N60201.AR.000205
NS MAYPORT
5090.3a

CONTAMINATION ASSESSMENT PLAN FOR BUILDINGS 460 AND 1587 NS MAYPORT FL

4/1/1995

ABB ENVIRONMENTAL SERVICES

~~275~~ 257

CONTAMINATION ASSESSMENT PLAN

BUILDING 460 AND BUILDING 1587

U.S. NAVAL STATION MAYPORT
MAYPORT, FLORIDA

Unit Identification Code: N60201
Contract No. N62467-89-D-0317/119

Prepared by:

ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301

Prepared for:

Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418

Code Engineer-in-Charge

April 1995

CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/076 are complete and accurate and comply with all requirements of this contract.

DATE: April 26, 1995

NAME AND TITLE OF CERTIFYING OFFICIAL: John Kaiser
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Michael J. Williams
Project Technical Lead

(DFAR 252.227-7036)

Contamination Assessment Plan
Building 460 and Building 1587
U.S. Naval Station Mayport, Mayport, Florida

Chapter	Title	Page No.
1.0	INTRODUCTION	1-1
2.0	BACKGROUND	2-1
2.1	SITE DESCRIPTION AND HISTORY	2-1
2.1.1	Building 460	2-1
2.1.2	Building 1587	2-1
3.0	SITE CONDITIONS	3-1
3.1	REGIONAL PHYSIOGRAPHY	3-1
3.2	SITE-SPECIFIC PHYSIOGRAPHY	3-1
3.2.1	Building 460 and Building 1587	3-1
3.3	REGIONAL HYDROGEOLOGY	3-1
3.3.1	Shallow Aquifer	3-2
3.3.2	Intermediate Artesian Aquifer	3-2
3.3.3	Floridan Aquifer System	3-3
3.4	SITE-SPECIFIC HYDROGEOLOGY	3-3
3.4.1	Building 460 and Building 1587	3-3
4.0	POTABLE WELL SURVEY	4-1
5.0	PROPOSED ASSESSMENT PLAN	5-1
5.1	BUILDING 460 FIELD INVESTIGATION	5-1
5.2	BUILDING 1587 FIELD INVESTIGATION	5-7
6.0	CONTAMINATION ASSESSMENT REPORT PREPARATION	6-1

REFERENCES

APPENDICES
Appendix A Site Background Information and Documentation

LIST OF FIGURES

Contamination Assessment Plan
Building 460 and Building 1587
U.S. Naval Station Mayport, Mayport, Florida

Figures	Title	Page No.
1-1	Facility Location Map	1-2
2-1	Location Map of Building 460	2-2
2-2	Site Map of Building 460	2-3
2-3	Location Map of Building 1587	2-5
2-4	Site Map of Building 1587	2-6
4-1	Potable Well Location Map	4-3
5-1	Proposed Soil Boring Location Map, Building 460	5-2
5-2	Proposed Monitoring Well Location Map, Building 460	5-3
5-3	Typical Shallow Monitoring Well Installation Detail	5-5
5-4	Typical Deep Monitoring Well Installation Detail	5-6
5-5	Proposed Soil Boring Location Map, Building 1587	5-9
5-6	Proposed Monitoring Well Location Map, Building 1587	5-10

LIST OF TABLES

Tables	Title	Page No.
2-1	Summary of Soil Analytical Data, Building 460, March 1994	2-4
4-1	Potable Well Data	4-2

GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
ASTM	American Society for Testing and Materials
BEQ	Bachelor Enlisted Man's Quarters
bls	below land surface
BTEX	benzene, toluene, ethylbenzene, total xylenes
CA	contamination assessment
CAP	Contamination Assessment Plan
CAR	Contamination Assessment Report
Cl	chloride
CompQAP	Comprehensive Quality Assurance Plan
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FOL	Field Operations Leader
GC	gas chromatograph
HASP	Health and Safety Plan
ID	inner diameter
IRA	Initial Remedial Action
msl	mean sea level
NAVSTA	U.S. Naval Station
OVA	organic vapor analyzer
ppm	parts per million
PVC	polyvinyl chloride
QA/QC	quality assurance and quality control
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
SO_4	sulfate
SOP	standard operating procedure
SOUTHNAV-FACENGCOM	Southern Division, Naval Facilities Engineering Command
TCLP	Toxicity Characteristic Leaching Procedure
TRPH	total recoverable petroleum hydrocarbons
USCGS NAD '27	U.S. Coastal and Geodetic Survey, 1927 North American Datum
USCS	Unified Soil Classification System
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOA	volatile organic aromatics
vd^3	cubic yards

1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), has been contracted by the Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to prepare a Contamination Assessment Plan (CAP) for underground storage tank (UST) releases at Building 460 and Building 1587, the Bachelor Enlisted Man's Quarters (BEQ), at the U.S. Naval Station (NAVSTA) Mayport, Florida. The base is located approximately 15 miles east-northeast of downtown Jacksonville on Mayport Road at the junction of the St. Johns River and the Atlantic Ocean (Figure 1-1). The CAP outlines a strategy for the contamination assessment (CA) sampling program that will provide data to characterize and estimate the vertical and horizontal extent of soil and groundwater contamination at Buildings 460 and 1587. The CAP includes a site description, background information, discussion of investigative methodologies, and a schedule for implementing the CA.

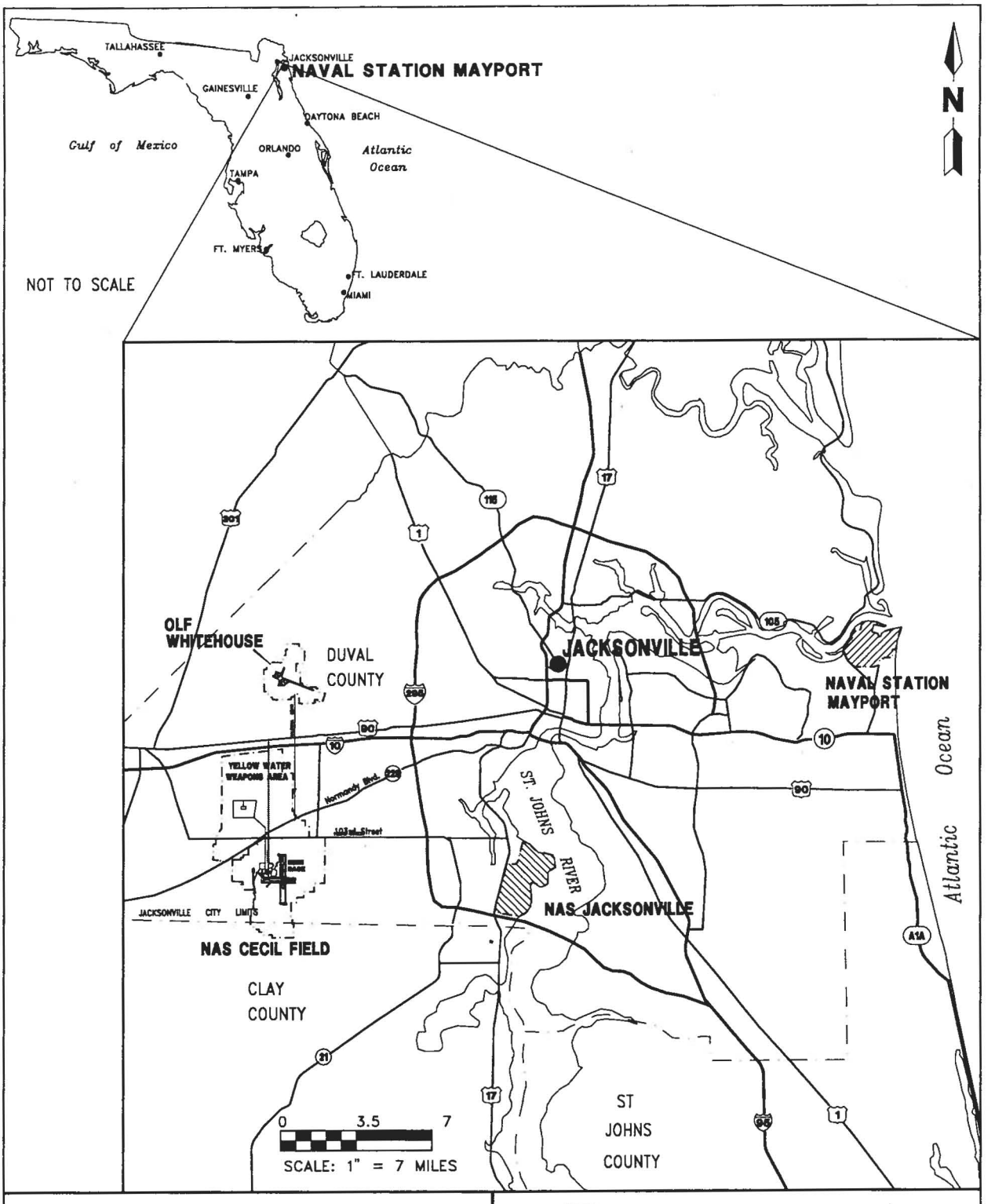


FIGURE 1-1
FACILITY LOCATION MAP

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION

2.1 SITE DESCRIPTION AND HISTORY.

2.1.1 Building 460 Building 460 is located in the northeast area of NAVSTA Mayport, east-southeast of the turning basin and west of Baltimore Street. The area adjacent to Building 460 includes baseball fields to the west, the base chapel to the east, and the base clinic to the south (Figure 2-1). Water lines and a 110-volt electric power line are located underground near the site.

On March 24, 1994, petroleum contamination was discovered during excavation and removal of Tank 460 and Tank 460G. Tank 460 was a 1,000-gallon coated steel UST that contained No. 2 heating oil and diesel fuel. The tank was installed in 1970. The tank leak was reportedly due to several areas of corrosion. The quantity of heating oil or diesel fuel released from the tank is unknown.

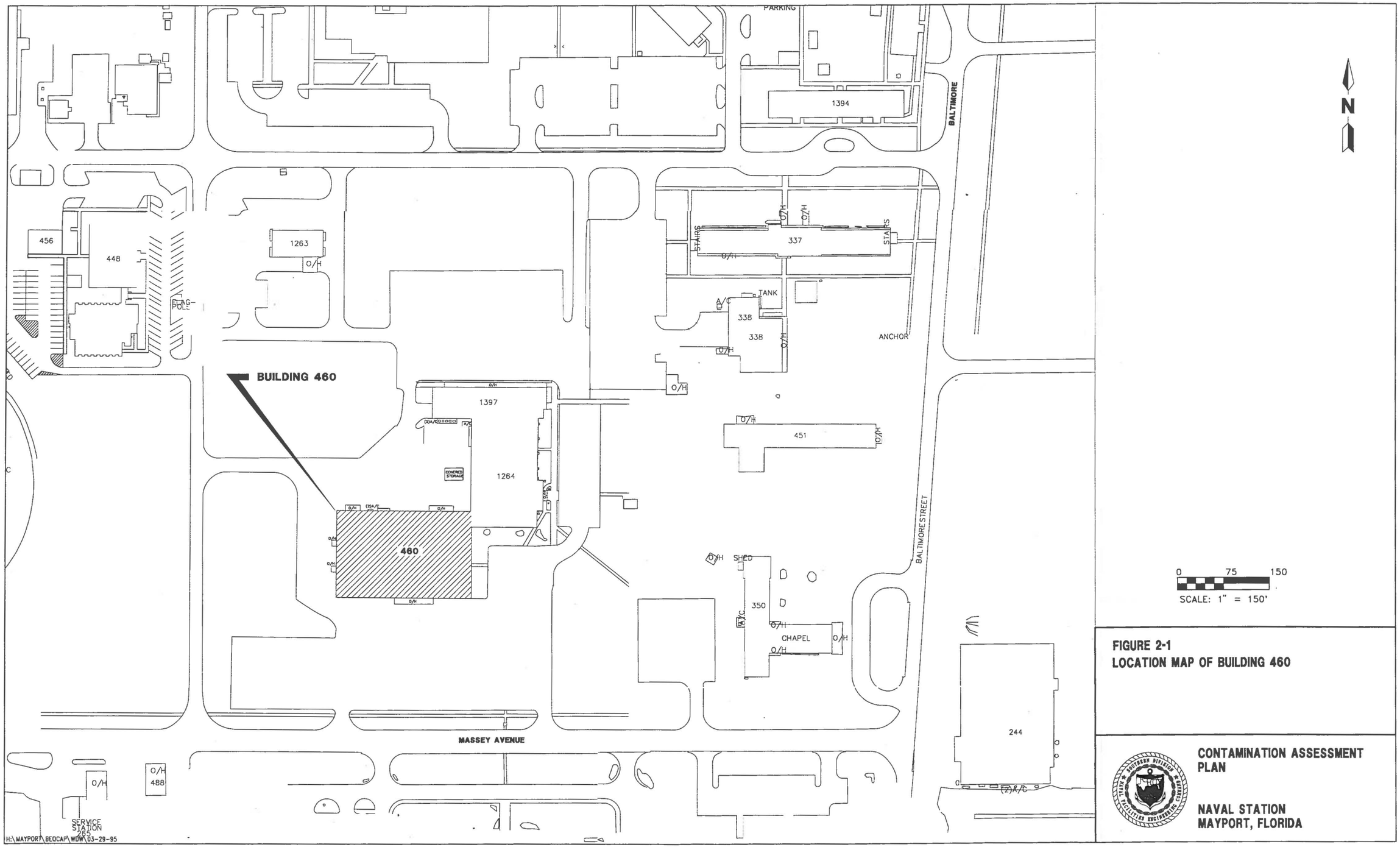
Tank 460G was a 1,000-gallon steel UST that contained diesel fuel. Tank 460G was an emergency generator tank located next to Building 460 (Figure 2-2). A Discharge Reporting Form and Closure Assessment Form were submitted to the city of Jacksonville, Water Quality Division, on March 24, 1994, and May 2, 1994, respectively. A copy of each form is attached in Appendix A, Site Background Information and Documentation.

As an Initial Remedial Action (IRA), V & W Construction & Service Company removed approximately 230 cubic yards (yd^3) of contaminated soil in accordance with Chapter 62-770, Florida Administrative Code (FAC). According to Navy personnel, free product was visible in the excavation after Tank 460 and Tank 460G were removed. Soil samples were collected from the excavation during the tank removals. A total of seven soil samples (X1 through X7) were collected from various locations in the excavation for laboratory analysis. The soil samples were analyzed for U.S. Environmental Protection Agency (USEPA) Methods 5030/8021 for volatile organic aromatics (VOAs), USEPA Method 9073 for total recoverable petroleum hydrocarbons (TRPH), and USEPA Methods 1311/6010 and 1311/7471 for Toxicity Characteristic Leaching Procedure (TCLP) of the eight Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

TRPH concentrations in all seven soil samples exceeded the State regulatory standard of 10 parts per million (ppm). A summary of the soil analytical data is shown in Table 2-1.

2.1.2 Building 1587 Building 1587 is located in the northeast area of NAVSTA Mayport, east of the Mayport turning basin and west of Baltimore Street. Building 1587 is a housing complex for Navy personnel. The area adjacent to Building 1587 includes a baseball field and track to the west, a parking area to the east, and Building 1586 to the south (see Figure 2-3). Water lines and a 110-volt electric power line are located underground at the site.

The UST at Building 1587 was installed in 1985 and contains No. 2 fuel oil, which is used to heat the building (Figure 2-4). The UST is asphalt-coated steel and has a capacity of 4,000 gallons. Petroleum contamination was discovered by a contractor attempting to install cathodic protection on the UST. Visible soil



0 75 150

SCALE: 1" = 150'

FIGURE 2-1
LOCATION MAP OF BUILDING 460

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION
MAYPORT, FLORIDA

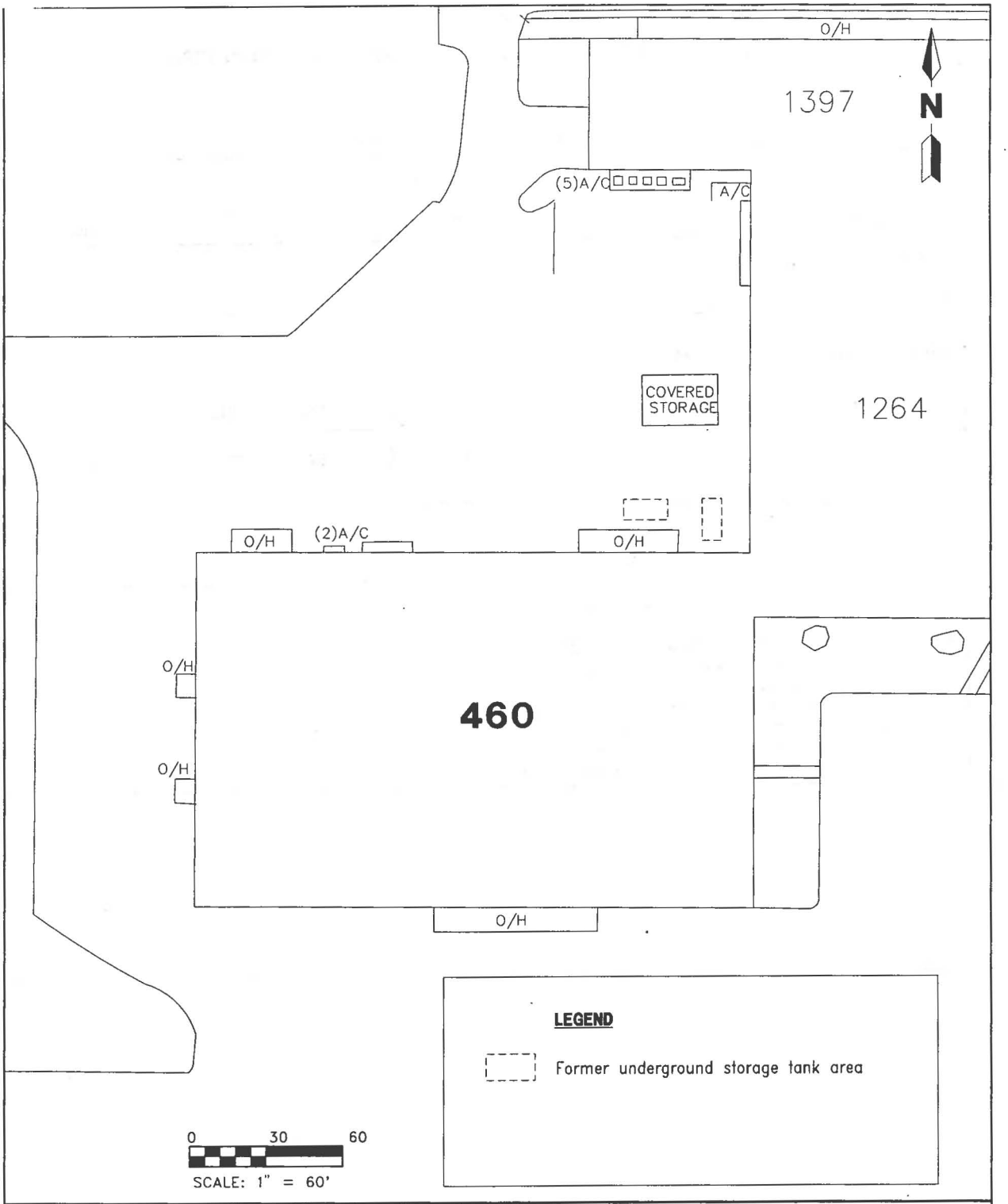


FIGURE 2-2
SITE MAP OF BUILDING 460

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION
MAYPORT, FLORIDA

Table 2-1
Summary of Soil Analytical Data, Building 460, March 1994

Contamination Assessment Plan
Buildings 460 and 1587
U.S. Naval Station Mayport, Florida

Contaminant	Soil Sample X1	X2	X3	X4	X5	X6	X7	State
Metals								
TCLP Barium	BDL	BDL	BDL	BDL	BDL	4.8	3.7	100.0
Volatile Organic Aromatics (USEPA Method 5030 or 8021)								
Ethylbenzene	0.6	3.2	BDL	0.4	2.0	BDL	BDL	NA
Total VOA	0.6	3.2	BDL	0.4	2.0	BDL	BDL	0.100
Total Recoverable Petroleum Hydrocarbons (USEPA Method 9073)								
TRPH	601	649	510	411	280	400	102	10

Analyses performed by V.O.C. Analytical Laboratory, Inc., in Jacksonville, Florida.

Notes: Concentrations are in milligrams per kilogram (mg/kg).
TCLP = Toxicity Characteristic Leaching Procedure.
BDL = below detection limits.
USEPA = U.S. Environmental Protection Agency.
NA = No applicable guidance concentration.
Total VOA = benzene, toluene, ethylbenzene, total xylenes.
TRPH = total recoverable petroleum hydrocarbons.

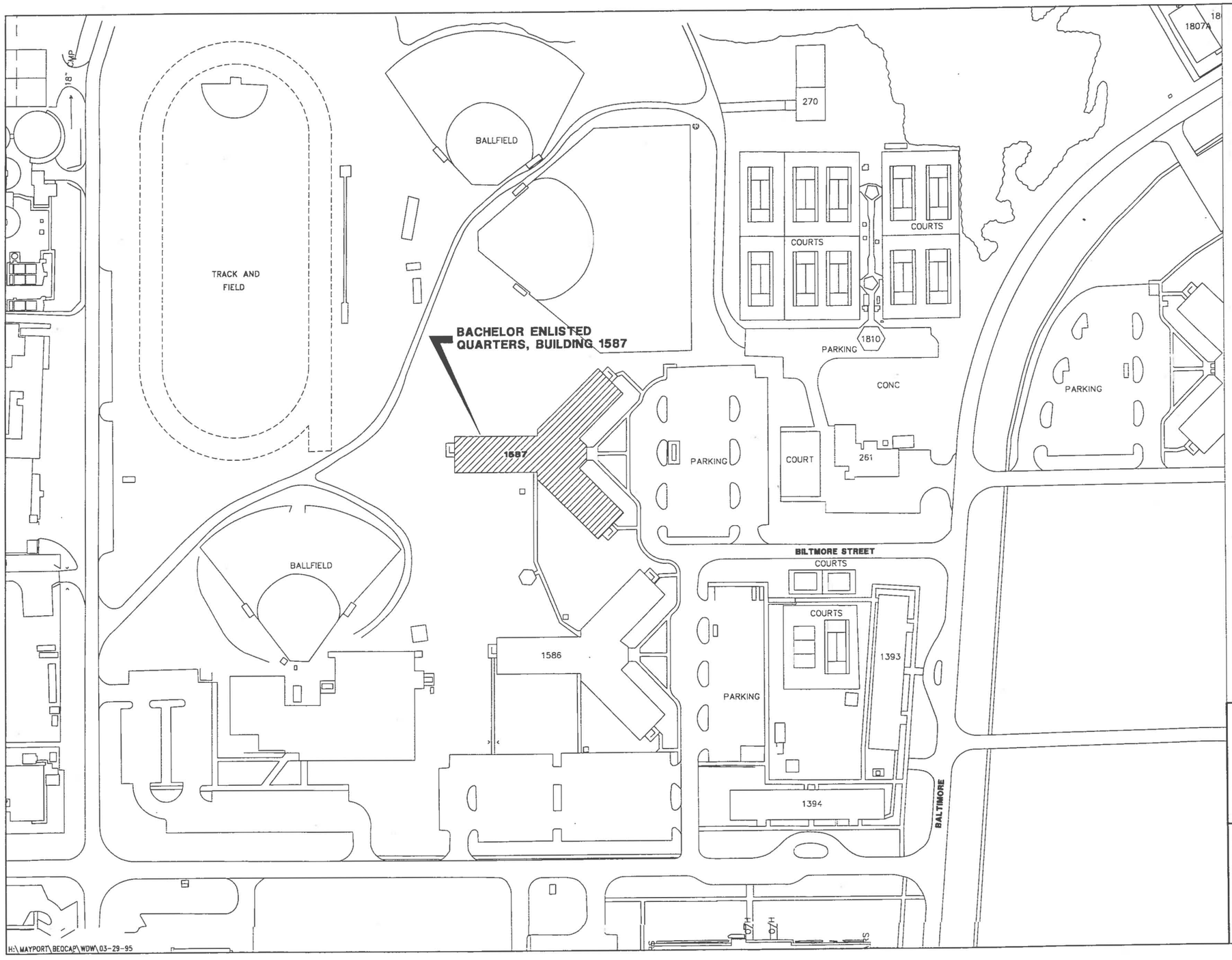


FIGURE 2-3
LOCATION MAP OF BUILDING 1587

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION
MAYPORT, FLORIDA

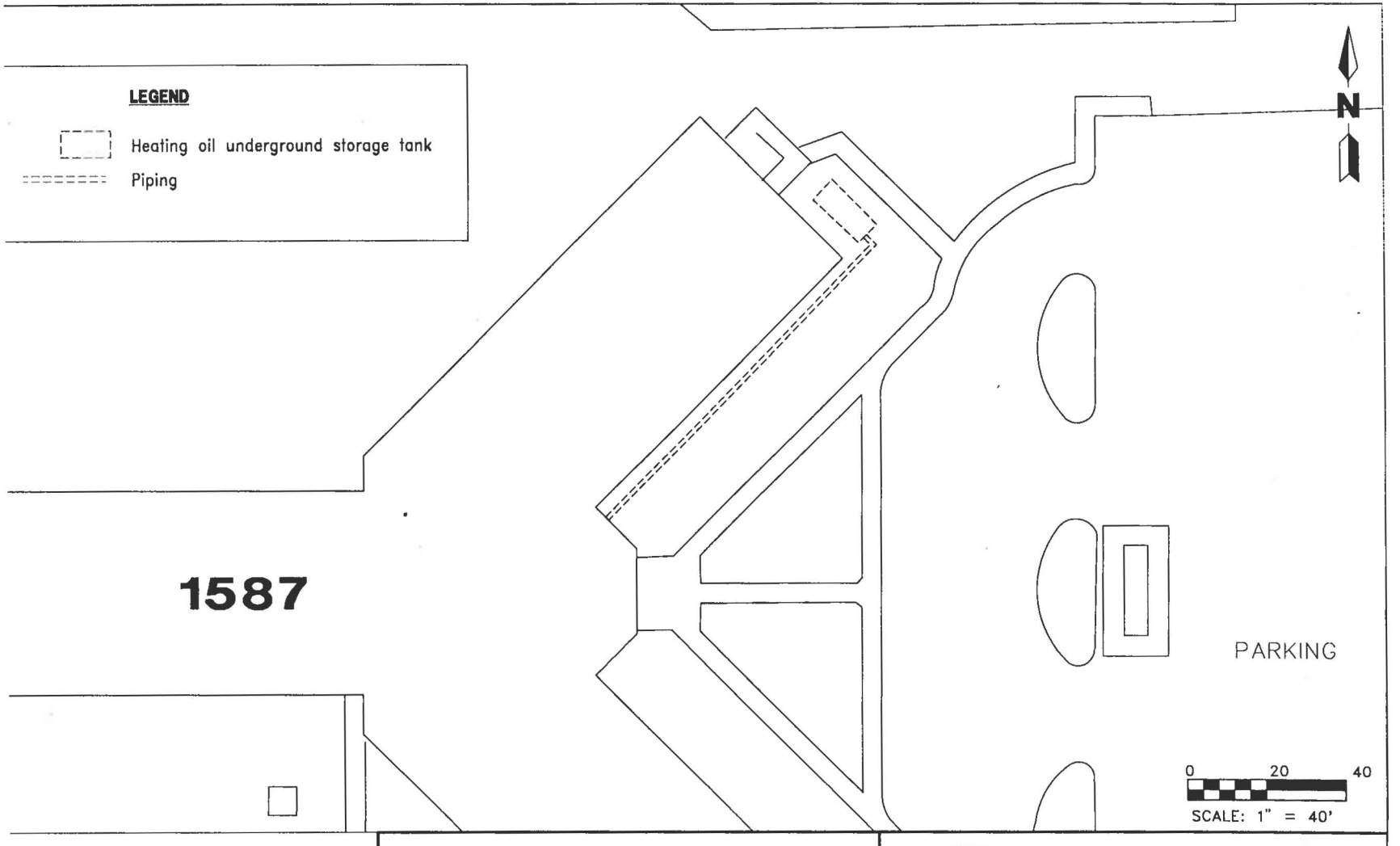


FIGURE 2-4
SITE MAP OF BUILDING 1587

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION
MAYPORT, FLORIDA

MAYPORT\BEQCAP\WDW\04-13-95

staining was discovered on the walls of the excavation when the UST was uncovered. Work to install the cathodic protection was stopped, and the tank was taken out of service. A temporary aboveground mobile storage tank was placed approximately 50 feet from Building 1587 to provide fuel for heating until Tank 1587 is repaired or replaced. Plastic sheeting and sandbags have been placed around the mobile tank to form a containment dike.

3.1 REGIONAL PHYSIOGRAPHY. A scarp extending north and south parallel to the coastline can be observed in eastern Florida. East of the scarp is a broad flat valley called the Eastern Valley (White, 1970). The Eastern Valley also parallels the coastline and extends from Duval County in north Florida to Broward County in south Florida. In north Florida, the valley extends eastward to the Atlantic Coastal Ridge and westward to the Duval Upland. Relict beach ridges can be found throughout the valley. Elevations in the valley vary from approximately 30 feet to less than 5 feet above mean sea level (msl). The valley likely represents a relict beach ridge plain.

NAVSTA Mayport is located in the northern part of the Eastern Valley, near the western edge of the Atlantic Coastal Ridge. The facility is located at the junction of the St. Johns River and the Atlantic Ocean. Physiographic features at the facility include the broad, low plain of the Eastern Valley; relict beach ridges of the Valley or the Atlantic Coastal Ridge; and tidal flats and plains associated with the St. Johns River. Elevations at the facility vary from approximately 5 feet to greater than 26 feet above msl. These features and the topography play a significant role in determining the configuration of the potentiometric surface of the unconfined aquifer. The potentiometric surface roughly follows the contour of the land surface.

3.2 SITE-SPECIFIC PHYSIOGRAPHY.

3.2.1 Building 460 and Building 1587. Elevations at Buildings 460 and 1587 range from 5 to 10 feet above msl. Most of the area surrounding Building 1587 is slightly sloped to the east and covered by buildings and pavement. Surface drainage at the site is to the east toward the storm drains located in the parking lot. Most of the area surrounding Building 460 is relatively flat with surface drainage to the north-northwest. The site is covered by pavement and grass. The direction of groundwater flow has not been determined at either site, but is probably north, toward the St. Johns River.

3.3 REGIONAL HYDROGEOLOGY. The distribution of sediment in northeastern Florida is controlled by the Peninsular Arch and the Southeast Georgia Embayment. More than 1,500 feet of Eocene Age and younger sediments were deposited in the region.

The underlying unconsolidated geologic sequence consists of flat-lying deposits of sand, silt, and clay overlying a thick sequence of marine carbonates. The three discernible underlying geologic units in the region are: (1) the surficial deposits, which form a unit approximately 40 to 100 feet thick and are of Late Miocene to Recent Age; (2) the Hawthorn Group, which is approximately 300 feet thick and of middle Miocene Age; and (3) the marine carbonate sequences of the Floridan aquifer system, which are of Eocene Age and comprise a unit greater than 1,000-feet thick.

The Ocala Group is composed of Eocene Age limestone formations, which are the principal consolidated formations near NAVSTA Mayport. The Eocene Age limestone formations in Duval County slope northeastward and form an irregular trough or

basin, which extends from south-central Duval County northeastward into northeastern Nassau County.

3.3.1 Shallow Aquifer The shallow aquifer consists of surficial sediment deposits of upper Miocene Age and younger. Surficial deposits can be divided into undifferentiated sediments of Pleistocene and Recent Age and sediments of upper Miocene and Pliocene Age. These sediments were deposited in lagoon and estuarine environments. The Pleistocene and Recent Age sediments extend from the surface to about 40 feet below land surface (bls). These highly variable sediments include quartz sand, shelly sand, coquina, silt, clay, and shell beds. Iron oxide-cemented (rusty red color hardpan), fine-grained, sand sediment is common in the upper part of the surficial deposits. Upper Miocene and Pliocene sediment consists of interbedded silty clay and clayey sand, sand, shell, and soft friable limestone prevalent at the base of these deposits. The contact between the upper Miocene and Pliocene deposits and the underlying Hawthorn Group is an unconformity identified by a coarse phosphatic sand and gravel bed (Leve, 1968). When coarse-grained phosphatic sand and gravel are not present, the contact is phosphatic sandy clay or clayey sand, dolostone, or a magnesium-rich clay.

The shallow aquifer beneath central and eastern Duval County is composed of a series of permeable zones separated by confining or semiconfining beds. The groundwater flow direction in the water table zone tends to reflect the surface topography of the area. Groundwater in this zone generally flows from higher to lower topographic areas or discharge areas (e.g., springs or streams that intersect the water table). Throughout much of NAVSTA Mayport, groundwater flows to the east, toward the Atlantic Ocean; however, groundwater flow in the vicinity of the sites is probably north, toward the St. Johns River.

The shallow aquifer is recharged by local precipitation. The average annual precipitation in Duval County is 52 to 54 inches. Water level hydrography indicates that 10 to 16 inches of rainfall recharge the shallow aquifer annually (Fairchild, 1972). Recharge was estimated by Hendry using a porosity of 20 percent. Discharge of the shallow aquifer occurs by evapotranspiration, seepage into surface water bodies, downward leakage into the underlying Hawthorn Group (intermediate artesian aquifer), and well pumpage.

3.3.2 Intermediate Artesian Aquifer The Hawthorn Group lies unconformably above the Crystal River Formation within the Ocala Group. Lithologically, the Hawthorn Group is quite variable and consists of calcareous, phosphatic sandy clay, and clayey sand interbedded with thin discontinuous lenses of phosphatic sand, phosphatic sandy limestone, limestone, and dolostone. The limestone and dolostone lenses are thicker and more prevalent near the base of the Hawthorn.

Phosphate is present throughout Hawthorn Group sediments, comprising one of the primary lithologic constituents. The most common carbonate components of the Hawthorn Group are dolomite and dolosilt. Clay minerals associated with the Hawthorn Group sediments are smectite, illite, palygorskite, and kaolinite.

The Hawthorn Group serves as a confining layer that separates the shallow aquifer from the underlying Floridan aquifer system; however, in Duval County, permeable sand and limestone layers within the Hawthorn's confining clay layers form the secondary or intermediate artesian aquifer. Water elevations indicate that groundwater flow in the intermediate artesian aquifer in the NAVSTA Mayport area is to the east (Fairchild, 1972).

3.3.3 Floridan Aquifer System The marine carbonate sequences that make up the Floridan aquifer system beneath NAVSTA Mayport consist of the following formations in descending order:

- the Ocala Group, which consists of the Crystal River Formation, the Williston Formation, and the Inglis Formation;
- the Avon Park Limestone;
- the Lake City Limestone; and
- the Oldsmar Limestone.

These formations range in age from the Late Eocene Crystal River Formation to the Early Eocene Oldsmar Limestone.

The Crystal River Formation is a white to cream, chalky, massive fossiliferous limestone. The Williston Formation, which lies conformably between the overlying Crystal River Formation and the underlying Inglis Formation, is a tan to buff granular limestone. The Inglis Formation, of late Eocene Age, is a tan to buff calcitic limestone very similar in appearance and composition to the Williston Formation (Leve, 1968).

The Avon Park Limestone, of middle Eocene Age, unconformably underlies the Ocala Group. It consists of alternating beds of tan, hard, massive dolomite, and brown to cream, granular, calcitic limestone. The Lake City Limestone unconformably underlies the Avon Park Limestone and is also Eocene in age. Lithologically, it consists of alternating beds of white to brown, chalky to granular limestone with lignite bands, and gray to tan dolomite. Below the Lake City Limestone is the Oldsmar Limestone of early Eocene Age. It consists of a cream to brown, soft, granular limestone and cherty, glauconitic, massive to finely crystalline dolomite (Leve, 1968).

The Floridan aquifer system is the principal source of freshwater in northeast Florida. Recharge to the Floridan aquifer system is predominantly by direct rainfall along the Ocala Uplift where the limestone of the aquifer outcrops at land surface. In northeast Florida, there is an area of recharge that encompasses western Clay and Putnam Counties and eastern Bradford and Alachua Counties. Permeable sand and gravel facies of the Hawthorn Group outcrop in this area, which appears to be hydraulically connected to the Floridan aquifer system. The top of the Floridan aquifer system in the vicinity of NAVSTA Mayport occurs at a depth of approximately 300 feet bls (Causey and Phelps, 1978). Groundwater flow in the Floridan aquifer system in eastern Duval County is to the east and northeast (Leve, 1968).

3.4 SITE-SPECIFIC HYDROGEOLOGY.

3.4.1 Building 460 and Building 1587 The Holocene to Pliocene undifferentiated deposits that contain the surficial aquifer are of variable thicknesses in Duval County. These sediments will not be totally penetrated during the CA. The sediments consist of unconsolidated sand, shell, and clay (Causey and Phelps, 1978). The principal water-bearing zone is a shell bed 35 to 55 feet bls (Franks, 1980). The unconfined surficial aquifer at NAVSTA Mayport is not used as a water

supply source. Water in the aquifer is high in dissolved solids and would not likely be used as a future source of potable water supply. No split-spoon soil sampling, monitoring well installation, or subsurface investigation has been performed at Building 460 or Building 1587. Therefore, no site-specific hydrogeology is available at the present time for these sites.

A CA, however, was performed by ABB-ES at Building 1586 in June 1994. Building 1586 is located directly south of Building 1587. During the CA at Building 1586, the water table was encountered at approximately 5 to 6 feet bls and the groundwater flow direction was north. Sediments encountered during the CA at Building 1586 include sand, silty sand, and gravel. Site conditions at Building 1587 are assumed to be similar to those encountered at Building 1586.

4.0 POTABLE WELL SURVEY

ABB-ES conducted a potable well survey at NAVSTA Mayport to assess the risk of contamination to potable water sources from petroleum constituents present in the soil and groundwater at the site. NAVSTA Mayport currently uses five onsite wells for potable and irrigation water. These wells are numbered N-1 through N-4 (potable water) and D-236 (irrigation water). Table 4-1 lists the construction and operation information for each of these wells.

Well N-3 is the closest potable water well to Building 460 and is located approximately ¼-mile west of the site (Figure 4-1). The well has a total depth of 1,000 feet bls and an open hole interval in the Floridan aquifer. The well is separated from the shallow sediment and the surficial aquifer by the sediment of the Hawthorn Group. The Hawthorn Group sediment, which acts as a confining unit, is approximately 300 feet thick at the facility. There are no potable wells within a ¼-mile radius of Building 1587.

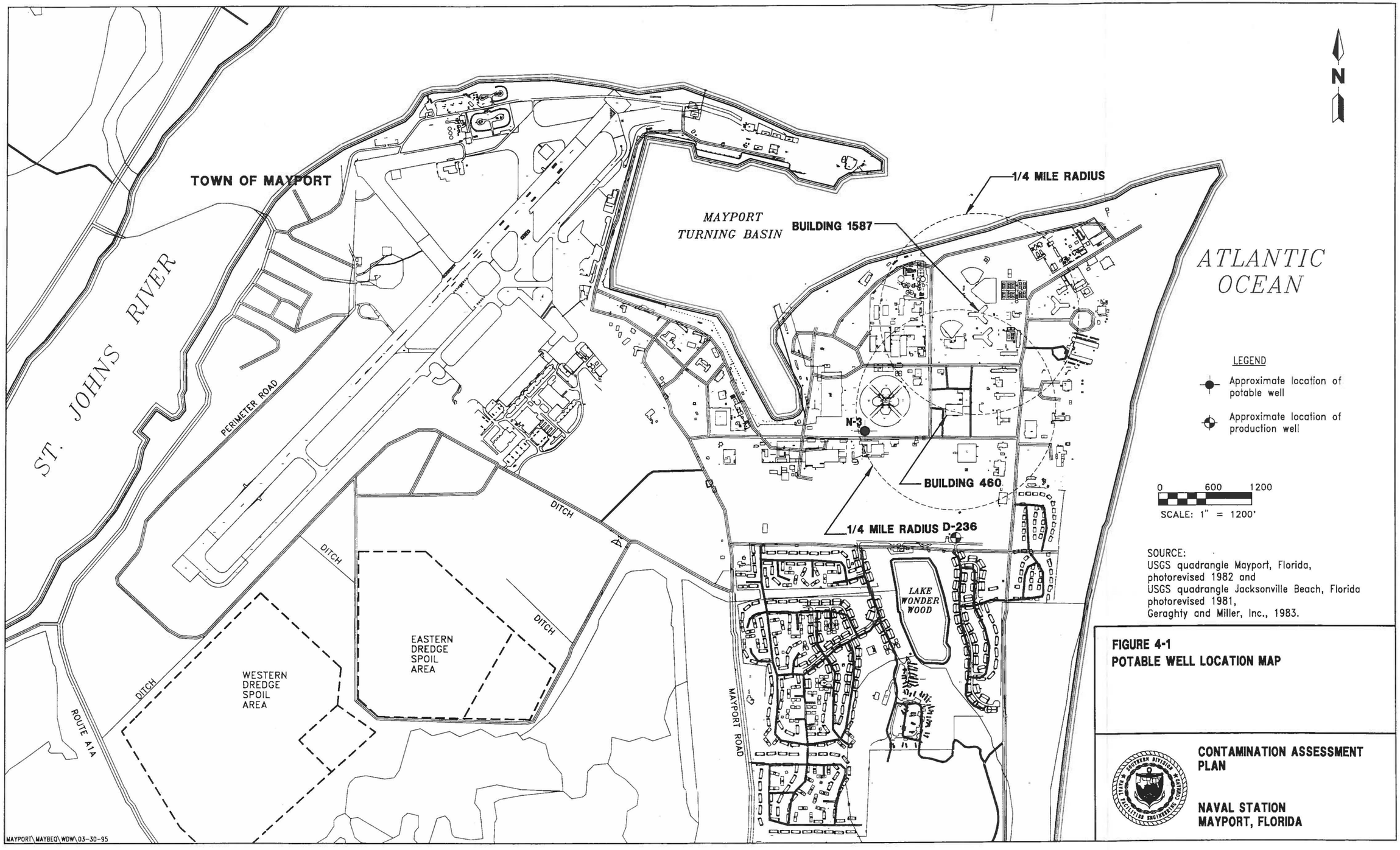
Table 4-1
Potable Well Data

Contamination Assessment Plan
Building 460 and Building 1587
U.S. Naval Station Mayport, Florida

Well Designation	Owner	Date Installed	Casing Diameter (inches)	Surface Elevation (ft msl)	Total Depth (ft bls)	Interval Open to Formation (ft bls)	Status
N-1	U.S. Navy	1961	12	10	1,001	435 to 1,001	In use
N-2	U.S. Navy	1958	12	10	1,000	435 to 1,000	In use
N-3	U.S. Navy	1979	16	10	1,000	433 to 1,000	In use
N-4	U.S. Navy	1979	16	10	1,000	419 to 1,000	In use
D-466	U.S. Navy	?	?	12	?	?	Plugged
D-236	U.S. Navy	1962	6	9	814	440 to 814	Irrigation
D-465	Jacksonville	?	?	10	700	?	Plugged
N-6	U.S. Navy	?	6	<10	?	?	Plugged
N-7	U.S. Navy	?	2		?	?	Plugged
N-8	U.S. Navy	?	4		?	?	Unknown
N-9	U.S. Navy	?	6		?	?	Plugged
N-10	U.S. Navy	?	4		?	?	Plugged
N-11	U.S. Navy	?	3		?	?	Plugged
N-12	U.S. Navy	?	3		?	?	Plugged
N-13	U.S. Navy	?	6		?	?	Plugged
N-14	U.S. Navy	?	?		?	?	Plugged
N-15	U.S. Navy	?	?		?	?	Plugged
N-16	U.S. Navy	?	?		?	?	Abandoned
N-17	U.S. Navy	?	?		?	?	Plugged
D-464	Jacksonville	1973	6	10	1,219	430 to 1,219	In use
J-2669	Private Duval County	?	3	<10	500	399 to 500	Unknown
DS-256	Duval County	1976	2	9	63	51 to 63	Monitor well
DS-263	Duval County	1976	2	9	14	10 to 14	Monitor well
DS-119	?	?	2	10	98	?	Not used
DS-119A	?	?	2	8	162	?	Unknown

Source: Geraghty & Miller, 1983.

Notes: ft msl = feet above mean sea level.
ft bls = feet below land surface.
? = unknown.



MAYPORT\MAYBEQ\WDW\03-30-95

FIGURE 4-1
POTABLE WELL LOCATION MAP

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION
MAYPORT, FLORIDA

All work performed and methodologies and equipment used during the course of this CA are in accordance with the ABB-ES, Florida Department of Environmental Protection (FDEP) approved Comprehensive Quality Assurance Plan (CompQAP) and applicable ABB-ES Standard Operating Procedures (SOPs) approved by the Board of Technical Directors. Applicable SOPs will be available onsite throughout the duration of this CA.

5.1 BUILDING 460 FIELD INVESTIGATION.

Prior to the beginning of the field investigation, a start-up meeting will be held onsite. All personnel associated with the investigation will review the scope of work in the CAP and Health and Safety Plan (HASP). Scheduling, logistics, and special precautions will be discussed.

The purpose of the CA field investigation is to assess the vertical and horizontal extent of soil and groundwater contamination and identify the types of contaminants at the site. The CA will require the drilling of soil borings and installation of monitoring wells at the site.

Soil Borings. To evaluate the extent of soil contamination at Building 460, approximately 20 soil borings will be advanced to the water table (approximately 6 feet bls). The proposed soil boring locations are shown in Figure 5-1. The soil borings will be advanced using a drilling rig equipped with 2¼-inch hollow stem augers and split-spoon samplers where conditions permit, using a hand auger, or using the Terraprobe℠ system. Soil samples will be collected at 2-foot vertical intervals until the water table is reached. The soil samples will be analyzed in the field for petroleum hydrocarbons using an organic vapor analyzer (OVA) in accordance with Chapter 62-770, FAC. In addition to the OVA analysis, soil samples collected at the water table will be screened using a field gas chromatograph (GC) for benzene, toluene, ethylbenzene, and total xylenes (BTEX) constituents. The screening of soil samples from these borings will assist in evaluating the horizontal and vertical extent of soil contamination. If excessively contaminated soil is detected, sampling will continue as recommended in FDEP's *Guidelines for Assessment and Remediation of Petroleum Contaminated Soil* (May 1994). Actual locations of the soil borings will be determined by the field team as more information is obtained about the soil contaminant plume.

Monitoring Well Construction. Seven shallow (15 feet bls) water-table monitoring wells and one deep (35 feet bls) vertical-extent monitoring well will be installed as part of the investigation to further assess the horizontal and vertical extent of petroleum-related groundwater contamination. The proposed monitoring well locations are shown in Figure 5-2. The shallow monitoring wells will be constructed of 2-inch inside diameter (ID), Schedule 40, flush-threaded, polyvinyl chloride (PVC) screen and casing. Screen length will be 10 feet with a slotted screen opening of 0.010 inch. At least 2 feet of screen will be placed above the water table to accommodate seasonal and tidal fluctuations of the water table. The screen will be surrounded with a 20/30 quartz sand filter pack to a minimum of 1.0 foot above the top of the screen as determined by the depth to water in each well. A minimum of 0.5-foot bentonite seal will be placed above the filter pack. The remaining annulus will be grouted to land surface with neat cement.

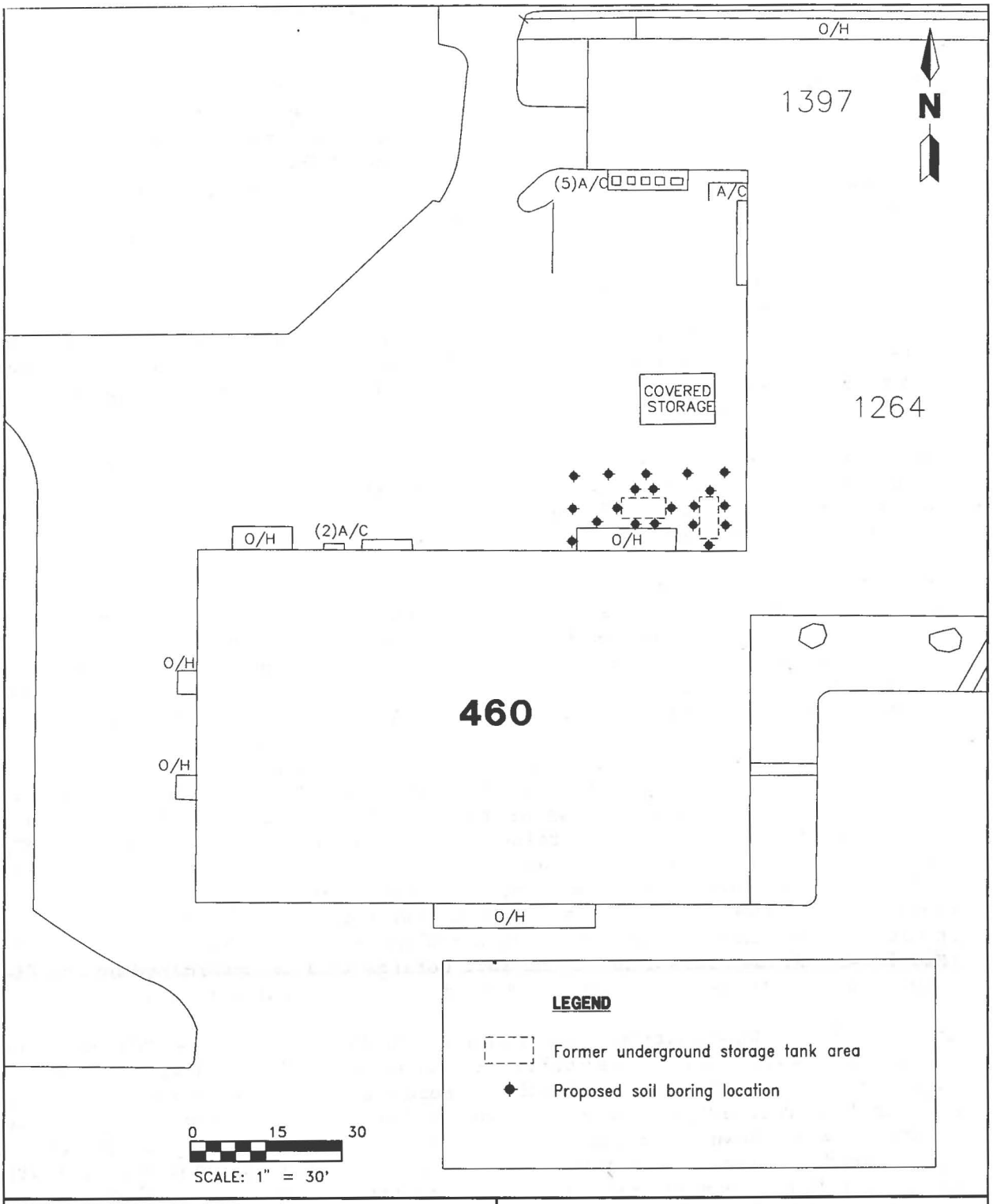


FIGURE 5-1
PROPOSED SOIL BORING LOCATION MAP, BUILDING 460

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION
MAYPORT, FLORIDA

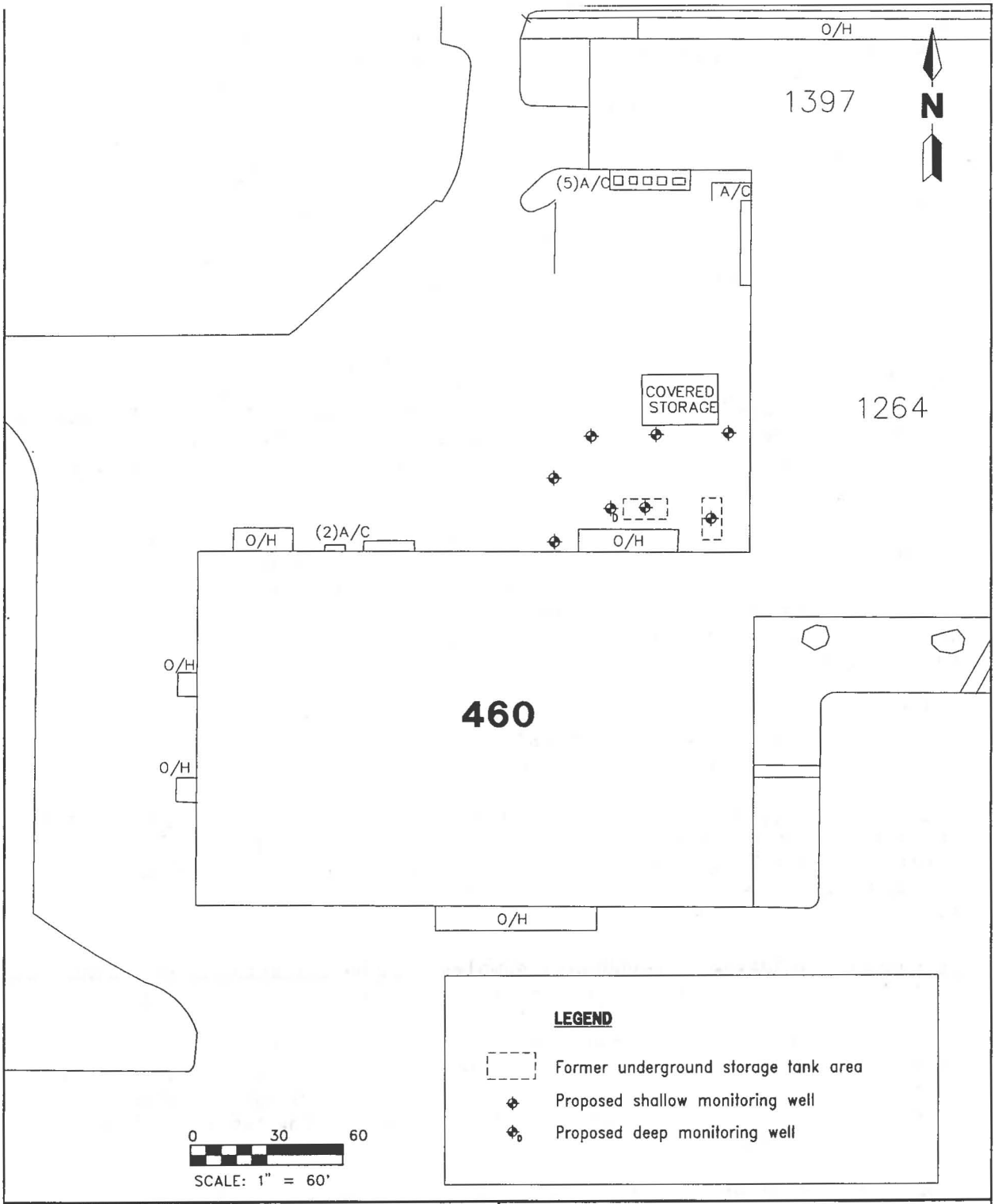


FIGURE 5-2
PROPOSED MONITORING WELL LOCATION MAP, BUILDING 460

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION MAYPORT, FLORIDA

A deep monitoring well will be installed at the site to assess the vertical extent of the groundwater contaminant plume. The deep monitoring well will be constructed of 2-inch ID, Schedule 40, flush-threaded, PVC screen and casing. Screen length will be 5 feet with a slotted screen opening of 0.010 inch. The monitoring well will be placed within a 6-inch PVC surface casing, installed to prevent vertical migration of contaminants. The depth of the surface casing (approximately 25 feet bls) will be determined by the vertical extent of contaminants being measured on the OVA. The screen will be surrounded with a 20/30 quartz sand filter pack to at least 2 feet above the top of the screen. A 2-foot, fine-grained sand (30/65 grade) seal will be placed immediately above the filter pack. The remaining annulus will be grouted to land surface with neat cement. The annular space surrounding the surface casing will also be grouted to land surface with neat cement.

A locking, watertight cap will be installed on each well. All monitoring wells will be finished below grade in a subsurface traffic-bearing vault and protected with a metal manhole assembly. Upon completion, all newly installed monitoring wells will be developed by pumping until the purged water is clear and relatively free of sediment to provide a good hydraulic connection with the surrounding aquifer.

Diagrams of typical shallow and deep monitoring well construction are illustrated in Figures 5-3 and 5-4, respectively. Detailed information of monitoring well construction, lithologic descriptions, split-spoon samples, and other pertinent data will be graphically displayed in boring logs in the Contamination Assessment Report (CAR). Soil will be classified in accordance with the Unified Soil Classification System (USCS).

All drilling fluids, sediment, and well development fluids from contaminated areas will be drummed, removed from the site, and properly disposed. The onsite Field Operations Leader (FOL) will determine proper disposal criteria.

Water Level Measurements. After installation of the monitoring wells and concurrent with the groundwater sampling event, water level measurements will be obtained from all existing site monitoring wells. Water level measurements will be used to establish the direction of groundwater flow and provide data on fluctuations in the water table.

Groundwater Sampling. Groundwater samples will be collected from all monitoring wells at the site that do not contain free product and analyzed for kerosene analytical group parameters as defined in Chapter 62-770, FAC. Appropriate quality assurance and quality control (QA/QC) samples, including a decontamination water source blank, will also be collected and analyzed. Groundwater samples will be collected with Teflon™ bailers and shipped via overnight carrier to a USEPA-approved analytical laboratory. The analytical sampling program will comply with the ABB-ES' CompQAP.

Slug Tests. Aquifer tests will be conducted to estimate the hydraulic properties of the water-table aquifer. Rising-head slug tests will be performed on a minimum of two monitoring wells at the site to collect data for calculating hydraulic conductivity. Hydraulic conductivity will be calculated using the computer program AQTESOLV™ (Geraghty & Miller, Inc. 1989). The AQTESOLV™ program calculates hydraulic conductivity from slug test data following the methods of

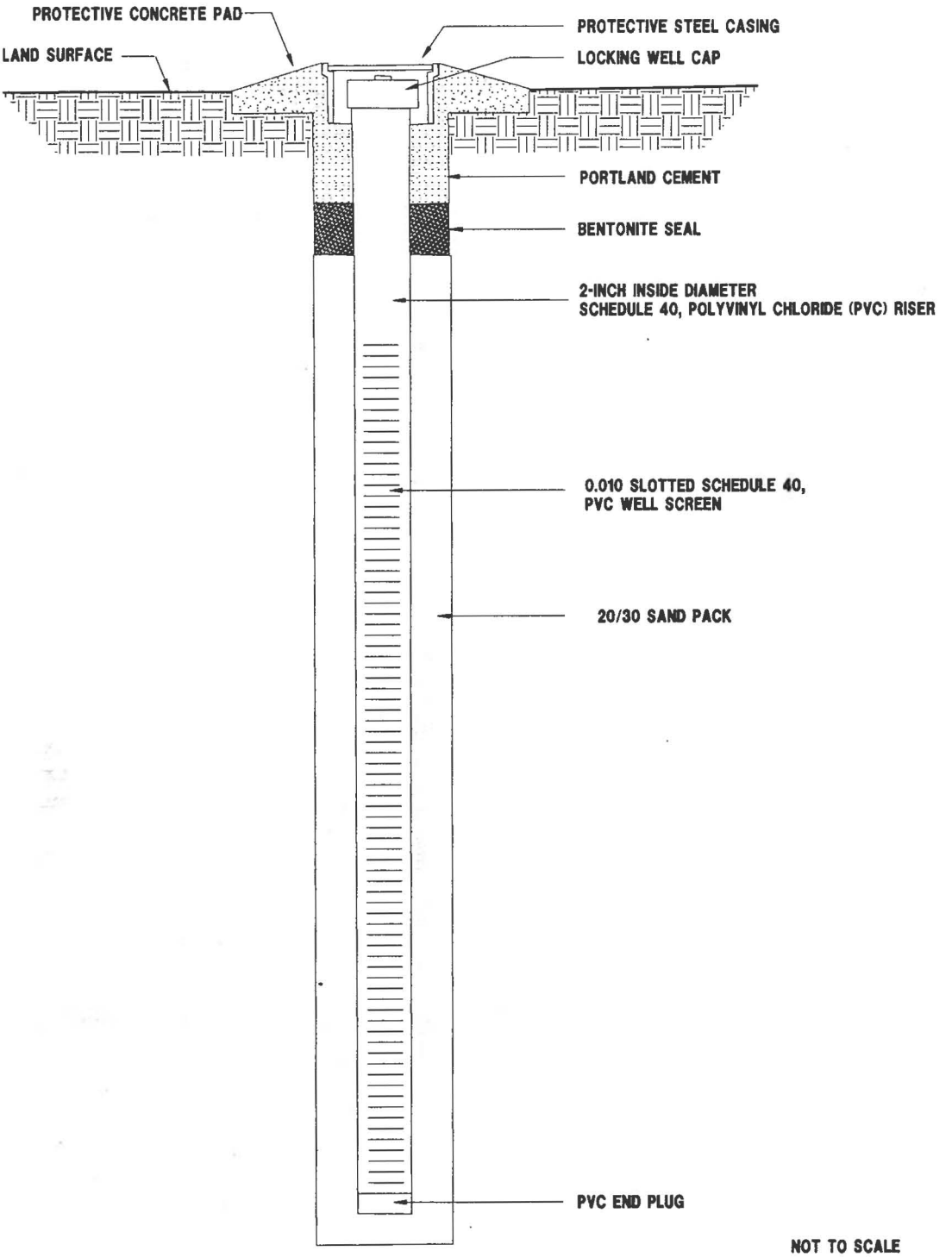


FIGURE 5-3
TYPICAL SHALLOW MONITORING WELL INSTALLATION DETAIL

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION
MAYPORT, FLORIDA

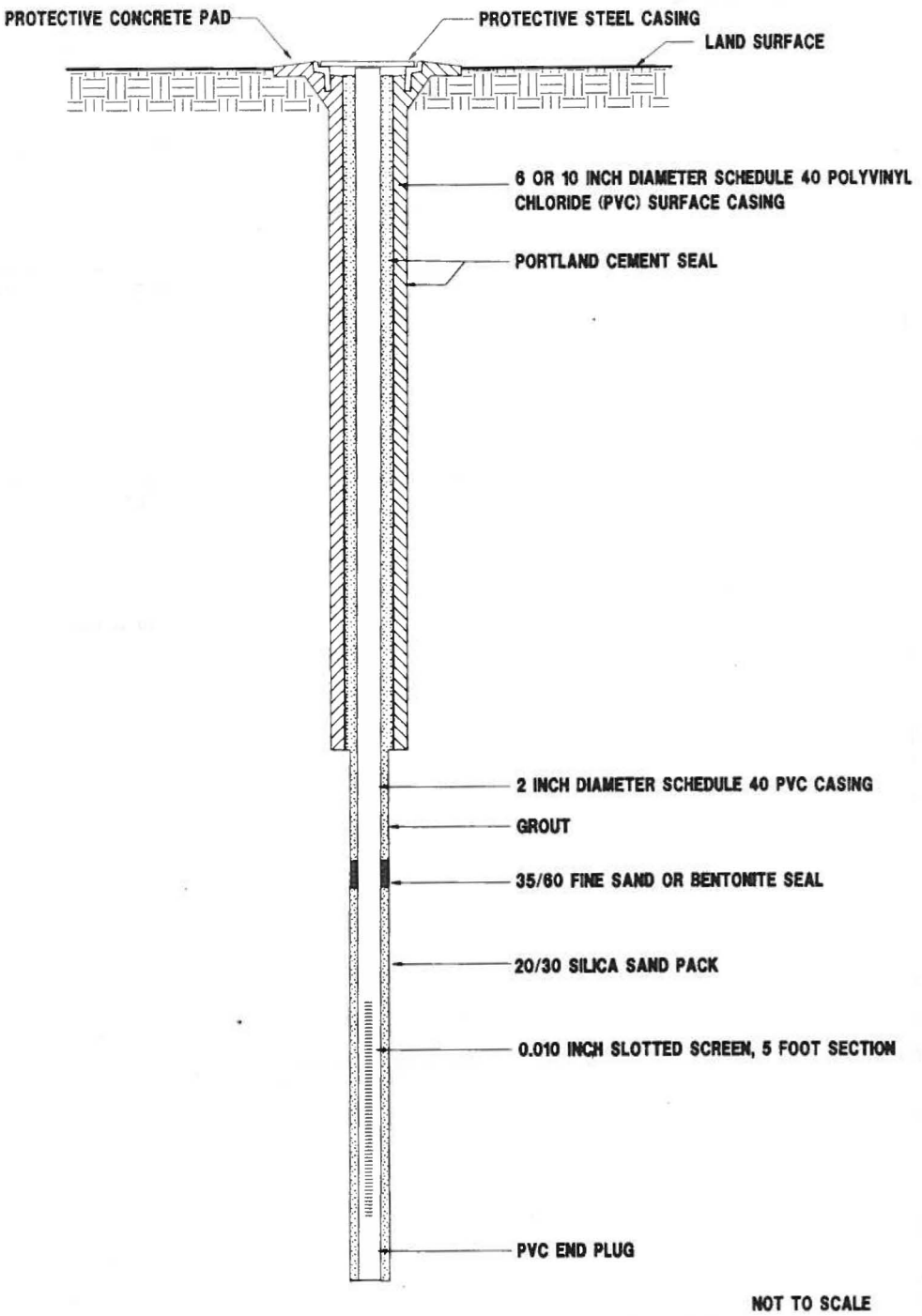


FIGURE 5-4
TYPICAL DEEP MONITORING WELL INSTALLATION DETAIL

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION

Bouwer and Rice (1976) for partially penetrating wells screened in unconfined aquifers.

Surveying. A Florida-licensed professional surveyor will be contracted to conduct a ground survey of the horizontal and vertical coordinates for each of the monitoring wells. This information will be incorporated into either the U.S. Coastal and Geodetic Survey 1927 North American Datum (USCGS NAD '27) or base coordinate grid system as appropriate.

Remedial Action Plan (RAP) Samples. One groundwater sample will be collected to facilitate the remedial design. The groundwater sample will be collected from an area within the contaminant plume which is representative of an average level of contamination. If site conditions or contaminants vary significantly, additional samples will be collected. The remedial design groundwater sample will be analyzed for iron (USEPA Method 236.1), manganese (USEPA Method 243.1), alkalinity (USEPA Method 310.1), chloride as Cl (USEPA Method 325.1), sulfate as SO_4 (USEPA Method 375.4), total sulfide (USEPA Method 376.1), oil and grease (USEPA Method 413.1), total organic carbon (USEPA Method 415.1), total solids (USEPA Method 160.3), total suspended solids (USEPA Method 160.2), total dissolved solids (USEPA Method 160.1), hardness (USEPA Method 130.2), color (USEPA Method 110.2), dissolved oxygen (USEPA Method 360.1), total Kjeldahl nitrogen (USEPA Method 351.3), ammonia-nitrogen (USEPA Method 350.2), nitrate/nitrite (USEPA Method 353.2), total phosphorous (USEPA Method 365.1), biological oxygen demand (USEPA Method 405.1), chemical oxygen demand (USEPA Method 410.1/410.2), total bacteria and specific petroleum degraders (USEPA Method 907B, Modified), and fingerprint (USEPA Method 8100).

Unsaturated soil and saturated soil samples will also be collected to facilitate the remedial design. The remedial design unsaturated soil samples will be analyzed for total Kjeldahl nitrogen (USEPA Method 351.3), ammonia-nitrogen (USEPA Method 350.2), nitrate/nitrite (USEPA Method 353.2), total phosphorus (USEPA Method 365.1), total organic carbon (USEPA Method 415.2), total petroleum hydrocarbon (USEPA Method 418.1), total bacteria (USEPA Method 907B Modified), specific petroleum degraders (USEPA Method 907B Modified), fingerprint (USEPA Method 3550/8100 Modified), and fraction of organic carbon. These analyses will be done on a representative sample from the vadose zone within the contaminated area. Remedial design saturated soil samples will undergo a sieve analysis (American Society for Testing and Materials [ASTM] Methods 421 and 422) to determine grain size distribution and uniformity coefficient, and analysis for fraction of organic carbon. If it is expected that TRPH concentrations in groundwater will exceed the regulatory criteria, a total petroleum hydrocarbon (USEPA Method 418.1) analysis of a saturated soil sample will also be performed by the contract laboratory.

5.2 BUILDING 1587 FIELD INVESTIGATION.

Prior to the beginning of the field investigation, a start-up meeting will be held onsite. All personnel associated with the investigation will review the scope of work in the CAP and HASP. Scheduling, logistics, and special precautions will be discussed.

The purpose of the CA field investigation is to assess the vertical and horizontal extent of soil and groundwater contamination and identify the types of

contaminants at the site. The GA will require the drilling of soil borings and installation of monitoring wells at the site.

Soil Borings. To evaluate the extent of soil contamination at Building 1587, approximately 30 soil borings will be advanced to the water table (approximately 6 feet bls). The proposed soil boring locations are shown in Figure 5-5. The soil borings will be advanced using a drilling rig equipped with 2¼-inch hollow stem augers and split-spoon samplers where conditions permit, using a hand auger, or using the Terraprobe∓ system. Soil samples will be collected at 2-foot vertical intervals until the water table is reached. The soil samples will be analyzed in the field for petroleum hydrocarbons using an OVA in accordance with Chapter 62-770, FAC. In addition to the OVA analysis, soil samples collected at the water table will be screened using a field GC for BTEX constituents. The screening of soil samples from these borings will assist in evaluating the horizontal and vertical extent of soil contamination. If excessively contaminated soil is detected, sampling will continue as recommended in FDEP's *Guidelines for Assessment and Remediation of Petroleum-Contaminated Soil* (May 1994). Actual locations of the soil borings will be determined by the field team as more information is obtained about the soil contaminant plume.

Monitoring Well Construction. Eleven shallow (15 feet bls) water-table monitoring wells and one deep (35 feet bls) vertical-extent monitoring well will be installed as part of the investigation to further assess the horizontal and vertical extent of petroleum related groundwater contamination. The proposed monitoring well locations are shown in Figure 5-6. The shallow monitoring wells will be constructed of 2-inch ID, Schedule 40, flush-threaded, PVC screen and casing. Screen length will be 10 feet with a slotted screen opening of 0.010-inch. At least 2 feet of screen will be placed above the water table to accommodate seasonal and tidal fluctuations of the water table. The screen will be surrounded with a 20/30 quartz sand filter pack to a minimum of 1.0 foot above the top of the screen as determined by the depth to water in each well. A minimum of 0.5-foot bentonite seal will be placed above the filter pack. The remaining annulus will be grouted to land surface with neat cement.

A deep monitoring well will be installed at the site to assess the vertical extent of the groundwater contaminant plume. The deep monitoring well will be constructed of 2-inch ID, Schedule 40, flush-threaded, PVC screen and casing. Screen length will be 5 feet with a slotted screen opening of 0.010 inch. The monitoring well will be placed within a 6-inch PVC surface casing, installed to prevent vertical migration of contaminants. The depth of the surface casing (approximately 25 feet bls) will be determined by the vertical extent of contaminants being measured on the OVA. The screen will be surrounded with a 20/30 quartz sand filter pack to at least 2 feet above the top of the screen. A 2-foot, fine-grained sand (30/65 grade) seal will be placed immediately above the filter pack. The remaining annulus will be grouted to land surface with neat cement. The annular space surrounding the surface casing will also be grouted to land surface with neat cement.

A locking, watertight cap will be installed on each well. All monitoring wells will be finished below grade in a subsurface traffic-bearing vault and protected with a metal manhole assembly. Upon completion, all newly installed monitoring wells will be developed by pumping until the purged water is clear and relatively free of sediment to provide a good hydraulic connection with the surrounding aquifer.

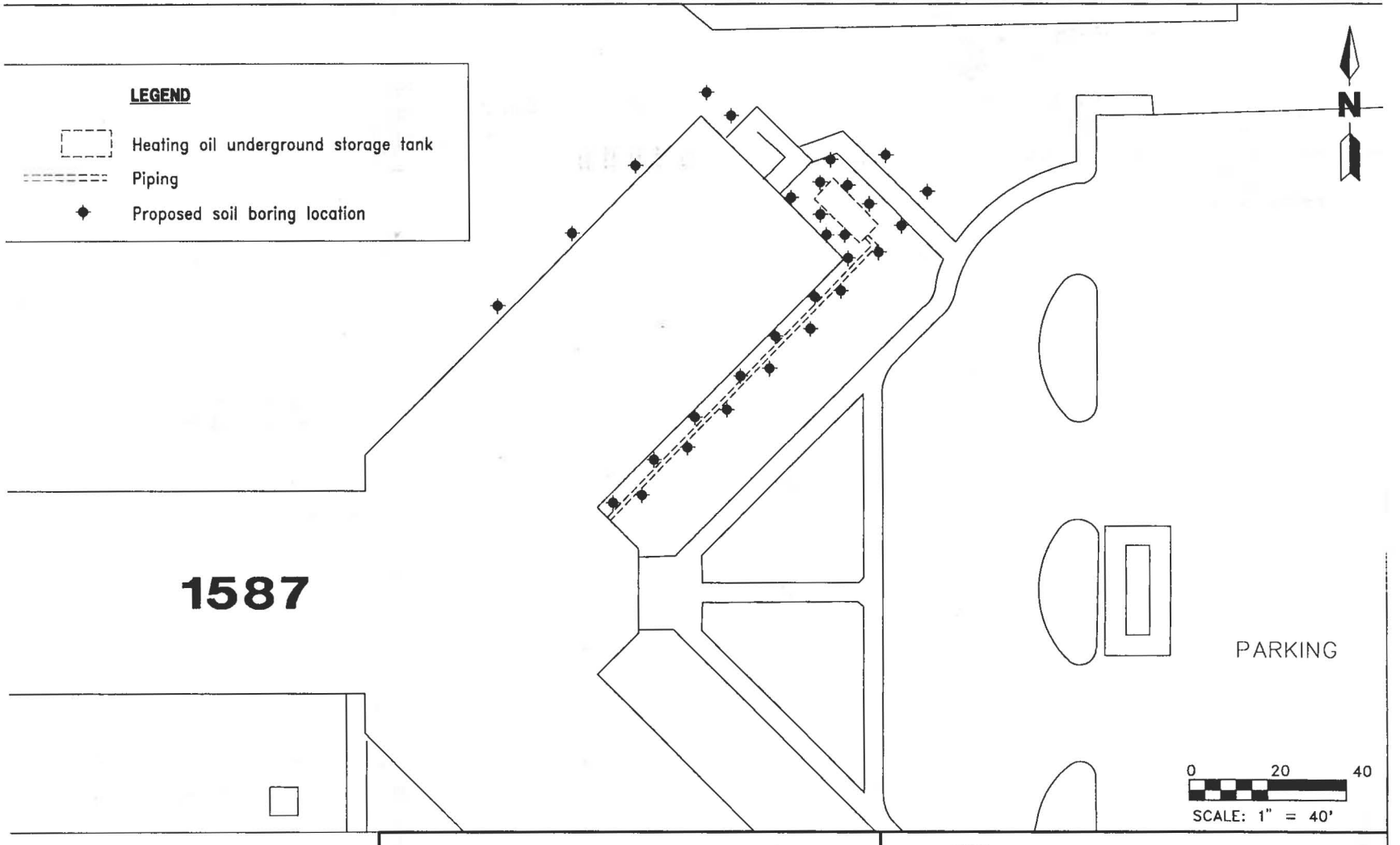


FIGURE 5-5
PROPOSED SOIL BORING LOCATION MAP, BUILDING 1587

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION MAYPORT, FLORIDA

MAYPORT\BEQCAP\WDW\04-17-95

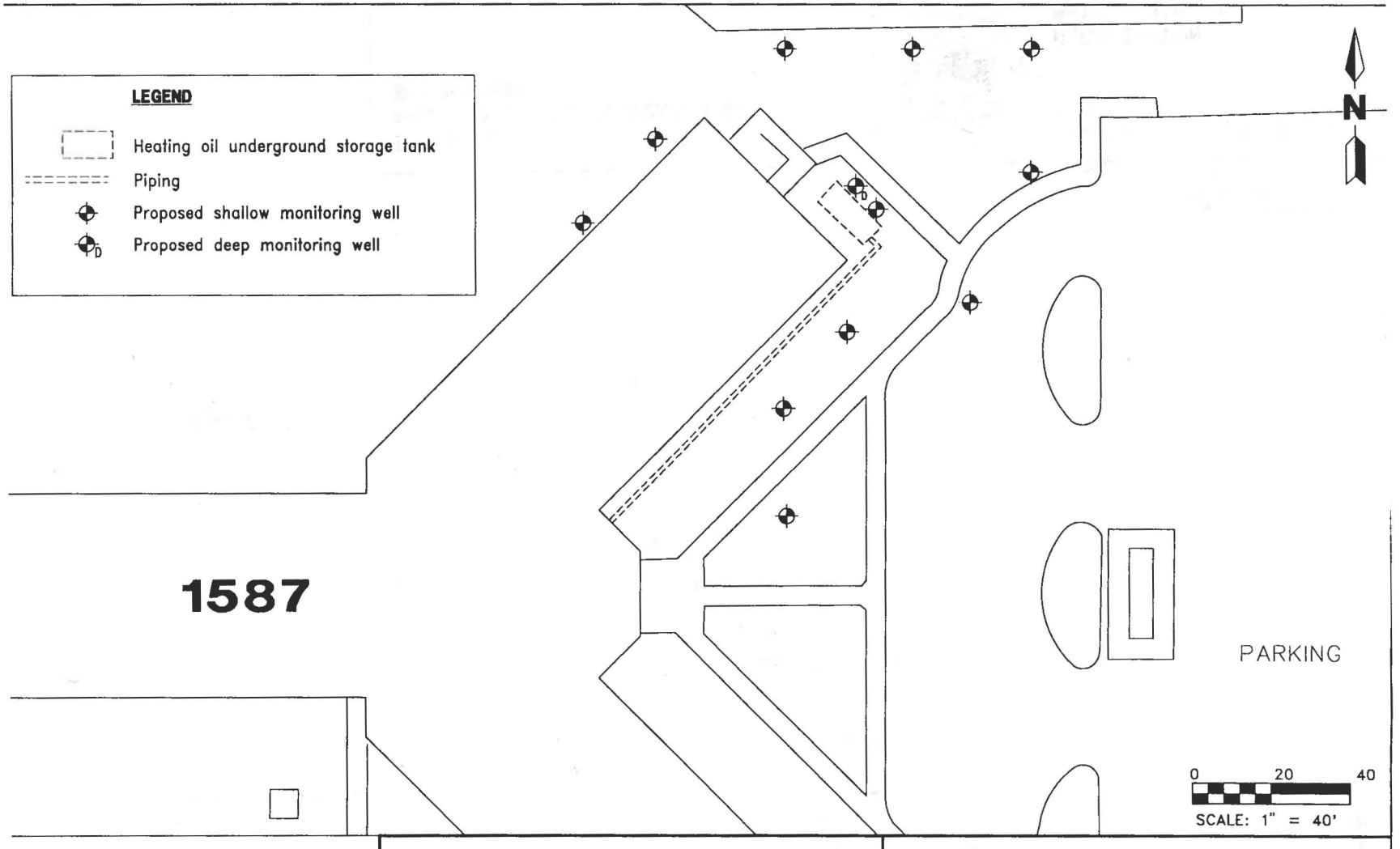


FIGURE 5-6
PROPOSED MONITORING WELL LOCATION MAP, BUILDING 1587

CONTAMINATION ASSESSMENT PLAN

NAVAL STATION MAYPORT, FLORIDA

MAYPORT\BEQCAP\WDW\04-13-95

Diagrams of typical shallow and deep monitoring well construction are illustrated in Figures 5-3 and 5-4, respectively. Detailed information of monitoring well construction, lithologic descriptions, split-spoon samples, and other pertinent data will be graphically displayed in boring logs in the CAR. Soil will be classified in accordance with the USCS.

All drilling fluids, sediment, and well development fluids from contaminated areas will be drummed, removed from the site, and properly disposed of. The onsite FOL will determine proper disposal criteria.

Water Level Measurements. After installation of the monitoring wells and concurrent with the groundwater sampling event, water level measurements will be obtained from all existing site monitoring wells. Water level measurements will be used to establish the direction of groundwater flow and provide data on fluctuations in the water table.

Groundwater Sampling. Groundwater samples will be collected from all monitoring wells at the site that do not contain free product and analyzed for kerosene analytical group parameters as defined in Chapter 62-770, FAC. Appropriate QA/QC samples, including a decontamination water source blank, will also be collected and analyzed. Groundwater samples will be collected with Teflon™ bailers and shipped via overnight carrier to an USEPA-approved analytical laboratory. The analytical sampling program will comply with the ABB-ES' CompQAP.

Slug Tests. Aquifer tests will be conducted to estimate the hydraulic properties of the water-table aquifer. Rising-head slug tests will be performed on a minimum of two monitoring wells at the site to collect data for calculating hydraulic conductivity. Hydraulic conductivity will be calculated using the computer program AQTESOLV™ (Geraghty & Miller, Inc. 1989). The AQTESOLV™ program calculates hydraulic conductivity from slug test data following the methods of Bouwer and Rice (1976) for partially penetrating wells screened in unconfined aquifers.

Surveying. A Florida-licensed professional surveyor will be contracted to conduct a ground survey of the horizontal and vertical coordinates for each of the monitoring wells. This information will be incorporated into either the USCGS NAD '27 or base coordinate grid system as appropriate.

RAP Samples. One groundwater sample will be collected to facilitate the remedial design. The groundwater sample will be collected from an area within the contaminant plume that is representative of an average level of contamination. If site conditions or contaminants vary significantly, additional samples will be collected. The remedial design groundwater sample will be analyzed for iron (USEPA Method 236.1), manganese (USEPA Method 243.1), alkalinity (USEPA Method 310.1), chloride as Cl (USEPA Method 325.1), sulfate as SO_4 (USEPA Method 375.4), total sulfide (USEPA Method 376.1), oil and grease (USEPA Method 413.1), total organic carbon (USEPA Method 415.1), total solids (USEPA Method 160.3), total suspended solids (USEPA Method 160.2), total dissolved solids (USEPA Method 160.1), hardness (USEPA Method 130.2), color (USEPA Method 110.2), dissolved oxygen (USEPA Method 360.1), total Kjeldahl nitrogen (USEPA Method 351.3), ammonia-nitrogen (USEPA Method 350.2), nitrate/nitrite (USEPA Method 353.2), total phosphorous (USEPA Method 365.1), biological oxygen demand (USEPA Method 405.1), chemical oxygen demand (USEPA Method 410.1/410.2), total bacteria and specific

petroleum degraders (USEPA Method 907B, Modified), and fingerprint (USEPA Method 8100).

Unsaturated soil and saturated soil samples will also be collected to facilitate the remedial design. The remedial design unsaturated soil samples will be analyzed for total Kjeldahl nitrogen (USEPA Method 351.3), ammonia-nitrogen (USEPA Method 350.2), nitrate/nitrite (USEPA Method 353.2), total phosphorus (USEPA Method 365.1), total organic carbon (USEPA Method 415.2), total petroleum hydrocarbon (USEPA Method 418.1), total bacteria (USEPA Method 907B Modified), specific petroleum degraders (USEPA Method 907B Modified), fingerprint (USEPA Method 3550/8100 Modified), and fraction of organic carbon. These analyses will be done on a representative sample from the vadose zone within the contaminated area. Remedial design saturated soil samples will undergo a sieve analysis (ASTM Methods 421 and 422) to determine grain size distribution and uniformity coefficient, and analysis for fraction of organic carbon. If it is expected that TRPH concentrations in groundwater will exceed the regulatory criteria, a total petroleum hydrocarbon (USEPA Method 418.1) analysis of a saturated soil sample will also be performed by the contract laboratory.

8.0 CONTAMINATION ASSESSMENT REPORT PREPARATION

A CAR addressing petroleum contamination and data collection will be prepared and submitted to SOUTHNAVFACENGCOM, the Navy, and FDEP subsequent to the completion of the CA field investigation. Site location maps, locations of borings and monitoring wells, and contaminant isoconcentration maps will be included in the CAR. Recommendations will be made for additional investigations, if needed, along with recommendations to complete a RAP.

REFERENCES

ABB Environmental Services, Inc., 1994, Contamination Assessment Report, Building 1586, Mayport: prepared for Southern Division, Naval Facilities Engineering Command, Charleston, South Carolina, August 1994.

Causey, L.V. and Phelps, G.G., 1978, Availability and Quality of Water from Shallow Aquifers in Duval County, Florida: U.S. Geological Survey Water Resources Investigations 78-92, page 36.

Fairchild, R.W., 1972, The Shallow Aquifer System in Duval County, Florida: Florida Bureau of Geology Report of Investigations No. 59, page 50.

Franks, B.J., 1980, The Surficial Aquifer at the Naval Station near Mayport, Florida: U.S. Geological Survey Open File Report 80-765, page 50.

Geraghty & Miller, Inc., 1983, Hydrogeologic Assessment and Groundwater Monitoring Plan, U.S. Naval Station Mayport, Florida.

Geraghty & Miller, Inc., 1989, AQTESOLV, Aquifer Test Design and Analysis: Computer program version 1.00.

Leve, G.W., 1968, The Floridan Aquifer in Northeast Florida: Groundwater, Volume 6, No. 2, page 19-29.

White, W.A., 1970, The Geomorphology of the Florida Peninsula: Florida Bureau of Geology Bulletin No. 51, page 164.

APPENDIX A

SITE BACKGROUND INFORMATION AND DOCUMENTATION

5090.16
Ser N4E4/ 00075
14 MAR 1994

Water Quality Division
Regulatory & Environmental Services
City of Jacksonville, Suite 412
421 West Church Street
Jacksonville, FL 32202-4111

Subj: DISCHARGE REPORTING FORMS FOR TANKS 460 AND 1587, NAVAL STATION MAYPORT FDEP FACILITY 168626008

Gentlemen:

Two Discharge Reporting Forms are forwarded for recently discovered contamination at Naval Station Mayport (NAVSTA). The first site was discovered during excavation and removal of heating oil tank #460 at old NEX/Commissary, Building 460. The tank had several corroded holes in it and it is not known how much fuel has leaked out of the tank. NAVSTA is performing an Interim Remedial Action to remove approximately 230 square yards of contaminated soil in accordance with FAC 17-770.

The second site was discovered when a contractor, attempting to install cathodic protection on BEQ Building 1587 heating oil tank system, was excavating along the side of tank #1587 and pulled-up contaminated soil. Contract work was stopped and the tank has been taken out of service. Until we can investigate and determine the location and cause of the leak, we are listing these as removal and corrosion, respectively.

Your Mr. John Assidy was at NAVSTA for tank removals on Wednesday, March 16, 1994, and has seen site 460 after the tank removal.

These sites will be added to NAVSTA's Petroleum Contamination Agreement with the State of Florida and we will proceed with a Contamination Assessment and Remedial Action as required.

If you have any further questions on this subject, please contact Cheryl Mitchell, N4E4, at 904-270-6730.

Sincerely,

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 3

To MARK JUKE / JIM WILLIAMS	From JAN BOVIER N4E7
Co. ABB	Co. NS MAYPORT - SCE
Dept.	Phone # 270-6730
Fax # 904-656-3386	Fax # 270-6884

DOUGLAS P. TOMLINSON
Lieutenant Commander, CEC, U.S. Navy
Staff Civil Engineer
By direction of
the Commanding Officer

Encl:
(1) FDER Form 17-761.900(1), Tank 460

Discharge Reporting Form

Use this form to notify the Department of Environmental Regulation of:

1. Results of tank tightness testing that exceed allowable tolerances within ten days of receipt of test result.
2. Petroleum discharges exceeding 25 gallons on pervious surfaces as described in Section 17-761.460 F.A.C. within one working day of disco
3. Hazardous substance (CERCLA regulated), discharges exceeding applicable reportable quantities established in 17-761.460(2) F.A.C., w one working day of the discovery.
4. Within one working day of discovery of suspected releases confirmed by: (a) released regulated substances or pollutants discovere the surrounding area, (b) unusual and unexplained storage system operating conditions, (c) monitoring results from a leak detection met or from a tank closure assessment that indicate a release may have occurred, or (d) manual tank gauging results for tanks of 550 gall or less, exceeding ten gallons per weekly test or five gallons averaged over four consecutive weekly tests.

Mail to the DER District Office in your area listed on the reverse side of this form

PLEASE PRINT OR TYPE

Complete all applicable blanks

1. DER Facility ID Number: 168626008 2. Tank Number: 460 3. Date: 03/16/94
4. Facility Name: NAVAL STATION MAYPORT

   Facility Owner or Operator: DEPARTMENT OF NAVY

   Facility Address: NAVAL STATION MAYPORT

   Telephone Number: (904) 270-6730 County: DUVAL

   Mailing Address: NAVAL STATION MAYPORT, MAYPORT, FL 32228-0067
5. Date of receipt of test results or discovery: 03/16/94 month/day/y
6. Method of initial discovery. (circle one only)

   A. Liquid detector (automatic or manual)
   B. Vapor detector (automatic or manual)
   C. Tightness test (underground tanks only).
   D. Emptying and Inspection.
   E. Inventory control.
   F. Vapor or visible signs of a discharge in the vicin
   G. Closure: REMOVING TANKS (expla
   H. Other:
7. Estimated number of gallons discharged: UNKNOWN
8. What part of storage system has leaked? (circle all that apply) A. Dispenser B. Pipe C. Fitting (D. Tank) E. Unkno
9. Type of regulated substance discharged. (circle one)

   A. leaded gasoline
   B. unleaded gasoline
   C. gasohol
   D. vehicular diesel
   F. aviation gas
   G. jet fuel
   L. used/waste oil
   (M. diesel)
   O. new/lube oil
   V. hazardous substance includes pesticides, ammon chlorine and derivatives (write in name or Chemical Abstra Service CAS number)
   Z. other (write in name)
10. Cause of leak. (circle all that apply)

    A. Unknown
    B. Split
    C. Loose connection
    (D. Corrosion)
    E. Puncture
    F. Installation failure
    G. Spill
    H. Overfill
    I. Other (specify)
11. Type of financial responsibility. (circle one)

    A. Third party insurance provided by the state insurance contractor
    B. Self-insurance pursuant to Chapter 17-769.500 F.A.C.
    (C. Not applicable)
    D. None
12. **To the best of my knowledge and belief all information submitted on this form is true, accurate, and complete.**

Closure Assessment Form

Owners of storage tank systems that are replacing, removing or closing in place storage tanks shall use this form to demonstrate that a storage system closure assesment was performed in accordance with Rule 17-761 or 17-762, Florida Administrative Code. Eligible Early Detection Incentive (EDI) and Reimbursement Program sites do not have to perform a closure assessment.

Please Print or Type
Complete All Applicable Blanks

1. Date: 5-2-94
2. DER Facility ID Number: 168626008 3. County: DUVAL
4. Facility Name: NAVAL STATION MAYPORT
5. Facility Owner: DEPARTMENT OF NAVY
6. Facility Address: NAVAL STATION MAYPORT, MAYPORT, FL 32228-0067
7. Mailing Address: --SAME--
8. Telephone Number: (904) 270-6730 9. Facility Operator: U. S. GOVERNMENT
10. Are the Storage Tank(s): (Circle one or both) A. Aboveground or (B.) Underground
11. Type of Product(s) Stored: #460 - HEATING OIL, DIESEL & #6-460 - DIESEL FOR GENERATOR
12. Were the Tank(s): (Circle one) A. Replaced (B.) Removed C. Closed in Place D. Upgraded (aboveground tanks only)
13. Number of Tanks Closed: 2 TANKS: #460, #6-460 14. Age of Tanks: 24 YEARS

Facility Assessment Information

Yes	No	Not Applicable	
☐	☒		1. Is the facility participating in the Florida Petroleum Liability Insurance and Restoration Program (FPLIRP)?
☒	☐		2. Was a Discharge Reporting Form submitted to the Department? If yes, When: 24 MARCH 1994 Where: CITY OF JACKSONVILLE WATER QUALITY
☐	☒	☐	3. Is the depth to ground water less than 20 feet?
☒	☐	☒	4. Are monitoring wells present around the storage system? If yes, specify type: ☐ Water monitoring ☐ Vapor monitoring
☐	☐	☒	5. Is there free product present in the monitoring wells or within the excavation?
☒	☐	☐	6. Were the petroleum hydrocarbon vapor levels in the soils greater than 500 parts per million for gasoline? Specify sample type: ☐ Vapor Monitoring wells ☐ Soil sample(s)
☐	☐	☒	7. Were the petroleum hydrocarbon vapor levels in the soils greater than 50 parts per million for diesel/kerosene? Specify sample type: ☐ Vapor Monitoring wells ☒ Soil sample(s)
☐	☐	☒	8. Were the analytical laboratory results of the ground water sample(s) greater than the allowable state target levels? (See target levels on reverse side of this form and supply laboratory data sheets)
☐	☒		9. If a used oil storage system, did a visual inspection detect any discolored soil indicating a release?
☐	☒		10. Are any potable wells located within ¼ of a mile radius of the facility?
☐	☒		11. Is there a surface water body within ¼ mile radius of the site? If yes, indicate distance:

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-5

15

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 5-A to 5-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/02/94	RL
Benzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Toluene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Ethyl benzene	2.0	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
MTBE	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Total BTEX	2.0	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/02/94	RL
TRPH	2800	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BLD	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS

ATTN: Venisa Watkins

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 4-A to 4-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

10893-4

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-4

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 4-A to 4-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/01/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Toluene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Ethyl benzene	0.4	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Total BTEX	0.4	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/01/94	RL
TRPH	4110	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS

ATTN: Venisa Watkins

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 3-A to 3-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

10893-3

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-3

+3

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 3-A to 3-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
TRPH	510	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
EPA 602 Compounds	-	mg/kg	5030/8021		03/31/94	04/01/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Toluene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Ethyl benzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Total BTEX	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Dilution Factor	1	mg/kg	5030/8021	-	03/31/94	04/01/94	RL

ATTN: Venisa Watkins

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 2-A to 2-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

10893-2

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-2

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 2-A to 2-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/01/94	RL
Benzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Toluene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Ethyl benzene	3.2	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
MTBE	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Total BTEX	3.2	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/01/94	RL
TRPH	6490	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS

Moss Point, MS 39563
ATTN: Venisa Watkins

Log #: 10893-1

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 1-A to 1-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

Our Quality Control Is Your Quality Assurance

APR. 18

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-1

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 1-A to 1-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/01/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Toluene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Ethyl benzene	0.6	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Total BTEX	0.6	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/01/94	RL
TRPH	6010	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS

[illegible], MS 39563
ATTN: Venisa Watkins

Log #: 10893-5

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 5-A to 5-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

10893-5

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

Moss Point, MS 39563
ATTN: Venisa Watkins

Log #: 10924-2

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Naval Station Mayport
Soil Analysis
Bldg. 460

Label: 2-A to 2-B
Date Sampled: 03/30/94
Date Received: 03/31/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

10924-2

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10924-2

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Naval Station Mayport
Soil Analysis
Bldg 460

Label: 2-A to 2-B
Date Sampled: 03/30/94
Date Received: 03/31/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/05/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Toluene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Ethyl benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Total BTEX	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/05/94	RL
TRPH .	102	mg/kg	9073	3.0	04/05/94	04/05/94	PB
TCLP Extraction	DONE		1311		04/02/94	04/03/94	EG
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Lead	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Mercury	BDL	mg/l	1311/7471	0.001	04/02/94	04/04/94	EG
TCLP Silver	BDL	mg/l	1311/6010A	0.1	04/02/94	04/04/94	EG
TCLP Barium	3.75	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG

Moss Point, MS 39563
ATTN: Venisa Watkins

Log #: 10924-1

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Naval Station Mayport
Soil Analysis
Bldg. 460

Label: 1-A to 1-E
Date Sampled: 03/30/94
Date Received: 03/31/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

10924-1

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

Site location? It would be nice to know where it was on.

Mitchell 270-6730

APR. 16

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10924-1

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Naval Station Mayport
Soil Analysis

Label: 1-A to 1-E
Date Sampled: 03/30/94
Date Received: 03/31/94
Collected By: CLIENT

Bldg 460

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/05/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Toluene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Ethyl benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Total BTEX	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/05/94	RL
TRPH	4000	mg/kg	9073	3.0	04/05/94	04/05/94	PB
TCLP Extraction	DONE		1311		04/02/94	04/03/94	EG
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Lead	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Mercury	BDL	mg/l	1311/7471	0.001	04/02/94	04/04/94	EG
TCLP Silver	BDL	mg/l	1311/6010A	0.1	04/02/94	04/04/94	EG
TCLP Barium	4.84	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG

taken before or after soil was removed?