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PLAN OF ACTION
NAVAL ASSESSMENT AND CONTROL
OF INSTALLATION POLLUTANTS,
VERIFICATION STUDY SITES 1-3,
9, 11, 15, 17, 19, 22, 26, 27,
BLDG. 649/755, BLDG. 648, IWPT
SLUDGE BEDS, DWT

Geraghty & Miller, Inc.

PLAN OF ACTION
NAVAL ASSESSMENT AND CONTROL
OF INSTALLATION POLLUTANTS,
VERIFICATION STUDY,
NAS PENSACOLA

Prepared for
DEPARTMENT OF THE NAVY
Southern Division, Naval Facilities Engineering Command

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December 14, 1983

GERAGHTY & MILLER, INC.
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December 14, 1983

Mr. William. E. Kellenberger, P.E.
Florida Department of Environmental Regulation
Northwest District
160 Governmental Center
Pensacola, Florida 32501

Dear Mr. Kellenberger:

On November 17, 1983, representatives from the Department of the Navy and their hydrogeologic consultant, Geraghty & Miller, Inc., met with Florida Department of Environmental Regulation representatives to discuss: (1) the Navy's NACIP (Naval Assessment and Control of Installation Pollutants) program presently being performed at the Naval Air Station, Pensacola, Florida, and (2) the sites requiring monitoring pursuant to Chapters 17-3 and 17-4 of the FAC (Florida Administrative Code).

The NACIP program is a multi-phased program too evaluate sites posing a potential threat to human health or the environment due to contamination from past hazardous materials operations. The first phase, the Initial Assessment Study which was previously submitted to you, evaluates each site based on information from record searches, aerial photographs, field inspections, and personnel interviews. The second phase, the confirmation study, consists of two steps, verification and characterization, and consists of on-site investigations to confirm or refute the existence of contamination (verification) and if contamination is present, to quantify the extent of the problem (characterization). Phase III is the implementation of long-term monitoring and/or corrective actions to control or mitigate the contamination.

It is the Navy's desire to integrate the FDER's ground-water monitoring requirements contained in Chapters 17-3 and 17-4 FAC into the overall NACIP program so that a sound monitoring plan can be implemented. With your concurrence, during the verification step, we intend to install the monitor wells at the sites required by 17-3 and 17-4 FAC and collect and analyze the first round of water

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samples for an expanded list of chemical constituents. These data will then be included in the Verification Report along with recommendations as to which, constituents should be analyzed quarterly for the remaining first year of sampling. The subsequent quarterly sampling and analysis of these monitor wells will be performed during the characterization step of the confirmation study.

During our meeting, it was generally agreed that some of the NACIP sites do not pose a significant risk to human health or the environment, and therefore, warrant no further action. In addition, work has been performed at some of the sites recommended in the IAS, which, based on the results, precludes the need for further actions at these sites. Therefore, presented in Attachment A is a summary of the findings at the sites where further work has been performed along with a discussion of the sites requiring further study and the actions that will be undertaken at each during the verification step of the confirmation study.

In closing, I would like to extend my appreciation to the FDER for their cooperation with the Navy in the NACIP study being performed at the NAS-Pensacola. We feel that the phased approach utilized by the Navy in performing these NACIP investigations is a thorough, cost-effective technique to delineate which sites actually need long-term monitoring or remedial actions.

If you have any questions concerning the information contained herein, please give us a call.

Sincerely,

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INTRODUCTION

A study was performed at the Pensacola Naval Air Station (NAS) for the Naval Energy and Environmental Support Activity in order to identify potential environmental contamination resulting from past hazardous materials management. The findings from this study were presented in a report dated June 1983 and entitled "Initial Assessment Study of Naval Air Station, Pensacola, Florida" (IAS). It was determined that seven sites needed further investigation in order to assess their potential long-term impacts on the environment.

During November 16 through 18, 1983, a representative from Geraghty & Miller, Inc., conducted a site visit to inspect these seven sites along with several others, and to collect additional information concerning each. In addition, during this visit, a meeting was held with representatives from the FDER (Florida Department of Environmental Regulation) to discuss: (1) the contents of the IAS, which was previously submitted to them, and (2) compliance with Chapters 17-3 and 17-4 FAC (Florida Administrative Code) at sites not covered by the IAS. Based on the findings from the site visit and on the data contained in the IAS, the following Plan-of-Action is proposed to implement the verification phase for 13 sites and compliance with Chapters 17-3 and 17-4 FAC for 3 sites (Polishing Pond, Phenols Pond, and Industrial Sludge Drying Beds).

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The results of the verification phase will be used to develop a general evaluation of the contamination found and to recommend for each site whether or not a follow-up Phase II investigation, Characterization Phase, will be needed.

PROPOSED WORK PROGRAM

On-Site Investigation

Sanitary Landfill (Site 1)

The sanitary landfill northeast of Fort Redoubt was used from the early 1950's until 1976. In 1975, eleven monitor wells were installed around the site. Some of the monitor wells have reportedly been damaged or destroyed. Therefore, prior to installing additional monitor wells, the existing wells will be examined to determine which are usable and water levels will be measured in these and referenced to mean sea level to determine the direction of ground-water movement. Subsequently, up to eight (8) additional monitor wells will be installed and the top of casings will be referenced to mean sea level. Ground-water samples (one round) will be collected and analyzed for the constituents identified in Table 1.

Waterfront Sediments (Site 2)

Between 1939 and 1973 large amounts of industrial wastes were discharged into Pensacola Bay. Sediment samples were collected from three locations in Pensacola Bay and a

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Table 1. Summary of the Number of Monitor Wells to be Installed, Soil Samples to be Collected, and Laboratory Chemical Analyses That Will Be Performed at Each Site

Site	Monitor wells		Sediment Samples		Comments
	Number	Analyses ^{2/}	Number	Analyses	
Sanitary Landfill (1)	8	Metals: Cd, Cr, Pb, CN, Ni, Zn, Hg, Ag Acid & Base-neutrals, pesticides, VOCs ^{2/}	-	-	Existing monitor wells will be utilized when feasible.
Waterfront Sediments (2)	-	-	6	EP Toxicity ^{3/}	-
Crash Crew Training Area (3)	6	VOCs	-	-	10 to 15 borings will be installed.
Navy Yard Disposal (9), Chevalier Field Pipeline (23), and Soil South of Bldg 3460 (29)	4	VOCs ^{4/} TOCs ^{4/}	-	-	Two surface-water samples will also be analyzed for pH, conductivity, VOCs and TOCs.
N Chevalier Field Disposal (11)	5	Metals: As, Ba, Cd, Cr, Pb, Hg, Se, Ag VOCs	6	EP Toxicity	Three surface-water samples will be collected and analyzed for pH, conductivity, metals, and VOCs. 15 to 20 borings will be installed.
Pesticide Rinseate Disposal (15)	-	-	9	Pesticides, herbicides, arsenic	-
Transformer Storage Yard (17)	-	-	9	PCBs	-
Fuel Farm Pipeline (19)	4	-	-	-	15 to 20 borings will be installed. Fuel thickness will be measured in monitor wells.
Refueler Repair Shop (22)	-	-	-	-	5 to 10 borings will be installed.
Supply Dept. Outside Storage (26)	1	Metals: As, Ba, Cd, Cr, Pb, Hg, Se, Ag VOCs	-	-	-
Radium Dial Shop Sanitary Sewer (27)	1	VOCs Gross alpha	-	-	-
Bldg 649/755	-	-	4	EP Toxicity (Sn, Cd, Mg, Cr, Ni, Ag, Pb, Cu, CN)	-
Bldg 648	1	VOCs	-	-	-
Industrial Waste Sludge Drying Beds	3	Metals: As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Cu, Zn, Mn VOCs TOC	6	EP Toxicity	-
Domestic Wastewater Treatment Ponds	4	Metals: As, Ba, Cd, Cr, Pb, Hg, Se, Ag TOC VOCs	-	-	-

1/ Ground-water samples collected at all sites will be measured in the field to determine pH, specific conductance, and temperature.

2/ VOCs - Volatile Organic Compounds - Method 601

3/ Toxicity for metals included arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and nickel.

4/ - Total Organic Carbon

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composite sample was analyzed for EP toxicity (metals), pH, and phenol. Results of these analyses show the sediment passed the EP Toxicity test for metals. Six additional sediment samples will be collected from deeper parts of the bay and analyzed for the constituents identified in Table 1.

Crash Crew Training Area (Site 3)

The training area consists of nine unlined pits in which fuel was burned for fire-fighting practice. Because the pits are clustered in one area, they will be treated collectively as a single source. A total of six (6) monitor wells will be installed around the pits and numerous borings will be drilled to detect the presence of free oil in the ground-water system. Water samples will be collected and analyzed for the constituents identified in Table 1.

Navy Yard Disposal Site, Chevalier Field Pipeline Leaks, Soil South of Building 3460 (Sites 9, 23, and 29)

Sites 9, 23, and 29 will be treated collectively as a single source. Site 9 was used between 1917 and the early 1930's for disposal of non-hazardous trash and refuse. Site 23 was a fuel-oil pipeline leak, and Site 29 is an industrial-waste pipeline leak. Four monitor wells will be installed in this area and water samples will be collected and analyzed for the constituents identified in Table 1. Two (2) surface-water samples will be collected from the creek (ditch) and these will also be analyzed for the constituents identified in Table 1.

North Chevalier Field Disposal Site (Site 11)

This site was used from the early 1930's until the late 1950's for disposal of industrial waste. A sediment sample taken from a branch of Bayou Grande adjoining the site was found to contain high concentrations of total metals and oil was found in a recently-installed soil boring in the landfill area.

Approximately 15 to 20 borings will be 'drilled' to determine whether or not significant volumes of oil are present in the subsurface. Five monitor wells will then be installed in the area and ground-water samples will be collected and analyzed for the constituents identified in Table 1; approximately three (3) surface-water samples from the creek will also be collected and analyzed for the constituents identified in Table 1. In addition, six (6) sediment samples from the channel and from Bayou Grande will be analyzed for the constituents identified in Table 1.

Pesticide Rinseate Disposal Area (Site 15)

This site was used between 1963 and 1979 for disposal of rinsewater from pesticide mixing and spray equipment cleaning. Dilute rinseate solutions were poured directly onto the ground. Soil samples will be collected at three (3) locations from depths of 1 inch, 12 inches, and 24 inches and analyzed for the constituents identified in Table 1.

Transformer Storage Yard (Site 17)

This site was used from 1964 until 1976 as a storage area for 200 to 300 transformers, some of which contained PCB's. Oil residues at the site were removed and disposed in a secure landfill.. At three (3) locations, soil samples will be collected at land surface and at depths of one and two ft and analyzed for the constituents identified in Table 1. One boring will be drilled through the asphalt pavement while the others will be drilled just outside of the paved area.

Fuel Farm Pipeline Leaks (Site 19)

In 1958, a leak occurred in the underground fuel pipeline which led from the fuel farm to the aircraft refueling facility at Forrest Sherman Field. This leak resulted in the direct discharge of several hundred thousand gallons of fuel oil into the subsurface. Approximately 15 to 20 borings will be drilled to delineate the horizontal extent of the plume, and four monitor wells will then be installed to determine the direction of movement and vertical thickness of the fuel oil, and estimate the amount which may be recoverable.

Refueler Repair Shop Fuel Disposal Site (Site 22)

This site was used between 1958 and 1977 for disposal of residual fuel from refueler trucks. Over this period, about 19,000 gallons of aviation gasoline and jet fuel, containing tetraethyl lead, were disposed of here. Soil samples were

collected to a depth of 24 inches at 3 locations on this site and analyzed for metals, phenol, and pH. Results of these analyses show no levels in excess of EP toxicity limits. Approximately 5 to 10 soil borings will be drilled to determine the presence or absence of fuel oil in the subsurface,

Supply Department Outside Storage (Site 26)

Until 1964, industrial chemicals, including paint strippers and acids, were stored on this site. Soil samples were taken to depths of 24 inches at 3 locations at the site and analyzed for EP toxicity (metals). Results of the analyses show no samples exceeding EP toxicity limits, One monitor well will be installed and a ground-water sample will be collected and analyzed for the constituents identified in Table 1.

Radium Dial Shoo Sanitary Sewer (Site 27)

From the 1940's until 1975, it was common practice at the Radium Dial Shop to wash spent cleaning solutions and luminous paint into the sanitary sewer. One monitor well will be installed at this site and a ground-water sample will be collected and analyzed for the constituents identified in Table 1.

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Building 649/755

From the mid-1940's until the early 1970's, metal plating was done in this building. Liquid wastes were drained into a ditch which flows toward Chevalier Field and into an arm of Bayou Grande. Four sediment samples will be collected from this ditch and analyzed for the constituents identified in Table 1.

Building 648

Reportedly, 20,000 gallons of waste paint thinner and waste paint were disposed of adjacent to this building. One monitor well will be installed at this site and a ground-water sample will be analyzed for the constituents identified in Table 1.

Industrial Waste Sludge Drying Beds

In compliance with Chapters 17-3 and 17-4 of the Florida Administrative Code, three (3) monitor wells will be installed to depths of approximately 15 feet around the industrial waste sludge drying beds. Ground-water samples will be analyzed for the constituents identified in Table 1. In addition, 6 soil samples will be collected at various depths beneath the beds and above the water table, and these will be analyzed for the constituents identified in Table 1.

Domestic Wastewater Treatment Ponds

Operation of the phenol pond and the polishing pond at the domestic wastewater treatment plant is covered under provisions of Chapters 17-3 and 17-4 of the Florida Administrative Code. Approximately four (4) monitor wells will be installed around these two ponds. Ground-water samples will be analyzed for the constituents identified in Table 1.

Data Analysis and Report Preparation

The data collected will be compiled into a written report. Figures and tables will be used to show well construction details, the results of the chemical analyses, and the locations of the samples collected. These figures and tables will be supported by text which will describe the work performed, monitor-well construction procedures, sampling and analysis methods, direction of ground-water flow, and sediments encountered.

An assessment of the potential for environmental effects will be addressed including known toxicity information on contaminants found and applicable rules and regulations regarding their presence in soil sediments and/or ground water/surface water. Recommendations will be presented regarding: (1) the need for additional field information to

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better define conditions at selected sites, and (2) which parameters need. to be analyzed, on a long-term basis at the sites requiring compliance under 17-3 and 17-4 FAC.