. **NOTE: If there is an adequate amount of data then the above recommendations should be considered, if not use the lower of the UCL or max.**

RESPONSE:

This comment is noted, and the text will be revised.

14. **Section 9.1.2.1, Page 9-40, Paragraph 3, Sentence 1.**
This sentence notes that five out of the six surface soil samples were collected beneath asphalt. However, this means that the five samples are not surface soil samples by definition. In general,,if an area is paved there is no current surface soil exposure. This paragraph should be revised.

RESPONSE:
This comment is noted, but the assessment assumed that surface features would be removed under future site use. This assumption is admittedly conservative but was considered appropriate since the future condition disposition of the site cannot be anticipated with absolute certainty.

15. **Section 9 1.3.3, Page 9-42, Paragraph 3.**
This paragraph discusses the development of exposure point concentrations for Site 8 and development of the FI/FC term. However, the FI/FC term is not derived appropriately. Typically, the FI/FC term is developed on an areal extent and not on the basis of the number of samples; unless the sampling was performed on a grid basis. In a [illegible] the "hot spot" cannot be moved about the site depending on which samples had the highes[illegible] concentration of individual contaminants. This is because the exposure dose is consid[illegible] the "area under the curve" as the receptor moves in a random fashion.

Finally, it should be noted that the statement that dieldrin was detected exclusively in sample #08S000301 may be misleading. The frequency of detection in Table 9-3 was four out of six samples by reviewing the data in Appendix F. After a careful review of the site data, it is determined that the use of the FI/FC term other than as 1.0 is inappropriate, so the risk assessment for soils should be re-calculated.

RESPONSE:
If uniform exposure to the impacted areas is assumed, use of the hot spot method for individual constituents is a reasonable estimator of overall exposure. If impacts are limited for each chemical, the exposure to each will vary as a function of their distribution in the impacted medium (ie. different curves for each). The FI/FC terms were not based upon detection frequency but rather an estimate of the impacted area. For BEQ and dieldrin, the area of impact was estimated at

approximately 1/10 acre, It is recognized that uncertainty does exist with respect to these factors due to limited sampling conducted. However, because sampling was intentionally biased toward suspected areas of impact, this approach was considered justified.

This text will be revised. Based on the data collected, however, it was concluded that significant (above screening level) dieldrin impacts were isolated to a small area east of the building along the foundation. Due to the limited number of samples collected, UCL estimates could not be made (fewer than 10 samples), and as a result, the maximum detected concentration was used as the EPC.

16. **Table 9-4.**
This table shows the COPC screening for the groundwater for Site 8 and that antimony is not selected as a COPC. However, since antimony was detected above MCL (6 ug/L), it should be selected as a COPC according to the Region 4 guidance. This table should be revised and antimony should be included in the risk assessment.

RESPONSE:
Although antimony was detected above its MCL, it did not exceed NASP-specific background (reference concentration).

17. **Section 9.1.1.3, Page 9-70, Paragraphs 3 and 4.**
These two paragraphs discuss the potential receptors for Site 24. However, a CSM is not presented and a future receptor (cemetery worker) is not addressed. These discrepancies should be resolved.

RESPONSE:
See the response to USEPA Risk Assessment Comments 8 through 10.

18. **Section 9.1.3.3, Page 9-71, Paragraph 1, Seatence 2.**
This sentence states that a sufficient number of samples were collected to compute VOC values, However, it is not clear what computing VOC values means in this context, The context of the sentence and paragraph suggests that the acronym UCL should be used+ The text should be clarified accordingly.

RESPONSE:
18) This comment is noted, and the text will be revised

19. **Section 9.1.3.3, Page 9-71? Paragraph 2.**
This paragraph states that due to the pattern of contamination only a small area of samples was used to calculate the exposure point concentration for residential and occupational use. However, the exposure may not be representative because of an overestimate of exposure (the area has the higher levels of contamination occur). In addition, a review of Figures 6-5,

6-6, and 6-7 found that coverage of Site 24 by the sampling locations is inadequate. Particularly, areas to the north and northeast of the site were not sampled. It is suggested that additional sampling be performed and the analytical protocols should be for the full TAL/TCL. The risk assessment should then be performed using samples for the entire area.

RESPONSE:
The comment accurately reflects the approach taken. Given that the area of highest impact encompasses approximately *0.5* acres, it was deemed conceivable that future residents or workers could be exposed exclusively in this area. The site investigation initially was comprised of a grid-based whole site coverage sampling strategy for field screening. Subsequent formal sampling was focused based on the screening results. Therefore, the sampling is considered adequate for characterization and was biased toward maximally impacted areas.

20. <u>Section 9.1.3.6, Page 9-80, Paragraph 4, Sentence 4</u>.
This sentence suggests that the elevated iron and manganese concentrations may be due to the periodic; application of fertilizer containing these elements and this is acceptable. However, if the fertilizer application is extensive enough to contaminate the groundwater, then this application is contamination of environmental media caused by Navy activities and this type of contamination should be addressed as for any other contamination of environmental media by Navy activities. The text should be revised to address this issue.

RESPONSE:
This comment is noted.

21. <u>Table 9-22,,</u>
This table shows that the inhalation of particulates for maintenance w[illegible]er was not considered to be a significant pathway+ However, since one of the activ[illegible] the worker is mowing the grass and mowing can generate dust, this pathway should b[illegible]ered. This consideration would be helpful in risk communication to workers and the p[illegible]ic.

RESPONSE:
Fate and transport screening in Section 8 indicates that surface soil VOCs to air is an invalid pathway (no VOCs were detected). As for dust ingestion/inhalation, the current worker scenario covers that pathway. See the response to USEPA risk assessment Comment 4.

22. <u>Appendix E</u>.
This appendix displays only the contaminants and the samples in which the PRGs were exceeded. However, as an appendix, it should present the data fur all detected compounds and constituents for all samples including the samples which had non-detected values for the detected contaminants. This appendix should be revised.

RESPONSE:
Appendix F presents the complete set of analytical results; please see the response to USEPA Specific Comment 10.

23. **Appendix G, Groundwater Summary Table.**
The table shows that antimony detection limit (30 ug/L) for the background samples is greater than the FPDWS (6 ug/L). It is known **that lower detection** limits for antimony can be achieved through graphite furnace atomic absorption where a detection limit of 5 ug/L can be achieved. Therefore, it is suggested **that these wells** be re-sampled for antimony and analyzed by the graphite furnace method.

RESPONSE:
See the response to USEPA Specific Comment 14.

RESPONSE:
Appendix F presents the complete set of analytical results; please see the response to USEPA Specific Comment 10.

23. **Appendix G, Groundwater Summary Table.**
The table shows that antimony detection limit (30 ug/L) for the background samples is greater than the FPDWS (6 ug/L). It is known **that lower detection** limits for antimony can be achieved through graphite furnace atomic absorption where a detection limit of 5 ug/L can be achieved. Therefore, it is suggested **that these wells** be re-sampled for antimony and analyzed by the graphite furnace method.

RESPONSE:
See the response to USEPA Specific Comment 14.