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CONTAMINATION ASSESSMENT/ REMEDIAL ACTIVITIES INVESTIGATION COMMODORES POND (SITE 10) NAVAL AIR STATION PENSACOIA PENSACOLA, FLORIDA

INTERIM DATA REPORT

November 1992

Contract N62467-88-C-0200

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This interim data report contains the results of Phase I of the Contamination Assessment/Remedial Activities Investigation conducted at Commodore's Pond (Site 10) located on the Naval Air Station in Pensacola, Florida. The objective of the Phase I investigation at Site 10 was to identify principal areas and primary contaminants of concern at the site and to provide recommendations for subsequent phases of investigation. This investigation was the first step in the completion of a Remedial Investigation/Feasibility Study for the site. Site 10 is located due west of Chevalier Field and occupies portions of an open field and the wooded area southeast of the Murray and Taylor roads intersection. Historical records indicate that the former Commodore's Pond on Site 10 was used for the storage of oak timbers. Field methods did not identify the location of the former pond. The results of this investigation indicate that soil and groundwater contamination are present on and in the vicinity of Site 10.

20 DISTRIBUTION/ AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT ☐ DTIC USERS	21 ABSTRACT SECURITY CLASSIFICATION
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Metals, total recoverable petroleum hydrocarbons, polynuclear aromatic hydrocarbons, and phenols are the primary contaminants. No contaminant source areas within Site 10 were conclusively identified. However, although the former Commodore's Pond is considered an unlikely source of current, on-site contamination its contribution to at least part of the detected Site 10 contamination cannot be dismissed. Repeated and widespread trenching and earthmoving activities have occurred on the site over many years and are thought to have potentially caused widespread dispersal of any more concentrated historical contaminant sources, if and where they occurred. Adjacent, non-Site 10 sources of contamination, such as Site 23 (Chevalier Field Pipe Leak Area), Site 36 (Industrial Waste Sewer), and/or areas west of Site 10, may be impacting Site 10. Further assessment activities are required at and in the vicinity of Site 10.

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RECORD OF DOCUMENT CHANGES

Revisions to this document were made based on comments received from the U.S. Environmental Protection Agency, Florida Department of Environmental Regulation, Florida Department of Natural Resources, and National Oceanic and Atmospheric Administration. All revisions are in bold and enclosed in brackets to denote changes to the last version of this document.

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EXECUTIVE SUMMARY

As part of the U.S. Navy's Installation Restoration Program, Phase I of the Contamination Assessment/Remedial Activities Investigation was conducted for Commodore's Pond (Site 10), located on the Naval Air Station in Pensacola, Florida. This work was performed by Ecology and Environment, Inc., under contract to the U.S. Navy, Southern Division, Naval Facilities Engineering Command.

Site 10 is located due west of Chevalier Field and occupies portions of an open field and the wooded area southeast of the intersection of Hurray Road and Taylor Road. Site 10 was formerly the location of a small surface vater body. In the mid-1800s, the pond was used for the underwater storage of shaped oak timbers. Debris was unearthed in the late 1960s during trenching operations for installation of the Industrial Wastewater Treatment Plant system. Abandoned oak timbers were exhumed and reburied on Magazine Point. It is reported that no hazardous materials were encountered during this effort. However, due to the proximity of Site 10 to the Chevalier Field Pipe Leak Area (Site 23), there is a possibility that subsurface contamination may exist.

The purpose of the Phase I investigation was to identify principal areas and primary contaminants of concern at the site and to provide recommendations for subsequent phases of investigation. The Phase I fieldwork included a site reconnaissance, habitat/biota survey, surface emissions survey and particulate air screening, radiation survey, geophysical survey, utilities survey, the collection and analysis of soil and groundwater samples, and a hydrologic assessment.

Soil and groundwater contamination are present on Site 10. Metals, total recoverable petroleum hydrocarbons (TRPHs), polynuclear aromatic

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hydrocarbons (PAHs), and phenols are the primary contaminants. There were no source areas found within the perimeter of the site to which the site soil and groundwater contamination could be attributed; however, there is evidence that adjacent, off-site sources of contamination, such as Site 23 (Chevalier Field Pipe Leak Area), Site 36 (Industrial Waste Sewer), and/or areas to the west, may be impacting Site 10.

The exact former location of Commodore's Pond, including whether it existed vithin the confines of Site 10, could not be determined from historical records or by field techniques.

Activities that have disturbed and redistributed soils and subsoils have occurred over the Site 10 area. Because a number of subsurface utilities intersect in the area of Site 10, virtually all areas of the site have been affected by activities, such as excavation, trenching, backfilling, and grading, associated with the installation, maintenance, and/or repair of these utilities. It is unknown whether fill materials from outside sources were brought to the site to backfill Commodore's Pond or other excavations. It is important to recognize that the soils contamination observed during Phase I may at least partially represent the affect of physical redistribution of soils during past earthwork activities.

Surface runoff from areas west of the site is diverted onto Site 10. It is unknown to what degree drainage from roads, parking areas, and other land uses may be contributing to the metals, TRPHs, and PAHs detected in soils on the site.

Although Site 10 soils show only traces of total metals, subtle differences are observed in the occurrence and distribution of each metal. Lead, which constitutes the major fraction of total metal concentrations in soil samples, was observed over a limited area in the northwest portion of the site and also in the south portion of the site. Contamination in each of these areas may be associated with off-site sources impacting Site 10.

TRPH contamination appears to be distributed throughout the soil column in most areas of Site 10 except in the northwest.

PAH soil contamination is present in the northeast portion of the site only; however, higher concentrations were detected southeast of and adjacent to Site 10 on sites 23 and 36. High concentrations of phenols,

which are sporadically distributed in the northeast and west-central site areas, may be associated with past, on-site activities or off-site sources.

Groundwater contamination also is present on Site 10. Lead, chromium, cadmium, and nickel concentrations exceeding Florida drinking water and groundwater standards were detected. These levels may reflect that turbid groundwater samples were not filtered prior to acid preservation. However, given the high concentrations and number of metals detected in the groundwater samples in the northwest area of the site, sediments in this area may have been contaminated by an undetermined source, possibly impacting Site 10 from the west. Lead concentrations, which were elevated with respect to the Florida Primary Drinking Water Standard in all three temporary wells, suggest endemic or ambient sources in this area.

The extent and origin of phenol contamination in the northeast area of the site are currently unknown; however, given the concentrations of phenols also observed in the soils in this area, this groundwater contamination may be associated with localized, on-site and/or off-site sources.

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1. INTRODUCTION

This Interim Data Report presents the findings of the Phase I investigation activities performed for Site 10, Commodore's Pond, located at the Naval Air Station (NAS) in Pensacola, Escambia County, Florida. This report has been prepared by Ecology and Environment, Inc., (E & E) for the Southern Division, U.S. Navy, Naval Facilities Engineering Command, under Contract No. N62467-88-C-0200. The information presented in this report is based on information and file documents provided by the Navy and on information gathered during the Phase I fieldwork conducted on the site from April 1991 to July 1991. Because of the proximity of the other four Group F sites (Site 9, Navy Yard Disposal Area; Site 23 Chevalier Field Pipe Leak Area; Site 29, Soil South of Building 3460; and Site 34, Solvent North of Building 3557) and part of Group N Site 36, Industrial Waste Sewer, to Site 10, any information gathered during the corresponding Phase I investigations of these sites that is relevant to understanding Site 10 conditions has been included in this Site 10 interim data report.

The investigation was conducted in accordance with the administrative documents prepared by E & E for this project, which include the June 1990 Project Management Plan, June 1990 Site Management Plan, July 1990 Generic Quality Assurance Project Plan (GQAPP), July 1990 General Health and Safety Plan, and June 1990 Contamination Assessment/Remedial Activities Investigation Work Plan--Group F with appended Site-Specific Health and Safety Plan and Site-Specific Quality Assurance Plan. All references to these documents in this report apply only to the 1990 versions.

The Commodore's Pond site (Site 10) is located due west of Chevalier Field and occupies portions of an open field and the wooded area southeast of the intersection of Murray Road and Taylor Road (see

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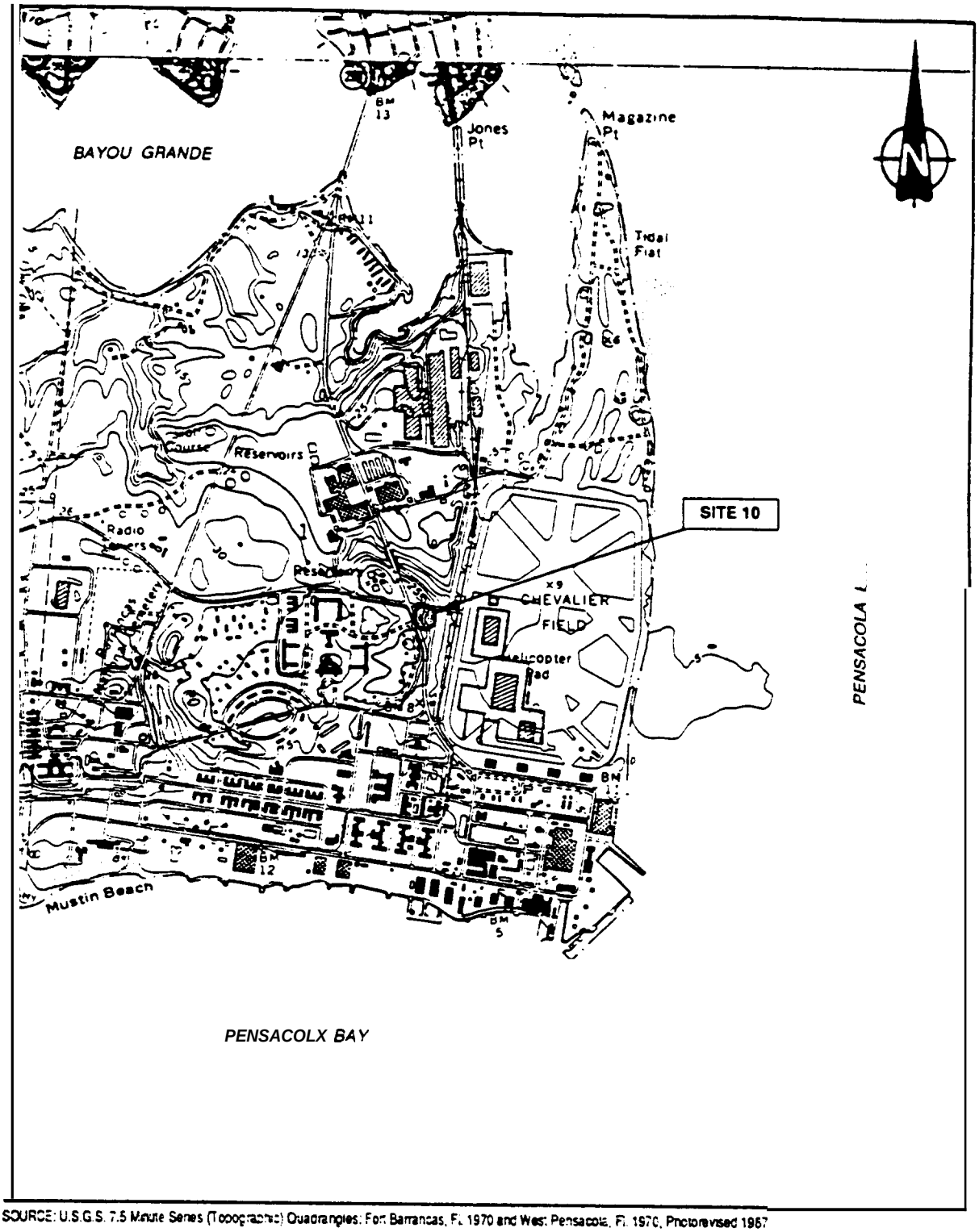
figures 1-1, 1-2, and 1-3). Site 10 was formerly the location of a small surface water body. In the mid-1800s, the pond was used for the underwater storage of shaped oak timbers. Debris was unearthed in the late 1960s during trenching operations for installation of the Industrial Wastevater Treatment Plant system. Abandoned oak timbers were exhumed and reburied on Magazine Point. It is reported that no hazardous materials were encountered during this effort. However, due to the proximity of Site 10 to the Chevalier Field Pipe Leak Area (Site 23), there is a possibility that subsurface contamination may exist. A complete site description and history are presented in the Group F work plan.

The purpose of the Phase I investigation was to identify principal areas and primary contaminants of concern at the site and to provide recommendations for subsequent phases of investigation. The Phase I fieldwork included a site reconnaissance, habitat/biota survey, surface emissions survey and particulate air screening, radiation survey, geophysical survey, utilities survey, and the collection and analysis of soil and groundwater samples. In addition, a hydrologic assessment, which included the determination of groundwater and surface water elevations, groundwater flow direction and hydraulic gradient, and surface water flow rates, was performed at the site. The recommendations for additional work at this site will be incorporated in the revised Group F work plan.

[Bold items enclosed in brackets denote changes to last version of document]



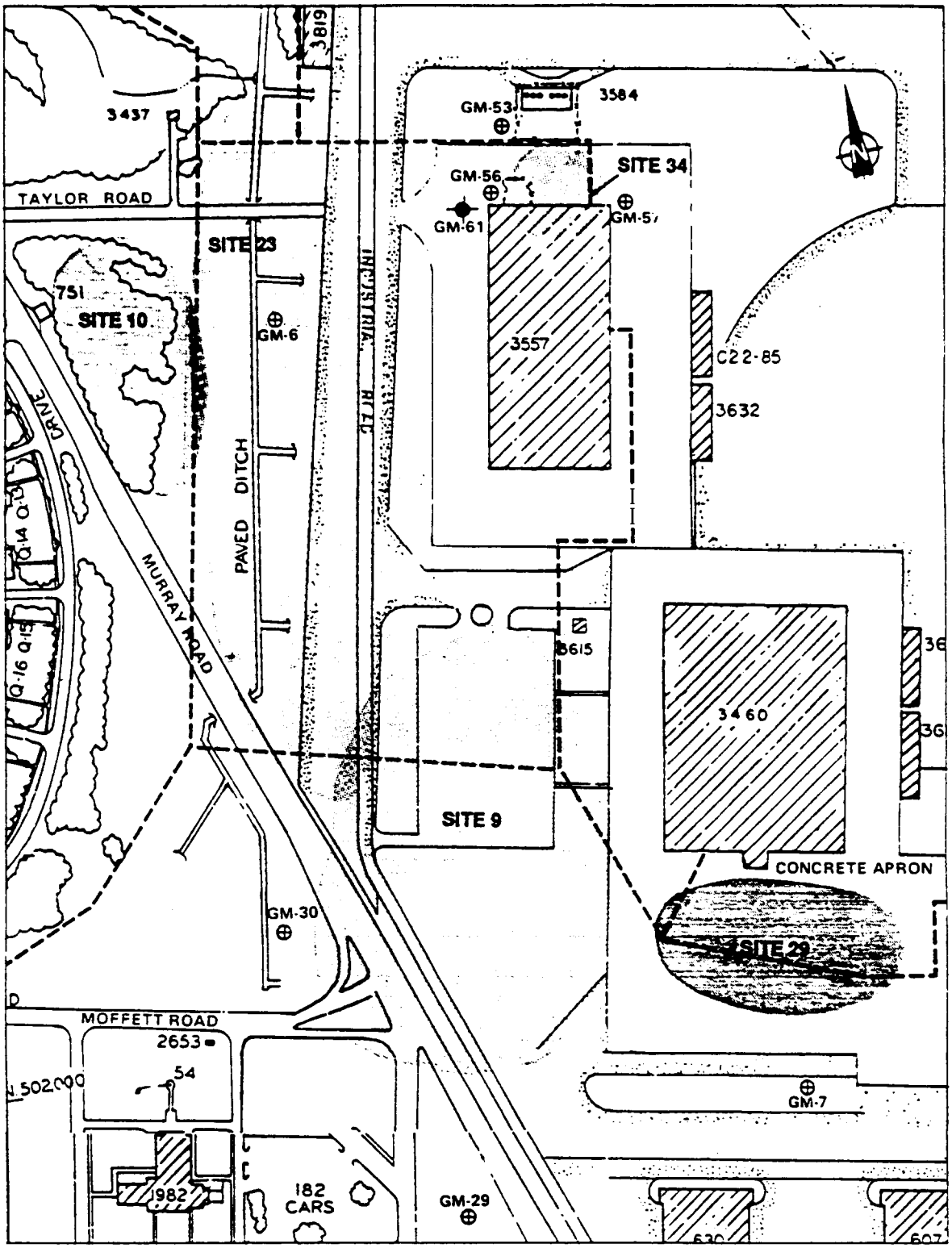
SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangles: Fort Barrancas, Fl. 1970 and West Pensacola, Fl. 1970, Photorevised 1967

SCALE

0 .5 1 MILE

0 1000 2000 3000 4000 5000 FEET

Figure 1-1
LOCATION MAP — NAS PENSACOLA SITE 10



SOURCE. U.S. Naval Air Station. Pensacola, Florida. 1986 and 1988. and Geraughty and Miller. 1986

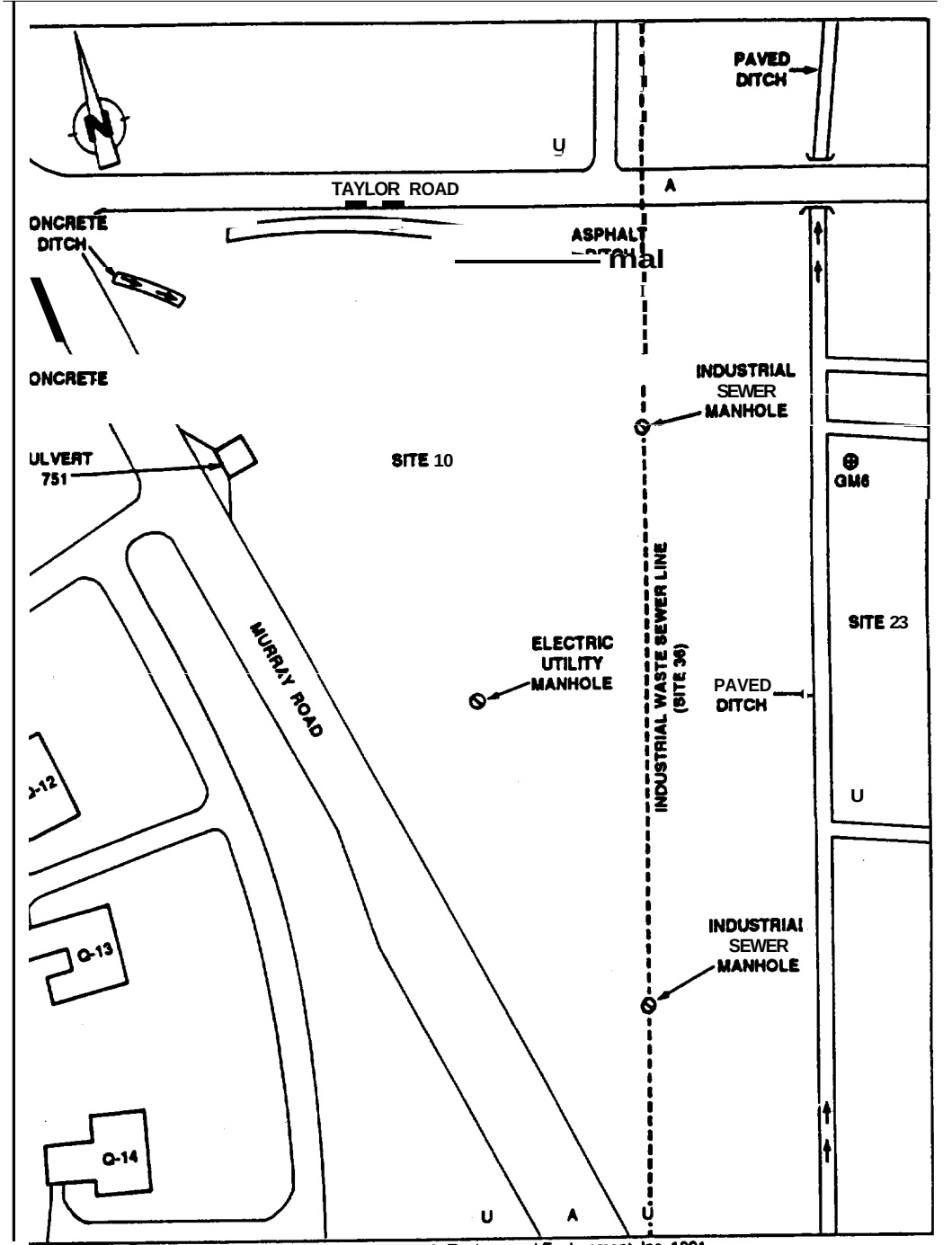
SCALE

0 200 400 600 800 FEET

KEY:

- ⊕ Existing Permanent Shallow Monitoring Well
- ✦ Existing Permanent Deep Monitoring Well
- — — — Industrial Waste Sewer Line
- Building

Figure 1-2 SITE VICINITY MAP — NAS PENSACOLA SITES 9, 10, 23, 29, 34, AND 36



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1990; Ecology and Environment, Inc. 1991

0 100 200 FEET
SCALE

KEY:

⊕	Existing Permanent Shallow Monitoring Well	C	Concrete Paved
Q-12	Residential Quarters	U	Unpaved
A	Asphalt Paved	→ →	Flow Direction

Figure 1-3
SITE PLAN MAP — NAS PENSACOLA SITE 10

2. INVESTIGATION METHODOLOGY

2.1 AERIAL PHOTOGRAPH AND EXISTING DATA ANALYSIS

Prior to the initiation of fieldwork, E & E personnel examined all available aerial photographs of NAS Pensacola for past and present conditions, features, and developments that might have had direct relevance to the fieldwork methodology. The aerial photograph analysis task involved assembling and stereoscopically analyzing historical photographic imagery and topographic maps available for the site area. Photographs were scaled to allow analysis of past and present surface conditions, drainage, and land use. The aerial photographs used in the analysis are listed in Table 2-1. The photographs were analyzed to obtain information regarding the evolution of site features that might have affected hydrologic conditions and to aid in the performance of such tasks as field reconnaissance and monitoring well placement.

2.2 SITE RECONNAISSANCE

A field reconnaissance survey was conducted on and around the site. Available aerial photographs and maps were used as guides in locating surface features. Visual inspections were made of surface conditions, vegetation, and surface drainage patterns. These observations of surface conditions on the site were used to update the site map. During the reconnaissance survey, the field team identified areas which presented the most suitable conditions for the establishment of survey grid baselines. The use of a grid system as part of the Phase I field investigation is discussed in the following sections.

The reconnaissance survey team utilized radiation and HNu air monitoring equipment during walkovers of site areas, in accordance with Section 6.1.1 of the GQAPP. Areas with readings above background were located, flagged, and identified on a site map for future reference.

[Bold items enclosed in brackets denote *changes* to last version of document]

Table 2-1

PHOTOGRAPHS AND MAPS USED IN THE AERIAL PHOTOGRAPH ANALYSIS
NAS PENSACOLA SITE 10

Source	Photograph/Map Number	Date	Scale
NAS Pensacola Public Works Department	1276833	2/5/90	1:2,400
	1276835	2/5/90	1:2,400
	1276836	5/22/06	1:2,400
	1276912	9/29/86	1:2,400
Florida Department of Transportatien	PD-3886-12-03	10/26/89	1:24,000
	PD-3618-12-03	11/21/86	1:24,000
	PD-3109-12-03	9/22/83	1:24,000
	PD-2684-11-04	3/9/81	1:24,000
	PD-1888-11-04	4/28/76	1:24,000
	PD-1331-11-03	5/4/73	1:24,000
	PD-868-4-09	4/6/10	1:24,000
	PD-616-8-05	3/25/60	1:24,000
	PD-285-7-01	10/8/64	1:12,000
	PNS-7054-3-2	10/12/61	1:24,000
U.S. Department of Agriculture	CPF-4H-17	1/22/51	1:24,000
	CPF-1V-78	1/3/58	1:24,000
West Florida Regional Planning Council	PD-3618-12-05	11/21/86	1:4,800

14[NASP]UH8018:T0355/561/23

Source: Ecology and Environment, Inc., 1992.

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All findings of the physical reconnaissance were mapped in detail and recorded in the field logbook.

2.3 HABITAT/BIOTA SURVEY

A habitat/biota survey was conducted for the site, as well as an evaluation of applicable literature pertaining to NAS Pensacola. During the physical reconnaissance, an E & E biologist/ecologist determined the on-site terrestrial habitats and the surrounding habitats that could be affected by off-site contaminant migration. During the walkover survey, rare, threatened, and endangered species and their potential habitats were identified, and general site conditions were evaluated regarding the site's ability to support viable populations of plants and animals.

2.4 OVA SURFACE EMISSIONS SURVEY AND PARTICULATE AIR SCREENING

Following the establishment of the survey grid network (discussed in Section 2.6), a surface emissions survey was conducted using organic vapor analyzer (OVA) air monitoring equipment. The survey was conducted in accordance with Section 6.1.1 of the GQAPP. Measurements were made at each established grid point, and readings were recorded in the field logbook. In addition, preliminary air screening was conducted with a particulate monitor to determine if the site represents a source of particulates in the air. The air screening was conducted in accordance with Section 6.1.1 of the GQAPP.

2.5 RADIATION SURVEY

Following the establishment of the survey grid network (discussed in Section 2.6), a radiation survey was conducted using the Eberline ESP-2 Gamma Scintillator with a 2-inch sodium iodide (NaI) probe and a Bicron G2 micro-R-meter. The survey was conducted in accordance with Section 6.3.6 of the GQAPP. Measurements were made at each established grid point, and readings were recorded in the field logbook.

[Background radiation readings were obtained in the unpaved area immediately east of Building 1754.]

2.6 GEOPHYSICAL SURVEY

Magnetometer and electromagnetic terrain conductivity surveys were conducted at the site and surrounding local areas. The magnetometer survey was conducted using a proton precession magnetometer; and the electromagnetic terrain conductivity survey was conducted using a Geonics, Ltd;, EM-31 instrument. (The electromagnetic survey is discussed in this report as the EM-31 survey.) The EM-31 conductivity instrument measures the apparent terrain conductivity allowing quick screening for changes in conductivity potentially associated with buried utilities or changes in soil conditions due to lithology, water content, or leachate plumes, if present. The EM-31 has a fixed intercoil spacing of 12.1 feet which yields an effective exploration depth of approximately 19.7 feet in the vertical dipole (deep) mode. Operation of the EM-31 in the horizontal dipole (shallow) mode yields an effective exploration depth of approximately 9.8 feet.

The survey effort required the initial establishment of a grid system over the study area. To construct the grid, baselines were established along the existing roads. The area was then gridded with spacings based on 100-foot centers. Baseline transects were established using a transit survey instrument and flagged at 50-foot intervals; however, measurements recorded during surveys were taken at 25-foot intervals. The grid system was completed relative to an arbitrarily established origin point using a brunton compass and tape measure. The origin point was established on Site 23, located east of Site 10. Grid points were flagged and numbered as follows:

Grid X, S n_1 + yy, W n_2 + zz,

where:

X = Grid letter;

n_1 = Distance in 100-foot increments south (S) from the origin point;

n_2 = Distance in 100-foot increments west (W) from the origin point;

yy = Additional distance in feet south from the nearest previously located 100-foot increment from the grid origin; and

zz = Additional distance in feet west from the nearest previously located 100-foot increment from the grid origin.

In the case of grid points located at even 100-foot increments from the origin, yy and zz = 00. Figure 2-1 shows the location of the survey grid and origin point.

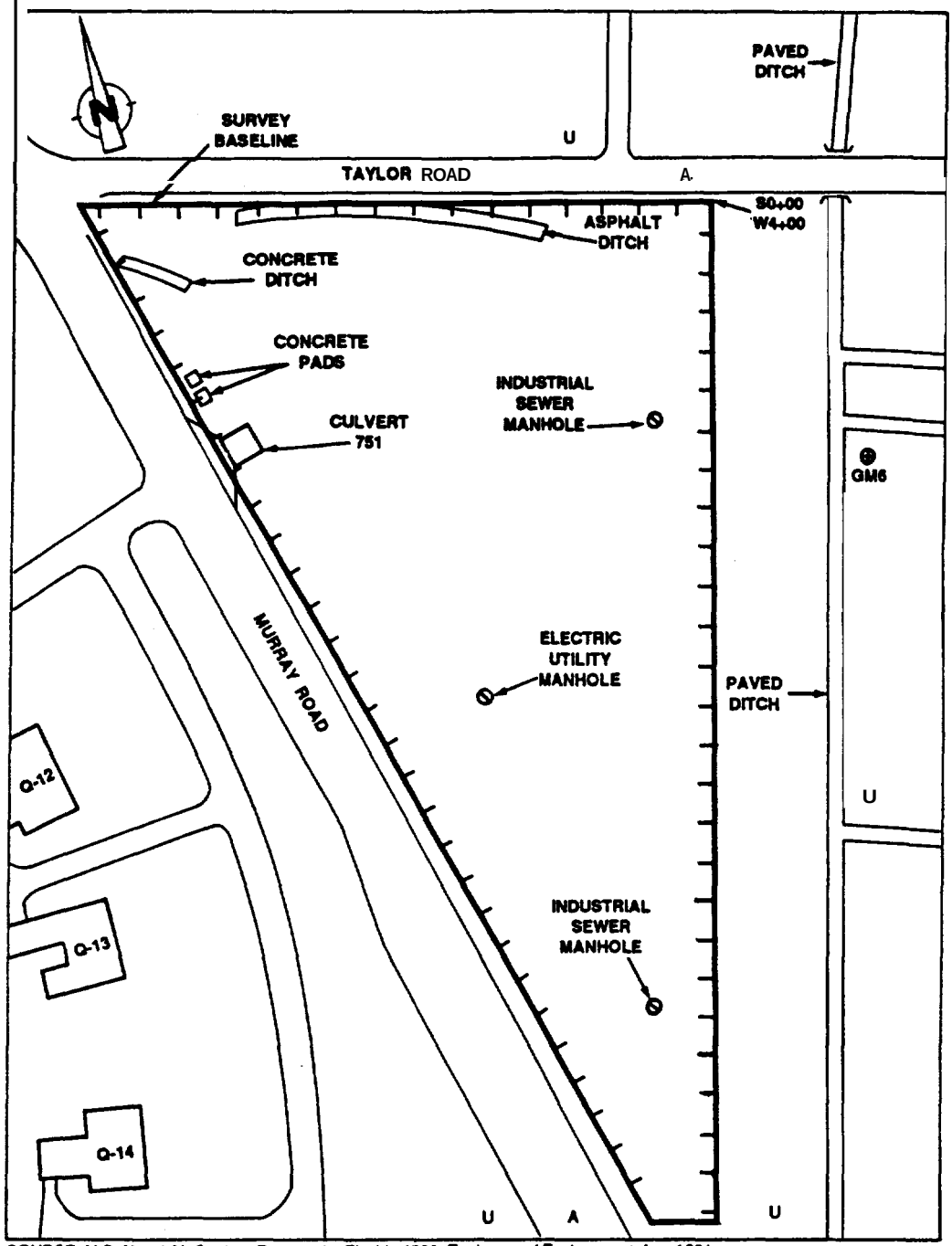
The geophysical survey was performed in accordance with field methodologies and data interpretation techniques discussed in Section 6.2.1 of the GQAPP. The EM-31 and magnetometer surveys were conducted by obtaining measurements at each 25-foot interval grid point.

2.7 UTILITIES SURVEY

Prior to conducting any augering, boring, or drilling, E & E located all underground cables, pipes, utilities, and other subsurface features that could potentially be damaged, create a safety hazard, or otherwise hinder fieldwork. The appropriate authorities (e.g., NAS Pensacola Public Works and Southern Bell) were contacted to identify the location of all underground utilities in the site area. In addition, E & E examined available maps and documents and conducted a metal detector survey around proposed boring locations to determine the potential presence of any other potentially hazardous subsurface features on site. The locations of all underground utilities and other obstructing features were marked with surveyor flags, fluorescent paint, or by other methods, as appropriate.

2.8 DATA ANALYSIS

Information obtained from the results of the above-described physical surveys was given primary consideration in the development of placement strategies for the Phase I soil borings and temporary monitoring wells. Prior to establishing the Phase I soil boring and temporary monitoring well locations, the results of the aerial photograph analysis, site reconnaissance, surface emissions survey and air particulate screening, radiation survey, geophysical survey, and utilities survey were evaluated to identify potential areas of surface or subsurface contamination, leachate seeps or streams, areas of stressed vegetation, and boundaries of filled areas. The proposed Phase



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1990; Ecology and Environment, Inc. 1991

0 100 200 FEET
SCALE

KEY:

- Existing Permanent Shallow Monitoring Well
- Q-12 Residential Quarters
- Survey Grid Boundary
- A Asphalt Paved
- U Unpaved

Figure 2-1
SURVEY GRID MAP — NAS PENSACOLA SITE 10

I soil boring and temporary monitoring well locations, shown on Figure 14-2 of the work plan, were then revised, as appropriate upon approval by Southern Division.

2.9 SOIL BORINGS AND TEMPORARY MONITORING YELL INSTALLATION

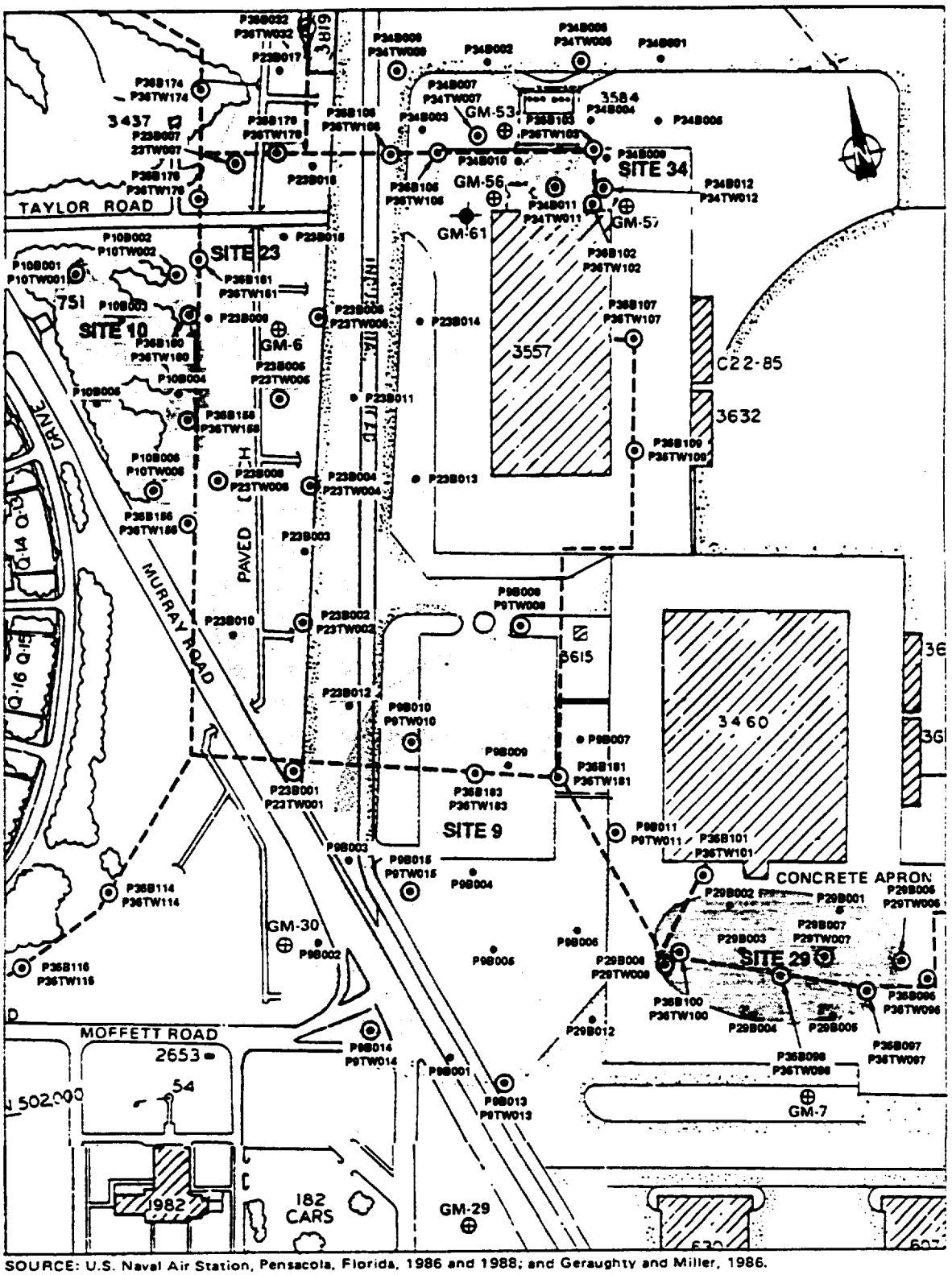
Figure 2-2 presents soil boring and temporary monitoring well locations at the five Group F sites (9, 10, 23, 29, and 34) and at Site 36. Figure 2-3 presents the soil boring and temporary monitoring well locations at Site 10 only.

Six soil borings were completed at Site 10 (see figures 2-2 and 2-3). At each Site 10 boring location, samples were collected by compositing soils over 5-foot depth intervals from land surface to the water table. Each 5-foot depth interval was assigned a letter designation as follows: A interval = surface to 5 feet below land surface (BLS); B interval = 5 to 10 feet BLS; C interval = 10 to 15 feet BLS; and so on to the water table. Samples were collected using either hand-operated bucket augers or a solid-stem auger powered by a drill rig. Lithologic characteristics of the materials encountered in each borehole were recorded in the field logbook. All soil sampling, compositing, and lithologic logging activities were performed in accordance with Section 6.6 of the GQAPP. Equipment decontamination was performed in accordance vith Section 6.10 of the GQAPP.

Temporary, stainless steel monitoring wells were installed in three of the six borings (see figures 2-2 and 2-3). Each well was constructed with 5 feet of 0.01-inch slotted screen, and installed to a depth that allowed the well screen to bracket the water table. The wells were installed using solid-stem augers powered by a drill rig. Lithologic Characteristics of materials encountered during installation of the wells were recorded in the field logbook in accordance with Section 6.6 of the GQAPP. All equipment decontamination activities were performed in accordance with Section 6.10 of the GQAPP.

2.10 SOIL SAMPLING

Twelve soil samples, plus one duplicate sample, were collected as described in Section 2.9. All soil samples were shipped to E & E's



SOURCE: U.S. Naval Air Station, Pensacola, Florida, 1986 and 1988; and Geraughty and Miller, 1986.

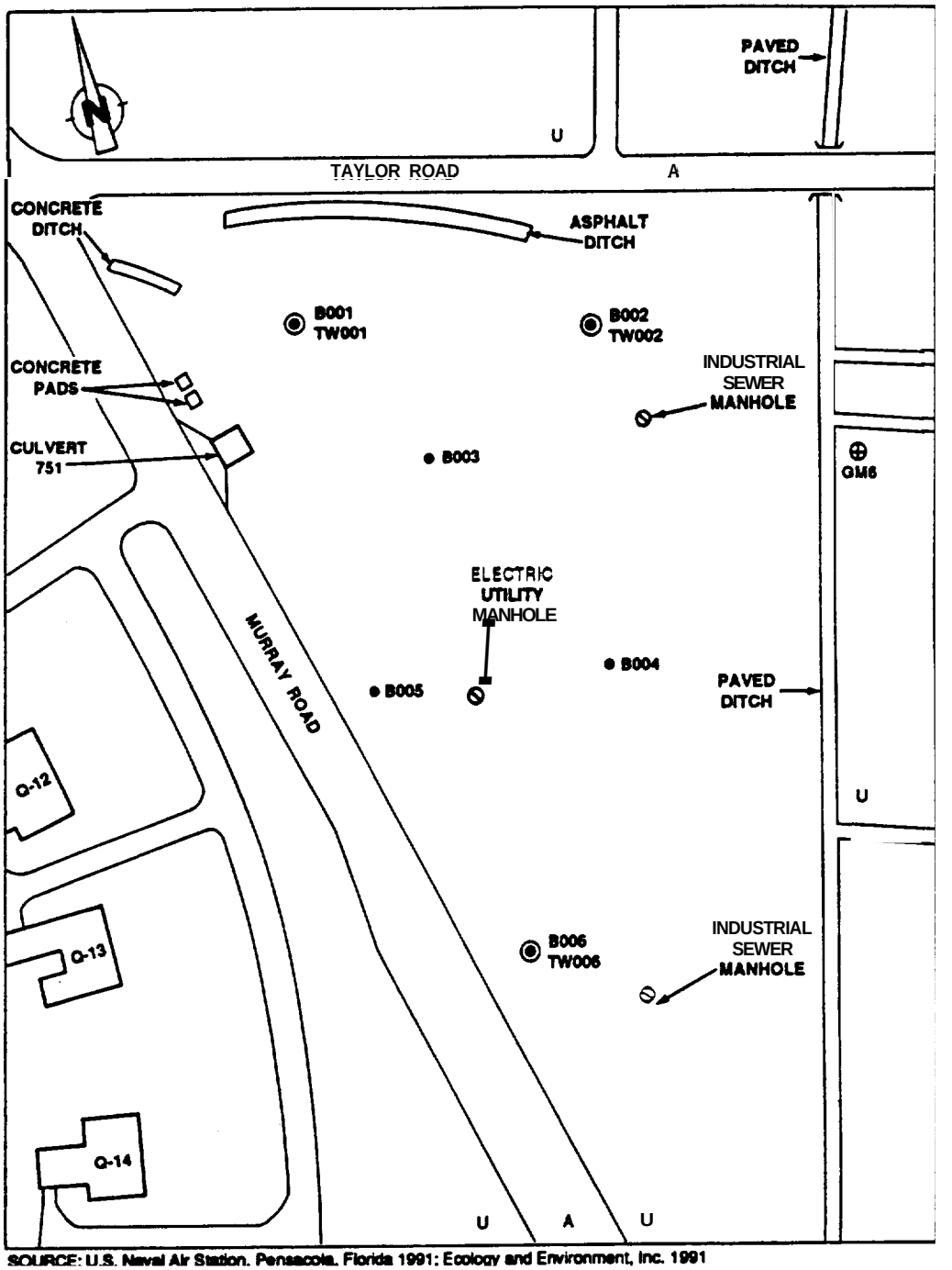
SCALE

0 200 400 600 800 FEET

KEY:

- ⊕ Permanent Shallow Monitoring Well
- Permanent Deep Monitoring Well
- Building
- Industrial Waste Sewer Line
- • Soil Boring
- ○ Temporary Monitoring Well
- P10B001 Soil Boring Number
- P10TW001 Temporary Monitoring Well Number

Figure 2-2 SOIL BORING AND TEMPORARY MONITORING WELL LOCATIONS — NAS PENSACOLA SITES 9, 10, 23, 29, 34, AND 36



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1991; Ecology and Environment, Inc. 1991

0 100 200 FEET
SCALE

KEY:

⊕	Existing Permanent Shallow Monitoring Well	TW001	Temporary Monitoring Well Number
Q-12	Residential Quarters	A	Asphalt Paved
●	Soil Boring	U	Unpaved
B001	Soil Boring Number		
○	Temporary Monitoring Well		

Figure 2-3
SOIL BORING AND TEMPORARY MONITORING WELL LOCATIONS
NAS PENSACOLA SITE 10

Table 2-2

SAMPLING AND ANALYTICAL SUMMARY
NAS PENSACOLA SITE 10

Medium	No. of Samples	Duplicates	Total	Analytical Suite[A,B]
Soil	12	1	13	A
Groundwator[C]	3	1	4	A

14[NASP]UH8018:T0355/562/27

Key :

'Analytical suite designation is as follows:

A = Volatile organic compounds (VOCs) including chlorobonrene, polynuclear aromatic hydrocarbons (PAHs), phenols. pesticides and total polychlorinated biphenyls (PCBs), total recoverable petroleum hydrocarbons (TRPHs), and aetals (total, unfiltered).

[b]Specific constituents encompassed by the various chemical groups included within analytical suite A are identified in tables 9-1 through 9-4 of the GQAPP.

[c]Groundwater samples and analyses shown are for temporary wells only.

Source: Ecology and Environment, Inc., 1992.

[Bold items enclosed in brackets denote changes to last version of document]

Analytical Services Center (ASC) and analyzed for the screening parameters listed in Table 2-2.

2.11 GROUNDWATER SAMPLING

Three groundwater samples, plus one duplicate sample, were collected from the three temporary monitoring wells shown on figures 2-2 and 2-3. Weather conditions; water levels; purge volumes: and groundwater pH, specific conductance, and temperature were recorded in the field logbook prior to sampling. In addition, prior to purging, each well was checked for the presence of floating and/or sinking immiscible hydrocarbons using a Solinst of Canada oil-water interface probe. Each groundwater sample was collected immediately following well purging. All well purging and sampling activities were performed in accordance with sections 6.8 and 6.11 of the GQAPP. Equipment decontamination was performed in accordance with Section 6.10 of the GQAPP. All groundwater samples collected from the temporary monitoring wells were shipped to E 6 E's ASC and analyzed for the screening parameters listed in Table 2-2.

2.12 HYDROLOGIC ASSESSMENT

The hydrologic assessment of the site and surrounding areas included determination of water level elevations in the temporary monitoring wells. These water levels were used to determine the shallow aquifer water table elevation, shallow groundwater flow direction, and horizontal hydraulic gradient in the site vicinity.

Wellhead top-of-casing (TOC) elevations for the temporary monitoring wells were measured relative to the top of a driven reference stake located adjacent to each well using a spirit level and tape measure. Following groundwater sampling and removal of the temporary monitoring wells, the elevations of the driven reference stakes were surveyed using a transit with reference to the benchmark established at permanent monitoring well GM61 (on Site 34--Solvent North of Building 3557), elevation 8.91 feet HSL (G&M 1986).

In conjunction with the wellhead survey, the elevations of other nearby features (e.g., ponds, streams, and leachate seeps) were established.

2.13 FIELD QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

All field tasks performed during the investigation were documented in the field logbooks according to the procedures specified in Section 7.2 of the GQAPP.

2.13.1 Field QA/QC Samples

Field QA/QC samples were prepared for all samples collected at the site during the Phase I investigation according to the procedures described in Section 6.12 of the GQAPP. Chain-of-custody was maintained for all samples collected, packaged, and shipped to E & E's ASC for analysis. Sample management was performed as specified in Section 7 of the GQAPP. The collected field QA/QC samples and corresponding analytical parameters are listed in Table 2-2.

2.13.2 Decontamination Procedures

All equipment used during field activities were decontaminated in accordance with Section 6.10 of the GQAPP.

2.14 INVESTIGATION-DERIVED WASTE MANAGEMENT

Excess soil generated during soil boring and temporary monitoring well installation activities was temporarily contained adjacent to the well or boring and then backfilled into the borehole after the auger flights or temporary well casings had been removed following sample collection. Any soil material remaining after completion of borehole backfilling was placed in 55-gallon drums, sealed, labeled, and moved to a central area on the site. Each drum has a painted-on label listing the site number and the type of material contained in the drum.

All water generated during development and purging of the temporary monitoring wells was temporarily contained adjacent to the well and then poured back into the well following collection of samples.

Potentially contaminated, personal protective clothing and disposable materials, wastes generated during decontamination activities, and other potentially contaminated, investigation-derived materials were placed in 55-gallon drums, labeled, and moved to a

central area on the site. These drums are sealed and labeled "trash". All drummed investigation-derived materials were subsequently picked up and disposed of by NAS Pensacola.

3. RESULTS

3.1 AERIAL PHOTOGRAPH AND EXISTING DATA ANALYSIS

The review of aerial photographs dating from 1951 to 1989 indicated that activities and surface features on and in the vicinity of Site 10 changed very little during this period. A road was constructed along the north perimeter of the site, and pine trees were planted in rows along the east perimeter of the site.

The January 22, 1951, aerial photograph shows Murray Road located along the west perimeter of Site 10. No buildings are apparent on the site. The area is covered mostly with oak trees and low grass, and the soil, where visible, appears to be light-colored soil. The ground surface slopes toward the east from Murray Road to a paved drainage ditch, which is oriented north-south, east of Site 10.

Review of the January 3, 1958, aerial photograph indicated that Taylor Road was constructed along the north perimeter of the site between 1951 and 1958.

Inspection of subsequent aerial photographs indicated little change over the Site 10 area. The oak tree forest, which covers most of the site, hinders determination of any additional activities.

A small structure, possibly culvert 751, located on site near the northwest perimeter of the site, appears first in the April 6, 1970, aerial photograph and then in the March 9, 1981, aerial photograph. However, this structure is not apparent in any of the other aerial photographs.

The planting of slash pines along the east perimeter of Site 10 was observed as early as the May 4, 1976, aerial photograph and apparently was completed prior to the November 21, 1986, aerial photograph.

Based on the review of the aerial photographs, there are no apparent activities which could represent potential sources of environmental contamination on Site 10.

3.2 SITE RECONNAISSANCE

During the site reconnaissance, visual inspections were conducted over the site. The site is grass covered, and there are many large sand live oak trees; the soil is sandy.

An asphalt drainage ditch, that directs surface water runoff from the northwest corner of the site toward the northeast portion of the site, is located along Taylor Road (see Figure 1-3). A concrete drainage ditch, located in the northwest corner of the site, directs surface water runoff from the southeast corner of the intersection of Taylor and Murray roads onto the ground surface.

Two square concrete pads, approximately 3 feet (width) by 3 feet (length) by 2 feet (height), are located along the western perimeter of the site, approximately 100 feet south of the concrete drainage ditch (see Figure 1-3). The purpose of these concrete pads is unknown. Culvert 751, a brick-lined culvert, is located 25 feet south of the two concrete pads. Culvert 751 apparently discharges surface water runoff from the area of Hurray Road and the residential quarters, located west of Site 10, into a stormwater drain system that outfalls into the paved drainage ditch located on Site 23 (east of Site 10; see figures 1-2 and 1-3); however, the exact location of this outfall is not known at this t'ime.

An electrical utility manhole, located in the west-central site area, provides access to buried electrical lines which reportedly cross the site from northeast to southwest and from northwest to southeast. Underground electrical utility lines on Site 10 include a multiple kilovolt transmission line which crosses the site from northeast to southwest and other electrical utilities, such as telephone, cable, etc., which extend southeast across the site from the intersection of Uurray and Taylor roads.

The surface of Site 10 slopes generally to the east-northeast; however, there is a slight slope along Murray and Taylor roads which are each elevated 2 to 3 feet above the adjacent ground surface.

Slash pines are located along the east boundary of the site and extend east into Site 23 which is located east of and adjacent to Site 10.

3.3 HABITAT/BIOTA SURVEY

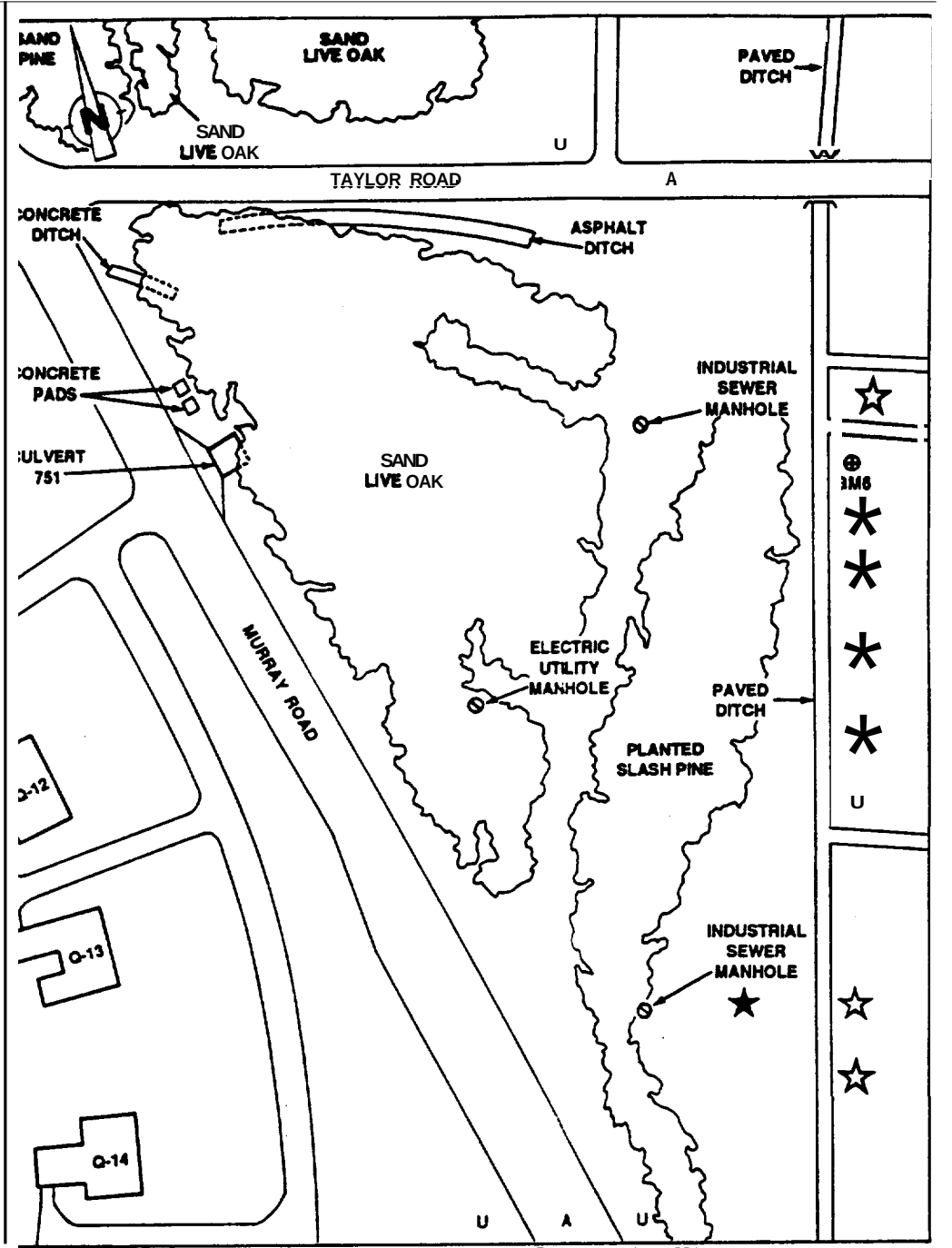
Figure 3-1 presents the results of the habitat/biota survey conducted at Site 10 and several adjacent habitats. Appendix A presents a list of birds observed in the NAS Pensacola vicinity. Site 10 consists of an open, park-like forest with a canopy of sand live oak (Quercus virginiana) and southern magnolia (Magnolia grandiflora) and a sparse groundcover. Leaf litter forms a dense covering on the ground. Groundcover consists of pawpaw (Asimina sp.), catbrier (Smilax sp.), spiderwort (Tradescantia ohiensis), hickory (Carya sp.), yaupon (Ilex vomitoria), cabbage palm (Sabal palmetto), morning glory (Ipomoea sp.), virginia creeper (Parthenocissus quinquefolia), and panic grass (Panicum sp.).

An area of planted slash pine (Pinus elliottii) exists along the east side of the site. The groundcover is sparse and consists of blackberry (Rubus cuneifolius), pennywort (Hydrocotyle umbellata), coinwort (Centella asiatica), dewberry (Rubus trivialis), live oak, vetch (Vicia sp.), sour dock (Rumex hastatulus), and wild onion (Allium canadense).

Open field areas between the sand live oak forest and planted pine are dominated by sour dock, dewberry, golden aster (Heterotheca subaxillaris), lovegrass (Eragrostis sp.), wild onion, poorman's pepper (Lepidium virginicum), phlox (Phlox drummondii), rabbit tobacco (Gnaphaliun purpureum), ragweed (Ambrosia artemisiifolia), scullcap (Scutellaria sp.), and little quaking grass (~~Briza minor~~).

The forest on the north side of Taylor Road across from Site 10 was also surveyed. An area of sand pine (~~Pinus clausa~~) borders Murray Road. Moving eastward across the site, the vegetation is dominated by a canopy of sand live oak with a very sparse subcanopy and groundcover. The leaf litter is quite dense. Groundcover mainly consists of pawpaw, rosemary (Conradina canescens), and catbrier (Smilax bona-nox) with lesser amounts of yaupon, spiderwort, stinging nettle (Cnidoscolus stimulosus), prickly pear (Opuntia humifusa), and muscadine grape (Vitis

[Bold items enclosed in brackets denote changes to last version of document]



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1991; Ecology and Environment, Inc. 1991

0 100 200 FEET
SCALE

KEY:

- ⊕ Existing Permanent Shallow Monitoring Well
- Q-12 Residential Quarters
- A Asphalt Paved
- U Unpaved
- Forested Area
- ★ Bald Cypress Seedling
- ☆ Individual Tree

Figure 3-1
HABITAT/BIOTA MAP — NAS PWSACOLA SITE 10

rotundifolia). As the ground slopes toward the paved drainage ditch, slash pine dominates the canopy. A dense, shrubby edge exists on the lower end of the slope. Dominant species include persimmon (Diospyros viginiana), muscadine grape, laurel oak (Quercus hemisphaerica), bracken fern (Pteridium aquilinum), and wild sarsaparilla (Smilax glauca).

Birds observed on Site 10 and adjacent habitats include common and boat-tailed grackles, bluejay, white-eyed vireo, Brewer's blackbird, northern mockingbird, killdeer, sharp-shinned hawk, and green heron. Other wildlife associated with the forested areas on and adjacent to the sites include squirrels, rabbits, rodents, lizards, frogs, and insects which may utilize the habitat for foraging or nesting. The open areas on site provide habitat for species that prefer open grassland, such as killdeer.

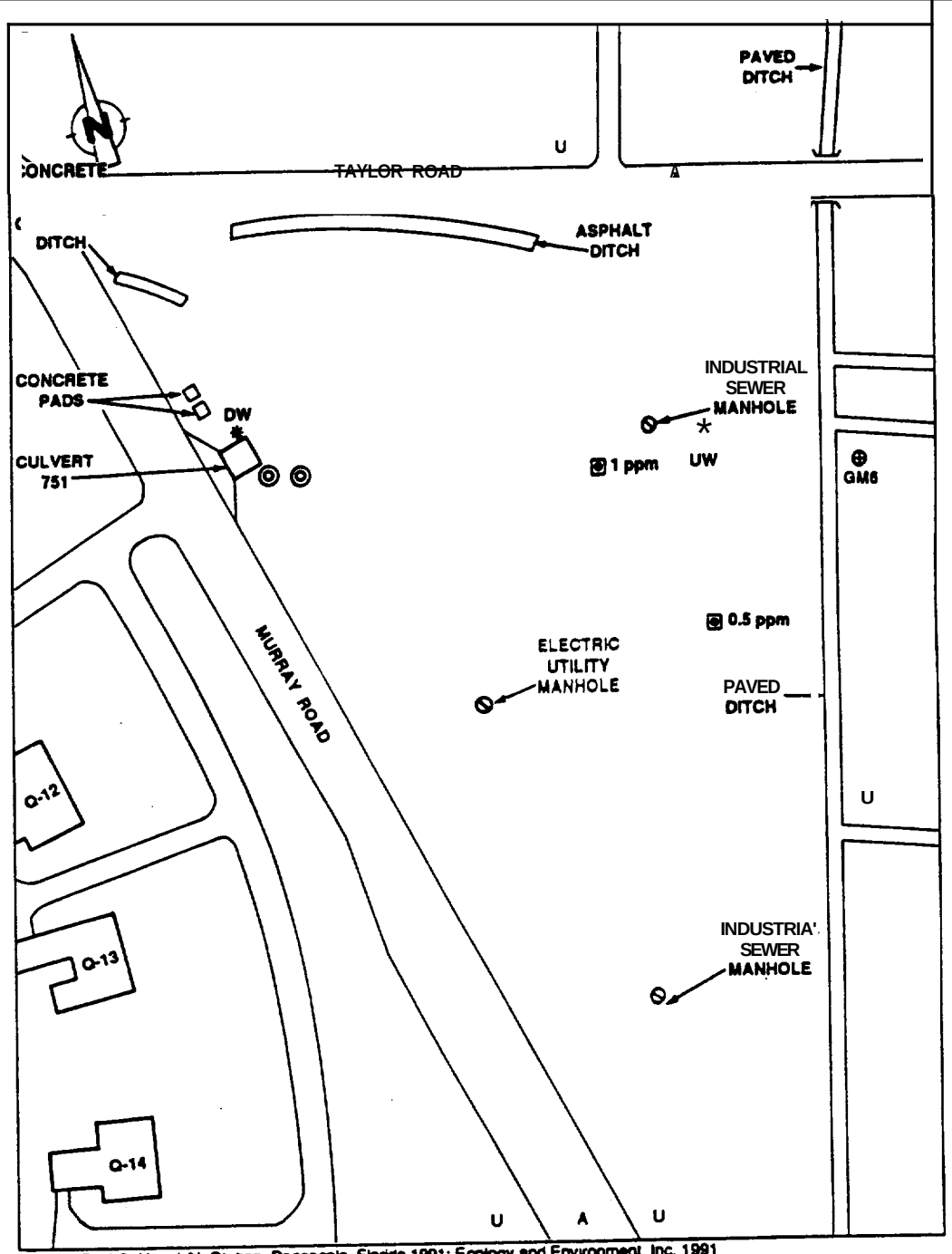
Water in the paved drainage ditch located east of Site 10 (on Site 23, Chevalier Field Pipe Leak Area) exhibited an oily sheen at the time of the survey, and several seep-like discharges from the paved banks were identified. However, no other indication of contamination was observed on Site 10 or in adjacent habitats. No rare, threatened or endangered species were identified on or adjacent to Site 10.

3.4 SURFACE BHISSIONS SURVEY AND PARTICULATE AIR SCREENING

An OVA was used to monitor surface emissions across the site. Only two measurements of organic vapors slightly above background were observed during the surface emissions survey (see Figure 3-2). Appendix B presents the results of the OVA surface emissions survey.

On June 5, 1991, a Mini-Ram particulate air monitoring device was used to determine if Site 10 represents a source of particulates to the ambient air. During the test, the wind was blowing from the east at approximately 3 to 5 miles per hour (mph). The Mini-Ram was placed upwind at survey grid location W4+00, S1+50 (see Figure 3-2). After 15 minutes, the time weighted average (TWA) of particulates was 0.18 milligrams per cubic meter (mg/m^3). The Mini-Ram was then placed directly downwind and approximately 325 feet west of the upwind location (see Figure 3-2). After 15 minutes, the TWA was recorded as 0.13 mg/m^3.

[Bold items enclosed in brackets denote changes to last version of document]



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1991; Ecology and Environment, Inc. 1991

0 100 200 FEET
SCALE

KEY:

- ⊕ Existing Permanent Shallow Monitoring Well
- Q-12 Residential Quarters
- A Asphalt Paved
- U Unpaved
- ◎ Radiation Reading Above 1.5x Background
- OVA Concentration Above Background
- ✱ Particulate Air Screening Location
- DW/UW Downwind/Upwind

Figure 3-2
RADIATION AND SURFACE EMISSIONS SURVEY MAP
NAS PENSACOLA SITE 10

Based on these results (a difference in the two readings of -0.05 mg/m^3 during light winds), the central area of the site does not appear *to* be a source of particulates in the air.

3.5 RADIATION SURVEY

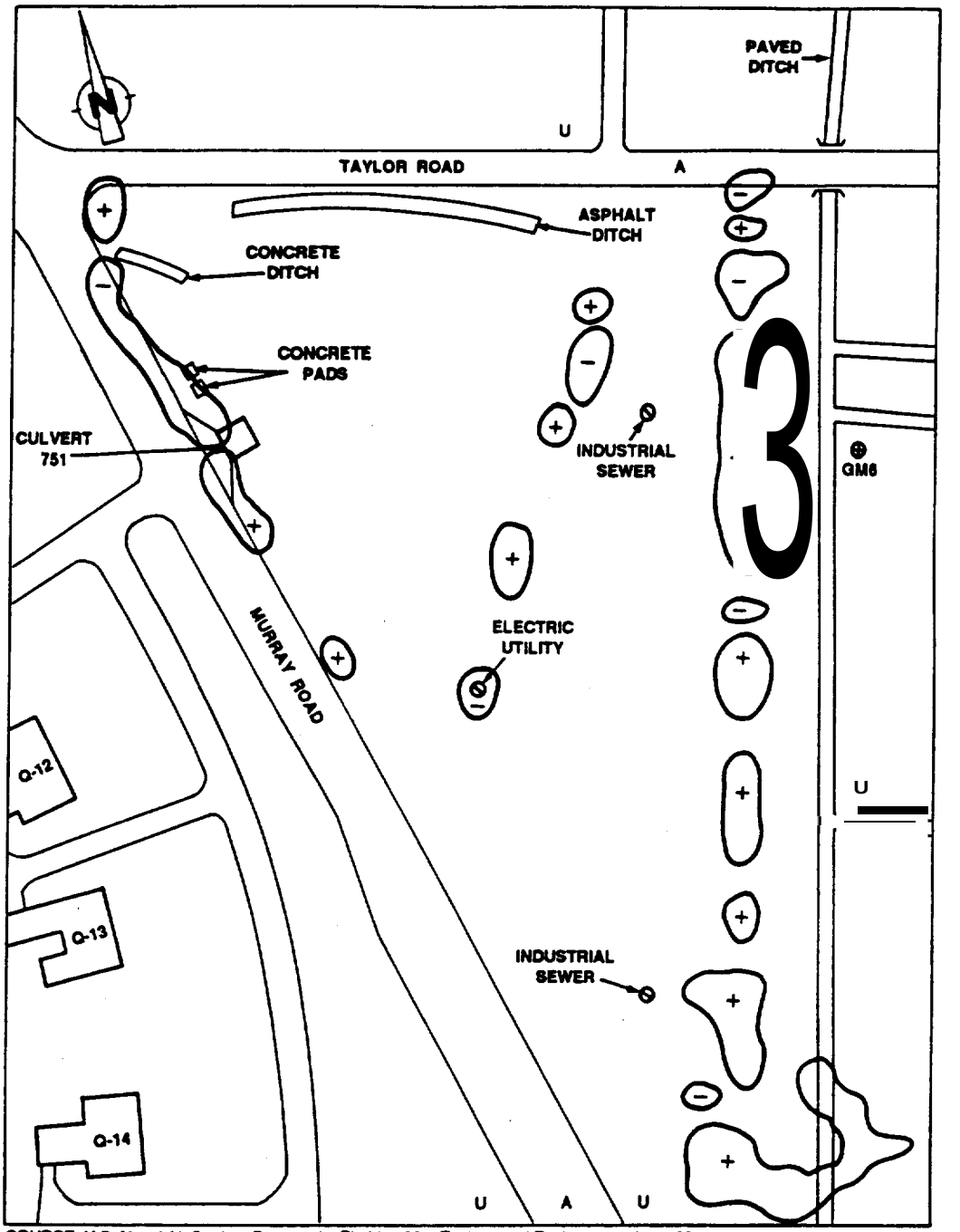
A radiation survey was conducted at Site 10 using the Eberline ESP-2 Gamma Scintillator and a Bicron G2 2-inch sodium iodine (NaI) probe. Appendix B presents the results of the radiation survey. Background gamma radiation levels at NAS Pensacola are 21,333 disintegrations per minute (dpm; a very low level of radiation). Figure 3-2 shows that only two readings were slightly elevated at 1.5 above background; however, these readings are considered low levels of radiation with the respect to background. The highest of these two readings measured on Site 10 was 34,000 dprn obtained near culvert 751; the adjacent reading toward the east was 32,666 dpm (see Figure 3-2).

Eleven additional readings above background were obtained along, Hurray Road in the northwest portion of Site 10; however, these readings were only 1.28 to 1.44 above background and are considered very low levels of radiation. Three readings obtained near the asphalt ditch along Taylor Road were also observed at this very low level of radiation above background.

3.6 GEOPHYSICAL SURVEY

The geophysical survey was conducted along a grid (see Figure 2-1) in accordance with field methodologies discussed in Section 2.6 of this report and Section 6.2.1 of the GQAPP. Geophysical survey readings, grid coordinates, and field data are presented in Appendix C.

The magnetometer survey was performed to locate buried metal objects possibly associated with historical on-site activities. Figure 3-3 shows the total magnetic field values (in units of 100 gammas) across the site with areas of positive magnetic anomalies greater than 50,500 gammas and negative magnetic anomalies less than 50,000 gammas. (An undisturbed background reading on Site 10 is 50,250 gammas.) Magnetometer values, grid coordinates, and field data are also presented in Appendix C.



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1991; Ecology and Environment, Inc. 1991

0 100 200 FEET
SCALE

KEY:

- Existing Permanent Shallow Monitoring Well
- Q-12 Residential Quarters
- Manhole
- A Asphalt Paved
- U Unpaved
- Area of Total Magnetic Field Greater than 50,500 Gammas
- Area of Total Magnetic Field Less than 50,000 Gammas

Figure 3-3
MAGNETOMETER SURVEY MAP — NAS PENSACOLA SITE 10

Magnetic anomalies over the Site 10 area appear linear in nature and are located in areas of known buried pipes and electrical utilities. Magnetic anomalies occur along the west perimeter of Site 10 where utility lines vere flagged along Murray Road. Another set of magnetic anomalies extend northeast toward Taylor Road from the electrical utility manhole and coincide with a buried, concrete-encased, multiple kilovolt electrical transmission line. Magnetic anomalies, extending north to south and adjacent to the paved drainage ditch east of Site 10, coincide with a buried "pipe alley" flagged in this area.

The EM-31 survey was performed by taking vertical dipole (deep) readings and horizontal dipole (shallow) readings with the orientation both north-south and east-west at each survey grid point. All readings were recorded and compared. All data, including field data, are presented in Appendix C.

The data, except anomalous readings obtained over buried utilities, were averaged for the two orientations and plotted. Buried utilities produce a high value when the EM-31 antenna is oriented parallel to the axis of the utility and a null, or very low value, when the antenna is oriented perpendicular to the utility. For each utility anomaly, only the higher value is plotted.

The results of the EM-31 horizontal dipole survey are presented on Figure 3-4. Average conductivity values recorded were 4 to 10 millimhos per meter (mmhos/m); however, conductivities greater than 100 mmhos/m are evident east of Site 10 in the area of the "pipe alley" which is oriented north to south. Anomalies associated with the electrical utilities located on Site 10 are located along the west perimeter of the site at Murray Road and also extend southeast and southwest across the site traversing the area of the electrical utility manhole (see Figure 3-4). The southeast trending shallow EM anomaly, approximately 100 feet east of Murray Road, has no corresponding magnetic anomaly and is not apparent on the deep EM conductivity map (see Figure 3-5). This anomaly may be due to shallow trenching and also coincides with the location of telephone and other light utilities, such as cable television and fiber optic lines.

The results of the EM-31 vertical dipole survey are presented on Figure 3-5. Average conductivity values recorded were 5.5 to SO

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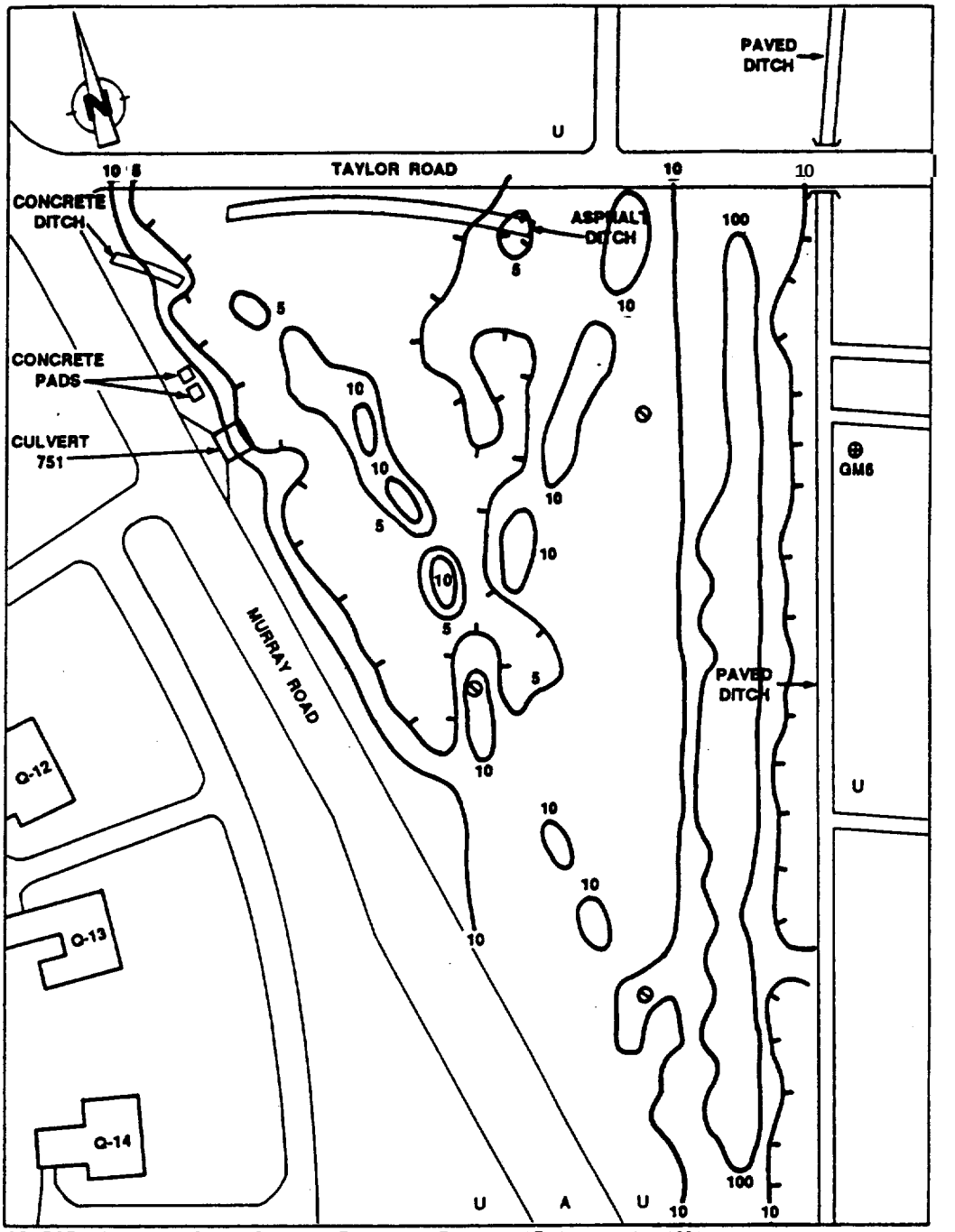


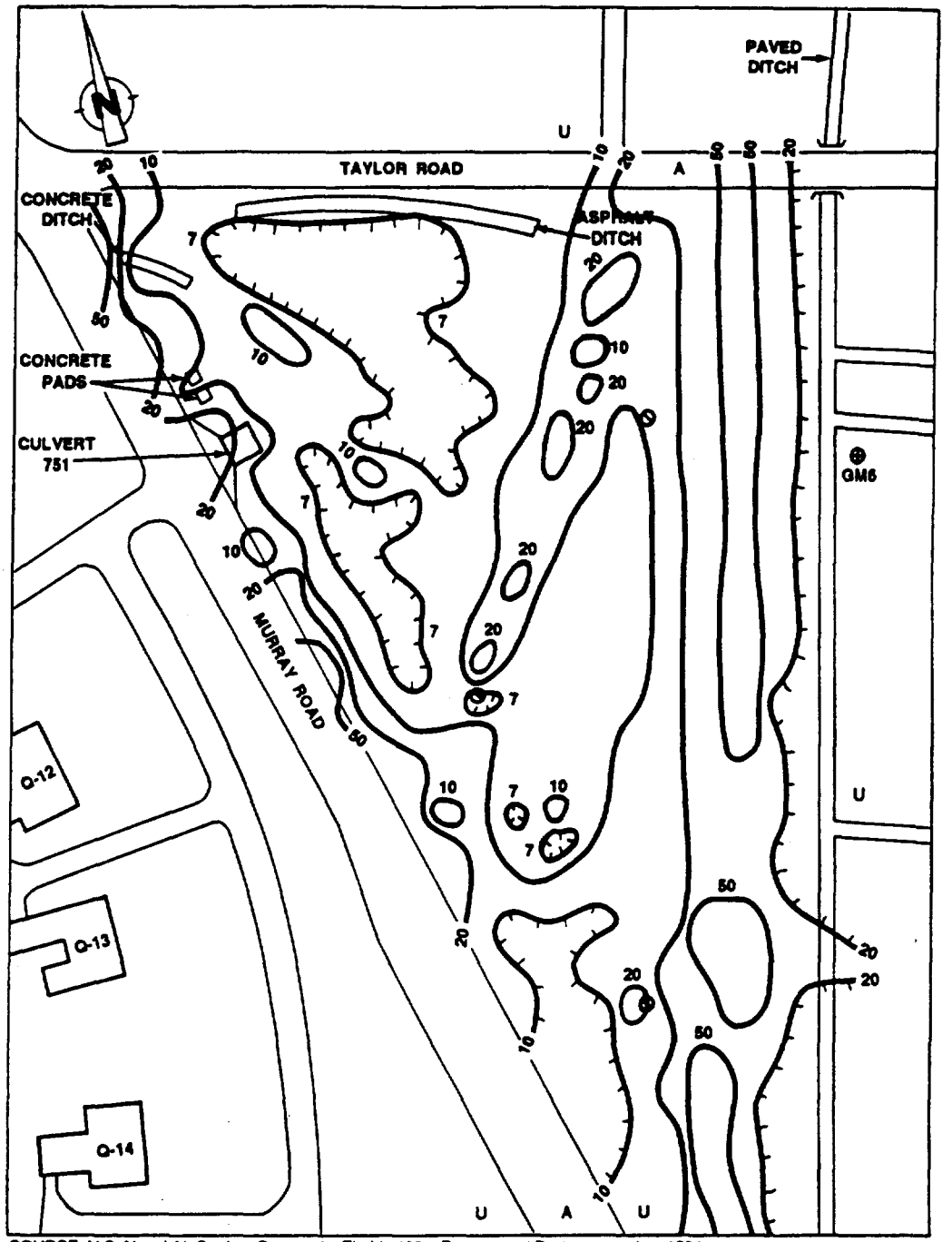
SOURCE: U.S. Naval Air Station, Pensacola, Florida 1991; Ecology and Environment, Inc. 1991

0 100 200 FEET
SCALE

KEY:

- ● Existing Permanent Shallow Monitoring Well
- Q-12 Residential Quarters
- Manhole
- A Asphalt Paved
- U Unpaved
- 10 — Electromagnetic Conductivity Isopleth (millimhos/meter)
- Area of Lower EM-31 Values

Figure 3-4
EM-31 SURVEY MAP, HORIZONTAL DIPOLE — NAS PENSACOLA SITE 10



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1991; Ecology and Environment, Inc. 1991

0 loa 200 FEET
SCALE

KEY:

- Existing Permanent Shallow Monitoring Well
- Q-12 Residential Quarters
- Manhole
- A Asphalt Paved
- U Unpaved
- 10 Electromagnetic Conductivity Isopleth (millimhos/meter)
- Area of Lower EM-31 Values

Figure 3-5
EM-31 SURVEY MAP, VERTICAL DIPOLE — NAS PENSACOLA SITE 10

Table 3-1

TEMPORARY MONITORING WELL CONSTRUCTION INFORMATION AND WATER LEVEL ELEVATIONS NAS PENSACOLA SITE 10

Well Number	Total Depth (BLS)	Depth to Water (BLS)	Depth to Water BTOC	TOC Elevation	Water Level Elevation	Date Measured
TW001	16.02	12.02	15.95	19.95	4.00	6/24/91
TW002	8.60	4.01	5.32	8.37	3.05	6/24/91
TW006	8.14	3.12	5.50	9.46	3.96	6/24/91

14[NASP]UH8018:T0355/605/22

Notes:

All depths are in feet; all elevations are in feet referenced to mean sea level (MSL); and all wells were constructed of 2-inch diameter stainless steel with 5 feet of 0.01-inch screen.

Key:

BLS = Below land surface.
TOC = Top of casing.
BTOC = Below top of casing.

Source: Ecology and Environment, Inc., 1992

[sold items enclosed in brackets denote changes to last version of document]

on these groundwater elevations, the direction of shallow groundvater flow is generally to the east toward the paved ditch located on Site 23 (see Figure 3-6). The horizontal hydraulic gradient is approximately 0.005.

Figure 3-7 illustrates water level elevations and groundwater flow direction, based on temporary monitoring well data, in the upper portion of the surficial zone of the Sand-and-Gravel Aquifer in the area of sites 10, 9, 23, 29, and 34. Based on these groundwater elevations, the direction of shallow groundwater flow is generally to the east at Site 10 and the horizontal hydraulic gradient is approximately 0.005 across Site 10; however, some steepening of the gradient (to approximately 0.008) is observed in the south portion of Site 10.

Figure 3-8 illustrates water level elevations and groundwater flow direction, based on permanent monitoring well data and inferred from temporary monitoring well data, in the upper portion of the surficial zone 'of the Sand-and-Gravel Aquifer in the area of sites 10, 9, 23, 29, and 34.

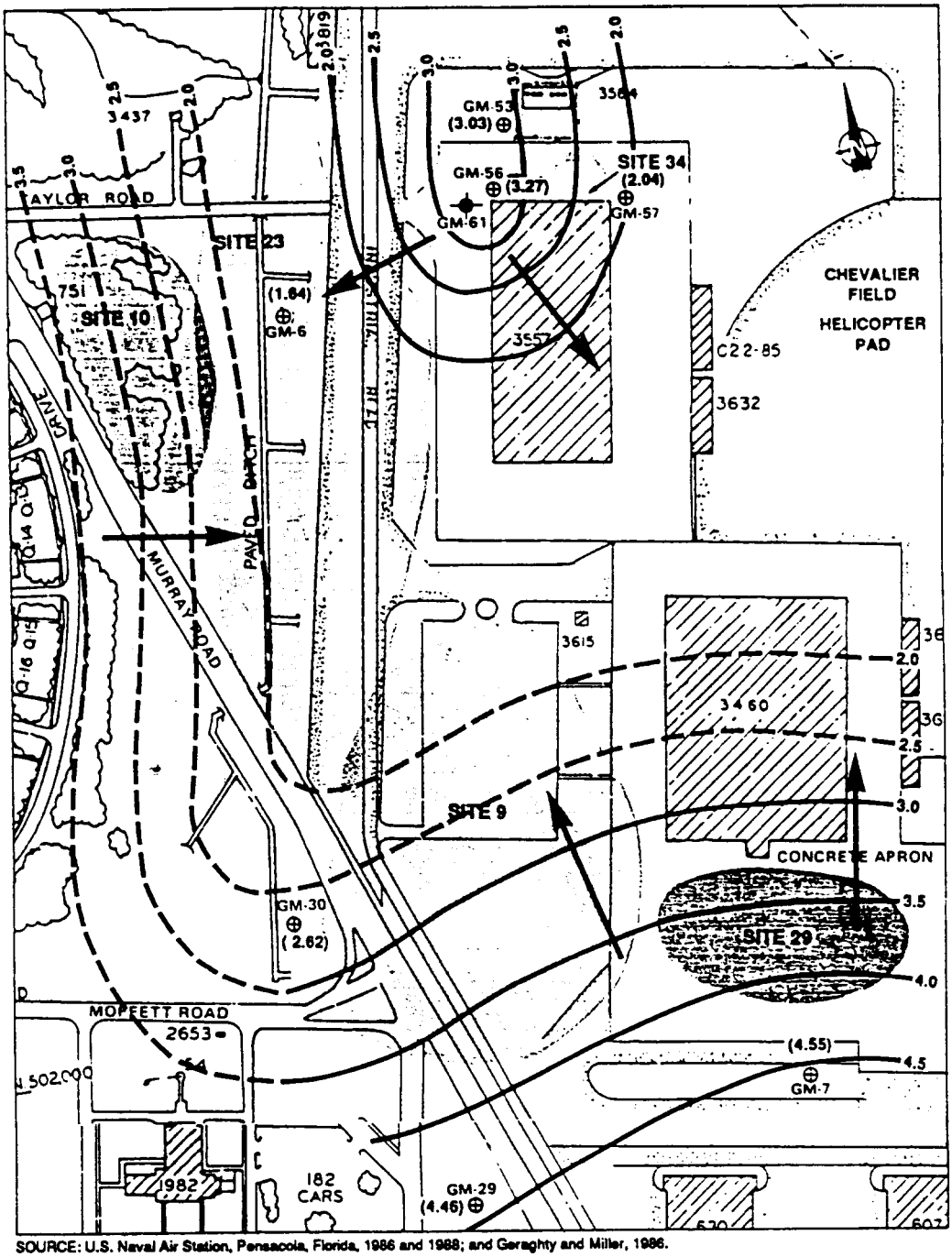
3.8 CHEMICAL ANALYSES

The following section presents the results of the laboratory analyses of the Site 10 soil and groundwater samples. The specific analytical parameters and parameter groups are listed or referenced in Table 2-2.

3.8.1 Soil

Table 3-2 summarizes the analytical screening results for soil samples collected at soil borings across Site 10 and presents the Resource Conservation and Recovery Act (RCRA) Proposed Corrective Action Levels (PCALs) for soil contamination (EPA 1990). Figure 2-3 shows the soil boring locations. The complete analytical screening results for soil samples are presented in Appendix E. In general, one or more of the soil samples collected at Site 10 exhibited elevated levels with respect to detection limits of metals, total recoverable petroleum hydrocarbons (TRPHs), polynuclear aromatic hydrocarbons (PAHs), and/or phenols. Volatile organic compounds (VOCs), pesticides, and polychlorinated biphenyls (PCBs) were not detected in any of the soil samples.

[Bold items enclosed in brackets denote changes to last version of document]



SOURCE: U.S. Naval Air Station, Pensacola, Florida, 1986 and 1988; and Geraghty and Miller, 1986.

SCALE

0 200 400 600 800 FEET

KEY:

- ⊕ Existing Permanent Shallow Monitoring Well
- ✦ Existing Permanent Deep Monitoring Well
- BLDG 3557 Building
- Q-12 Residential Quarters
- (3.03) Water Lwei Elevations (feet above MSL)
- 3.5 Water Level Elevation Isopleth (feet above MSL) (Dashed Where Inferred)
- → Groundwater Flow Direction

Figure 3-8

SURFICIAL ZONE WATER LEVEL ELEVATIONS, PERMANENT MONITORING WELLS NAS PENSACOLA SITES 9, 10, 23, 29, AND 34

Table 3-2 (Cont.)

Parameter	Dotaction Limit	Sample Number (Location and Depth Interval)						RCRA PCAL
		P10S004A (B004A)	P10S005A (B005A)	P10S005B (B005B)	P10S005C (B005C)	P10S005D (B005D)	P10S006A (B006A)	
Chromium (mg/kg)	1.0	--	--	--	1.6	--	--	400[b]
Zinc (mg/kg)	2.0	3.0	2.5	--	--	--	--	16,000
Lead (mg/kg)	4.0	--	--	--	--	--	5.8	
TRPHs (mg/kg)	5.0	13	13	23	12	31	8.2	
Total PAHs as Benzo-a-pyrene	1,000	--	--	--	--	--	--	
Phenols as Trichlorophenol	2,000	3,800	--	--	40,000	--	--	

14[NASP]UH8018:T0355/570/4

Key:

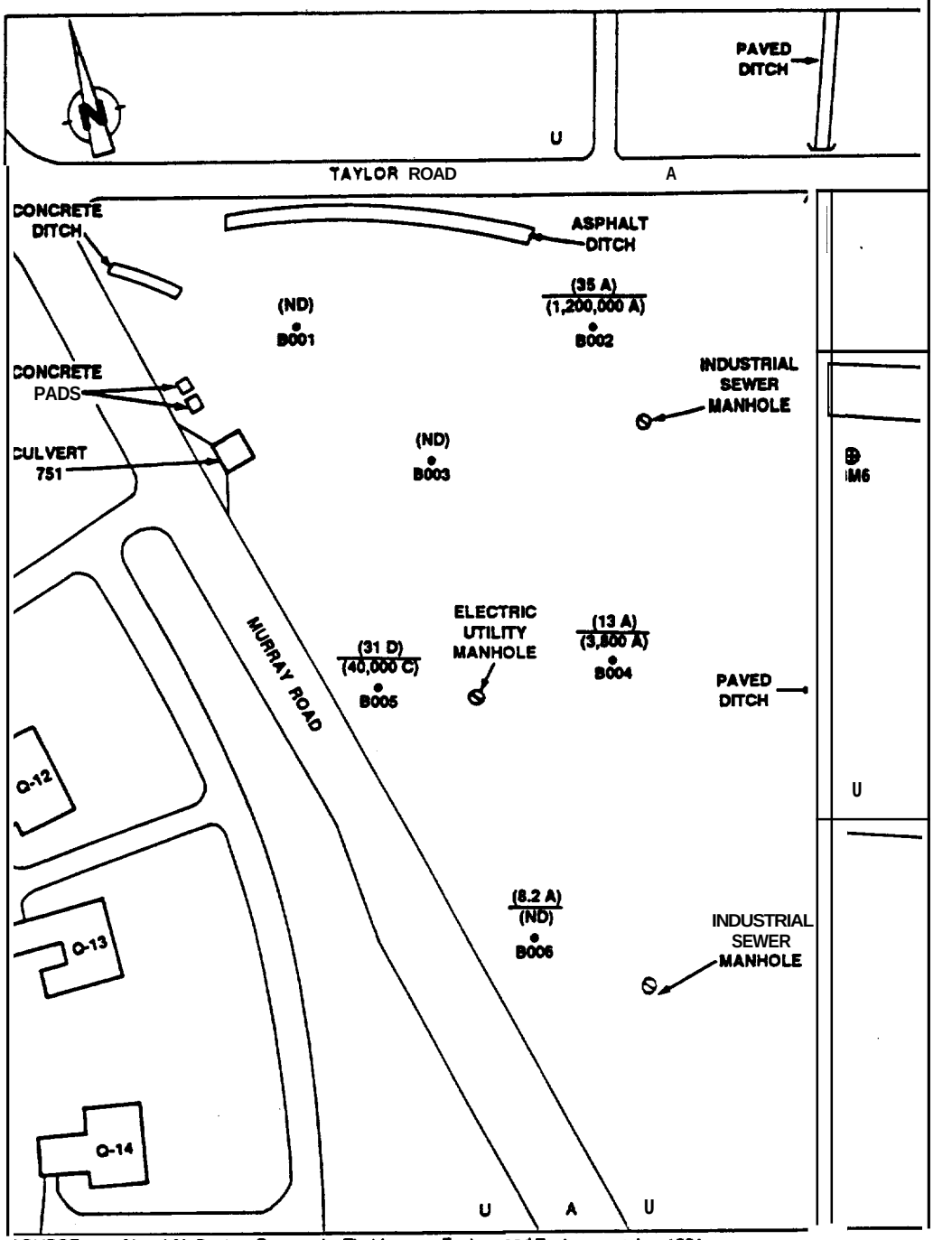
[a]Duplicate of sample P10S001A.
[b]This PCAL is Lor hexavalent chromium.

RCRA PCAL = Resource Coneorvation and Recovery Act Proposed Corrective Action Level.

Dash (--) indicates compound not detected.

Source: Ecology and Environment, Inc., 1992.

[Bold items enclosed in brackets denote changes to last version of document]



SOURCE: US. Naval Air Station, Pensacola, Florida 1991; Ecology and Environment, Inc. 1991

0 100 200 FEET
SCALE

KEY:

⊕	Existing Permanent Shallow Monitoring Well	A	Asphalt Paved
•	Soil Boring	U	Unpaved
Q-12	Residential Quarters	(13 A) / (3,800 A)	TRPH Concentration (mg/kg) and Sample Interval / Phenol Concentration (ug/kg) and Sample Interval
ND	Not Detected		

Figure 3-9
HIGHEST TRPH AND HIGHEST PHENOL CONCENTRATIONS DETECTED AT EACH SOIL BORING LOCATION — NAS PENSACOLA SITE 10

Table 3-3

GROUNDWATER FIELD PARAMETERS
NAS PENSACOLA SITS 10

Well Number	Temperature (°C)	pH (units)	Specific Conductance (μmhos/cm)	Date Measured
TW001	26	6.0	261	6/24/91
TW002	25	4.6	89	6/24/91
TW006	25	6.0	180	6/24/91

14[NASP]UH8018:T0355/661/25

Source: Ecology and Environment. Inc., 1992.

in these unfiltered samples, rather than actual groundwater contamination. TRPHs, PAHs, VOCs, pesticides, and PCBs were not detected in any of the groundwater samples.

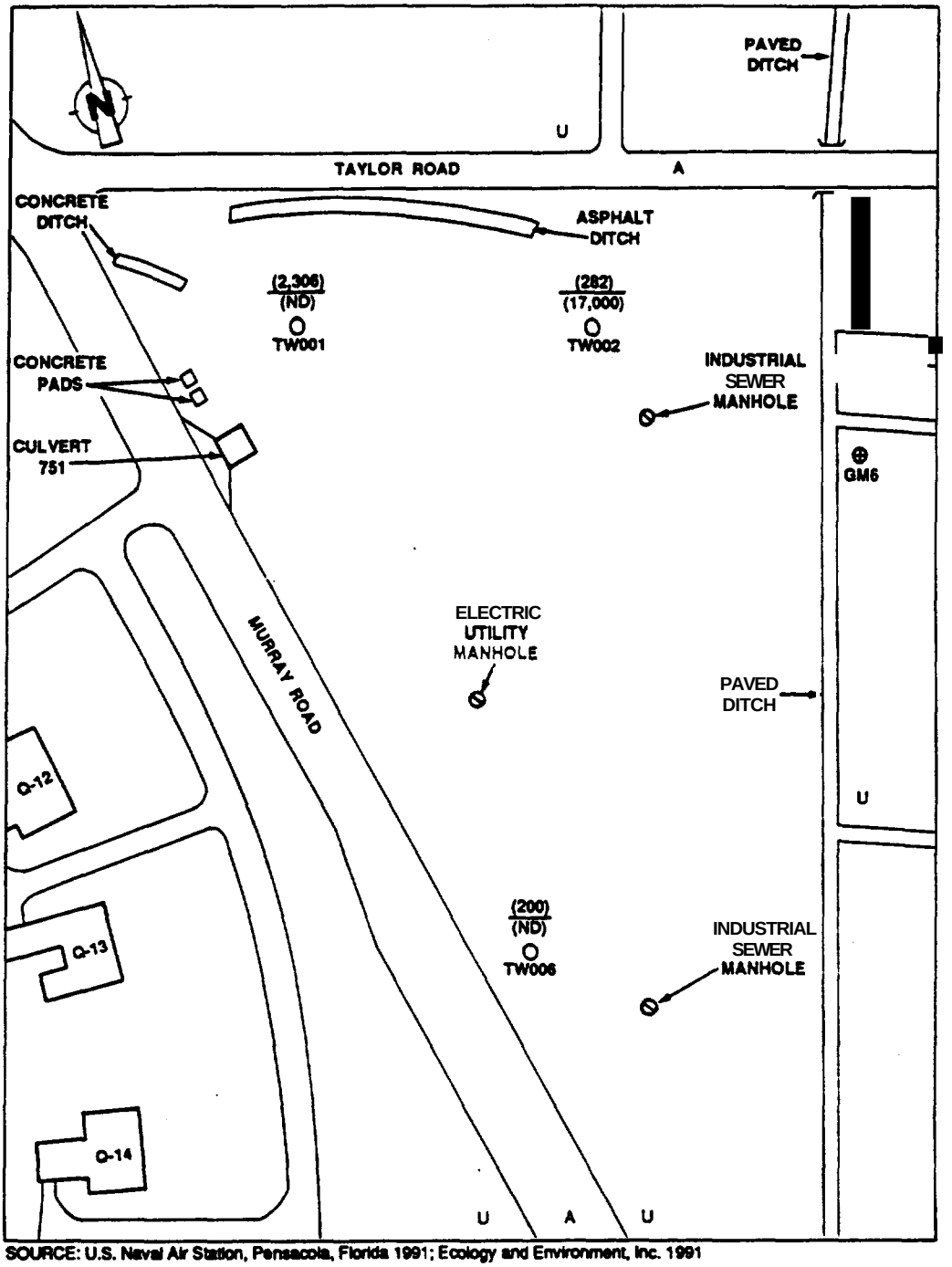
Metals

Chromium was detected in all three groundwater samples collected at Site 10; however, only one sample (GW001) exhibited a concentration (450 µg/L) exceeding the Florida Primary Drinking Water Standard (FPDWS) of SO µg/L (FDER 1991). Lead was detected in all the groundwater samples at concentrations exceeding the FPDWS of 50 µg/L (FDER 1991). Figure 3-10 presents chromium and lead concentrations detected in samples from temporary wells TW001, TW002, and TW006. The highest concentrations of chromium and lead were detected in the groundwater sample obtained from temporary well TW001 (See Table 3-4 and Figure 3-10).

Zinc was also detected in all the groundwater samples collected at Site 10; however, the concentrations of zinc were well below the Florida Secondary Drinking Water Standard (FSDWS) of 5,000 µg/L (FDER 1991; see Table *3-4)*. Cadmium, nickel, and copper were detected in only one groundwater sample (GW001; see Table 3-4). Cadmium was detected at a concentration (46 µg/L) exceeding the FPDWS of 10 µg/L. Nickel was detected at a concentration (420 µg/L) exceeding the Florida Groundwater Guidance Concentration (FGWGC) of 150 µg/L (FDER 1989). Copper, on the other hand, was detected at a concentration (170 µg/L) below the FSDWS of 1,000 µg/L (Chapter 17-550, FAC). Figure 3-11 presents the total metals concentrations detected in groundwater samples obtained from the temporary monitoring wells. The groundwater sample (GW001) obtained from temporary well TW001 exhibited the greatest number of metals detected and also the highest concentrations detected for each metal on Site 10 (see Table 3-4 and Figure 3-11).

Phenols

Phenols were detected in one groundwater sample (GW002) and the associated duplicate groundwater sample (GW002D) collected from temporary monitoring well TW002.



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1991; Ecology and Environment, Inc. 1991

0 100 200 FEET
SCALE

KEY:

⊕	Existing Permanent Shallow Monitoring Well	A	Asphalt Paved
O	Temporary Monitoring Well	U	Unpaved
Q-12	Residential Quarters	(282)/(17,000)	Total Metals Concentration (ug/L) / Phenol Concentration (ug/L)
ND	Not Detected.		

Figure 3-11
TOTAL METALS AND PHENOL CONCENTRATIONS IN GROUNDWATER SAMPLES
NAS PENSACOLA SITE 10

contaminants were detected in the samples collected at boring B003 in the north-central area of the site.

Total metals were detected in the soil samples at very low concentrations. Lead concentrations were generally the greatest component of the total metals concentrations.

TRPHs were present in the A-interval samples from three borings (B002, B004, and B006) along the east portion of the site; the highest concentration was detected in boring B002 in the northeast area. However, TRPHs were also detected in all the intervals (A, B, C, and D) sampled at boring BOOS in the west-central area of the site, and these concentrations were high relative to the other TRPH concentrations detected at Site 10.

On Site 10, PAHs were present only in the A-interval sample collected from boring B002 in the northeast portion of the site; however, higher PAH soil concentrations were observed in areas of sites 23 and 36 southeast of and adjacent to Site 10. The highest phenol concentration was detected in the A-interval sample collected from boring B002. High concentrations of phenols, which are sporadically distributed in the northeast and west-central site areas, may be associated with past on-site activities or off-site sources.

Historical records of activities associated with Commodore's Pond within the area of Site 10 do not suggest any apparent on-site sources for the soil contamination detected in the east and central portions of the site. However, high levels of PAHs and phenols in boring B002 in the northeast area of the site suggest a source in this vicinity. PAHs and phenols were not detected in soil samples collected at nearby borings P36B160 and P36B161 (just east of boring P10B002) during the corresponding Phase I investigation of Site 36 (Industrial Waste Sewer). This may indicate that the extent of PAH and phenol contamination is not attributable to the industrial waste sewer line.

TRPHs, on the other hand, were detected in almost all of the soil samples collected from Site 36 borings P36B156, P36B158, P36B160, and P36B161. This distribution indicates that TRPH contamination extends along the industrial waste sewer line and along the east boundary of Site 10; however, the highest levels of TRPHs were detected just east of the industrial vaste sewer line in Site 23 soil boring P23B008.

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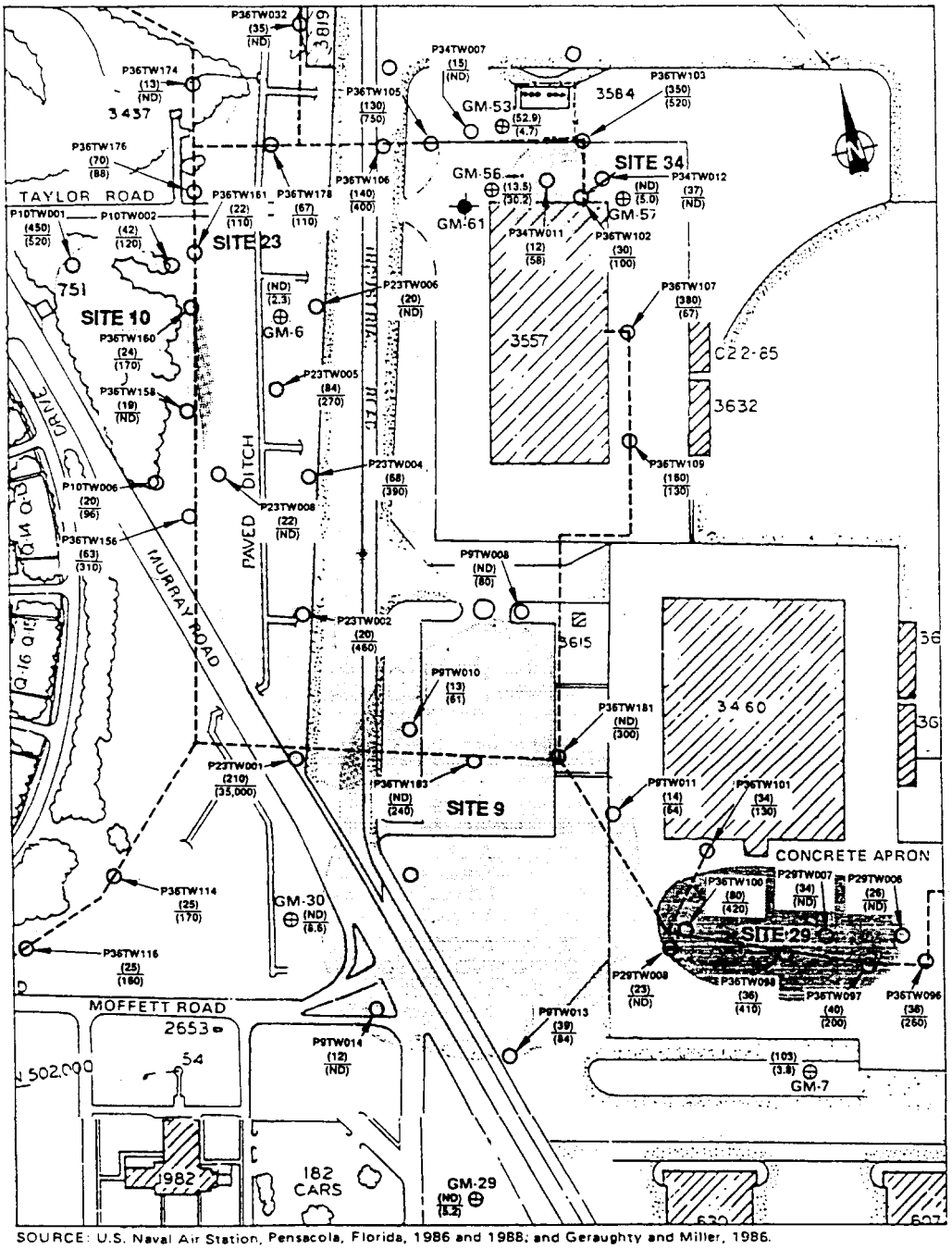
concentrations than the groundwater samples from corresponding nearby Phase I temporary monitoring wells, and exhibit even lower dissolved (millipore-filtered) metals concentrations. If acid preservative leaching/dissolution is occurring, then groundwater metals contamination may not be as widespread on Site 10 as is suggested by the Phase I analytical screening results.

The highest total metals concentration and the greatest number of metal analytes were detected in sample GW001 collected from well TW001 located in the northwest area of the site. Although the metals results for this groundwater sample reflect leaching/dissolution of the aquifer matrix sediments, the high concentrations and number of metals detected suggest that these sediments may have been contaminated by an unknown source, possibly located north or west of the site. The contaminants from these potential source areas could have been transported onto Site 10 via surface water runoff from the area of Murray Road directed through the concrete and asphalt ditches located in the northwest portion of the site (see Figure 1-3). It should be noted that lead (A interval) and chromium (B interval) were the only metals detected in the soil samples S001A and S001B, respectively, collected from corresponding soil boring B001. There was no correspondence between the metals concentrations detected in groundwater samples from the other temporary monitoring wells (TW002 AND TW006) at Site 10 and the metals concentrations in the associated soil boring samples (S002A and S006A).

Chromium, zinc, and lead were detected in all the Site 10 groundwater samples, and, therefore, are the most widely distributed metals at Site 10. Lead detected in the groundwater may be of some concern as all the lead concentrations in the Site 10 groundwater samples exceed the FPDWS of 50 µg/L. Figure 3-12 presents chromium and lead concentrations detected in groundwater samples collected on sites 9, 10, 23, 29, 34, and the adjacent portion of Site 36. Lead and chromium are widely distributed in the groundwater over this area and may be of concern as many of the concentrations detected in the groundwater samples exceed the FPDWSs for each metal of 50 µg/L.

No TRPHs or PAHs were detected in groundwater samples from Site 10. The absence of these contaminants in the groundwater, although they are present in the soil (see Section 3.8.1), probably reflects the relative



SOURCE: U.S. Naval Air Station, Pensacola, Florida, 1986 and 1988; and Geraughty and Miller, 1986.

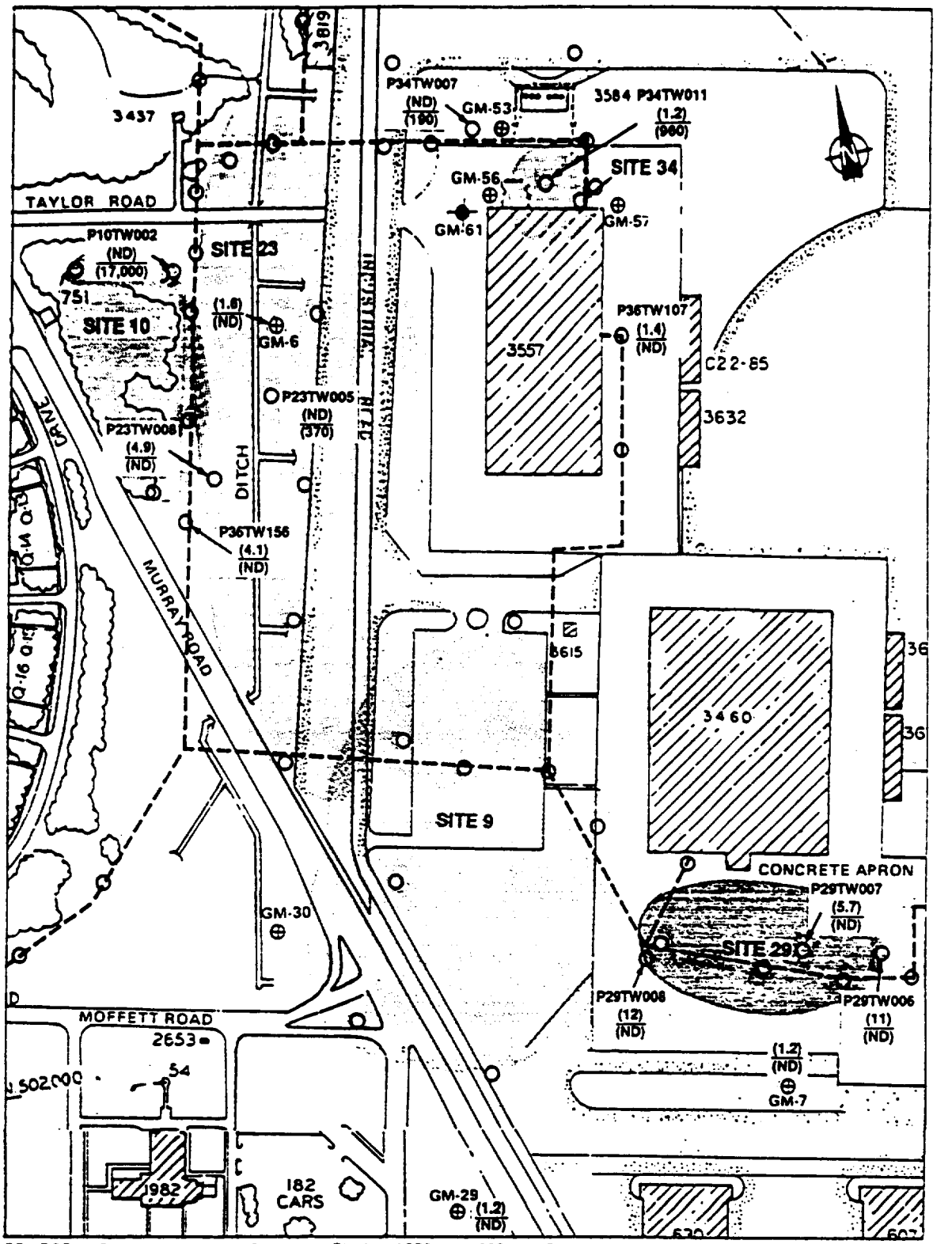
SCALE

0 200 400 600 800 FEET

KEY:

- ⊕ Existing Permanent Shallow Monitoring Well
- ✦ Existing Permanent Deep Monitoring Well
- ▨ Building
- ○ Temporary Monitoring Well
- (39) Chromium Concentration (ug/L)
- (84) Lead Concentration (ug/L)
- — — — Industrial Waste Sewer Line

Figure 3-12 CHROMIUM AND LEAD CONCENTRATIONS WHERE DETECTED IN GROUNDWATER SAMPLES — NAS PENSACOLA SITES 9, 10, 23, 29, 34, AND 36



SOURCE: U.S. Naval Air Station, Pensacola, Florida, 1986 and 1988; and Geraughty and Miller, 1986.

SCALE

0 200 400 600 800 FEET

KEY:

- Existing Permanent Shallow Monitoring Well
- Existing Permanent Deep Monitoring Well
- Building
- Temporary Monitoring Well
- (1.2) TRPH Concentration (mg/L)
- (960) Phenol Concentration (ug/L)
- Industrial Waste Sewer Line

Figure 3-13 TRPH AND PHENOL CONCENTRATIONS WHERE DETECTED IN GROUNDWATER SAMPLES — NAS PENSACOLA SITES 9, 10, 23, 29, 34, AND 36

8

4. CONCLUSIONS

Soil and groundwater contamination are present on Site 10. Metals, TRPHs, PAHs, and phenols are the primary contaminants. There were no source areas found within the perimeter of the site to which the site soil and groundwater contamination could be attributed; however, there is evidence that adjacent, off-site sources of contamination may be impacting Site 10.

The exact former location of Commodore's Pond, including whether it existed within the confines of Site 10, could not be determined from historical records or by field techniques.

Activities that have disturbed and redistributed soils and subsoils have occurred over the Site 10 area. Because a number of subsurface utilities intersect in the area of Site 10, virtually all areas of the site have been affected by activities, such as excavation, trenching, backfilling, and grading, associated with the installation, maintenance, and/or repair of these utilities. It is unknown whether fill materials from outside sources were brought to the site to backfill Commodore's Pond or other excavations. It is important to recognize that the soils contamination observed during Phase I may at least partially represent the affect of physical redistribution of soils during past earthwork activities.

Surface runoff from areas west of the site is diverted onto Site 10. It is unknown to what degree drainage from roads, parking areas, and other land uses may be contributing to the metals, TRPHs, and PAHs detected in soils on the site.

Although Site 10 soils show only traces of total metals, subtle differences are observed in the occurrence and distribution of each metal. Lead, which constitutes the major fraction of total metals concentrations in soil samples, was observed over a limited area in the northvest portion of the site and also in the south portion of the site.

[Bold items enclosed in brackets denote changes to last version of document]

Contamination in each of these areas may be associated with off-site sources impacting Site 10.

TRPH contamination appears to be distributed throughout the soil column in most areas of Site 10 except in the northwest.

PAU soil contamination is present in the northeast portion of the site only; however, higher concentrations were detected southeast of and adjacent to Site 10 on sites 23 and 36. High concentrations of phenols, which are sporadically distributed in the northeast and west-central site areas, may be associated with past on-site activities or off-site sources.

Groundwater contamination also is present on Site 10. Lead, chromium, cadmium, and nickel concentrations exceeding Florida drinking water and groundwater standards may reflect that turbid groundwater samples were not filtered prior to acid preservation. However, given the high concentrations and number of metals detected in the groundwater samples in the northwest area of the site, sediments in this area may have been contaminated by an undetermined source, possibly impacting Site 10 from the west. Lead concentrations, which were elevated with respect to the FPDWS in all three temporary wells, suggest endemic or ambient sources in this area.

The extent and origin of phenol groundwater contamination in the northeast area of the site are currently unknown; however, given the concentrations of phenols also observed in the soils in this area, this groundwater contamination may be associated with localized, on-site and/or off-site sources.

Further assessment activities are required at and in the vicinity of Site 10.

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6. FLORIDA PROFESSIONAL GEOLOGIST SEAL

I hereby affix my seal to the Interim Data Report for Commodore's Pond (Site 10), located at the Naval Air Station in Pensacola, Escambia County, Florida, in accordance with Chapter 492 of the Florida Statutes and applicable rules and regulations developed pursuant thereto:

Name:	Richard J. Rudy
License Number:	P.G. No. 97
State:	Florida
Expiration Date:	July 31, 1994

Richard J. Rudy

11-19-94

Date

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A

APPENDIX A

BIRDS OBSERVED DURING HABITAT/BIOTA SURVEY

Table A-1

BIRDS OBSERVED DURING HABITAT/BIOTA SURVEY
OCTOBER 1990

Mature pine forest, including grassy margins along dirt roads and thickets bordering forests.

Cardinal	Cardinalis cardinalis
Bluejay	Cyanocitta cristata
Gray Catbird	Dumetella carolinensis
Northern Mockingbird	Mimus polyglottos
Rufous-sided Towhee	Pipilo erythrophthalmus
Boat-tailed Grackle	Quiscalus major
Common Grackle	Quiscalus quiscula
Eastern Phoebe	Sayornis phoebe
Carolina Wren	Thryothorus ludovicianus
Brown Thrasher	Toxostoma rufum
House Wren	Troglodytes aedon
Yellow-throated Vireo	Vireo flavifrons
White-eyed Vireo	Vireo griseus
Mourning Dove	Zenaida macroura

Upland mature hardwood forest with some mix of pines.

Red-tailed Eawk	Buteo jamaicensis
Bluejay	Cyanocitta cristata
Prairie Warbler	Dendroica discolor
Mississippi Kite	Ictinia mississippiensis
Northern Mockingbird	Mimus polyglottos
Tufted Titmouse	Parus bicolor
Carolina Chickadee	Parus carolinensis
Ruby Crowned Kinglet	Regulus calendula
Golden Crowned Kinglet	Regulus satrapa
Ovenbird	Seiurus aurocapillus
Nashville Warbler	Vermivora ruficapilla
Mourning Dove	Zenaida macroura

Beachfront, including shoreline along waterfront apron; Pensacola Bay open water; Bayou Grande open water; shoreline along dredge spoil fill area; interior mudflats of dredge spoil fill area; and primary dune/scrubby areas of beach.

Great Blue Heron	Ardea herodias
Ruddy Turnstone	Arenaria interpres
Sanderling	Calidris alba
Least Sandpiper	Calidris minutilla
Semi-palmated Sandpiper	Calidris pusilla
Willet	Catoptrophorus semipalmatus
Belted Kingfisher	Ceryle alcyon
Semi-palmated Plover	Charadrius semipalmatus
Killdeer	Charadrius vociferus
Eastern Wood Pewee	Contopus borealis
Fish Crow	Corvus ossifragus
Bluejay	Cyanocitta cristata
Little Blue Heron	Egretta caerulea
Acadian Flycatcher	Empidonax virescens
Herring Gull	Larus argentatus
Laughing Gull	Larus atricilla
Short-billed Dowitcher	Limnodromus griseus
Northern Mockingbird	Mimus polyglottos
Osprey	Pandion haliaetus
Brown Pelican	Pelecanus occidentalis
Double Crested Cormorant	Phalacrocorax auritus
Black-bellied Plover	Pluvialis squatarola
Chipping Sparrow	Spizella passerina
Roseate Tern	Sterna dougallii
Common Tern	Sterna hirundo
Royal Tern	Sterna maxima
Forester's Tern	Sterna porsteri
Sandwich Tern	Sterna sandircensis
Tree Swallow	Tachycineta bicolor
House Wren	Troglodytes aedon
Mourning Dove	Zenaida macroura

Marshland, including emergent vegetation found along Bayou Grande, Pensacola Bay, and brackish-vater ponds.

Red-winged Blackbird	Agelaius phoeniceus
Northern Shoveler	Anas clypeata
Green-winged Teal	Anas crecea
Blue-winged Teal	Anas discors
Mottled Duck	Anas fulvigula
Great Blue Heron	Ardea herodias
Lesser Scaup	Aythya affinis
Cardinal	Cardinalis cardinalis
Great Egret	Casmerodius albus
Belted Kingfisher	Ceryle alcyon
Northern Flicker	Colaptes auratus
Bluejay	Cyanocitta cristata
Yellow-rumped Warbler	Dendroica coronata
Little Blue Heron	Egretta caerulea
Snowy Egret	Egretta thula
Tricolored Heron	Egretta tricolor
American Coot	Fulica americana
Yellowthroat	Geothlypis trichas
Northern Mockingbird	Mimus polyglottos
Osprey	Pandion haliaetus
Rufous-sided Towhee	Pipilo erythrophthalmus
Pied-billed Grebe	Podilymbus podiceps
Forester's Tern	Sterna forsteri
House Wren	Troglodytes aedon
Mourning Dove	Zenaida macroura

Forested wetland area, including mature hardwoods and thick undergrowth mixed with emergent vegetation such as cattails.

Cardinal	Cardinalis cardinalis
American Goldfinch	Carduelis tristis
Marsh Wren	Cistothorus palustris
Northern Flicker	Colaptes auratus
Bluejay	Cyanocitta cristata
Prairie Warbler	Dendroica discolor
Wood Thrush	Hylocichla mustelina
Northern Mockingbird	Mimus polyglottos
Yellow-bellied Sapsucker	Sphyrapicus varius
Brown Thrasher	Toxostoma rufum

B

APPENDIX B

RADIATION AND SURFACE EMISSIONS DATA

SITE 10

PARTICULATE AIR SCREENING DATA

Date: June 5, 1991
Wind Direction: east
Wind Velocity: 3 to 5 miles per hour

Upwind Location: Grid location W4+00, S1+50
Measurement Duration: 15 minutes
Time Weighted Average Particulate Concentration: 0.18 mg/m^3

Downwind Location: 325 ft. west of upwind station
Measurement Duration: 15 minutes
Time Weighted Average Particulate Concentration: 0.13 mg/m^3

Upwind/Downwind Difference: -0.05 mg/m^3

SITE 10 RADIATION and SURFACE EMISSIONS SURVEY

COORDINATE LOCATION	ESP-2 1 METER GROSS CPM	ESP-2 1 METER GROSS DPM	ESP-2 SURFACE GROSS CPM	ESP-2 SURFACE GROSS DPM	OVA BKGND (ppm)	OVA ABOVEBG (ppm)
S0+00W4+00	2350	15667	2600	17333	6.0	0.0
S0+00W4+25	2900	19333	2700	18000	6.0	0.0
S0+00W4+50	3000	20000	3600	24000	6.0	0.0
S0+00W4+75	3400	22667	3400	22667	6.0	0.0
S0+00W5+00	3400	22667	3600	24000	6.0	0.0
S0+00W5+25	4100	27333	3600	24000	6.0	0.0
S0+00W5+50	4300	28667	4300	28667	6.0	0.0
S0+00W5+75	4500	30000	4700	31333	6.0	0.0
S0+00W6+00	3000	20000	3200	21333	6.0	0.0
S0+00W6+25	3600	24000	3000	20000	6.0	0.0
S0+00W6+50	3600	24000	3300	22000	6.0	0.0
S0+00W6+75	3400	22667	3100	20667	6.0	0.0
S0+00W7+00	3400	22667	3000	20000	6.0	0.0
S0+00W7+25	3900	26000	3600	24000	6.0	0.0
S0+00W7+50	4600	30667	3800	25333	6.0	0.0
S0+00W7+75	4200	28000	3900	26000	6.0	0.0
S0+00W8+00	4200	28000	3800	25333	6.0	0.0
S0+25W4+00	2150	14333	2200	14667	6.0	0.0
S0+25W4+25	2300	15333	2200	14667	6.0	0.0
S0+25W4+50	2400	16000	2600	17333	6.0	0.0
S0+25W4+75	2350	15667	2300	15333	6.0	0.0
S0+25W5+00	2800	18667	3000	20000	6.0	0.0
S0+25W5+25	3400	22667	3400	22667	6.0	0.0
S0+25W5+50	3800	25333	3900	26000	6.0	0.0
S0+25W5+75	2800	18667	2900	19333	6.0	0.0
S0+25W6+00	2900	19333	3100	20667	6.0	0.0
S0+25W6+25	3100	20667	3600	24000	6.0	0.0
S0+25W6+50	3000	20000	3700	21333	6.0	0.0
S0+25W6+75	3000	20000	2900	19333	6.0	0.0
S0+25W7+00	3000	20000	3300	22000	6.0	0.0
S0+25W7+25	3000	20000	3100	20667	6.0	0.0
S0+25W7+50	2700	18000	3000	20000	6.0	0.0
S0+25W7+75	3600	24000	3700	24667	6.0	0.0
S0+25W8+00	3500	23333	3700	24667	6.0	0.0
S0+25W8+25	3800	25333	4300	28667	6.0	0.0
S0+50W4+00	2000	13333	1900	12667	6.0	0.0
S0+50W4+25	1900	12667	2000	13333	6.0	0.0
S0+50W4+50	2100	14000	2200	14667	6.0	0.0
S0+50W4+75	2200	14667	2200	14667	6.0	0.0
S0+50W5+00	2600	17333	2600	17333	6.0	0.0
S0+50W5+25	3000	20000	3400	22667	6.0	0.0
S0+50W5+50	3100	20667	3200	21333	6.0	0.0
S0+50W5+75	2300	15333	2300	15333	6.0	0.0
S0+50W6+00	2100	14000	2200	14667	6.0	0.0

SITE 10 RADIATION
and SURFACE EMISSIONS SURVEY

COORDINATE LOCATION	ESP-2 1 METER GROSS CPM	ESP-2 1 METER GROSS DPM	ESP-2 SURFACE GROSS CPM	ESP-2 SURFACE GROSS DPM	OVA BKGND (ppm)	OVA ABOVEBG (ppm)
S0+50W6+25	2400	16000	2500	16667	6.0	0.0
S0+50W6+50	2250	15000	2500	16667	6.0	0.0
S0+50W6+75	2450	16333	2750	18333	6.0	0.0
S0+50W7+00	2400	16000	2400	16000	6.0	0.0
S0+50W7+25	2500	16667	2600	17333	6.0	0.0
S0+50W7+50	2500	16667	2100	14000	6.0	0.0
S0+50W7+75	2800	18667	2700	18000	6.0	0.0
S0+50W8+00	4000	26667	4100	27333	6.0	0.0
S0+75W4+00	1950	13000	1900	12667	6.0	0.0
S0+75W4+25	1900	12667	2000	13333	6.0	0.0
S0+75W4+50	2000	13333	2000	13333	6.0	0.0
S0+75W4+75	2100	14000	2000	13333	6.0	0.0
S0+75W5+00	2500	16667	2600	17333	6.0	0.0
S0+75W5+25	4000	26667	4300	28667	6.0	0.0
S0+75W5+50	3400	22667	3900	26000	6.0	0.0
S0+75W5+75	2400	16000	2400	16000	6.0	0.0
S0+75W6+00	2300	15333	2400	16000	6.0	0.0
S0+75W6+25	2550	17000	2500	16667	6.0	0.0
S0+75W6+50	2400	16000	2400	16000	6.0	0.0
S0+75W6+75	2300	15333	2450	16333	6.0	0.0
S0+75W7+00	2500	16667	2600	17333	6.0	0.0
S0+75W7+25	2300	15333	2600	17333	6.0	0.0
S0+75W7+50	2200	14667	2300	15333	6.0	0.0
S0+75W7+75	3400	22667	2800	18667	6.0	0.0
S1+00W4+00	1900	12667	1950	13000	6.0	0.0
S1+00W4+25	2100	14000	2100	14000	6.0	0.0
S1+00W4+50	1950	13000	1800	12000	6.0	0.0
S1+00W4+75	2200	14667	2200	14667	6.0	0.0
S1+00W5+00	2800	18667	2700	18000	6.0	0.0
S1+00W5+25	4000	26667	4400	29333	6.0	0.0
S1+00W5+50	3300	22000	3100	20667	6.0	0.0
S1+00W5+75	2800	18667	2800	18667	6.0	0.0
S1+00W6+00	2300	15333	2100	14000	6.0	0.0
S1+00W6+25	2500	16667	2500	16667	6.0	0.0
S1+00W6+50	2500	16667	2400	16000	6.0	0.0
S1+00W6+75	2500	16667	2500	16667	6.0	0.0
S1+00W7+00	2400	16000	2600	17333	6.0	0.0
S1+00W7+25	2450	16333	2600	17333	6.0	0.0
S1+00W7+50	3800	25333	4100	27333	6.0	0.0
S1+00W7+75	3800	25333	3800	25333	6.0	0.0
S1+25W4+00	1870	12467	1970	13133	6.0	0.0
S1+25W4+25	2000	13333	2000	13333	6.0	0.0
S1+25W4+50	1850	12333	1800	12000	6.0	0.0
S1+25W4+75	2200	14667	2350	15667	6.0	0.0

SITE 10 RADIATION and SURFACE EMISSIONS SURVEY

COORDINATE LOCATION	ESP-2 1 METER GROSS CPM	ESP-2 1 METER GROSS DPM	ESP-2 SURFACE GROSS CPM	ESP-2 SURFACE GROSS DPM	OVA BKGND (ppm)	OVA ABOVEBG (ppm)
S1+25W5+00	2400	16000	2500	16667	6.0	0.0
S1+25W5+25	2400	16000	2400	16000	6.0	0.0
S1+25W5+50	3700	24667	3900	26000	6.0	0.0
S1+25W5+75	3000	20000	3400	22667	6.0	0.0
S1+25W6+00	3100	20667	3500	23333	6.0	0.0
S1+25W6+25	2400	16000	2500	16667	6.0	0.0
S1+25W6+50	2550	17000	2500	16667	6.0	0.0
S1+25W6+75	2500	16667	2500	16667	6.0	0.0
S1+25W7+00	3000	20000	3000	20000	6.0	0.0
S1+25W7+25	4000	26667	4300	28667	6.0	0.0
S1+25W7+50	3600	24000	4100	27333	6.0	0.0
S1+50W4+00	2000	13333	2000	13333	6.0	0.0
S1+50W4+25	1900	12667	2000	13333	6.0	0.0
S1+50W4+50	1800	12000	1900	12667	6.0	0.0
S1+50W4+75	2300	15333	2100	14000	6.0	0.0
S1+50W5+00	2200	14667	2600	17333	6.0	0.0
S1+50W5+25	2400	16000	2300	15333	6.0	0.0
S1+50W5+50	3400	22667	3300	22000	6.0	0.0
S1+50W5+75	3200	21333	3400	22667	6.0	0.0
S1+50W6+00	2200	14667	2100	14000	6.0	0.0
S1+50W6+25	3200	21333	3400	22667	6.0	0.0
S1+50W6+50	2800	18667	2500	16667	6.0	0.0
S1+50W6+75	2700	18000	3000	20000	6.0	0.0
S1+50W7+00	3900	26000	4200	28000	6.0	0.0
S1+50W7+25	3200	21333	3400	22667	6.0	0.0
S1+75W4+00	1820	12133	1700	11333	6.0	0.0
S1+75W4+25	2100	14000	2000	13333	6.0	0.0
S1+75W4+50	2150	14333	1950	13000	6.0	0.0
S1+75W4+75	2150	14333	2050	13667	6.0	1.0
S1+75W5+00	2100	14000	2250	15000	6.0	0.0
S1+75W5+25	2200	14667	2300	15333	6.0	0.0
S1+75W5+50	2300	15333	2400	16000	6.0	0.0
S1+75W5+75	2300	15333	2300	15333	6.0	0.0
S1+75W6+00	2400	14667	2200	14667	6.0	0.0
S1+75W6+25	2400	16000	2300	15333	6.0	0.0
S1+75W6+50	4300	28667	4600	30667	6.0	0.0
S1+75W6+75	4700	31333	4900	32667	6.0	0.0
S1+75W7+00	4300	28667	5100	34000	6.0	0.0
S1+75W7+25	3500	23333	3800	25333	6.0	0.0
S2+00W4+00	2000	13333	1950	13000	6.0	0.0
S2+00W4+25	2000	13333	2000	13333	6.0	0.0
S2+00W4+50	1850	12333	1800	12000	6.0	0.0
S2+00W4+75	2000	13333	2000	13333	6.0	0.0
S2+00W5+00	2150	14333	2250	15000	6.0	0.0

SITE 10 RADIATION
and SURFACE EMISSIONS SURVEY

COORDINATE LOCATION	ESP-2 1 METER GROSS CPM	ESP-2 1 METER GROSS DPM	ESP-2 SURFACE GROSS CPM	ESP-2 SURFACE GROSS DPM	OVA BKGND (ppm)	OVA ABOVEBG (ppm)
S2+00W5+25	2200	14667	2100	14000	6.0	0.0
S2+00W5+50	2300	15333	2300	15333	6.0	0.0
S2+00W5+75	2200	14667	2300	15333	6.0	0.0
S2+00W6+00	2600	17333	2700	18000	6.0	0.0
S2+00W6+25	2400	16000	2300	15333	6.0	0.0
S2+00W6+50	3000	20000	3200	21333	6.0	0.0
S2+00W6+75	2700	18000	3000	20000	6.0	0.0
S2+00W7+00	4000	26667	4400	29333	6.0	0.0
S2+25W4+00	1850	12333	1750	11667	6.0	0.0
S2+25W4+25	2000	13333	2100	14000	6.0	0.0
S2+25W4+50	2200	14666	2200	14666	6.0	0.0
S2+25W4+75	2000	13333	2100	14000	6.0	0.0
S2+25W5+00	2250	15000	2150	14333	6.0	0.0
S2+25W5+25	2000	13333	2000	13333	6.0	0.0
S2+25W5+50	2100	14000	2300	15333	6.0	0.0
S2+25W5+75	2550	15667	2200	14667	6.0	0.0
S2+25W6+00	2450	16333	2500	16667	6.0	0.0
S2+25W6+25	2600	17333	2600	17333	6.0	0.0
S2+25W6+50	2500	16667	2400	16000	6.0	0.0
S2+25W6+75	2500	16667	2450	16333	6.0	0.0
S2+25W7+00	4200	28000	4500	30000	6.0	0.0
S2+50W4+00	1900	12667	1870	12467	6.0	0.0
S2+50W4+25	2000	13333	2100	14000	6.0	0.0
S2+50W4+50	2000	13333	2050	13667	6.0	0.0
S2+50W4+75	1950	13000	2000	13333	6.0	0.0
S2+50W5+00	2300	15333	2300	15333	6.0	0.0
S2+50W5+25	1950	13000	2000	13333	6.0	0.0
S2+50W5+50	2200	14667	2000	13333	6.0	0.0
S2+50W5+75	2300	15333	2400	16000	6.0	0.0
S2+50W6+00	2450	16333	2500	16667	6.0	0.0
S2+50W6+25	2400	16000	2400	16000	6.0	0.0
S2+50W6+50	3200	21333	3300	22000	6.0	0.0
S2+50W6+75	4000	26667	4300	28667	6.0	0.0
S2+75W4+00	1700	11333	1970	13133	6.0	0.5
S2+75W4+25	1700	11333	2000	13333	6.0	0.0
S2+75W4+50	1850	12333	1800	12000	6.0	0.0
S2+75W4+75	1850	12333	2000	13333	6.0	0.0
S2+75W5+00	2200	14667	2100	14000	6.0	0.0
S2+75W5+25	2000	13333	2000	13333	6.0	0.0
S2+75W5+50	2200	14667	2100	14000	6.0	0.0
S2+75W5+75	2300	15333	2300	15333	6.0	0.0
S2+75W6+00	2600	17333	2700	18000	6.0	0.0
S2+75W6+25	2450	16333	2600	17333	6.0	0.0
S2+75W6+50	3350	22333	3500	23333	6.0	0.0

SITE 10 RADIATION and SURFACE EMISSIONS SURVEY

COORDINATE LOCATION	ESP-2 1 METER GROSS CPM	ESP-2 1 METER GROSS DPM	ESP-2 SURFACE GROSS CPM	ESP-2 SURFACE GROSS DPM	OVA BKGND (ppm)	OVA ABOVEBG (ppm)
S2+75W6+75	3400	22667	4200	28000	6.0	0.0
S3+00W4+00	1800	12000	1720	11467	6.0	0.0
S3+00W4+25	1800	12000	2100	14000	6.0	0.0
S3+00W4+50	1800	12000	1800	12000	6.0	0.0
S3+00W4+75	2050	13667	2000	13333	6.0	0.0
S3+00W5+00	2150	14333	2100	14000	6.0	0.0
S3+00W5+25	2300	15333	2300	15333	6.0	0.0
S3+00W5+50	2100	14000	2200	14667	6.0	0.0
S3+00W5+75	2300	15333	2300	15333	6.0	0.0
S3+00W6+00	2400	16000	2500	16667	6.0	0.0
S3+00W6+25	2700	18000	2850	19000	6.0	0.0
S3+00W6+50	4300	28667	4600	30667	6.0	0.0
S3+25W4+00	1680	11200	1740	11600	6.0	0.0
S3+25W4+25	1700	11333	1800	12000	6.0	0.0
S3+25W4+50	1900	12667	2000	13333	6.0	0.0
S3+25W4+75	2100	14000	2000	13333	6.0	0.0
S3+25W5+00	2100	14000	2050	13667	6.0	0.0
S3+25W5+25	2100	14000	2200	14667	6.0	0.0
S3+25W5+50	2100	14000	2100	14000	6.0	0.0
S3+25W5+75	2200	14667	2300	15333	6.0	0.0
S3+25W6+00	2700	18000	2400	16000	6.0	0.0
S3+25W6+25	3800	25333	3500	23333	6.0	0.0
S3+50W4+00	1700	11333	1800	12000	6.0	0.0
S3+50W4+25	1700	11333	1700	11333	6.0	0.0
S3+50W4+50	1800	12000	1800	12000	6.0	0.0
S3+50W4+75	2000	13333	1900	12667	6.0	0.0
S3+50W5+00	2000	13333	2100	14000	6.0	0.0
S3+50W5+25	2100	14000	2100	14000	6.0	0.0
S3+50W5+50	2200	14667	2300	15333	6.0	0.0
S3+50W5+75	2600	17333	2400	16000	6.0	0.0
S3+50W6+00	3000	20000	2700	18000	6.0	0.0
S3+50W6+25	3700	24667	3800	25333	6.0	0.0
S3+75W4+00	1720	11467	1800	12000	6.0	0.0
S3+75W4+25	1700	11333	2000	13333	6.0	0.0
S3+75W4+50	2200	14667	2100	14000	6.0	0.0
S3+75W4+75	1900	12667	2000	13333	6.0	0.0
S3+75W5+00	2300	15333	2250	15000	6.0	0.0
S3+75W5+25	2350	15667	2200	14667	6.0	0.0
S3+75W5+50	2400	16000	2400	16000	6.0	0.0
S3+75W5+75	2400	16000	2450	16333	6.0	0.0
S3+75W6+00	3100	20667	3100	20667	6.0	0.0
S4+00W4+00	1900	12667	1720	11467	6.0	0.0
S4+00W4+25	2000	13333	2000	13333	6.0	0.0
S4+00W4+50	1850	12333	1900	12667	6.0	0.0

SITE 10 RADIATION
and SURFACE EMISSIONS SURVEY

COORDINATE LOCATION	ESP-2 1 METER GROSS CPM	ESP-2 1 METER GROSS DPM	ESP-2 SURFACE GROSS CPM	ESP-2 SURFACE GROSS DPM	OVA BKGND (ppm)	OVA ABOVEBG (ppm)
S4+00W4+75	2050	13667	2160	14400	6.0	0.0
S4+00W5+00	2250	15000	2050	13667	6.0	0.0
S4+00W5+25	2200	14667	2500	16667	6.0	0.0
S4+00W5+50	2400	16000	2300	15333	6.0	0.0
S4+00W5+75	2800	18667	2800	18667	6.0	0.0
S4+25W4+00	1900	12667	2000	13333	6.0	0.0
S4+25W4+25	2000	13333	2100	14000	6.0	0.0
S4+25W4+50	2050	13667	2200	14667	6.0	0.0
S4+25W4+75	2500	16667	2300	15333	6.0	0.0
S4+25W5+00	2500	16667	2450	16333	6.0	0.0
S4+25W5+25	3200	21333	3300	23333	6.0	0.0
S4+25W5+50	3500	23333	3400	22667	6.0	0.0
S4+25W5+75	2700	18000	3000	20000	6.0	0.0
S4+50W4+00	1800	12000	2000	13333	6.0	0.0
S4+50W4+25	1900	12667	2100	14000	6.0	0.0
S4+50W4+50	2100	14000	2000	13333	6.0	0.0
S4+50W4+75	2500	16667	2450	16333	6.0	0.0
S4+50W5+00	3000	20000	2900	19333	6.0	0.0
S4+50W5+25	3500	23333	3700	24667	6.0	0.0
S4+50W5+50	3600	24000	3600	24000	6.0	0.0
S4+75W4+00	2200	14667	2200	14667	6.0	0.0
S4+75W4+25	2100	14000	2300	15333	6.0	0.0
S4+75W4+50	2200	14667	2300	15333	6.0	0.0
S4+75W4+75	2400	16000	2700	18000	6.0	0.0
S4+75W5+00	3500	23333	3500	23333	6.0	0.0
S4+75W5+25	3500	23333	3900	26000	6.0	0.0
S5+00W4+00	1800	12000	1900	12667	6.0	0.0
S5+00W4+25	2000	13333	2100	14000	6.0	0.0
S5+00W4+50	2200	14667	2300	15333	6.0	0.0
S5+00W4+75	2900	19333	3000	20000	6.0	0.0
S5+00W5+00	4100	27333	3900	26000	6.0	0.0
S5+00W5+25	3300	22000	3400	22667	6.0	0.0
S5+25W4+00	2000	13333	1900	12667	6.0	0.0
S5+25W4+25	2100	14000	2000	13333	6.0	0.0
S5+25W4+50	3000	20000	2950	19667	6.0	0.0
S5+25W4+75	3600	24000	3500	23333	6.0	0.0
S5+25W5+00	3000	20000	3000	20000	6.0	0.0
S5+50W4+00	1900	12667	2000	13333	6.0	0.0
S5+50W4+25	2200	14667	2100	14000	6.0	0.0
S5+50W4+50	3600	24000	3600	24000	6.0	0.0
S5+50W4+75	3600	24000	3800	25333	6.0	0.0
S5+75W4+00	1800	12000	1900	12667	6.0	0.0
S5+75W4+25	2800	18667	3000	20000	6.0	0.0
S5+75W4+50	3600	24000	3600	24000	6.0	0.0

SITE 10 RADIATION and SURFACE EMISSIONS SURVEY

COORDINATE LOCATION	ESP-2 1 METER GROSS CPM	ESP-2 1 METER GROSS DPM	ESP-2 SURFACE GROSS CPM	ESP-2 SURFACE GROSS DPM	OVA BKGND (ppm)	OVA ABOVEBG (ppm)
S5+75W4+75	3300	22000	3200	21333	6.0	0.0
S6+00W4+00	2200	14667	2200	14667	6.0	0.0
S6+00W4+25	3300	22000	3100	20667	6.0	0.0
S6+00W4+50	3600	24000	3300	22000	6.0	0.0
S6+00W4+75	3000	20000	3200	21333	6.0	0.0
S6+25W4+00	2200	14667	2400	16000	6.0	0.0
S6+25W4+25	3700	24667	3900	26000	6.0	0.0
S6+25W4+50	3300	22000	3800	25333	6.0	0.0
S6+50W4+00	2700	18000	3000	20000	6.0	0.0
S6+50W4+25	3300	22000	3400	22667	6.0	0.0
S6+75W4+00	3400	22667	3600	24000	6.0	0.0
S6+75W4+25	3100	20667	3100	20667	6.0	0.0
S7+00W4+00	3000	20000	3000	20000	6.0	0.0

C

APPENDIX C

EM-31 AND MAGNETOMETER DATA

SITE 10 GEOPHYSICAL SURVEY

COORDINATE LOCATION	EM-31 VERT N-S (mmhos/m)	EM-31 VERT E-W (mmhos/m)	EM-31 HORZ N-S (mmhos/m)	EM-31 HORZ E-W (mmhos/m)	MAGNETOMETER (gammas)
S0+00W4+00	42.0	26.5	19.0	7.0	50136
S0+00W4+25	23.0	23.5	9.0	8.0	50290
S0+00W4+50	24.5	21.0	9.0	8.0	50276
S0+00W4+75	10.0	10.0	5.5	6.5	50361
S0+00W5+00	8.0	8.0	5.0	5.0	50356
S0+00W5+25	8.0	8.0	5.5	4.5	50333
S0+00W5+50	8.0	8.0	4.5	5.0	50292
S0+00W5+75	7.5	7.5	4.5	4.5	50362
S0+00W6+00	7.5	8.0	4.5	4.0	50285
S0+00W6+25	7.5	7.5	4.0	4.0	50328
S0+00W6+50	7.5	7.5	4.0	4.0	50308
S0+00W6+75	7.5	7.5	4.0	4.5	50348
S0+00W7+00	8.0	8.0	5.0	4.0	50308
S0+00W7+25	8.0	8.0	4.5	4.0	50349
S0+00W7+50	9.5	9.5	4.5	4.0	50300
S0+00W7+75	12.0	12.0	4.0	4.5	50369
S0+00W8+00	23.5	14.0	13.5	7.0	50706
S0+25W4+00	34	22	20	10	50340
S0+25W4+25	15.5	16.0	7.0	7.5	50288
S0+25W4+50	10.5	<0	43.0	9.0	50406
S0+25W4+75	11.0	11.5	5.5	5.5	50383
S0+25W5+00	8.0	8.0	5.0	5.5	50338
S0+25W5+25	7.5	7.5	5.0	4.5	50318
S0+25W5+50	7.0	7.0	5.0	5.0	50290
S0+25W5+75	6.5	6.5	4.5	5.0	50344
S0+25W6+00	6.0	6.0	4.0	4.0	50305
S0+25W6+25	5.5	5.5	4.0	3.5	50369
S0+25W6+50	5.5	5.5	3.5	3.5	50314
S0+25W6+75	5.5	5.5	3.5	3.5	50385
S0+25W7+00	5.0	5.5	3.5	3.5	50324
S0+25W7+25	6.0	6.0	4.0	3.5	50375
S0+25W7+50	8.5	9.0	3.5	3.5	50329
S0+25W7+75	5.0	5.0	5.5	6.0	50355
S0+25W8+00	56.0	30.0	17.0	7.0	50520
S0+25W8+25					
S0+50W4+00	40	0	48	7	50035
S0+50W4+25	13.0	14.0	6.0	6.0	50265
S0+50W4+50	31.0	17.0	11.5	6.0	50396
S0+50W4+75	14.5	14.5	5.5	5.0	50367
S0+50W5+00	8.0	7.5	6.0	5.0	50317
S0+50W5+25	7.0	7.0	5.0	5.0	50341
S0+50W5+50	7.0	7.0	5.0	5.0	50328
S0+50W5+75	6.5	6.5	5.0	4.5	50330
S0+50W6+00	6.0	6.5	4.5	4.5	50299
S0+50W6+25	6.0	5.5	5.0	4.5	50340

SITE 10 GEOPHYSICAL SURVEY

COORDINATE LOCATION	EM-31 VERT N-S (mmhos/m)	EM-31 VERT E-W (mmhos/m)	EM-31 HORZ N-S (mmhos/m)	EM-31 HORZ E-W (mmhos/m)	MAGNETOMETER (gammas)
S0+50W6+50	5.5	5.5	4.0	4.0	50325
S0+50W6+75	5.5	5.5	3.5	3.5	50353
S0+50W7+00	6.0	6.0	4.0	4.0	50282
S0+50W7+25	8.0	8.0	4.0	3.5	50363
S0+50W7+50	6.5	9.0	5.5	5.0	50339
S0+50W7+75	5.5	3.5	18.0	5.5	50266
S0+50W8+00	73.0	56.0	25.0	9.0	49484
S0+75W4+00	40	0	48	7	50193
S0+75W4+25	11.5	12.5	6.0	7.0	50257
S0+75W4+50	17.0	18.0	5.5	6.0	50286
S0+75W4+75	23.5	17.5	7.0	6.0	50526
S0+75W5+00	8.0	8.0	5.5	4.5	50343
S0+75W5+25	7.0	7.0	5.0	5.0	50355
S0+75W5+50	7.0	7.0	5.0	5.0	50292
S0+75W5+75	7.0	7.0	5.0	5.0	50348
S0+75W6+00	6.5	6.5	4.5	5.0	50300
S0+75W6+25	6.0	6.0	4.5	4.5	50357
S0+75W6+50	6.0	6.0	4.0	4.0	50316
S0+75W6+75	6.5	6.5	4.0	3.5	50360
S0+75W7+00	5.0	10.0	4.5	9.0	50334
S0+75W7+25	9.5	9.5	4.5	4.5	50388
S0+75W7+50	12.5	12.5	5.0	4.5	50357
S0+75W7+75	19.0	3.0	37.0	10.0	50305
S1+00W4+00	35.0	0.5	39.0	7.0	50226
S1+00W4+25	11.5	12.0	7.0	6.5	50346
S1+00W4+50	12.0	12.5	6.0	5.5	50239
S1+00W4+75	<0	<0	58.0	7.0	48563
S1+00W5+00	10.0	10.5	5.0	5.0	50346
S1+00W5+25	7.0	7.0	4.5	4.5	50319
S1+00W5+50	7.0	7.0	4.5	5.0	50309
S1+00W5+75	6.5	6.5	5.0	5.0	50333
S1+00W6+00	6.5	6.5	4.5	4.5	50366
S1+00W6+25	6.5	6.5	4.5	4.5	50339
S1+00W6+50	7.5	7.0	4.0	5.0	50339
S1+00W6+75	11.0	4.5	7.5	5.0	50354
S1+00W7+00	7.0	7.0	4.0	4.0	50356
S1+00W7+25	8.0	8.5	4.0	4.0	50396
S1+00W7+50	18.0	11.5	18.0	5.0	50383
S1+00W7+75	38.0	14.5	55.0	34.0	48187
S1+25W4+00	34	0	68	7	50405
S1+25W4+25		11.5		7.0	50312
S1+25W4+50	10.0	10.5	5.5	6.5	50250
S1+25W4+75	25.0	19.5	11.5	6.0	49908
S1+25W5+00	14.0	15.0	5.0	5.0	50289
S1+25W5+25	7.5	8.0	4.5	4.5	50300

SITE 10 GEOPHYSICAL SURVEY

COORDINATE LOCATION	EM-31 VERT N-S (mmhos/m)	EM-31 VERT E-W (mmhos/m)	EM-31 HORZ N-S (mmhos/m)	EM-31 HORZ E-W (mmhos/m)	MAGNETOMETER (gammas)
S1+25W5+50	6.5	6.5	5.0	5.0	50261
S1+25W5+75	6.5	6.5	4.5	4.5	50359
S1+25W6+00	6.5	6.5	4.5	4.5	50288
S1+25W6+25	8.0	8.0	5.0	5.0	50329
S1+25W6+50	2.5	8.0	5.5	7.5	50309
S1+25W6+75	7.0	7.0	5.0	5.0	50366
S1+25W7+00	7.0	7.5	4.5	4.5	50297
S1+25W7+25	18.5	14.0	12.0	6.5	50335
S1+25W7+50	10.5	<0	63.0	11.5	49915
S1+50W4+00	41.0	0	49.0	7.5	50476
S1+50W4+25	12.0	12.5	7.5	8.0	50377
S1+50W4+50	8.0	10.0	5.5	6.5	50311
S1+50W4+75	14.5	15.5	5.0	5.5	50280
S1+50W5+00	24.5	4.0	21.0	8.0	50628
S1+50W5+25	9.0	9.0	4.5	5.0	50304
S1+50W5+50	7.0	7.0	5.0	5.0	50316
S1+50W5+75	6.5	6.5	4.5	4.5	50324
S1+50W6+00	6.5	7.0	4.5	4.5	50308
S1+50W6+25	5.5	2.0	17.0	5.0	50330
S1+50W6+50	7.5	7.0	4.5	4.5	50343
S1+50W6+75	7.0	7.0	4.5	4.5	50329
S1+50W7+00	10.5	12.0	4.5	3.0	50100
S1+50W7+25	43.0	35.0	20.0	10.0	49322
S1+75W4+00	34	0	88	7	50433
S1+75W4+25	12.0	12.5	7.0	9.0	50349
S1+75W4+50	9.0	9.0	6.0	6.5	50294
S1+75W4+75	11.0	11.0	5.5	5.0	50362
S1+75W5+00	20.0	<0	33.0	6.0	50469
S1+75W5+25	11.5	11.5	4.5	4.0	50316
S1+75W5+50	7.0	7.0	4.5	4.5	50290
S1+75W5+75	6.5	6.5	4.5	4.5	50337
S1+75W6+00	8.0	8.0	4.5	4.5	50288
S1+75W6+25	10.0	7.0	5.5	5.0	50284
S1+75W6+50	6.5	6.5	4.5	4.5	50292
S1+75W6+75	7.5	7.5	5.0	5.5	50330
S1+75W7+00					
S1+75W7+25					51587
S2+00W4+00	40.0	0	73.0	9.0	50041
S2+00W4+25	12.0	12.5	7.0	8.0	50322
S2+00W4+50	9.0	9.5	6.0	6.5	50318
S2+00W4+75	9.5	9.5	5.5	5.0	50349
S2+00W5+00	17.5	17.5	5.0	5.0	50399
S2+00W5+25	16.5	13.5	7.5	4.0	50397
S2+00W5+50	7.0	7.0	4.5	4.5	50323
S2+00W5+75	7.0	7.0	4.5	4.5	50318

SITE 10 GEOPHYSICAL SURVEY

COORDINATE LOCATION	EM-31 VERT N-S (mmhos/m)	EM-31 VERT E-W (mmhos/m)	EM-31 HORZ N-S (mmhos/m)	EM-31 HORZ E-W (mmhos/m)	MAGNETOMETER (gammas)
S2+00W6+00	4.5	1.0	17.0	4.5	50331
S2+00W6+25	6.5	7.0	4.5	4.5	50314
S2+00W6+50	6.5	6.5	4.5	4.5	50201
S2+00W6+75	9.5	8.5	4.0	4.0	50319
S2+00W7+00	10.5	10.0	15.0	6.5	50358
S2+25W4+00	30	0	130	8	50399
S2+25W4+25	12.5	12.5	7.0	7.0	50344
S2+25W4+50	9.0	9.0	6.0	6.5	50306
S2+25W4+75	8.5	8.5	5.5	5.5	50407
S2+25W5+00	11.0	11.5	5.0	5.0	50279
S2+25W5+25	8.5	<0	60.0	6.0	50955
S2+25W5+50	7.5	7.5	4.0	4.5	50265
S2+25W5+75	8.0	8.5	4.5	4.5	50342
S2+25W6+00	8.5	8.5	4.5	4.0	50272
S2+25W6+25	6.0	6.0	4.0	4.5	50323
S2+25W6+50	6.5	7.0	4.5	4.0	50252
S2+25W6+75	13.5	13.0	5.0	4.5	50272
S2+25W7+00	<0	<0	58.0	35.0	50970
S2+50W4+00	43.0	0	90.0	8.5	50188
S2+50W4+25	12.0	12.5	6.5	6.5	50322
S2+50W4+50	9.0	9.0	6.5	7.0	50339
S2+50W4+75	8.5	8.0	6.0	6.0	50356
S2+50W5+00	8.5	9.0	5.0	5.0	50355
S2+50W5+25	25.0	8.0	12.5	5.0	51081
S2+50W5+50	9.5	9.5	4.0	4.0	50360
S2+50W5+75	7.0	2.5	12.0	4.5	50307
S2+50W6+00	6.5	6.5	4.0	4.0	50290
S2+50W6+25	6.0	6.0	4.5	4.0	50285
S2+50W6+50	8.5	9.0	4.0	4.0	50238
S2+50W6+75	35.0	22.5	12.5	6.0	50175
S2+75W4+00	34	0	130	8	50277
S2+75W4+25	12.5	13.0	7.0	7.0	50357
S2+75W4+50	9.0	9.0	6.5	7.0	50303
S2+75W4+75	8.0	8.0	5.5	6.0	50378
S2+75W5+00	8.0	7.0	4.5	5.5	50324
S2+75W5+25	15.0	16.5	4.0	4.0	50271
S2+75W5+50	12.5	13.5	4.0	4.0	50237
S2+75W5+75	10.0	6.5	5.0	4.0	50305
S2+75W6+00	6.0	6.0	4.0	4.0	50254
S2+75W6+25	7.0	7.0	4.5	4.0	50298
S2+75W6+50	16.5	12.5	6.5	5.0	50191
S2+75W6+75					
S3+00W4+00	33.0	0	85.0	8.5	50211
S3+00W4+25	13.5	14.0	7.0	8.5	50276
S3+00W4+50	9.5	9.5	6.5	7.0	50321

SITE 10 GEOPHYSICAL SURVEY

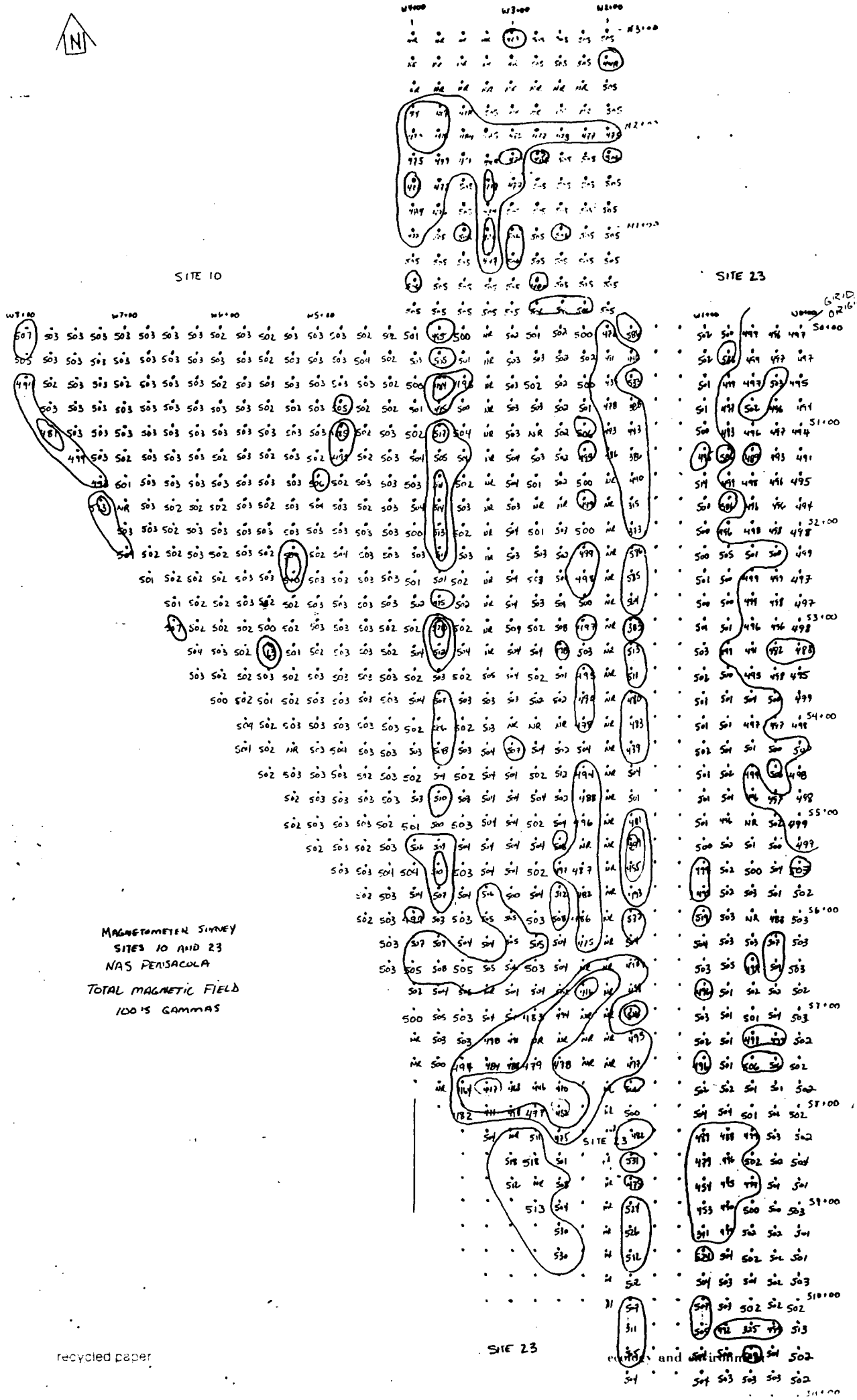
COORDINATE LOCATION	EM-31 VERT N-S (mmhos/m)	EM-31 VERT E-W (mmhos/m)	EM-31 HORZ N-S (mmhos/m)	EM-31 HORZ E-W (mmhos/m)	MAGNETOMETER (gammas)
S3+00W4+75	7.5	7.5	5.5	5.5	50355
S3+00W5+00	7.0	7.0	4.5	4.5	50310
S3+00W5+25	9.0	9.0	4.0	4.0	50245
S3+00W5+50	21.0	14.5	9.0	6.0	50075
S3+00W5+75	8.0	8.0	4.5	4.0	50245
S3+00W6+00	6.5	6.5	4.0	4.0	50273
S3+00W6+25	8.5	8.5	5.0	4.0	50289
S3+00W6+50	56.0	31.0	25.0	12.0	50767
S3+25W4+00	26	0	150	9	50474
S3+25W4+25	15.0	14.5	7.5	8.5	50284
S3+25W4+50	9.5	9.5	6.5	7.0	50307
S3+25W4+75	8.5	8.5	6.0	6.5	50358
S3+25W5+00	7.5	7.5	5.0	6.5	50290
S3+25W5+25	7.5	7.5	4.5	4.5	50178
S3+25W5+50	<0	<0	65.0	55.0	6347
S3+25W5+75	8.5	8.5	4.0	4.5	50219
S3+25W6+00	7.5	7.5	4.5	4.0	50311
S3+25W6+25	11.5	10.5	9.0	6.0	50496
S3+50W4+00	24	0	140	8	50266
S3+50W4+25	14.5	15.0	8.0	9.0	50333
S3+50W4+50	10.0	10.0	7.0	7.0	50370
S3+50W4+75	8.5	9.0	6.0	6.5	50357
S3+50W5+00	8.0	8.0	5.5	5.5	50325
S3+50W5+25	8.0	8.0	5.0	5.0	50262
S3+50W5+50	14.0	<0	32.0	5.0	50387
S3+50W5+75	12.0	12.0	4.5	4.0	50299
S3+50W6+00	12.5	12.5	5.0	5.5	50289
S3+50W6+25	22.0	20.0	22.5	13.0	50303
S3+75W4+00	38	0	120	8.5	50404
S3+75W4+25	14.5	15.0	8.0	8.0	50328
S3+75W4+50	10.5	10.0	7.5	7.0	50316
S3+75W4+75	9.0	9.0	6.5	6.5	50388
S3+75W5+00	9.0	9.0	5.5	5.5	50323
S3+75W5+25	9.5		5.0		50255
S3+75W5+50	15.5	14.5	6.0	4.0	50130
S3+75W5+75	21.0	17.5	6.5	4.5	50223
S3+75W6+00	29.0	25.0	13.5	7.0	50034
S4+00W4+00	30.0	0	145	8.5	50297
S4+00W4+25	15.5	16.0	8.5	8.5	50334
S4+00W4+50	10.5	10.5	8.0	8.0	50357
S4+00W4+75	9.5	9.5	6.5	7.0	50379
S4+00W5+00	10.5	10.5	6.5	7.0	50331
S4+00W5+25	3.0	4.0	8.5	6.5	50315
S4+00W5+50	10.0	10.5	4.5	4.0	50289
S4+00W5+75	8.0	<0	32.0	6.5	50418

SITE 10 GEOPHYSICAL SURVEY

COORDINATE LOCATION	EM-31 VERT N-S (mmhos/m)	EM-31 VERT E-W (mmhos/m)	EM-31 HORZ N-S (mmhos/m)	EM-31 HORZ E-W (mmhos/m)	MAGNETOMETER (gammas)
S4+25W4+00	31	0	100	7.5	50351
S4+25W4+25	16.5	16.5	10.0	9.0	50333
S4+25W4+50	11.0	11.0	7.0	7.0	50307
S4+25W4+75	11.0	10.5	6.5	7.0	50423
S4+25W5+00	6.0	4.0	14.0	7.0	50338
S4+25W5+25					
S4+25W5+50	11.5	12.0	5.0	5.5	50283
S4+25W5+75	25.0	20.0	16.5	8.5	50429
S4+50W4+00	31	0	120	9.0	50201
S4+50W4+25	16.0	16.0	9.0	8.5	50317
S4+50W4+50	12.0	12.0	8.0	8.0	50294
S4+50W4+75	16.0	14.0	8.0	7.5	50365
S4+50W5+00	12.5	15.5	7.0	7.5	50351
S4+50W5+25	9.5	11.5	7.5	8.0	50318
S4+50W5+50	15.0	15.0	6.0	5.5	50285
S4+75W4+00	115	48	46	18.5	50371
S4+75W4+25	17.0	17.0	8.0	9.0	50347
S4+75W4+50	15.0	15.0	8.0	8.0	50301
S4+75W4+75	1.5	<0	22.5	14.0	50389
S4+75W5+00	9.5	9.5	5.5	6.0	50322
S4+75W5+25	9.0	9.0	5.0	5.0	50288
S5+00W4+00	52.0	0	150	11.0	50125
S5+00W4+25	14.5	22.0	10.5	12.0	50292
S5+00W4+50	16.5	18.0	9.5	9.0	50314
S5+00W4+75	12.0	12.0	7.5	6.5	50359
S5+00W5+00	8.0	8.0	5.5	6.0	50337
S5+00W5+25	10.0	10.0	6.0	5.0	50270
S5+25W4+00	27	0	94	8	50634
S5+25W4+25	17.5	19.0	9.0	11.0	50313
S5+25W4+50	20.0	8.0	13.0	10.0	50293
S5+25W4+75	9.5	9.0	6.0	6.0	50393
S5+25W5+00	7.5	8.0	5.0	5.5	50287
S5+50W4+00	45.0	0	165	10.0	50470
S5+50W4+25	18.5	19.5	9.0	9.0	50493
S5+50W4+50	14.0	11.0	13.0	10.0	50301
S5+50W4+75	8.0	8.0	5.5	5.0	50363
S5+75W4+00	84	0	66	8.5	50403
S5+75W4+25	22.5	16.0	17.0	12.0	50334
S5+75W4+50	11.5	11.5	7.0	8.0	50286
S5+75W4+75					
S6+00W4+00	110	0	100	10.0	49926
S6+00W4+25	19.5	14.5	11.0	9.5	50321
S6+00W4+50	10.0	10.0	7.0	7.0	50293
S6+00W4+75					
S6+25W4+00	134	23	48	3.5	50728

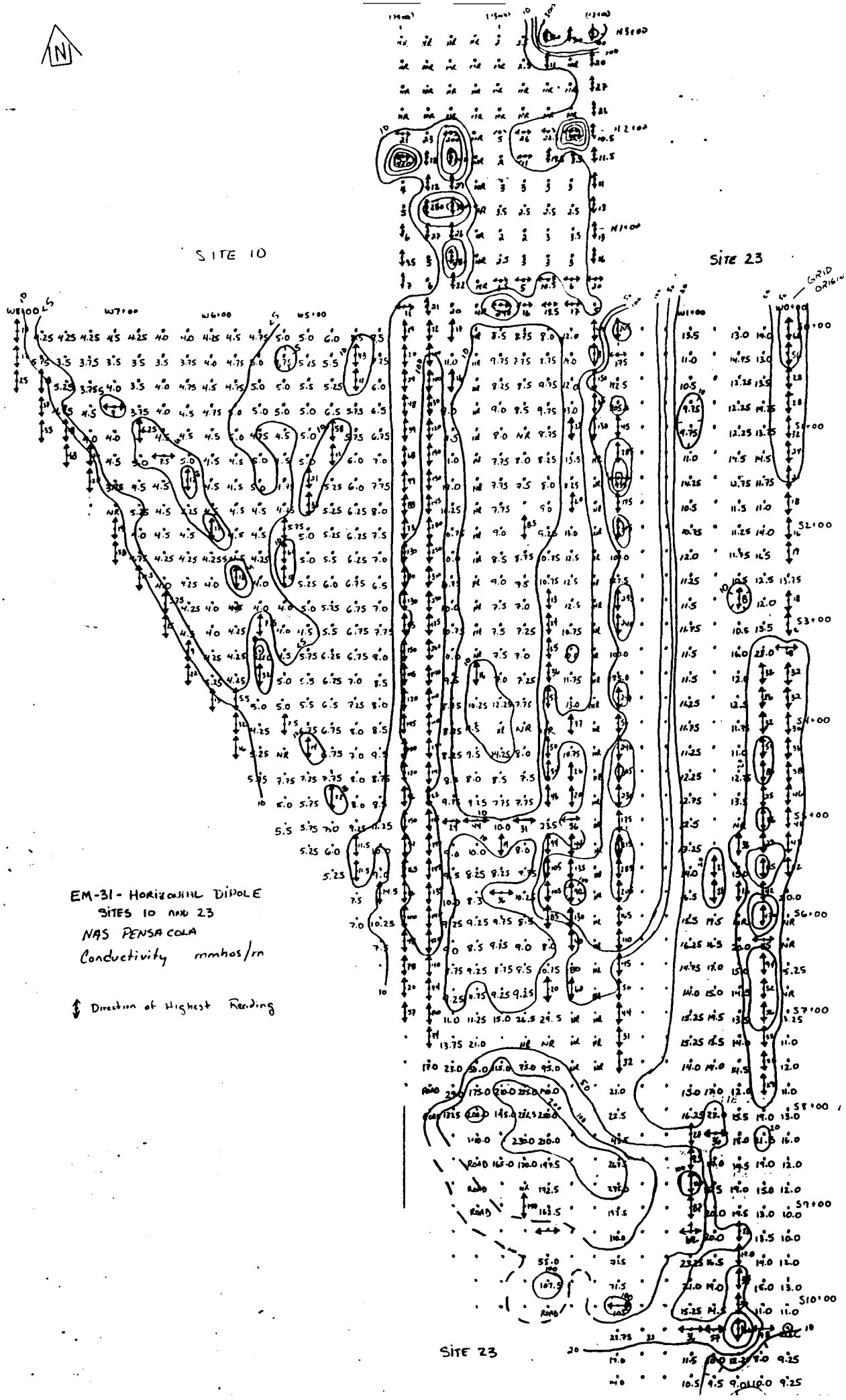
SITE 10 GEOPHYSICAL SURVEY

COORDINATE LOCATION	EM-31 VERT N-S (mmhos/m)	EM-31 VERT E-W (mmhos/m)	EM-31 HORZ N-S (mmhos/m)	EM-31 HORZ E-W (mmhos/m)	MAGNETOMETER (gammas)
S6+25W4+25	15.0	16.0	7.5	7.5	50375
S6+25W4+50					
S6+50W4+00	96	29	20	7	
S6+50W4+25	16.0	18.0	8.0	9.5	50345
S6+75W4+00	42	21	26	16	50219
S6+75W4+25	NR	NR	NR	NR	NR
S7+00W4+00					



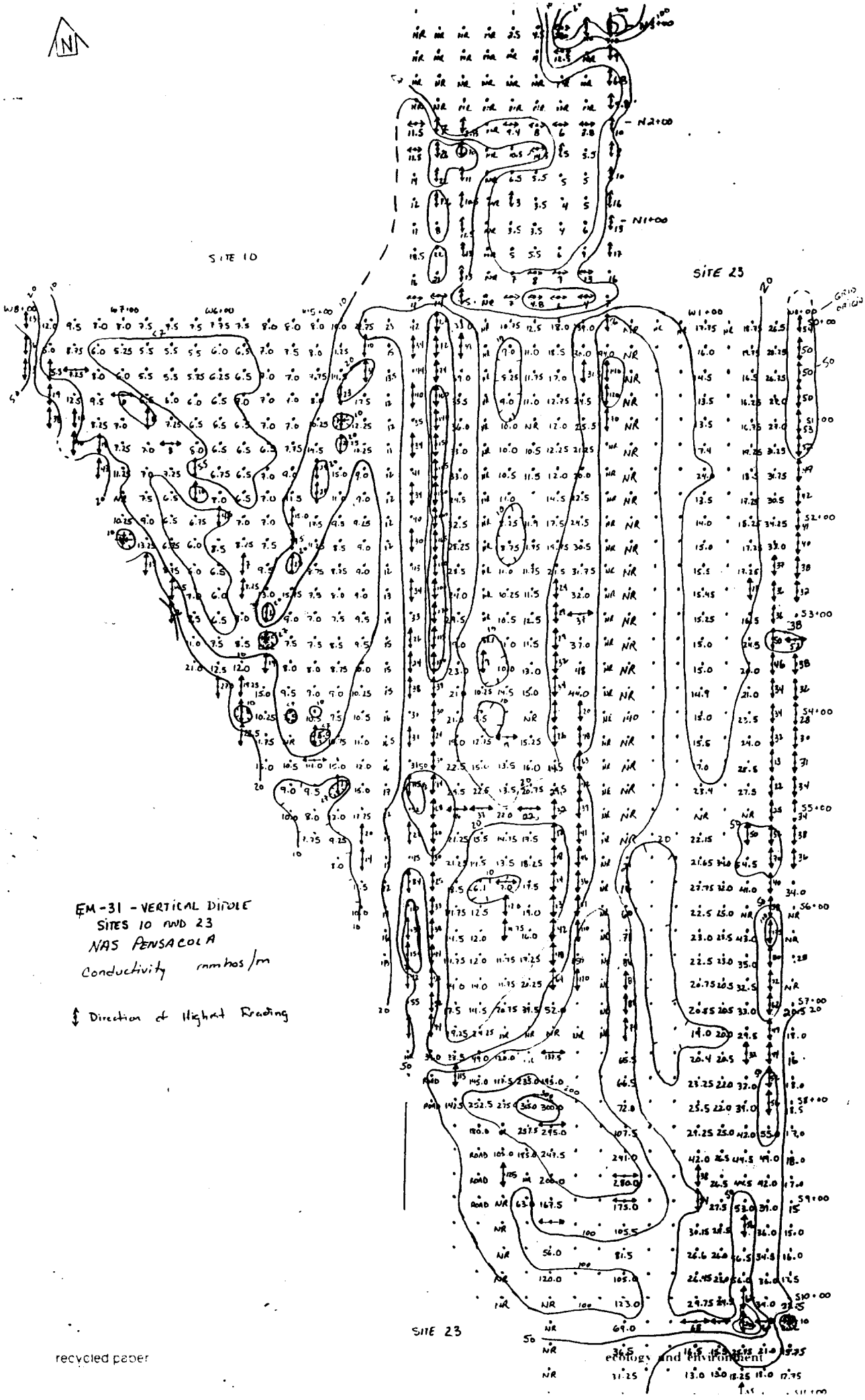
recycled paper

ecology and environment



EM-31 - HORIZONTAL DIPOLE
SITES 10 AND 23
NAS PENSACOLA
Conductivity mmhos/m

↕ Direction of Highest Reading


N
SITE 10
SITE 23
SITE 23
N2+00
N1+00
W8+00
W7+00
W6+00
W5+00
W1+00
W0+00
50+00
51+00
52+00
53+00
54+00
55+00
56+00
57+00
58+00
59+00
510+00
Grid origin
EM-31 - VERTICAL DIPOLE
SITES 10 AND 23
NAS PENSACOLA
Conductivity mmhos/m
Direction of Highest Reading

D

APPENDIX D

TEHPORARY MONITORING WELL, SOIL BORING, AND LITHOLOGIC INFORHATION

SOIL BORING/TEMPORARY MONITORING WELL INFORMATION

1) Site no.: 10
2) Boring no./Well no.: P10B001/P10TW001
3) Drilling firm: Griner Drilling Service
4) Drilling method: SSA
5) Date drilled/installed: 06/21/91
6) Geologist: JOE FUGITT
7) Depth of boring (BLS): 16
8) Depth to water in borehole (BLS): 12
9) Highest open-borehole OVA/HNu reading (ppm): 1.0
10) Depth of well (BLS): 16.02
11) Length of well screen: 5
12) Length of casing (BLS): 11.02
13) Approx. height of casing above land surface: 3.93
14) Depth to water in well (BTOC): 15.95
15) Elevation of TOC: 19.95
16) Water level elevation: 4.00
17) Date groundwater sampled: 06/24/91
18) pH (units): 6.0
19) Temperature (degrees C): 26
20) Specific conductance (umhos/cm): 261
21) Borehole/Well abandonment method: Backfilled with cuttings.
22) Comments:

BOREHOLE LITHOLOGIC LOG

Sample Depth (BLS)	Sample Description
0- 15.0	Tan sand, fine to medium grained. Wet at 12 ft.

Notes: All depths, lengths, heights, and elevations are measured in feet. All boreholes are 4 inches in diameter. All well casings and screens are 2-inch-diameter; well screen slot sizes are .010 inches. No annular material (i.e. filter pack, seal or grout) was used in well installation. Unless otherwise noted, all sand grains are quartz.

NA = not applicable
SSA = solid stem auger
HA = hand auger

BLS = below land surface
TOC = top of casing
BTOC = below top of casing

SOIL BORING/TEMPORARY MONITORING WELL INFORMATION

1) Site no.: 10
2) Boring no./Well no.: P10B002/P10TW002
3) Drilling firm: Griner Drilling Service
4) Drilling method: SSA
5) Date drilled/installed: 06/21/91
6) Geologist: JOE FUGITT
7) Depth of boring (BLS): 9
8) Depth to water in borehole (BLS): 4
9) Highest open-borehole OVA/HNu reading (ppm) : 5.8
10) Depth of well (BLS): 8.6
11) Length of well screen: 5
12) Length of casing (BLS): 3.6
13) Approx. height of casing above land surface: 1.25
14) Depth to water in well (BTOC): 5.32
15) Elevation of TOC: 8.37
16) Water level elevation: 3.05
17) Date groundwater sampled: 06/24/91
18) pH (units): 4.6
19) Temperature (degrees C): 25
20) Specific conductance (umhos/cm): 89
21) Borehole/Well abandonment method: Backfilled with cuttings.
22) Comments:

BOREHOLE LITHOLOGIC LOG

Sample Depth (BLS)	Sample Description
0- 3.0	Light brown sand, fine to medium grained.
3.0- 4.0	Wood layer. Water at 4 ft.
4.0- 9.0	Light brown sand, fine to medium grained.

Notes: All depths, lengths, heights, and elevations are measured in feet. All boreholes are 4 inches in diameter. All well casings and screens are 2-inch-diameter; well screen slot sizes are .010 inches. No annular material (i.e. filter pack, seal or grout) was used in well installation. Unless otherwise noted, all sand grains are quartz.

NA = not applicable
SSA = solid stem auger
HA = hand auger

BLS = below land surface
TOC = top of casing
BTOC = below top of casing

SOIL BORING/TEMPORARY MONITORING WELL INFORHATION

1) Site no.: 10
2) Boring no./Well no.: P10B003
3) Drilling firm: Griner Drilling Service
4) Drilling method: SSA and HA
5) Date drilled/installed: 06/21/91
6) Geologist: JOE FUGITT
7) Depth of boring (BLS): 10
8) Depth to water in borehole (BLS): 9
9) Highest open-borehole OVA/HNu reading (ppm): 0
10) Depth of well (BLS): NA
11) Length of well screen: NA
12) Length of casing (BLS): NA
13) Approx. height of casing above land surface: NA
14) Depth to water in well (BTOC): NA
15) Elevation of TOC: NA
16) Water level elevation: NA
17) Date groundwater sampled:
18) pH (units): NA
19) Temperature (degrees C): NA
20) Specific conductance (umhos/cm): NA
21) Borehole/Well abandonment method: Backfilled with cuttings.
22) Comments:

BOREHOLE LITHOLOGIC LOG

Sample Depth (BLS)	Sample Description
0- 9.0	Tan sand, fine to medium grained. Very dry to 7.5 ft. Wet at 9 ft.

Notes: All depths lengths, heights, and elevations are measured in feet. All boreholes are 4 inches in diameter. All well casings and screens are 2-inch-diameter; well screen slot sizes are .010 inches. No annular material (i.e. filter pack, seal or grout) was used in well installation. Unless otherwise noted, all sand grains are quartz.

NA = not applicable
SSA = solid stem auger
HA = hand auger

BLS = below land surface
TOC = top of casing
BTOC = below top of casing

SOIL BORING/TEMPORARY MONITORING WELL INFORMATION

1) Site no.: 10
2) Boring no./Well no.: P10B004
3) Drilling firm: Griner Drilling Service
4) Drilling method: EA
5) Date drilled/installed: 06/22/91
6) Geologist: JOE FUGITT
7) Depth of boring (BLS): 2.5
8) Depth to water in borehole (BLS): 2
9) Highest open-borehole OVA/HNu reading (ppm) : 3.3
10) Depth of well (BLS): NA
11) Length of well screen: NA
12) Length of casing (BLS): NA
13) Approx. height of casing above land surface: NA
14) Depth to water in well (BTOC): NA
15) Elevation of TOC: NA
16) Water level elevation: NA
17) Date groundwater sampled:
18) pH (units): NA
19) Temperature (degrees C): NA
20) Specific conductance (umhos/cm): NA
21) Borehole/Well abandonment method: Backfilled with cuttings.
22) Comments:

BOREHOLE LITHOLOGIC LOG

Sample Depth (BLS)	Sample Description
0- 2.0	White sand, fine to medium grained.
2.0- 2.5	Dark grey to black stained sand. Black oily saturation between sand grains. No odor. Wet at 2 ft.

Notes: All depths, lengths, heights, and elevations are measured in feet. All boreholes are 4 inches in diameter. All well casings and screens are 2-inch-diameter; well screen slot sizes are .010 inches. No annular material (i.e. filter pack, seal or grout) was used in well installation. Unless otherwise noted, all sand grains are quartz.

NA = not applicable
SSA = solid stem auger
HA = hand auger

BLS = below land surface
TOC = top of casing
BTOC = below top of casing

SOIL BORING/TEMPORARY MONITORING WELL INFORHATION

1) Site no.: 10
2) Boring no./Well no.: P10B005
3) Drilling firm: Griner Drilling Service
4) Drilling method: SSA
5) Date drilled/installed: 06/22/91
6) Geologist: JOE FUGITT
7) Depth of boring (BLS): 20
8) Depth to water in borehole (BLS): 18
9) Highest open-borehole OVA/HNu reading (ppm) : 0.2
10) Depth of well (BLS): NA
11) Length of well screen: NA
12) Length of casing (BLS): NA
13) Approx. height of casing above land surface: NA
14) Depth to water in well (BTOC): NA
15) Elevation of TOC: NA
16) Water level elevation: NA
17) Date groundwater sampled:
18) pfi (units): NA
19) Temperature (degrees C): NA
20) Specific conductance (umhos/cm): NA
21) Borehole/Well abandonment method: Backfilled with cuttings.
22) Comments:

BOREHOLE LITHOLOGIC LOG

Sample Depth (BLS)	Sample Description
0- 10.0	Tan sand, fine to medium grained, very dry.
10.0- 15.0	Tan to orange sand, fine to medium grained, moist.
15.0- 20.0	Tan to white sand, fine to medium grained. Wet at 18 ft.

Notes: All depths, lengths, heights, and elevations are measured in feet. All boreholes are 4 inches in diameter. All well casings and screens are 2-inch-diameter; well screen slot sizes are .010 inches. No annular material (i.e. filter pack, seal or grout) was used in well installation. Unless otherwise noted, all sand grains are quartz.

NA = not applicable
SSA = solid stem auger
HA = hand auger

BLS = below land surface
TOC = top of casing
BTOC = below top of casing

SOIL BORING/TEMPORARY MONITORING WELL INFORMATION

1) Site no.: 10
2) Boring no./Well no.: P10B006/P10TW006
3) Drilling firm: Griner Drilling Service
4) Drilling method: SSA
5) Date drilled/installed: 06/22/91
6) Geologist: JOE FUGITT
7) Depth of boring (BLS): 9
8) Depth to water in borehole (BLS): 4
9) Highest open-borehole OVA/HNu reading (ppm): 16.6
10) Depth of well (BLS): 8.14
11) Length of well screen: 5
12) Length of casing (BLS): 3.14
13) Approx. height of casing above land surface: 1.78
14) Depth to water in well (BTOC): 5.50
15) Elevation of TOC: 9.46
16) Water level elevation: 3.96
17) Date groundwater sampled: 06/24/91
18) pH (units): 6.0
19) Temperature (degrees C): 25
20) Specific conductance (umhos/cm): 180
21) Borehole/Well abandonment method: Backfilled with cuttings.
22) Comments:

BOREHOLE LITHOLOGIC LOG

Sample Depth (BLS)	Sample Description
0- 1.0	Brownish-grey sand, fine to medium grained.
1.0- 9.0	White sand, fine to medium grained.

Notes:. All depths, lengths, heights, and elevations are measured in feet. All boreholes are 4 inches in diameter. All well casings and screens are 2-inch-diameter; well screen slot sizes are .010 inches. No annular material (i.e. filter pack, seal or grout) was used in well installation. Unless otherwise noted, all sand grains are quartz.

NA = not applicable
SSA = solid stem auger
EA = hand auger

BLS = below land surface
TOC = top of casing
BTOC = below top of casing

E

APPENDIX E

SOIL SAMPLING
ANALYTICAL SCREENING RESULTS

MEMORANDUM

TO: John Barksdale

FROM: Gary Hahn Gary Hahn/kr

DATE: July 11, 1991

SUBJECT: UH-8000 Pensacola Report

RE: 9101.497

CC: Lab File

Attached is the laboratory report of the analysis conducted on ten samples received at the Analytical Services Center on June 25, 1991. Analysis was performed according to the screening procedures set forth in "Generic Quality Assurance Project Plan, Contamination Assessments and Remedial Activities, Naval Air Station Pcnsacola, Pensacola, Florida," July 1990.

TRPA samples #14405, #14406, #14407 and #14408 were not preserved to correct pH. Additional acid (H_2SO_4) was added to bring down the pH to required levels.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

GH/kr
Enclosure

M E M O R A N D U M

TO: John Barksdale

FROM: Gary Hahn

DATE: July 9, 1991

SUBJECT: UH-8000 Pensacola Report

REF: 9101.475

CC: Lab File

Attached is the laboratory report of the analysis conducted on seven samples received at the Analytical Services Center on June 22, 1991. Analysis was performed according to the procedures set forth in "Generic Quality Assurance Project Plan, Contamination Assessments and Remedial Activities, Naval Air Station Pensacola, Pensacola, Florida," July 1990.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report, unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

GH:jp
enclosure

ecology and environment, inc.
288 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060
International Specialists in the Environment

9101.475

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project No: UH 8010
Project Name: NASP Site 10 Group F Phase I
Project Manager: John Barksdale
Samplers (Signatures): J. Fugitt, Daniel Cassala
Field Team Leader: Joe Fugitt

STATION NUMBER	DATE 1991	TIME	SAMPLE TYPE COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	Screening VOC's	Screening PAHs	Screening Phenols	Screening Pesticides and PCB's	TRPHs	Screening metals	REMARKS
0 S001A	6/21	1400	X			low	Site 10 Boring 1	3	X	X	X	X	X	X	
0 S001AD	6/21	1400					Boring 1 dup								
0 S001B	6/21	1405					Boring 1								All samples preserved with ice at 4°C
0 S001C	6/21	1425					Boring 1								
0 S002A	6/21	1513					Boring 2								
0 S003A	6/21	1605					Boring 3								Containers
0 S003B	6/21	1624					Boring 3								VOAs Lot# 1123033 QC# 10353C
															8 Ounce jars Lot# X0331013 QC# X0942C

Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	Ship Via
J. Fugitt	6/21/91/1800					Federal Express
Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	
Relinquished By (Signature)	Date/Time	Received For Laboratory By (Signature)	Relinquished By (Signature)	Date/Time	Received For Laboratory By (Signature)	BL/Airbill Number: 0776546013
Fed. Express	6-22-91/1000	[illegible]				Date: 6/21/91

Distribution: Original Accompanies Shipment, Copy to Coordinator Field Files
*See CONCENTRATION RANGE on back of form.

234055

ecology and environment, inc.
[redacted] DRIVE, LANCASTER, NEW YORK 14[redacted], TEL. 716/684-[redacted]
International Specialists in the Environment

Sample Range 14399 — 14408

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project No.: UH8010
Project Name: NAS Pensacola Phase I Group F
Project Manager: John Barksdale
Samplers: (Signatures) Joseph J Fugitt, Daniel Carsalia
Field Team Leader: Joe Fugitt

STATION NUMBER	DATE 1991	TIME	SAMPLE TYPE COMP	GRAB	AIR	SAMPLE INFORMATION EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	Screening VOCs	Screening metals	Screening PAHs	Screening Phenols	Screening Pesticides and PCB's	TRPHs	REMARKS
5004A	6/22	0745	X			14399	Site 10 Boring 4	3	X	X	X	X	X	X	
5005A		0803				14400	5								
5005B		0810				14401	5								
5005C		0820				14402	5								All Samples Preserved on ICE at 4°C.
5005D		0830				14403	5								
5006A		0915					6								

QA/QC
VOAs LOT# 1123033
QC# 10353C
8021 SPAKS LOT# X0331013
QC# X0942C

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)
J.J. Fugitt	6/24/91 750	Fed Ex			
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)
Relinquished By: (Signature)	Date/Time 0930	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received For Laboratory (Signature)
Fed Ex	6-25-91				

Ship Via: FEDERAL EXPRESS
BL/Airbill Number: 0776546050
Date: 6/24/91

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files
*See CONCENTRATION RANGE on back of form.

234058

JOB NUMBER : 9101.475

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
14272.01	P10-S001A	SPNPRGl	06/21/91		06/25/91
14272.02	P10-S001A	SPNTPHl	06/21/91		06/27/91
14272.03	P10-S001A	SPNMETl	06/21/91		06/25/91
		SPNP&P1	06/21/91		06/27/91
		SPNPAHl	06/21/91		06/28/91
		SPNPHLl	06/21/91		06/27/91
14273.01	P10-S001AD	SPNPRGl	06/21/91		06/25/91
14273.02	P10-S001AD	SPNTPHl	06/21/91		06/27/91
14273.03	P10-S001AD	SPNMETl	06/21/91		06/25/91
		SPNP&P1	06/21/91		06/27/91
		SPNPAHl	06/21/91		06/28/91
		SPNPEiLl	06/21/91		06/27/91
14274.01	P10-S001B	SPNPRGl	06/21/91		06/25/91
14274.02	P10-S001B	SPNTPHl	06/21/91		06/27/91
14274.03	P10-S001B	SPNMETl	06/21/91		06/25/91
		SPNPCPl	06/21/91		06/27/91
		SPNPAHl	06/21/91		06/28/91
		SPNPHL1	06/21/91		06/27/91
14275.01	P10-S001C	SPNPRGl	06/21/91		06/25/91
14275.02	P10-S001C	SPNTPHl	06/21/91		06/27/91
14275.03	P10-S001C	SPNMET1	06/21/91		06/25/91
		SPNPCPl	06/21/91		06/27/91
		SPNPAHl	06/21/91		06/28/91
		SPNPHLl	06/21/91		06/27/91
14276.01	P10-S002A	SPNPRGl	06/21/91		06/25/91
14276.02	P10-S002A	SPNTPHl	06/21/91		06/27/91
14276.03	P10-S002A	SPNMET1	06/21/91		06/25/91
		SPNP&P1	06/21/91		06/27/91
		SPNPAHl	06/21/91		06/28/91
		SPNPHLl	06/21/91		06/27/91
14277.01	P10-S003A	SPNPRGl	06/21/91		06/26/91
14277.02	P10-S003A	SPNTPH1	06/21/91		06/27/91
14277.03	P10-S003A	SPNMETl	06/21/91		06/25/91
		SPNP&P1	06/21/91		06/27/91
		SPNPAHl	06/21/91		06/28/91
		SPNPHLl	06/21/91		06/27/91
14278.01	P10-S003B	SPNPRGl	06/21/91		06/26/91
14278.02	P10-S003B	SPNTPHl	06/21/91		06/27/91
14278.03	P10-S003B	SPNMET1	06/21/91		06/25/91
		SPNPCPl	06/21/91		06/27/91
		SPNPAHl	06/21/91		06/28/91
		SPNPHLl	06/21/91		06/27/91

JOB NUMBER : 9101.497

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
14399.01	P10-S004A	SPNPRGl	06/22/91		06/27/91
14399.02	P10-S004A	SPNTPEl	06/22/91		06/27/91
14399.03	P10-S004A	SPNMETl	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAH1	06/22/91		07/02/91
		SPNPELl	06/22/91		07/03/91
14400.01	P10-S005A	SPNPRGl	06/22/91		06/28/91
14400.02	P10-S005A	SPNTPEl	06/22/91		06/27/91
14400.03	P10-S005A	SPNMETl	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAEl	06/22/91		07/02/91
		SPNPELl	06/22/91		07/03/91
14401.01	P10-S005B	SPNPRGl	06/22/91		06/28/91
14401.02	P10-S005B	SPNTPEl	06/22/91		06/27/91
14401.03	P10-S005B	SPNMETl	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAEl	06/22/91		07/02/91
		SPNPHLl	06/22/91		07/03/91
14402.01	P10-S005C	SPNPRG1	06/22/91		06/28/91
14402.02	P10-S005C	SPNTPEl	06/22/91		06/27/91
14402.03	P10-S005C	SPNMETl	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAEl	06/22/91		07/02/91
		SPNPHLl	06/22/91		07/03/91
14403.01	P10-S005D	SPNPRGl	06/22/91		06/28/91
14403.02	P10-S005D	SPNTPHl	06/22/91		06/27/91
14403.03	P10-S005D	SPNMET1	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAEl	06/22/91		07/02/91
		SPNPELl	06/22/91		07/03/91
14404.01	P10-S006A	SPNPRGl	06/22/91		06/28/91
14404.02	P10-S006A	SPNTPH1	06/22/91		06/27/91
14404.03	P10-S006A	SPNMET1	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAEl	06/22/91		07/02/91
		SPNPBLl	06/22/91		07/03/91
14405.01	P10-GW002	WPNPRG1	06/24/91		06/28/91
14405.03	P10-GW002	WPNP&P1	06/24/91		07/03/91
		WPNPAH1	06/24/91		06/29/91
		WPNPHL1	06/24/91		06/28/91
14405.04	P10-GW002	WPNTPH1	06/24/91		06/26/91
14405.05	P10-GW002	WPNMET1	06/24/91		06/28/91
14406.01	P10-GW006	WPNPRGl	06/24/91		06/28/91
14406.03	P10-GW006	WPNP&P1	06/24/91		07/03/91
		WPNPAH1	06/24/91		06/29/91
		WPNPHL1	06/24/91		06/28/91
14406.04	P10-GW006	WPNTPH1	06/24/91		06/26/91

JOB NUMBER : 9101.497

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATB ANALYZED
14406.05	P10-GW006	WPNMET1	06/24/91		06/28/91
14407.01	P10-GW001	WPNPRG1	06/24/91		06/28/91
14407.03	P10-GW001	WPNP&P1	06/24/91		07/03/91
		WPNPAH1	06/24/91		06/29/91
		WPNPHL1	06/24/91		06/28/91
14407.04	P10-GW001	WPNTPH1	06/24/91		06/26/91
14407.05	P10-GW001	WPNMET1	06/24/91		06/28/91
14408.01	P10-GW002D	WPNPRGl	06/24/91		06/28/91
14408.03	P10-GW002D	WPNP&P1	06/24/91		07/03/91
		WPNPAH1	06/24/91		06/29/91
		WPNPHL1	06/24/91		06/29/91
14408.04	P10-GW002D	WPNTPH1	06/24/91		06/26/91
14408.05	P10-GW002D	WPNMET1	06/24/91		06/28/91

METALS SECTION JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
SAMPLE ID LAB : EE-91-14272 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S001A
SAHPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	7.6		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

METALS SECTION JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
SAMPLE ID LAB : BE-91-14274 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S001B
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arscnic	ND		6.0	MG/KG
Chromium	1.1		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMHENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

METALS SECTION JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
SAHPLE ID LAB : EE-91-14273 MATRIX: SOLID
SAHPLE ID CLIENT: P10-S001AD
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

METALS SECTION JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
SAHPLE ID LAB : EE-91-14275 MATRIX: SOLID
SAHPLE ID CLIENT: P10-S001C
SAHPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

METALS SECTION JOB NUXBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN VET WEIGHT
SAMPLE ID LAB : EE-91-14276 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S002A
SAMPLE LOCATION :

PARAMETER	RESULTS	0	ONT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	1.1		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

METALS SECTION JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN VET VEIGET
SAMPLE ID LAB : EE-91-14277 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S003A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIHATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIHIT

METALS SECTION JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
SAMPLE ID LAB : EE-91-14278 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S003B
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK,
L = PRESENT BELOW STATED DETECTION LIMIT

JOB NUMBER :9131.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
SAHPLB ID LAB : EB-91-14399 MATRIX: SOLID
SAHPLB ID CLIENT: P10-S004A

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	3.0		2.0	MG/KG
had	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UE-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
SAMPLE ID LAB : EE-91-14400 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S005A

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	2.5		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
SAMPLE ID LAB : EE-91-14401 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S005B

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
SAMPLE ID LAB : EE-91-14402 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S005C

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	1.6		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN VET WEIGHT
SAMPLE ID LAB : EE-91-14403 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S005D

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIBNT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
SAMPLE ID LAB : BE-91-14404 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S006A

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	5.8		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMHENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRBSENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIHIT
NA = NOT APPLICABLE

QUALITY CONTROL FOR PRECISION RESULTS OF ANALYSIS OF REPLICATE ANALYSES OF SOLID SAMPLES

9101.475

(mg/kg)

Parameter	E & E Laboratory No. 91-14274	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
Arsenic		ND	ND	NC
Cadmium		ND	ND	NC
Chromium		1.1	ND	NC
Copper		ND	ND	NC
Lead		ND	10	NC
Nickel		ND	ND	NC
Silver		ND	ND	NC
Zinc		ND	ND	NC

ND = NOT DETECTED

NC = NOT CALCULABLE

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOLID SAMPLES

9101.475

(mg/kg)

Parameter	E & E Laboratory No. 91-14274	Original Value	Amount Added	Amount Determined	Percent Recovery
Arsenic		ND	200	170	84
Cadmium		ND	5.0	4.5	91
Chromium		1.1	20	20	98
Copper		ND	25	24	96
Lead		ND	50	44	87
Nickel		ND	50	47	94
Silver		ND	5.0	5.1	101
Zinc		ND	50	50	99

ND = NOT DETECTED

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, PERCENT RECOVERIES ARE CALCULATED DIRECTLY FROM THE RAW DATA.

METALS SECTION JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAHPLE ID LAB : METEOD BLANK MATRIX: SOLID
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

JOB NUMBER :9101.497

Bcology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASB I BATCH 2
RBSULTS IN WET WEIGHT
SAMPLE ID LAB : METHOD BLANK MATRIX: SOLID

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		6.0	MG/KG
Chromium	ND		1.0	MG/KG
Zinc	ND		2.0	MG/KG
Lead	ND		4.0	MG/KG
Cadmium	ND		0.50	MG/KG
Nickel	ND		4.0	MG/KG
Copper	ND		2.5	MG/KG
Silver	ND		1.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SPNTPH1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC TRPH UNITS : MG/KG
PARAMETER : TRPH

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-14272			
P10-S001A	ND		5.0
EE-91-14273			
P10-S001AD	ND		5.0
EE-91-14274			
P10-S001B	ND		5.0
EE-91-14275			
P10-S001C	ND		5.0
EE-91-14276			
P10-S002A	35		5.0
EE-91-14277			
P10-S003A	ND		5.0
EE-91-14278			
P10-S003B	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAMPLE ID LAB :EE-91-14399 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S004A

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	13		5.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SMPLE ID LAB :EE-91-14400 MTRIX: SOLID
SAMPLE ID CLIENT: P10-S005A

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	13		5.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAMPLE ID LAB :EE-91-14401 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S005B

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	23		5.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCB 2
SAMPLE ID LAB :EE-91-14402 HATRIX: SOLID
SAMPLE ID CLIENT: P10-S005C

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	12		5.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAMPLE ID LAB :EE-91-14403 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S005D

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	31		5.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
SAMPLE ID LAB :EE-91-14404 MATRIX: SOLID
SAMPLE ID CLIENT: P10-S006A

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	8.2		5.0	MG/KG

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

OUALITY CONTROL FOR PRECISION
RBSULTS OF ANALYSIS OF REPLICATE
ANALYSES OF SOLID SAMPLES

9101.497

(mg/kg)

Parameter	E C E Laboratory No. 91-	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
T. Recoverable Petroleum Hydrocarbons				
	Batch OC	14	0.2	56.1

ND = NOT DETECTED

NC = NOT CALCULABLE

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, RPD's ARE CALCULATED DIRECTLY FROM THE RAW DATA.

QUALITY CONTROL FOR PRECISION
RESULTS OF ANALYSIS OF REPLICATE
ANALYSES OF SOLID SAMPLES

9101.475

(mg/kg)

Parameter	E & E Laborstory No. 91-	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
T. RECOVERABLE PETROLEUM HYDROCARBONS	Batch QC	ND	ND	NC

ND = NOT DETECTED

NC = NOT CALCULABLE

NOTE: ALTEOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, RPD'S ARE CALCULATED DIRECTLY FROM RAW DATA.

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOLID SAMPLES

9101.475

(mg/kg)

Parameter	E & E Laboratory No. 91-	Original Value	Amount Added	Amount Determined	Percent Recovery
T. RECOVERABLE PETROLEUM HYDROCARBONS	14275	ND	120	100	80.4

ND = NOT DETECTED

NC = NOT CALCULABLE

NOTE: ALTBOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, PERCENT RECOVERIES ARE CALCULATED DIRECTLY FROM TBE RAW DATA.

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY FOR SPIRED SOLID SAMPLES

9101.497

(mg/kg)

Parameter	E & E Laboratory No. 91-	Original Value	Amount Added	Amount Determined	Pcrcent Recovery
T. Recoverable Petroleum Hydrocarbons					
	14399	13	130	130	91.4

ND = NOT DETECTED

** = RECOVERY NOT DETERMINED BECAUSE SAMPLE AMOUNT IS FOUR OR MORE TIMES GREATER THAN SPIKE AMOUNT.

NOTE: ALTHOUGH RESULTS *ARE* REPORTED AS ROUNDED VALUES, PERCENT RECOVERIES ARE CALCULATED DIRECTLY FROM THE RAW DATA.

TEST CODE : SPNPAH1 JOB NUMBER : 9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14272 MATRIX : SOLID
SMPLE ID CLIENT: P10-S001A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPAH1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14273 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001AD
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIHATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE : SPNPAH1 JOB NUMBER : 9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET **WEIGHT**
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14274 MATRIX : SOLID
SAHPLE ID CLIENT: P10-S0018
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	**ND**		**1000**

QUALIFIERS: C = COMMENT **ND** = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPAH1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAR - LC UNITS : UG/KG
SAHPLE ID LAB : EE-91-14275 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001C
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14276 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S002A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIHIT
Total as Benzo-a-pyrene	1500		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPAH1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAHE : PNC PAH - LC UNITS : UG/KG
SAHPLE ID LAB : EE-91-14277 MATRIX : SOLID
SAHPLE ID CLIENT: P10-S003A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPAH1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCB 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14278 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S003B
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE : SPNPAH1 JOB NUMBER 39101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCB 2
RBSULTS IN WET WEIGHT
TBST NAHE : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14399 MATRIX : SOLID
SAHPLE ID CLIENT: P10-S004A

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIHIT

TEST CODE :SPNPAH1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14400 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005A

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = *ALSO* PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE : SPNPAH1 JOB NUMBER 39101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14401 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005B

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPAH1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASB I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14402 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005C

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TBST CODB :SPNPAH1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14403 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005D

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPAH1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14404 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S006A

PARAMETER	RESULTS	a	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT NO = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOV STATED DETECTION LIMIT

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QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY FOR SPIKED SOIL SAMPLES

3101.475

(ug)

Parameter	E S E Laboratory No. 91-	Original Value	Amount Added	Amount Determined	Percent Recovery
Benzo(a)pyrene	14273	ND	50	45	90

ND = NOT DETECTED

TEST CODE :SPNPAH1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : METHOD BLANK 1 598/99 MATRIX : SOLID
SAHPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

OUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATBD DETECTION LIMIT

0000692

TEST CODE : SPNPHL1 JOB NUMBER : 9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCE 2
RESULTS IN WET WEIGHT
TEST NAHE : PNC PHENOL - LC UNITS : UG/KG
SAHPLE ID LAB : EE-91-14272 MATRIX : SOLID
SAHPLE ID CLIENT: P10-S001A
SAHPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPHL1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14273 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001AD
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000693

TEST CODB : SPNPAH1 JOB NUMBER : 9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAB - LC UNITS : UG/KG
SAMPLE ID LAB : METHOD BLANK #1 MATRIX : SOLID

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPAH1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PAH - LC UNITS : UG/KG
SAMPLE ID LAB : METHOD BLANK #2 MATRIX : SOLID

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

000C594

TEST CODE :SPNPAH1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
TEST NAHE : PNC PAH - LC UNITS : UG/KG
SAHPLE ID LAB : METHOD BLANK 2 598/99 MATRIX : SOLID
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY FOR SPIKED SOIL SAMPLES

9101.497

(ug)

Parameter	E & E Laboratory No. 91-14399 MS	Original Value	Amount Added	Amount Determined	Percent Recovery
Benzo(a)pyrene		ND	SO	41	82

ND = NOT DETECTED

0000695

TEST CODE :SPNPHL1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAHPLE ID LAB : EE-91-14275 MATRIX : SOLID
SAHPLE ID CLIENT: P10-S001C
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMI'
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOV STATED DETECTION LIHIT

TEST CODE :SPNPHL1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14274 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001B
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRBSENT BBLOV STATBD DETECTION LIMIT

0000096

TEST CODE : SPNPHL1 JOB NUMBER : 9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAHPLE ID LAB : EE-91-14276 MATRIX : SOLID
SAHPLE ID CLIENT: P10-S002A
SAHPLE LOCATION :

PARAMETER	RESULTS	Q	ONT. LIMIT
Total as Trichlorophenol	1200000		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE : SPNPHL1 JOB NUMBER : 9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14277 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S003A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000097

TEST CODE :SPNPHL1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14278 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S003B
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPHL1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14399 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S004A

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	3800		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000698

TEST CODB :SPNPHL1 JOB NUMBER :9101.497

Ecology and Bnvironment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14400 MTRIX : SOLID
SAMPLE ID CLIENT: P10-S005A

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODB :SPNPHL1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEBNOL - LC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14401 MATRIX :SOLID
SAMPLE ID CLIENT: P10-S005B

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DBTBCTBD
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000090

TEST CODE :SPNPHL1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14402 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005C

PARAMETER	RESULTS	Q	QNT. LIHIT
Total as Trichlorophenol	40000		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODB : SPNPHL1 JOB NUMBER t9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RBSULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14403 MATRIX : SOLID
SAHPLE ID CLIENT: P10-S005D

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000700

TEST CODB : SPNPHL1 JOB NUMBER : 9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASB I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14404 HATRIX : SOLID
SAMPLE ID CLIENT: P10-S006A

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR PRECISION
RBSULTS OF ANALYSIS OF REPLICATE
ANALYSES OF SOIL SAMPLES

9101.475

(ug/kg)

Parametcr	E S B Laboratory No. 91-	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
TRICHLORO-PHENOL	14272 DUP. #1	N D .	ND	NC
	14272 DUP. #2	ND	ND	NC

0000701

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY FOR SPIKED SOIL SAMPLES

9101.475

(ug)

Parameter	E & E Laboratory No. 91-Blank #1	Original Value	Amount Added	Amount Determined	Percent Recovery
2,4,6-Trichloro-Phenol		ND	100	82	82

ND = NOT DETECTED

QUALITY CONTROL FOR PRECISION
RESULTS OF ANALYSIS OF REPLICATE
ANALYSBS OF SOIL SAMPLES

9101.475

(ug/kg)

Parameter	E & E Laboratory No. 91-14276	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
Total Phenols Reported As Trichlorophenol		1,200,000	680,000	55

0000702

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TEST CODE :SPNPHL1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : METHOD BLANK 600/60 MATRIX : SOLID
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY FOR SPIKED SOIL SAMPLES

9101.497

(ug)

Parameter	E & E Laboratory No. 91- Blank Spike	Original Value	Amount Added	Amount Determined	Percent Recovery
2,4,6-Trichlorophenol		ND	200	190	95

ND = NOT DETECTED

0000703

TEST CODB : SPNPHL1 JOB NUMBER : 9101.497

Bcology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RBSULTS IN WET WEIGHT
TEST NAME : PNC PHENOL - LC UNITS : UG/KG
SAMPLE ID LAB : METHOD BLANK MATRIX : SOLID

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		2000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE : SPNPRG1 JOB NUMBER t9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14272 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenscne	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethanc	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethanc	ND		1000
Trichloroethene	ND		1000
Tctrachloroethcne	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000704

TEST CODE :SPNPRG1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAHPLE ID LAB : EE-91-14273 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001AD
SAHPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIHATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODB :SPNPRG1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14274 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001B
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichlorocthene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000705

TEST CODE :SPNPRG1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAHE : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14275 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001C
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPRG1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14276 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S002A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethenc	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichlorocthane	ND		1000
1,2 - Dichloroethanc	ND		1000
Trichloroethena	ND		1000
Tctrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000706

TEST CODE :SPNPRG1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCE 2
RESULTS IN WET WEIGHT
TEST NAHE : PNC PURGABLES- GC UNITS : UG/KG
SAHPLE ID LAB : EE-91-14277 MATRIX : SOLID
SAHPLE ID CLIENT: P10-S003A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dfchloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPRG1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAHE : PNC PURGABLES- CC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14278 MATRIX :SOLID
SAMPLE ID CLIENT: P10-S003B
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbcnzenc	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichlorocthene	ND		1000
Hethylenc Chloride	ND		1000
Trans-1,2, - Dichloroethenc	ND		1000
1,1 - dichloroethanc	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichlorocthanc	ND		1000
Trichlorocthene	ND		1000
Tetrachloroethcne	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000707

TBST CODE :SPNPRG1 JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCE 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14399 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S004A

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODB : SPNPRG1 JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCE 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14400 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005A

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethana	ND		1000
Trichloroethene	ND		1000
Tetrachlorocthena	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000703

TEST CODE :SPNPRG1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCE 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14401 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005B

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TBST CODE :SPNPRG1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14402 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005C

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichlorocthane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOV STATED DETECTION LIMIT

0000709

TEST CODE :SPNPRG1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : EE-91-14403 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005D

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPRG1 JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN VET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : BE-91-14404 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S006A

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethena	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000710

QUALITY CONTROL FOR ACCURACY AND PRECISION:
PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD)
OF SOIL MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
(Sample # 14275)

9101.475

(ug/kg)

Parameter	Original Value	Amount Added MS	Amount Added MSD	Amount Determined MS	Amount Determined MSD	Percent Recovery MS	Percent Recovery MSD	RPD
Benzene	ND	2500	2500	2100	1700	84	68	22
Toluene	ND	2500	2500	2200	1800	88	72	20
Ethyl Benzene	ND	2500	2500	2100	1700	84	68	22
1,2-Dichlorobenzene	ND	2500	2500	2000	1900	80	76	5.1
1,3-Dichlorobenzene	ND	2500	2500	2100	1800	84	72	15
1,4-Dichlorobenzene	ND	2500	2500	2100	1800	84	72	15
1,1-Dichloroethene	ND	2500	2500	2000	1500	80	60	29
Methylene Chloride	ND	2500	2500	1300	1100	52	44	17
Trans-1,2-Dichloroethene	ND	2500	2500	1900	1400	76	56	30
1,1-Dichloroethane	ND	2500	2500	2100	1600	84	64	27
1,1,1-Trichloroethane	ND	2500	2500	2300	1900	92	76	19
1,2-Dichloroethane	ND	2500	2500	2000	1800	80	72	11
Trichloroethene	ND	2500	2500	1900	1500	76	60	24
Tetrachloroethene	ND	2500	2500	2000	1700	80	68	16

These recoveries and RPDs are within E & E, Inc. limits.

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9101.475

Compound	E & E Laboratory No. 91-	Percent Recovery
Trifluorotoluene	14272	103
	14273	102
	14274	107
	14275	102
	14276	107
	14277	100
	14278	97
	Method Blank #1	100
	Method Blank #2	100
1,4-Dichlorobutane	14272	79
	14273	88
	14274	95
	14275	89
	14276	86
	14277	137
	14278	120
	Method Blank tl	100
	Method Blank t2	100

0000711

TEST CODE :SPNPRG1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : METHOD BLANK 1 MATRIX : SOLID
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNPRG1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : METHOD BLANK 2 MATRIX : SOLID
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIHIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethene	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethene	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethane	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethene	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = *ALSO* PRESENT IN BLANK
L = PRESENT BELOV STATED DETECTION LIMIT

0000712

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9101.497

Compound	E & E Laboratory No. 91-	Percent Recovery
Trifluorotoluenc	14399	77
	14400	76
	14401	79
	14402	74
	14403	101
	14404	95
	Method Blank	100
1,4-Dichlorobutane	14399	68
	14400	74
	14401	74
	14402	72
	14403	74
	14404	74
	Method Blank	100

TEST CODE :SPNPRG1 JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIRNT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PURGABLES- GC UNITS : UG/KG
SAMPLE ID LAB : METHOD BLANK MATRIX : SOLID

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		1000
Toluene	ND		1000
Ethylbenzene	ND		1000
Total Xylenes	ND		1000
1,2 - Dichlorobenzene	ND		1000
1,3 - Dichlorobenzene	ND		1000
1,4 - Dichlorobenzene	ND		1000
1,1 - dichloroethcne	ND		1000
Methylene Chloride	ND		1000
Trans-1,2, - Dichloroethenc	ND		1000
1,1 - dichloroethane	ND		1000
1,1,1 - Trichloroethanc	ND		1000
1,2 - Dichloroethane	ND		1000
Trichloroethene	ND		1000
Tetrachloroethane	ND		1000
chlorobenzene	ND		1000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000713

TEST CODE : SPNP&P1 JOB NUMBER : 9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EE-91-14272 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4p4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNP&P1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : BE-91-14273 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001AD
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

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TEST CODE :SPNP&P1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EE-91-14274 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001B
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
494 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNP&P1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EB-91-14275 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S001C
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIHIT

0000715

TEST CODE : SPNP&P1 JOB NUMBER : 9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EE-91-14276 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S002A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Eeptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNP&P1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EE-91-14277 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S003A
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000716

TEST CODE :SPNP&P1 JOB NUMBER :9101.475

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EE-91-14278 MATRIX : SOLID
SMPLE ID CLIENT: P10-S003B
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST COOB :SPNP&P1 JOB NUMBER 89101.497

Ecology and Environment, Inc.
Analytical Services Curter

CLIENT : UH-8000 NASP - PHASB I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : BE-91-14399 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S004A

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dicldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDB	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = BSTIHATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000717

TEST CODB : SPNP&P1 JOB NUMBER 39101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UB-8000 NASP - PEASE I BATCH 2
RBSULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EE-91-14400 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005A

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPNP&P1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RBSULTS IN VET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EE-91-14401 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005B

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
494 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000718

TEST CODE :SPNP&P1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EE-91-14402 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005C

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIHIT

TEST CODB :SPNP&P1 JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIBNT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : BE-91-14403 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S005D

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BBLOV STATBD DBTBCTION LIMIT

0000715

TEST CODE :SPNP&P1 JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
RESULTS IN WET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : EE-91-14404 MATRIX : SOLID
SAMPLE ID CLIENT: P10-S006A

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY:
PERCENT RECOVERY OF SOIL MATRIX SPIKE
(Sample # 14274)

9101.475

Compound	Original Result	Amount Added	Amount Determincd	Percent Recovery
		(ug/kg)		
Heptachlor	ND	400	390	98
Lindane	ND	400	379	95
Aldrin	ND	400	432	108
4,4'-DDT	ND	1000	1062	106
Dieldrin	ND	1000	1100	110
Endrin	ND	1000	1040	104
Chlordane	ND	- -	- -	NA
4,4'-DDE	ND	- -	- -	NA
PCB-1254	ND	5000	5771	115

ND = NOT DETECTED

NA = NOT APPLICABLE

0000720

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and environment

TEST CODE :SPNP&P1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
RESULTS IN VET WEIGHT
TEST NAME : PNC PEST./PCB UNITS : UG/KG
SAMPLE ID LAB : METHOD BLANK MATFUX : SOLID

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		1000
Lindane	ND		1000
Aldrin	ND		1000
4,4 - DDT	ND		1000
Dieldrin	ND		1000
Endrin	ND		1000
Chlordane	ND		1000
4,4-DDE	ND		1000
Total PCBs	ND		5000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

F

APPENDIX F

TEMPORARY MONITORING WELL GROUNDWATER SAMPLING ANALYTICAL SCREENING RESULTS

I

MEMORANDUM

TO: John Barksdale

FROM: Gary Hahn Gary Hahn/kr

DATE: July 11, 1991

SUBJECT: UH-8000 Pensacola Report

RE: 9101.497

CC: Lab File

Attached is the laboratory report of the analysis conducted on ten samples received at the Analytical Services Center on June 25, 1991. Analysis was performed according to the screening procedures set forth in "Generic Quality Assurance Project Plan, Contamination Assessments and Remedial Activities, Naval Air Station Pensacola, Pensacola, Florida," July 1990.

TRPH samples #14405, #14406, #14407 and #14408 were not preserved to correct pH. Additional acid (H_2SO_4) was added to bring down the pH to required levels.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

GH/kr
Enclosure

MEMORANDUM

TO: John Barksdale

FROM: Gary Hahn

DATE: July 9, 1991

SUBJECT: UH-8000 Pensacola Report

REF: 9101.475

CC: Lab File

Attached is the laboratory report of the analysis conducted on seven samples received at the Analytical Services Center on June 22, 1991. Analysis was performed according to the procedures set forth in "Generic Quality Assurance Project Plan, Contamination Assessments and Remedial Activities, Naval Air Station Pensacola, Pensacola, Florida," July 1990.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report, unless othervise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, vith such charges accruing until destruction of the samples is authorized by the client.

GH:jp
enclosure

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ology ar en(nment, inc.
EASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8080
rional Specialists in the Environment

See Jack Miller

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

Project Name: NAS Pensacola Site 10 Group F

Project Manager: John Burksdale

Field Team Leader: Arnold C. Lamb

(Signature)

DATE	TIME	SAMPLE TYPE COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	Screening Metals	Screening Pesticides	Screening PCB's	Screening VOA's	Screening air	TRPH	REMARKS
6/24/91	0835		X		Low 14405	TW002	5	X	X	X	X		X	VOA Lot# 1123033 QC# 10353C
6/24/91	1007		X			TW006	5							
6/24/91	0935		X			TW001	5							Liter poly Lot# 109 2021 QC# 10230C
6/24/91	0835		X		14408	TW002	5							Liter Amber Lot# 1109012 QC# 10320C
														1/2 gal. Amber Lot# 1094012 QC# 10278C
					Preservatives:									
					HCl mallinckrodt Lot# 5587KEGP									VOA's preserved with HCl <2
					H_2SO_4 mallinckrodt Lot# 6843KCBG									metals preserved with HNO_3 <2
					HNO_3 mallinckrodt Lot# 6623KECG									TRPH preserved with H_2SO_4 <2
														~~All samples packed in ICE <4°C~~

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
[signature]	6/24/91 1700	FedEx			
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Relinquished By: (Signature)	Date/Time 0930 6-25-91	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time	Received For Laboratory By: (Signature)

Ship Via: FEDERAL EXPRESS

BL/Airbill Number: 0776546072

Date: 6/24/91

234055

tion: Original Accompanies Shipment; Copy to Coordinator Field Files
NCENTRATION RANGE on back of form.

JOB NUMBER : 9101.497

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
14399.01	P10-S004A	SPNPRGl	06/22/91		06/27/91
14399.02	P10-S004A	SPNTPH1	06/22/91		06/27/91
14399.03	P10-S004A	SPNMET1	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAH1	06/22/91		07/02/91
		SPNPELl	06/22/91		07/03/91
14400.01	P10-S005A	SPNPRGl	06/22/91		06/28/91
14400.02	P10-S005A	SPNTPHl	06/22/91		06/27/91
14400.03	P10-S005A	SPNMET1	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAH1	06/22/91		07/02/91
		SPNPELl	06/22/91		07/03/91
14401.01	P10-S005B	SPNPRGl	06/22/91		06/28/91
14401.02	P10-S005B	SPNTPHl	06/22/91		06/27/91
14401.03	P10-S005B	SPNMET1	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAH1	06/22/91		07/02/91
		SPNPHL1	06/22/91		07/03/91
14402.01	P10-S005C	SPNPRGl	06/22/91		06/28/91
14402.02	P10-S005C	SPNTPHl	06/22/91		06/27/91
14402.03	P10-S005C	SPNMET1	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAH1	06/22/91		07/02/91
		SPNPHL1	06/22/91		07/03/91
14403.01	P10-S005D	SPNPRGl	06/22/91		06/28/91
14403.02	P10-S005D	SPNTPHl	06/22/91		06/27/91
14403.03	P10-S005D	SPNMET1	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAH1	06/22/91		07/02/91
		SPNPHL1	06/22/91		07/03/91
14404.01	P10-S006A	SPNPRG1	06/22/91		06/28/91
14404.02	P10-S006A	SPNTPH1	06/22/91		06/27/91
14404.03	P10-S006A	SPNMET1	06/22/91		06/28/91
		SPNP&P1	06/22/91		06/29/91
		SPNPAH1	06/22/91		07/02/91
		SPNPHL1	06/22/91		07/03/91
14405.01	P10-GW002	WPNPRG1	06/24/91		06/28/91
14405.03	P10-GW002	WPNP&P1	06/24/91		07/03/91
		WPNPAH1	06/24/91		06/29/91
		WPNPHL1	06/24/91		06/28/91
14405.04	P10-GW002	WPNTPH1	06/24/91		06/26/91
14405.05	P10-GW002	WPNMET1	06/24/91		06/28/91
14406.01	P10-GW006	WPNPRG1	06/24/91		06/28/91
14406.03	P10-GW006	WPNP&P1	06/24/91		07/03/91
		WPNPAH1	06/24/91		06/29/91
		WPNPHL1	06/21/91		06/28/91
14406.04	P10-GW006	WPNTPH1	06/24/91		06/26/91

0000724

JOB NUMBER : 9101.497

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATB EXTRACTED	DATE ANALYZED
14406.05	P10-GW006	WPNMET1	06/24/91		06/28/91
14407.01	P10-GW001	WPNPRG1	06/24/91		06/28/91
14407.03	P10-GW001	WPNP&P1	06/24/91		07/03/91
		WPNPAH1	06/24/91		06/29/91
		WPNPHL1	06/24/91		06/28/91
14407.04	P10-GW001	WPNTPH1	06/24/91		06/26/91
14407.05	P10-GW001	WPNMET1	06/24/91		06/28/91
14408.01	P10-GW002D	WPNPRG1	06/24/91		06/28/91
14408.03	P10-GW002D	WPNP&P1	06/24/91		07/03/91
		WPNPAH1	06/24/91		06/29/91
		WPNPHL1	06/24/91		06/29/91
14408.04	P10-GW002D	WPNTPH1	06/24/91		06/26/91
14408.05	P10-GW002D	WPNMET1	06/24/91		06/28/91

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAMPLE ID LAB :EE-91-14407 MATRIX: VATBR
SAMPLE ID CLIENT: P10-GW001

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		60	UG/L
Chromium	450		10	UG/L
Zinc	700		20	UG/L
Lead	520		40	UG/L
Cadmium	46		5.0	UG/L
Nickel	420		40	UG/L
Copper	170		25	UG/L
Silver	ND		10	UG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

0000725

JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
SAMPLE ID LAB :EE-91-14405 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW002

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		60	UG/L
Chromium	41		10	UG/L
Zinc	110		20	UG/L
Lead	120		40	UG/L
Cadmium	ND		5.0	UG/L
Nickel	ND		40	UG/L
Copper	ND		25	UG/L
Silver	ND		10	UG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER : 9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAMPLE ID LAB :EE-91-14408 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW002D

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		60	UG/L
Chromium	42		10	UG/L
Zinc	120		20	UG/L
Lead	120		40	UG/L
Cadmium	ND		5.0	UG/L
Nickel	ND		40	UG/L
Copper	ND		25	UG/L
Silver	ND		10	UG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

0000726

JOB NUMBER : 9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
SAMPLE ID LAB : EE-91-14406 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW006

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		60	UG/L
Chromium	20		10	UG/L
Zinc	84		20	UG/L
Lead	96		40	UG/L
Cadmium	ND		5.0	UG/L
Nickel	ND		40	UG/L
Copper	ND		25	UG/L
Silver	ND		10	UG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAMPLE ID LAB : METHOD BLANK MATRIX: WATER

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
Arsenic	ND		60	UG/L
Chromium	ND		10	UG/L
Zinc	ND		20	UG/L
Lead	ND		40	UG/L
Cadmium	ND		5.0	UG/L
Nickel	ND		40	UG/L
Copper	ND		25	UG/L
Silver	ND		10	UG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
SAMPLE ID LAB :EE-91-14407 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW001

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	ND		1.0	MG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER 89101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAMPLE ID LAB :EE-91-14405 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW002

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	ND		1.0	MG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATBD DETECTION LIMIT
NA = NOT APPLICABLE

0000728

JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
SAMPLE ID LAB :EE-91-14408 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW002D

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	ND		1.0	MG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

JOB NUMBER t9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAMPLE ID LAB :EE-91-14406 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW006

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	ND		1.0	MG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUB B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATBD DETECTION LIMIT
NA = NOT APPLICABLE

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QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED WATER SAMPLES

9101.497

(mg/L)

Parameter	E & E Laboratory No. 91-	Original Value	Amount Added	Amount Determined	Parcent Recovery
T. Recoverable Petroleum Hydrocarbons					
	Batch QC	11	8.5	22	125

ND = NOT DETECTED

** = RECOVERY NOT DETERMINED BECAUSE SAMPLE AMOUNT IS FOUR OR MORE TIMES GREATER THAN SPIKE AMOUNT.

NOTE: ALTEOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, PERCENT RECOVERIES ARE CALCULATED DIRECTLY FROM TEE RAW DATA.

JOB NUMBER r9101.497

Bcology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
SAMPLE ID LAB : METHOD BLANK MATRIX: WATER

PARAMETER	RESULTS	Q	QNT. LIMIT	UNITS
TRPH	ND		1.0	MG/L

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BBLOV STATBD DETECTION LIMIT
NA = NOT APPLICABLE

0000730

TEST CODE :WPNPRG1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PURGABLES- GC UNITS : UG/L
SAMPLE ID LAB : EE-91-14407 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW001

PARAXETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		lo
Toluene	ND		10
Ethylbenzene	ND		10
Total Xylenes	ND		10
1,2 - Dichlorobenzene	ND		10
1,3 - Dichlorobenzene	ND		10
1,4 - Dichlorobenzene	ND		10
1,1 - Dichloroethene	ND		10
Methylene Chloride	ND		10
Trans - 1,2 - Dichloroethene	ND		10
1,1 - Dichloroethane	ND		10
1,1,1 - Trichloroethane	ND		10
1,2 - Dichloroethane	ND		10
Trichloroethene	ND		10
Tetrachloroethene	ND		10
Chlorobenzene	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :VPNPRG1 JOB NUMBER :9101.497

Ecology and Environment, Iac.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PURGABLES- GC UNITS : UG/L
SAMPLE ID LAB : EE-91-14405 MATRIX: VATBR
SAMPLE ID CLIENT: P10-GW002

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		lo
Toluene	ND		10
Ethylbenzene	ND		10
Total Xylenes	ND		10
1,2 - Dichlorobenzene	ND		10
1,3 - Dichlorobenzene	ND		10
1,4 - Dichlorobenzene	ND		10
1,1 - Dichloroethene	ND		10
Methylene Chloride	ND		10
Trans - 1,2 - Dichloroethene	ND		10
1,1 - Dichlorocthane	ND		10
1,1,1 - Trichlorocthane	ND		10
1,2 - Dichlorocthane	ND		10
Trichlorocthenc	ND		10
Tetrachlorocthene	ND		10
Chlorobenzene	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000731

TEST CODE :WPNPRG1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PURGABLES- GC UNITS : UG/L
SAMPLE ID LAB : EE-91-14408 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW002D

PARAMETER	RESULTS	Q	QNT. LIMIT
Benzene	ND		10
Toluene	ND		10
Ethylbenzene	ND		10
Total Xylenes	ND		10
1,2 - Dichlorobenzene	ND		10
1,3 - Dichlorobenzene	ND		10
1,4 - Dichlorobenzene	ND		10
1,1 - Dichloroethene	ND		10
Methylene Chloride	ND		10
Trans - 1,2 - Dichloroethene	ND		10
1,1 - Dichloroethane	ND		10
1,1,1 - Trichloroethane	ND		10
1,2 - Dichloroethane	ND		10
Trichloroethene	ND		10
Tetrachloroethene	ND		10
Chlorobenzene	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIHIT

TEST CODE :VPNPRG1 JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
TEST NAME : PNC PURGABLES- GC UNITS : UG/L
SAMPLE ID LAB : EE-91-14406 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW006

PARAMETER	RBSULTS	Q	QNT. LIMIT
Benzene	ND		lo
Toluene	ND		10
Ethylbenzene	ND		10
Total Xylenes	ND		10
1,2 - Dichlorobenzene	ND		10
1,3 - Dichlorobenzene	ND		10
1,4 - Dichlorobenzene	ND		10
1,1 - Dichloroethenc	ND		10
Methylene Chloride	ND		10
Trans - 1,2 - Dichloroethene	ND		10
1,1 - Dichloroethane	ND		10
1,1,1 - Trichloroethane	ND		10
1,2 - Dichloroethane	ND		10
Trichloroethene	ND		10
Tetrachloroethene	ND		10
Chlorobenzene	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATBD DETECTION LIMIT

0000732

OUALITY CONTROL FOR ACCURACY *AND* PRECISION:
PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD)
OF WATER MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (HSD)
(Sample # 14408)

9101.497

(ug/L)

Parameter	Original Value	Amount Added		Amount Determined		Percent Recovery		
		MS	MSD	MS	MSD	MS	MSD	RPD
Benzene	ND	20	20	19	13	95	65	38
Toluene	ND	20	20	19	13	95	65	38
Ethyl Benzene	ND	20	20	18	13	90	65	32
1,2-Dichlorobenzene	ND	40	40	37	30	93	75	21
1,3-Dichlorobenzene	ND	40	40	37	29	93	73	24
1,4-Dichlorobenzene	ND	40	40	36	29	90	73	21
1,l-Dichloroethene	ND	20	20	17	11	85	55	43
Methylene Chloride	ND	20	20	16	15	80	75	6.5
Trans-1,2-Dichloroethene	ND	20	20	18	13	90	65	32
1,1-Dichloroethane	ND	20	20	18	14	90	70	25
1,1,1-Trichloroethane	ND	20	20	18	13	90	65	32
1,2-Dichloroethane	ND	20	20	17	15	85	75	13
Trichloroethene	ND	20	20	18	13	90	65	32
Tetrachloroethene	ND	20	20	17	12	85	60	34
Chlorobenzene	ND	40	40	34	26	a5	65	27

These recoveries and RPDs are within E & E, Inc. limits.

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED WATER SAMPLES

9101.497

(ug/L)

Parameter	E & E Laboratory No. 91- Blank Spike	Original Value	Amount Added	Amount Determined	Percent Recovery
Benzene		ND	20	17	85
Toluene		ND	20	16	80
Ethyl Benzene		ND	20	17	85
1,2-Dichlorobenzene		ND	20	16	80
1,3-Dichlorobnezene		ND	20	15	75
1,4-Dichlorobenzene		ND	20	18	90
1,1-Dichloroethene		ND	20	13	65
Methylene Chloride		ND	20	16	80
Trans-1,2-Dichloroethene		ND	20	16	80
1,1-Dichloroethane		ND	20	13	65
1,1,1-Trichloroethane		ND	20	17	85
1,2-Dichloroethane		ND	20	18	90
Trichloroethent		ND	20	18	90
Tetrachloroethene		ND	20	17	85

ND = NOT DETECTED

0000733

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QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9101.497

Compound	E & E Laboratory No. 91-	Percent Recovery
Trifluorotoluene	14405	80
	14406	88
	14407	73
	14408	70
	Method Blank	100
1,4-Dichlorobutane	14405	80
	14406	100
	14407	65
	14408	78
	Method Blank	100

TEST CODE :WPNPRG1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
TEST NAME : PNC PURGABLES- CC UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK MATRIX: WATER

PARAMETER	RESULTS	Q	QNT. LIXIT
Benzene	ND		lo
Toluene	ND		10
Ethylbenzenc	ND		10
Total Xylenes	ND		10
1,2 - Dichlorobenzene	ND		10
1,3 - Dichlorobenzene	ND		10
1,4 - Dichlorobenzene	ND		10
1,1 - Dichlorocthene	ND		10
Methylene Chloride	ND		10
Trans - 1,2 - Dichloroethene	ND		10
1,1 - Dichlorocthane	ND		10
1,1,1 - Trichloroethanc	ND		10
1,2 - Dichloroethane	ND		10
Trichlorocthcnc	ND		10
Tetrachlorocthenc	ND		10
Chlorobenzene	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000734

TEST CODE :WPNPAH1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
TEST NAME : PNC PAH - LC UNITS : UG/L
SAHPLE ID LAB : EE-91-14407 MATRIX: WATER
SAHPLE ID CLIENT: P10-GW001

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIHIT

TEST CODE :WPNPAH1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PAR - LC UNITS : UG/L
SAMPLE ID LAB : BE-91-14405 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW002

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WPNPAH1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PAH - LC UNITS : UG/L
SAMPLE ID LAB : EE-91-14408 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW002D

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODB :WPNPAH1 JOB NUMBER r9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PAH - LC UNITS : UG/L
SAMPLE ID LAB : BB-91-14406 MATRIX: VATBR
SAMPLE ID CLIENT: P10-GW006

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000736

TEST CODE :WPNPAH1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UE-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PAH - LC UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK MATRIX: WATER

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Benzo-a-pyrene	ND		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY FOR SPIKED WATER SAMPLES

9101.497

(ug)

Parameter	E & E Laboratory No. Blank	91- Spike	Original Value	Amount Added	Amount Determined	Percent Recovery
Benzo(a)pyrene			ND	20	16	*80*

ND = NOT DETECTED

0000737

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TEST CODE :WPNPHL1 JOB NUMBER 89101.497

Ecology and Bnvironment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PHENOL - LC UNITS : UG/L
SAMPLE ID LAB : BE-91-14407 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW001

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODB :VPNPHL1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIBNT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PHENOL - LC UNITS : UG/L
SAMPLE ID LAB : BE-91-1440s MATRIX: WATER
SAMPLE ID CLIENT: P10-GW002

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	10000		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOV STATED DETECTION LIMIT

0000738

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TEST CODE :WPNPHL1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PHENOL - LC UNITS : UG/L
SAMPLE ID LAB : EE-91-14408 MATRIX : WATER
SAMPLE ID CLIENT: P10-GW002D

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	17000		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WPNPHL1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PHENOL - LC UNITS : UG/L
SAMPLE ID LAB : BE-91-14406 MATRIX: VATBR
SAMPLE ID CLIENT: P10-GW006

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000733

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED WATER SAMPLES

9101.497

(ug)

Parameter	E & E Laboratory No. 91- Blank Spike	Original Value	Amount Added	Amount Determined	Percent Recovery
2,4,6-Trichlorophenol		ND	100	95	95

ND = NOT DETECTED

TEST CODE :WPNPHL1 JOB NUMBER r9101.497

Bcology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PHENOL - LC UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK MATRIX: WATER

PARAMETER	RESULTS	Q	QNT. LIMIT
Total as Trichlorophenol	ND		100

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000740

TEST CODE : WPNP&P1 JOB NUMBER : 9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UE-8000 NASP - PEASE I BATCH 2
TEST NAME : PNC PEST./PCB UNITS : UG/L
SAMPLE ID LAB : BE-91-14407 MATRIX : WATER
SAMPLE ID CLIENT: P10-GW001

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		5.0
Lindane	ND		5.0
Aldrin	ND		5.0
4,4 - DDT	ND		5.0
Dieldrin	ND		5.0
Endrin	ND		5.0
Chlordane	ND		5.0
4,4-DDE	ND		5.0
Total PCBs	ND		10

QUALIFIERS: C = COHMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WPNP&P1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PEST./PCB UNITS : UG/L
SAMPLE ID LAB : EE-91-14405 MATRIX: VATBR
SAMPLE ID CLIENT: P10-GW002

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		5.0
Lindane	ND		5.0
Aldrin	ND		5.0
4,4 - DDT	ND		5.0
Dieldrin	ND		5.0
Endrin	ND		5.0
Chlordane	ND		5.0
4,4-DDE	ND		5.0
Total PCBs	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRBSBNT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000741

TEST CODB : WPNP&P1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PEST./PCB UNITS : UG/L
SAMPLE ID LAB : EE-91-14408 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW002D

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		5.0
Lindane	ND		5.0
Aldrin	ND		5.0
4,4 - DDT	ND		5.0
Dieldrin	ND		5.0
Endrin	ND		5.0
Chlordane	ND		5.0
4,4-DDE	ND		5.0
Total PCBs	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIHIT

TEST CODB :VPNP&P1 JOB NUMBER 89101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PEASE I BATCH 2
TEST NAME : PNC PEST./PCB UNITS : UG/L
SAMPLE ID LAB : BE-91-14406 MATRIX: WATER
SAMPLE ID CLIENT: P10-GW006

PARAMETER	RESULTS	Q	QNT. LIHIT
Heptachlor	ND		5.0
Lindane	ND		5.0
Aldrin	ND		5.0
4,4 - DDT	ND		5.0
Dialdrin	ND		5.0
Endrin	ND		5.0
Chlordane	ND		5.0
4,4-DDE	ND		5.0
Total PCBs	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

0000742

TEST CODE :WPNP&P1 JOB NUMBER :9101.497

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : UH-8000 NASP - PHASE I BATCH 2
TEST NAME : PNC PEST./PCB UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK MATRIX: WATER

PARAMETER	RESULTS	Q	QNT. LIMIT
Heptachlor	ND		5.0
Lindane	ND		5.0
Aldrin	ND		5.0
4,4 - DDT	ND		5.0
Dieldrin	ND		5.0
Endrin	ND		5.0
Chlordane	ND		5.0
4,4-DDE	ND		5.0
Total PCBs	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT