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SITE ASSESSMENT REPORT SITE 20 ALLEGHENY PIER 303 NAS PENSACOLA FL
7/1/1998
NAVY PUBLIC WORKS CENTER

# SITE ASSESSMENT REPORT
# FDEP REGISTERED NUMBER 179202973

## SITE 20, ALLEGHENY PIER (PIER 303)
## NAVAL AIR STATION
## PENSACOLA, FLORIDA

**PREPARED BY:**

**NAVY PUBLIC WORKS CENTER**
**BUILDING 458**
**PENSACOLA, FLORIDA 32508-6500**

**AUTHOR: GREG CAMPBELL, P.E.**

**JULY 1998**

**PREPARED FOR:**

**SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND**
**2155 EAGLE DR., P.O. BOX 190010**
**NORTH CHARLESTON, SOUTH CAROLINA 29418**

**BYAS GLOVER, CODE 18410, ENGINEER-IN-CHARGE**

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**Pensacola, Florida**


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# 1.0 INTRODUCTION

## 1.1 PURPOSE

The Navy Public Works Center, Naval Air Station, Pensacola, Florida, was retained by Southern Division Navy Facilities Engineering Command (SOUTHNAVFACENGCOM) to investigate potential hydrocarbon contamination and conduct a site assessment and remediation plan (if warranted) at Site 20, Allegheny Pier (Pier 303), located at Pensacola Naval Air Station (NASP), Pensacola, Florida in December 1994.

The site was originally put under the Installation Restoration Program (IR) for NAS Pensacola, and designated as Site 20 for NAS Pensacola, but was removed from the list in July 1994 when only petroleum constituents were found at the site.

The findings and conclusions of the field investigation for the Site Assessment Report for Site 20, Allegheny Pier (Pier 303), are presented herein.

## 1.2 SITE LOCATION AND AREA OF INVESTIGATION

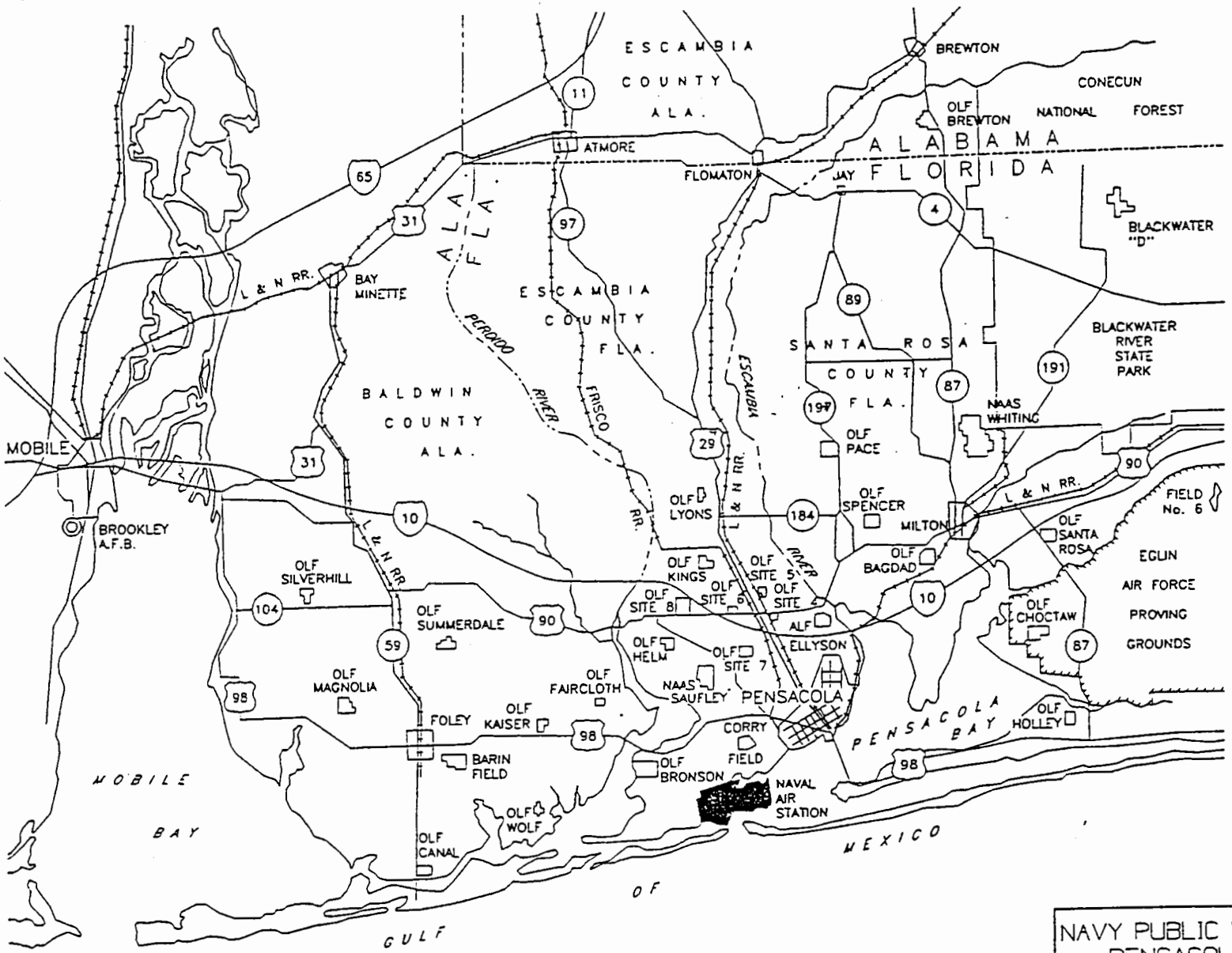
The Pensacola Naval Air Station Pensacola (NASP) is approximately 5,800-acres and is located on a peninsula bounded on the east and south by Pensacola Bay and Big Lagoon and on the north by Bayou Grande (Figure 1-1). Allegheny Pier (Pier 303) is located within the confines of NAS Pensacola in Section 1, Range 30W, Township 3S. The site is located approximately 1/4 mile south of Chevalier Field. Site location maps which show the site in relation to surrounding features are included as Figures 1-2 and 1-3.

The pier area is situated along the Pensacola Bay shoreline and consists of an approximately 30-foot wide concrete loading area immediately adjacent to the pier seawall, surrounded by a large asphalt parking lot. Previously there was a 1,300,000-gallon aboveground fuel storage tank (tank number 354) adjacent to and east of the pier. Tank no. 354 was removed on November 17, 1993, and not replaced. The tank was surrounded by a concrete containment wall. The site area extended approximately 1,000 feet north of the previous storage tank location and interfaces with Buildings 707, 52, 18, and 3573.

## 1.3 SITE HISTORY AND OPERATIONS

The site is a former berthing pier area which has fueling capabilities. The aboveground storage tank (no. 354) was used to contain Navy Special Fuel Oil, Distillate DFM, and JP-5 Jet Fuel since 1926 (NEESA 1983). However, the structure may have been modified or replaced one or more times in the past 66 years. One or more pipelines extended from the fuel storage tank, presumably north toward Building 3573 to the berthing pier (structure no. 303) and possibly to other ship fueling areas.

In 1981, a leak was discovered in the fuel pipeline leading to the berthing pier while a contractor was driving piles for the pier. Apparently, the pipelines had not been in active use for several

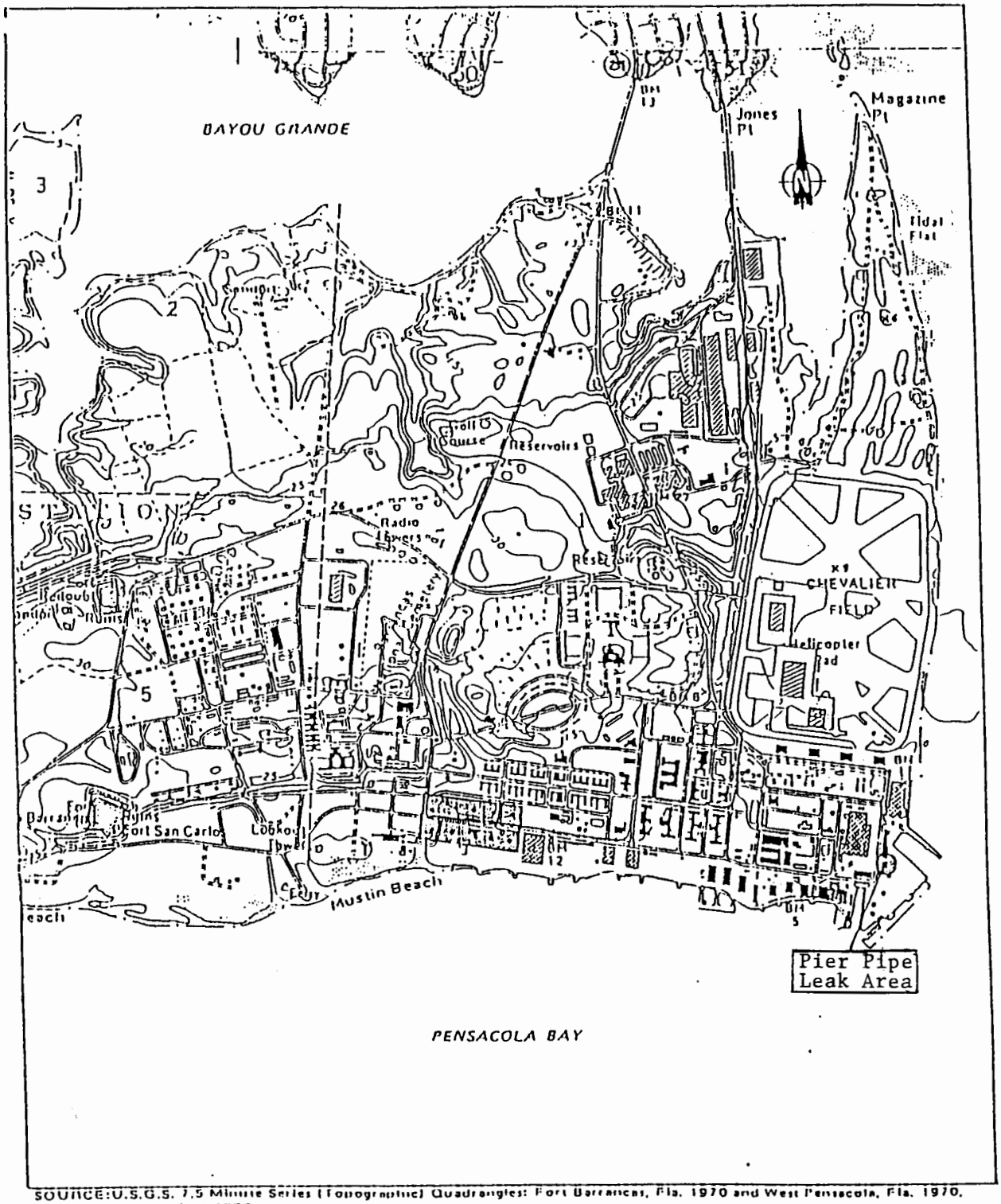



NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA

| | | |
|---|---|---|
| SCALE: 1" = 10 MI<br>DATE: 10/10/94 | FIGURE 1-1 | DRAWN BY: GAC<br>DWG. NO.: BORDER<br>REVISED BY: |

REGIONAL LOCATION MAP OF PROJECT

CLIENT: NAS ENVIRONMENTAL DEPARTMENT, NAS PENSACOLA



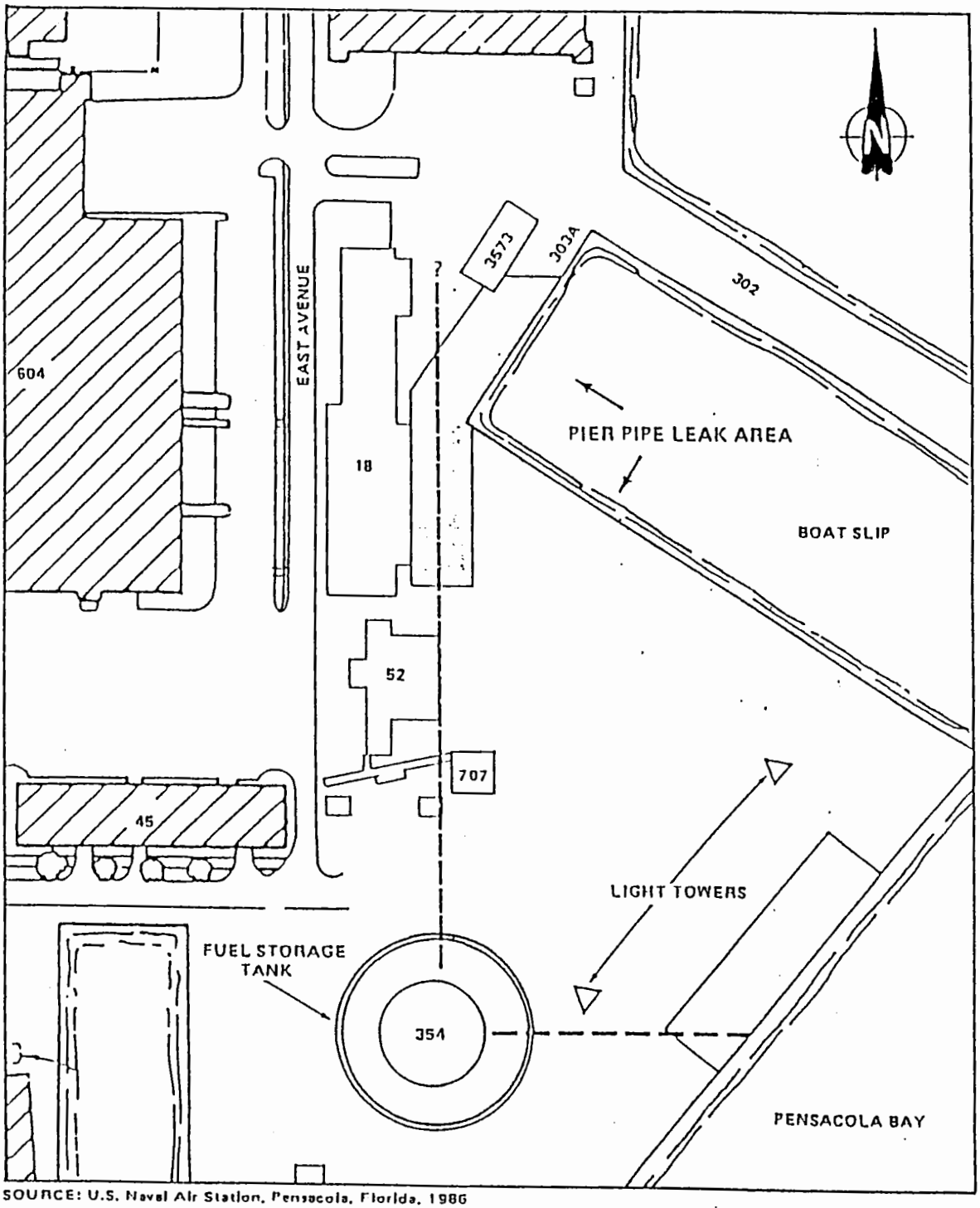

SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangles: Fort Barrancas, Fla. 1970 and West Pensacola, Fla. 1970, Photorevised 1987

SCALE

0 ½ 1 MILE

0 .5 1 KILOMETER

| NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA | | |
|---|---|---|
| SCALE: 1" = 2Ø' DATE: 10/31/95 | FIGURE 1-2 | DRAWN BY: GAC CHG. NO.: SITE REVISED BY: |
| Site Location Map- NAS Pensacola Pier Pipe Leak Area | | |
| CLIENT: NAS ENVIRONMENTAL DEPARTMENT, NAS PENSACOLA, FL | | |




SOURCE: U.S. Naval Air Station, Pensacola, Florida, 1986

SCALE

0 100 200 400 FEET

KEY:

- Possible Fuel Pipeline
- Approximate Areas Of Previously Identified Potential Contamination
- Building

| NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA | | |
|---|---|---|
| SCALE: 1" = 20' | FIGURE | DRAWN BY: GAC |
| DATE: 10/31/95 | 1-3 | CHG. NO: SITE |
| | | REVISED BY: |

Site Specific Location Map
NAS Pensacola
Pier Pipe Leak Area

CLIENT: NAS ENVIRONMENTAL DEPARTMENT, NAS PENSACOLA, FL

years, and either the lines had broken during the years of usage (NEESA 1983) or the abandoned lines contained product when penetrated by the piles. The soil in the excavation area appeared soaked with fuel oil, reportedly Navy Special Fuel Oil or marine diesel fuel (NEESA 1983). An unknown volume of soil was removed and properly disposed of (NEESA 1983).

In November 1993, the presence of petroleum constituents at the Wastewater Treatment Plant lead to an investigation of the sanitary sewer lines. Oil/fuel was discovered during the investigations of oil/fuel infiltration of lines leading from the berthing pier to the Wastewater Treatment Plant. Possible contamination was thought to have occurred during construction modifications to the pier. No closure assessment was performed since the site was on the FDEP/Navy petroleum agreement list for further investigation.

## 1.4 INITIAL REMEDIAL ACTION

No initial remedial action activities were performed at the site other than petroleum contaminated soil removal in 1981.

## 1.5 RESULTS OF PREVIOUS INVESTIGATIONS

Four monitoring wells were reportedly installed on the berthing pier and on the seawall (NEESA 1983). However, no information concerning the well construction, installation data, or location of the monitoring wells could be found. No free product was detected in the four groundwater monitoring wells during the IAS investigation. Groundwater samples were not collected from the monitoring wells for laboratory analysis.

Soil and water samples were collected from a utility manhole by the BRAC contractor upon discovery of petroleum odor in the manhole on June 27, 1996. The samples were analyzed for Priority Pollutant Total Metals (EPA methods 7041, 6010, and 7841), Priority Pollutant Volatiles (EPA method 8260), Priority Pollutant Acid Extractables (EPA method 8270), Priority Pollutant B/N Extractables (EPA method 8270) and Priority Pollutant Pesticides (EPA method 8081). A summary table showing the results of the analyses is included in Table 1-1. A soil sample collected from M/H 31-S indicated contamination of chromium, copper, lead, nickel, zinc, ethylbenzene, toluene, aldrin and heptachlor epoxide at levels of 2 ppm, 5 ppm, 45 ppm, 3 ppm, 16 ppm, 1400 ppb, 500 ppb, 0.054 ppb, and 0.16 ppb, respectfully. A water sample collected from M/H 31-W indicated contamination of zinc, aldrin, and heptachlor epoxide at levels of 0.1 ppm, 0.050 ppb, and 0.070 ppb, respectfully.

## 1.6 REGIONAL GEOLOGY AND HYDROGEOLOGY

The Naval Air Station Pensacola is located in the Gulf Coastal Lowland Subdivision of the Coastal Plain Province physiographic division (Brooks 1981). NASP is located on a peninsula bounded on the east and south by Pensacola Bay and Big Lagoon and on the north by Bayou Grande. The most prominent topographic feature on the peninsula is an escarpment or bluff which parallels the southern and eastern shorelines and on which Fort Barrancas was built. Seaward of the escarpment is a nearly level marine terrace with surface elevations of

**TABLE 1-1**
**SUMMARY OF ANALYTICAL SCREENING RESULTS FOR SOIL AND WATER SAMPLES**
**M/H 31-S AND M/H 31-W**
**NAVAL AIR STATION PENSACOLA**
**SITE 20, ALLEGHENY PIER (PIER 30)**

| PARAMETER | SOIL AND WATER SAMPLE | |
|---|---|---|
| | M/H 31-S (SOIL) | M/H-W (WATER) |
| Chromium (ppm) | 2 | BDL |
| Copper (ppm) | 5 | BDL |
| Lead (ppm) | 45 | BDL |
| Nickel (ppm) | 3 | BDL |
| Zinc (ppm) | 16 | 0.1 |
| Ethylbenzene | 1400 | BDL |
| Toluene | 500 | BDL |
| Aldrin | 0.54 | 0.050 |
| Heptachlor epoxide | 0.16 | 0.070 |

NOTES: BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
Samples taken June 27, 1996

approximately 5 feet above MSL. The central part of the peninsula, located landward of the escarpment, is a broad, gently rolling upland area with surface elevations up to 40 feet MSL (USGS 1970a, 1970b). Sandy soils occur throughout the NAS Pensacola area. As a result, most of the rainfall infiltrates directly into the subsurface. Consequently, there are few streams or surface water bodies on the peninsula.

There are three principal hydrogeologic units of importance which underlie NASP. These are, in descending order, the Surficial Aquifer, the Intermediate System, and the Floridan Aquifer System.

The Surficial Aquifer occurs from land surface to a depth of approximately 300 feet at NASP and is composed of a sequence of unconsolidated to poorly indurated clastic deposits (Wagner et al. 1984). In this portion of Florida, the Surficial Aquifer constitutes an important source of water supply and is called the Sand-and-Gravel Aquifer (Southeastern Geological Society [SEGS] 1986). In the NASP vicinity, the Sand-and-Gravel Aquifer is made up of three zones based on contrasting permeabilities. These zones are referred to as the surficial zone, the low permeability zone, and the main producing zone (Wilkins et al. 1985).

The surficial zone is contiguous with land surface and contains groundwater under water table or perched water table conditions. The results of numerous borings conducted at NASP indicate that the surficial zone ranges in thickness between 40 and 70 feet and consists of tan and brown, fine to medium-grained quartz sand. Depth to the water table with the surficial zone is variable depending on location and ranges from less than 1 foot near surface water bodies to more than 20 feet in areas of higher elevation. Shallow groundwater in the surficial zone moves toward area of lower elevation and/or the nearest surface water body. Overall, the surficial zone has a high permeability (16 to 56 ft/day). Horizontal groundwater flow would generally be expected to be high.

The low permeability zone is underlying the surficial zone and is a zone of lower permeability sediments dominated by clay and silt-mixed material. At NASP this zone is generally composed of gray to blue, sandy, silty, slightly fossiliferous (shelly) clay and clayey sand ranging in thickness from 8 to 40 feet (G&M 1984, 1986). The result of laboratory permeability test conducted on samples from this zone indicate that vertical hydraulic conductivities are low ($4.2 \times 10^{-5}$ to $9.9 \times 10^{-2}$ ft/day). Few, if any, wells are open to the low permeability zone at NASP; thus, no information is available regarding groundwater flow direction.

The main producing zone is the bottom portion of the Sand-and-Gravel Aquifer and consists mainly of sand and gravel interbedded with thin beds of silt and clay. The depth at which the main producing zone is encountered is somewhat variable, ranging from 60 to approximately 120 feet BLS at NASP. This zone generally has the highest permeability characteristics due to thicker and more persistent sand and gravel beds and is tapped by most of the major wells in the Pensacola area (Wilkins et al. 1985). The thickness of the main producing zone can be highly variable; however, it is estimated to be up to about 100 feet at NASP. Insufficient data exist for wells open to the main producing zone at NASP to determine direction of groundwater flow within this zone; however, the flow direction is assumed to be generally southward under

ambient conditions. Pumpage of the supply wells would locally cause groundwater in this zone to flow toward the wells. A considerable potential exists for vertical groundwater flow from the surficial to the main producing zone at this location. It is not known to what extent this potential exists elsewhere at NASP.

The low limit of the Sand-and-Gravel Aquifer coincides with the top of a regionally extensive and vertically persistent hydrogeologic unit of much lower permeability. This unit is referred to as the Intermediate System. In the vicinity of NASP, the top of the Intermediate System generally lies within the sediments termed Miocene Coarse Clastic or corresponds to the top of the Upper Member of the Pensacola Clay and occurs at a depth of approximately 300 feet (Wilkins et al. 1985). In general, the Intermediate System consists of fine-grained sediments and functions as an effective confining unit which retards the exchange of water between the overlying Sand-and-Gravel Aquifer and the underlying Floridan Aquifer System (SEGS 1986). The entire sequence is primarily poor to non-water bearing. In the NASP area, the Intermediate System is approximately 1,100 feet thick and is composed of the lower portion of the Miocene Coarse Clastic, the Upper Member of the Pensacola Clay, the Escambia Sand Member of the Pensacola clay, and the Lower Member of the Pensacola Clay; all are of Miocene Age.

Immediately underlying the Intermediate System and occurring at a depth of approximately 1,500 feet BLS at NASP is the Floridan Aquifer System. The Floridan Aquifer in this area is composed of the Middle to Lower Miocene Chickasawhay Limestone and undifferentiated Tampa State Limestone. Groundwater within the Floridan Aquifer in this area is highly mineralized and is not used for water supply (Wagner et al. 1984).

The soils of Escambia County are primarily derived from marine and stream-deposit parent material. The IAS soil association map (NEESA 1983) indicates that the surface soils at Site 20 are predominately undifferentiated coastal soils, including dune land and beach-tidal marsh. Lithologic information from nearby borings indicates that primarily fine-to-medium-grained quartz sands occur to depths of approximately 15 to 50 feet BLS. Considering the site's proximity to Pensacola Bay, the depth to groundwater is roughly estimated 5 feet, and groundwater flow is presumably to the east and south, toward the bay. Based on well drilling logs from other areas of NAS Pensacola, a confining or semi-confining zone of low permeability can be expected to occur beginning at a depth of 40 to 70 feet.

## 1.7 WELL SURVEY

Currently there are two potable water wells located at NASP that are permitted by the Northwest Florida Water Management District. Potable water to the base is mainly supplied by potable water wells located at Corry Station, located three miles to the north. The two potable water wells located at NASP are only used to supplement the potable water wells at Corry Station. NASP water supply wells (Wells No. 1 and No. 2) are located approximately 1.2 miles (northwest) and 1.0 mile (northwest) of Allegheny Pier (Pier 303), respectively. Supply wells No. 1 and No.2 were installed in 1942 to a depth of 174'6" and 178', respectfully, (open to the main producing zone). The wells yield, when in use, about 650 gpm, each. The depth to the static water level for supply well No. 1 and No. 2, in 1942, was approximately 23 feet and

24 feet, respectively. Well construction details are shown in Table 1-2.

## TABLE 1-2

## CONSTRUCTION DETAILS OF WATER-SUPPLY WELLS

| NAVAL AIR STATION, PENSACOLA, FLORIDA GROUNDWATER WELL NUMBER | #1 | #2 |
|---|---|---|
| Year Drilled | 1942 | 1942 |
| Depth Drilled | 174' x 6" | 178' |
| Length, outside casing | 106" | 114" |
| Diameter, outside casing | 24" x 100'<br>12" x 106' | 24" x 110'<br>12" x 114' |
| Material, outside casing | Steel | Steel |
| Depth to static water level | 23' | 24' |
| Normal suction lift (wkng. level) | 32' | 38' |
| Normal yield, GPM | 650 | 650 |
| Test yield, GPM | u/k | u/k |
| Type of grout | Cement | Cement |
| Drilling method | Rotary | Rotary |
| Type of strainer | Bronze | Bronze |
| Depth to top of strainer | 106' | 114' |
| Protection from surface water? | Yes | Yes |
| Is inundation of well possible? | No | No |
| Sale intrusion noted in past? | No | No |
| Has the well ever been contaminated? | No | No |
| Pump manufacturers' name | Layne Bowler | Layne Bowler |
| Model number | RKLC | RKLC |
| Capacity GPM | 750 | 750 |
| Check valve present in line? | Yes | Yes |
| Date of last servicing | Routine Maint. | Routine Maint. |
| Maintenance schedule (day/mo.) | Daily | Daily |

Notes: uk=unknown
s.s.=stainless

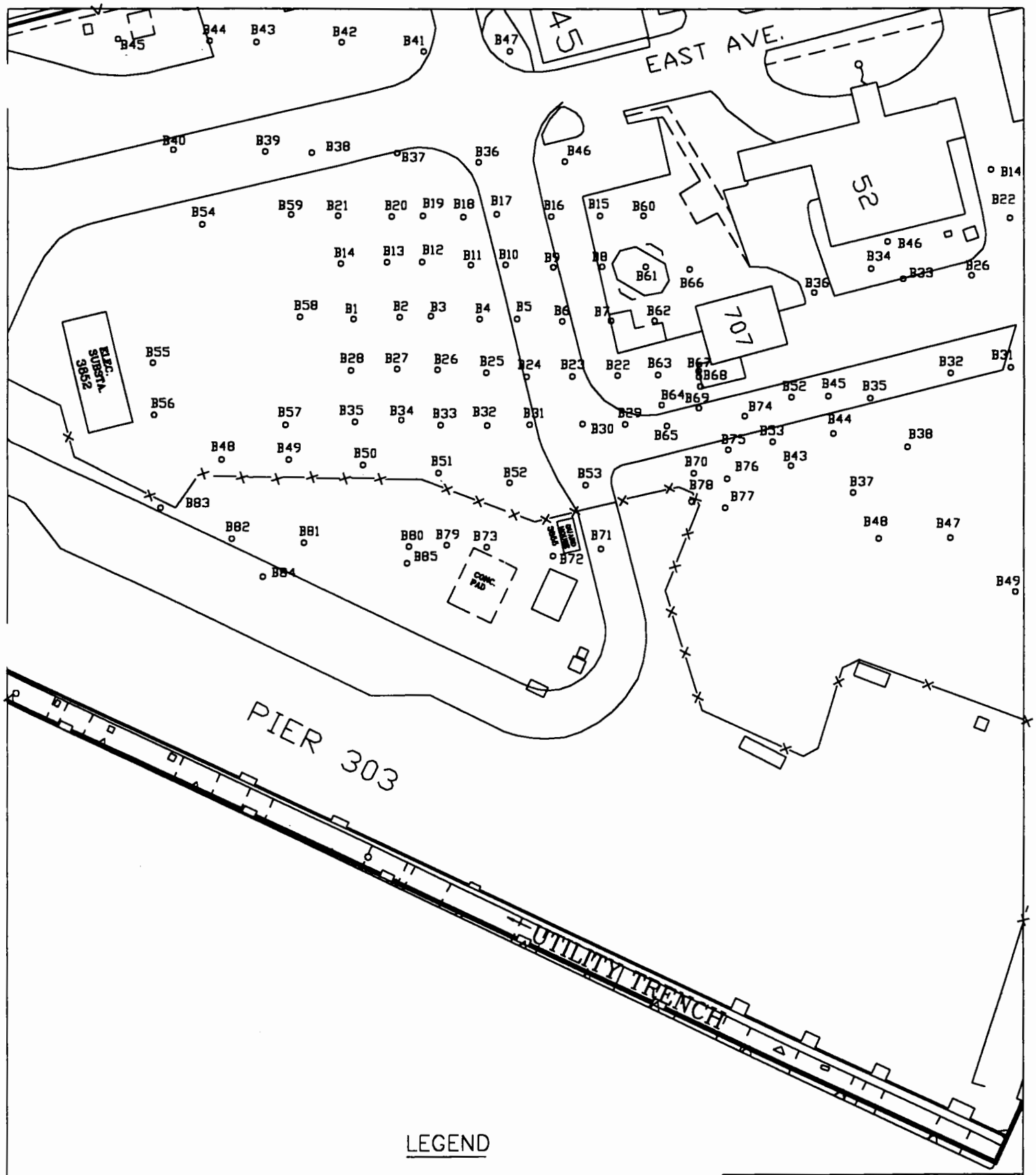
## 2.0 SITE ASSESSMENT

## 2.1 SOIL BORING AND MONITORING WELL CONSTRUCTION DETAILS

Public Works Center (PWC) Pensacola personnel initiated the investigation with the installation of 73 soil borings (SB-1 thru SB-73) to a depth of approximately 7 feet BLS. These soil borings were installed by W.E.S., Inc. personnel on June 18, 19, July 24, and August 15, 1996. Additional soil borings (SB-74 thru SB-85) were installed at the site on August 28, and October 23, 1996, to further delineate petroleum contamination at the site. Building 18 was later included as part of Site 20 and 53 soil borings (BH-1 thru BH-53) were installed by W.E.S., Inc. at that location on September 19 and November 7, 1996; and January 8 and February 19, 1997. A location map of the soil borings is shown in Figure 2-1. All soil borings were installed using a hollow stem auger. The hollow stem augers were decontaminated between borings using liquanox soap, isopropyl alcohol, and distilled water. Soil samples were collected from each borehole at 1, 4, and 5-7 feet intervals and analyzed for volatile organic vapors using an organic vapor analyzer (OVA) with a flame ionization detector. Soil boring cuttings were placed back into the boreholes upon completion of installation.

Shallow groundwater monitoring wells MW-1 thru MW-53 and MW-56 thru MW-59; and deep vertical extent monitoring wells DMW-54 and DMW-55 were installed at the site by W.E.S., Inc. personnel. Monitoring well MW-1 thru MW-5 were installed on August 21, 1996; MW-6 thru MW-9 were installed August 22, 1996; MW-10 thru MW-12 were installed August 27, 1996; MW-13 thru MW-17 were installed October 23, 1996; MW-17 and MW-18 were installed October 24, 1997; MW-19 thru MW-26 were installed January 30, 1997; MW-27 thru MW-32 were installed February 25, 1997; MW-33 and MW-34 were installed February 26, 1997; MW-35 thru MW-41 were installed March 25, 1997; MW-42 thru MW-47 were installed May 1, 1997; MW-48 thru MW-53 were installed May 15, 1997; and DMW-54 thru MW-59 were installed May 28 and May 29, 1997. A location map of the monitoring wells is shown in Figure 2-2. The shallow groundwater monitoring wells were installed to a depth of 13' to 15' BLS depending on the groundwater depth. The monitoring wells were installed using a hollow stem auger with an inside diameter of 4 inches. The monitoring wells consist of 2-inch diameter by 10 feet of 0.0010 inch slotted schedule 40 PVC screen, threaded to between 2 feet and 3.0 feet of solid schedule 40 PVC riser. The filter sand pack for monitoring wells consisted of coarse silica sand with a mesh size of 20 to 30. The sand filter pack was placed in the annular space between the outside of the well screen and borehole from the bottom of the borehole to approximately 1.0 foot above the well screen. A 1.0 foot bentonite seal was placed above the sand pack with the remaining annular space filled with cement grout.

The deep vertical extent monitoring wells (DMW-54 and DMW-55) were installed to a depth of 23.5' and 25' BLS, respectfully. The monitoring wells were installed using a hollow stem auger with an inside diameter of 4 inches. The monitoring wells consist of 2-inch diameter by 5 feet of 0.0010 inch slotted schedule 40 PVC screen, threaded to 18.5 feet (DMW-54)/ 20 feet (DMW-55) of solid schedule 40 PVC riser. The filter sand pack for monitoring wells consisted of coarse silica sand with a mesh size of 20 to 30. The sand filter pack was placed in the annular space between the outside of the well screen and borehole from the bottom of the borehole to




LEGEND

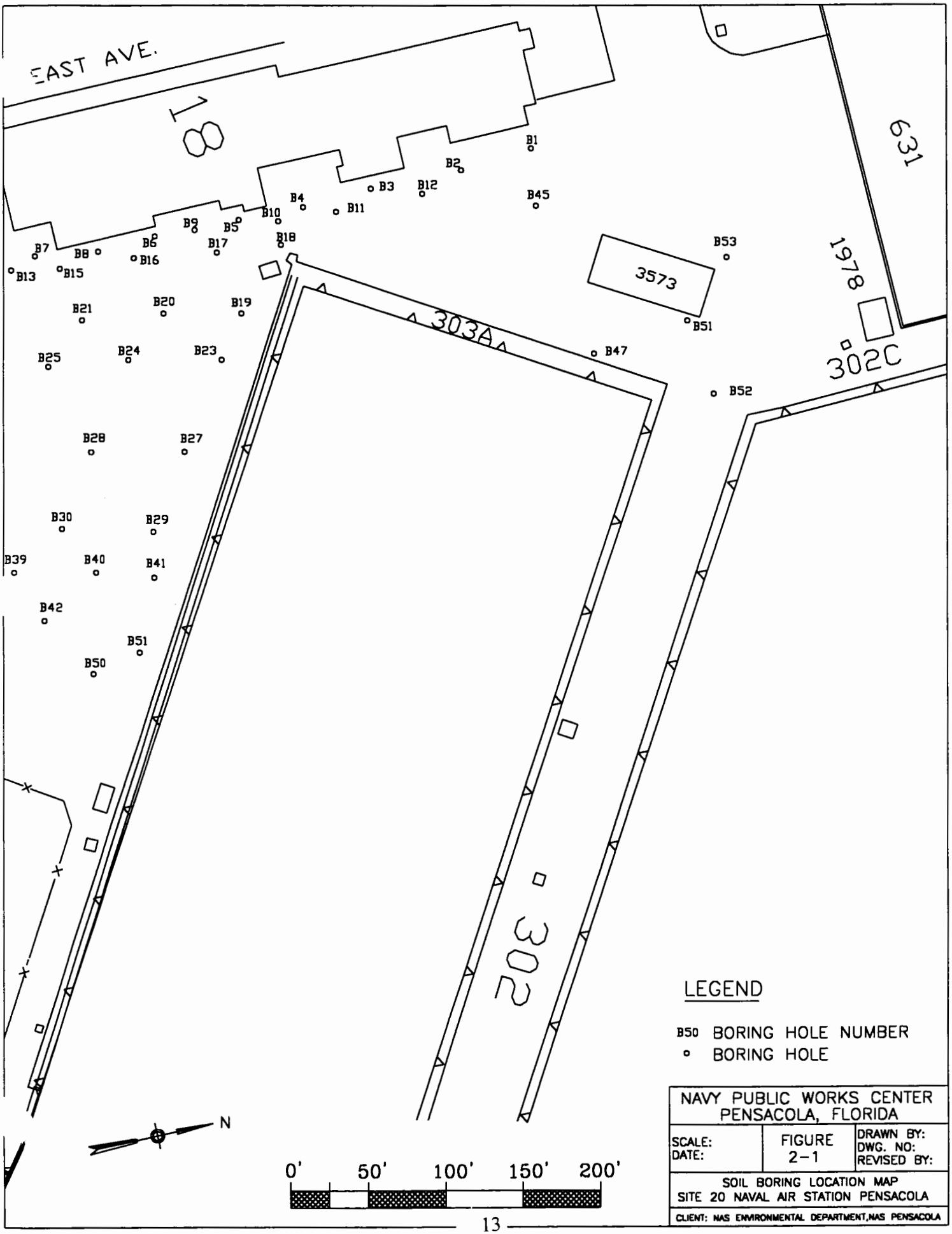
B50 BORING HOLE NUMBER

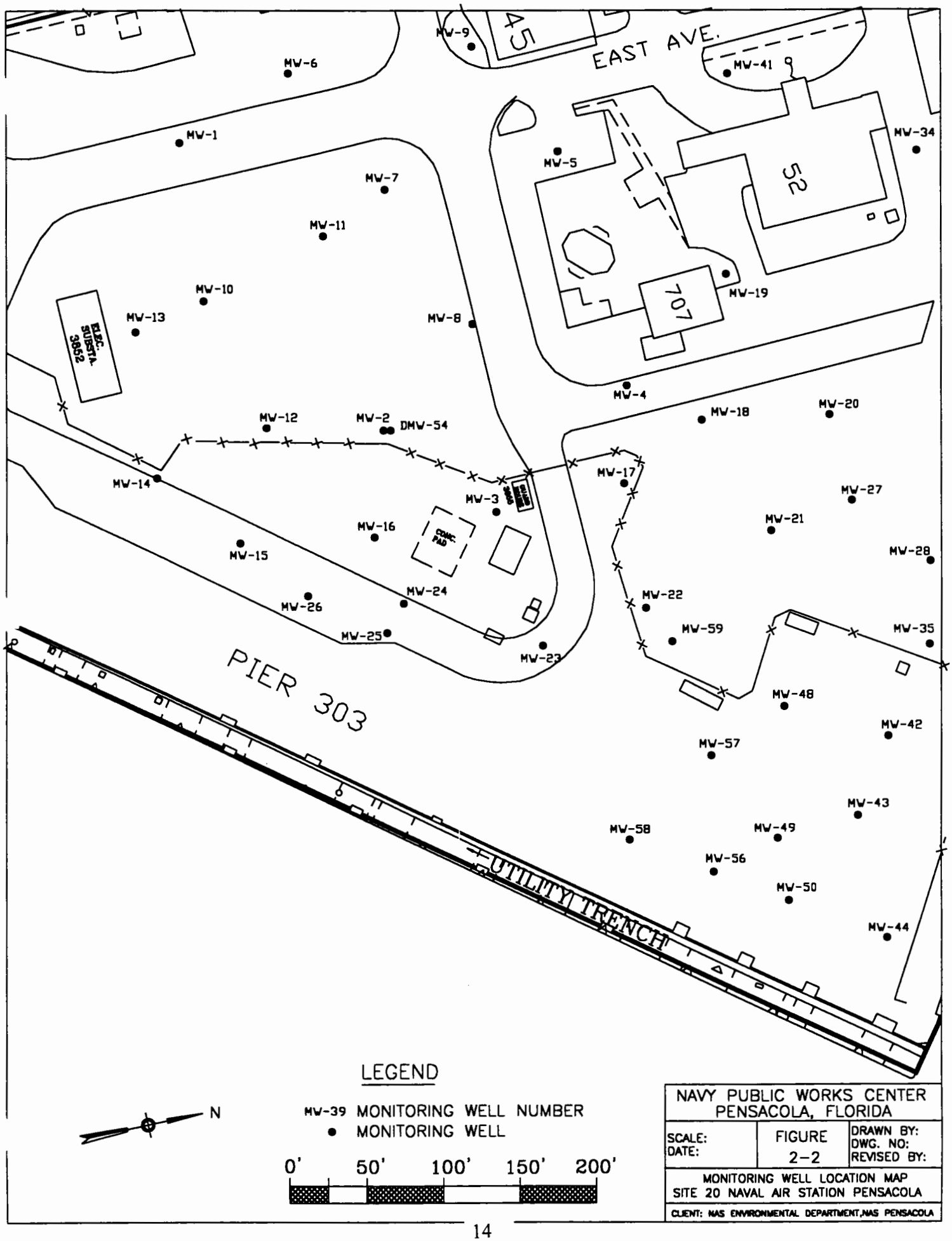
○ BORING HOLE

N

0' 50' 100' 150' 200'

| NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA | | |
|---|---|---|
| SCALE: DATE: | FIGURE 2-1 | DRAWN BY: DWG. NO: REVISED BY: |
| SOIL BORING LOCATION MAP SITE 20 NAVAL AIR STATION PENSACOLA | | |
| CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA | | |


EAST AVE.
178
631
1978
3573
303A
302C
302
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B15
B16
B17
B18
B19
B20
B21
B23
B24
B25
B27
B28
B29
B30
B39
B40
B41
B42
B45
B47
B50
B51
B52
B53
LEGEND
B50 BORING HOLE NUMBER
BORING HOLE
N
0'
50'
100'
150'
200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE
2-1
DRAWN BY:
DWG. NO:
REVISED BY:
SOIL BORING LOCATION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


EAST AVE.
PIER 303
UTILITY TRENCH
ELEC. SUBSTA. 3852
CONC. PAD
52
707
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
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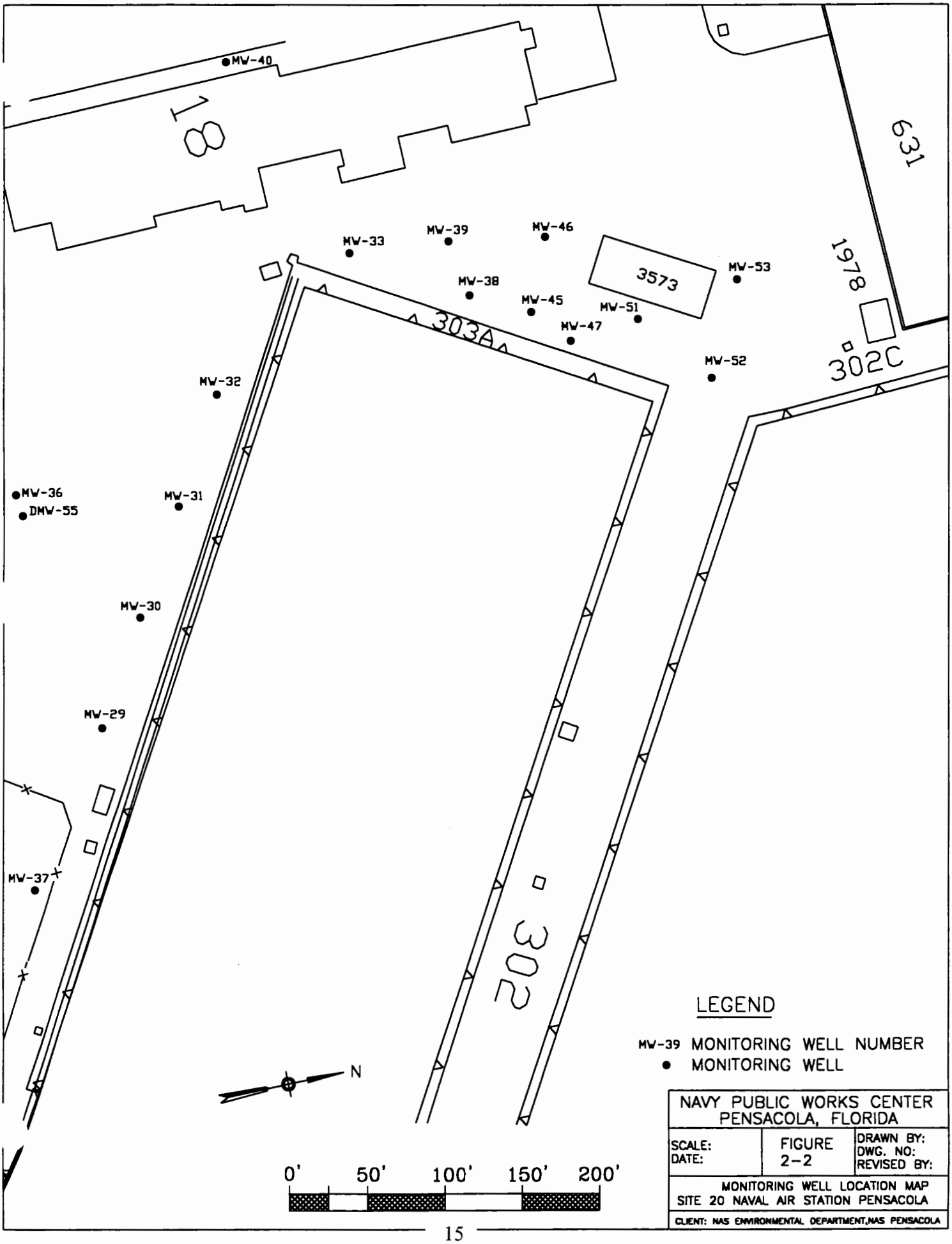
MW-50
MW-56
MW-57
MW-58
MW-59
DMW-54
LEGEND
MW-39 MONITORING WELL NUMBER
MONITORING WELL
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE
2-2
DRAWN BY:
DWG. NO:
REVISED BY:
MONITORING WELL LOCATION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


MW-40
18
631
MW-33
MW-39
MW-46
3573
MW-53
1978
MW-38
MW-45
MW-51
MW-47
303A
302C
MW-52
MW-32
MW-36
DMW-55
MW-31
MW-30
MW-29
MW-37
302
LEGEND
MW-39 MONITORING WELL NUMBER
MONITORING WELL
N
0'
50'
100'
150'
200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE
2-2
DRAWN BY:
DWG. NO:
REVISED BY:
MONITORING WELL LOCATION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA

approximately 1.0 foot above the well screen. A 1.0 foot fine sand seal was placed above the sand pack with the remaining annular space filled with cement grout. A flush mounted manhole was installed around the top of the monitoring wells with an 8" diameter manhole cover. A locking cap placed at the top of the monitoring wells completing the monitoring well construction. The groundwater extracted during well development was placed into steel 55 gallon drums and properly labeled for disposal. The drill cuttings were also placed into 55 gallon drums and properly labeled for disposal. The construction diagrams for monitoring wells MW-1 thru MW-59 are shown in Appendix A.

## 2.2 GROUNDWATER FLOW DIRECTION

The top of casing elevations for shallow monitoring wells MW-1 thru MW-59 were surveyed by Charlotte Engineering and Surveying. Survey benchmark is northeast corner of concrete lightpole. Groundwater elevations for the groundwater level measurements taken on September 17, 1997, are shown in Table 2-1. A groundwater flow direction map for the groundwater level measurements taken on September 17, 1997, is shown in Figure 2-3. The groundwater flow direction map indicates the groundwater flow direction at the site to fluctuate in all directions as shown in Figure 2-3. However, the groundwater flow direction for the majority of the site is in the southwest direction.

## 2.3 GROUNDWATER FLOW RATE

The horizontal groundwater flow velocity was calculated using the equation V=Ki/n. The horizontal hydraulic conductivity was calculated by taking the average of the hydraulic conductivities determined from slug tests performed during the preparation of three previous CAR's performed at NAS Pensacola. The average horizontal conductivity of the three sites at NAS Pensacola was determined to be 48.3 feet/day (Campbell, 1995). A hydraulic gradient was calculated from the groundwater elevation and horizontal distance data collected from groundwater monitoring wells MW-4 and MW-18 on September 17, 1997. The hydraulic gradient was determined to be 0.00019. The effective pore velocity of the site was assumed to be 25%. The average linear groundwater flow velocity at the site was determined to be 0.037. The groundwater flow velocity assumptions and calculations are shown in Appendix B.

## 2.4 SOIL ASSESSMENT

The extent of soil contamination at the site was determined by OVA screening. Eighty-five soil borings (SB-1 thru SB-85) were installed at the site, in the vicinity of the former aboveground tank, by W.E.S., Inc. on June 18, June 19, July 24, August 15, August 28, and October 23, 1996, to a depth of approximately six to seven feet BLS. Fifty-three soil borings (BH-1 thru BH-53) were installed at the site, in the vicinity of Building 18, by W.E.S., Inc. on September 19, 1996, November 7, 1996, January 8, and February 19, 1997, to a depth of approximately six to seven feet BLS. The soil borings (see Figure 2-1 for locations) were installed using a stainless steel auger. Soil samples were collected from each borehole at intervals of 1', 4' and 6-7' BLS. The groundwater at the site was generally found at approximately 6 to 7.0 feet BLS. The investigation was initiated by the installation of twenty-one soil borings, installed in a grid

**TABLE 2-1**
**TOP OF CASING AND GROUNDWATER ELEVATIONS**
**NAVAL AIR STATION PENSACOLA**
**SITE 20, ALLEGHENY PIER (303)**

| WELL NUMBER | TOC FT. M.S.L. | DTW (FT) 9/17/97 | GROUNDWATER ELEVATION 9/17/97 |
|---|---|---|---|
| MW-1 | 25.86 | 6.19 | 19.67 |
| MW-2 | 28.51 | NS | NS |
| MW-3 | 28.59 | 8.89 | 19.70 |
| MW-4 | 28.48 | 8.79 | 19.69 |
| MW-5 | 25.97 | 6.25 | 19.72 |
| MW-6 | 25.11 | 5.41 | 19.70 |
| MW-7 | 26.08 | 6.32 | 19.76 |
| MW-8 | 27.93 | NS | NS |
| MW-9 | 26.01 | 6.26 | 19.75 |
| MW-10 | 26.88 | 7.21 | 19.67 |
| MW-11 | 26.39 | NS | NS |
| MW-12 | 28.11 | NS | NS |
| MW-13 | 27.00 | 7.35 | 19.65 |
| MW-14 | 27.87 | 8.15 | 19.72 |
| MW-15 | 28.23 | 8.49 | 19.74 |
| MW-16 | 28.38 | 8.55 | 19.83 |
| MW-17 | 29.41 | 9.69 | 19.72 |
| MW-18 | 29.38 | 9.68 | 19.70 |
| MW-19 | 27.98 | NS | NS |
| MW-20 | 29.42 | 9.65 | 19.77 |

NOTES: TOC = Top of Casing
NS = Not Sampled
DTW = Depth to Water

Benchmark is northeast corner of concrete lightpole. Assumed elevation = 30.00.

## TABLE 2-1 (CONT.)

| WELL NUMBER | TOC FT. M.S.L. | DTW (FT) 9/17/97 | GROUNDWATER ELEVATION 9/17/97 |
|---|---|---|---|
| MW-21 | 29.82 | 10.09 | 19.73 |
| MW-22 | 29.62 | 9.91 | 19.71 |
| MW-23 | 28.76 | 9.05 | 19.71 |
| MW-24 | 28.47 | 8.75 | 19.72 |
| MW-25 | 28.37 | 8.67 | 19.70 |
| MW-26 | 27.97 | 8.25 | 19.72 |
| MW-27 | 29.72 | 9.98 | 19.74 |
| MW-28 | 29.38 | 9.65 | 19.73 |
| MW-29 | 28.28 | 8.49 | 19.79 |
| MW-30 | 28.63 | 9.35 | 19.28 |
| MW-31 | 28.34 | NS | NS |
| MW-32 | 28.02 | NS | NS |
| MW-33 | 27.24 | NS | NS |
| MW-34 | 26.00 | NS | NS |
| MW-35 | 28.72 | 9.15 | 19.57 |
| MW-36 | 28.75 | NS | NS |
| MW-37 | 28.00 | 8.25 | 19.75 |
| MW-38 | 27.70 | 7.81 | 19.89 |
| MW-39 | 26.46 | 6.57 | 19.89 |
| MW-40 | 24.38 | 4.52 | 19.86 |
| MW-41 | 25.36 | 5.58 | 19.78 |

NOTES: TOC = Top of Casing
NS = Not Sampled
DTW = Depth to Water

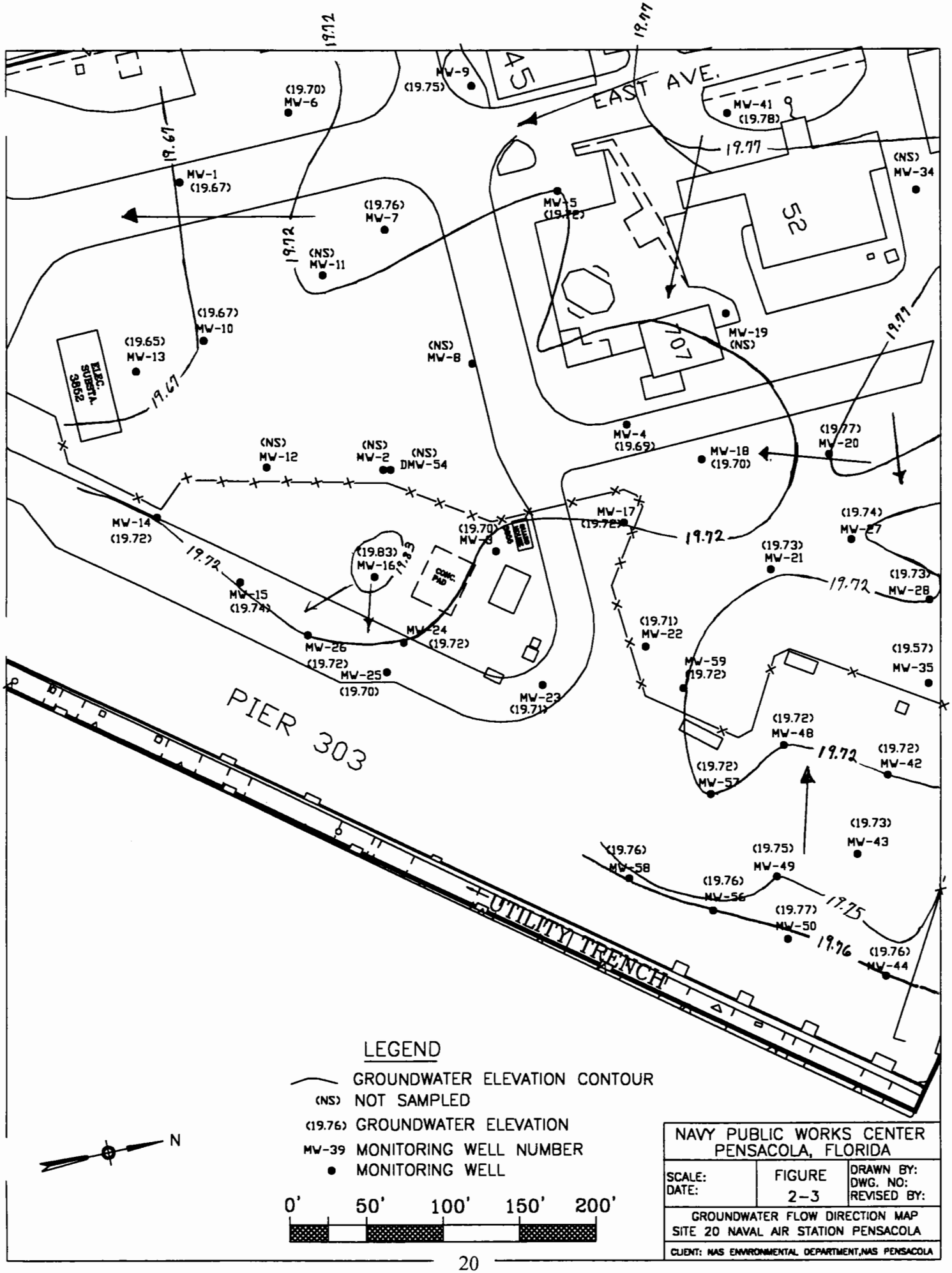
Benchmark is northeast corner of concrete lightpole. Assumed elevation = 30.00.

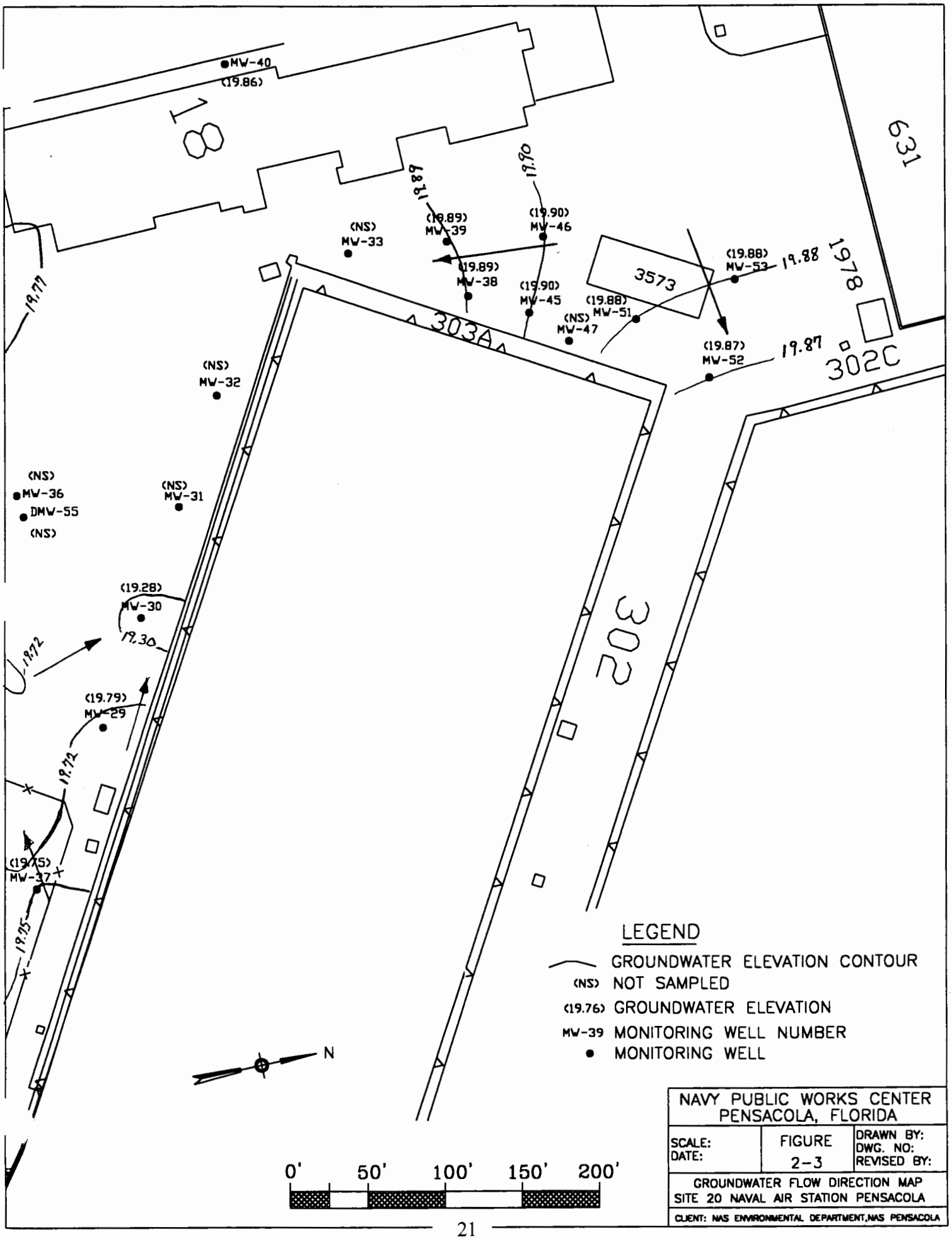
## TABLE 2-1 (CONT.)

| WELL NUMBER | TOC FT. M.S.L. | DTW (FT) 9/17/97 | GROUNDWATER ELEVATION 9/17/97 |
|---|---|---|---|
| MW-42 | 28.71 | 8.99 | 19.72 |
| MW-43 | 28.50 | 8.77 | 19.73 |
| MW-44 | 28.14 | 8.38 | 19.76 |
| MW-45 | 26.51 | 6.61 | 19.90 |
| MW-46 | 26.94 | 7.04 | 19.90 |
| MW-47 | 27.55 | NS | NS |
| MW-48 | 29.28 | 9.56 | 19.72 |
| MW-49 | 28.26 | 8.51 | 19.75 |
| MW-50 | 27.88 | 8.11 | 19.77 |
| MW-51 | 27.69 | 7.81 | 19.88 |
| MW-52 | 28.13 | 8.26 | 19.87 |
| MW-53 | 27.47 | 7.59 | 19.88 |
| DMW-54 | 28.53 | NS | NS |
| DMW-55 | 28.93 | NS | NS |
| MW-56 | 28.21 | 8.45 | 19.76 |
| MW-57 | 28.71 | 8.99 | 19.72 |
| MW-58 | 28.22 | 8.46 | 19.76 |
| MW-59 | 29.33 | 9.61 | 19.72 |

NOTES: TOC = Top of Casing
NS = Not Sampled
DTW = Depth to Water

Benchmark is northeast corner of concrete lightpole. Assumed elevation = 30.00.


EAST AVE.
PIER 303
UTILITY TRENCH
ELEC. SUBSTA. 3852
CONC. PAD
45
52
707
19.67
19.72
19.77
19.83
19.75
19.76
(19.70) MW-6
MW-9 (19.75)
MW-41 (19.78)
(NS) MW-34
MW-1 (19.67)
(19.76) MW-7
MW-5 (19.72)
(NS) MW-11
(19.67) MW-10
(19.65) MW-13
(NS) MW-8
MW-19 (NS)
MW-4 (19.69)
(19.77) MW-20
MW-18 (19.70)
(NS) MW-12
(NS) MW-2
(NS) DMW-54
MW-14 (19.72)
MW-17 (19.72)
(19.74) MW-27
(19.70) MW-3
(19.83) MW-16
(19.73) MW-21
(19.73) MW-28
MW-15 (19.74)
(19.71) MW-22
MW-24 (19.72)
MW-26 (19.72)
MW-25 (19.70)
MW-23 (19.71)
MW-59 (19.72)
(19.57) MW-35
(19.72) MW-48
(19.72) MW-42
(19.72) MW-57
(19.73) MW-43
(19.76) MW-58
(19.75) MW-49
(19.76) MW-56
(19.77) MW-50
(19.76) MW-44
LEGEND
GROUNDWATER ELEVATION CONTOUR
(NS) NOT SAMPLED
(19.76) GROUNDWATER ELEVATION
MW-39 MONITORING WELL NUMBER
MONITORING WELL
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE 2-3
DRAWN BY:
DWG. NO:
REVISED BY:
GROUNDWATER FLOW DIRECTION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


MW-40
(19.86)
18
631
19.89
19.90
(19.89)
MW-39
(19.90)
MW-46
(NS)
MW-33
(19.89)
MW-38
(19.90)
MW-45
3573
(19.88)
MW-53
19.88
1978
19.77
(19.88)
MW-51
(NS)
MW-47
303A
(19.87)
MW-52
19.87
302C
(NS)
MW-32
(NS)
MW-36
DMW-55
(NS)
(NS)
MW-31
(19.28)
MW-30
19.30
19.72
302
(19.79)
MW-29
19.72
(19.75)
MW-37
19.75
LEGEND
GROUNDWATER ELEVATION CONTOUR
(NS) NOT SAMPLED
(19.76) GROUNDWATER ELEVATION
MW-39 MONITORING WELL NUMBER
MONITORING WELL
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE
2-3
DRAWN BY:
DWG. NO:
REVISED BY:
GROUNDWATER FLOW DIRECTION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA

pattern with 30 feet spacing, on June 18, 1996. Soil samples were also collected during the installation of monitoring wells MW-1 thru MW-59 at approximately 1, 4 and 6 foot intervals BLS and analyzed with an OVA for volatile organic compounds (see Figure 2-2 for locations).

The soil boring designations and their respective OVA screening results are shown in Table 2-2 and a Soil Contamination Distribution Map is included as Figure 2-4. The groundwater table at the site was generally encountered at from 5 to 8 feet BLS. No VOCs were detected in the soil samples collected from boreholes SB-21, SB-36, SB-38 thru SB-41, SB-43 thru SB-50, SB-54 thru SB-59, SB-62 thru SB-67, SB-69 thru SB-75, and SB-78 thru SB-85 at the site in the vicinity of the former tank; or in the soil samples collected from boreholes BH-1 thru BH-4, BH-11, BH-12, BH-19, BH-37, BH-43, BH-44, BH-48 thru BH-53 at the site in the vicinity of Building 18; or in the soil samples collected during the installation of monitoring wells MW-1, MW-3 thru MW-6, MW-9, MW-10, MW-13 thru MW-24, MW-26 thru MW-29, MW-33, MW-35, MW-37 thru MW-46, MW-48 thru MW-51, MW-53, and DMW-55 thru MW-59. Volatile organic vapors which exceeded excessively contaminated soil with kerosene analytical group of 50 ppm were detected in soil samples collected from soil borings SB-1 (high of 82 ppm) @ 4 ft. BLS, SB-3 (high of 410 ppm) @ 7 ft. BLS, SB-4 (high of 650 ppm) @ 7 ft. BLS, SB-5 (high of >900 ppm) @ 7 ft. BLS, SB-6 (high of 668 ppm) @ 7 ft. BLS, SB-7 (high of >990 ppm) @ 7 ft. BLS, SB-8 (high of 64 ppm) @ 1 ft. BLS, SB-9 (high of 84 ppm) @ 7 ft. BLS, SB-10 (high of >995 ppm) @ 7 ft. BLS, SB-11 (high of >960 ppm) @ 7 ft. BLS, SB-12 (high of >993 ppm) @ 7 ft. BLS, SB-13 (high of >1000 ppm) @ 7 ft. BLS, SB-14 (high of 710 ppm) @ 7 ft. BLS, SB-16 (high of >1000 ppm) @ 7 ft. BLS, SB-17 (high of >1000 ppm) @ 7 ft. BLS, SB-18 (high of >1000 ppm) @ 7 ft. BLS, SB-19 (high of >1000 ppm) @ 7 ft. BLS, SB-22 (high of 218 ppm) @ 7 ft. BLS, SB-23 (high of 580 ppm) @ 7 ft. BLS, SB-24 (high of 731 ppm) @ 7 ft. BLS, SB-25 (high of 854 ppm) @ 7 ft. BLS, SB-26 (high of >992 ppm) @ 7 ft. BLS, SB-27 (high of >980 ppm) at 7 ft. BLS, SB-28 (high of 508 ppm) @ 7 ft. BLS, SB-29 (high of 420 ppm) @ 4 ft. BLS, SB-30 (high of 76 ppm) @ 3 ft. BLS, SB-31 (high of >930 ppm) @ 4 ft. BLS, SB-32 (high of >998 ppm) @ 7 ft. BLS, SB-33 (high of >908 ppm) @ 7 ft. BLS, SB-34 (high of >900 ppm) @ 7 ft. BLS, SB-35 (high of 608 ppm) @ 7 ft. BLS, SB-37 (900 ppm) @ 7 ft. BLS, SB-52 (high of 120 ppm) @ 7 ft. BLS, SB-61 (680 ppm) @ 7 ft. BLS collected from the site in the vicinity of the former aboveground tank.

Volatile organic vapors which exceeded excessively contaminated soil with kerosene analytical group of 50 ppm were detected in soil samples collected from soil borings SB-5 (750 ppm) @ 7 ft. BLS, SB-6 (>1000 ppm) @ 6 ft. BLS, SB-7 (high of 830 ppm) @ 5 ft. BLS, SB-8 (high >1000 ppm) @ 4 ft. BLS, SB-9 (>1000 ppm) @ 1, 4, and 7 ft. BLS, SB-10 (high 650 ppm) @ 7 ft. BLS, SB-15 (high 80 ppm) @ 4 ft. BLS, SB-20 (high 335 ppm) @ 4 ft. BLS, SB-21 (high 63 ppm) @ 6 ft. BLS, SB-22 (high 151 ppm) @ 6 ft. BLS, SB-23 (high 52 ppm) @ 6 ft. BLS, SB-24 (high 56 ppm) @ 6 ft. BLS, SB-25 (high 225 ppm) @ 1 ft. BLS, SB-26 (high 120 ppm) @ 1 ft. BLS, SB-27 (high 100 ppm) @ 2 ft. BLS), SB-28 (high 90 ppm) @ 4 ft. BLS, SB-29 (high 700 ppm) @ 4 ft. BLS, SB-30 (high 120 ppm) @ 4 and 6 feet BLS, SB-31 (high 850 ppm) @ 1 and 6 ft. BDL, SB-32 (high 50 ppm) @ 4 ft. BLS, SB-33 (high 180 ppm) @ 2 ft. BLS, SB-34 (high 700 ppm) @ 6 ft. BLS, SB-36 (high 400 ppm) @ 4 ft. BLS, SB-38 (high 645 ppm) @ 4 ft. BLS, SB-39 (high 210 ppm) @ 6 ft. BLS, SB-40 (high >1000 ppm) @ 4 and 6 ft. BLS, SB-42 (high 300 ppm) 6 ft. BLS, and SB-45 (>1000 ppm) @ 6 ft. BLS collected from the site in

**Table 2-2**
**Volatile Organic Compounds (VOCs)**
**Concentrations in Soil**
**Soil Samples From B-1 thru B-85 at Pier**
**SB-1 thru SB-53 at Building 18**
**and MW-1 thru MW-59**
**Naval Air Station Pensacola**
**Site 20, Allegheny Pier (Pier 303)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| B-1 | 1' | 0 |
| | 2.5' | 0 |
| | 4' | 82 |
| | 5' | 50 |
| | 7' | 2 |
| B-2 | 1' | 0 |
| B-3 | 1' | 0 |
| | 4' | 130 |
| | 7' | 410 |
| B-4 | 1' | 8 |
| | 4' | 195 |
| | 7' | 650 |
| B-5 | 1' | 102 |
| | 4' | >680 |
| | 7' | >900 |
| B-6 | 1' | 25 |
| | 4' | 125 |
| | 7' | 668 |
| B-7 | 1' | 41 |
| | 4' | 42 |
| | 7' | >990 |
| B-8 | 1' | 64 |
| | 4' | 60 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.
Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| B-9 | 1' | 64 |
| | 4' | 80 |
| | 7' | 84 |
| B-10 | 1' | 9 |
| | 4' | 365 |
| | 7' | >995 |
| B-11 | 1' | 220 |
| | 4' | >920 |
| | 7' | >960 |
| B-12 | 1' | 22 |
| | 4' | 872 |
| | 7' | >993 |
| B-13 | 1' | 100 |
| | 4' | 888 |
| | 7' | >1000 |
| B-14 | 1' | 51 |
| | 4' | 580 |
| | 7' | 710 |
| B-15 | 1' | 38 |
| B-16 | 1' | 18 |
| | 4' | 520 |
| | 7' | >1000 |
| B-17 | 1' | 180 |
| | 4' | 60 |
| | 7' | >1000 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2- 2 (Cont.)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| B-18 | 1' | 220 |
| | 4' | 20 |
| | 7' | >1000 |
| B-19 | 1' | 45 |
| | 4' | 98 |
| | 7' | >1000 |
| B-20 | 1' | 0 |
| | 4' | 25 |
| | 7' | 38 |
| B-21 | 1' | 0 |
| | 4' | 0 |
| B-22 | 1' | 7 |
| | 4' | 9 |
| | 7' | 218 |
| B-23 | 1' | 72 |
| | 4' | 450 |
| | 7' | 580 |
| B-24 | 1' | 45 |
| | 4' | 620 |
| | 7' | 731 |
| B-25 | 1' | 30 |
| | 4' | 140 |
| | 7' | 854 |
| B-26 | 1' | 25 |
| | 4' | 300 |
| | 7' | >992 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| B-27 | 1' | 100 |
| | 4' | 78 |
| | 7' | >980 |
| B-28 | 1' | 31 |
| | 4' | 70 |
| | 7' | 508 |
| B-29 | 1' | 18 |
| | 4' | 420 |
| B-30 | 1' | 34 |
| | 3' | 76 |
| B-31 | 1' | 78 |
| | 4' | >930 |
| | 7' | 205 |
| B-32 | 1' | 34 |
| | 4' | >880 |
| | 7' | >998 |
| B-33 | 1' | 30 |
| | 4' | 530 |
| | 7' | >908 |
| B-34 | 1' | 38 |
| | 4' | >200 |
| | 7' | >900 |
| B-35 | 1' | 32 |
| | 4' | 392 |
| | 7' | 608 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2- 2 (Cont.)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| B-36 | 1' | 0 |
| | 3' | 0 |
| B-37 | 1' | 0 |
| | 4' | 0 |
| | 7' | 900 |
| B-38 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-39 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-40 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-41 | 1' | 0 |
| | 3' | 0 |
| B-42 | 1' | 0 |
| | 4' | 0 |
| | 7' | 4 |
| B-43 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-44 | 1' | 0 |
| | 3' | 0 |
| B-45 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-46 | 1' | 0 |
| | 4' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| B-47 | 1' | 0 |
| | 4' | 0 |
| B-48 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-49 | 1' | 0 |
| | 4' | 0 |
| B-50 | 1' | 0 |
| | 4' | 0 |
| B-51 | 1' | 30 |
| | 4' | 40 |
| | 7' | 0 |
| B-52 | 1' | 65 |
| | 4' | 20 |
| | 7' | 120 |
| B-53 | 1' | 25 |
| | 4' | 45 |
| | 7' | 40 |
| B-54 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-55 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-56 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**

| Boring Designation | Depth ( Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| B-57 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-58 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-59 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-60 | 1' | 5 |
| | 4' | 0 |
| B-61 | 1' | 0 |
| | 4' | 0 |
| | 7' | 680 |
| B-62 | 1' | 0 |
| B-63 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-64 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-65 | 1' | 0 |
| | 4' | 0 |
| B-66 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.
Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| B-67 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-68 | 1' | 2 |
| | 4' | 0 |
| | 7' | 0 |
| B-69 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-70 | 1' | 0 |
| | 4' | 0 |
| | 7 | 0 |
| B-71 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-72 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-73 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-74 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-75 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-76 | 1' | 0 |
| | 4' | 43 |
| | 7' | 10 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| B-77 | 1' | 0 |
| | 4' | 6 |
| | 7' | 8 |
| B-78 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-79 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-80 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| B-81 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| B-82 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| B-83 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| B-84 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| B-85 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**
**(NAS BLDG 18/PART OF NAS 20, ALLEGHENY PIER)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| SB-1 | 1' | 0 |
| | 4' | 0 |
| | 5' | 0 |
| SB-2 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| SB-3 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| SB-4 | 1' | 0 |
| | 4' | 0 |
| | 5' | 0 |
| SB-5 | 1' | 0 |
| | 4' | 0 |
| | 7' | 750 |
| SB-6 | 1' | 0 |
| | 4' | 0 |
| | 6' | >1000 |
| SB-7 | 1' | 10 |
| | 4' | 650 |
| | 5' | 830 |
| SB-8 | 1' | 300 |
| | 4' | >1000 |
| SB-9 | 1' | >1000 |
| | 4' | >1000 |
| | 7' | >1000 |
| SB-10 | 1' | 0 |
| | 4' | 10 |
| | 7' | 650 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**
**(NAS BLDG 18/PART OF NAS 20, ALLEGHENY PIER)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| SB-11 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| SB-12 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| SB-13 | 1' | 18 |
| | 3' | 19 |
| SB-14 | 1' | 30 |
| | 4' | 0 |
| | 6' | 43 |
| SB-15 | 1' | 0 |
| | 4' | 0 |
| | 6' | 80 |
| SB-16 | 1' | 0 |
| | 3' | 27 |
| SB-17 | 1' | 0 |
| | 2' | 18 |
| SB-18 | 1' | 0 |
| | 4' | 0 |
| | 6' | 36 |
| SB-19 | 1' | 0 |
| | 4' | 0 |
| | 5' | 0 |
| SB-20 | 1' | 0 |
| | 4' | 335 |
| | 6' | 180 |
| SB-21 | 1' | 20 |
| | 4' | 0 |
| | 6' | 63 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**
**(NAS BLDG 18/PART OF NAS 20, ALLEGHENY PIER)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| SB-22 | 1' | 0 |
| | 4' | 0 |
| | 6' | 151 |
| SB-23 | 1' | 42 |
| | 4' | 15 |
| | 6' | 52 |
| SB-24 | 1' | 0 |
| | 4' | 15 |
| | 6' | 56 |
| SB-25 | 1' | 225 |
| | 4' | 20 |
| | 6' | 25 |
| SB-26 | 1' | 120 |
| | 4' | 30 |
| | 6' | 19 |
| SB-27 | 1' | 10 |
| | 2' | 100 |
| SB-28 | 1' | 0 |
| | 4' | 90 |
| | 6' | 50 |
| SB-29 | 1' | 75 |
| | 4' | 700 |
| | 6' | 350 |
| SB-30 | 1' | 50 |
| | 4' | 120 |
| | 6' | 120 |
| SB-31 | 1' | 850 |
| | 4' | 600 |
| | 6' | 850 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**
**(NAS BLDG 18/PART OF NAS 20, ALLEGHENY PIER)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| SB-32 | 1' | 20 |
| | 4' | 50 |
| | 6' | 25 |
| SB-33 | 1' | 18 |
| | 2' | 180 |
| | 6' | -- |
| SB-34 | 1' | 80 |
| | 4' | 600 |
| | 6' | 700 |
| SB-35 | 1' | 20 |
| | 4' | 20 |
| | 6' | 20 |
| SB-36 | 1' | 200 |
| | 4' | 400 |
| | 6' | 70 |
| SB-37 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| SB-38 | 1' | 90 |
| | 4' | 645 |
| | 6' | 500 |
| SB-39 | 1' | 90 |
| | 4' | 175 |
| | 6' | 210 |
| SB-40 | 1' | 200 |
| | 4' | >1000 |
| | 6' | >1000 |
| SB-41 | 1' | 40 |
| | 4' | 20 |
| | 6' | -- |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**
**(NAS BLDG 18/PART OF NAS 20, ALLEGHENY PIER)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| SB-42 | 1' | 40 |
| | 4' | 250 |
| | 6' | 300 |
| SB-43 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| SB-44 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| SB-45 | 1' | 0 |
| | 4' | 0 |
| | 6' | >1000 |
| SB-46 | 1' | 0 |
| | 4' | 0 |
| | 6' | 3 |
| SB-47 | 1' | 0 |
| | 4' | 0 |
| | 6' | 3 |
| SB-48 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| SB-49 | 1' | 0 |
| | 4' | 0 |
| | 6 | 0 |
| SB-50 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| SB-51 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.
Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

**Table 2-2 (Cont.)**
**(NAS BLDG 18/PART OF NAS 20, ALLEGHENY PIER)**

| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| SB-52 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| SB-53 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

| Table 2-2 (Cont.) MONITORING WELLS MW-1 THRU MW-59 | | |
|---|---|---|
| **Boring Designation** | **Depth (Feet BLS)** | **VOCs Concentration (ppm)[1]** |
| MW-1 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-2 | 1' | 10 |
| | 4' | 0 |
| | 6' | 0 |
| MW-3 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| MW-4 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-5 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-6 | 1' | 0 |
| | 4' | 0 |
| | 5.5' | 0 |
| MW-7 | 1' | 0 |
| | 4' | 450 |
| | 5.5' | 800 |
| MW-8 | 1' | 0 |
| | 4' | 0 |
| | 7' | 650 |
| MW-9 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-10 | 1' | 0 |
| | 4' | 0 |
| | 5.75' | 0 |
| | 7' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

| Table 2-2 (Cont.) MONITORING WELLS MW-1 THRU MW-59 | | |
|---|---|---|
| **Boring Designation** | **Depth (Feet BLS)** | **VOCs Concentration (ppm)[1]** |
| MW-11 | 1' | 0 |
| | 4' | 0 |
| | 7' | 105 |
| MW-12 | 1' | 0 |
| | 4' | 24 |
| | 7' | 50 |
| MW-13 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-14 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-15 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-16 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-17 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-18 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-19 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-20 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques0.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

| Table 2-2 (Cont.) MONITORING WELLS MW-1 THRU MW-59 | | |
|---|---|---|
| **Boring Designation** | **Depth (Feet BLS)** | **VOCs Concentration (ppm)[1]** |
| MW-21 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-22 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-23 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-24 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-25 | 1' | 10 |
| | 4' | 0 |
| | 6' | 0 |
| MW-26 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-27 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-28 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-29 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-30 | 1' | 0 |
| | 4' | 0 |
| | 6' | 25 |
| MW-31 | 1' | 50 |
| | 4' | >1000 |
| | 6' | >1000 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.
Notes: BLS = below land surface
ppm = parts per million
Soil samples analyzed and VOC results reported by W.E.S., Inc.

| Table 2-2 (Cont.) MONITORING WELLS MW-1 THRU MW-59 | | |
|---|---|---|
| **Boring Designation** | **Depth (Feet BLS)** | **VOCs Concentration (ppm)[1]** |
| MW-32 | 1' | >1000 |
| | 4' | >1000 |
| | 6' | >1000 |
| MW-33 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-34 | 1' | 25 |
| | 4' | 5 |
| | 6' | 120 |
| MW-35 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-36 | 1' | 3 |
| | 4' | 0 |
| | 6' | 0 |
| MW-37 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-38 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-39 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-40 | 1' | 0 |
| | 4' | 0 |
| MW-41 | 1' | 0 |
| | 4' | 0 |
| MW-42 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
Soil samples analyzed and VOC results reported by W.E.S., Inc.

| Table 2-2 (Cont.) MONITORING WELLS MW-1 THRU MW-59 | | |
|---|---|---|
| **Boring Designation** | **Depth (Feet BLS)** | **VOCs Concentration (ppm)[1]** |
| MW-43 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-44 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-45 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-46 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-47 | 1' | 0 |
| | 4' | 0 |
| | 6' | >1000 |
| MW-48 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-49 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-50 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-51 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| MW-52 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

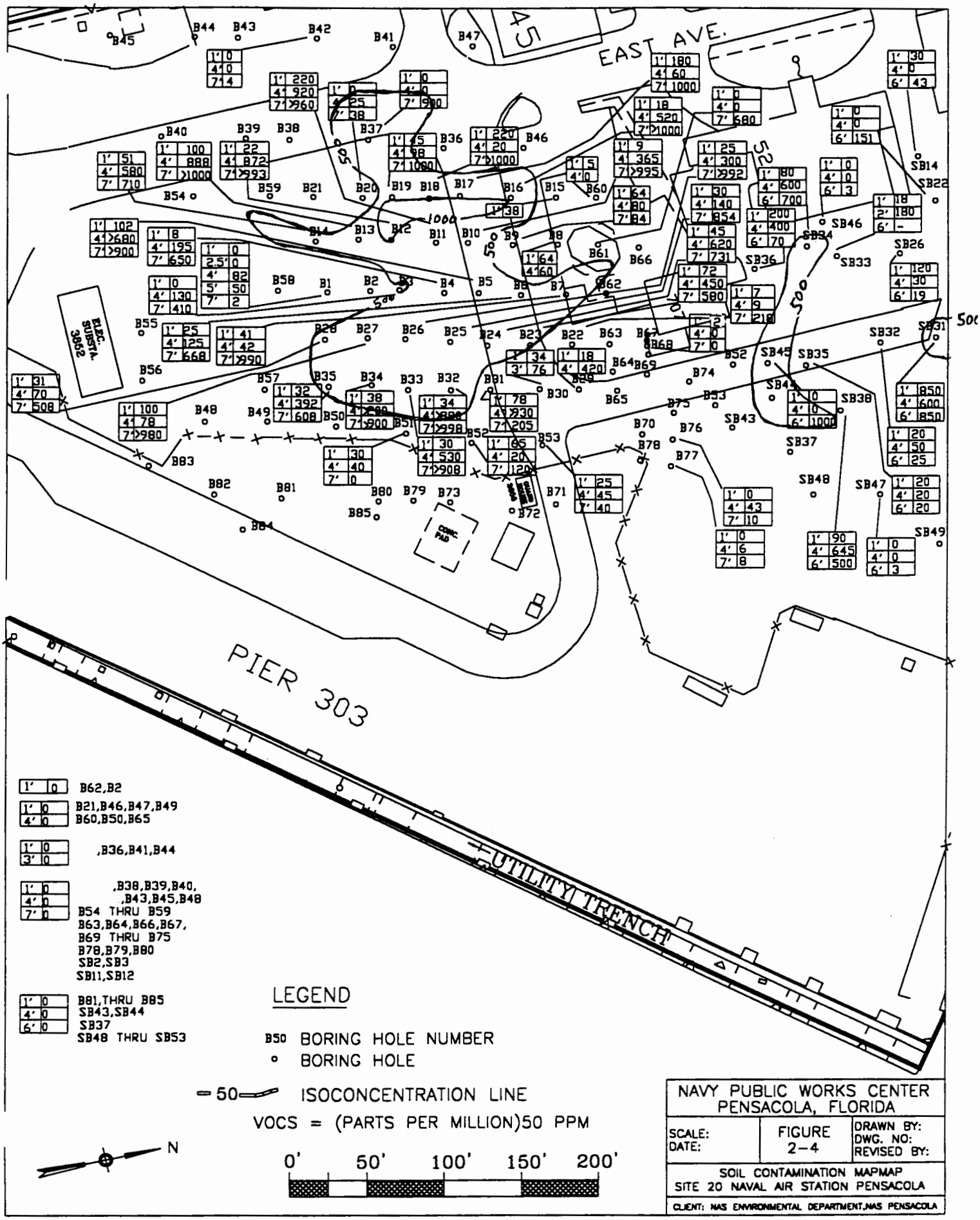
Notes: BLS = below land surface
ppm = parts per million
Soil samples analyzed and VOC results reported by W.E.S., Inc.

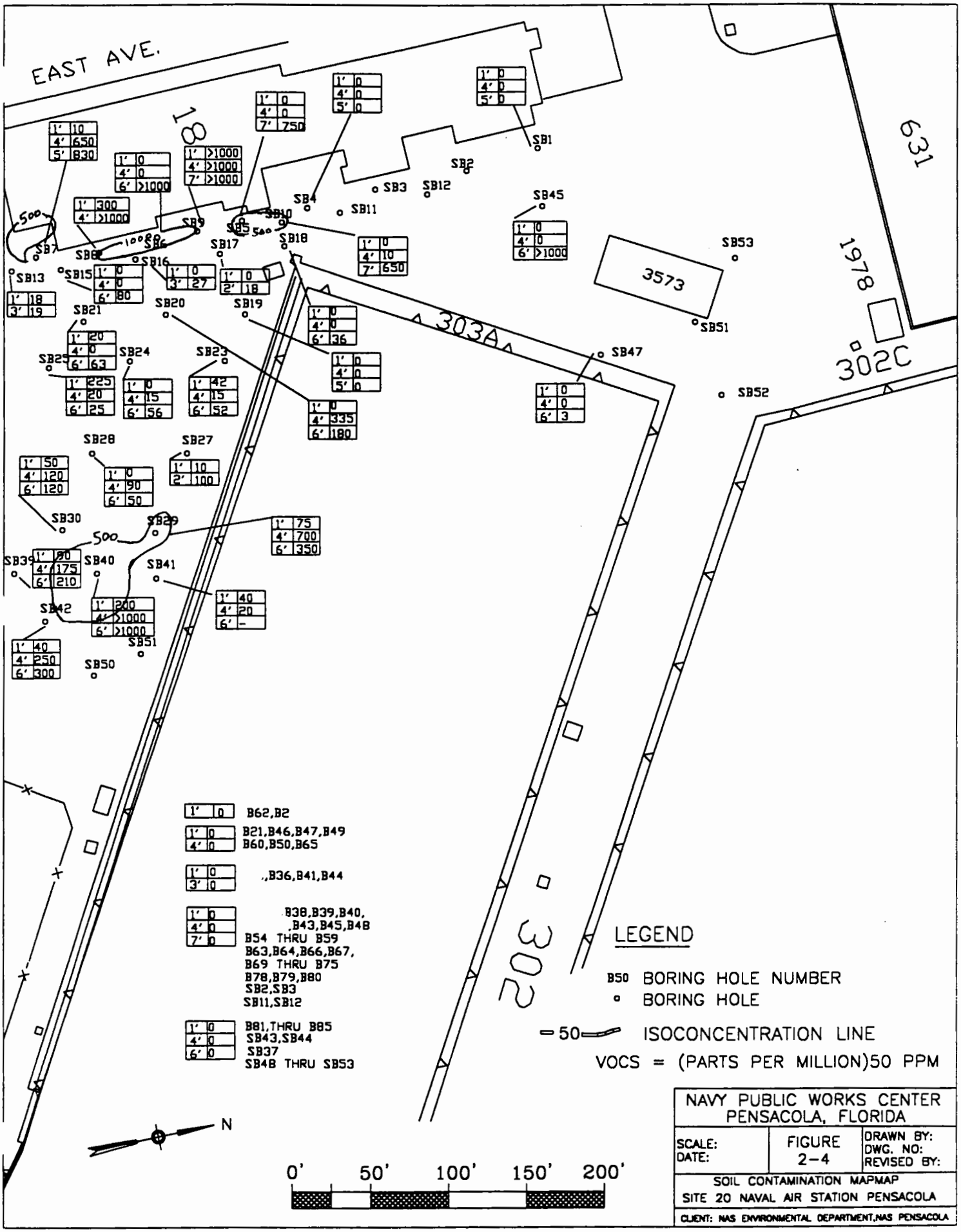
**Table 2- 2 (Cont.)**
**MONITORING WELLS MW-1 THRU MW-59**

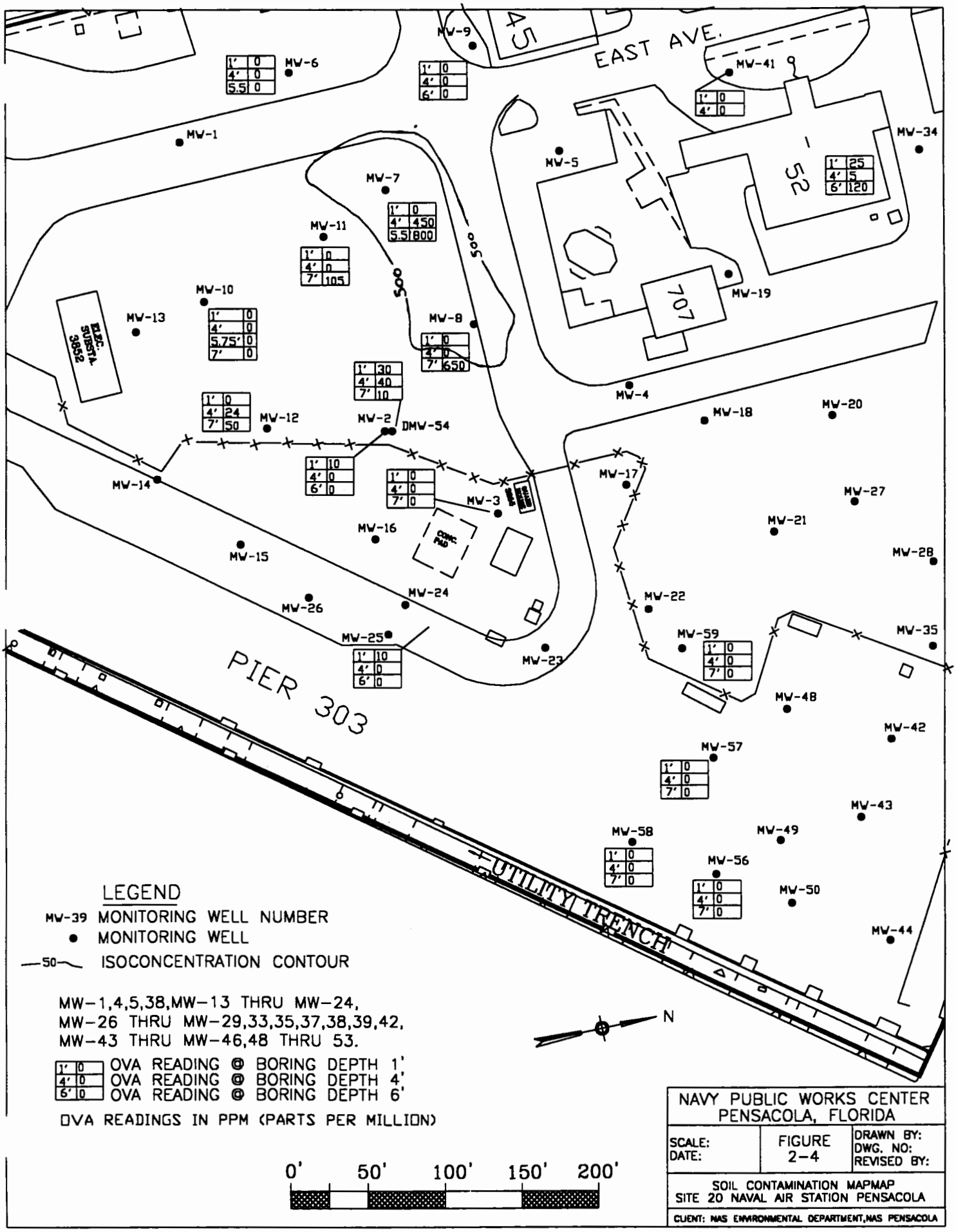
| Boring Designation | Depth (Feet BLS) | VOCs Concentration (ppm)[1] |
|---|---|---|
| MW-53 | 1' | 0 |
| | 4' | 0 |
| | 6' | 0 |
| DMW-54 | 1' | 30 |
| | 4' | 40 |
| | 7' | 10 |
| DMW-55 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| MW-56 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| MW-57 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| MW-58 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |
| MW-59 | 1' | 0 |
| | 4' | 0 |
| | 7' | 0 |

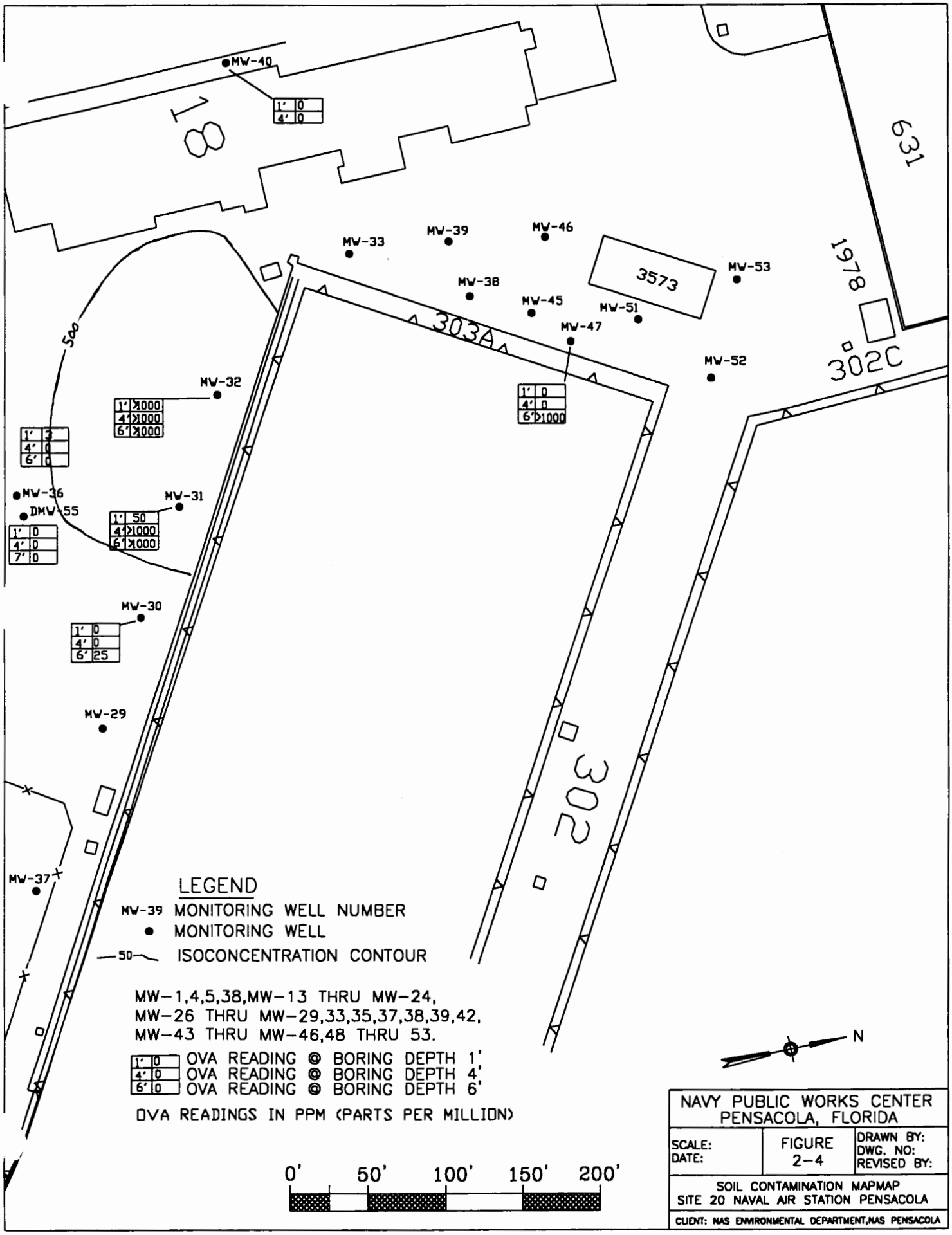
[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
Soil samples analyzed and VOC results reported by W.E.S., Inc.


EAST AVE.
PIER 303
UTILITY TRENCH
ELEC. SUBSTA. 3852
CONC. PAD
B62,B2
B21,B46,B47,B49
B60,B50,B65
,B36,B41,B44
,B38,B39,B40,
,B43,B45,B48
B54 THRU B59
B63,B64,B66,B67,
B69 THRU B75
B78,B79,B80
SB2,SB3
SB11,SB12
B81,THRU B85
SB43,SB44
SB37
SB48 THRU SB53
LEGEND
B50 BORING HOLE NUMBER
BORING HOLE
50 ISOCONCENTRATION LINE
VOCS = (PARTS PER MILLION)50 PPM
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE 2-4
DRAWN BY:
DWG. NO:
REVISED BY:
SOIL CONTAMINATION MAPMAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


EAST AVE.
18
631
1978
3573
303A
302C
302
SB1
SB2
SB3
SB4
SB5
SB6
SB7
SB8
SB9
SB10
SB11
SB12
SB13
SB15
SB16
SB17
SB18
SB19
SB20
SB21
SB23
SB24
SB25
SB27
SB28
SB29
SB30
SB39
SB40
SB41
SB42
SB45
SB47
SB50
SB51
SB52
SB53
LEGEND
B50 BORING HOLE NUMBER
BORING HOLE
50 ISOCONCENTRATION LINE
VOCS = (PARTS PER MILLION)50 PPM
B62,B2
B21,B46,B47,B49
B60,B50,B65
B36,B41,B44
B38,B39,B40,
B43,B45,B48
B54 THRU B59
B63,B64,B66,B67,
B69 THRU B75
B78,B79,B80
SB2,SB3
SB11,SB12
B81,THRU B85
SB43,SB44
SB37
SB48 THRU SB53
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE 2-4
DRAWN BY:
DWG. NO:
REVISED BY:
SOIL CONTAMINATION MAPMAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


EAST AVE.
PIER 303
UTILITY TRENCH
ELEC. SUBSTA. 3852
CONC. PAD
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
MW-13
MW-14
MW-15
MW-16
MW-17
MW-18
MW-19
MW-20
MW-21
MW-22
MW-23
MW-24
MW-25
MW-26
MW-27
MW-28
MW-34
MW-35
MW-41
MW-42
MW-43
MW-44
MW-48
MW-49
MW-50
MW-56
MW-57
MW-58
MW-59
DMW-54
500
LEGEND
MW-39 MONITORING WELL NUMBER
MONITORING WELL
50 ISOCONCENTRATION CONTOUR
MW-1,4,5,38,MW-13 THRU MW-24,
MW-26 THRU MW-29,33,35,37,38,39,42,
MW-43 THRU MW-46,48 THRU 53.
OVA READING @ BORING DEPTH 1'
OVA READING @ BORING DEPTH 4'
OVA READING @ BORING DEPTH 6'
OVA READINGS IN PPM (PARTS PER MILLION)
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE 2-4
DRAWN BY:
DWG. NO:
REVISED BY:
SOIL CONTAMINATION MAPMAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


MW-40
1' 0
4' 0
18
631
MW-33
MW-39
MW-46
3573
MW-53
1978
MW-38
MW-45
MW-51
MW-47
303A
302C
MW-52
500
MW-32
1' >1000
4' >1000
6' >1000
1' 0
4' 0
6' >1000
1' 3
4' 0
6' 0
MW-36
DMW-55
MW-31
1' 50
4' >1000
6' >1000
1' 0
4' 0
7' 0
MW-30
1' 0
4' 0
6' 25
MW-29
302
MW-37
LEGEND
MW-39 MONITORING WELL NUMBER
MONITORING WELL
50 ISOCONCENTRATION CONTOUR
MW-1,4,5,38,MW-13 THRU MW-24,
MW-26 THRU MW-29,33,35,37,38,39,42,
MW-43 THRU MW-46,48 THRU 53.
1' 0 OVA READING @ BORING DEPTH 1'
4' 0 OVA READING @ BORING DEPTH 4'
6' 0 OVA READING @ BORING DEPTH 6'
OVA READINGS IN PPM (PARTS PER MILLION)
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE
2-4
DRAWN BY:
DWG. NO:
REVISED BY:
SOIL CONTAMINATION MAPMAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA

the vicinity of Building 18.

Volatile organic vapor concentrations that exceeded the excessively contaminated soil limits of 50 ppm for the kerosene analytical group were detected in the soil sample collected from monitoring wells MW-7 (high 800 ppm) @ 5.5 ft. BLS, MW-8 (650 ppm) @ 7 ft. BLS, MW-11 (105 ppm) @ 7 ft. BLS, MW-12 (high 50 ppm) @ 7 ft. BLS, MW-31 (high >1000 ppm) @ 4 and 6 ft. BLS, MW-32 (high >1000 ppm) @ 1, 4, and 6 ft. BLS, MW-34 (high 120 ppm) @ 6 ft. BLS, MW-47 (>1000 ppm) @ 6 ft. BLS, and MW-52 (>1000 ppm) @ 6 ft. BLS. A soil contamination map is shown in Figure 2-4. VOC readings taken from three areas of the site (the tank area, Building 18, and monitoring wells) indicate that the areal extent of soil contamination is widespread and extensive.

## 2.5 SITE SPECIFIC HYDROGEOLOGY

The principal aquifer of concern at the site is the surficial zone of the sand-and-gravel aquifer. The surficial zone was penetrated to at depth of 25.5 feet during this investigation. The lithology at the site was found to be consistent and is generally composed of (1) asphalt, road sub-base from 0-1 feet BLS (2) light brown to grey, fine silty sand from 1 to 4 feet BLS (3) white, silty, fine sand from 4 to 6 feet BLS (4) reddish white, fine to medium, silty sand from 6 to 7 feet BLS (5) tan, fine to medium, silty sand from 7 to 10 feet BLS (6) grey, fine to medium, silty sand from 10 to 18 feet BLS (7) tan, medium to course, silty sand from 18 to 25 feet BLS. The groundwater table at the site was encountered between 6 and 7 feet BLS. Lithological logs describing the soils encountered at various depth, the approximate groundwater level, and OVA screening results for the soil borings installed during monitoring well installation are shown in Appendix C.

## 2.6 SURFACE WATER ASSESSMENT

Pensacola Bay is located approximately 50 feet south and east of the site. No surface water assessment was performed at the site.

## 2.7 GROUNDWATER QUALITY ASSESSMENT

Groundwater samples were extracted from shallow groundwater monitoring wells MW-1, MW-3 thru MW-7, MW-9, MW-10, MW-13 thru MW-18, MW-20 thru MW-28, MW-35, MW-37 thru MW-46, MW-48 thru MW-53 and MW-56 thru MW-59 and deep vertical extent groundwater monitoring wells DMW-54 and DMW-55 by W.E.S., Inc. personnel using the methods and procedures outlined in their Comprehensive Quality Assurance Plan (CompQAP No. 900465G). The groundwater samples were analyzed by NPWC Pensacola laboratory using the method and procedures outlined in PWC Pensacola's Comprehensive Quality Assurance Plan No. 920121G.

Groundwater samples were collected on September 10 and November 6, 1996, February 11, February 27, March 27, May 2, May 21, May 30, and September 18, 1997. The groundwater samples were analyzed for volatile organic aromatics (VOAs), polynuclear aromatic hydrocarbons (PAHs), ethylene dibromide (EDB) and TPH using EPA methods 8260, 8270A,

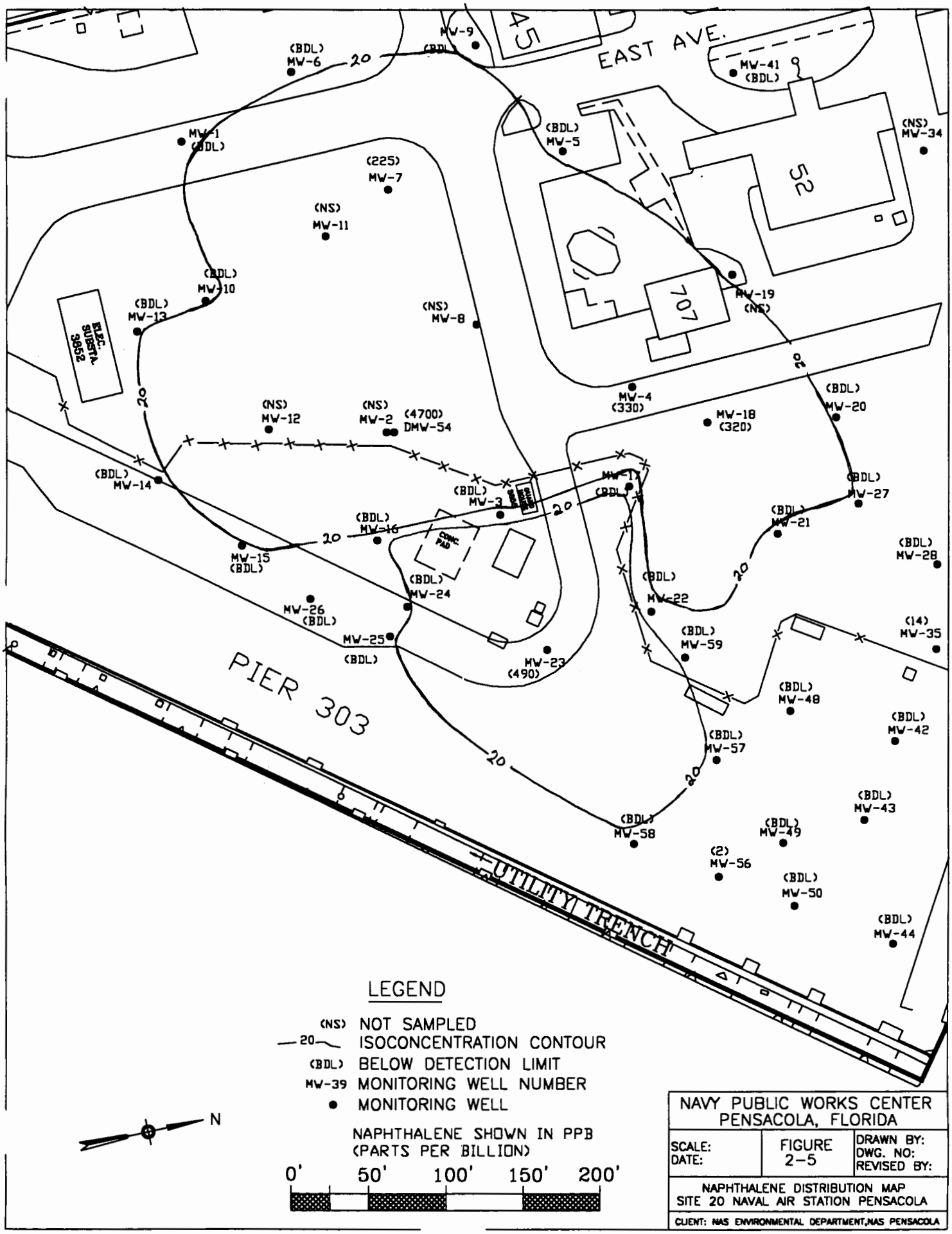
504 and FLPRO, respectively.

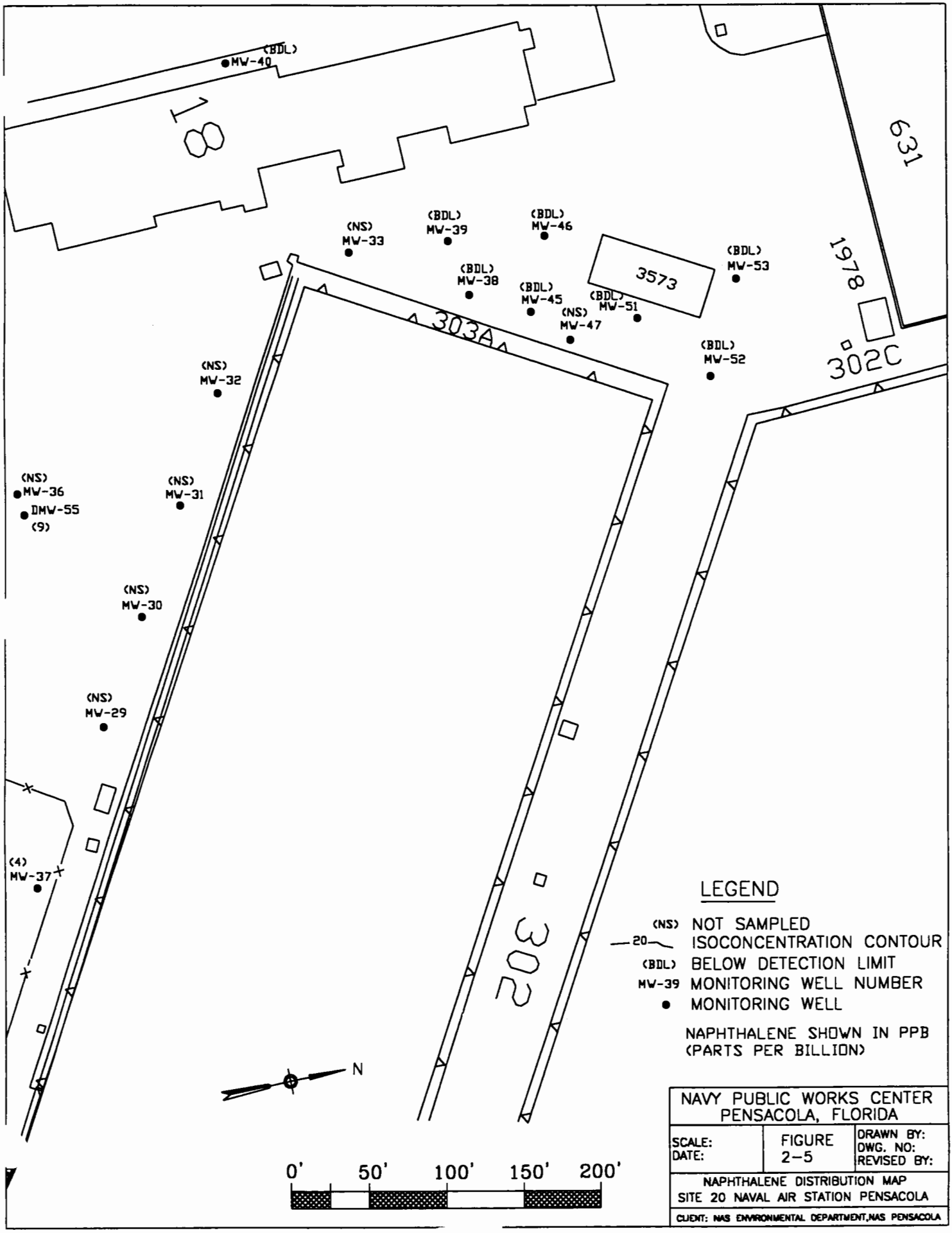
Free product was discovered in monitoring wells MW-2, MW-8, MW-11, MW-12, MW-19, MW-29 thru MW-34, MW-36 and MW-47. Therefore, these monitoring wells were not sampled and analyzed with the exception of monitoring wells MW-29 and MW-30 which were sampled for lead using the quiescent sampling method on September 25, 26, and 29, 1997.

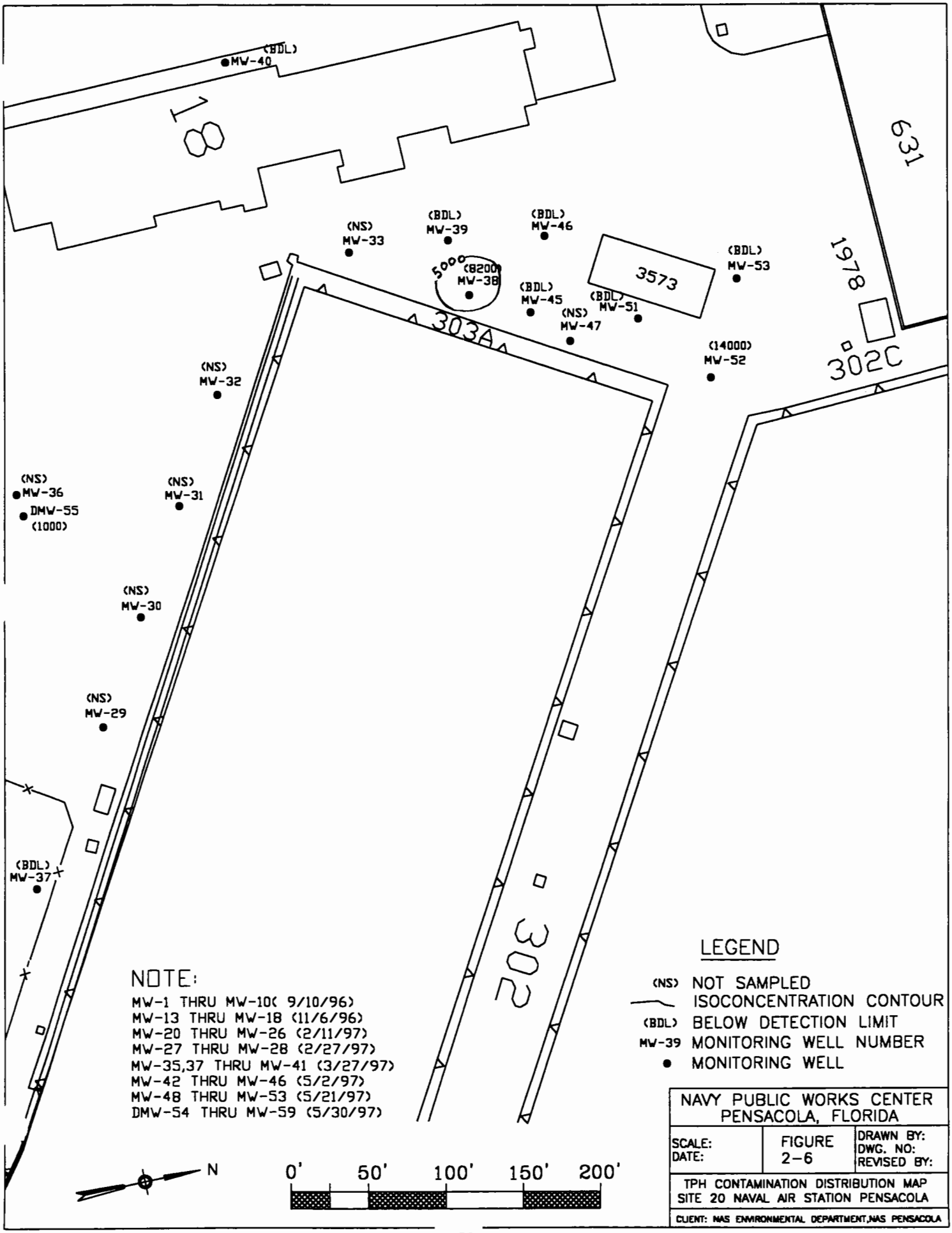
Groundwater samples were collected from each monitoring well (except MW-2, MW-8, MW-11, MW-12, MW-19, MW-31 thru MW-34, MW-36 and MW-47) using the quiescent sampling technique by Navy Public Works Center Pensacola laboratory personnel on September 18 thru September 29, 1997 using the methods and procedures outlined in their Comprehensive Quality Assurance Plan (CompQAP). These groundwater samples were analyzed for total lead using EPA method 7421. The analytical laboratory results are found in Appendix D.

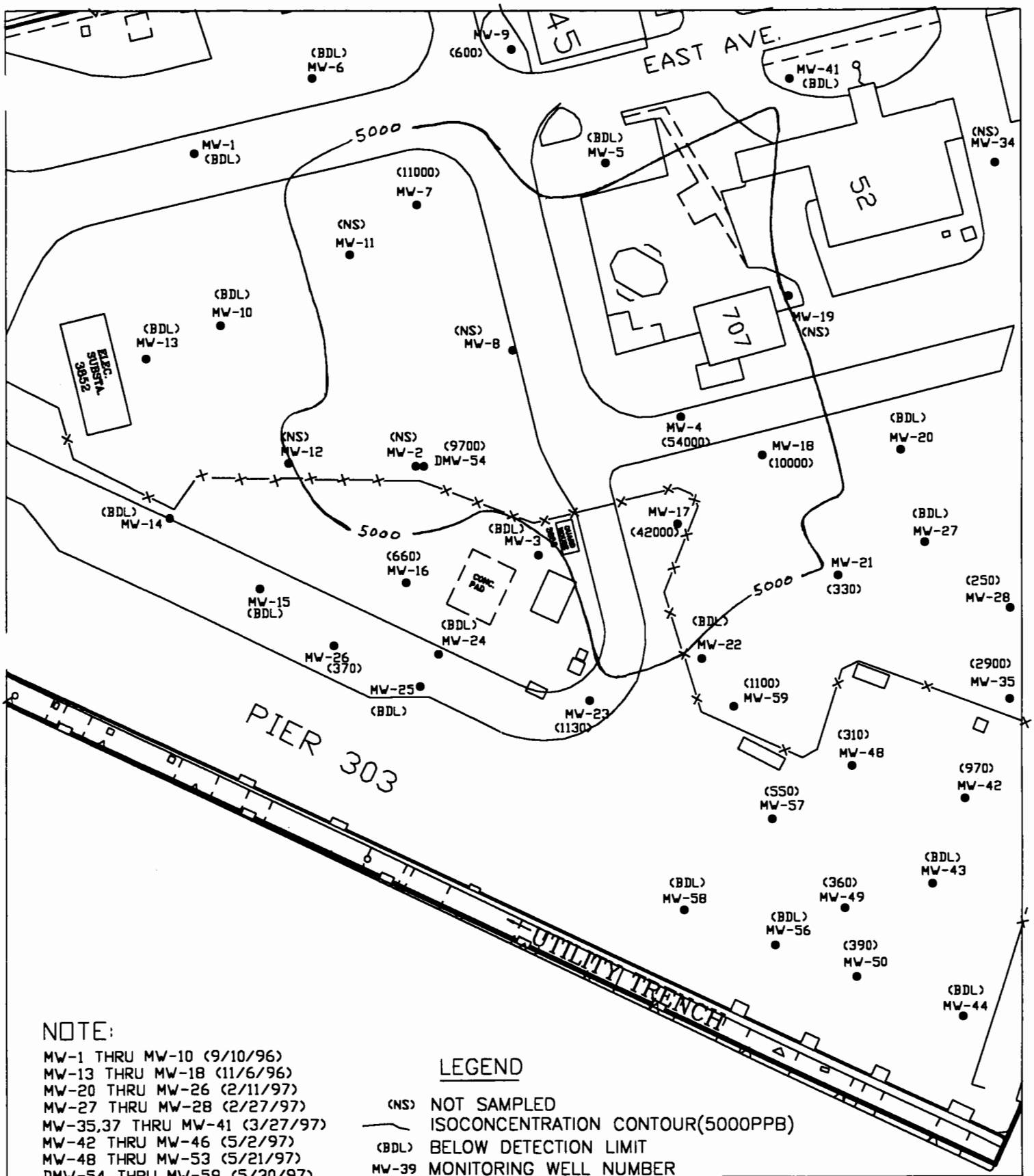
Groundwater analytical results are included in Appendix D. Summary tables of the VOA and PAH analytical results are shown in Tables 2-3 and 2-4, respectfully, and summary tables of the TPHs, lead, and EDBs analytical results are shown in Table 2-5. A Naphthalene Contamination Distribution Map is included as Figure 2-5, a TPH Contamination Distribution Map is included as Figure 2-6, and a Lead Contamination Distribution Map is included as Figure 2-7.

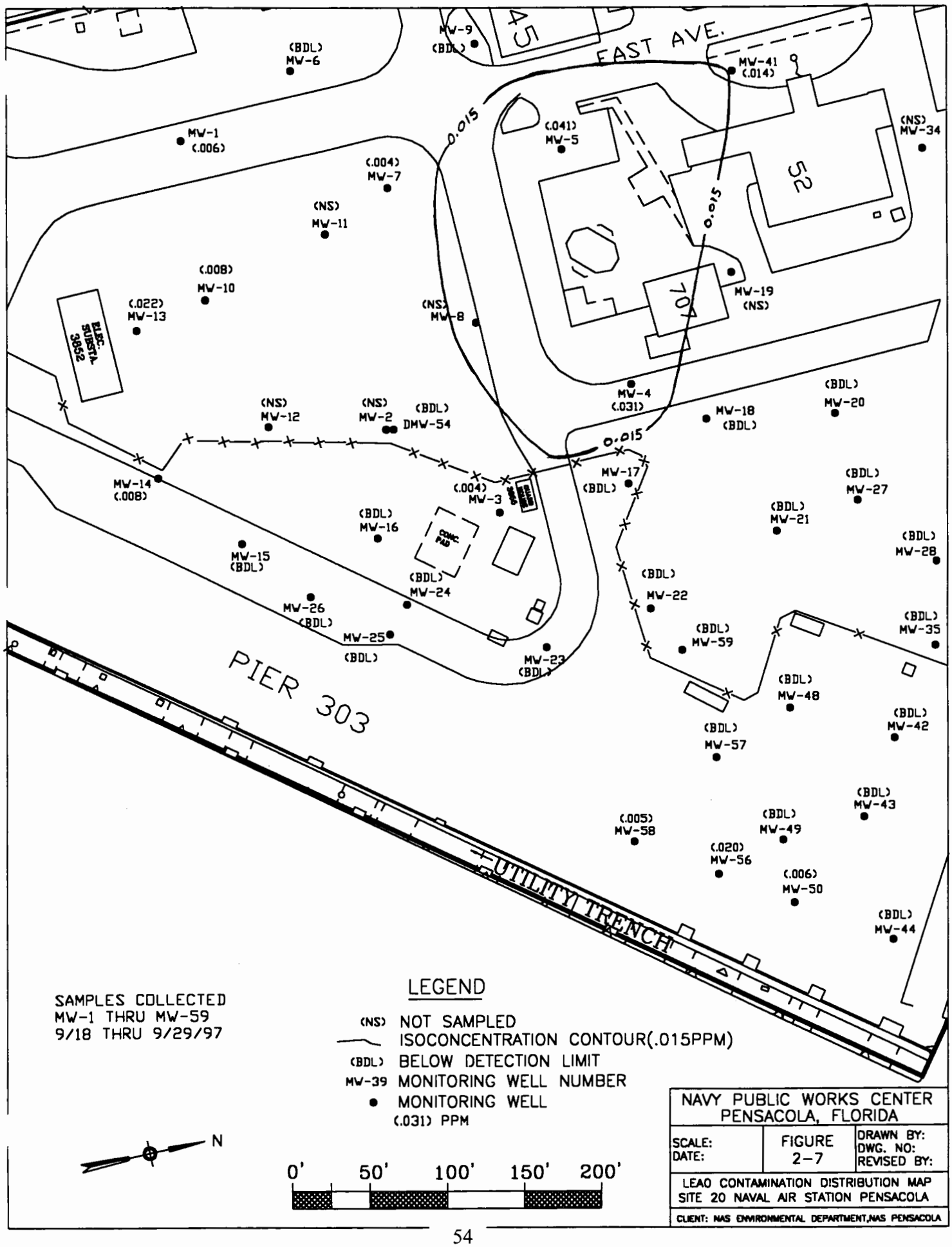
The laboratory analysis of groundwater samples collected from the monitoring wells (other than monitoring wells with free product) indicated benzene levels in deep vertical extent monitoring well DMW-55 at a concentration of 2 ppb which is above the FDEP groundwater cleanup target level of 1 ppb for benzene. Trans-1,2-Dichloroethene was detected in the groundwater samples collected from monitoring well MW-7 at a concentration of 2 ppb which is below the FDEP groundwater guidance concentration of 7 ppb for trans-1,2-Dichloroethene. Toluene was detected in the groundwater samples collected from monitoring wells MW-42, MW-52, and DMW-55 at concentration levels of 1 ppb, 2 ppb, and 2 ppb, respectfully, which does not exceed the FDEP groundwater cleanup target level of 40 ppb for toluene. Trichloroethene was detected in the groundwater sample collected from MW-40 at concentrations of 2 ppb which does not exceed the FDEP groundwater guidance concentration of 3 ppb. Vinyl Chloride was detected in the groundwater samples collected from monitoring wells MW-7, MW-27, and MW-28 at concentration levels of 37 ppb, 1 ppb, and 2 ppb, respectfully, which are equal to or exceed the FDEP groundwater guidance concentration of 1 ppb for vinyl chloride. MTBE (1 ppb) was detected in the groundwater sample collected from DMW-55 which is below the FDEP groundwater cleanup target level of 35 ppb for MTBE. Total xylenes were detected in the groundwater samples collected from monitoring wells MW-50, DMW-54, and DMW-55 at concentration levels of 2 ppb, 29 ppb, and 2 ppb, respectfully. Deep vertical monitoring well DMW-54 (29 ppb) exceeded the FDEP groundwater cleanup target level of 20 ppb for total xylenes. No VOAs were detected in the groundwater samples collected from monitoring wells MW-1, MW-3 thru MW-6, MW-9 and MW-10, MW-13 thru MW-18, MW-20 thru MW-26, MW-35, MW-37 thru MW-39, MW-41, MW-43 thru 46, MW-48 and MW-49, MW-51, MW-53, and MW-56 thru MW-59. Groundwater samples were not collected or analyzed for VOAs at monitoring wells MW-2, MW-8, MW-11, MW-12, MW-19, MW-29 thru MW-34, MW-36, and MW-47 because free-product was detected in the monitoring wells.


EAST AVE.
PIER 303
UTILITY TRENCH
ELEC. SUBSTA. 3852
45
52
707
(BDL) MW-6
MW-9 (BDL)
MW-41 (BDL)
(NS) MW-34
(BDL) MW-5
MW-1 (BDL)
(225) MW-7
(NS) MW-11
(BDL) MW-10
(BDL) MW-13
(NS) MW-8
MW-19 (NS)
MW-4 (330)
MW-18 (320)
(BDL) MW-20
(NS) MW-12
(NS) MW-2
(4700) DMW-54
(BDL) MW-14
(BDL) MW-3
MW-17 (BDL)
(BDL) MW-27
(BDL) MW-16
(BDL) MW-21
(BDL) MW-28
MW-15 (BDL)
(BDL) MW-24
(BDL) MW-22
MW-26 (BDL)
MW-25 (BDL)
(BDL) MW-59
(14) MW-35
MW-23 (490)
(BDL) MW-48
(BDL) MW-42
(BDL) MW-57
(BDL) MW-43
(BDL) MW-58
(BDL) MW-49
(2) MW-56
(BDL) MW-50
(BDL) MW-44
20
LEGEND
(NS) NOT SAMPLED
20 ISOCONCENTRATION CONTOUR
(BDL) BELOW DETECTION LIMIT
MW-39 MONITORING WELL NUMBER
MONITORING WELL
NAPHTHALENE SHOWN IN PPB (PARTS PER BILLION)
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE 2-5
DRAWN BY:
DWG. NO:
REVISED BY:
NAPHTHALENE DISTRIBUTION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


(BDL)
MW-40
18
631
(NS)
MW-33
(BDL)
MW-39
(BDL)
MW-46
3573
(BDL)
MW-53
1978
(BDL)
MW-38
(BDL)
MW-45
(BDL)
MW-51
(NS)
MW-47
303A
(BDL)
MW-52
302C
(NS)
MW-32
(NS)
MW-36
DMW-55
(9)
(NS)
MW-31
(NS)
MW-30
(NS)
MW-29
(4)
MW-37
302
N
0'
50'
100'
150'
200'
LEGEND
(NS) NOT SAMPLED
20 ISOCONCENTRATION CONTOUR
(BDL) BELOW DETECTION LIMIT
MW-39 MONITORING WELL NUMBER
MONITORING WELL
NAPHTHALENE SHOWN IN PPB
(PARTS PER BILLION)
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE
2-5
DRAWN BY:
DWG. NO:
REVISED BY:
NAPHTHALENE DISTRIBUTION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


(BDL)
MW-40
18
631
(NS)
MW-33
(BDL)
MW-39
(BDL)
MW-46
5000
(8200)
MW-38
3573
(BDL)
MW-53
1978
(BDL)
MW-45
(BDL)
MW-51
(NS)
MW-47
303A
(14000)
MW-52
302C
(NS)
MW-32
(NS)
MW-36
DMW-55
(1000)
(NS)
MW-31
(NS)
MW-30
(NS)
MW-29
(BDL)
MW-37
302
NOTE:
MW-1 THRU MW-10( 9/10/96)
MW-13 THRU MW-18 (11/6/96)
MW-20 THRU MW-26 (2/11/97)
MW-27 THRU MW-28 (2/27/97)
MW-35,37 THRU MW-41 (3/27/97)
MW-42 THRU MW-46 (5/2/97)
MW-48 THRU MW-53 (5/21/97)
DMW-54 THRU MW-59 (5/30/97)
LEGEND
(NS) NOT SAMPLED
ISOCONCENTRATION CONTOUR
(BDL) BELOW DETECTION LIMIT
MW-39 MONITORING WELL NUMBER
MONITORING WELL
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE
2-6
DRAWN BY:
DWG. NO:
REVISED BY:
TPH CONTAMINATION DISTRIBUTION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


EAST AVE.
PIER 303
UTILITY TRENCH
5000
(BDL) MW-6
MW-9 (600)
MW-41 (BDL)
MW-1 (BDL)
(BDL) MW-5
(NS) MW-34
(11000) MW-7
(NS) MW-11
(BDL) MW-10
(BDL) MW-13
ELEC. SUBSTA. 3852
(NS) MW-8
MW-19 (NS)
52
707
MW-4 (54000)
MW-18 (10000)
(BDL) MW-20
(NS) MW-12
(NS) MW-2
(9700) DMW-54
(BDL) MW-14
MW-17 (42000)
(BDL) MW-27
(BDL) MW-3
(660) MW-16
CONC. PAD
MW-21 (330)
(250) MW-28
MW-15 (BDL)
(BDL) MW-24
(BDL) MW-22
MW-26 (370)
(2900) MW-35
MW-25 (BDL)
(1100) MW-59
MW-23 (1130)
(310) MW-48
(970) MW-42
(550) MW-57
(BDL) MW-43
(BDL) MW-58
(360) MW-49
(BDL) MW-56
(390) MW-50
(BDL) MW-44
NOTE:
MW-1 THRU MW-10 (9/10/96)
MW-13 THRU MW-18 (11/6/96)
MW-20 THRU MW-26 (2/11/97)
MW-27 THRU MW-28 (2/27/97)
MW-35,37 THRU MW-41 (3/27/97)
MW-42 THRU MW-46 (5/2/97)
MW-48 THRU MW-53 (5/21/97)
DMW-54 THRU MW-59 (5/30/97)
LEGEND
(NS) NOT SAMPLED
ISOCONCENTRATION CONTOUR(5000PPB)
(BDL) BELOW DETECTION LIMIT
MW-39 MONITORING WELL NUMBER
MONITORING WELL
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE 2-6
DRAWN BY:
DWG. NO:
REVISED BY:
TPH CONTAMINATION DISTRIBUTION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA


EAST AVE.
PIER 303
UTILITY TRENCH
ELEC. SUBSTA. 3852
CONC. PAD
45
52
707
0.015
(BDL) MW-6
MW-9 (BDL)
MW-41 (.014)
(NS) MW-34
MW-1 (.006)
(.041) MW-5
(.004) MW-7
(NS) MW-11
(.008) MW-10
(.022) MW-13
(NS) MW-8
MW-19 (NS)
MW-4 (.031)
(BDL) MW-20
MW-18 (BDL)
(NS) MW-12
(NS) MW-2
(BDL) DMW-54
MW-14 (.008)
(.004) MW-3
MW-17 (BDL)
(BDL) MW-27
(BDL) MW-21
(BDL) MW-16
MW-15 (BDL)
(BDL) MW-28
(BDL) MW-24
(BDL) MW-22
MW-26 (BDL)
MW-25 (BDL)
MW-23 (BDL)
(BDL) MW-59
(BDL) MW-35
(BDL) MW-48
(BDL) MW-42
(BDL) MW-57
(BDL) MW-43
(.005) MW-58
(BDL) MW-49
(.020) MW-56
(.006) MW-50
(BDL) MW-44
SAMPLES COLLECTED
MW-1 THRU MW-59
9/18 THRU 9/29/97
LEGEND
(NS) NOT SAMPLED
ISOCONCENTRATION CONTOUR(.015PPM)
(BDL) BELOW DETECTION LIMIT
MW-39 MONITORING WELL NUMBER
MONITORING WELL
(.031) PPM
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE 2-7
DRAWN BY:
DWG. NO:
REVISED BY:
LEAD CONTAMINATION DISTRIBUTION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA

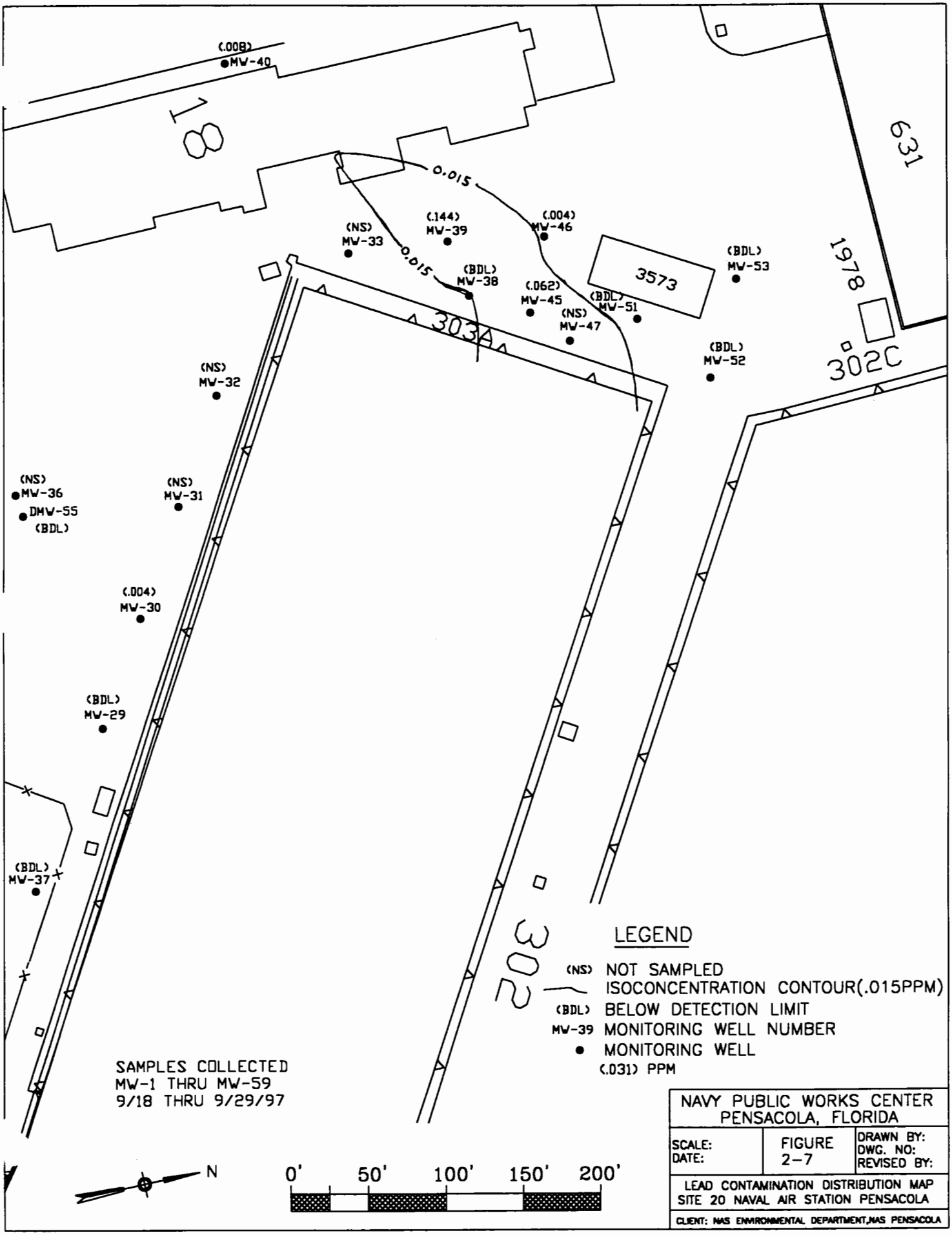

(.008)
MW-40
18
631
0.015
(.144)
MW-39
(.004)
MW-46
(NS)
MW-33
0.015
(BDL)
MW-38
3573
(BDL)
MW-53
1978
(.062)
MW-45
(BDL)
MW-51
(NS)
MW-47
303A
(BDL)
MW-52
302C
(NS)
MW-32
(NS)
MW-36
DMW-55
(BDL)
(NS)
MW-31
(.004)
MW-30
(BDL)
MW-29
(BDL)
MW-37
302
LEGEND
(NS) NOT SAMPLED
ISOCONCENTRATION CONTOUR(.015PPM)
(BDL) BELOW DETECTION LIMIT
MW-39 MONITORING WELL NUMBER
MONITORING WELL
(.031) PPM
SAMPLES COLLECTED
MW-1 THRU MW-59
9/18 THRU 9/29/97
N
0' 50' 100' 150' 200'
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE
2-7
DRAWN BY:
DWG. NO:
REVISED BY:
LEAD CONTAMINATION DISTRIBUTION MAP
SITE 20 NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA

**TABLE 2-3**
**SUMMARY OF VOLATILE ORGANIC COMPOUNDS**
**ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES**
**COLLECTED FROM MONITORING WELLS MW-1 THRU MW-59**
**PENSACOLA NAVAL AIR STATION**
**SITE 20, ALLEGHENY PIER (PIER 303)**

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW-1 9/10/96 | MW-2 | MW-3 9/10/96 | MW-4 9/10/96 | MW-5 9/10/96 | MW-6 9/10/96 | MW-7 9/10/96 | MW-8 | MW-9 9/10/96 | MW-10 9/10/96 |
| Benzene | BDL | NS | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL |
| trans-1,2- Dichloroethene | BDL | NS | BDL | BDL | BDL | BDL | 2 | NS | BDL | BDL |
| Toluene | BDL | NS | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL |
| Trichloroethene | BDL | NS | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL |
| Vinyl Chloride | BDL | NS | BDL | BDL | BDL | BDL | 37 | NS | BDL | BDL |
| Xylenes (Total) | BDL | NS | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-3 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW-11 | MW-12 | MW-13 11/6/96 | MW-14 11/6/96 | MW-15 11/6/96 | MW-16 11/6/96 | MW-17 11/6/96 | MW-18 11/6/96 | MW-19 11/6/96 | MW-20 2/11/97 |
| Benzene | NS | NS | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL |
| trans-1,2- Dichloroethene | NS | NS | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL |
| Toluene | NS | NS | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL |
| Trichloroethene | NS | NS | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL |
| Vinyl Chloride | NS | NS | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL |
| Xylenes (Total) | NS | NS | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-3 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW-21 2/11/97 | MW-22 2/11/97 | MW-23 2/11/97 | MW-24 2/11/97 | MW-25 2/11/97 | MW-26 2/11/97 | MW-27 2/27/97 | MW-28 2/27/97 | MW-29 2/27/97 | MW-30 2/27/97 |
| Benzene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | NS |
| trans-1,2- Dichloroethene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | NS |
| Toluene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | NS |
| Trichloroethene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | NS |
| Vinyl Chloride | BDL | BDL | BDL | BDL | BDL | BDL | 1 | 2 | NS | NS |
| Xylenes (Total) | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | NS |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-3 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-31 | MW-32 | MW-33 | MW-34 | MW-35 3/27/97 | MW-36 | MW-37 3/27/97 | MW-38 3/27/97 | MW-39 3/27/97 | MW-40 3/27/97 | MW-41 3/27/97 |
| Benzene | NS | NS | NS | NS | BDL | NS | BDL | BDL | BDL | BDL | BDL |
| trans-1,2- Dichloroethene | NS | NS | NS | NS | BDL | NS | BDL | BDL | BDL | BDL | BDL |
| Toluene | NS | NS | NS | NS | BDL | NS | BDL | BDL | BDL | BDL | BDL |
| Trichloroethene | NS | NS | NS | NS | BDL | NS | BDL | BDL | BDL | 2 | BDL |
| Vinyl Chloride | NS | NS | NS | NS | BDL | NS | BDL | BDL | BDL | BDL | BDL |
| Xylenes (Total) | NS | NS | NS | NS | BDL | NS | BDL | BDL | BDL | BDL | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-3 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MW-42 5/2/97 | MW-43 5/2/97 | MW-44 5/2/97 | MW-45 5/2/97 | MW-46 5/2/97 | MW-47 | MW-48 5/21/97 | MW-49 5/21/97 | MW-50 5/21/97 |
| Benzene | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| trans-1,2- Dichloroethene | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| Toluene | 1 | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| Trichloroethene | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| Vinyl Chloride | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| Xylenes (Total) | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | 2 |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-3 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MW-51 5/21/97 | MW-52 5/21/97 | MW-53 5/21/97 | DMW-54 5/30/97 | DMW-55 5/30/97 | MW-56 5/30/97 | MW-57 5/30/97 | MW-58 5/30/97 | MW-59 5/30/97 |
| Benzene | BDL | BDL | BDL | BDL | 2 | BDL | BDL | BDL | BDL |
| trans-1,2- Dichloroethene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL |
| Toluene | BDL | 2 | BDL | 2 | BDL | BDL | BDL | BDL | BDL |
| Trichloroethene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL |
| Vinyl Chloride | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL |
| Xylenes (Total) | BDL | BDL | BDL | 29 | 2 | BDL | BDL | BDL | BDL |
| MTBE | BDL | BDL | BDL | BDL | 1 | BDL | BDL | BDL | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

**TABLE 2-4**
**SUMMARY OF PAH**
**ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES**
**COLLECTED FROM MONITORING WELLS MW-1 THRU MW-59**
**NAVAL AIR STATION PENSACOLA**
**SITE 20, ALLEGHENY PIER (PIER 303)**

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW-1 9/10/96 | MW-2 | MW-3 9/10/96 | MW-4 9/10/96 | MW-5 9/10/96 | MW-6 9/10/96 | MW-7 9/10/96 | MW-8 | MW-9 9/10/96 | MW-10 9/10/96 |
| Acenaphthene | BDL | NS | 23 | BDL | BDL | BDL | BDL | NS | BDL | BDL |
| Anthracene | BDL | NS | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL |
| Flouranthene | BDL | NS | BDL | 8 | BDL | BDL | BDL | NS | BDL | BDL |
| Flourene | BDL | NS | BDL | 14 | BDL | BDL | 5 | NS | BDL | BDL |
| 1-Methylnaphthalene | BDL | NS | BDL | 540 | BDL | BDL | 220 | NS | 28 | 7 |
| 2-Methylnaphthalene | BDL | NS | BDL | 580 | BDL | BDL | 300 | NS | 37 | BDL |
| Naphthalene | BDL | NS | BDL | 330 | BDL | BDL | 225 | NS | BDL | BDL |
| Phenanthrene | BDL | NS | BDL | 11 | BDL | BDL | BDL | NS | BDL | BDL |
| Pyrene | BDL | NS | BDL | 10 | BDL | BDL | BDL | NS | BDL | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-4 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW-11 | MW-12 | MW-13 11/6/96 | MW-14 11/6/96 | MW-15 11/6/96 | MW-16 11/6/96 | MW-17 11/6/96 | MW-18 11/6/96 | MW-19 | MW-20 2/11/97 |
| Acenaphthene | NS | NS | BDL | BDL | BDL | 6 | 4 | 16 | NS | BDL |
| Anthracene | NS | NS | BDL | BDL | BDL | BDL | BDL | 5 | NS | BDL |
| Flouranthene | NS | NS | BDL | BDL | BDL | BDL | BDL | 7 | NS | BDL |
| Flourene | NS | NS | BDL | BDL | BDL | BDL | 2 | 16 | NS | BDL |
| 1-Methylnaphthalene | NS | NS | BDL | BDL | BDL | 4 | 54 | 415 | NS | BDL |
| 2-Methylnaphthalene | NS | NS | BDL | BDL | BDL | 3 | 42 | 500 | NS | BDL |
| Naphthalene | NS | NS | BDL | BDL | BDL | BDL | BDL | 320 | NS | BDL |
| Phenanthrene | NS | NS | BDL | BDL | BDL | BDL | BDL | 14 | NS | BDL |
| Pyrene | NS | NS | BDL | BDL | BDL | BDL | BDL | 7 | NS | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-4 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW-21 2/11/97 | MW-22 2/11/97 | MW-23 2/11/97 | MW-24 2/11/97 | MW-25 2/11/97 | MW-26 2/11/97 | MW-27 2/27/97 | MW-28 2/27/97 | MW-29 | MW-30 |
| Acenaphthene | 67 | 7 | 130 | BDL | 6 | 4 | BDL | BDL | NS | NS |
| Anthracene | 2 | BDL | 17 | BDL | BDL | BDL | BDL | BDL | NS | NS |
| Flouranthene | BDL | BDL | 7 | BDL | BDL | BDL | BDL | BDL | NS | NS |
| Flourene | 18 | 2 | 86 | BDL | BDL | BDL | BDL | BDL | NS | NS |
| 1-Methylnaphthalene | 11 | BDL | 81 | BDL | BDL | BDL | BDL | BDL | NS | NS |
| 2-Methylnaphthalene | 7 | BDL | 140 | BDL | BDL | BDL | BDL | BDL | NS | NS |
| Naphthalene | BDL | BDL | 490 | BDL | BDL | BDL | BDL | BDL | NS | NS |
| Phenanthrene | 4 | BDL | 81 | BDL | BDL | BDL | BDL | BDL | NS | NS |
| Pyrene | BDL | BDL | 4 | BDL | BDL | BDL | BDL | BDL | NS | NS |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-4 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-31 | MW-32 | MW-33 | MW-34 | MW-35 3/27/97 | MW-36 | MW-37 3/27/97 | MW-38 3/27/97 | MW-39 3/27/97 | MW-40 3/27/97 | MW-41 3/27/97 |
| Acenaphthene | NS | NS | NS | NS | 7 | NS | 24 | BDL | BDL | BDL | BDL |
| Anthracene | NS | NS | NS | NS | BDL | NS | BDL | BDL | BDL | BDL | BDL |
| Chrysene | NS | NS | NS | NS | BDL | NS | BDL | BDL | 2 | BDL | BDL |
| Flouranthene | NS | NS | NS | NS | BDL | NS | BDL | 5 | 5 | BDL | BDL |
| Flourene | NS | NS | NS | NS | BDL | NS | 6 | BDL | BDL | BDL | BDL |
| 1-Methylnaphthalene | NS | NS | NS | NS | BDL | NS | 3 | 13 | BDL | BDL | BDL |
| 2-Methylnaphthalene | NS | NS | NS | NS | BDL | NS | BDL | 9 | BDL | BDL | BDL |
| Naphthalene | NS | NS | NS | NS | 14 | NS | 4 | BDL | BDL | BDL | BDL |
| Phenanthrene | NS | NS | NS | NS | BDL | NS | 2 | BDL | 5 | BDL | BDL |
| Pyrene | NS | NS | NS | NS | 3 | NS | 2 | 7 | 5 | BDL | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above .
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-4 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-42 5/2/97 | MW-43 5/2/97 | MW-43 9/18/97 | MW-44 5/2/97 | MW-44 9/18/97 | MW-45 5/2/97 | MW-46 5/2/97 | MW-47 | MW-48 5/21/97 | MW-49 5/21/97 | MW-50 5/21/97 |
| Acenaphthene | 27 | 29 | 49 | 8 | 22 | BDL | BDL | NS | 33 | 69 | 18 |
| Anthracene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| Chrysene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| Flouranthene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| Flourene | 4 | BDL | 15 | BDL | BDL | BDL | BDL | NS | BDL | 25 | BDL |
| 1-Methylnaphthalene | 6 | BDL | 6 | BDL | BDL | BDL | BDL | NS | 4 | 17 | BDL |
| 2-Methylnaphthalene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| Naphthalene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |
| Phenanthrene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | 3 | 6 | BDL |
| Pyrene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |

NOTES:

Groundwater samples MW-1 thru MW-59 were collected on dates specified above .
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

## TABLE 2-4 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MW-51 5/21/97 | MW-52 5/21/97 | MW-53 5/21/97 | DMW-54 5/30/97 | DMW-55 5/30/97 | MW-56 5/30/97 | MW-57 5/30/97 | MW-58 5/30/97 | MW-59 5/30/97 |
| Acenaphthene | BDL | BDL | BDL | 207 | 3 | 15 | 11 | 3 | 16 |
| Anthracene | BDL | BDL | BDL | 28 | BDL | BDL | BDL | BDL | BDL |
| Chrysene | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL |
| Flouranthene | BDL | BDL | BDL | 15 | BDL | BDL | BDL | BDL | BDL |
| Flourene | BDL | BDL | BDL | 124 | BDL | BDL | BDL | BDL | BDL |
| 1-Methylnaphthalene | BDL | BDL | BDL | 365 | 42 | 3 | BDL | BDL | BDL |
| 2-Methylnaphthalene | BDL | BDL | BDL | 440 | 28 | BDL | BDL | BDL | BDL |
| Naphthalene | BDL | BDL | BDL | 4700 | 9 | 2 | BDL | BDL | BDL |
| Phenanthrene | BDL | BDL | BDL | 118 | BDL | BDL | BDL | BDL | BDL |
| Pyrene | BDL | BDL | BDL | 10 | BDL | BDL | BDL | BDL | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above .
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
NS = Not sampled

**TABLE 2-5**
**SUMMARY OF TPH, LEAD, AND EDB**
**ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES**
**COLLECTED FROM MONITORING WELLS MW-1 THRU MW-59**
**NAVAL AIR STATION PENSACOLA**
**SITE 20, ALLEGHENY PIER (PIER 303)**

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 | MW-6 | MW-7 | MW-8 | MW-9 | MW-10 |
| **TPH** 9/10/96 | BDL | NS | BDL | 54000 | BDL | BDL | 11000 | NS | 600 | BDL |
| **LEAD (ppm)** 9/18 thru 9/29/97 | .006 | NS | .004 | .031 | .041 | BDL | .004 | NS | BDL | .008 |
| **EDB** 9/10/96 | BDL | NS | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
All results reported in parts per billion (ppb) unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
TPH = Total Petroleum Hydrocarbons
NS = Not sampled

## TABLE 2-5 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW-11 | MW-12 | MW-13 11/6/96 | MW-14 11/6/96 | MW-15 11/6/96 | MW-16 11/6/96 | MW-17 11/6/96 | MW-18 11/6/96 | MW-19 | MW-20 2/11/97 |
| **TPH** | NS | NS | BDL | BDL | BDL | 660 | 42000 | 10000 | NS | BDL |
| **LEAD (ppm)** 9/18 thru 9/29/97 | NS | NS | .022 | .008 | BDL | BDL | BDL | BDL | NS | BDL |
| **EDB** | NS | NS | BDL | BDL | BDL | BDL | BDL | BDL | NS | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
All results reported in parts per billion (ppb) unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
TPH = Total Petroleum Hydrocarbons
NS = Not sampled

## TABLE 2-5 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MW-21 2/11/97 | MW-22 2/11/97 | MW-23 2/11/97 | MW-24 2/11/97 | MW-25 2/11/97 | MW-26 2/11/97 | MW-27 2/27/97 | MW-28 2/27/97 | MW-29 | MW-30 |
| **TPH** | 330 | 270 | 1130 | BDL | BDL | 370 | BDL | 250 | NS | NS |
| **LEAD (ppm)** 9/18 thru 9/29/97 | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | .004 |
| **EDB** | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | NS | NS |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
All results reported in parts per billion (ppb) unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
TPH = Total Petroleum Hydrocarbons
NS = Not sampled

## TABLE 2-5 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-31 | MW-32 | MW-33 | MW-34 | MW-35 3/27/97 | MW-36 | MW-37 3/27/97 | MW-38 3/27/97 | MW-39 3/27/97 | MW-40 3/27/97 | MW-41 3/27/97 |
| **TPH** | NS | NS | NS | NS | 2900 | NS | BDL | 82000 | BDL | BDL | BDL |
| **LEAD (ppm)** 9/18 thru 9/29/97 | NS | NS | NS | NS | BDL | NS | BDL | BDL | .144 | .008 | .014 |
| **EDB** | NS | NS | NS | NS | BDL | NS | BDL | BDL | BDL | BDL | BDL |

NOTES:

Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
All results reported in parts per billion (ppb) unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
TPH = Total Petroleum Hydrocarbons
NS = Not sampled

## TABLE 2-5 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MW-42 5/2/97 | MW-43 5/2/97 | MW-44 5/2/97 | MW-45 5/2/97 | MW-46 5/2/97 | MW-47 | MW-48 5/21/97 | MW-49 5/21/97 | MW-50 5/21/97 |
| **TPH** | 970 | BDL | BDL | BDL | BDL | NS | 310 | 360 | 390 |
| **LEAD (ppm)** 9/18 thru 9/29/97 | BDL | BDL | BDL | .062 | .004 | NS | BDL | BDL | .006 |
| **EDB** | BDL | BDL | BDL | BDL | BDL | NS | BDL | BDL | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
All results reported in parts per billion (ppb) unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
TPH = Total Petroleum Hydrocarbons
NS = Not sampled

## TABLE 2-5 (CONT.)

| PARAMETER | MONITORING WELL NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MW-51 5/21/97 | MW-52 5/21/97 | MW-53 5/21/97 | DMW-54 5/30/97 | DMW-55 5/30/97 | MW-56 5/30/97 | MW-57 5/30/97 | MW-58 5/30/97 | MW-59 5/30/97 |
| **TPH** | BDL | 14000 | BDL | 9700 | 1000 | BDL | 550 | BDL | 1100 |
| **LEAD (ppm)** 9/18 thru 9/29/97 | BDL | BDL | BDL | BDL | BDL | .020 | BDL | .005 | BDL |
| **EDB** | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL | BDL |

NOTES: Groundwater samples MW-1 thru MW-59 were collected on dates specified above.
All results reported in parts per billion (ppb) unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
TPH = Total Petroleum Hydrocarbons
NS = Not sampled

The following PAHs were detected in the groundwater samples collected from monitoring wells listed below: **MW-3,** concentration levels of acenaphthene (23 ppb); **MW-4**, concentration levels of flouranthene (8 ppb), flourene (14 ppb), 1-methylnaphthalene (540 ppb), 2-methylnaphthalene (580 ppb), naphthalene (20 ppb), phenanthrene (11 ppb), and pyrene (10 ppb); **MW-7**, concentration levels of flourene (5 ppb), 1-methylnaphthalene (220 ppb), 2-methylnaphthalene (300 ppb), and naphthalene (225 ppb); **MW-9**, concentration levels of 1-methylnaphthalene (28 ppb) and 2-methylnaphthalene (37 ppb); **MW-10**, concentration of 1-methylnaphthalene (7 ppb); **MW-16**, concentration levels of acenaphthene (6 ppb), 1-methylnaphthalene (4 ppb), and 2-methylnaphthalene (3 ppb); **MW-17**, concentration levels of acenaphthene (4 ppb), flourene (2 ppb), 1-methylnaphthalene (54 ppb), and 2-methylnaphthalene (42 ppb); **MW-18**, concentration levels of acenaphthene (16 ppb), anthracene (5 ppb), flouranthene (7 ppb), flourene (16 ppb), 1-methylnaphthalene (415 ppb), 2-methylnaphthalene (500 ppb), naphthalene (320 ppb), phenanthrene (14 ppb), and pyrene (7 ppb); **MW-21**, concentration levels of acenaphthene (67 ppb), anthracene (2 ppb), flourene (18 ppb), 1-methylnaphthalene (11 ppb), 2-methylnaphthalene (7 ppb), and phenanthrene (4 ppb); **MW-22**, concentration levels of acenaphthene (7 ppb) and flourene (2 ppb); **MW-23** , concentration levels of acenaphthene (130 ppb), anthracene (17 ppb), flouranthene (7 ppb), flourene (86 ppb), 1-methylnaphthalene (81 ppb), 2-methylnaphthalene (140 ppb), naphthalene (490 ppb), phenanthrene (81 ppb), and pyrene (4 ppb); **MW-25**, concentration of acenaphthene (6 ppb); **MW-26**, concentration of acenaphthene (4 ppb); **MW-35**, concentration levels of acenaphthene (7 ppb), naphthalene (14 ppb), pyrene (3 ppb); **MW-37**, concentration levels of acenaphthene (24 ppb), flourene (6 ppb), 1-methylnaphthalene (3 ppb), naphthalene (4 ppb), phenanthrene (2 ppb), and pyrene (2 ppb); **MW-38**, concentration levels of flouranthene (5 ppb), 1-methylnaphthalene (13 ppb), 2-methylnaphthalene (9 ppb), and pyrene (7 ppb); **MW-39**, concentration levels of chrysene (2 ppb), flouranthene (5 ppb), phenanthrene (5 ppb), and pyrene (5 ppb); **MW-42**, concentration levels of acenaphthene (27 ppb), flourene (4 ppb), and 1-methylnaphthalene (6 ppb); **MW-43** (two groundwater sample collections - 5/2/97 & 9/18/97), concentration levels of acenaphthene (29 ppb & 49 ppb), flourene (BDL & 15 ppb), and 1-methylnaphthalene (BDL & 6 ppb); **MW-44** (two groundwater sample collections - 5/2/97 & 9/18/97), concentration levels of acenaphthene (8 ppb & 22 ppb); **MW-48**, concentration levels of acenaphthene (33 ppb), 1-methylnaphthalene (4 ppb) and phenanthrene (3 ppb); **MW-49** , concentration levels of acenaphthene (69 ppb), flourene (25 ppb), 1-methylnaphthalene (4 ppb), and phenanthrene (6 ppb); **MW-50**, concentration of acenaphthene (18 ppb); **DMW-54**, concentration levels of acenaphthene (207 ppb), anthracene (28 ppb), flouranthene (15 ppb), flourene (124 ppb), 1-methylnaphthalene (365 ppb), 2-methylnaphthalene (440 ppb), naphthalene (4700 ppb), phenanthrene (118 ppb), and pyrene (10 ppb); **DMW-55**, concentration levels of acenaphthene (3 ppb), 1-methylnaphthalene (42 ppb), 2-methylnaphthalene (28 ppb), and naphthalene (9 ppb); **MW-56**, concentration levels of acenaphthene (15 ppb), 1-methylnaphthalene (3 ppb), and naphthalene (2 ppb); **MW-57**, concentration of acenaphthene (11 ppb); **MW-58**, concentration of acenaphthene (3 ppb); and **MW-59**, concentration of acenaphthene (16 ppb). No groundwater samples collected from the monitoring wells at Site 20 exceeded FDEP groundwater cleanup target levels for acenaphthene (210 ppb), anthracene (2100 ppb), flouranthene (280 ppb), flourene (280 ppb), phenanthrene (210 ppb), pyrene (210 ppb) and chrysene (5 ppb). However, groundwater samples collected from monitoring wells MW-4

(naphthalene @ 330 ppb), MW-7 (naphthalene @ 225 ppb), MW-18 (naphthalene @ 320 ppb), MW-23 (naphthalene @ 490 ppb), and DMW-54 (naphthalene @ 4700 ppb) exceeded the FDEP groundwater cleanup target levels of 20 ppb for naphthalene. No PAHs were detected in the groundwater samples collected from monitoring wells MW-1, MW-5, MW-6, MW-13 thru MW-15, MW-20, MW-24, MW-27, MW-28, MW-40, MW-41, MW-45, MW-46, MW-51 thru MW-53. Groundwater samples were not collected or analyzed for PAHs at monitoring wells MW-2, MW-8, MW-11, MW-12, MW-19, MW-29 thru MW-34, MW-36, and MW-47 because free-product was detected in these monitoring wells.

Ethylene dibromide (EDB) was not detected in any of the groundwater samples collected from monitoring wells MW-1 thru MW-59. Total petroleum hydrocarbons (TPHs) were detected in the groundwater samples collected from monitoring wells MW-4, MW-7, MW-9, MW-16, MW-17, MW-18, MW-21, MW-22, MW-23, MW-26, MW-28, MW-35, MW-38, MW-42, MW-48, MW-49, MW-50, MW-52, DMW-54, DMW-55, MW-57 and MW-59 at concentrations of 54000 ppb, 11000 ppb, 600 ppb, 660 ppb, 42000 ppb, 10000 ppb, 330 ppb, 270 ppb, 1130 ppb, 370 ppb, 250 ppb, 2900 ppb, and 82000 ppb, 970 ppb, 310 ppb, 360 ppb, 390 ppb, 14000 ppb, 9700 ppb, 1000 ppb, 550 ppb, 1100 ppb respectively. The levels of TPHs detected in groundwater monitoring wells MW-4 (5400 ppb), MW-7 (11000 ppb), MW-17 (42000 ppb), MW-18 (10000 ppb), MW-38 (82000 ppb), MW-52 (14000 ppb), and DMW-54 (9700 ppb) exceeded the FDEP groundwater cleanup target level of 5000 ppb for TPH. Groundwater samples were not collected or analyzed for EDBs or TPHs at monitoring wells MW-2, MW-8, MW-11, MW-12, MW-19, MW-29 thru MW-34, MW-36, and MW-47 because free-product was detected in these monitoring wells. A TPH contamination distribution map is shown in Figure 2-6.

Groundwater sampling performed September 18 thru September 29, 1997, at Site 20 using the quiescent sampling technique detected lead in monitoring wells MW-1, MW-3, MW-4, MW-5, MW-7, MW-10, MW-13, MW-14, MW-30, MW-39, MW-40, MW-41, MW-45, MW-46, MW-50, MW-56, and MW-58 at concentrations of .006 ppm, .004 ppm, .031 ppm, .041 ppm, .004 ppm, .008 ppm, .022 ppm, .008 ppm, .004 ppm, .144 ppm, .008 ppm, .014 ppm, .062 ppm, .004 ppm, .006 ppm, .020 ppm, and .005 ppm, respectfully. The levels of lead detected in groundwater monitoring wells MW-4 (.031 ppm), MW-5 (.041 ppm), MW-13 (.022 ppm), MW-39 (.144 ppm), MW-45 (.062 ppm), and MW-56 (.020 ppm) exceeded the FDEP regulatory limit of .015 ppm for lead. Groundwater samples were not collected or analyzed for lead at monitoring wells MW-2, MW-8, MW-11, MW-12, MW-19, MW-31 thru MW-34, MW-36, and MW-47 because free-product was detected in these monitoring wells. A lead contamination distribution map is shown in Figure 2-7.

Free phase petroleum product depths could not be measured in the monitoring wells using an Advanced Remediation Technologies (A.R.T.) model number IS01-E, oil-water interface probe due to the thick viscous condition of the free product. Mr. John Mitchell, FDEP, was notified of the difficulty of measuring free product using the oil/water interface probe. Mr. Mitchell noted he would research how other similar sites (thick viscous free product) measured the free-product when encountering this problem. He stated he would notify PWC personnel once he had information. Mr. Mitchell had not notified PWC personnel to date.

## 3.0 CONCLUSIONS AND RECOMMENDATIONS

### 3.1 CONCLUSIONS

- The suspected source of the contamination has been eliminated and the approximate gallons of petroleum product released is unknown.

- No initial remedial action was performed at the site.

- Free-phase petroleum product was detected in monitoring wells MW-2, MW-8, MW-11, MW-12, MW-19, MW-29 thru MW-34, MW-36, and MW-47.

- OVA screenings were performed on 197 soil borings, at varying depths, in order to delineate the extent of contaminated soils. Soil samples collected from the soil borings were analyzed for volatile organic vapors using an OVA.

- Fifty-seven shallow groundwater monitoring wells (MW-1 thru MW-54 and MW-57 thru MW-59) and two deep vertical extent monitoring wells (DMW-55 and DMW-56) were installed at the site and groundwater samples were collected from each well and analyzed for the kerosene analytical group listed in FDEP Rule 62-770.600(4)(a).

- NASP water supply wells (Wells No. 1 and No. 2) are located approximately 1.2 miles (northwest) and 1.0 mile (northwest) of Allegheny Pier (Pier 303), respectively.

- Groundwater depth measured in monitoring wells MW-1 thru MW-59 on September 17, 1997, indicates the groundwater flow direction at the majority of the site to be toward the southwest direction.

- No petroleum contaminants were detected in the groundwater samples collected from monitoring wells MW-6, MW-15, MW-20, MW-24, MW-51 and MW-53.

- Benzene was detected in the groundwater sample collected from DMW-55 at a level of 2 ppb which exceeds the FDEP groundwater cleanup target level of 1 ppb for benzene.

- Vinyl Chloride was detected in the groundwater samples collected from monitoring wells MW-7, MW-27, and MW-28 at concentration levels of 37 ppb, 1 ppb, and 2 ppb, respectfully, which meets or exceeds the FDEP groundwater guidance concentration of 1 ppb for vinyl chloride.

- Benzene was detected in the groundwater sample collected from deep vertical monitoring well DMW-55 at a concentration level of 2 ppb which exceeds the FDEP groundwater cleanup target level of 1 ppb for benzene.

- Total Xylenes were detected in the groundwater sample collected from deep vertical monitoring well DMW-54 at a concentration level of 29 ppb which exceeds the FDEP groundwater cleanup target level of 20 ppb for total xylenes

- Naphthalene detected in monitoring wells MW-4 (330 ppb), MW-7 (225 ppb), MW-18 (320 ppb), MW-23 (490 ppb), and DMW-54 (4700 ppb) exceeded the FDEP groundwater cleanup target levels of 20 ppb for naphthalene.

- TPHs detected in monitoring wells MW-4 (54000 ppb), MW-7 (11000 ppb), MW-17 (42000 ppb), MW-18 (10000 ppb), MW-38 (82000 ppb), MW-52 (14000 ppb), and DMW-54 (9700 ppb) exceeded the FDEP groundwater cleanup target level of 5000 ppb for TPHs.

- Total lead detected in the groundwater samples collected from monitoring wells MW-4 (.031 ppm), MW-5 (.041 ppm), MW-13 (.022 ppm), MW-39 (.144 ppm), MW-45 (.062 ppm), and MW-56 (.020 ppm) exceeded the FDEP groundwater cleanup target level of .015 ppm for lead.

- No EDBs were detected in the groundwater samples collected from monitoring wells MW-1 thru MW-59.

- The areal extent of the groundwater contamination at the site is significant and appears dispersed over a wide area.

- The hydraulic conductivity at the site was estimated to be 48.3 ft/day.

- The average pore water velocity is estimated to be 0.037 ft/day.

## 3.2 RECOMMENDATIONS

Contaminants were detected in the soil and groundwater at levels that exceeded the FDEP regulatory limits. The extent of the groundwater contamination is widespread and covers a somewhat extensive area. Therefore, the preparation of a soil and groundwater remedial action plan in accordance with FDEP Rule 62-770.700 is recommended at the site.

## 4.0 PROFESSIONAL REVIEW CERTIFICATION

The Site Assessment contained in this report was prepared using sound, hydrogeologic principles and judgement. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned engineer should be notified to evaluate the effects of any additional information on the assessment described in this report. This Site Assessment Report was developed for Naval Air Station Pensacola, Site 20, Allegheny Pier (Pier 303), Pensacola, Florida, and should not be construed to apply to any other site.

**G. A. Campbell**
**Professional Engineer**
**P.E. No. 38572**

7/15/98
**Date**

## 5.0 REFERENCES


Campbell, Gregory A., P.E., April 1995. Contamination Assessment Report, Naval Air Station, Radar Site (Bldg. 3255), Naval Air Station, Pensacola.

Ecology and Environment, Inc. (E&E). 1991. Contamination Assessment/Remedial Activities, Naval Air Station Pensacola, Florida.

Geraghty and Miller, Inc. March 1986. Characterization Study: Assessment of Potential Groundwater Pollution at Naval Air Station Pensacola, Florida.

Naval Energy and Environmental Support Activity (NEESA). January 1983. Initial Assessment Study of Naval Air Station Pensacola, Florida.

# APPENDICES

# APPENDIX A

## MONITORING WELL CONSTRUCTION DIAGRAMS

W.E.S., Inc.
Environmental Division

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-1

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/21/96 Finish: 8/21/96
TIME Start: 1000 Finish: 1055

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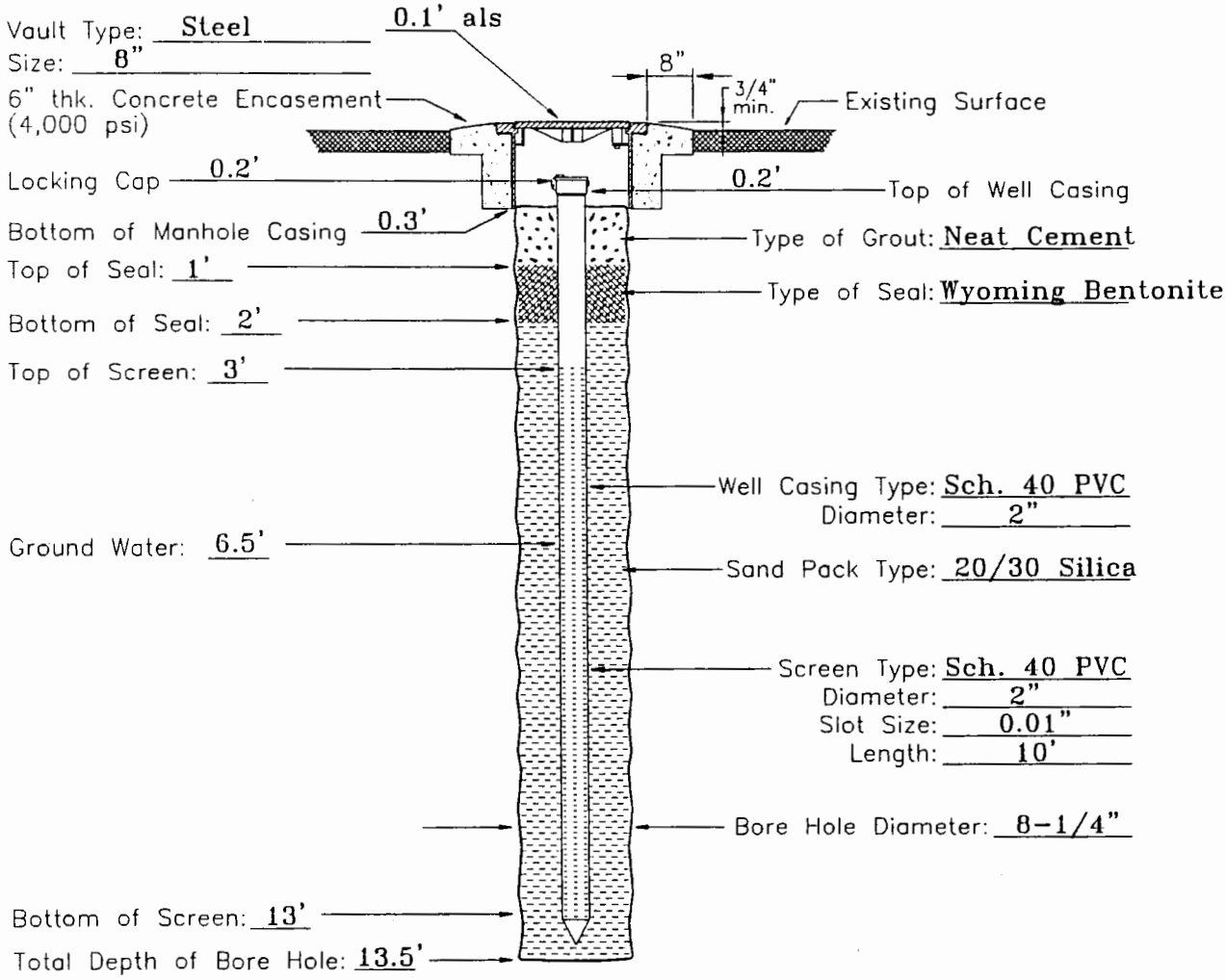


NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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W.E.S., Inc.
Environmental Division

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-2

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/21/96 Finish: 8/21/96
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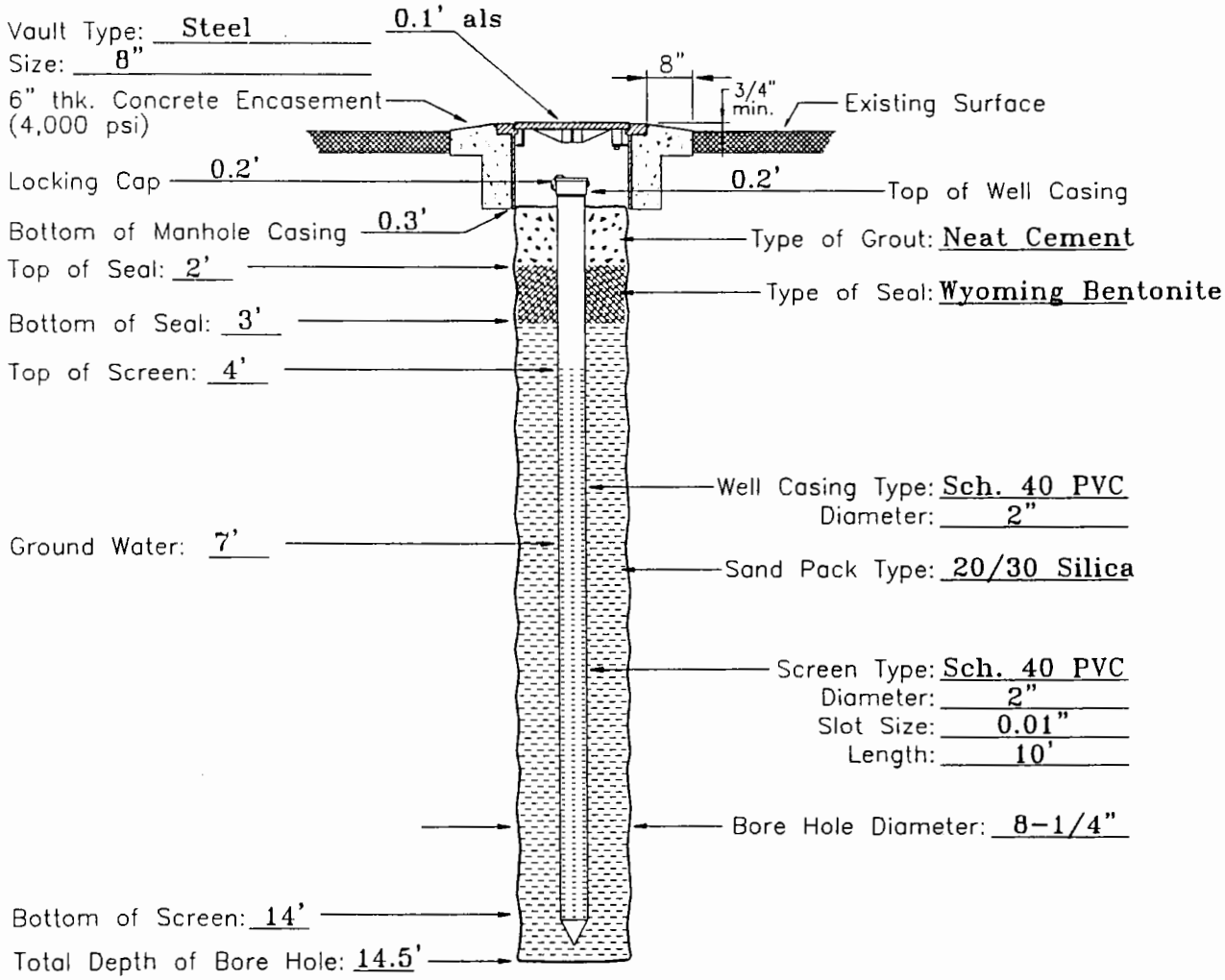


NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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Environmental Division

6389 Tower Lane
Sarasota, FL 34240-8810
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(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-3

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/21/96 Finish: 8/21/96
TIME Start: 1300 Finish: 1345

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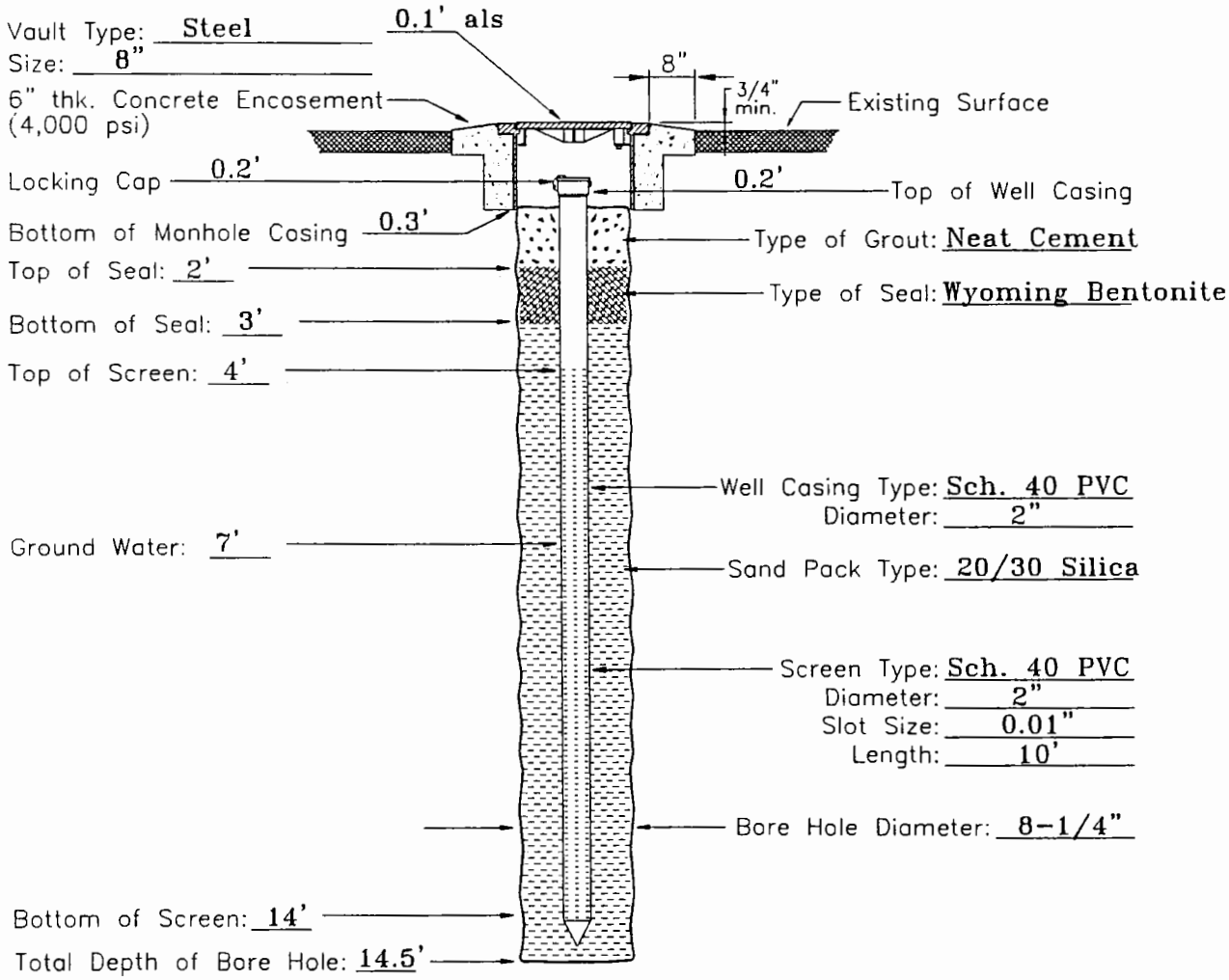


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# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-4

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/21/96 Finish: 8/21/96
TIME Start: 1415 Finish: 1455

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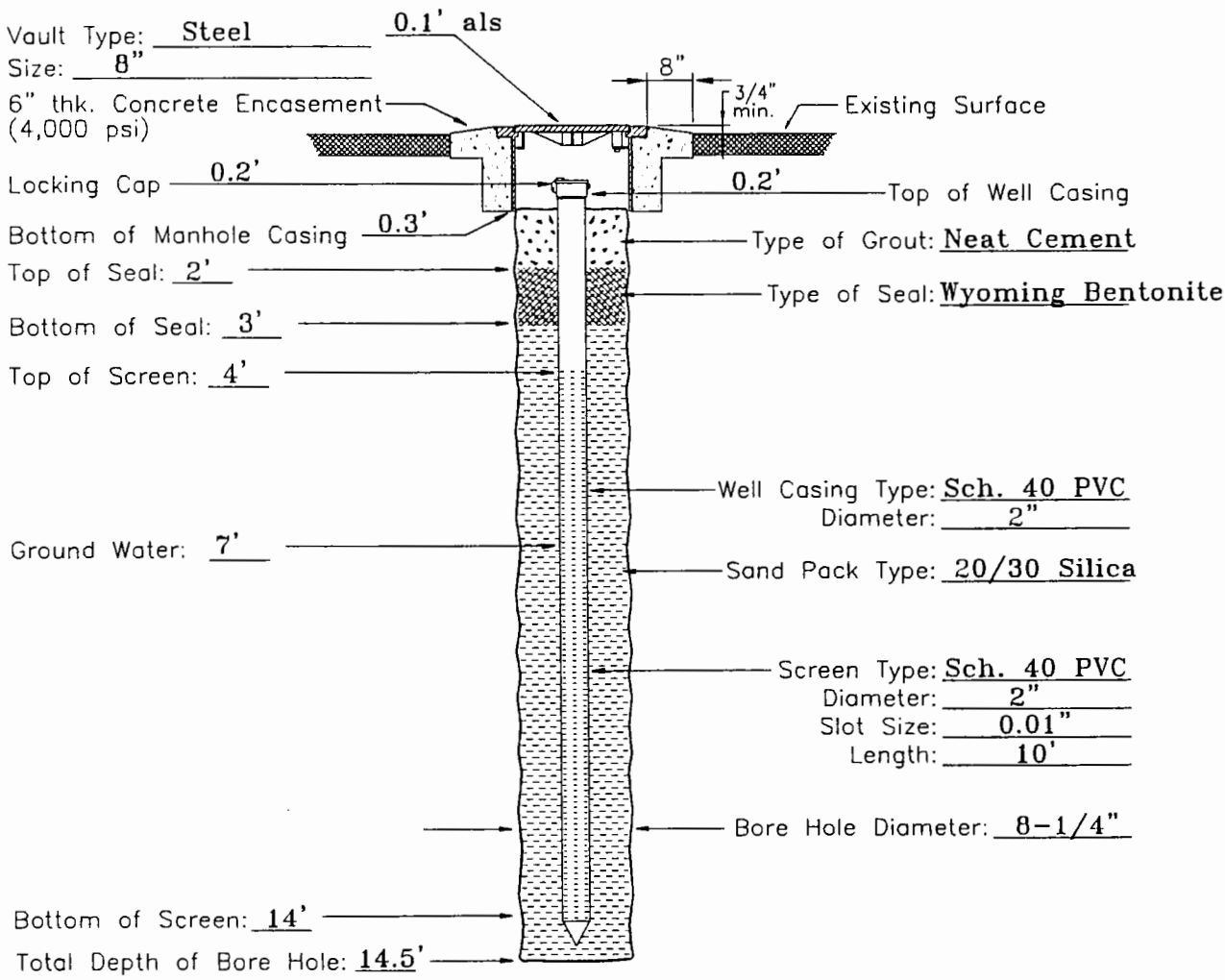


NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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Sarasota, FL 34240-8810
(941) 371-7617
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# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-5

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
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TIME Start: 1500 Finish: 1545

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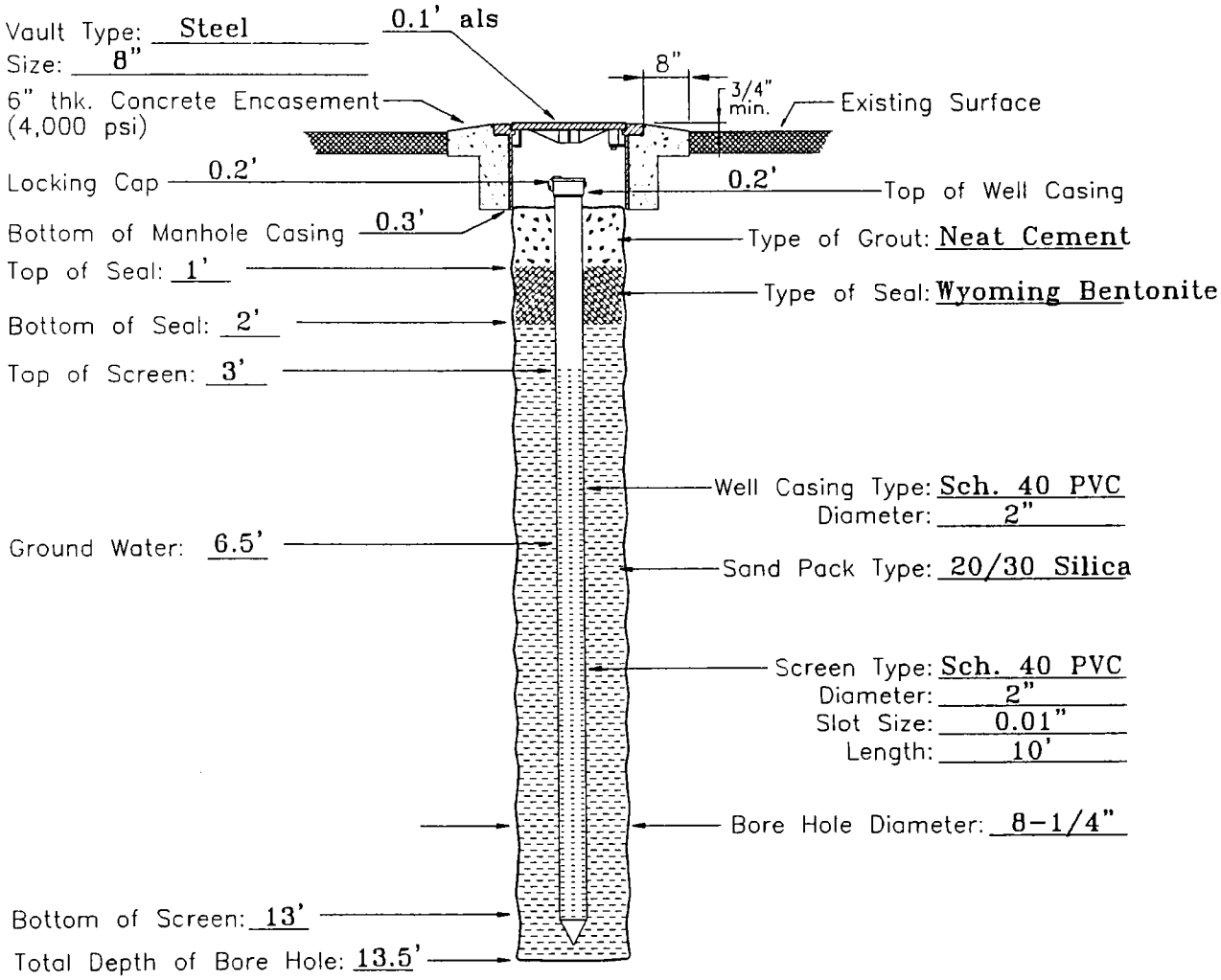


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# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-6

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/22/96 Finish: 8/22/96
TIME Start: 0915 Finish: 1000

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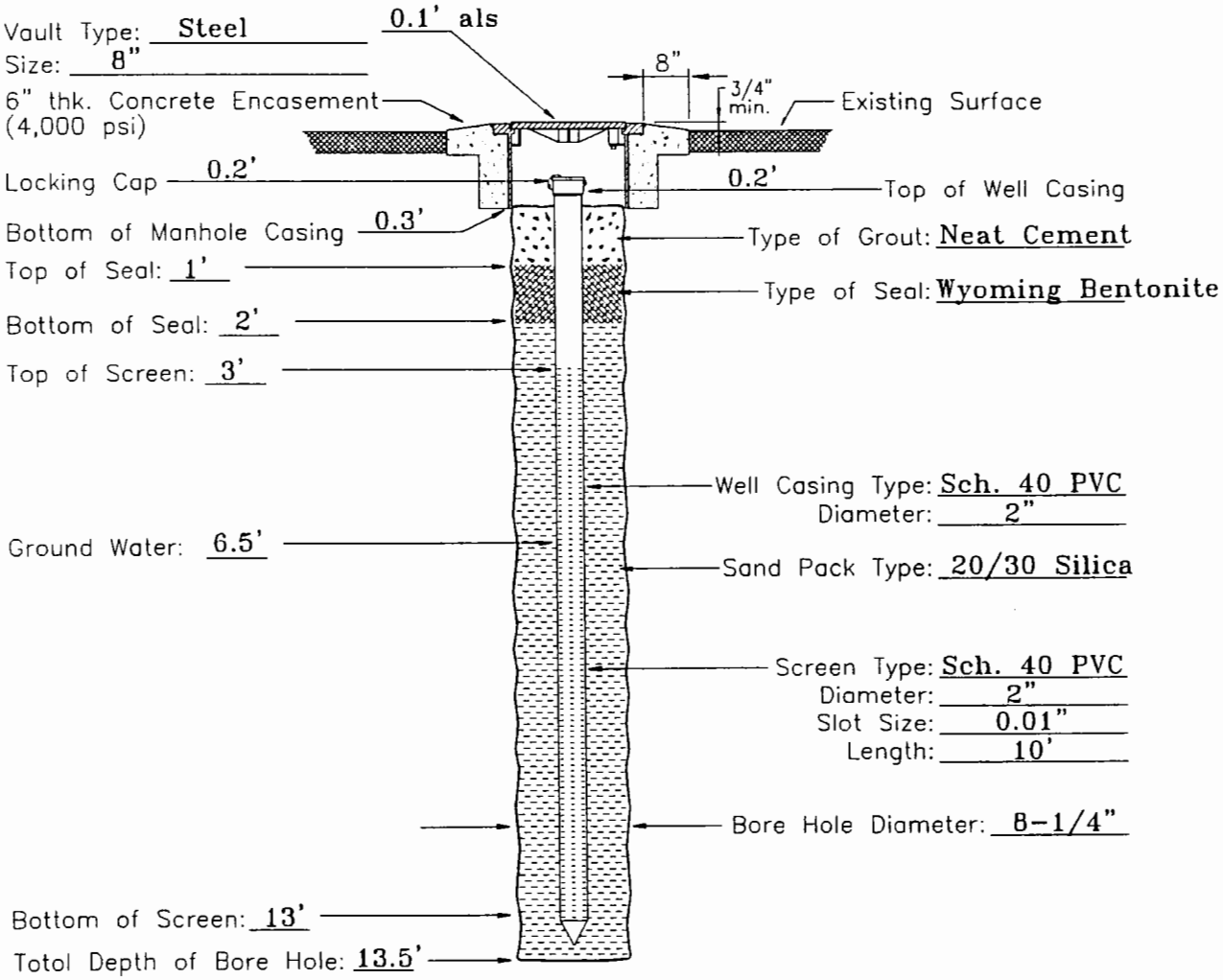


NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-7

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/22/96 Finish: 8/22/96
TIME Start: 1015 Finish: 1100

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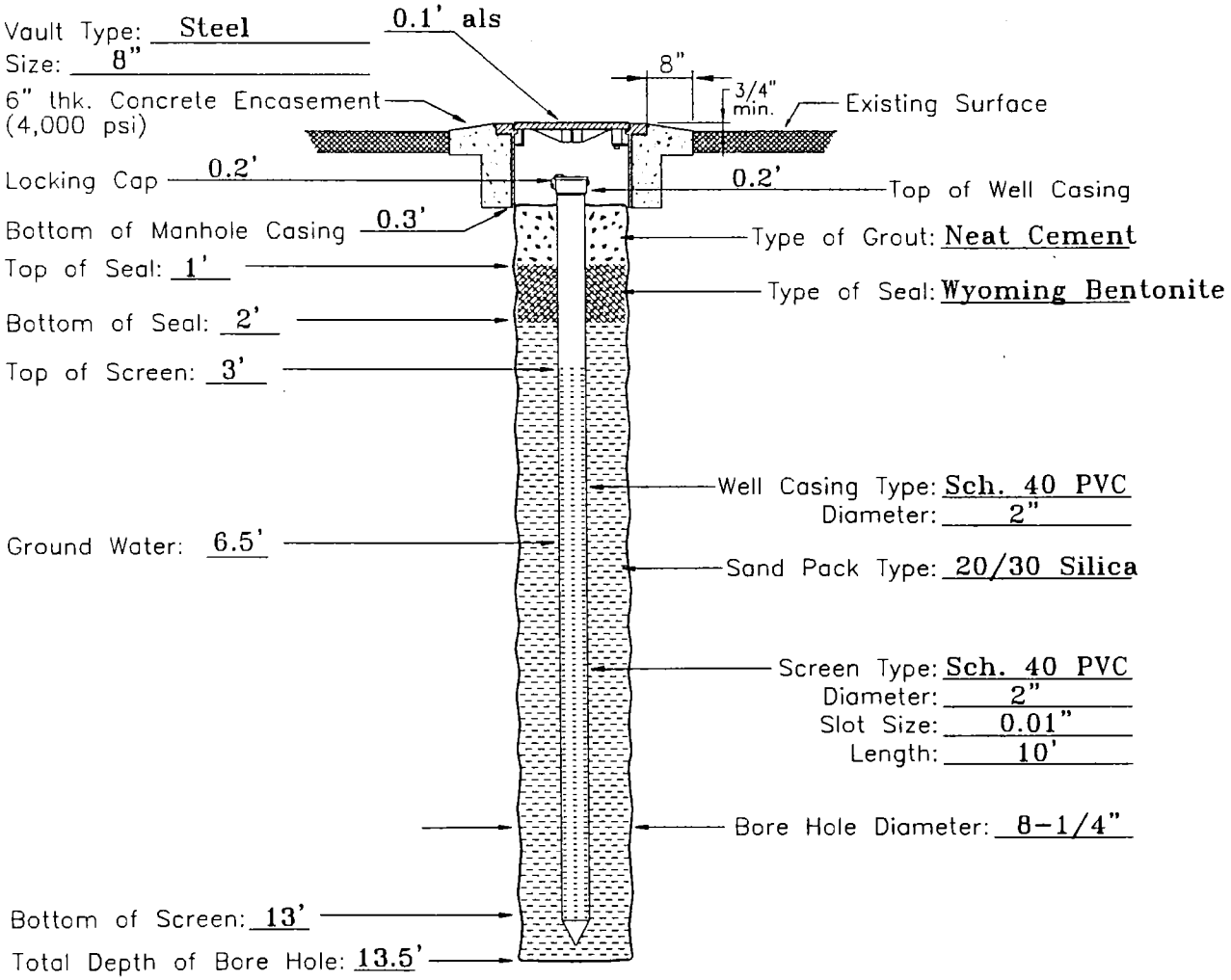


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# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
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LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-8

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/22/96 Finish: 8/22/96
TIME Start: 1115 Finish: 1200

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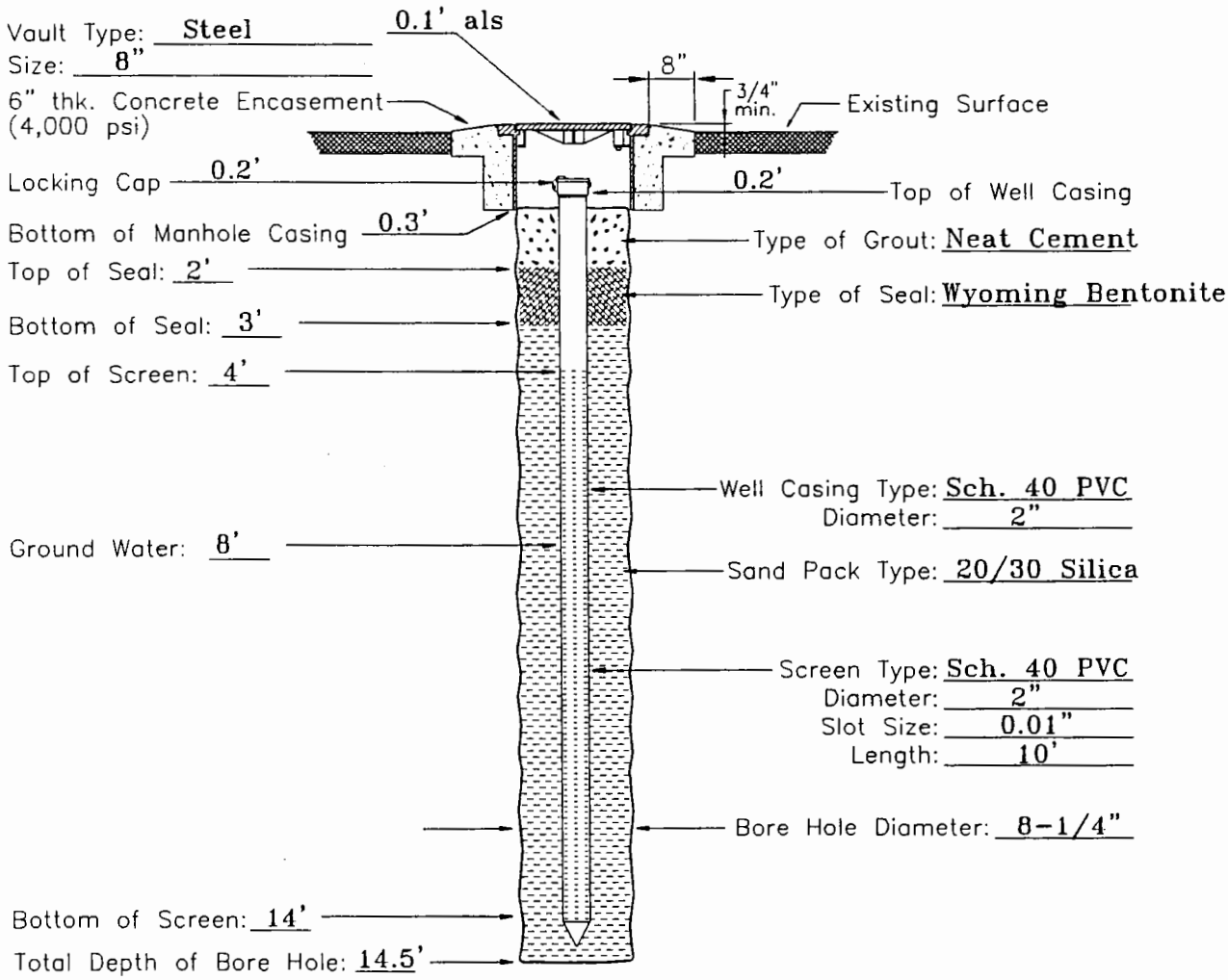


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# MONITOR WELL CONSTRUCTION DETAIL

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(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-9

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/22/96 Finish: 8/22/96
TIME Start: 1300 Finish: 1345

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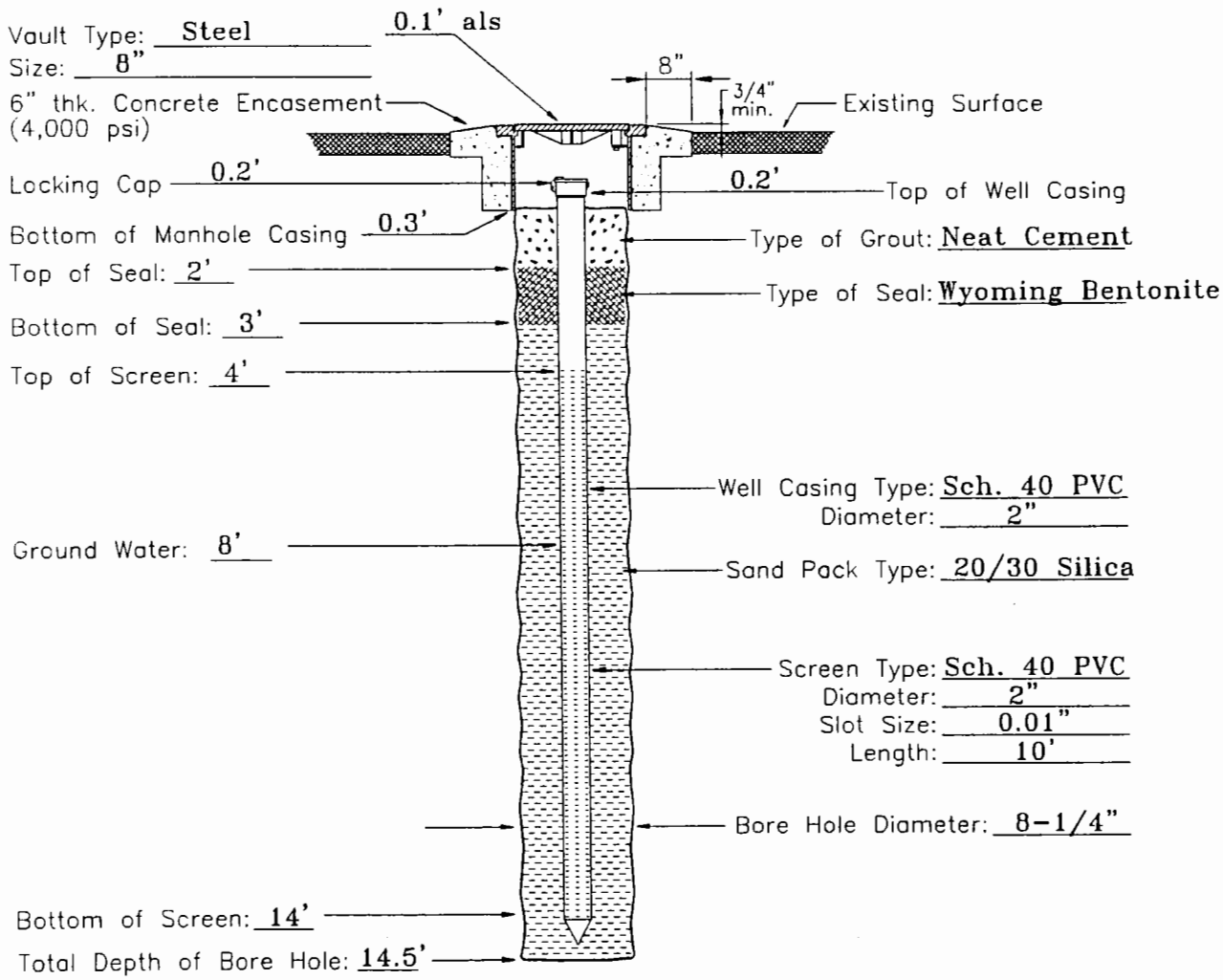


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# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-10

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/27/96 Finish: 8/27/96
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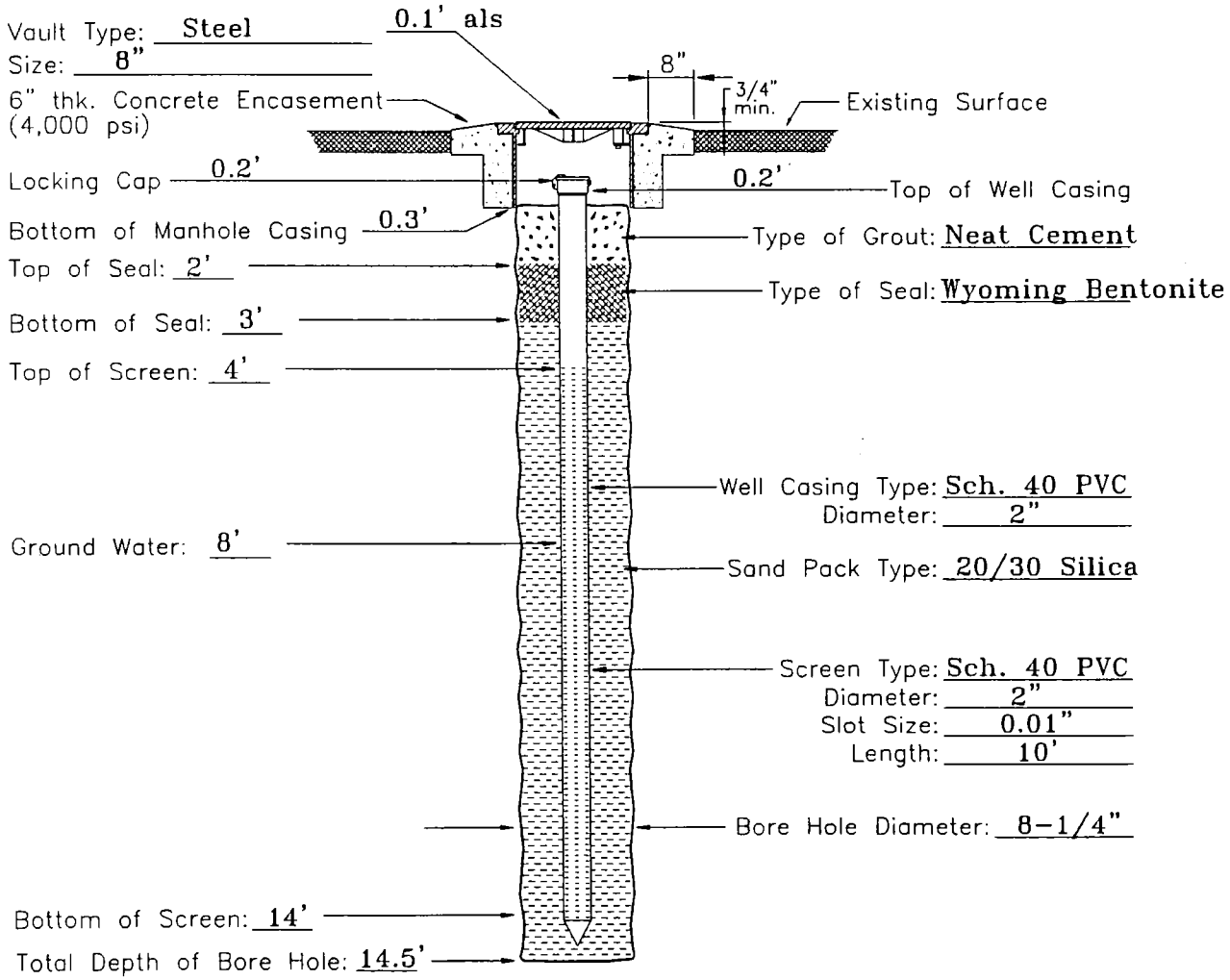


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# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-11

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/27/96 Finish: 8/27/96
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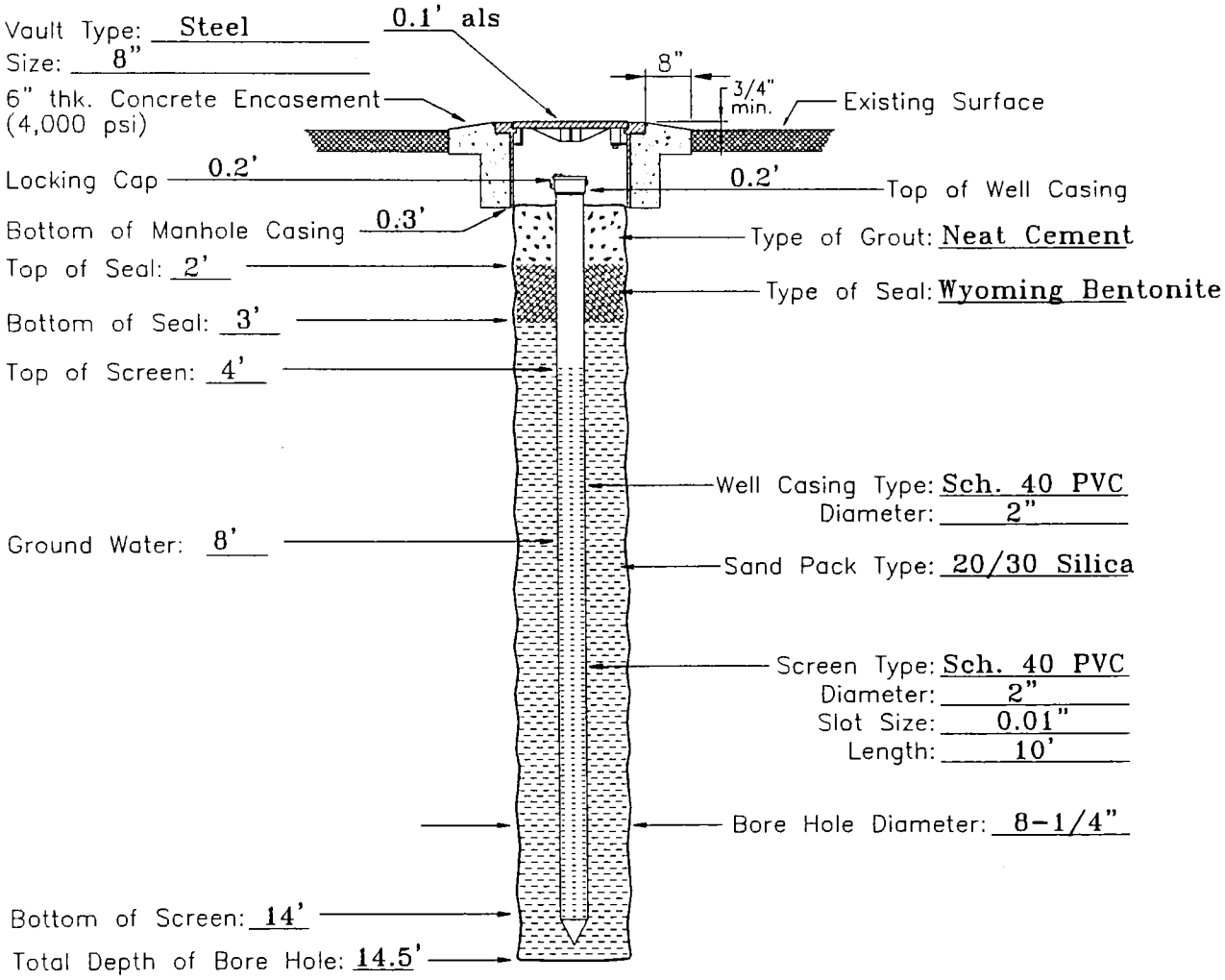


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Environmental Division

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6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-12

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/27/96 Finish: 8/27/96
TIME Start: 1330 Finish: 1410

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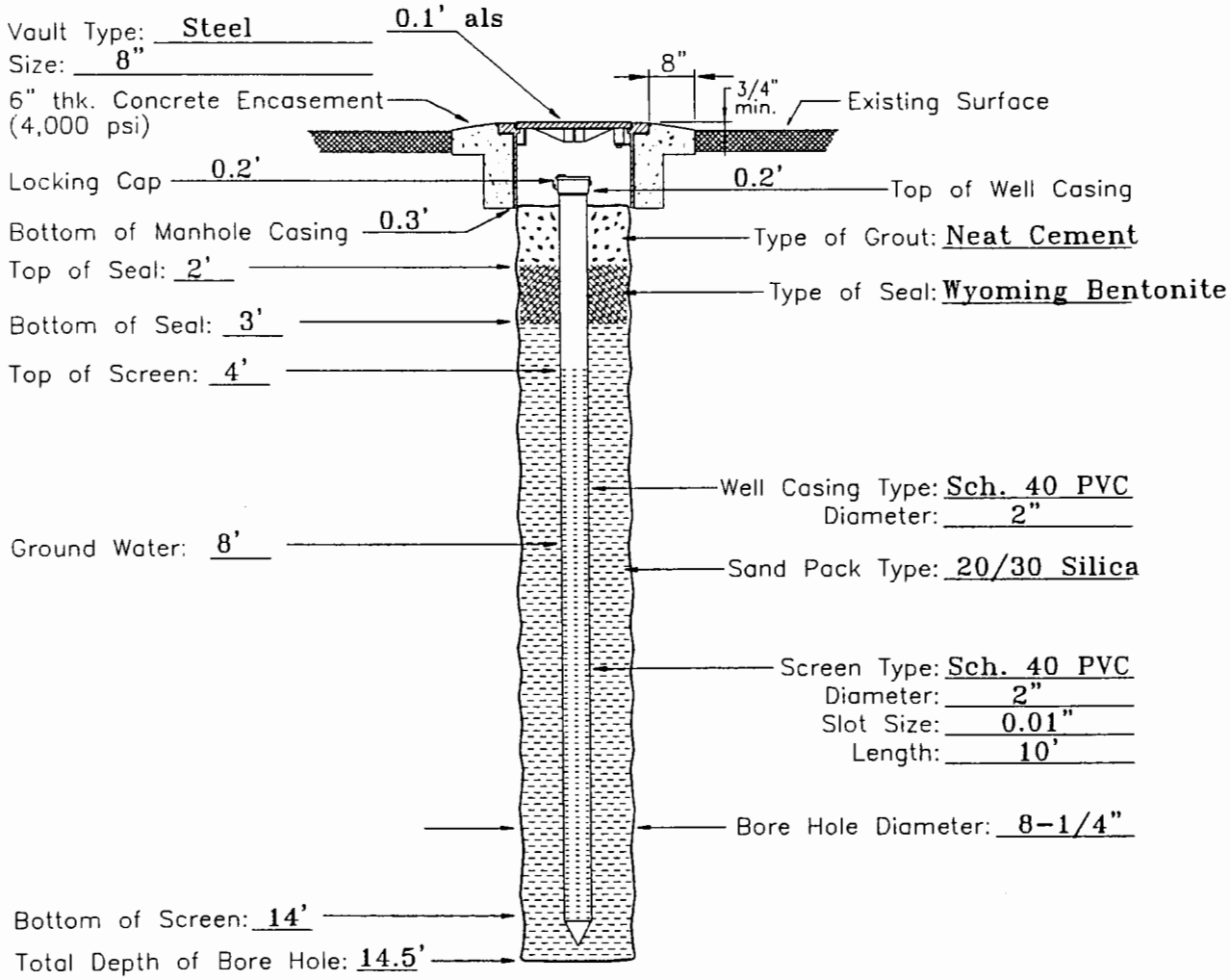


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Environmental Division

# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-13

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 10/23/96 Finish: 10/23/96
TIME Start: 1000 Finish: 1115

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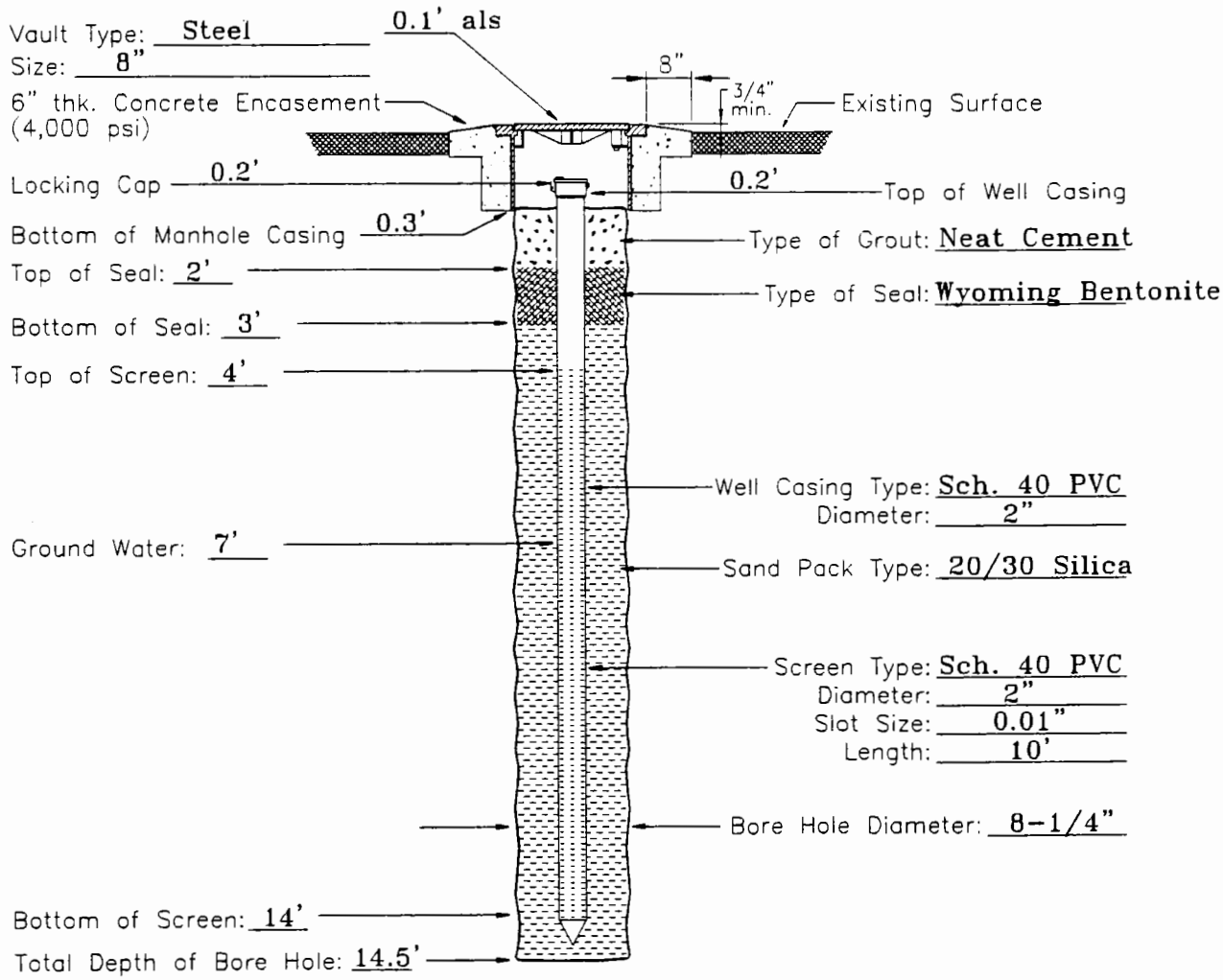


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Environmental Division

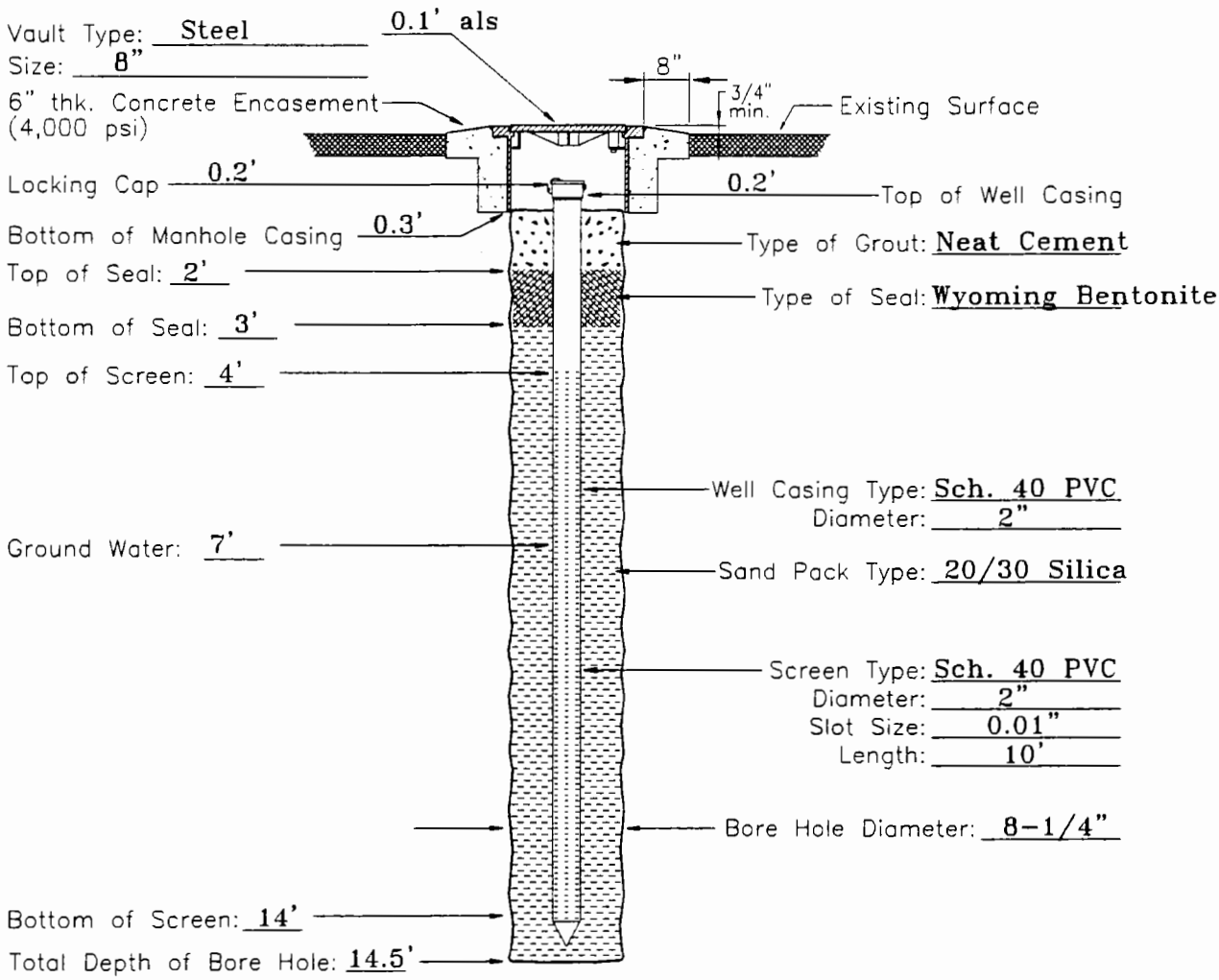
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-14

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 10/23/96 Finish: 10/23/96
TIME Start: 1230 Finish: 1315

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):

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Environmental Division

# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-15

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 10/23/96 Finish: 10/23/96
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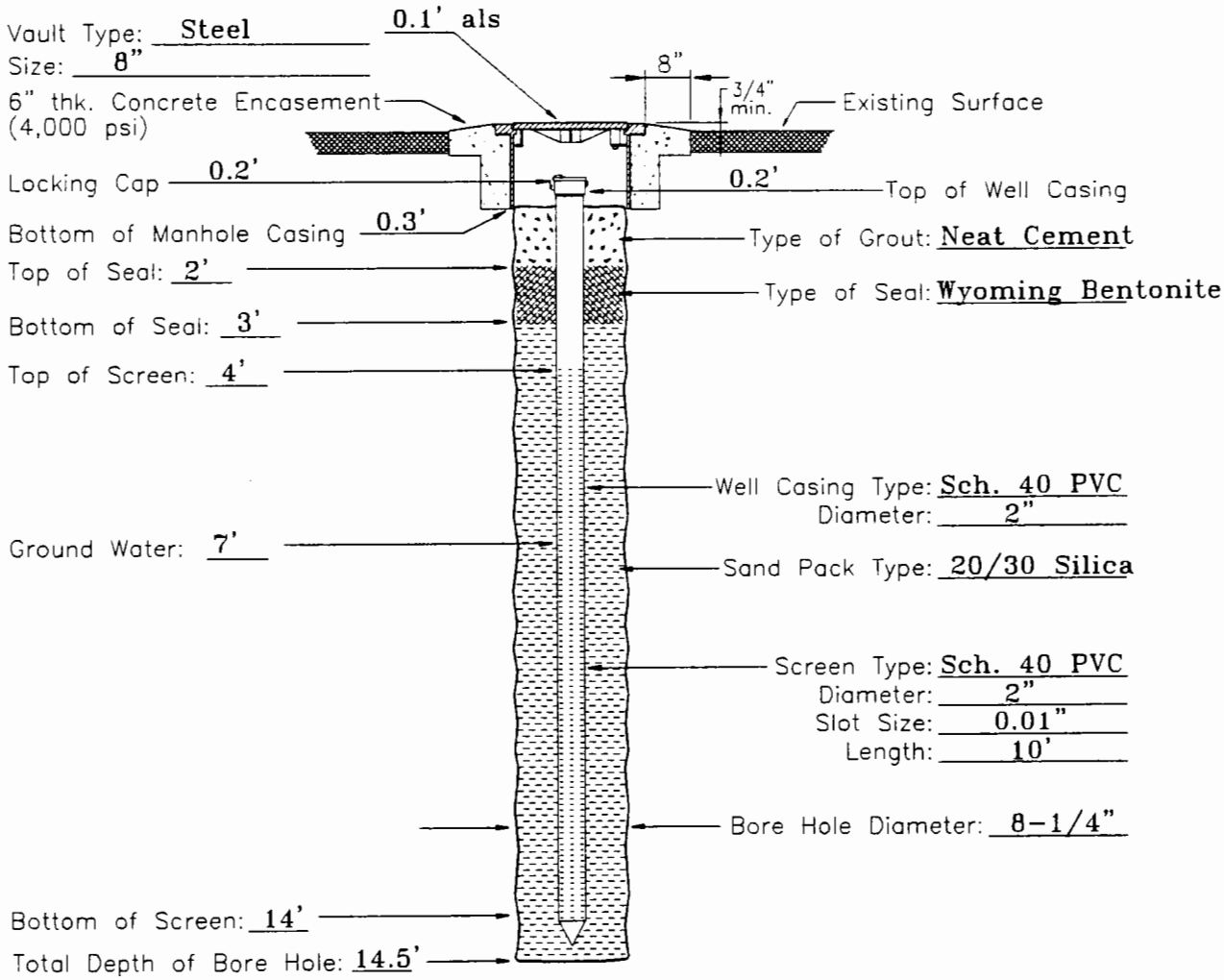


NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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Environmental Division

# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-16

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
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TIME Start: 1415 Finish: 1500

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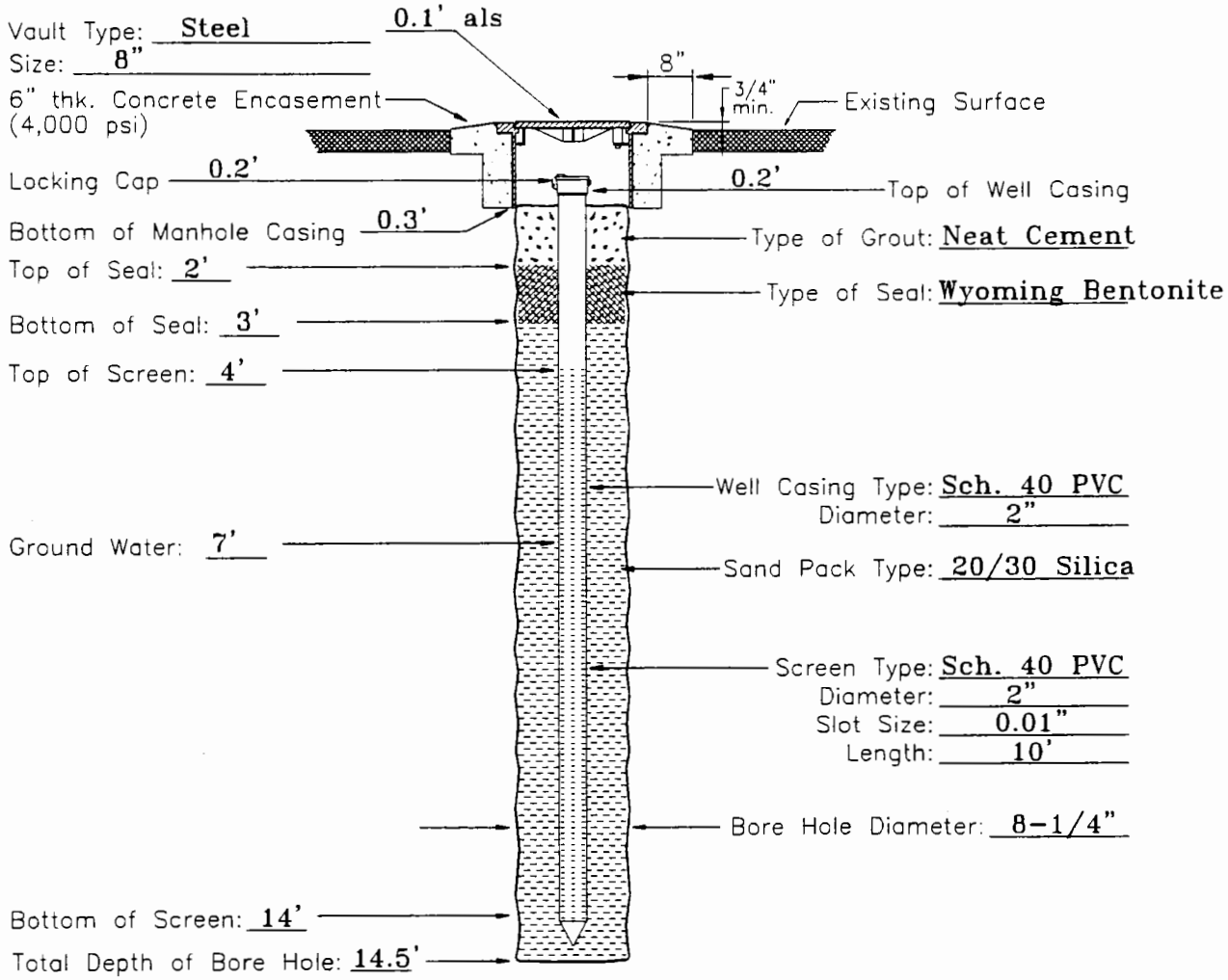


NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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Environmental Division

# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-17

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 10/24/96 Finish: 10/24/96
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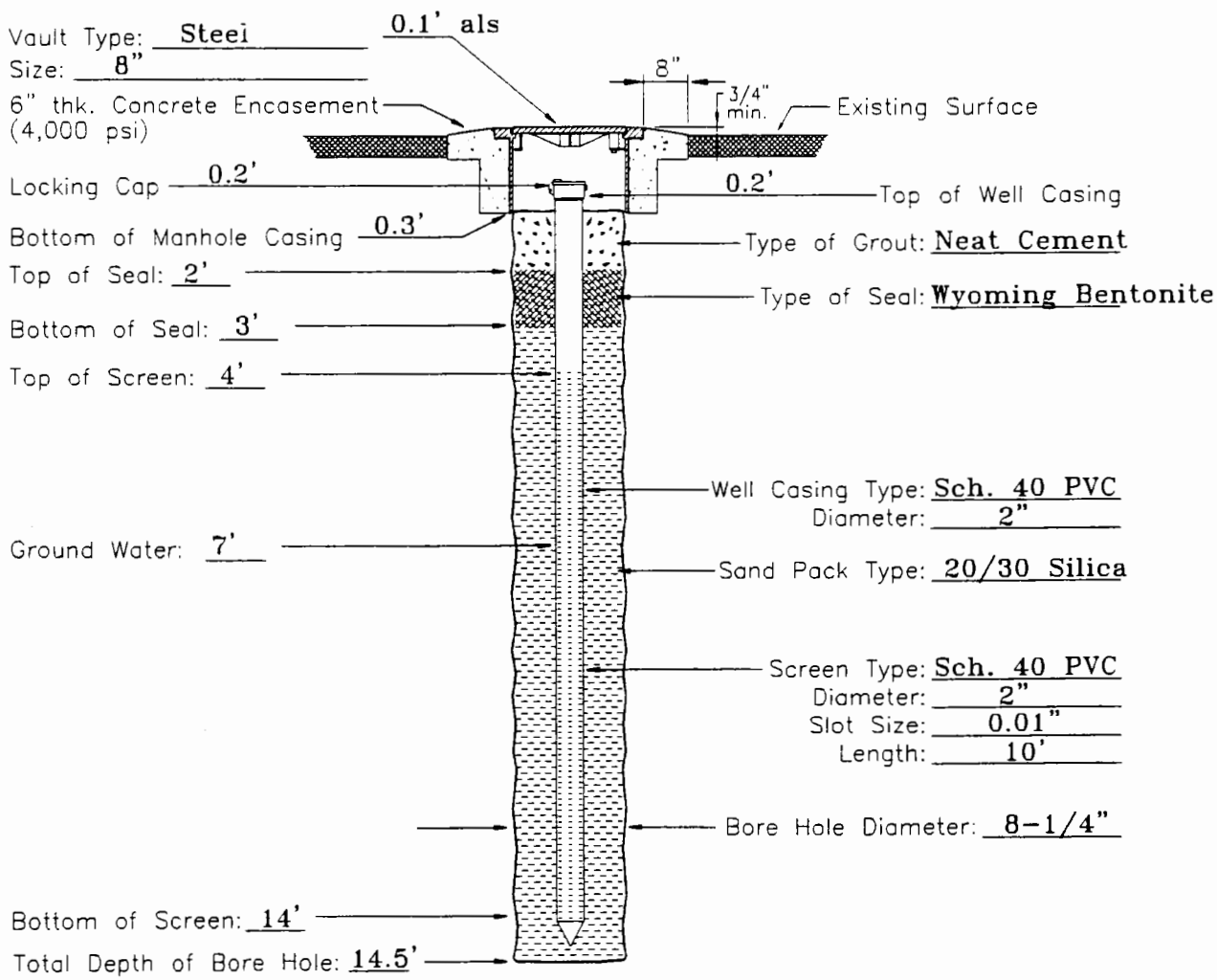


NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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W.E.S., Inc.
Environmental Division

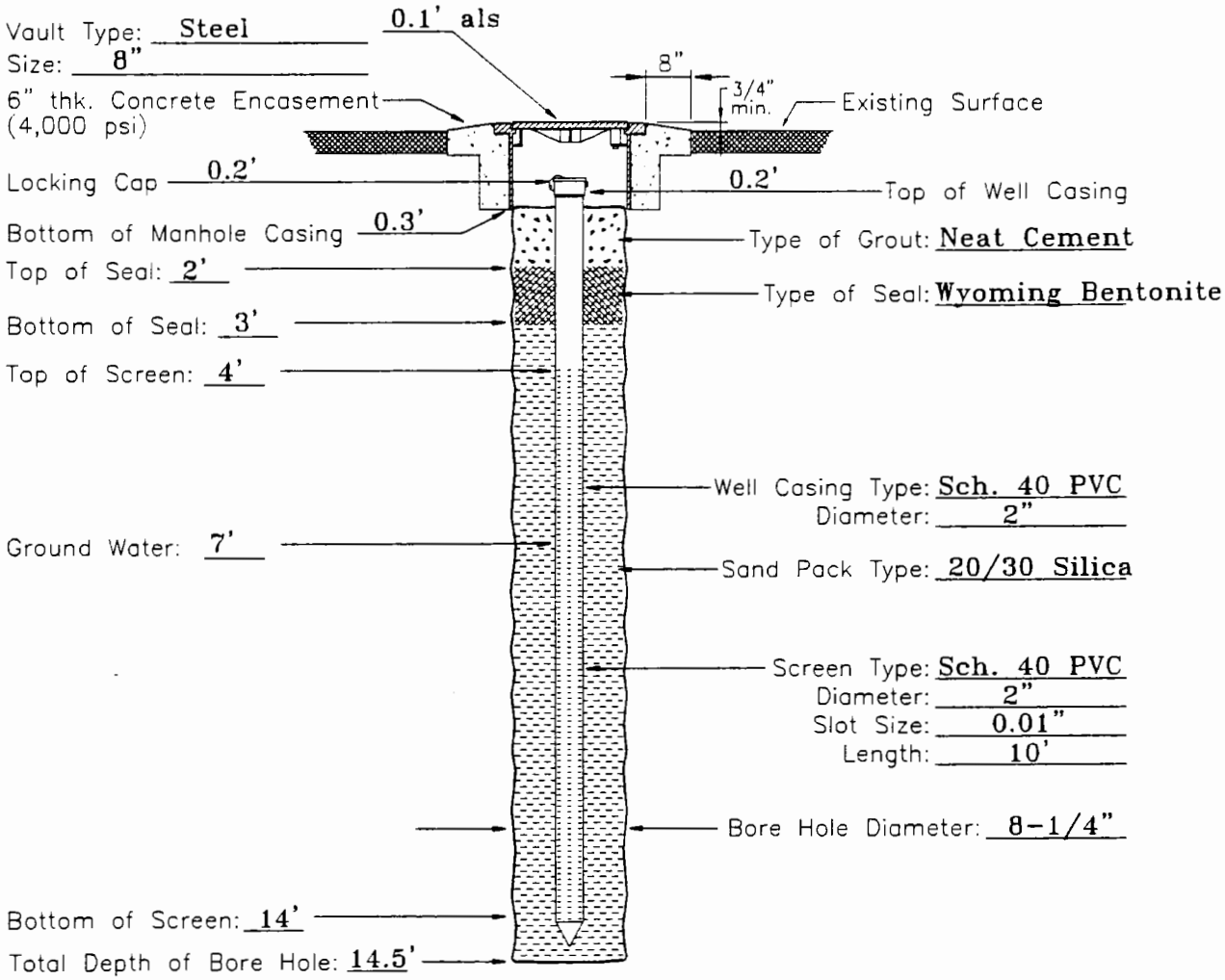
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-18

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 10/24/96 Finish: 10/24/96
TIME Start: 1045 Finish: 1200

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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W.E.S., Inc.
Environmental Division

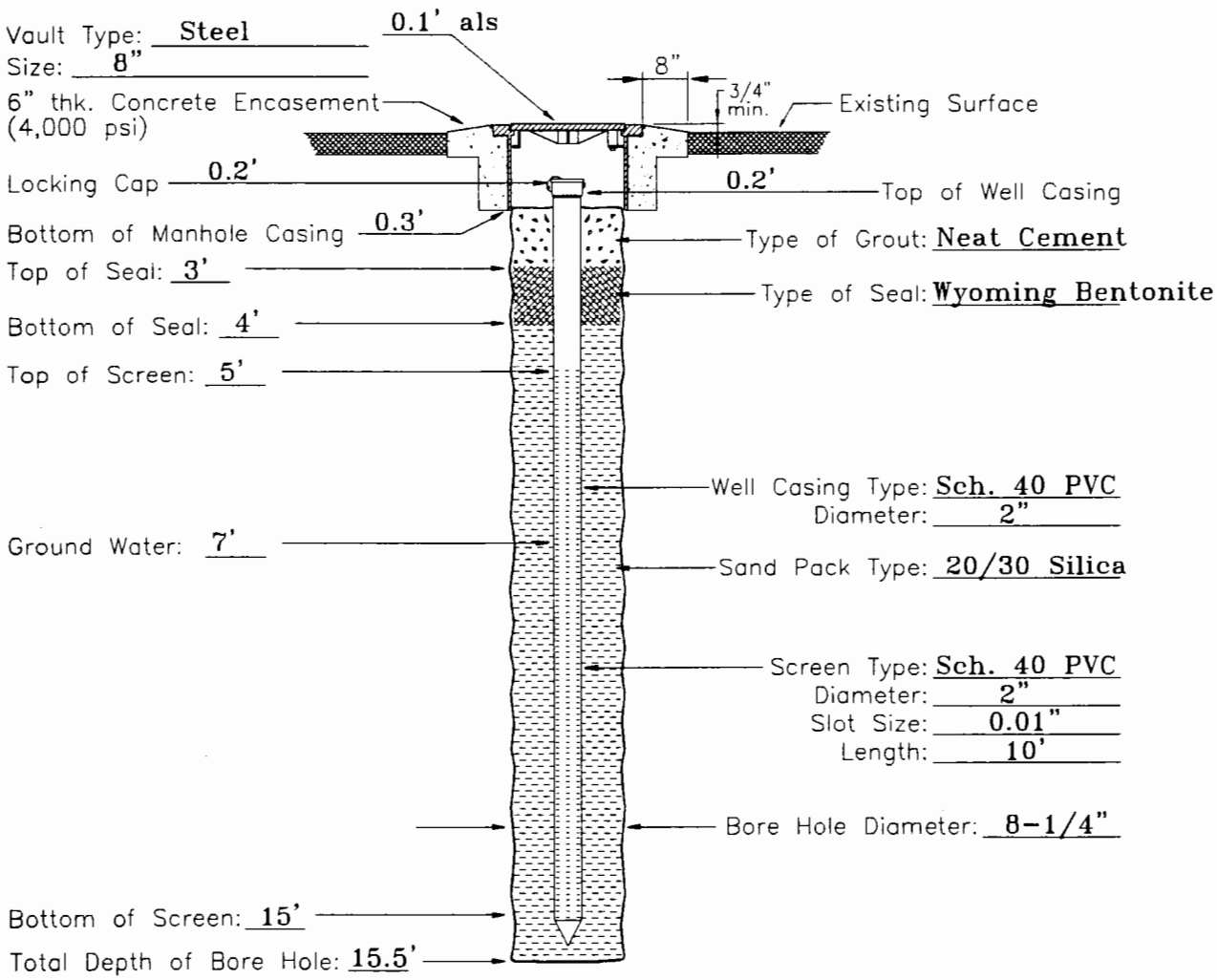
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-19

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 01/30/97 Finish: 01/30/97
TIME Start: 0800 Finish: 0850

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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W.E.S., Inc.
Environmental Division

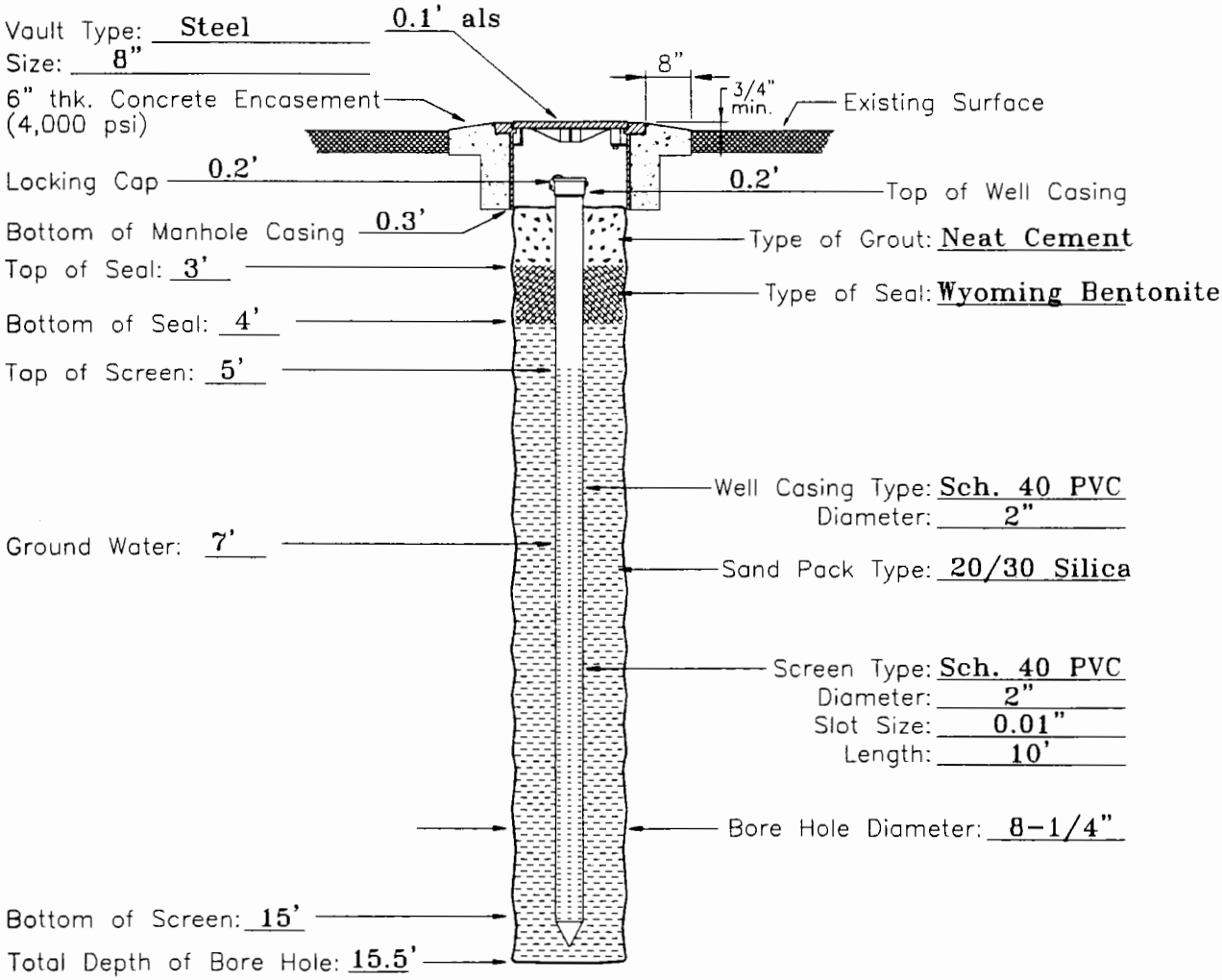
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-20

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 01/30/97 Finish: 01/30/97
TIME Start: 0850 Finish: 0940

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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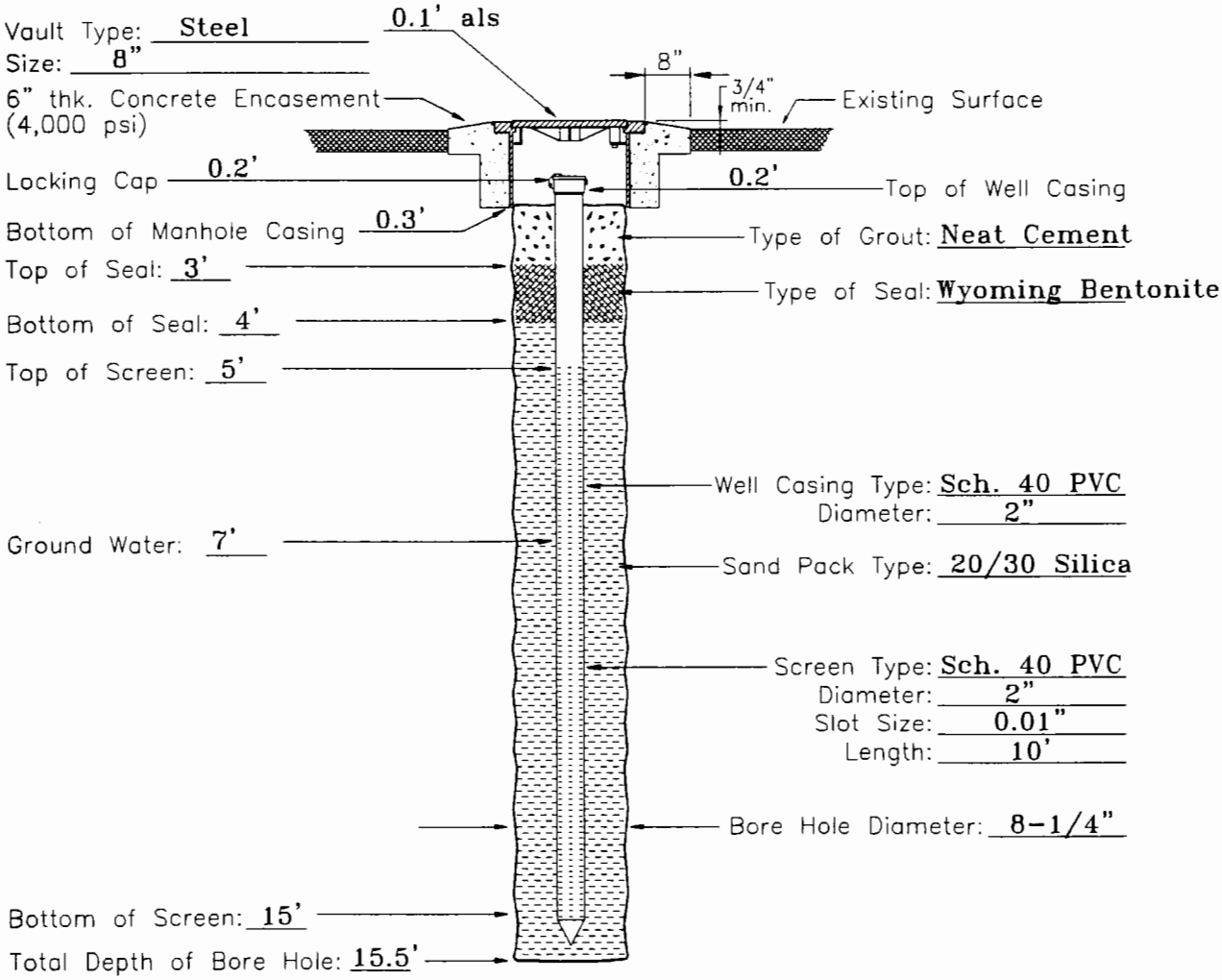
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-21

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 01/30/97 Finish: 01/30/97
TIME Start: 0940 Finish: 1030

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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Environmental Division

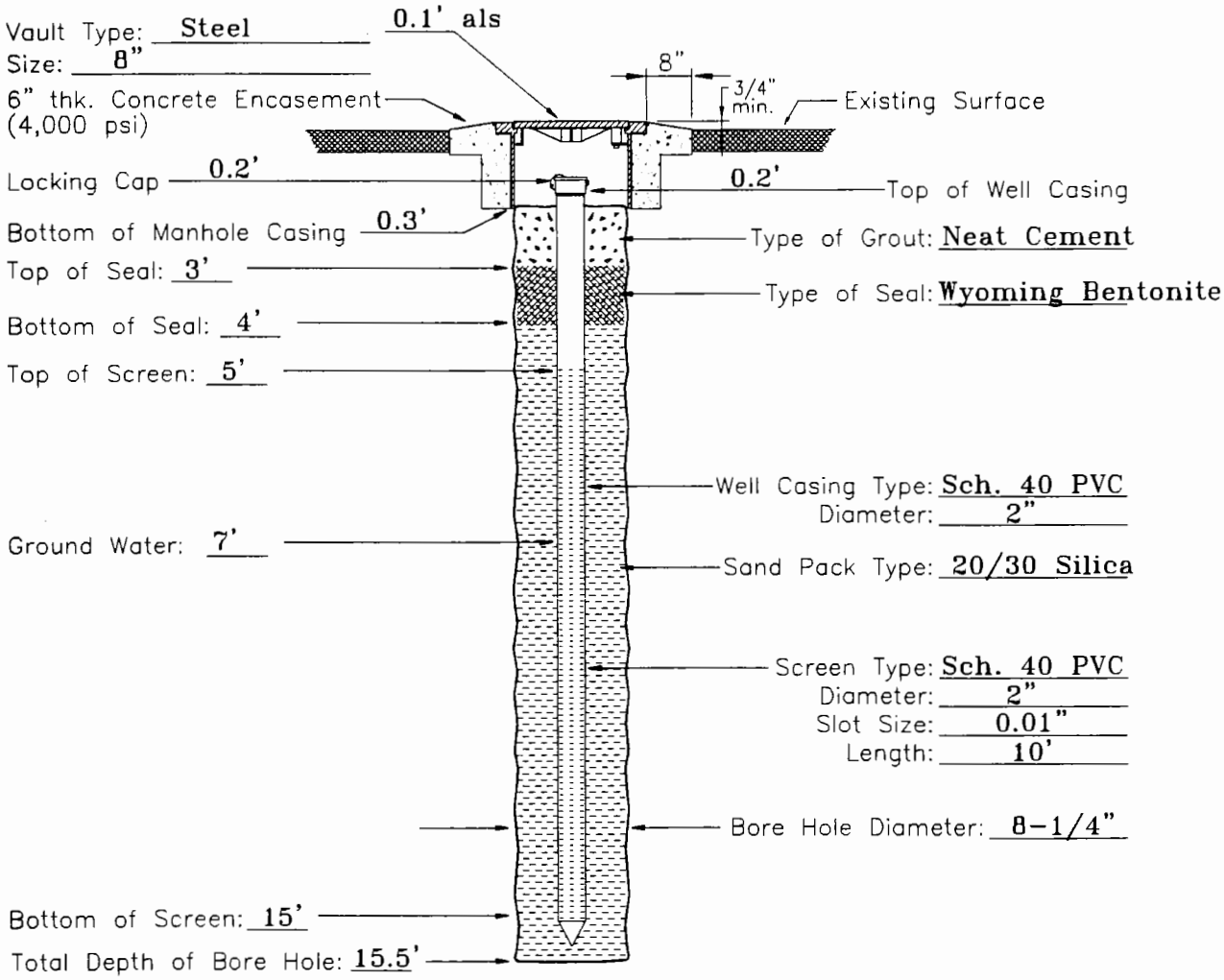
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-22

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 01/30/97 Finish: 01/30/97
TIME Start: 1030 Finish: 1120

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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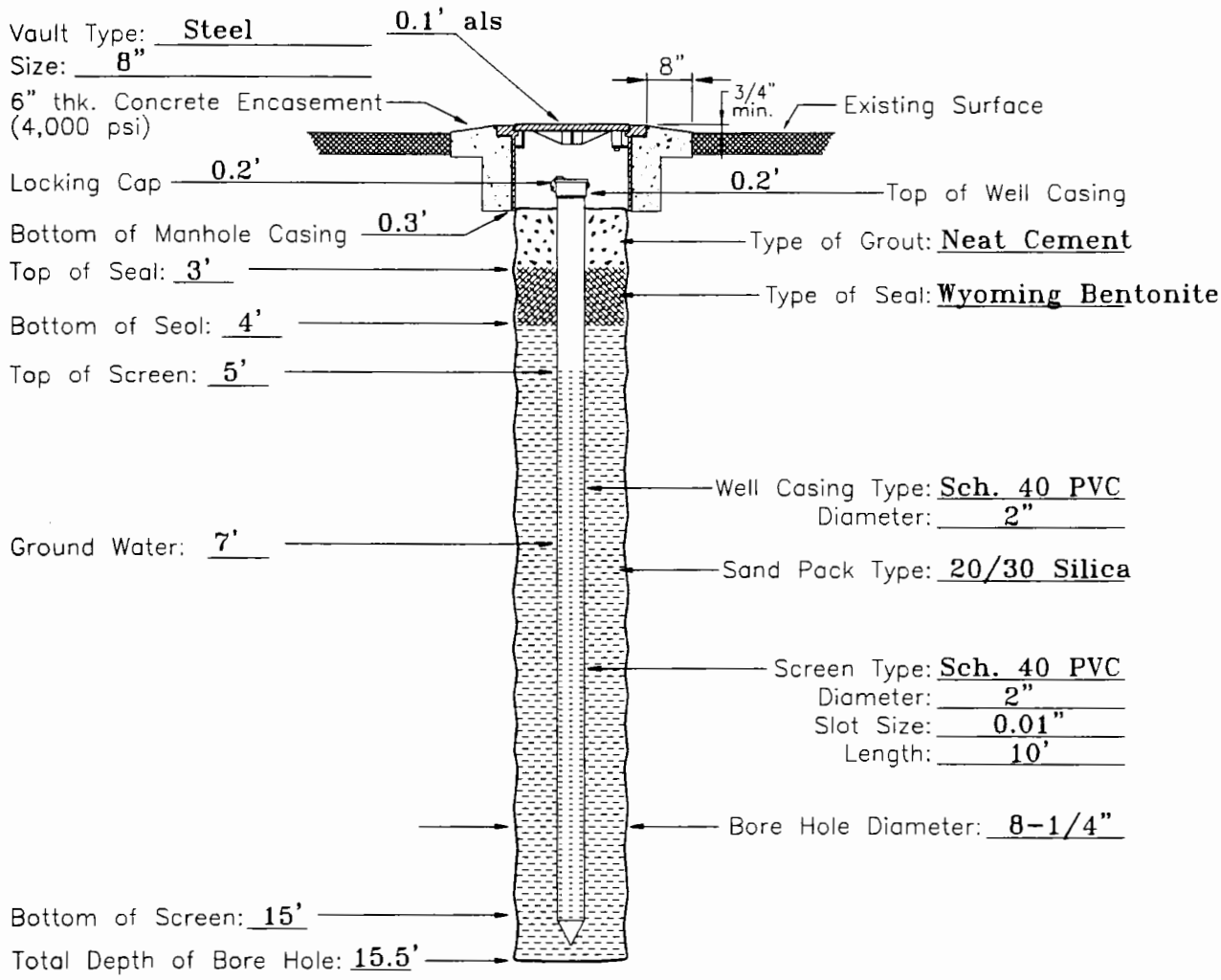
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-23

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 01/30/97 Finish: 01/30/97
TIME Start: 1120 Finish: 1210

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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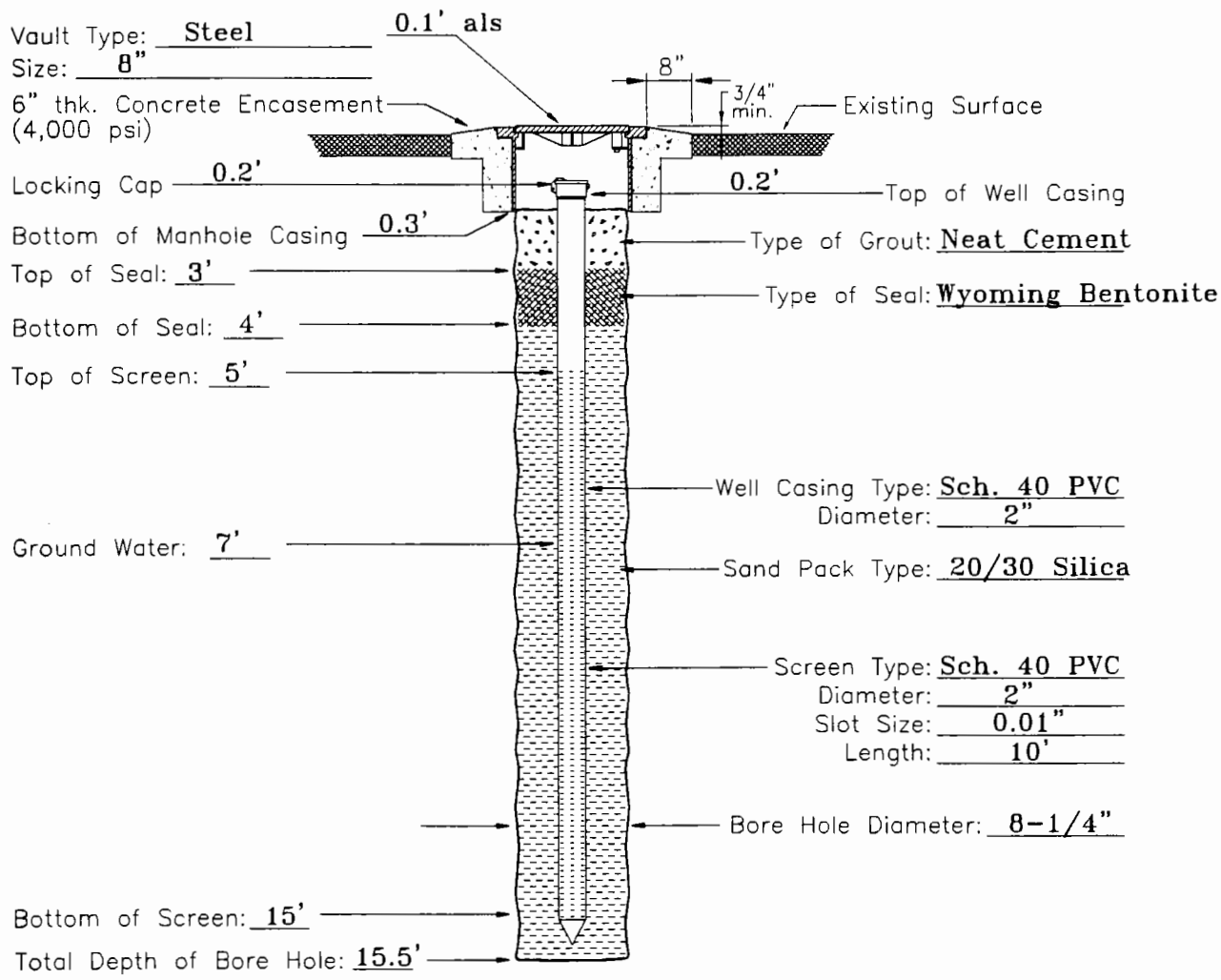
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-24

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 01/30/97 Finish: 01/30/97
TIME Start: 1210 Finish: 1300

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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6389 Tower Lane
Sarasota, FL 34240-8810
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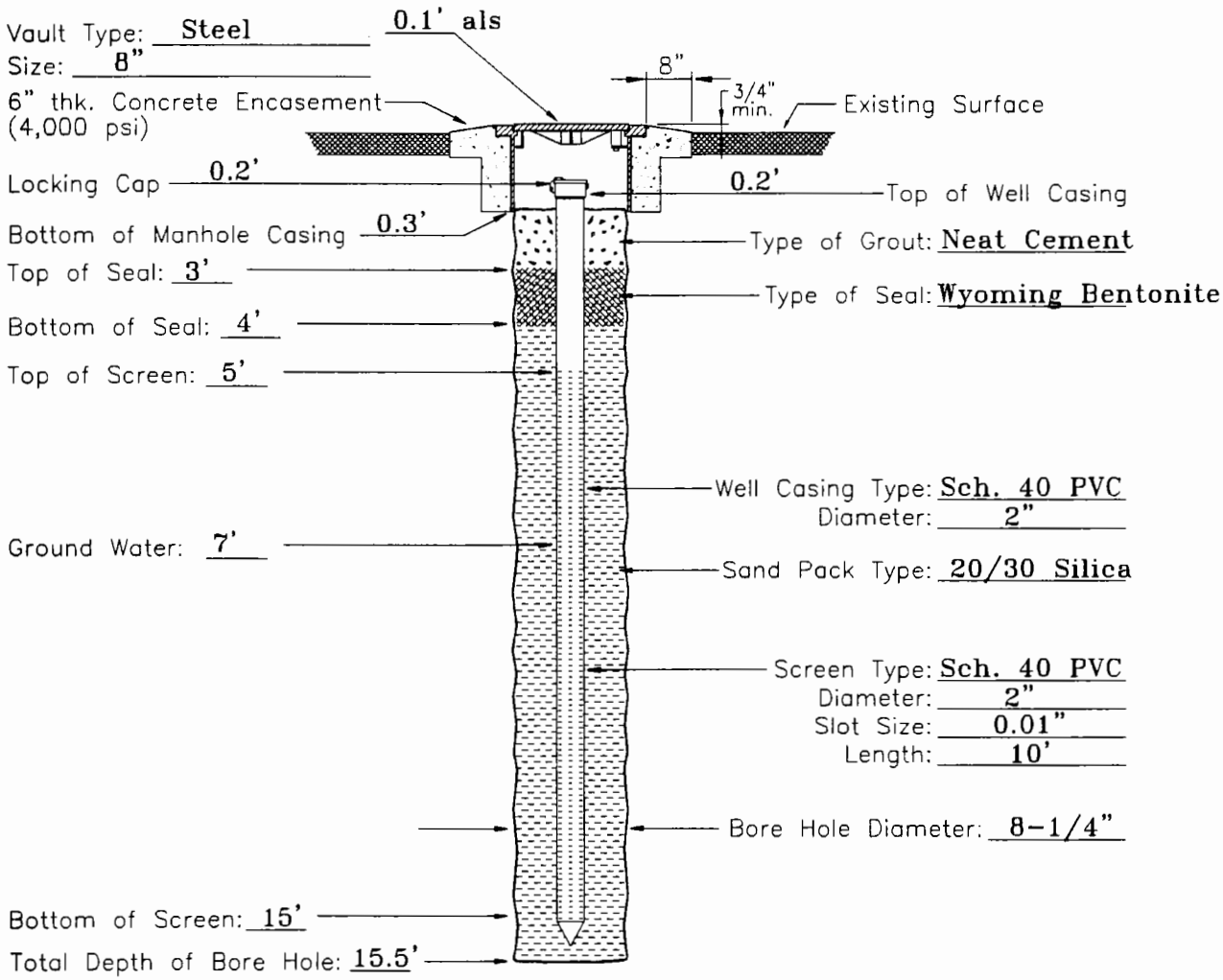
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-25

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 01/30/97 Finish: 01/30/97
TIME Start: 1300 Finish: 1400

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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Environmental Division

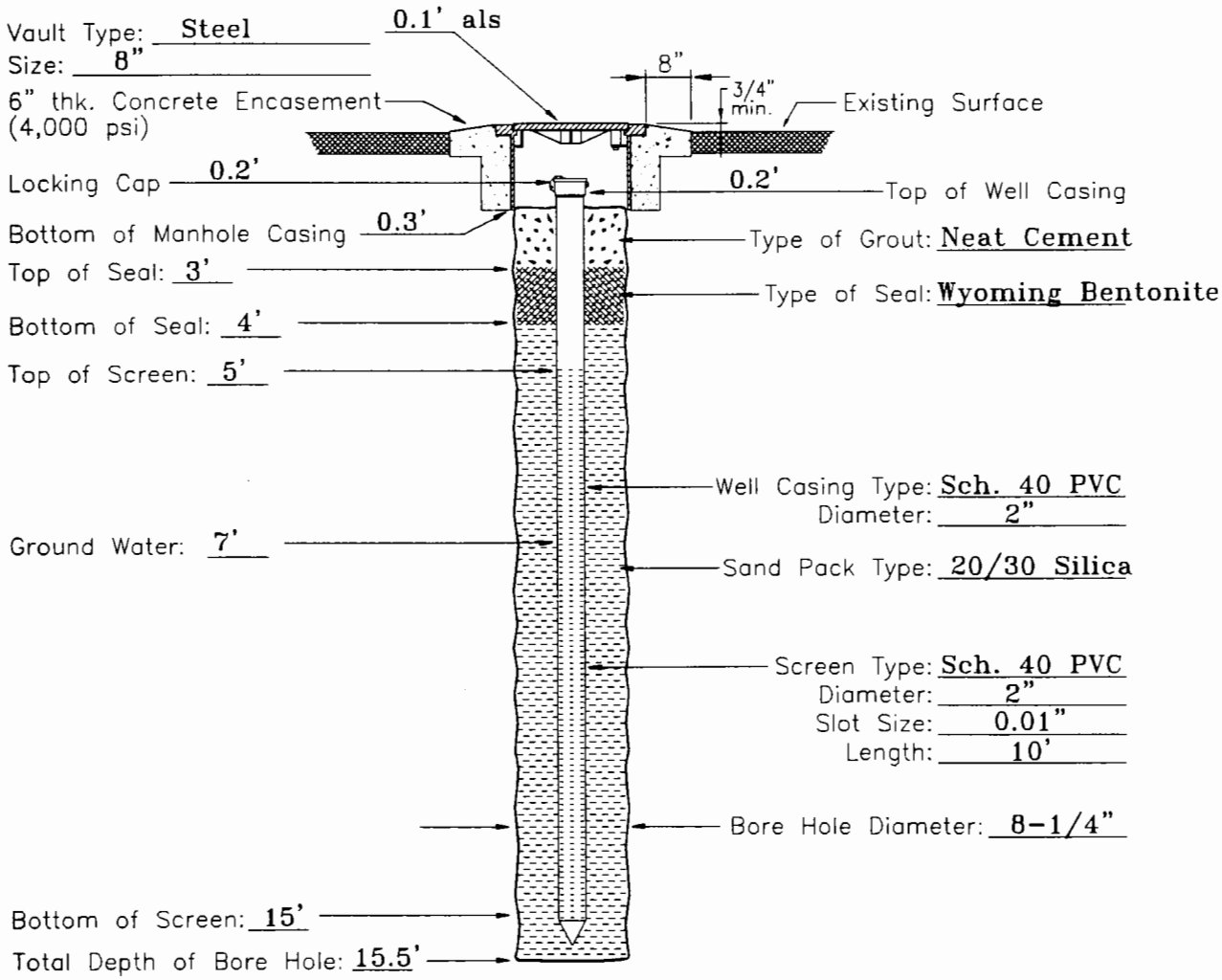
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-26

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 01/30/97 Finish: 01/30/97
TIME Start: 1400 Finish: 1500

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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Environmental Division

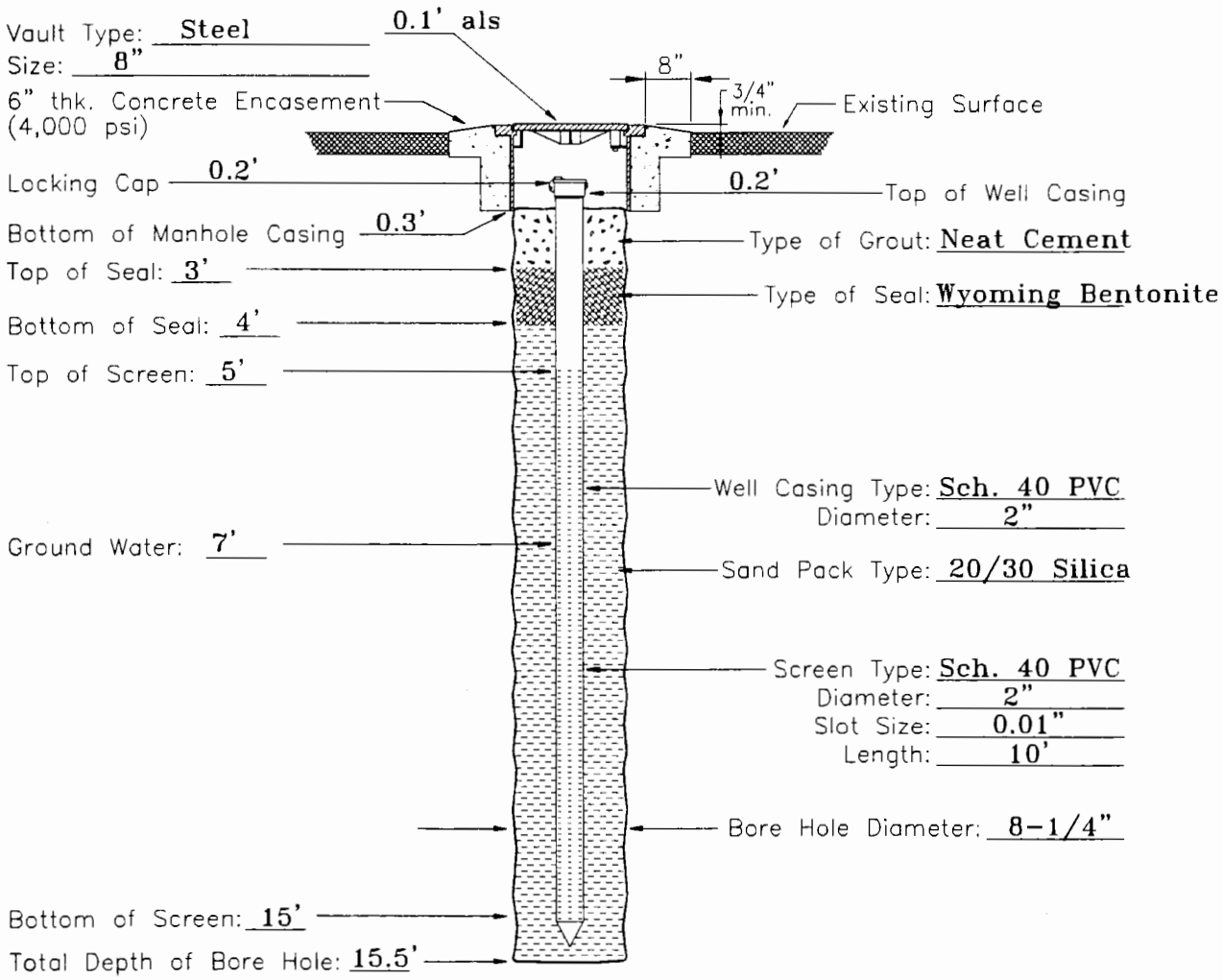
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-27

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/25/97 Finish: 02/25/97
TIME Start: 1015 Finish: 1100

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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W.E.S., Inc.
Environmental Division

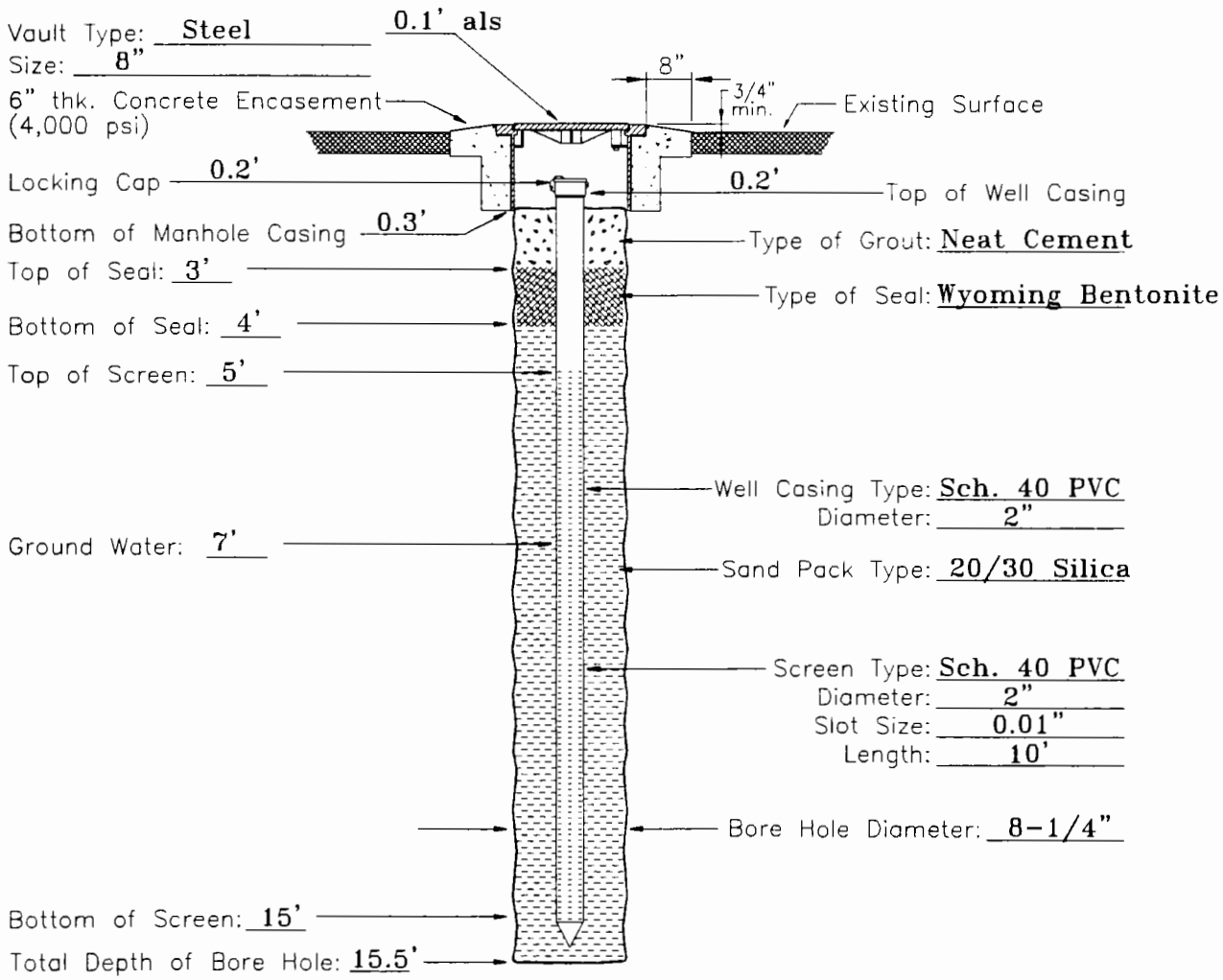
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-28

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/25/97 Finish: 02/25/97
TIME Start: 1145 Finish: 1230

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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W.E.S., Inc.
Environmental Division

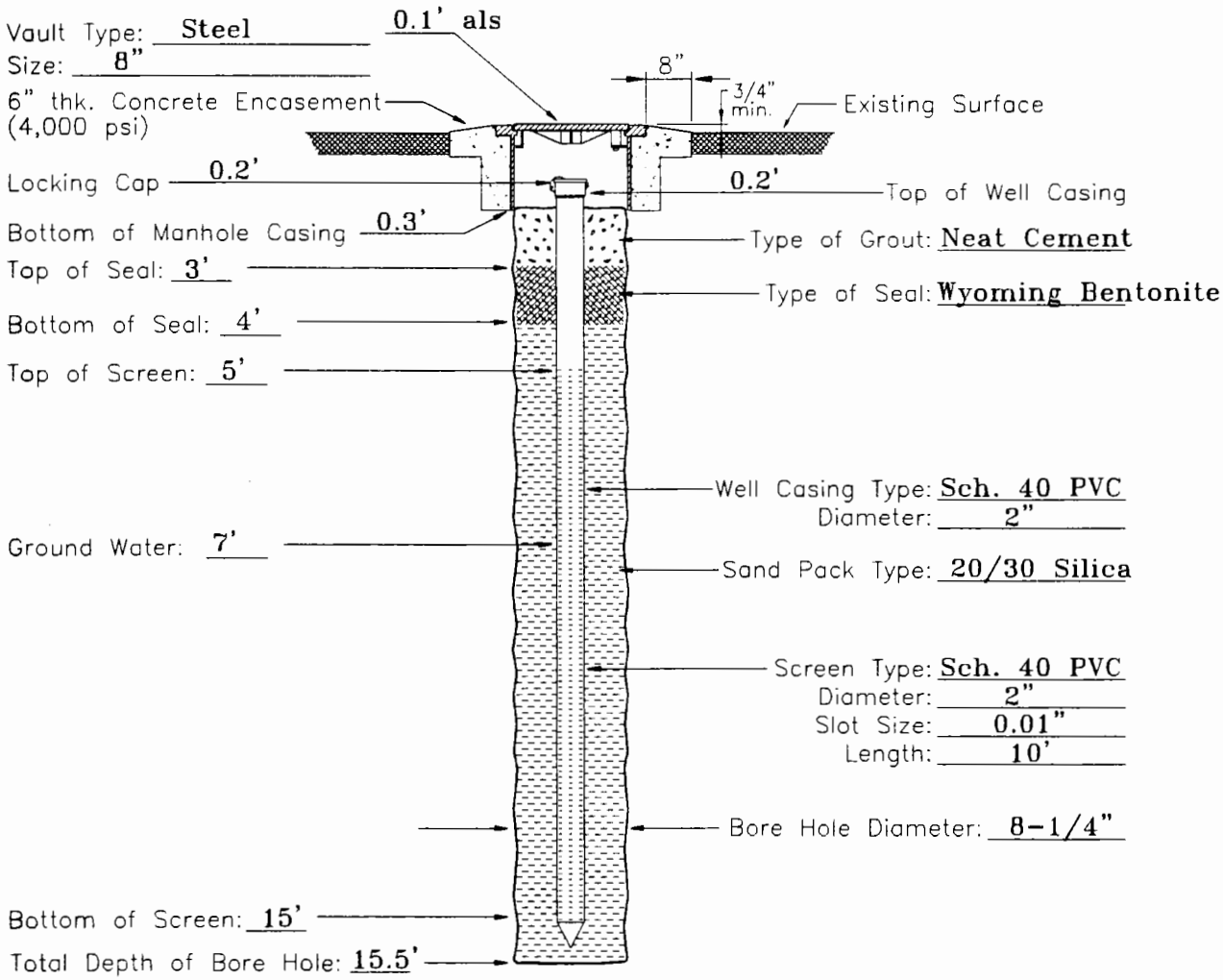
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-29

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/25/97 Finish: 02/25/97
TIME Start: 1245 Finish: 1330

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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W.E.S., Inc.
Environmental Division

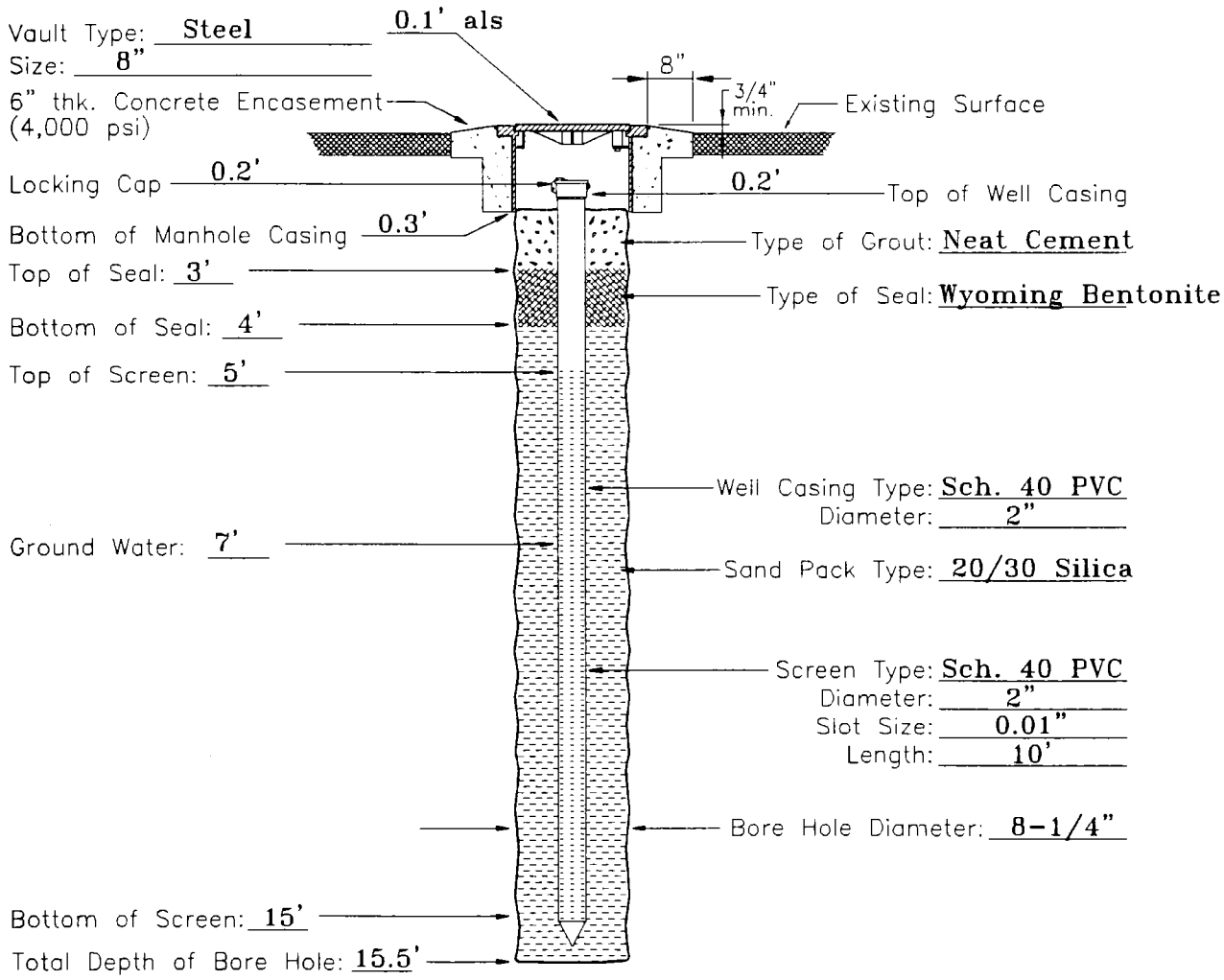
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-30

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/25/97 Finish: 02/25/97
TIME Start: 1345 Finish: 1430

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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W.E.S., Inc.
Environmental Division

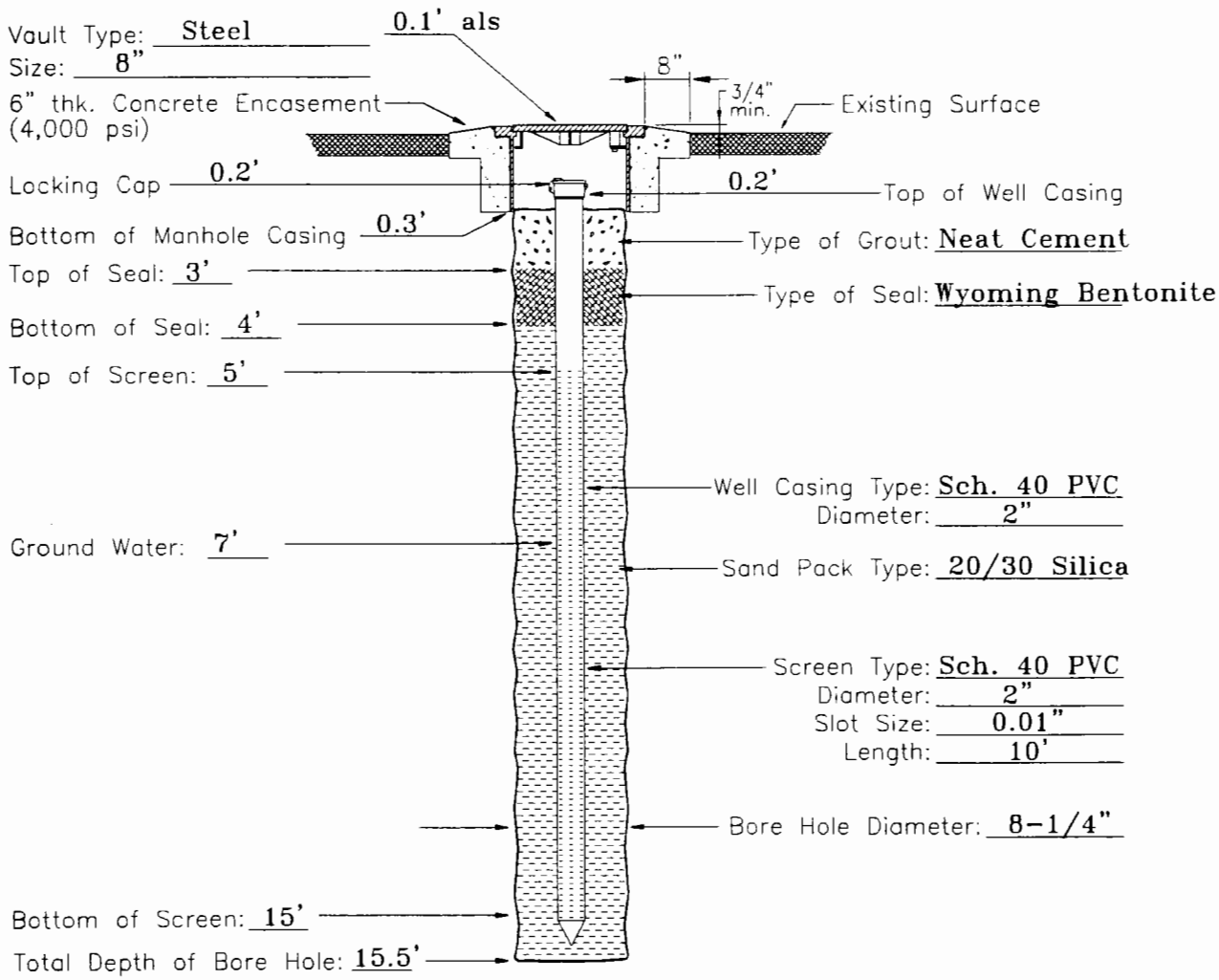
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-31

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/25/97 Finish: 02/25/97
TIME Start: 1445 Finish: 1530

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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W.E.S., Inc.
Environmental Division

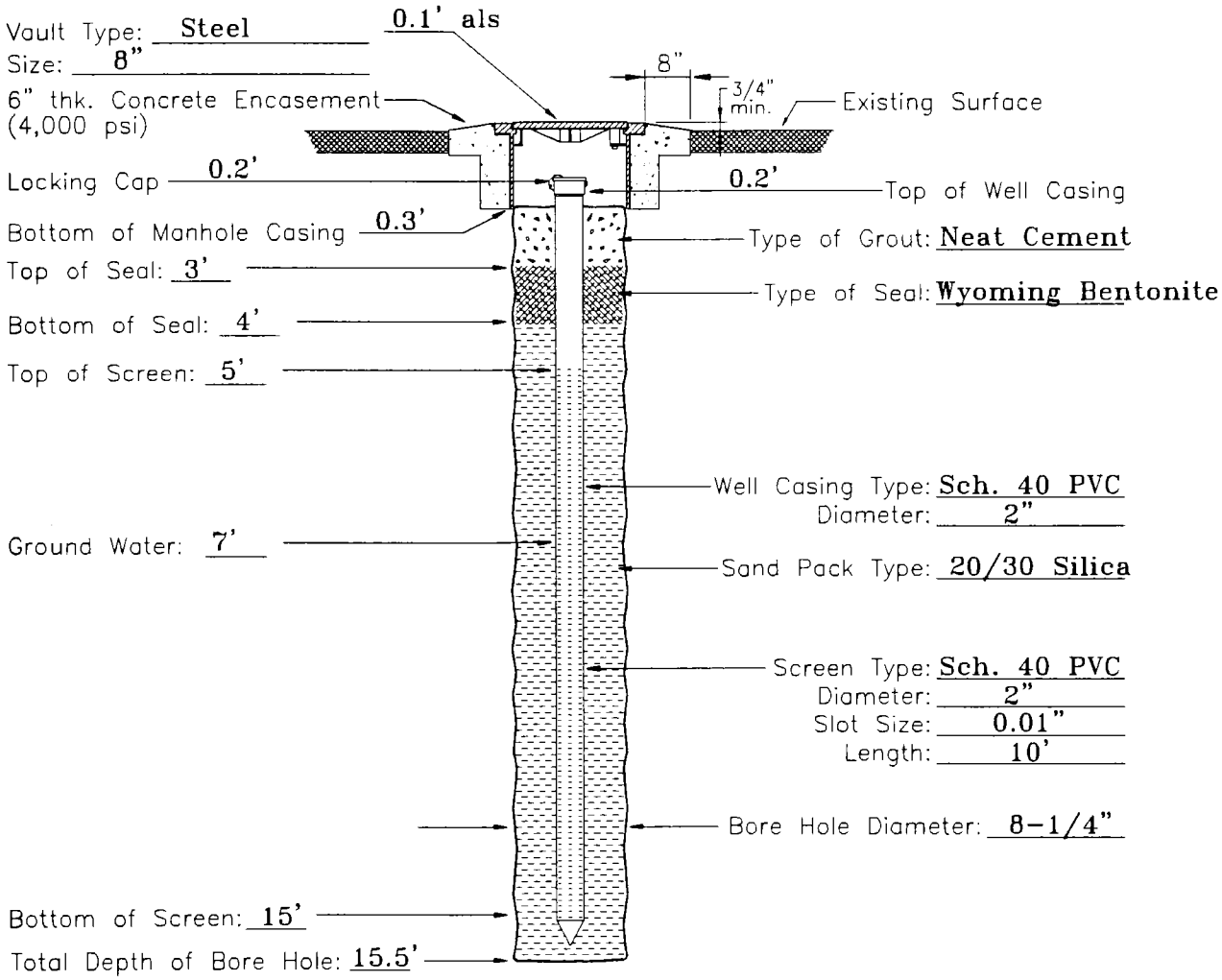
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-32

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/25/97 Finish: 02/25/97
TIME Start: 1545 Finish: 1630

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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W.E.S., Inc.
Environmental Division

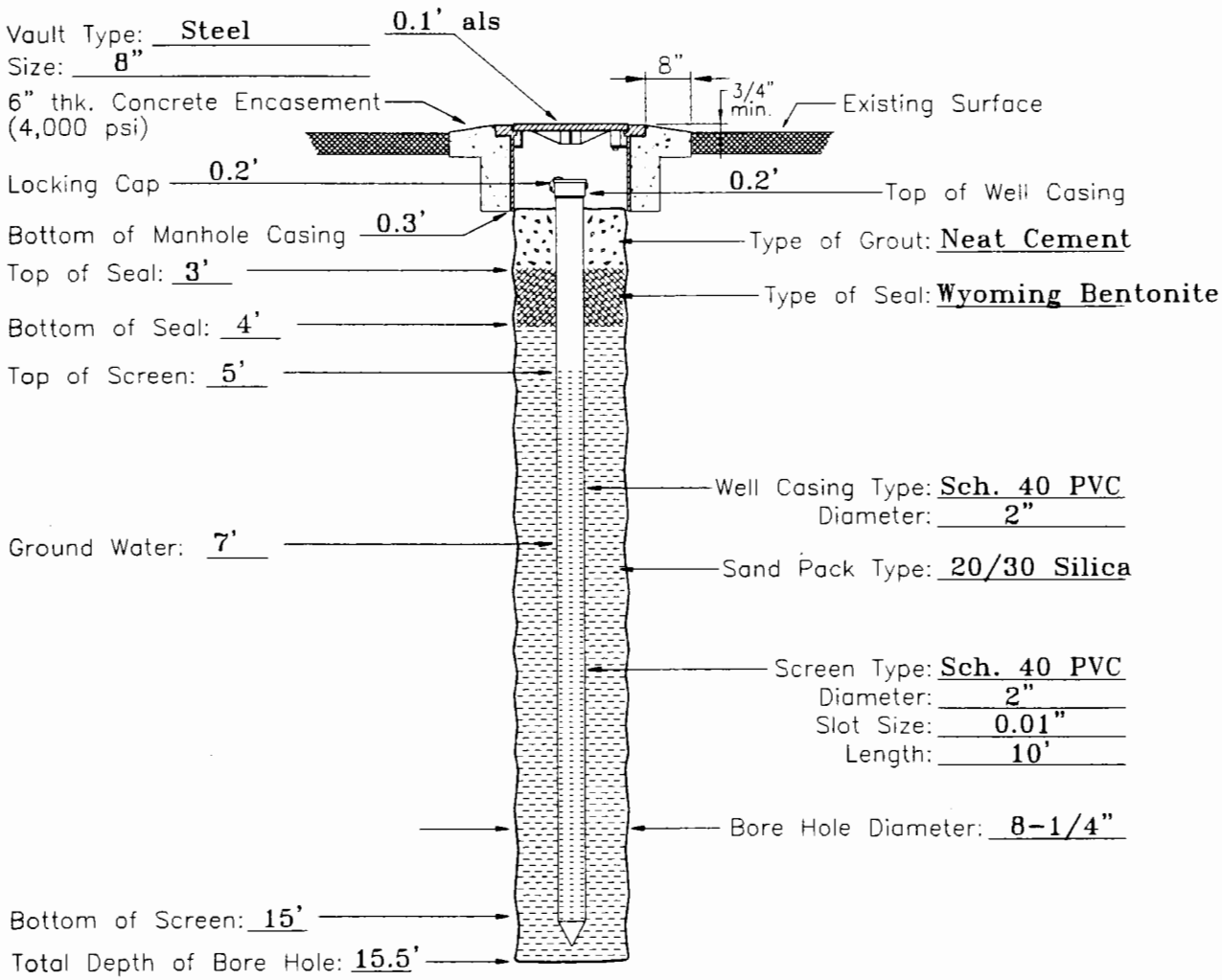
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-33

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/26/97 Finish: 02/26/97
TIME Start: 0915 Finish: 1000

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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Environmental Division

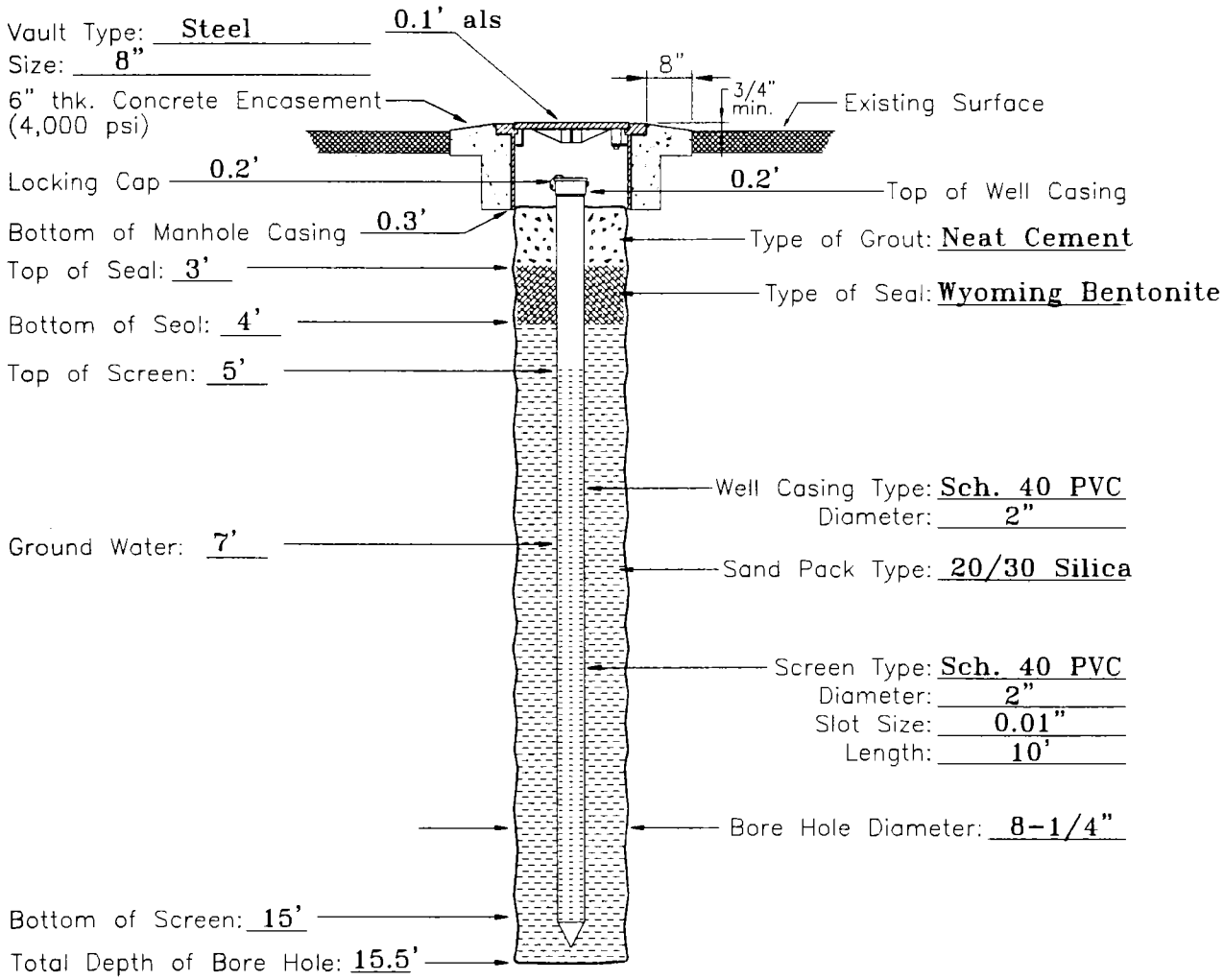
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-34

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/26/97 Finish: 02/26/97
TIME Start: 1015 Finish: 1100

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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W.E.S., Inc.
Environmental Division

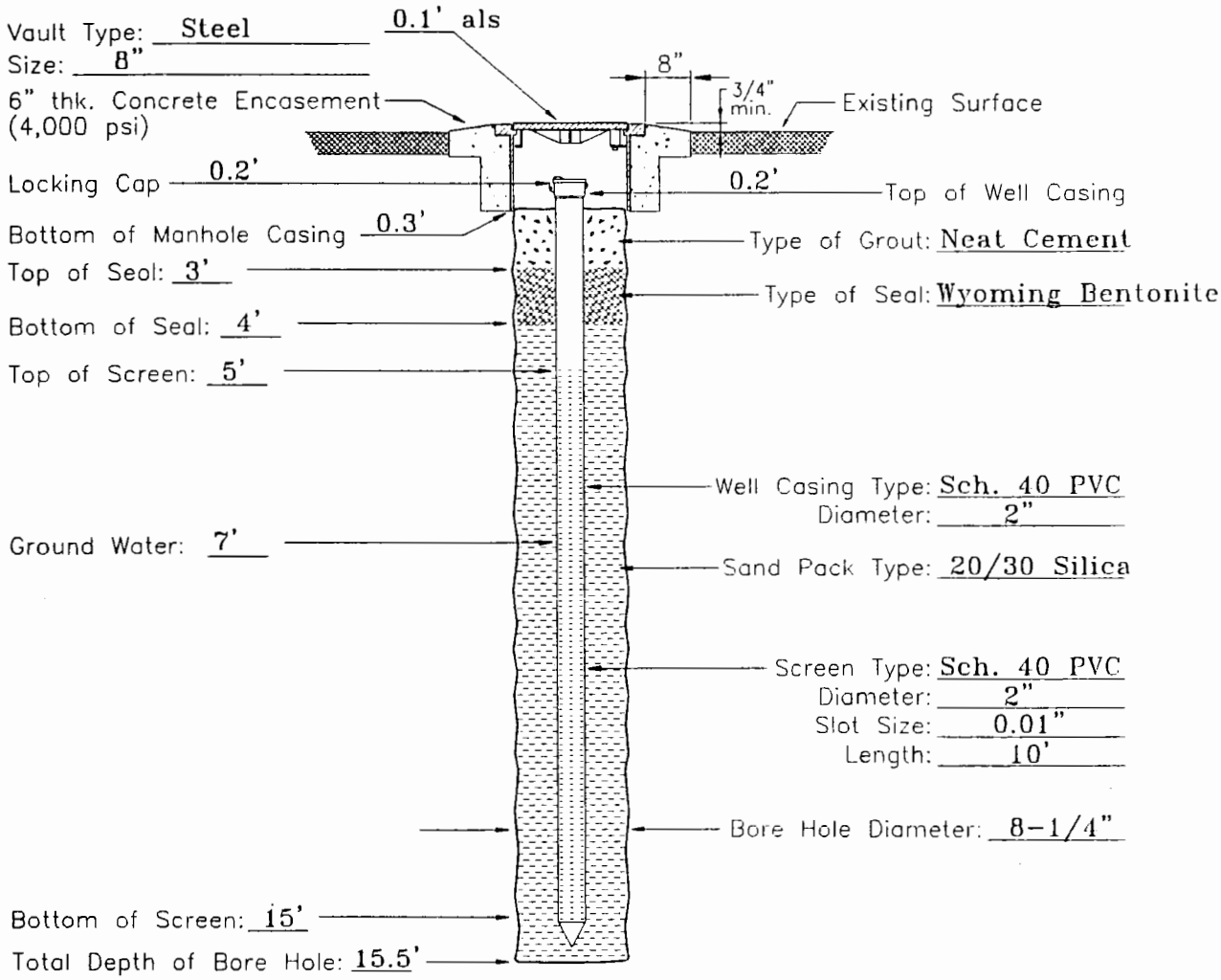
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5210 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-35

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 03/25/97 Finish: 03/25/97
TIME Start: 1230 Finish: 1320

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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Environmental Division

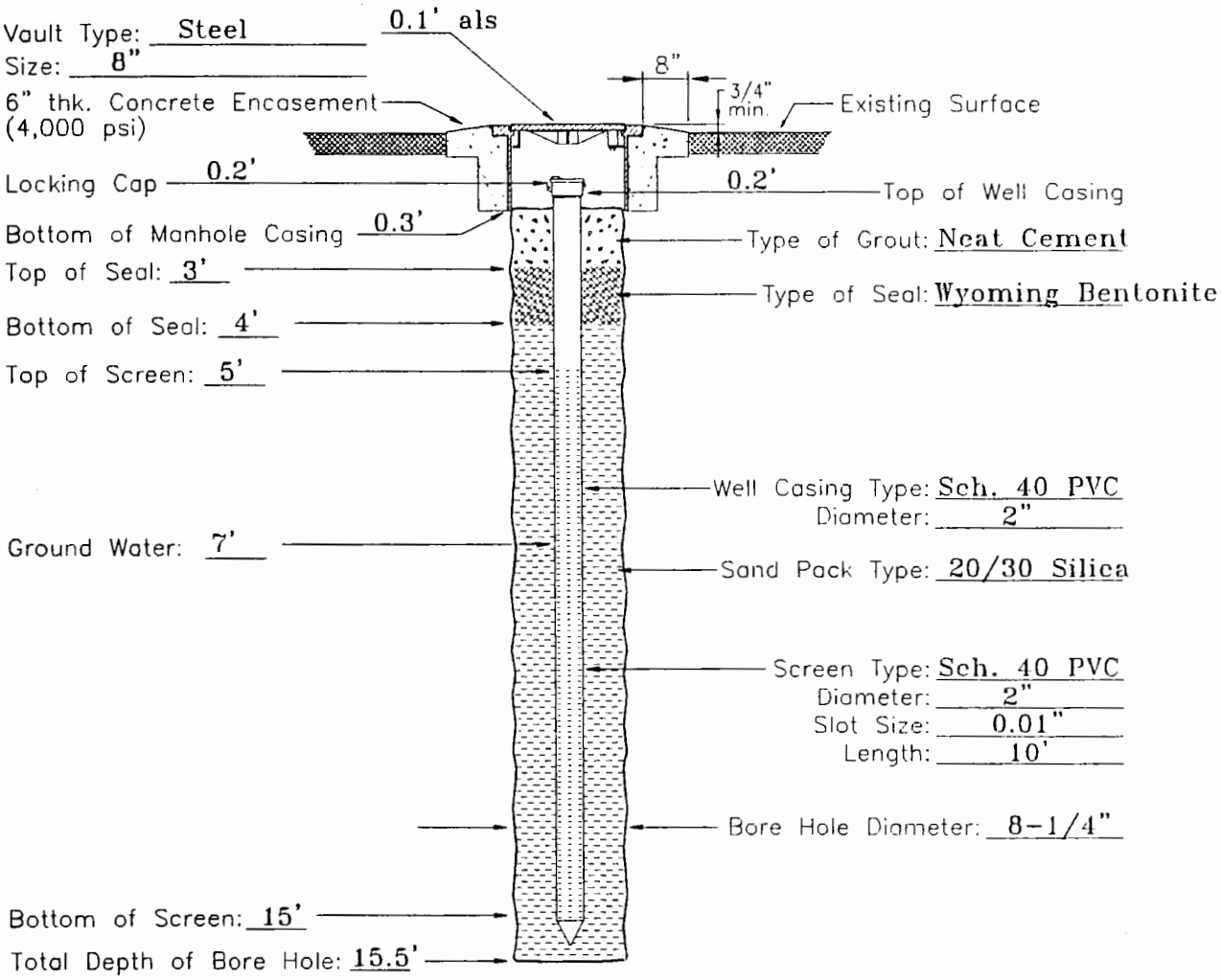
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-37

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 03/25/97 Finish: 03/25/97
TIME Start: 1400 Finish: 1430

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

A-36

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Environmental Division

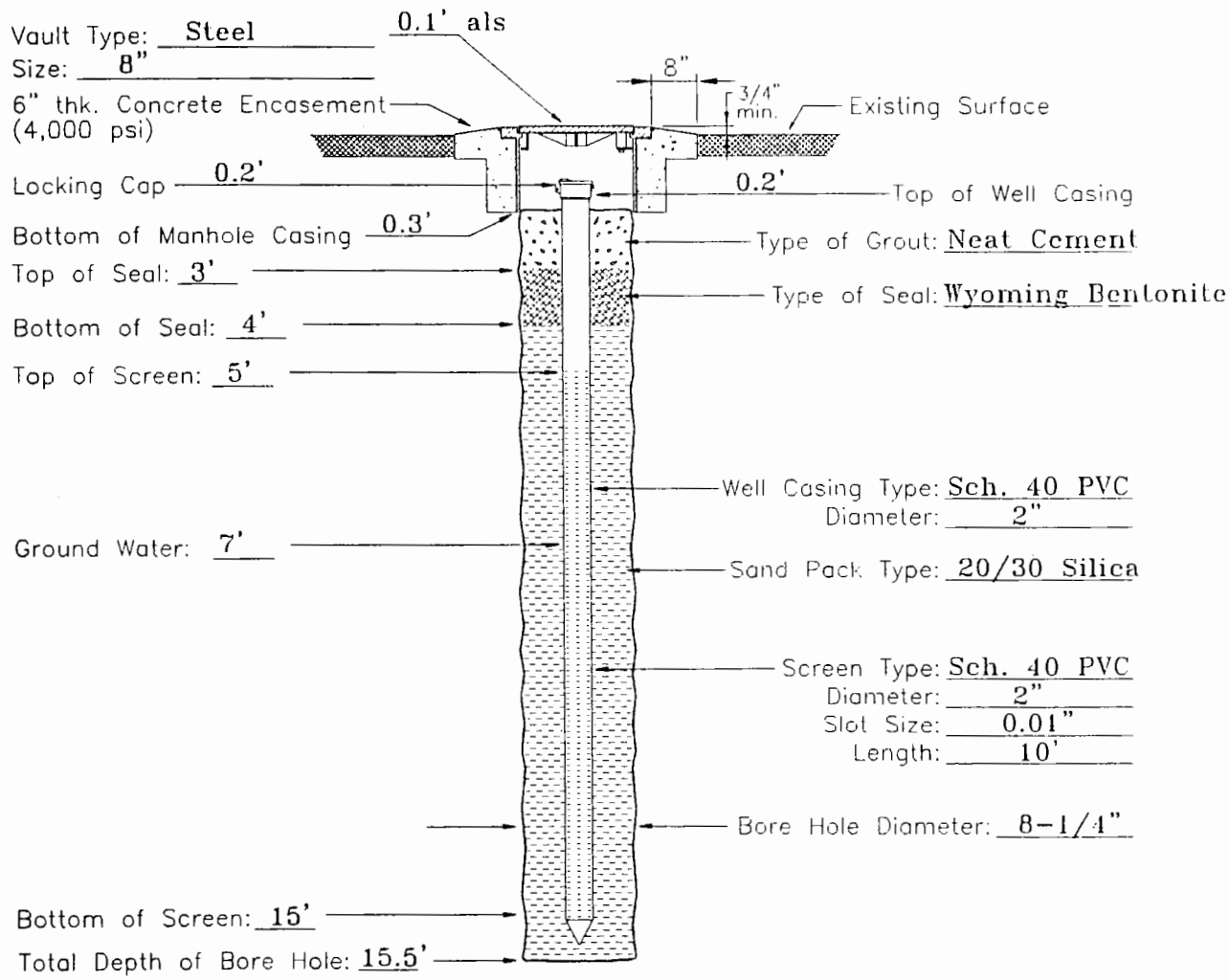
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-38

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 03/25/97 Finish: 03/25/97
TIME Start: 1430 Finish: 1500

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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W.E.S., Inc.
Environmental Division

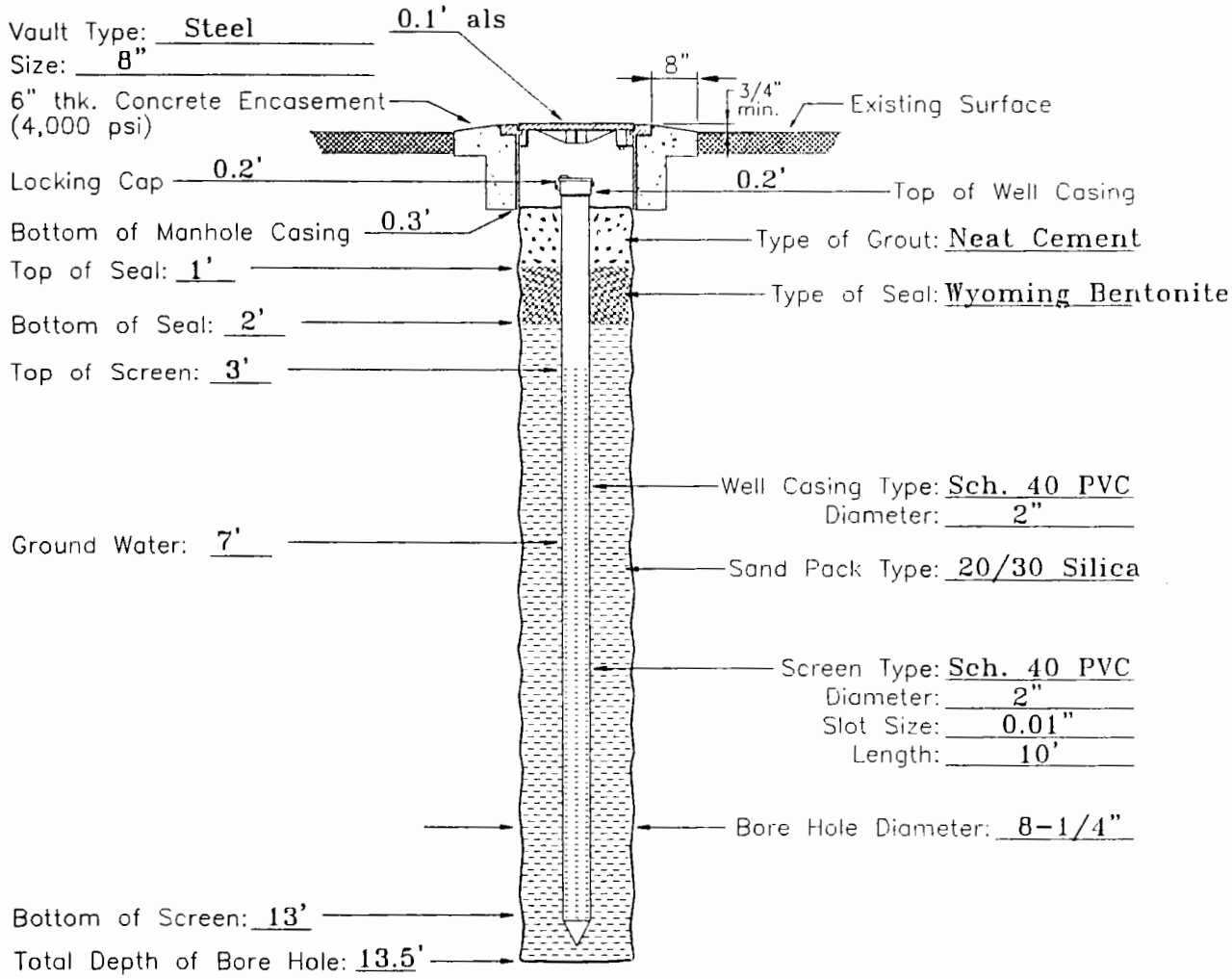
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-39

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 03/25/97 Finish: 03/25/97
TIME Start: 1500 Finish: 1530

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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# MONITOR WELL CONSTRUCTION DETAIL

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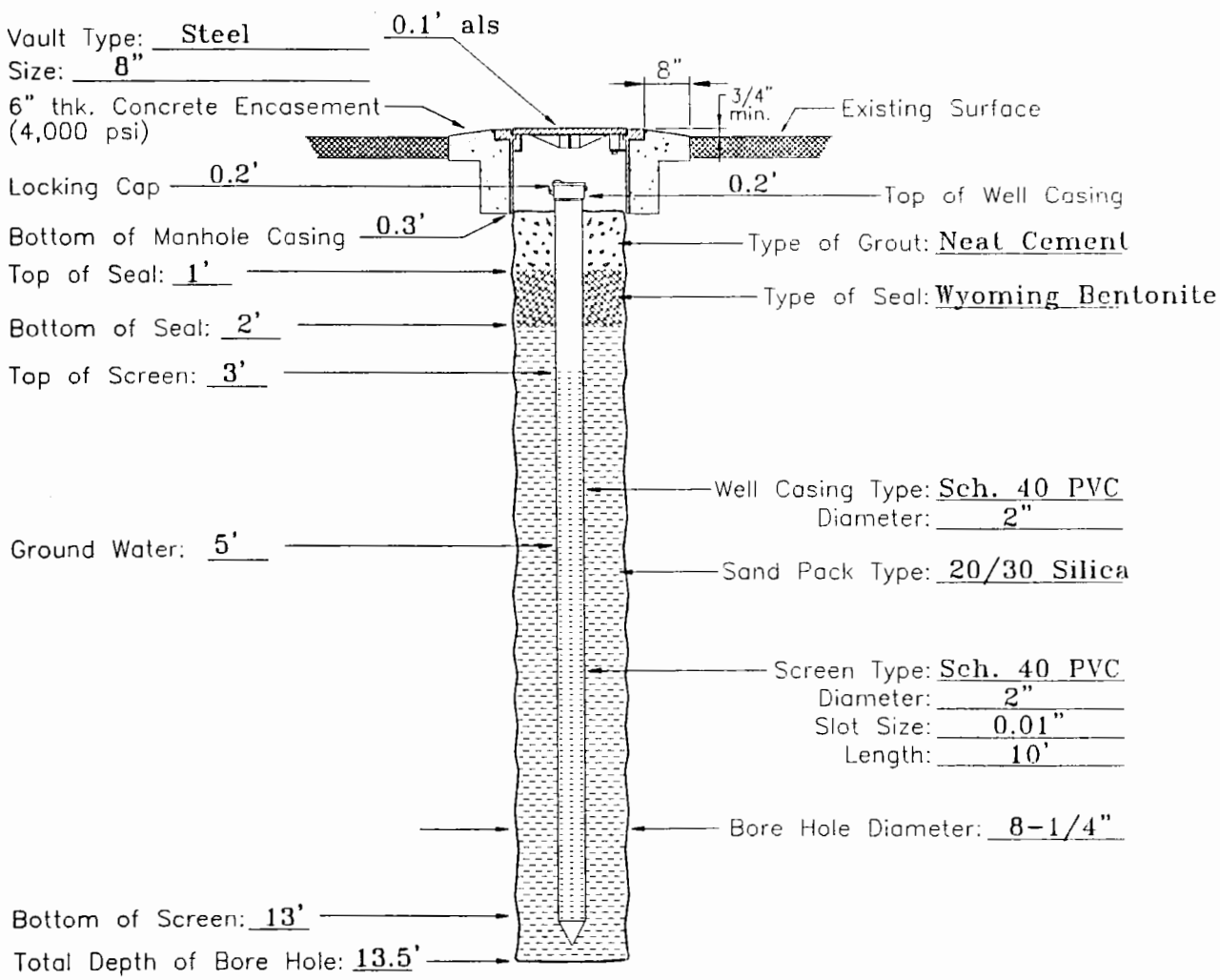
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-40

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 03/25/97 Finish: 03/25/97
TIME Start: 1530 Finish: 1600

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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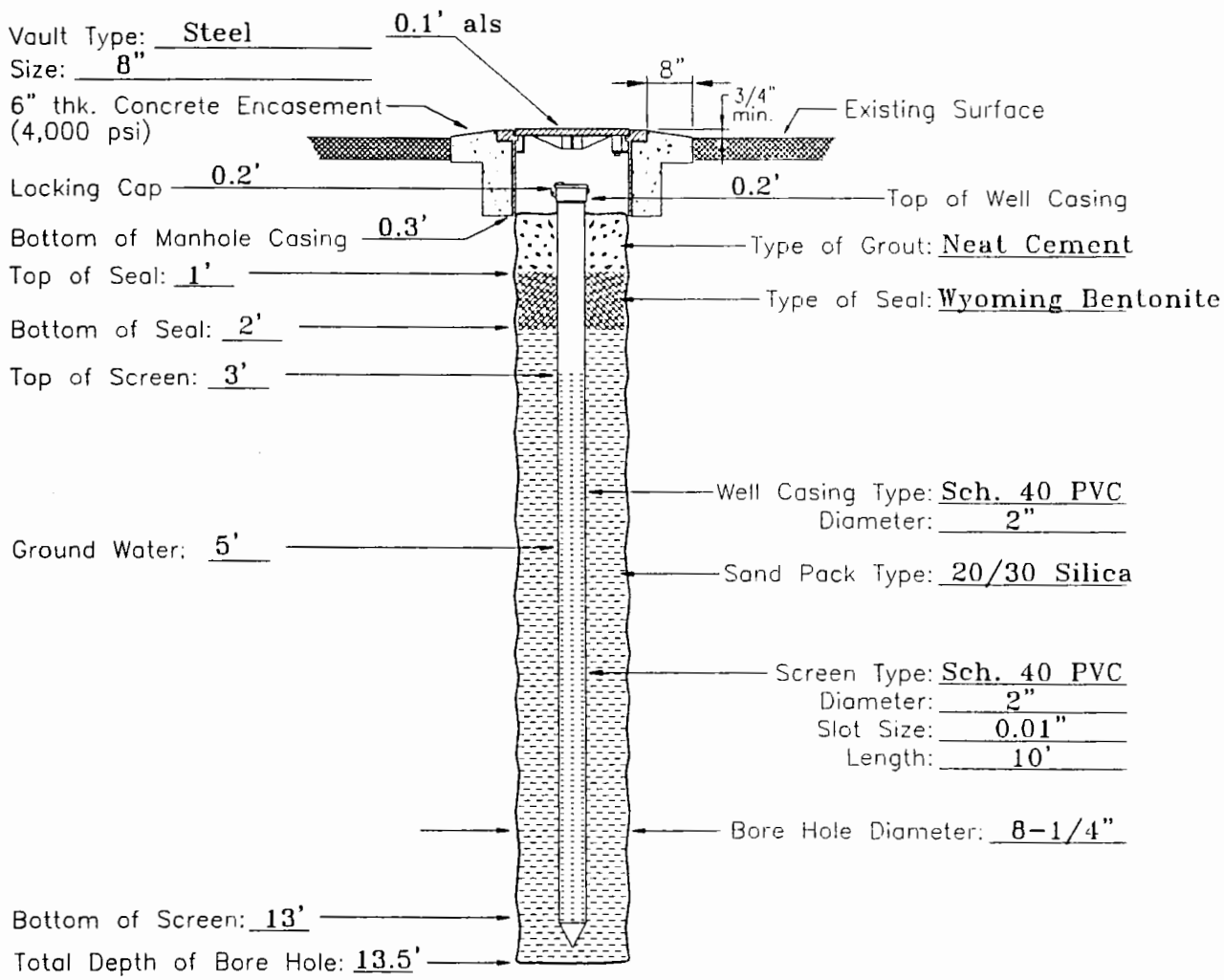
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-41

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 03/25/97 Finish: 03/25/97
TIME Start: 1600 Finish: 1630

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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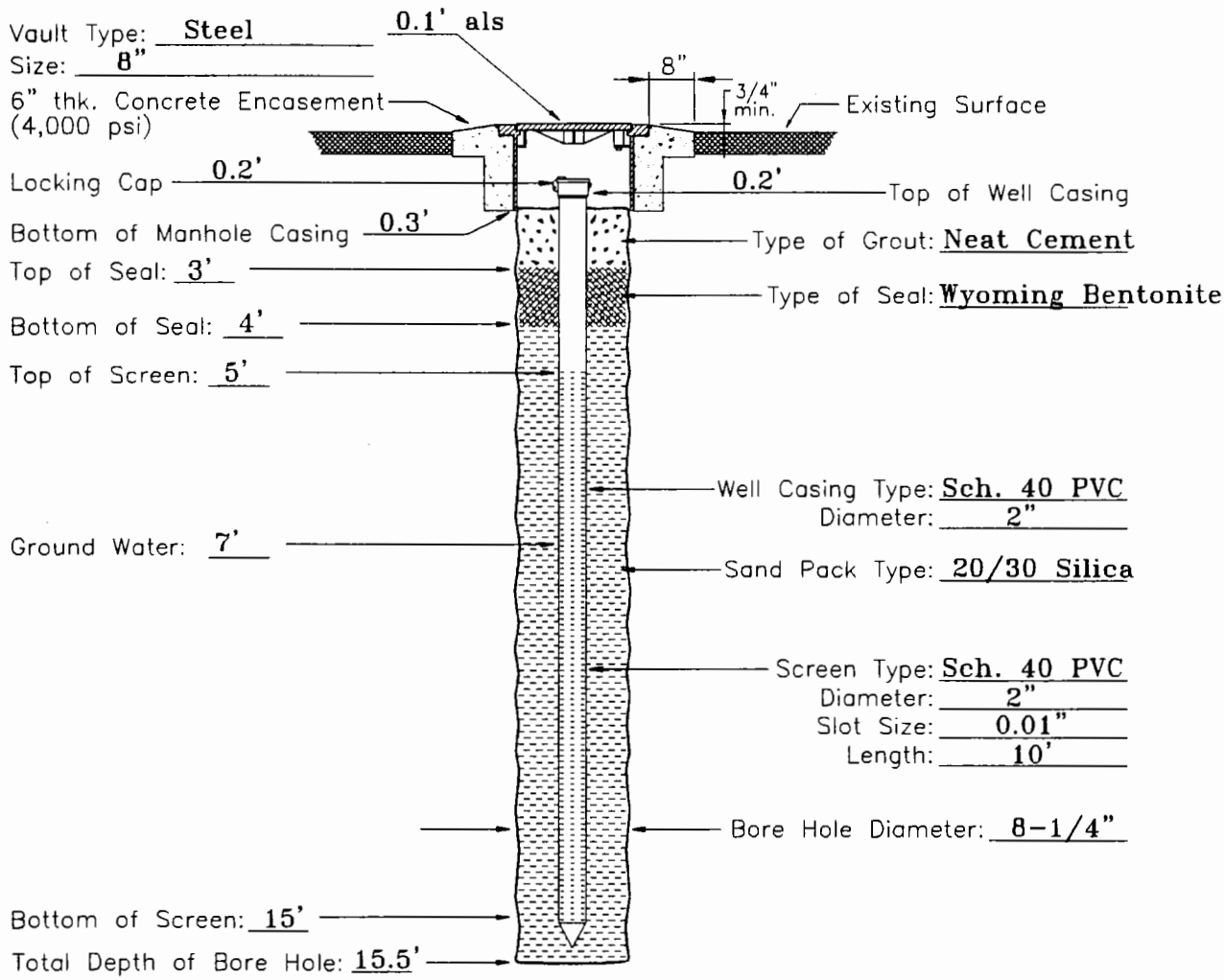
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-42

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/01/97 Finish: 05/01/97
TIME Start: 0845 Finish: 0945

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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# MONITOR WELL CONSTRUCTION DETAIL

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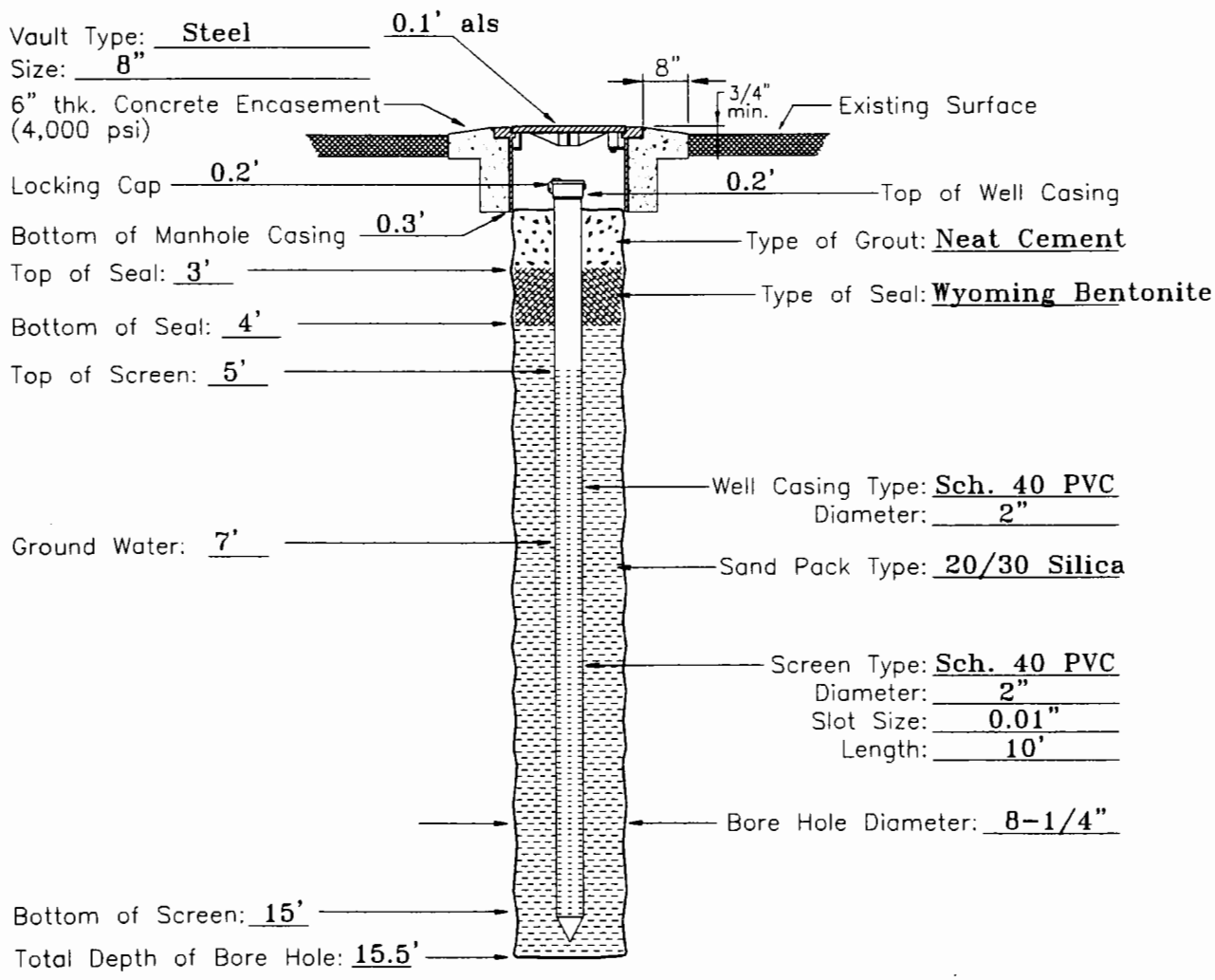
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-43

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/01/97 Finish: 05/01/97
TIME Start: 1000 Finish: 1100

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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# MONITOR WELL CONSTRUCTION DETAIL

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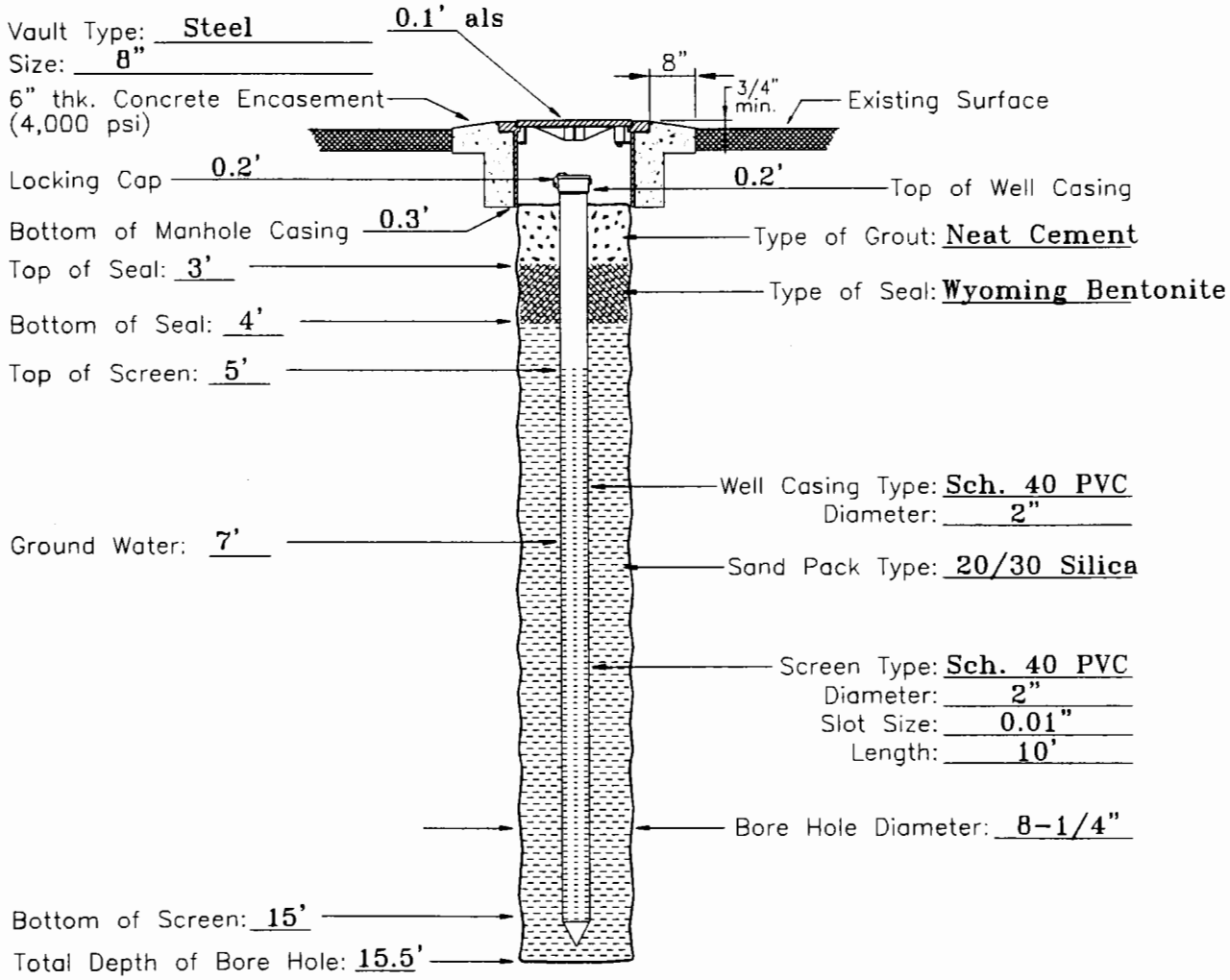
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-44

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/01/97 Finish: 05/01/97
TIME Start: 1115 Finish: 1215

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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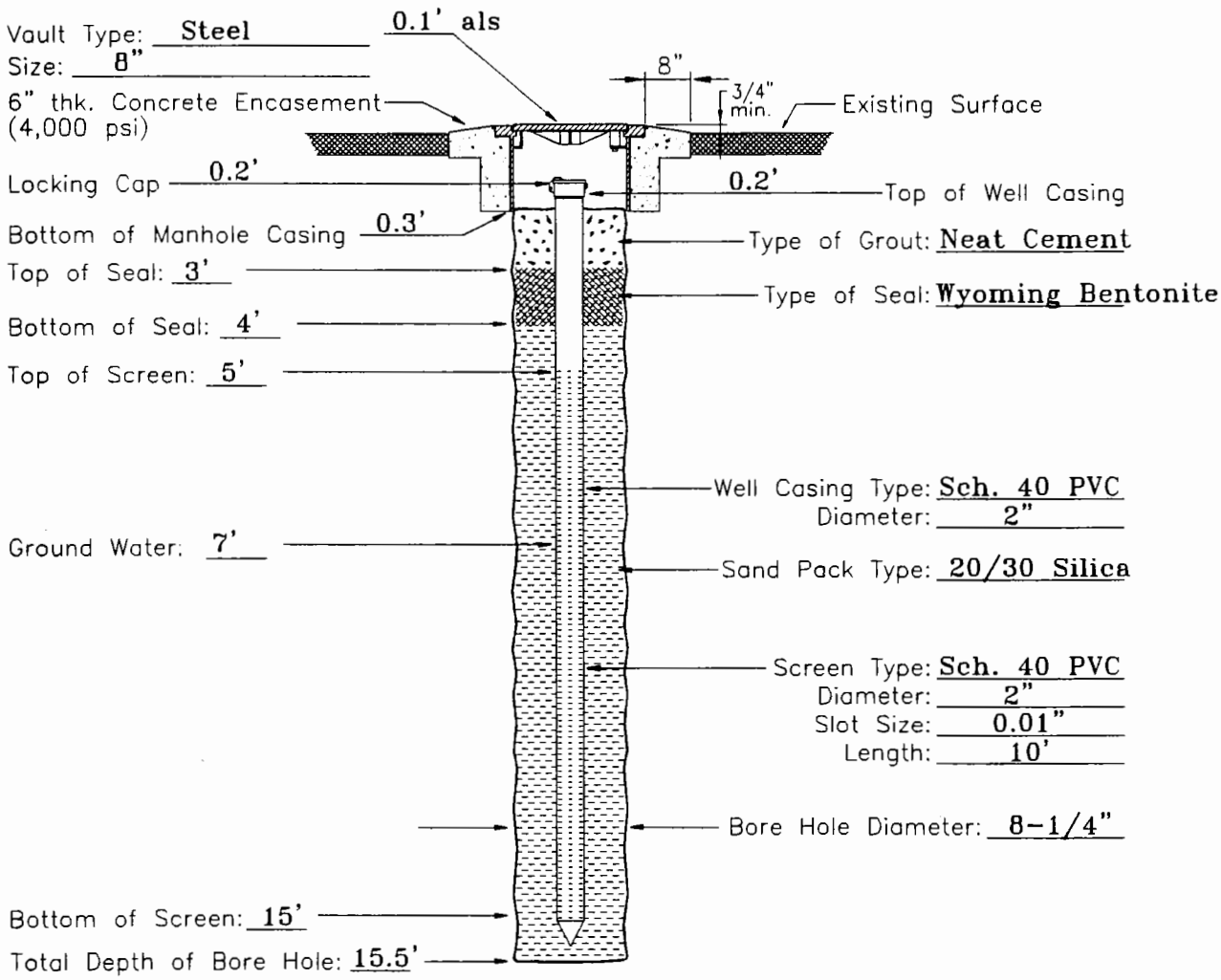
# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-45

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/01/97 Finish: 05/01/97
TIME Start: 1300 Finish: 1400

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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# MONITOR WELL CONSTRUCTION DETAIL

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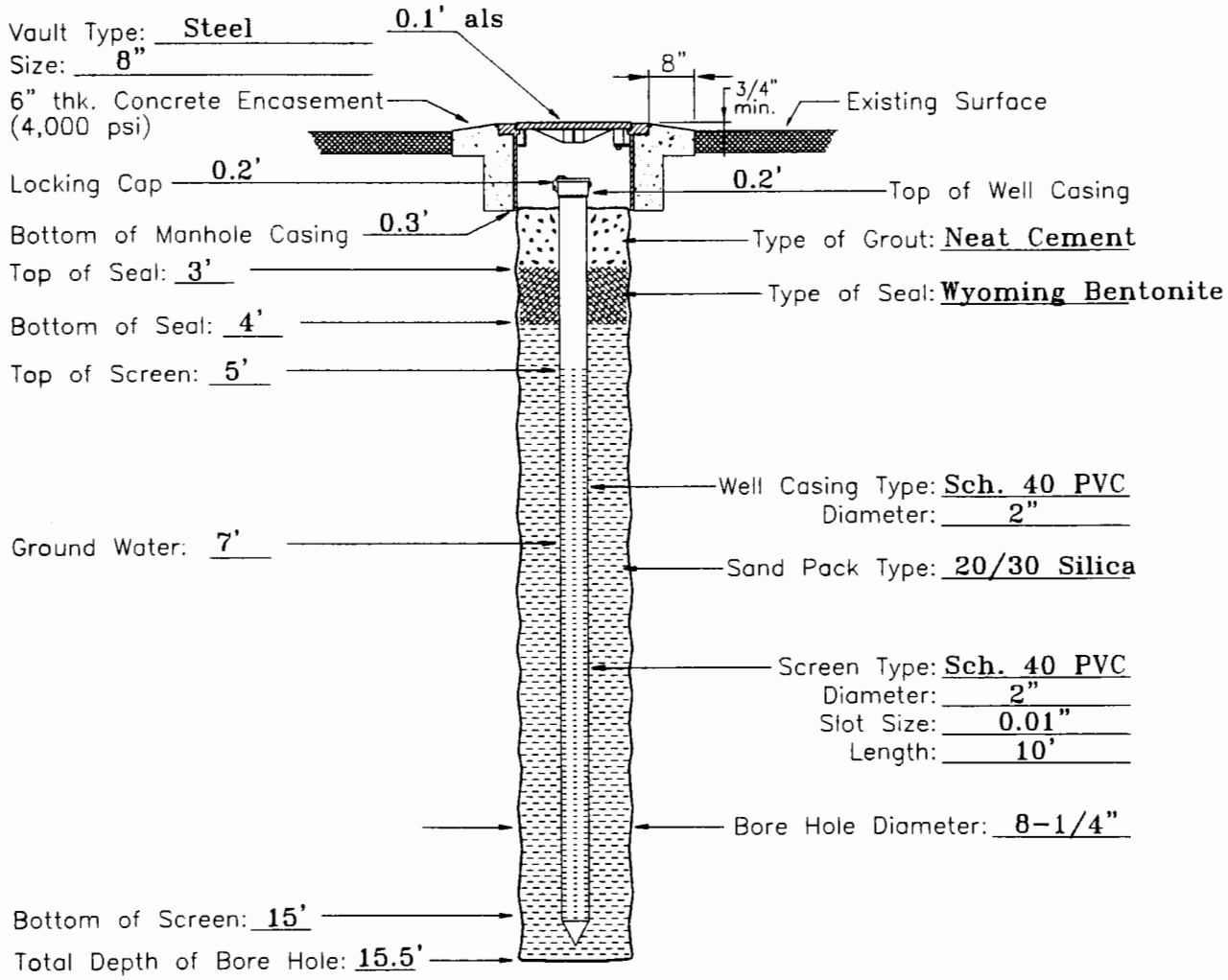
LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-46

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/01/97 Finish: 05/01/97
TIME Start: 1415 Finish: 1515

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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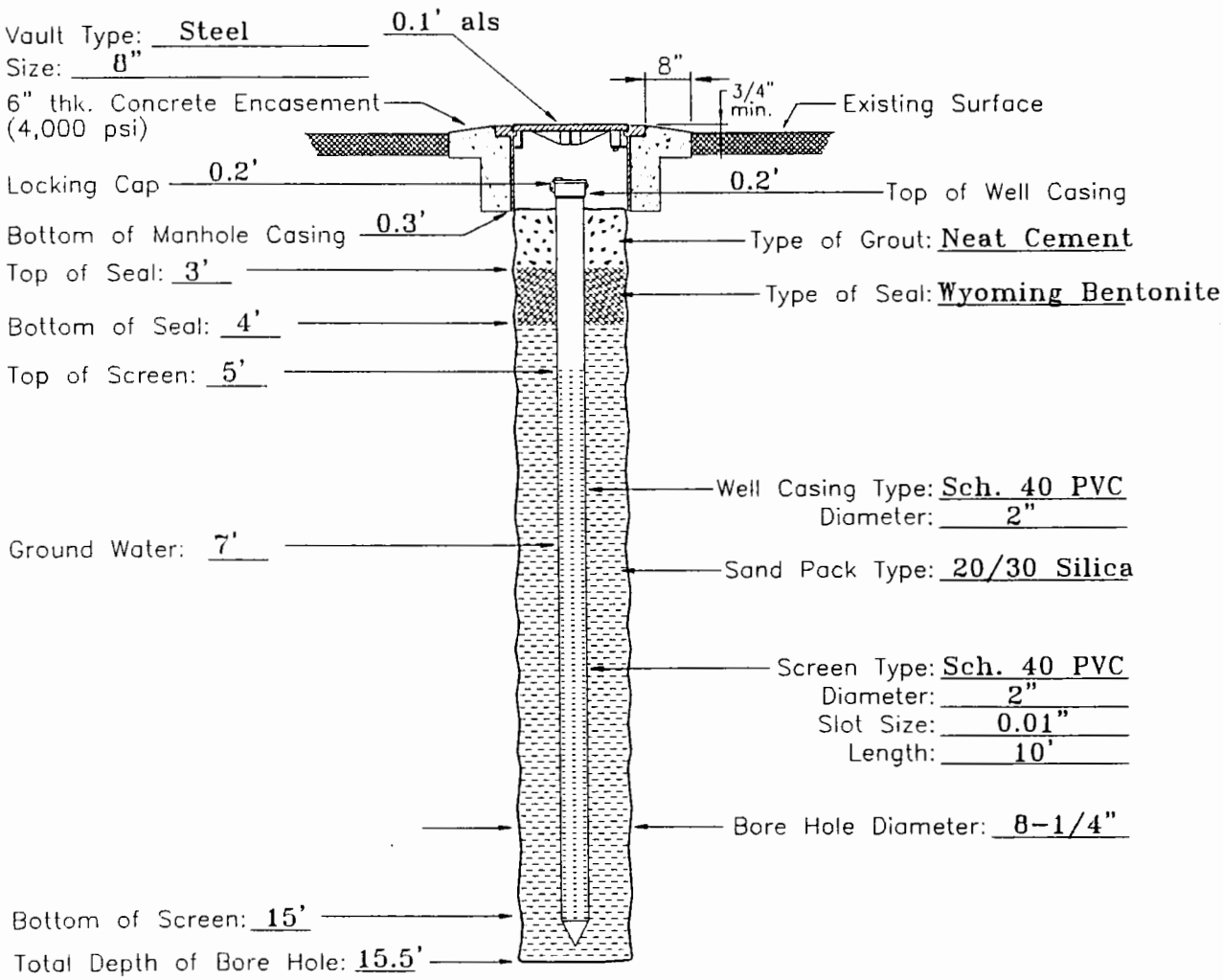
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-47

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/01/97 Finish: 05/01/97
TIME Start: 1530 Finish: 1630

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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# MONITOR WELL CONSTRUCTION DETAIL

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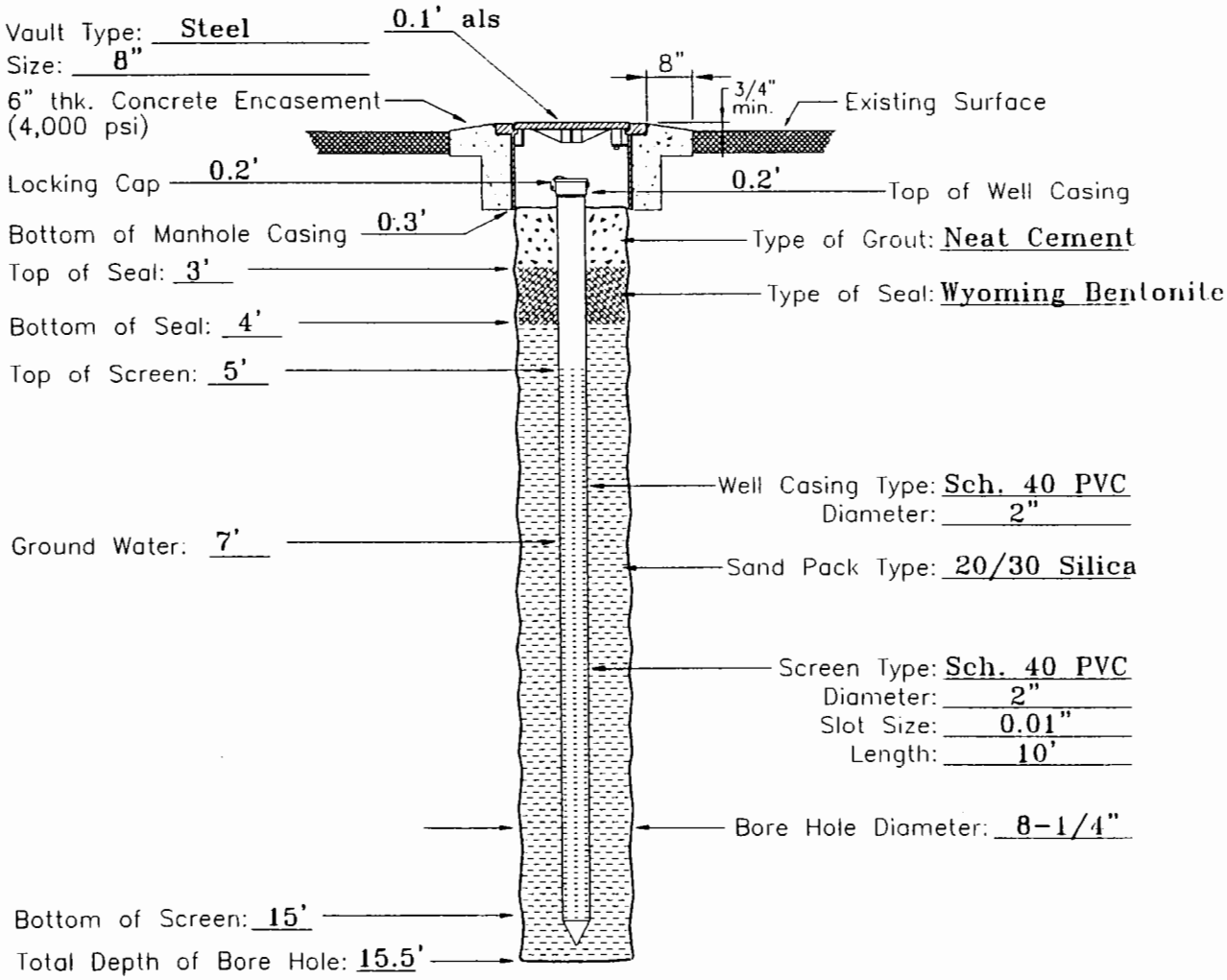
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-48

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/15/97 Finish: 05/15/97
TIME Start: 0800 Finish: 0845

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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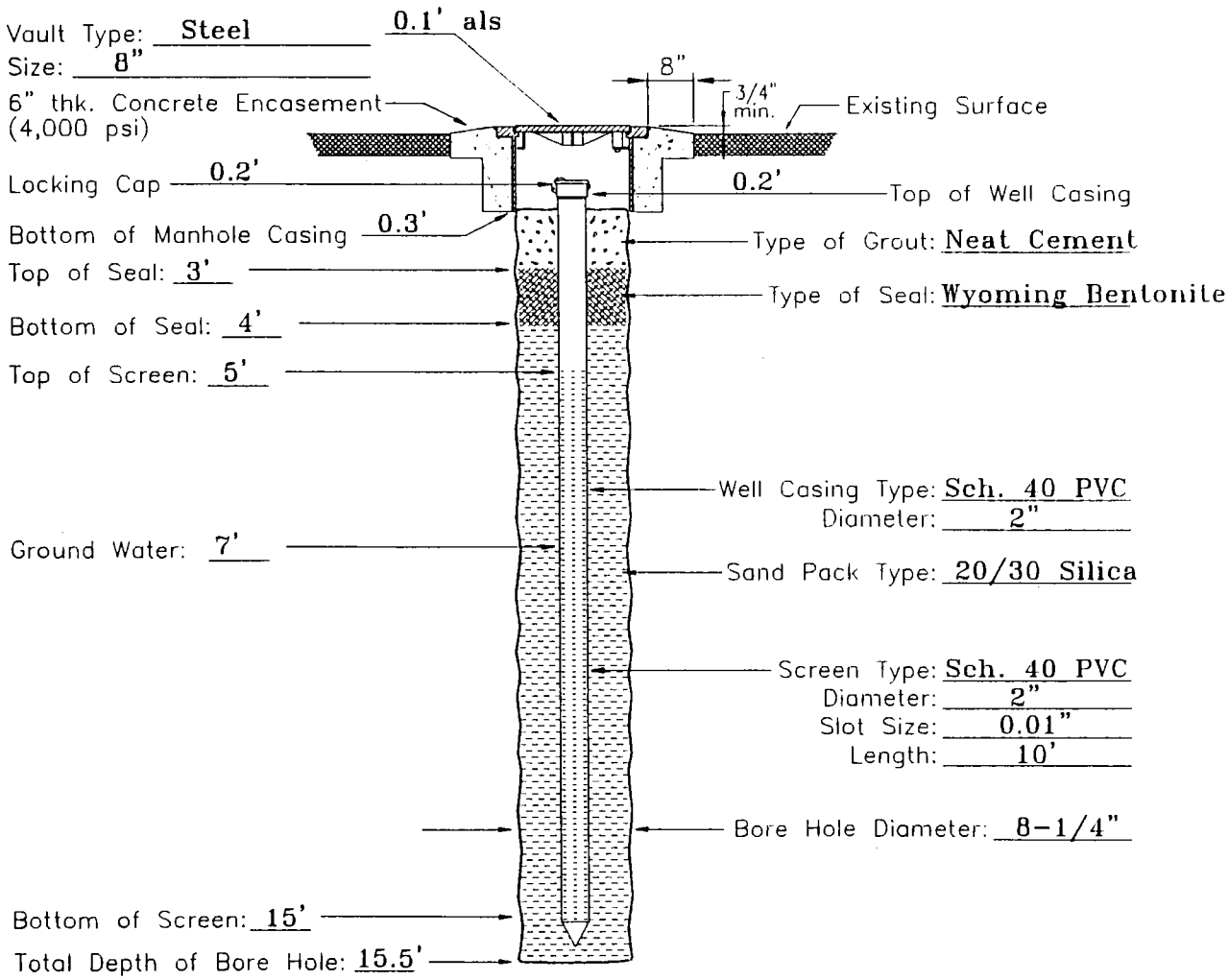
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-49

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/15/97 Finish: 05/15/97
TIME Start: 0900 Finish: 0945

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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Environmental Division

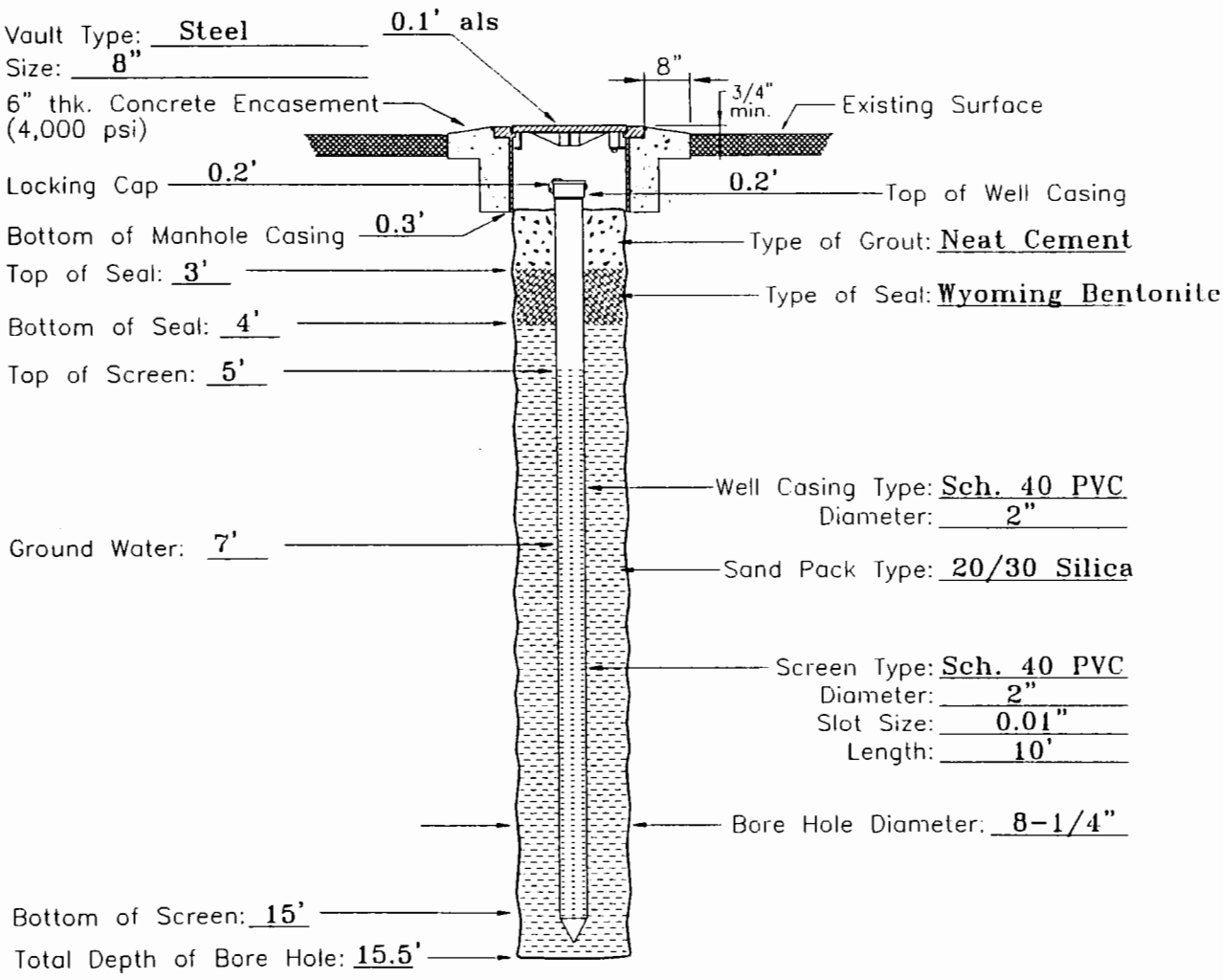
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-50

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/15/97 Finish: 05/15/97
TIME Start: 1000 Finish: 1045

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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Environmental Division

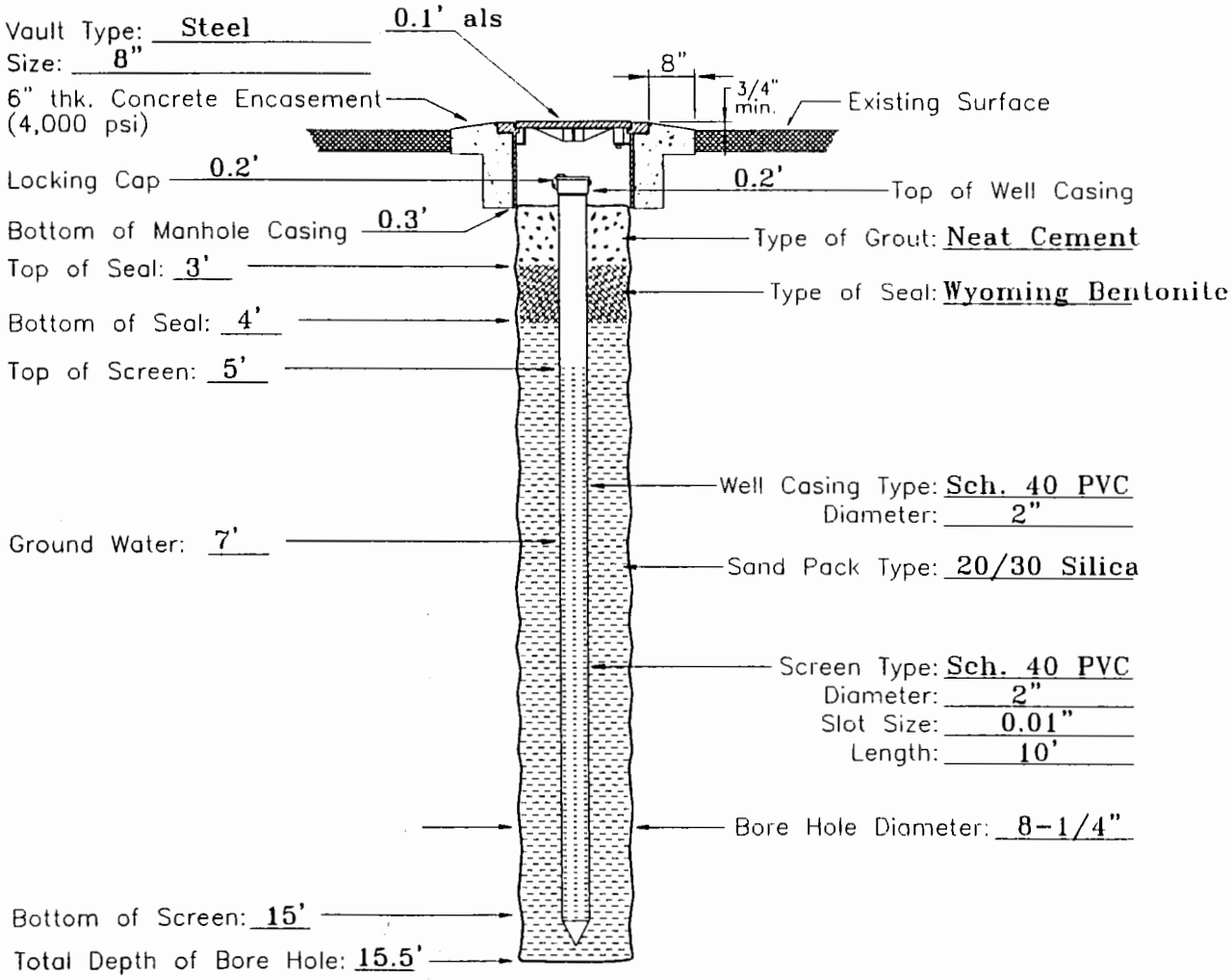
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-51

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/15/97 Finish: 05/15/97
TIME Start: 1100 Finish: 1145

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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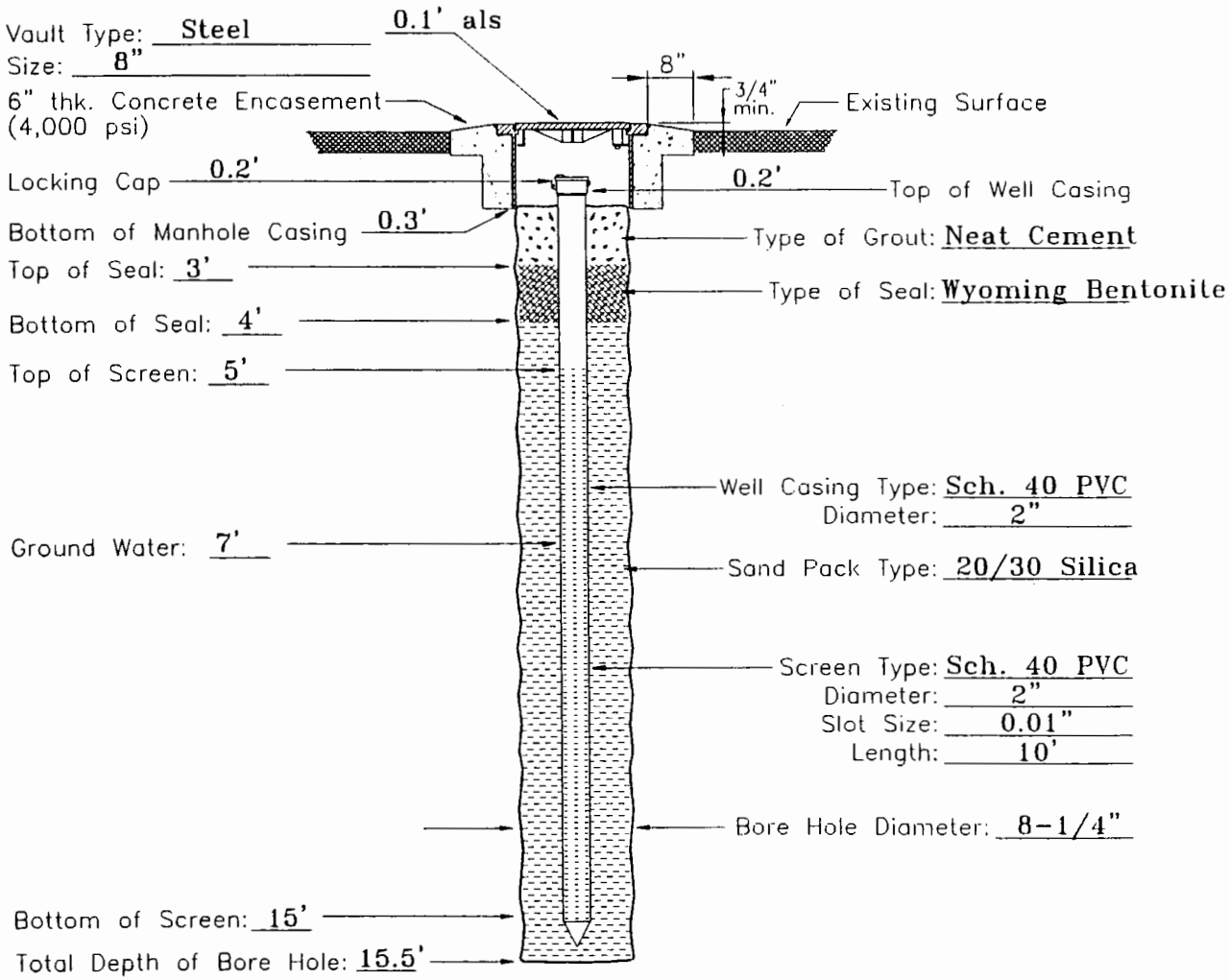
(941) 378-5210 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-52

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/15/97 Finish: 05/15/97
TIME Start: 1300 Finish: 1345

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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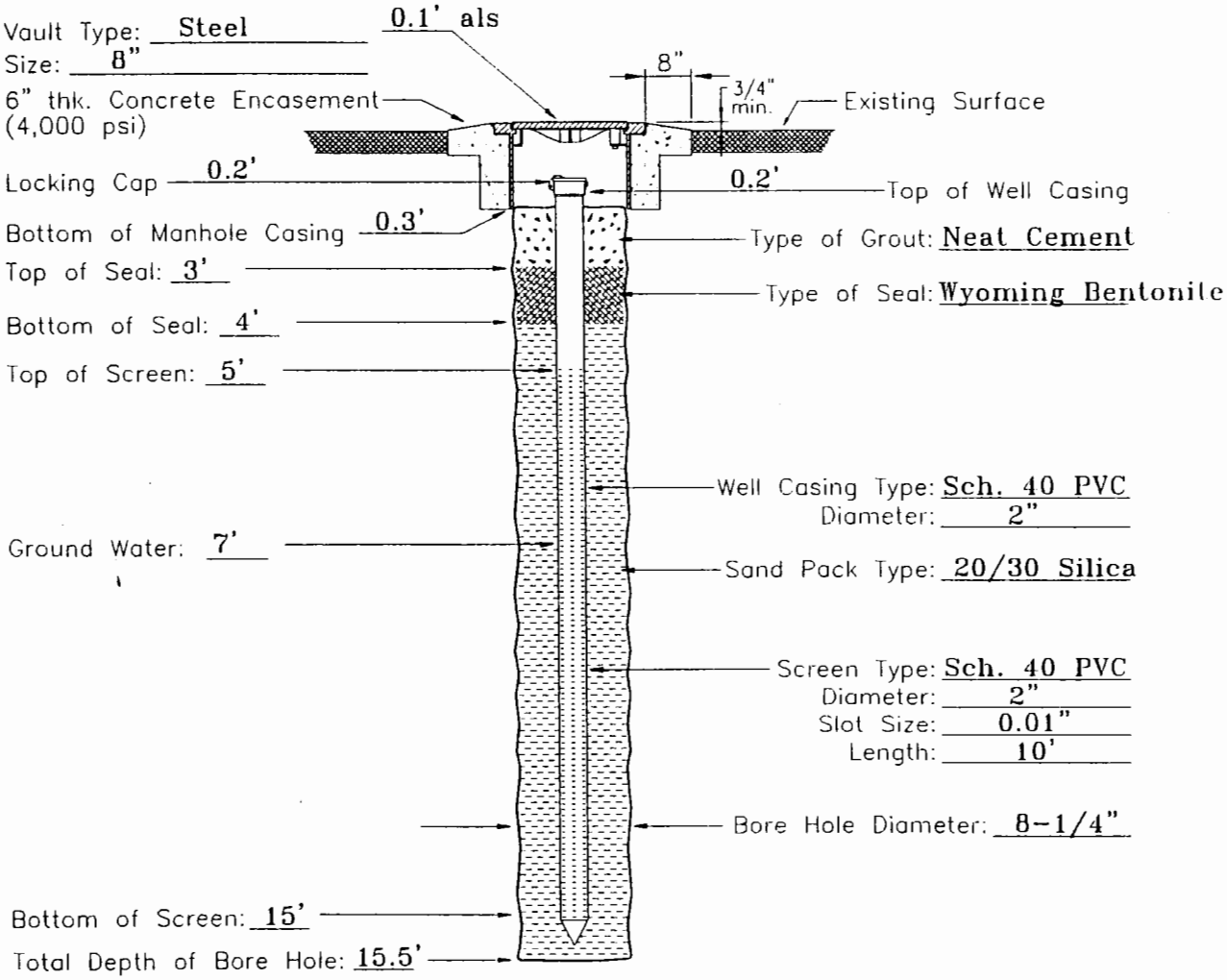
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-53

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/15/97 Finish: 05/15/97
TIME Start: 1400 Finish: 1445

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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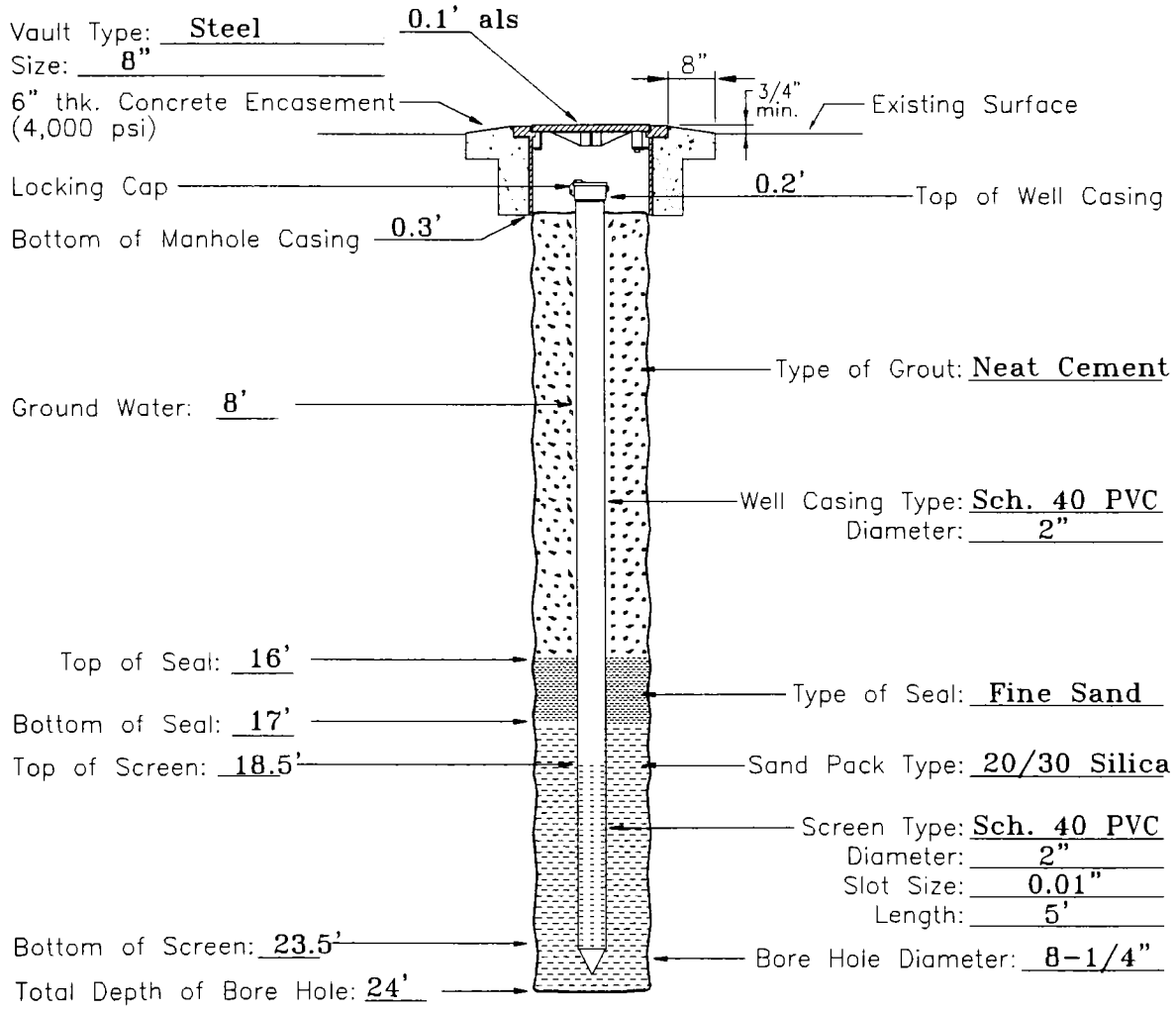
(941) 378-5218 Fax

# VERTICAL EXTENT
# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: DMW-54

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/28/97 Finish: 05/28/97
TIME Start: 1415 Finish: 1600

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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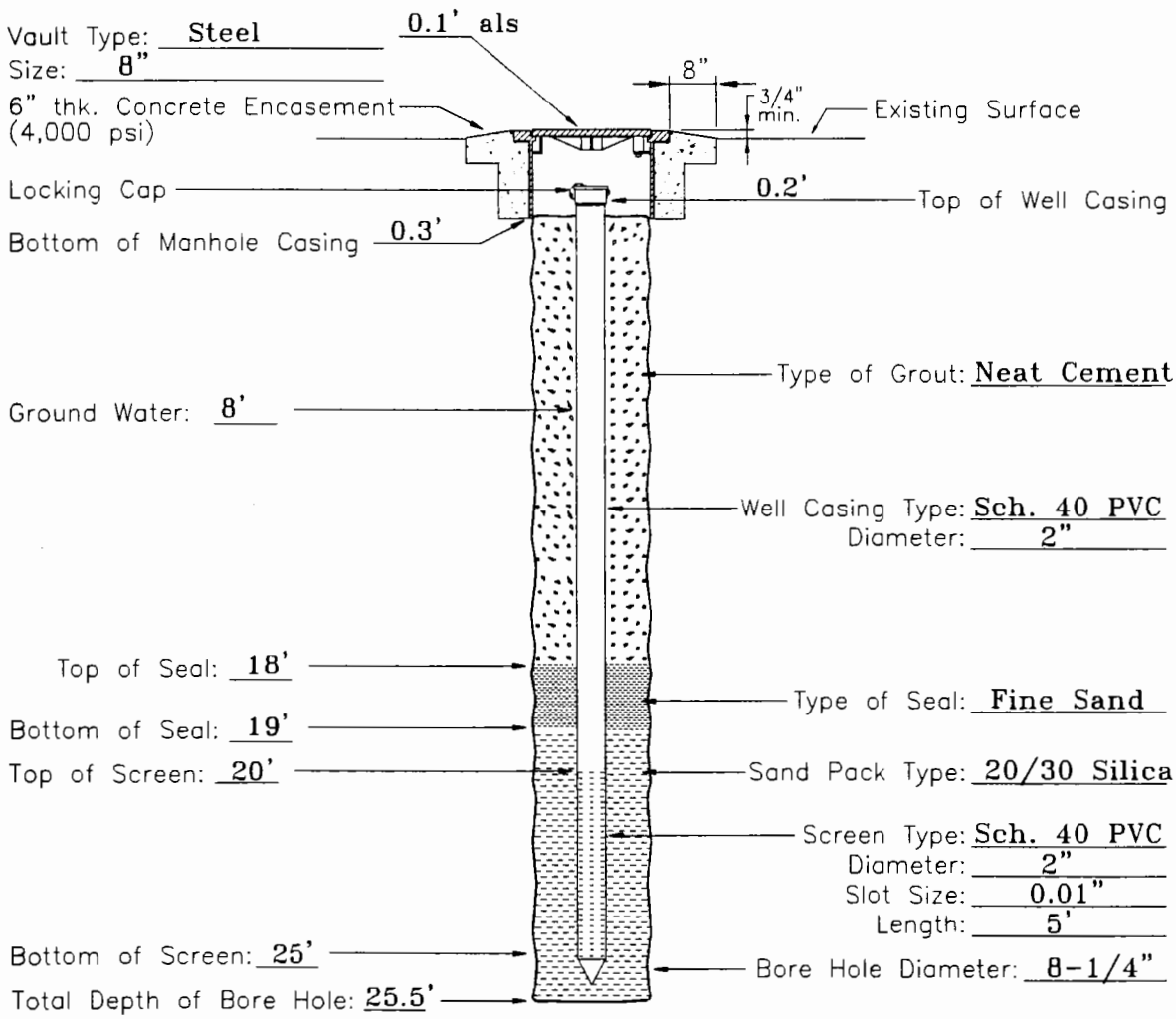
# VERTICAL EXTENT
# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: DMW-55

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/29/97 Finish: 05/29/97
TIME Start: 0900 Finish: 1100

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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# MONITOR WELL CONSTRUCTION DETAIL

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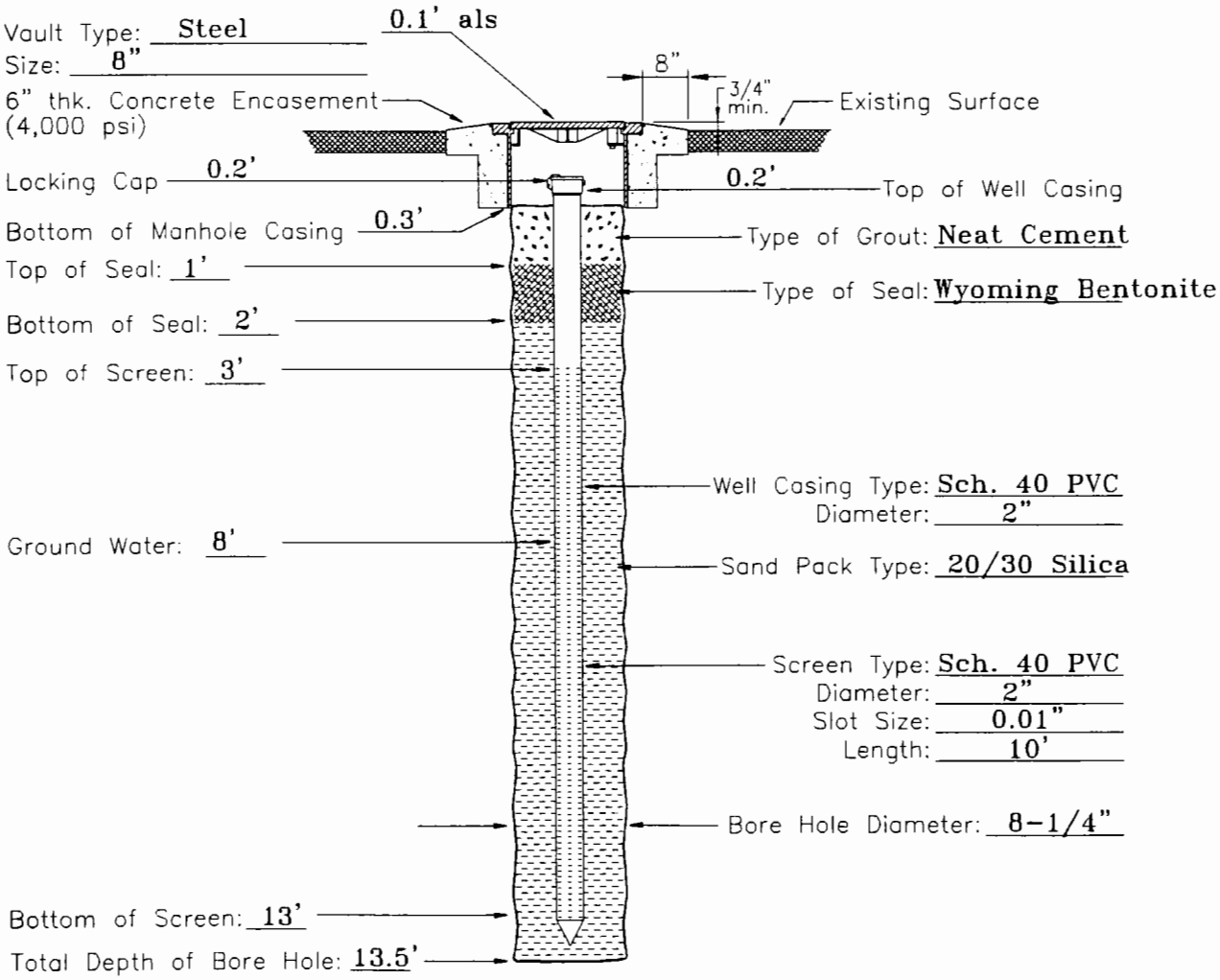
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-56

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/29/97 Finish: 05/29/97
TIME Start: 1115 Finish: 1200

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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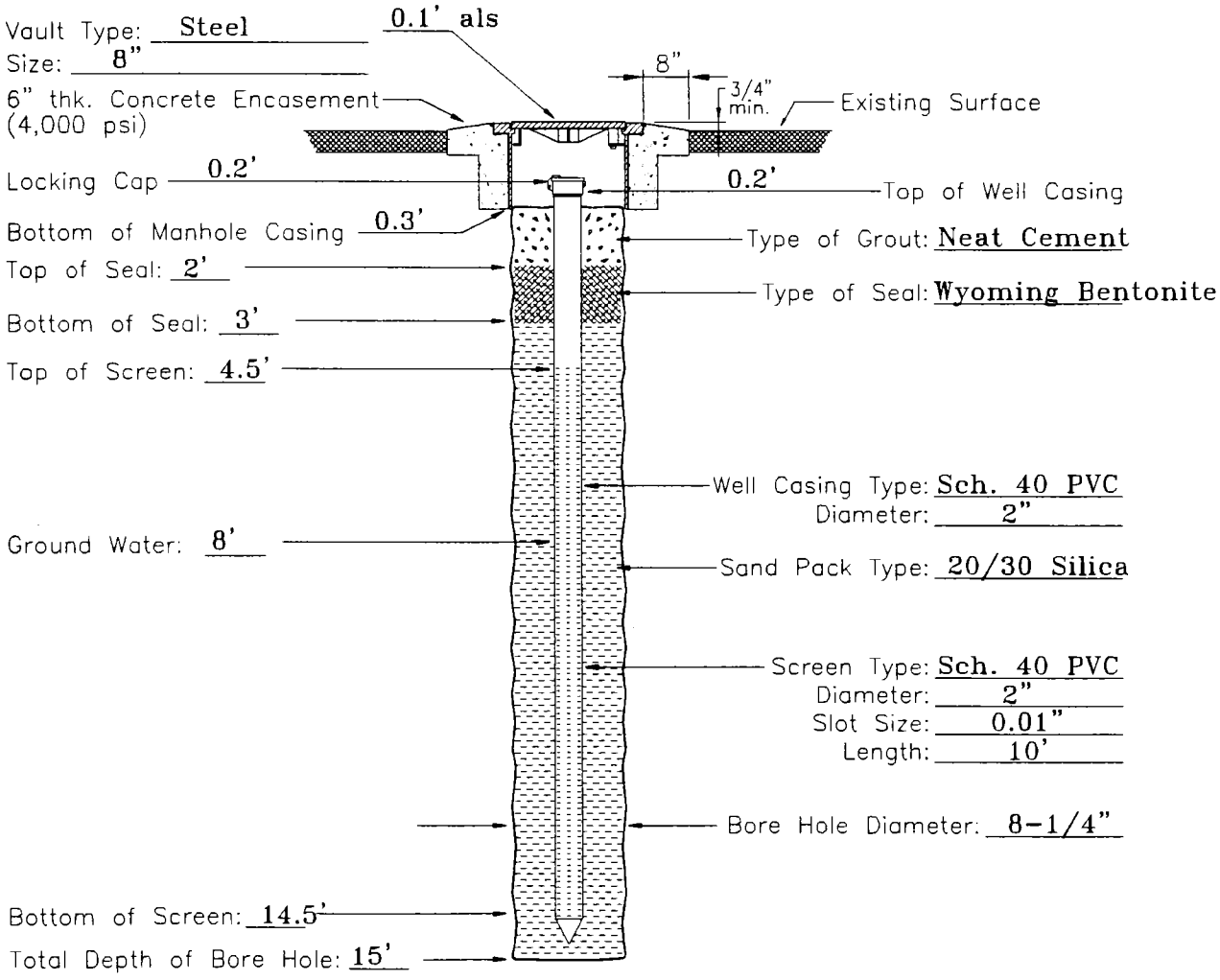
(941) 378-5218 Fax

# MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-57

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/29/97 Finish: 05/29/97
TIME Start: 1215 Finish: 1300

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

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# MONITOR WELL CONSTRUCTION DETAIL

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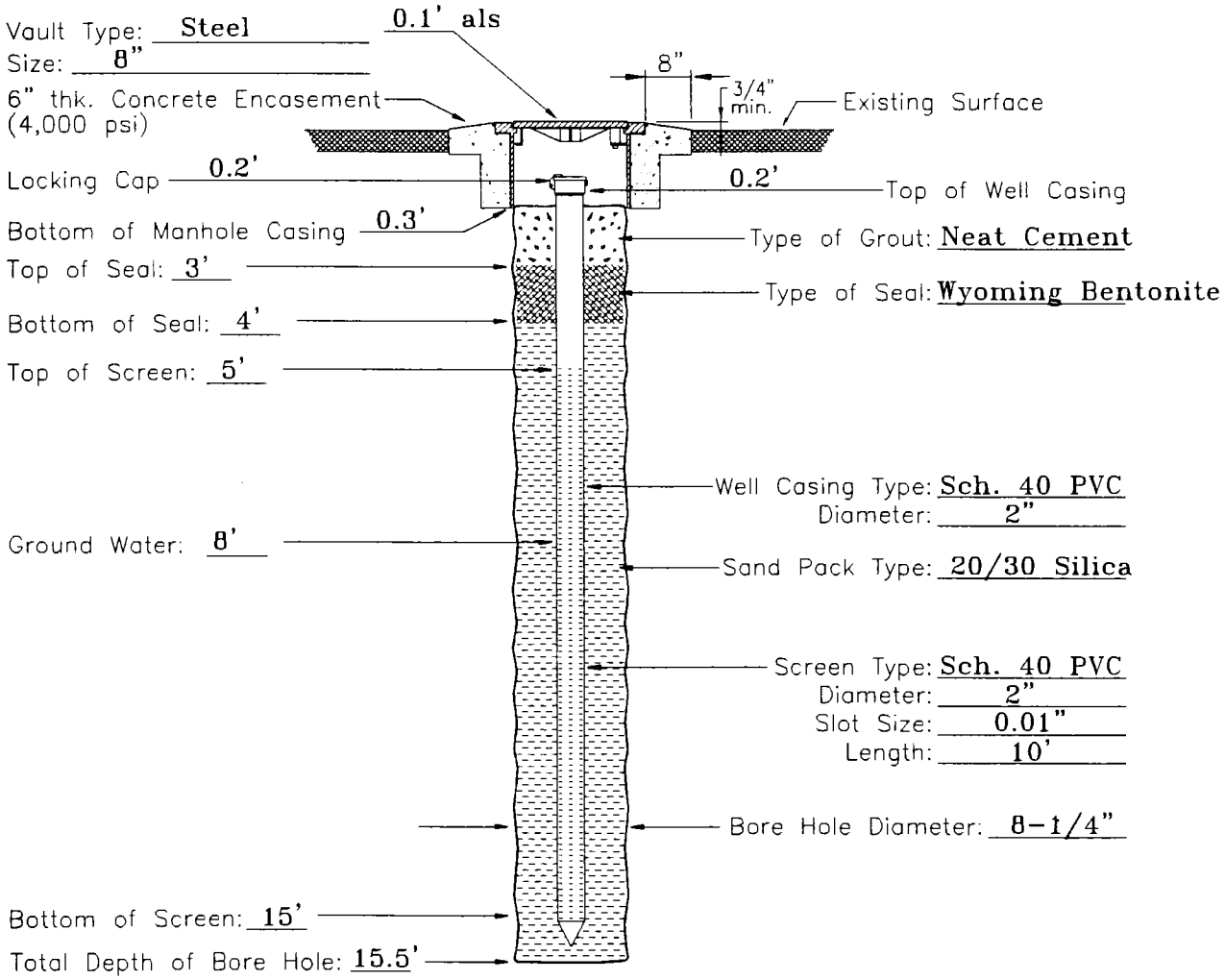
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-58

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/29/97 Finish: 05/29/97
TIME Start: 1315 Finish: 1400

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

W.E.S., Inc.
Environmental Division

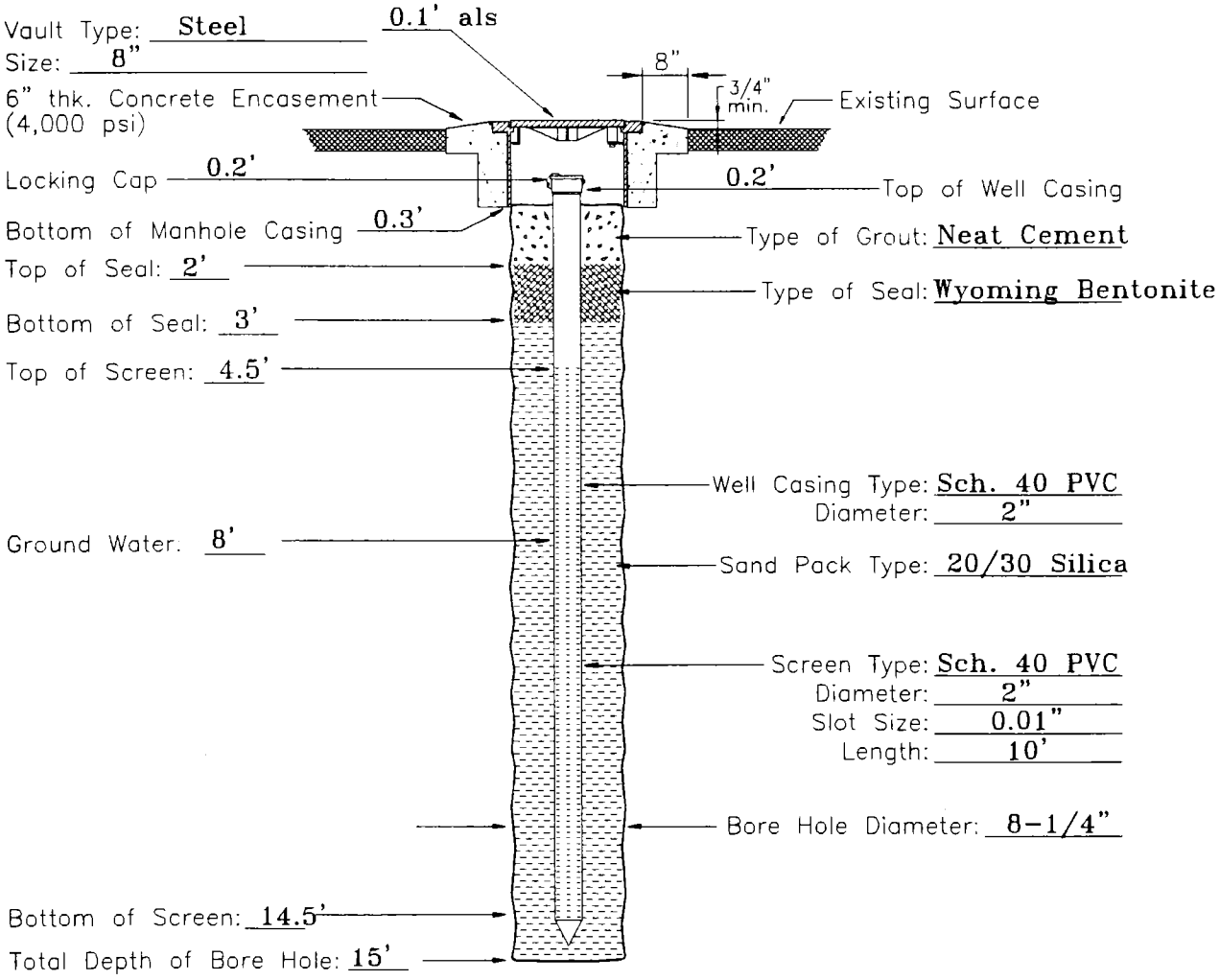
# MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-59

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 20, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 05/29/97 Finish: 05/29/97
TIME Start: 1415 Finish: 1500

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):




NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

# APPENDIX B

## GROUNDWATER FLOW VELOCITY CALCULATIONS

## GROUNDWATER FLOW VELOCITY CALCULATIONS

$$V = Ki/n$$

Where
V = groundwater flow velocity
K = hydraulic conductivity* (as an average of Geraghty & Miller (1987), Site 3810 N (1992) and Site 3221 SW (1993 = 48.3 ft/day
i = gradient (elevation/distance) between MW-4 and MW-18
n = porosity, estimated at 25%

September 17, 1997 $i = \frac{19.70 - 19.69}{53} = .00019$ ft/ft

Hydraulic gradient = i = 0.00019 ft/ft

Average Velocity = $V = \frac{48.3 \text{ ft/day} \times .0019 \text{ ft/ft}}{0.25} = .037$ ft/day

* Geraghty and Miller. January 1987. Evaluation of Hydrocarbons in Shallow Ground Water from Aviation Turbine Fuel (JP-5) Pipeline Leak at the NAS Pensacola, Florida.

Roger Durham. August 1992. Contamination Assessment Report: Site 3810N Naval Aviation Depot, Naval Air Station, Pensacola, Florida.

Roger Durham and Pamela J. Wagner. February 1993. Contamination Assessment Report: Site 3221SW, Naval Aviation Depot, Naval Air Station, Pensacola, Florida.

# APPENDIX C

## LITHOLOGIC LOG

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 08/21/96 | Completed: 08/21/96 | |
| MONITOR WELL NO.: MW-1 | Start Time: 1000 | Finish Time: 1055 | |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; Asphalt, Compacted Gravel Lmrk. Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | | 1'-3.5'; Brown, Silty, Fine Sand w/ Shell Fragments | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | | | 3.5'-6'; Black, Clayey,Fine Sand w/ Coal Fragments | | | |
| | | | | 100% | | | | | |
| | | | | | 6 | | 0 | NR | 0 |
| | | | Water Table @ Approx. 6.5' bls | | | 6'-13.5'; White, Medium to Coarse Grained, Sand | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | End of Boring @ 13.5' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

09/06/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-1

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 08/21/96 | Completed: 08/21/96 | |
| MONITOR WELL NO.: MW-2 | Start Time: 1200 | Finish Time: 1245 | |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; Asphalt, Compacted Gravel Lmrk. Road Base | 10 | NR | 10 |
| | | | | | 2 | | | | |
| | | | | 100% | | 1'-2.5'; Brown, Silty, Clay (Fill) | | | |
| | | | | | | 2.5'-4'; Lt Grey, Silty, Fine Sand | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | | | 4'-6'; Darker Grey, Silty, Fine to Medium, Sand | | | |
| | | | | 100% | | | | | |
| | | | | | 6 | | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | 6'-6.5'; Lense of Grey, Sandy Clay | | | |
| | | | | | | 6.5'-8'; Darker Grey, Silty Sand w/ trace of Clay | | | |
| | | | | | 8 | | | | |
| | | | | | | 8'-14.5'; Grey, Medium to Coarse, Sand. Strong Petroleum Odor. | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | |

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Florida Professional Geologist No. 0001181

09/09/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 08/21/96 | Completed: | 08/21/96 |
| MONITOR WELL NO.: MW-3 | Start Time: 1300 | Finish Time: | 1345 |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Compacted Gravel Lmrk. Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | | | | | |
| | | | | 100% | 4 | 1'-7'; Brown, Silty, Fine to Medium, Sand | 0 | NR | 0 |
| | | | | 100% | | | | | |
| | | | | | 6 | 7'-8'; Becoming Whiter, Medium to Coarse, Sand | 0 | NR | 0 |
| | | | Water Table @ Approx. 8' bls | | | | | | |
| | | | | | 10 | 8'-14.5'; Grey, Medium to Coarse, Sand w/ Clayey vestiges | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | |

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Florida Professional Geologist No. 0001181

08/06/96
Date

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STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | |
|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile |
| | Start Date: 08/21/96 | Completed: 08/21/96 |
| MONITOR WELL NO.: MW-4 | Start Time: 1415 | Finish Time: 1455 |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Compacted Gravel Lmrk. Road Base | 0 | NR | 0 |
| | | | | 100% | 2 | 1'-3'; Brown, Silty, Fine to Medium Sand | | | |
| | | | | 100% | 4 | 3'-4'; Asphalt Lenses | 0 | NR | 0 |
| | | | | | 6 | 4'-5'; Brown, Silty, Fine to Medium Sand | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | 7.5'-14.5'; Dark Grey, Medium to Coars, Sand w/ Organic Detritus Strong Petroleum Odor | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | |

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Florida Professional Geologist No. 0001181

09/06/96
Date

| | | |
|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile |
| | Start Date: 08/21/96 | Completed: 08/21/96 |
| MONITOR WELL NO.: MW-5 | Start Time: 1500 | Finish Time: 1545 |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; Asphalt, Compacted Gravel Lmrk. Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | | 1'-1.5'; Red, Sandy Clay (Fill) | | | |
| | | | | 100% | 4 | 1.5'-5'; Tan/Grey, Silty, Fine Sand | 0 | NR | 0 |
| | | | | 100% | 6 | 5'-6'; Becoming White, Silty, Fine Sand | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | 6'-13.5'; White, Medium to Coarse, Sand | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | End of Boring @ 13.5' bls | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

09/06/96
Date

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STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-5

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 08/22/96 | Completed: | 08/22/96 |
| MONITOR WELL NO.: MW-6 | Start Time: 0915 | Finish Time: | 1000 |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Compacted Gravel Lmrk. Road Base | 0 | NR | 0 |
| | | | | 100% | 2 | 1'-2'; Orange/Red, Sandy Clay (Fill) | | | |
| | | | | 100% | 4 | 2'-4'; Grey, Silty, Fine Sand | 0 | NR | 0 |
| | | | | 100% | | 4'-5'; Light Brown, Silty, Coarse Sand | | | |
| | | | Water Table @ Approx. 6.5' bls | | 6 | 5'-6.5'; Dark Brown, Fine to Medium, Silty, Sand | 0 | NR | 0 |
| | | | | | 8 | | | | |
| | | | | | 10 | 6.5'-13.5'; Light Tan to White, Coarse Sand | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | End of Boring @ 13.5' bls | | | |

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Florida Professional Geologist No. 0001181

09/06/96
Date

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STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 08/22/96 | Completed: 08/22/96 | |
| MONITOR WELL NO.: MW-7 | Start Time: 1015 | Finish Time: 1100 | |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; Asphalt, Compacted Gravel Lmrk. Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | | 1'-2'; Light Brown, Silty, Fine Sand | | | |
| | | | | 100% | 4 | 2'-4'; Grey, Silty, Ex. Fine Sand. Lense of Gravel | 450 | NR | 450 |
| | | | | 100% | 6 | 4'-5'; Light Brown, Silty, Coarse Sand | 800 | NR | 800 |
| | | | Water Table @ Approx. 6.5' bls | | | 5'-6.5'; Dark Brown, Silty, Fine to Medium Sand | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 6.5'-13.5'; Light Tan to White, Coarse Sand | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | End of Boring @ 13.5' bls | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

09/06/96
Date

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STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 08/22/96 | Completed: 08/22/96 | |
| MONITOR WELL NO.: MW-8 | Start Time: 1115 | Finish Time: 1200 | |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Compacted Gravel Lmrk. Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | | 1'-2'; Red, Sandy Clay (Fill) | | | |
| | | | | 100% | 4 | 2'-7'; Grey, Silty, Fine to Medium, Sand w/ Clay Stringers | 0 | NR | 0 |
| | | | | 100% | | | | | |
| | | | | | 6 | | | | |
| | | | | | | 7'-14.5'; Grey, Coarse Sand w/ Shell Fragments | 650 | NR | 650 |
| | | | Water Table @ Approx. 8' bls | | | Strong Petroleum Odor | | | |
| HA | | | | | | | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | |

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Florida Professional Geologist No. 0001181

09/06/96
Date

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PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 08/22/96 | Completed: 08/22/96 | |
| MONITOR WELL NO.: MW-9 | Start Time: 1300 | Finish Time: 1345 | |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-0.5'; Humus, w/ Organics | 0 | NR | 0 | |
| | | | | 100% | 2 | 0.5'-2.5'; Light Brown, Silty, Fine Sand | | | | |
| | | | | 100% | 4 | 2.5'-3'; Asphalt & Road Base | 0 | NR | 0 | |
| | | | | 100% | 6 | 3'-6'; Light Tan, Silty, Fine to Medium Sand | | | | |
| | | | Water Table @ Approx. 8' bls | | | | 0 | NR | 0 | |
| | | | | | 8 | 6'-14.5'; Becoming White, Medium to Coarse, Silty Sand Brick @ 6' | | | | |
| | | | | | 10 | | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | | |

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09/06/96
Date

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No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 08/27/96 | Completed: 08/27/96 | |
| MONITOR WELL NO.: MW-10 | Start Time: 0920 | Finish Time: 1030 | |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Gravel & Lmrk Road Base | 0 | NR | 0 | |
| | | | | 100% | 2 | 1'-3'; Red, Sandy Clay (Fill) | | | | |
| | | | | 100% | 4 | 3'-3.5'; Concrete | 0 | NR | 0 | |
| | | | | 100% | 6 | 3.5'-6'; Red/Black, Sandy Clay. 10% Organic | | | | |
| | | | Water Table @ Approx. 8' bls | | 8 | 6'-14.5'; Becoming White, Medium to Coarse, Silty Sand | 15 | 15 | 0 | |
| | | | | | 10 | | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | | |

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Florida Professional Geologist No. 0001181

09/06/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 08/27/96 | Completed: | 08/27/96 |
| MONITOR WELL NO.: MW-11 | Start Time: 1230 | Finish Time: | 1320 |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Gravel & Lmrk Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | | 1'-3'; Red, Sandy Clay (Fill) | | | |
| | | | | | | 3'-5'; Debris, Concrete (Fill) | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | | | 5'-7'; Dark Grey/Black, Silty Fine Sand | | | |
| | | | | 100% | | | | | |
| | | | | | 6 | | | | |
| | | | Water Table @ Approx. 8' bls | | | | 105 | 15 | 105 |
| | | | | | 8 | 7'-14.5'; Becoming White, Medium to Coarse, Silty Sand | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

09/06/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 08/27/96 | Completed: 08/27/96 | |
| MONITOR WELL NO.: MW-12 | Start Time: 1330 | Finish Time: 1410 | |
| Delivery Order 0027 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Gravel & Lmrk Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | | 1'-3.5'; Red, Sandy Clay (Fill) | | | |
| | | | | | | 3.5'-4'; Debris, Concrete (Fill) | | | |
| | | | | 100% | 4 | | 24 | NR | 24 |
| | | | | | | 4'-7'; Dark Grey/Black, Silty Medium to Coarse Sand | | | |
| | | | | 100% | 6 | | | | |
| | | | Water Table @ Approx. 8' bls | | | | 50 | NR | 50 |
| | | | | | 8 | 7'-14.5'; Grey/ Black, Medium to Coarse, Silty Sand Strong Petroleum Odor | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

09/06/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 10/23/96 | Completed: | 10/23/96 |
| MONITOR WELL NO.: MW-13 | Start Time: 1000 | Finish Time: | 1115 |
| Delivery Order 0036 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Gravel & Lmrk Road Base | 0 | NR | 0 |
| | | | | | 2 | - | | | |
| | | | | 100% | | 1'-3'; Red, Sandy Clay (Fill) | | | |
| | | | | 100% | 4 | 3'-6'; Brown to Red, Silty, Fine Sand, w/ trace of Clay. | 0 | NR | 0 |
| | | | | 100% | | | | | |
| | | | | | 6 | 6'-14'; Becoming Increasingly Lighter Brown to White, Silty, Medium to Coarse, Sand. | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

11/04/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-13

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 10/23/96 | Completed: 10/23/96 | |
| MONITOR WELL NO.: MW-14 | Start Time: 1230 | Finish Time: 1315 | |
| Delivery Order 0036 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; Asphalt, Gravel & Lmrk Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | | 1'-3'; Red, Sandy Clay (Fill) | | | | |
| | | | | 100% | 4 | 3'-6'; Brown to Red, Silty, Fine Sand, w/ trace of Clay. | 0 | NR | 0 | |
| | | | | 100% | | | | | | |
| | | | Water Table @ Approx. 7' bls | | 6 | 6'-14'; Becoming Increasingly Lighter Brown, Silty, Medium to Coarse, Sand. | 0 | NR | 0 | |
| | | | | | 8 | | | | | |
| | | | | | 10 | | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | | |

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Florida Professional Geologist No. 0001181

11/04/96
Date

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No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 10/23/96 | Completed: 10/23/96 | |
| MONITOR WELL NO.: MW-15 | Start Time: 1325 | Finish Time: 1400 | |
| Delivery Order 0036 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Gravel & Lmrk Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | | 1'-3'; Red, Sandy Clay (Fill) | | | | |
| | | | | 100% | 4 | 3'-6'; Brown to Red, Silty, Fine Sand, w/ trace of Clay. | 0 | NR | 0 | |
| | | | | 100% | 6 | 6'-9'; Becoming Grey, Silty Fine to Medium Sand. Strong Petroleum Odor @ WT | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | 9'-14'; Becoming Increasingly Lighter Brown to White, Silty, Medium to Coarse, Sand. | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

11/04/96
Date

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0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

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|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile |
| | Start Date: 10/23/96 | Completed: 10/23/96 |
| MONITOR WELL NO.: MW-16 | Start Time: 1415 | Finish Time: 1500 |
| Delivery Order 0036 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; Asphalt, Gravel & Lmrk Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | | 1'-3'; Red, Sandy Clay (Fill) | | | | |
| | | | | 100% | 4 | 3'-6'; Brown to Red, Silty, Fine Sand, w/ trace of Clay. | 0 | NR | 0 | |
| | | | | 100% | 6 | 6'-14'; Becoming Increasingly Lighter Brown to White, Silty, Medium to Coarse, Sand. | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | | |

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Florida Professional Geologist No. 0001181

11/04/96
Date

MICHAEL J. WALSH
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STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-16

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 10/24/96 | Completed: | 10/24/96 |
| MONITOR WELL NO.: MW-17 | Start Time: 0900 | Finish Time: | 1030 |
| Delivery Order 0036 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; Asphalt, Gravel & Lmrk Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | | 1'-3'; Red, Sandy Clay (Fill) | | | | |
| | | | | 100% | 4 | 3'-6'; Brown to Red, Silty, Fine Sand, w/ trace of Clay. | 0 | NR | 0 | |
| | | | | 100% | 6 | 6'-14'; Becoming Increasingly Lighter Brown to White, Silty, Medium to Coarse, Sand. | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | | |

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Florida Professional Geologist No. 0001181

11/04/96
Date

MICHAEL J. WALSH
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No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 10/24/96 | Completed: | 10/24/96 |
| MONITOR WELL NO.: MW-18 | Start Time: 1045 | Finish Time: | 1200 |
| Delivery Order 0036 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; Asphalt, Gravel & Lmrk Road Base | 0 | NR | 0 |
| | | | | | 2 | - | | | |
| | | | | 100% | | 1'-3'; Red, Sandy Clay (Fill) | | | |
| | | | | 100% | 4 | 3'-6'; Brown to Red, Silty, Fine Sand, w/ trace of Clay. | 0 | NR | 0 |
| | | | | 100% | | | | | |
| | | | | | 6 | 6'-9'; Becoming Grey, Silty Fine to Medium Sand. | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | Strong Petroleum Odor @ WT | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 9'-14'; Becoming Increasingly Lighter Brown to White, Silty, Medium to Coarse, Sand. | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

11/04/96
Date

MICHAEL J. WALSH
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No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

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|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 01/30/97 | Completed: 01/30/97 | |
| MONITOR WELL NO.: MW-19 | Start Time: 0800 | Finish Time: 0850 | |
| Delivery Order 0046 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; Black, Fine sand mixed w/ humus organics | 0 | NR | 0 |
| | | | | | 2 | 1'-4'; Brown to red sandy clay (fill) | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Brown to Red sandy clay mixed with coarse sands | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 6'-15'; Becoming Increasingly Lighter Brown to White, Silty, Medium to Coarse, Sand. | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
02/03/97
Date

MICHAEL J. WALSH PROVISIONAL LICENSE No. PG0001181 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 01/30/97 | Completed: 01/30/97 | |
| **MONITOR WELL NO.: MW-20** | Start Time: 0850 | Finish Time: 0940 | |
| Delivery Order 0046 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 | |
| | | | | | 2 | 1'-4'; Reddish brown sandy clay mixed with pebbles (fill) | | | | |
| | | | | 100% | 4 | | 0 | NR | 0 | |
| | | | | | | 4'-6'; Brown,Medium sand | | | | |
| | | | | 100% | 6 | | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | 6'-15'; Becoming Increasingly Lighter Brown to White, Silty, Medium to Coarse, Sand. | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001188

Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001188
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 01/30/97 | Completed: 01/30/97 | |
| MONITOR WELL NO.: MW-21 | Start Time: 0940 | Finish Time: 1030 | |
| Delivery Order 0046 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 | |
| | | | | | 2 | 1-4'; Red/Brown Sandy Clay (fill) | | | | |
| | | | | 100% | 4 | | 0 | NR | 0 | |
| | | | | | | 4'-6'; Brown,Medium sand | | | | |
| | | | | 100% | 6 | | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | 6'-15'; Becoming Increasingly Lighter Brown to White, Silty, Medium to Coarse, Sand. | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
Date 03/97

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

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|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 01/30/97 | Completed: 01/30/97 | |
| **MONITOR WELL NO.: MW-22** | Start Time: 1030 | Finish Time: 1120 | |
| Delivery Order 0046 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 |
| | | | | | 2 | 1-4'; Reddish Brown ,Sandy Clay (fill) | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | | | 4'-6'; White,Medium to coarse sand | | | |
| | | | | 100% | 6 | | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 6'-15'; Becoming Increasingly Lighter White, Coarse sand | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
Date 02/03/97

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No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-22

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|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 01/30/97 | Completed: 01/30/97 | |
| MONITOR WELL NO.: MW-23 | Start Time: 1120 | Finish Time: 1210 | |
| Delivery Order 0046 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 |
| | | | | | 2 | 1-4'; Reddish Brown Sandy Clay (fill) | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Dark red/brown, Medium to fine sand | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 6'-15'; Becoming Increasingly Lighter Brown to White, Coarse sand | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. PG0001181
Date: 02/03/97

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PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-23

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|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 01/30/97 | Completed: 01/30/97 | |
| MONITOR WELL NO.: MW-24 | Start Time: 1210 | Finish Time: 1300 | |
| Delivery Order 0046 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 |
| | | | | | 2 | 1'-4'; Red/Brown Sandy Clay (fill) | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Grayish white, Medium to coarse sand | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 6'-15'; Becoming Increasingly Lighter White Medium to Coarse, Sand. | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

02/03/97
Date

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 01/30/97 | Completed: 01/30/97 | |
| **MONITOR WELL NO.: MW-25** | Start Time: 1300 | Finish Time: 1400 | |
| Delivery Order 0046 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 |
| | | | | | 2 | 1'-4'; Red/Brown, Sandy Clay (fill) | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Grayish white, Medium to coarse sand | | | |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 6'-15'; Becoming Increasingly Lighter White Medium to Coarse, Sand. | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

02/03/97
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-25

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 01/30/97 | Completed: 01/30/97 | |
| **MONITOR WELL NO.: MW-26** | Start Time: 1400 | Finish Time: 1500 | |
| Delivery Order 0046 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | | | 1'-4'; Red/Brown Sandy Clay (fill) | | | | |
| | | | | 100% | 4 | | 0 | NR | 0 | |
| | | | | | | 4'-6'; Red/Brown, Medium | | | | |
| | | | | 100% | 6 | sand | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | | | | | |
| | | | | | 8 | | | | | |
| | | | | | | 6'-15'; Becoming Increasingly | | | | |
| | | | | | 10 | Lighter Brown to White | | | | |
| | | | | | | Medium to Coarse, Sand. | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
STATE OF FLORIDA
02/03/97
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-26

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 02/25/97 | Completed: | 02/25/97 |
| **MONITOR WELL NO.: MW-27** | Start Time: 1015 | Finish Time: | 1100 |
| Delivery Order 0048 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | | | 1'-6'; Light Brown, Silty, Fine sand | | | | |
| | | | | 100% | 4 | | 0 | NR | 0 | |
| | | | | | | 6'-7'; White, Silty, Fine to Coarse sand | | | | |
| | | | | 100% | 6 | | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | | | | | |
| | | | | | 8 | | | | | |
| | | | | | | 7'-15'; Tan, Silty, Fine to Coarse sand | | | | |
| | | | | | 10 | | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

03/03/1997
Date

C-27

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 02/25/97 | Completed: | 02/25/97 |
| **MONITOR WELL NO.: MW-28** | Start Time: 1145 | Finish Time: | 1230 |
| Delivery Order 0048 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | | | 1'-6'; Light Brown, Silty, Fine sand | | | | |
| | | | | 100% | 4 | | 0 | NR | 0 | |
| | | | | | | 6'-7'; White, Silty, Fine to Coarse sand | | | | |
| | | | | 100% | 6 | | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | | | | | |
| | | | | | 8 | | | | | |
| | | | | | | 7'-15'; Tan, Silty, Fine to Coarse sand | | | | |
| | | | | | 10 | | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. PG0001181
Date 03/03/1997

MICHAEL J. WALSH
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No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-28

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 02/25/97 | Completed: | 02/25/97 |
| **MONITOR WELL NO.: MW-29** | Start Time: 1245 | Finish Time: | 1330 |
| Delivery Order 0048 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | | | 1'-6'; Light Brown, Silty, Fine sand | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | | | 6'-8'; Light Brown to White, Silty | | | |
| | | | | 100% | 6 | Fine to Med. to Coarse sand | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | NOTE: Strong Petroleum odor at water table | | | |
| | | | | | 8 | | | | |
| | | | | | | 8'-10'; Tan, Silty, Fine to Medium to Coarse sand | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie" | | | |
| | | | | | | 11'-15'; Tan, Silty, Fine to | | | |
| | | | | | 12 | Medium to Coarse sand | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
Date 03/07/1997

MICHAEL J. WALSH
PROFESSIONAL GEOLOGIST
No. PG0001181
STATE OF FLORIDA

C-29

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 02/25/97 | Completed: | 02/25/97 |
| **MONITOR WELL NO.: MW-30** | Start Time: 1345 | Finish Time: | 1430 |
| Delivery Order 0048 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | | | 1'-6'; Light Brown, Silty, Fine sand | | | | |
| | | | | 100% | 4 | | 0 | NR | 0 | |
| | | | | | | 6'-8'; Light Brown to White, Silty Fine to Med. to Coarse sand | | | | |
| | | | | 100% | 6 | | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | NOTE: Strong Petroleum odor at water table | | | | |
| | | | | | 8 | | | | | |
| | | | | | | 8'-10'; Tan, Silty, Fine to Medium to Coarse sand | | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie" | | | | |
| | | | | | | 11'-15'; Tan, Silty, Fine to Medium to Coarse sand | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
Date 08/08/1997

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-30

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 02/25/97 | Completed: | 02/25/97 |
| **MONITOR WELL NO.: MW-31** | Start Time: 1445 | Finish Time: | 1530 |
| Delivery Order 0048 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 3" Asphalt, 9" Road Base | 175 | 125 | 50 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-6'; Gray, Petroleum-stained Silty, Fine sand | >1000 | NR | >1000 |
| | | | | 100% | 6 | 1'-6'; Light Gray, Petroleum-stained Silty, Fine sand | >1000 | NR | >1000 |
| | | | Water Table @ Approx. 7' bls | | | NOTE: Strong Petroleum odor at water table | | | |
| | | | | | 8 | | | | |
| HA | | | | | | 8'-10'; Tan/Gray Petroleum-stained Fine to Med. to Coarse sand | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie" | | | |
| | | | | | 12 | 11'-15'; Tan/Gray Petroleum-stained Fine to Med. to Coarse sand | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
Date 03/03/1997

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-31

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 02/25/97 | Completed: | 02/25/97 |
| **MONITOR WELL NO.: MW-32** | Start Time: 1545 | Finish Time: | 1630 |
| Delivery Order 0048 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 3" Asphalt, 9" Road Base | >1000 | NR | >1000 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-6'; Gray, Petroleum-stained Silty, Fine sand | >1000 | NR | >1000 |
| | | | | 100% | 6 | 1'-6'; Light Gray, Petroleum-stained Silty, Fine sand | >1000 | NR | >1000 |
| | | | Water Table @ Approx. 7' bls | | | NOTE: Strong Petroleum odor at water table | | | |
| | | | | | 8 | | | | |
| | | | | | | 8'-10'; Tan/Gray Petroleum-stained Fine to Med. to Coarse sand | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie" | | | |
| | | | | | 12 | 11'-15'; Tan/Gray Petroleum-stained Fine to Med. to Coarse sand | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
Date 03/03/1997

MICHAEL J. WALSH PROFESSIONAL LICENSED No. PG0001181 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

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| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 02/26/97 | Completed: | 02/26/97 |
| **MONITOR WELL NO.: MW-33** | Start Time: 0915 | Finish Time: | 1000 |
| Delivery Order 0048 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | | | 1'-6'; Light Brown, Silty, Fine sand | | | | |
| | | | | 100% | 4 | | 0 | NR | 0 | |
| | | | | | | 6'-8'; Light Brown to White, Silty Fine to Med. to Coarse sand | | | | |
| | | | | 100% | 6 | | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | NOTE: Strong Petroleum odor at water table | | | | |
| | | | | | 8 | | | | | |
| | | | | | | 8'-10'; Tan, Silty, Fine to Medium to Coarse sand | | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie" | | | | |
| | | | | | | 11'-13'; Void, No Return | | | | |
| | | | | | 12 | | | | | |
| | | | | | | 13'-15'; Tan, Silty, Fine to Medium to Coarse sand | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

03/03/1997
Date

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No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-33

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 02/26/97 | Completed: | 02/26/97 |
| **MONITOR WELL NO.: MW-34** | Start Time: 1015 | Finish Time: | 1100 |
| Delivery Order 0048 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 95 | 70 | 25 | |
| | | | | | 2 | | | | | |
| | | | | 100% | 4 | 1'-6'; Light Brown, Silty, Fine sand | 14 | 9 | 5 | |
| | | | | 100% | 6 | 6'-8'; Light Brown to White, Silty Fine to Med. to Coarse sand | 120 | NR | 120 | |
| | | | Water Table @ Approx. 7' bls | | | NOTE: Strong Petroleum odor at water table | | | | |
| | | | | | 8 | 8'-10'; Tan, Silty, Fine to Medium to Coarse sand | | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie" | | | | |
| | | | | | 12 | 11'-15'; Tan, Silty, Fine to Medium to Coarse sand | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

03/03/1997
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. 0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-34

| | | |
|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile |
| | Start Date: 03/25/97 | Completed: 03/25/97 |
| **MONITOR WELL NO.: MW-35** | Start Time: 1230 | Finish Time: 1315 |
| Delivery Order 0049 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | | | 1'-4'; Light Brown, Medium to Silty Fine sand | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | | | 4'-6'; Light Brown to White, Silty Fine to Med. to Coarse sand | | | |
| | | | | 100% | 6 | | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | | 6'-10'; White to Reddish Brown Medium Sand | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie" | | | |
| | | | | | | 11'-15'; Gray, Medium to Fine Silty Sand | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

03/31/1997
Date

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PROVISIONAL LICENSE
No. 0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-35

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|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 03/25/97 | Completed: | 03/25/97 |
| **MONITOR WELL NO.: MW-36** | Start Time: 1320 | Finish Time: | 1350 |
| Delivery Order 0049 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | | | 1'-4'; Light Brown, to Grayish White Silty Fine sand | | | | |
| | | | | 100% | 4 | | 0 | NR | 0 | |
| | | | | | | 4'-6'; White, Silty, Fine Sand | | | | |
| | | | | 100% | 6 | | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | 6'-7'; White to Reddish Brown Medium Sand | | | | |
| | | | | | 8 | | | | | |
| | | | | | | NOTE: Strong Petroleum Odor at Water Table | | | | |
| | | | | | 10 | 7'-10'; Tan Medium to Fine, Silty Sand | | | | |
| | | | | | | 10'-15'; Gray, Medium to Fine Silty Sand | | | | |
| | | | | | 12 | | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001131

03/31/1997
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. 0001131
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-36

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Site 20 | | | | | | LOGGED BY: Patrick J. Brown | | SHEET 1 OF 1 | | |
| Naval Air Station | | | | | | Contractor: WES, Inc. | | Dr. Method: HSA | | |
| Pensacola, Florida | | | | | | Driller: South Florida Testing & Drilling | | Dr. Rig: Mobile | | |
| | | | | | | Start Date: 03/25/97 | | Completed: 03/25/97 | | |
| MONITOR WELL NO.: MW-37 | | | | | | Start Time: 1400 | | Finish Time: 1430 | | |
| Delivery Order 0049 | | | | | | Contract No. N65114-95-D-2126 | | CONTAMINATION DATA | | |
| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | | OVA RESULTS (PPM) CARBON FILTER | | NOTES |
| | | | | | | | | W/O | WITH | NET |
| POST | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | | 0 | NR | 0 |
| | | | | | 2 | | | | | |
| HOLE | | | | | | 1'-4'; Light Beige, Medium to Silty Fine sand | | | | |
| | | | | 100% | 4 | | | 0 | NR | 0 |
| | | | | | | 4'-7'; Light Beige to White, | | | | |
| HSA | | | | 100% | 6 | Silty Fine Sand | | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | | |
| | | | | | 8 | | | | | |
| HA | | | | | | 7'-8'; White to Reddish Brown Medium Sand | | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie" | | | | |
| | | | | | 12 | 11'-15';Dark Grayish Brown Medium to Fine Silty Sand | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

03/31/1997
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. 0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-37

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 03/25/97 | Completed: | 03/25/97 |
| **MONITOR WELL NO.: MW-38** | Start Time: 1430 | Finish Time: | 1500 |
| Delivery Order 0049 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | | | 1'-4'; Brown, Medium to Fine Silty sand | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | | | 4'-10'; Light Brown, Silty Fine Sand | | | |
| | | | | 100% | 6 | | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie" | | | |
| | | | | | | 11'-15';Dark Brown, Silty, Fine Sand | | | |
| | | | | | 12 | | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

03/31/1997
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 03/25/97 | Completed: | 03/25/97 |
| **MONITOR WELL NO.: MW-39** | Start Time: 1500 | Finish Time: | 1530 |
| Delivery Order 0049 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | 4 | 1'-4'; Light Beige, Medium to Fine Silty sand | 0 | NR | 0 | |
| | | | | 100% | 6 | 4'-6'; Light Beige, Silty Fine Sand | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | 6'-10'; Tan, Medium to Fine, Silty Sand | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | | | | | |
| | | | | | 12 | 10'-12'; Dark Brown, Silty, Fine Sand | | | | |
| | | | | | 14 | 12'-15'; Increasingly Lighter Brown to Beige Coarse Sand | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

03/31/1997
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PGC001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

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|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 03/25/97 | Completed: | 03/25/97 |
| **MONITOR WELL NO.: MW-40** | Start Time: 1530 | Finish Time: | 1600 |
| Delivery Order 0049 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | | 0 | NR | 0 | |
| | | | | | 2 | 0'-4'; Brown, Silty Fine Sand w/ Organic Humus | | | | |
| | | | | 100% | 4 | 4'-5'; White, Silty Fine Sand | 0 | NR | 0 | |
| | | | Water Table @ 5' BLS | | | | | | | |
| | | | | | 6 | | | | | |
| | | | | | | 5'-13'; Grayish White, Silty, Fine Sand | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | | | | | |
| | | | | | 12 | | | | | |
| | | | | | | End of Boring @ 13' BLS | | | | |
| | | | | | 14 | | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. G001181

08/31/1997
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-40

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 03/25/97 | Completed: | 03/25/97 |
| MONITOR WELL NO.: MW-41 | Start Time: 1600 | Finish Time: | 1630 |
| Delivery Order 0049 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Organic Humus, 8" Red Clay Base | 0 | NR | 0 |
| | | | | | 2 | 1'-4'; Beige, Silty Fine Sand | | | |
| | | | | 100% | 4 | 4'-10'; Dark Brown to Gray Silty, Fine Sand | 0 | NR | 0 |
| | | | Water Table @ 5' BLS | | | | | | |
| | | | | | 6 | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 10'-13'; White, Medium to Coarse Sand | | | |
| | | | | | 12 | | | | |
| | | | | | | End of Boring @ 13' BLS | | | |
| | | | | | 14 | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

03/31/1997
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. 0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-41

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/01/97 | Completed: 05/01/97 | |
| MONITOR WELL NO.: MW-42 | Start Time: 0845 | Finish Time: 0945 | |
| Delivery Order 0051 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-4'; Light Brown, Fine to Medium, Silty Fine Sand. | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Light Brown to White, Fine to Medium, Silty Sand . | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | 6'-10'; White to Reddish Brown, Fine to Medium, Silty Sand. | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001187

05/07/97
Date

MICHAEL J. WALSH
PROFESSIONAL GEOLOGIST
STATE OF FLORIDA
No. PG0001187

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/01/97 | Completed: 05/01/97 | |
| MONITOR WELL NO.: MW-43 | Start Time: 1000 | Finish Time: 1100 | |
| Delivery Order 0051 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-4'; Light Brown, Fine to Medium, Silty Fine Sand. | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Light Brown to White, Fine to Medium, Silty Sand . | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| HA | | | | | | 6'-10'; White to Reddish Brown, Fine to Medium, Silty Sand. | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

05/07/97
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-43

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/01/97 | Completed: 05/01/97 | |
| MONITOR WELL NO.: MW-44 | Start Time: 1115 | Finish Time: 1215 | |
| Delivery Order 0051 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-4'; Light Brown, Fine to Medium, Silty Fine Sand. | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Light Brown to White, Fine to Medium, Silty Sand . | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| HA | | | | | 10 | 6'-10'; White to Reddish Brown, Fine to Medium, Silty Sand. | | | |
| | | | | | 12 | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh P.G.
Florida Professional Geologist No. 0001181

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

7/07/97
Date

C-44

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/01/97 | Completed: 05/01/97 | |
| **MONITOR WELL NO.: MW-45** | Start Time: 1300 | Finish Time: 1400 | |
| Delivery Order 0051 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | 4 | 1'-4'; Light Beige, Fine to Medium, Silty Sand. | 0 | NR | 0 | |
| | | | | 100% | 6 | 4'-6'; Light Beige, Fine to Medium, Silty Sand. | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | 6'-10'; Tan, Fine to Medium, Silty Sand. | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | 10'-12'; Dark Brown, Fine to Medium, Silty Sand. | | | | |
| | | | | | 12 | 12'-15'; Increasingly Lighter Brown to Beige, Fine to Coarse Sand. | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael C. Walsh P.G.
Florida Professional Geologist No. 0001181

05/07/97
Date

MICHAEL C. WALSH
PROVISIONAL LICENSE
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-45

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 05/01/97 | Completed: | 05/01/97 |
| **MONITOR WELL NO.: MW-46** | Start Time: 1415 | Finish Time: | 1515 |
| Delivery Order 0051 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-4'; Light Beige, Fine to Medium, Silty Sand. | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Light Beige, Fine to Medium, Silty Sand. | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | 6'-10'; Tan, Fine to Medium, Silty Sand. | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 10'-12'; Dark Brown, Fine to Medium, Silty Sand. | | | |
| | | | | | 12 | 12'-15'; Increasingly Lighter Brown to Beige, Fine to Coarse Sand. | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

5/17/97
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-46

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/01/97 | Completed: 05/01/97 | |
| MONITOR WELL NO.: MW-47 | Start Time: 1530 | Finish Time: 1630 | |
| Delivery Order 0051 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-4'; Light Beige, Fine to Medium, Silty Sand. | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Light Beige, Fine to Medium, Silty Sand. | >1,000 | NR | >1,000 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | 6'-11'; Gray, Fine to Medium, Silty Sand. Strong Petro. Odor at Water Table. | | | |
| | | | | | 10 | 10'-11'; Encountered a wood "pier tie". | | | |
| | | | | | 12 | 10'-12'; Dark Brown, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | 12'-15'; Increasingly Lighter Brown to Beige, Fine to Coarse Sand. | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

5/07/97
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-47

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/15/97 | Completed: 05/15/97 | |
| **MONITOR WELL NO.: MW-48** | Start Time: 0800 | Finish Time: 0845 | |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-4'; Light Brown, Fine to Medium, Silty Fine Sand. | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Light Brown to White, Fine to Medium, Silty Sand . | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 6'-10'; White to Reddish Brown, Fine to Medium, Silty Sand. | | | |
| | | | | | 12 | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

05/19/97
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | |
|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile |
| | Start Date: 05/15/97 | Completed: 05/15/97 |
| **MONITOR WELL NO.: MW-49** | Start Time: 0900 | Finish Time: 0945 |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-4'; Light Brown, Fine to Medium, Silty Fine Sand. | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Light Brown to White, Fine to Medium, Silty Sand . | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | | | | |
| | | | | | 10 | 6'-10'; White to Reddish Brown, Fine to Medium, Silty Sand. | | | |
| | | | | | 12 | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

05/19/97
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-49

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 05/15/97 | Completed: | 05/15/97 |
| **MONITOR WELL NO.: MW-50** | Start Time: 1000 | Finish Time: | 1045 |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-4'; Light Brown, Fine to Medium, Silty Fine Sand. | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Light Brown to White, Fine to Medium, Silty Sand . | 0 | NR | 0 |
| | | | Water Table @ Approx. 7' bls | | | | | | |
| | | | | | 8 | 6'-10'; White to Reddish Brown, Fine to Medium, Silty Sand. | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

Date 05/19/97

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | |
|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile |
| | Start Date: 05/15/97 | Completed: 05/15/97 |
| **MONITOR WELL NO.: MW-51** | Start Time: 1100 | Finish Time: 1145 |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | 4 | 1'-4'; Light Beige, Fine to Medium, Silty Sand. | 0 | NR | 0 | |
| | | | | 100% | 6 | 4'-6'; Light Beige, Fine to Medium, Silty Sand. | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | 6'-10'; Tan, Fine to Medium, Silty Sand. | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | 10'-12'; Dark Brown, Fine to Medium, Silty Sand. | | | | |
| | | | | | 12 | 12'-15'; Increasingly Lighter Brown to Beige, Fine to Coarse Sand. | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. D001181

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. P00001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

05/19/97
Date

| | | |
|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile |
| | Start Date: 05/15/97 | Completed: 05/15/97 |
| **MONITOR WELL NO.: MW-52** | Start Time: 1300 | Finish Time: 1345 |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | | | 1'-4'; Light Beige, Fine to Medium, Silty Sand. | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | | | 4'-6'; Light Beige, Fine to Medium, Silty Sand. | | | |
| | | | | 100% | 6 | | >1,000 | NR | >1,000 |
| | | | Water Table @ Approx. 7' bls | | | 6'-11'; Gray, Fine to Medium, Silty Sand. Strong Petro. Odor at Water Table. | | | |
| | | | | | 8 | | | | |
| | | | | | | 10'-11'; Encountered a wood "pier tie". | | | |
| | | | | | 10 | | | | |
| | | | | | | 10'-12'; Dark Brown, Fine to Medium, Silty Sand. | | | |
| | | | | | 12 | | | | |
| | | | | | | 12'-15'; Increasingly Lighter Brown to Beige, Fine to Coarse Sand. | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

05/19/97
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | |
|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile |
| | Start Date: 05/15/97 | Completed: 05/15/97 |
| **MONITOR WELL NO.: MW-53** | Start Time: 1400 | Finish Time: 1445 |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | 4 | 1'-4'; Light Beige, Fine to Medium, Silty Sand. | 0 | NR | 0 | |
| | | | | 100% | 6 | 4'-6'; Light Beige, Fine to Medium, Silty Sand. | 0 | NR | 0 | |
| | | | Water Table @ Approx. 7' bls | | | 6'-10'; Tan, Fine to Medium, Silty Sand. | | | | |
| | | | | | 8 | | | | | |
| | | | | | 10 | 10'-12'; Dark Brown, Fine to Medium, Silty Sand. | | | | |
| | | | | | 12 | 12'-15'; Increasingly Lighter Brown to Beige, Fine to Coarse Sand. | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15.0' bls | | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

05/19/97
Date

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/28/97 | Completed: 05/28/97 | |
| **MONITOR WELL NO.: DMW-54** | Start Time: 1415 | Finish Time: 1600 | |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA HA | | | | 100% | 1 | 0'-1'; Ashphalt, Rd. Sub-base. | 80 | 50 | 30 |
| | | | | | | | 120 | 80 | 40 |
| | | | | | 6 | 1'-3.5'; Brown, Silty, Fine Sand w/ Shell Fragments. | 32 | 22 | 10 |
| | | | Water Table @ approx. 8' bls | | | | | | |
| | | | | | 10 | | | | |
| | | | | | 14 | 3.5'-6'; Black, Clayey, Fine Sand w/ Coal Fragments. | | | |
| | | | | | 18 | | | | |
| | | | | | 22 | 18'-24.5'; Becoming Light Tan, Medium to Coarse, Silty Sand. | | | |
| | | | | | 26 | End of Boring @ 24' bls | | | |

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MICHAEL J. WALSH PROVISIONAL LICENSE No. PG0001181 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

Date 06/03/97

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/29/97 | Completed: 05/29/97 | |
| **MONITOR WELL NO.: DMW-55** | Start Time: 0900 | Finish Time: 1100 | |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | 1 | 0'-1'; Ashphalt, Rd. Sub-base. | 0 | NR | 0 |
| | | | | | 6 | 1'-4'; Light Brown to Grey, Fine, Silty, Sand. | 0 | NR | 0 |
| | | | Water Table @ approx. 8' bls | | | 4'-6'; White, Silty, Fine Sand. | 0 | NR | 0 |
| HA | | | | | 10 | 6'-7'; Reddish White, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | 7'-10'; Tan, Fine to Medium, Silty Sand. | | | |
| | | | | | 18 | 10'-18'; Grey, Fine to Medium, Silty Sand. | | | |
| | | | | | 22 | 18'-25' Tan, Medium to Coarse, Silty Sand. | | | |
| | | | | | 26 | End of Boring @ 25' bls | | | |

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Florida Professional Geologist No. 0001181

Date 06/03/97

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

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|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/29/97 | Completed: 05/29/97 | |
| **MONITOR WELL NO.: MW-56** | Start Time: 1115 | Finish Time: 1200 | |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | 100% | 4 | 1'-4'; Light Brown to Grey, Silty, Fine Sand. | 0 | NR | 0 |
| | | | | 100% | 6 | 4'-6'; Light Brown to White, Silty, Fine Sand. | 0 | NR | 0 |
| | | | Water Table @ Approx. 8' bls | | | 6'-7'; Reddish White, Silty, Fine to Medium, Sand. | | | |
| HA | | | | | 10 | 7'-10'; Tan, Silty, Fine to Medium, Sand. | | | |
| | | | | | 12 | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | End of Boring @ 13' bls | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. PG0001181

06/03/97
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

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|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: | HSA |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: | Mobile |
| | Start Date: 05/29/97 | Completed: | 05/29/97 |
| **MONITOR WELL NO.: MW-57** | Start Time: 1215 | Finish Time: | 1300 |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NOTES NET |
|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 |
| | | | | | 2 | | | | |
| | | | | | | 1'-4'; Light Brown to Grey, Silty, Fine Sand. | | | |
| | | | | 100% | 4 | | 0 | NR | 0 |
| | | | | | | 4'-6'; Light Brown to White, Silty, Fine Sand. | | | |
| | | | | 100% | 6 | | | | |
| | | | | | | | 0 | NR | 0 |
| | | | Water Table @ Approx. 8' bls | | | 6'-7'; Reddish White, Silty, Fine to Medium, Sand. | | | |
| | | | | | | 7'-10'; Tan, Silty, Fine to Medium, Sand. | | | |
| | | | | | 10 | | | | |
| | | | | | 12 | | | | |
| | | | | | | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | |
| | | | | | 14 | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | |

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Florida Professional Geologist No. 0001181

06/03/97
Date

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No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/29/97 | Completed: 05/29/97 | |
| **MONITOR WELL NO.: MW-58** | Start Time: 1315 | Finish Time: 1400 | |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | 4 | 1'-4'; Light Brown to Grey, Silty, Fine Sand. | 0 | NR | 0 | |
| | | | | 100% | 6 | 4'-6'; Light Brown to White, Silty, Fine Sand. | | | | |
| | | | | | | | 0 | NR | 0 | |
| | | | Water Table @ Approx. 8' bls | | | 6'-7'; Reddish White, Silty, Fine to Medium, Sand. | | | | |
| HA | | | | | 10 | 7'-10'; Tan, Silty, Fine to Medium, Sand. | | | | |
| | | | | | 12 | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 15' bls | | | | |

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

MICHAEL J. WALSH PROFESSIONAL LICENSE No. PG0001181 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

06/03/97
Date

| | | | |
|---|---|---|---|
| Site 20 | LOGGED BY: Patrick J. Brown | SHEET 1 OF 1 | |
| Naval Air Station | Contractor: WES, Inc. | Dr. Method: HSA | |
| Pensacola, Florida | Driller: South Florida Testing & Drilling | Dr. Rig: Mobile | |
| | Start Date: 05/29/97 | Completed: 05/29/97 | |
| **MONITOR WELL NO.: MW-59** | Start Time: 1415 | Finish Time: 1500 | |
| Delivery Order 0053 | Contract No. N65114-95-D-2126 | CONTAMINATION DATA | |

| TYPE | NUMB | BLOW | SAMP. INTV. (FT.) | SAMP. RECV. (IN) | DEPTH | DESCRIPTION OF MATERIALS AND CONDITIONS | OVA RESULTS (PPM) CARBON FILTER W/O | WITH | NET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| POST HOLE HSA | | | | 100% | | 0'-1'; 4" Asphalt, 8" Road Base. | 0 | NR | 0 | |
| | | | | | 2 | | | | | |
| | | | | 100% | 4 | 1'-4'; Light Brown to Grey, Silty, Fine Sand. | 0 | NR | 0 | |
| | | | | 100% | 6 | 4'-6'; Light Brown to White, Silty, Fine Sand. | 0 | NR | 0 | |
| | | | Water Table @ Approx. 8' bls | | | 6'-7'; Reddish White, Silty, Fine to Medium, Sand. | | | | |
| HA | | | | | 10 | 7'-10'; Tan, Silty, Fine to Medium, Sand. | | | | |
| | | | | | 12 | 10'-15'; Gray, Fine to Medium, Silty Sand. | | | | |
| | | | | | 14 | | | | | |
| | | | | | | End of Boring @ 14.5' bls | | | | |

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

06/03/97
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

# APPENDIX D

## SOIL AND GROUNDWATER ANALYTICAL RESULTS

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508–6500
Phone (904) 452–4728/3642
DSN 922–4728/3642

# Laboratory Report

**Priority Pollutant Total Metals**

| | |
|---|---|
| **Requester:** | ROICC |
| **Address:** | 655 Industrial Blvd. NAS Pensacola, FL 32508 |
| **Phone #:** | N/S |
| **Contact:** | Frostie White |
| **Lab ID Number:** | 9607050 |
| **Sample Date:** | 27 Jun 96 |
| **Received Date:** | 27 Jun 96 |
| **Sample Site:** | NAS Pensacola, FL |
| **Job Order #:** | 130 4124 |

| Sample ID# | Lab | 1– 62781 | 2– | 3– | 4– | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Pier 303 M/H 31–S | | | | Brian Nelson |
| Collector Name | | P. Keane | | | | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 27 Jun 96 @ 1505 | | | | ICP – 9 Jul 96 |
| Sample Type | Comp/Grab | Grab | | | | GFAA – 12 Jul 96 |
| Sample Matrix | | Soil | | | | HG – 16–17 Jul 96 |

| PARAMETER Metals: | METHOD # | ID# 1– 62781 | units | Det. Limit | ID# 2– | units | Det. Limit | ID# 3– | units | Det. Limit | ID# 4– | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Priorty Pollutant Metals including Total Cyanide and Total Phenolics (CFR 40, Part 122, App. D, Table III) | | | | | | | | | | | | | | |
| Antimony(Sb) | EPA 7041 | X BDL | mg/kg | 0.5 | | mg/kg | 0.5 | | mg/kg | 0.5 | | mg/kg | 0.5 | $HNO_3$ to pH<2 |
| Arsenic(As) | EPA 6010 | X BDL | mg/kg | 0.5 | | mg/kg | 0.5 | | mg/kg | 0.5 | | mg/kg | 0.5 | $HNO_3$ to pH<2 |
| Beryllium(Be) | EPA 6010 | X BDL | mg/kg | 0.5 | | mg/kg | 0.5 | | mg/kg | 0.5 | | mg/kg | 0.5 | $HNO_3$ to pH<2 |
| Cadmium(Cd) | EPA 6010 | X BDL | mg/kg | 1 | | mg/kg | 1 | | mg/kg | 1 | | mg/kg | 1 | $HNO_3$ to pH<2 |
| Chromium(Cr) | EPA 6010 | X 2 | mg/kg | 1 | | mg/kg | 1 | | mg/kg | 1 | | mg/kg | 1 | $HNO_3$ to pH<2 |
| Copper(Cu) | EPA 6010 | X 5 | mg/kg | 2 | | mg/kg | 2 | | mg/kg | 2 | | mg/kg | 2 | $HNO_3$ to pH<2 |
| Lead(Pb) | EPA 6010 | X 45 | mg/kg | 5 | | mg/kg | 5 | | mg/kg | 5 | | mg/kg | 5 | $HNO_3$ to pH<2 |
| Mercury(Hg) | EPA 6010 | X BDL | mg/kg | 0.1 | | mg/kg | 0.1 | | mg/kg | 0.1 | | mg/kg | 0.1 | $HNO_3$ to pH<2 |
| Nickel(Ni) | EPA 6010 | X 3 | mg/kg | 2 | | mg/kg | 2 | | mg/kg | 2 | | mg/kg | 2 | $HNO_3$ to pH<2 |
| Selenium(Se) | EPA 6010 | X BDL | mg/kg | 15 | | mg/kg | 15 | | mg/kg | 15 | | mg/kg | 15 | $HNO_3$ to pH<2 |
| Silver(Ag) | EPA 6010 | X BDL | mg/kg | 1 | | mg/kg | 1 | | mg/kg | 1 | | mg/kg | 1 | $HNO_3$ to pH<2 |
| Thallium(Tl) | EPA 7841 | X BDL | mg/kg | 0.5 | | mg/kg | 0.5 | | mg/kg | 0.5 | | mg/kg | 0.5 | $HNO_3$ to pH<2 |
| Zinc(Zn) | EPA 6010 | X 16 | mg/kg | 2 | | mg/kg | 2 | | mg/kg | 2 | | mg/kg | 2 | $HNO_3$ to pH<2 |

D-1

Comments: mg/kg=milligrams per kilogram. All Values are reported on a dry weight basisN/S = Not Submitted.

Approved by: _____ Date: _____

Jerry Dees, Laboratory Director

PWC 5090/14

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Priority Pollutant Volatiles by Method 8260

**Client:** ROICC
**Address:** 655 Industrial
NAS Pensacola, FL 32508
**Phone #:** not submitted
**Contact:** Frostie White

**Lab Report Number:** 62781
**Sample Date:** 06/27/96
**Received Date:** 06/27/96
**Sample Site:** NASP Pier 303
**Job Order No.:** 130 4124

| | |
|---|---|
| LAB Sample ID# | 1- 62781 |
| Sample Name / Location | M/H 31- S |
| Collector's Name | P. Keane |
| Date & Time Collected | 06/27/96 @ 1505 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 07/09/96 - JM |
| Date of Analysis | 07/09/96 |
| Sample Matrix | Soil |
| Dilution | X 100 |

| Compound Name | 1- 62781 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acrolein | BDL | ug/Kg | 500 | |
| Acrylonitrile | BDL | ug/Kg | 100 | |
| Benzene | BDL | ug/Kg | 100 | |
| Bromodichloromethane | BDL | ug/Kg | 100 | |
| Bromoform | BDL | ug/Kg | 200 | |
| Bromomethane | BDL | ug/Kg | 300 | |
| Carbon Tetrachloride | BDL | ug/Kg | 100 | |
| Chlorobenzene | BDL | ug/Kg | 100 | |
| Chloroethane | BDL | ug/Kg | 100 | |
| Chloroform | BDL | ug/Kg | 100 | |
| Chloromethane | BDL | ug/Kg | 100 | |
| 2-Chloroethyivinylether | BDL | ug/Kg | 100 | |
| Dibromochloromethane | BDL | ug/Kg | 100 | |
| 1,1-Dichloroethane | BDL | ug/Kg | 100 | |
| 1,2-Dichloroethane | BDL | ug/Kg | 100 | |
| 1,1-Dichloroethene | BDL | ug/Kg | 100 | |
| trans-1,2-Dichloroethene | BDL | ug/Kg | 100 | |
| 1,2-Dichloropropane | BDL | ug/Kg | 100 | |
| 1,3-Dichloropropene | BDL | ug/Kg | 100 | |
| Ethylbenzene | 1400 | ug/Kg | 100 | |
| Methylene Chloride | BDL | ug/Kg | 500 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/Kg | 100 | |
| Tetrachloroethene | BDL | ug/Kg | 100 | |
| Toluene | 500 | ug/Kg | 100 | |
| 1,1,1-Trichloroethane | BDL | ug/Kg | 100 | |
| 1,1,2-Trichloroethane | BDL | ug/Kg | 100 | |
| Trichloroethene | BDL | ug/Kg | 100 | |
| Vinyl Chloride | BDL | ug/Kg | 100 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 95 |
| Toluene-d8 | 86-119 | 105 |
| Bromoflourobenzene | 85-116 | 104 |

**COMMENTS :** Methanol extraction was performed prior to volatiles analysis.

**BDL = Below Detection Limit.** **ug/L = Microgram per liter.** **ug/Kg = Microgram per kilogram.**

**Approved by :** _____
Jerry Dees, Laboratory Director

**Date:** 7/16/96
Report Generated



**End of Report**

D-2

# Navy Public Works Center

## Environmental Laboratory

# Analytical Report

## Priority Pollutant Acid Extractables by Method 8270

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: ROICC
Address: 655 Industrial
NAS Pensacola, FL 32508
Phone #: not submitted
Contact: Frostie White

Lab Report Number: 62781
Sample Date: 06/27/96
Received Date: 06/27/96
Sample Site: NASP Pier 303
Job Order No.: 130 4124

| | |
|---|---|
| LAB Sample ID# | 1- 62781 |
| Sample Name / Location | M/H 31- S |
| Collector's Name | P. Keane |
| Date & Time Collected | 06/27/96 @ 1505 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 06/28/96 -JJ |
| Date of Analysis | 06/28/96 & 07/10/96 |
| Sample Matrix | Water |
| Dilution | X 750 |

| Compound Name | 1- 62781 | units | Det. Limit | Flags |
|---|---|---|---|---|
| 2-Chlorophenol | BDL | ug/Kg | 247500 | |
| 2,4-Dichlorophenol | BDL | ug/Kg | 375000 | |
| 2,4-Dimethylphenol | BDL | ug/Kg | 247500 | |
| 2,4-Dinitrophenol | BDL | ug/Kg | 375000 | |
| 4,6-Dinitro-2-methylphenol | BDL | ug/Kg | 247500 | |
| 2-Nitrophenol | BDL | ug/Kg | 247500 | |
| 4-Nitrophenol | BDL | ug/Kg | 247500 | |
| 4-Chloro-3-methylphenol | BDL | ug/Kg | 247500 | |
| Pentachlorophenol | BDL | ug/Kg | 375000 | |
| Phenol | BDL | ug/Kg | 127500 | |
| 2,4,6-Trichlorophenol | BDL | ug/Kg | 375000 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 2-Fluorophenol | 25-121 | 85 ** |
| Phenol d-5 | 24-113 | 82 ** |
| 2,4,6-Tribromophenol | 19-122 | 87 ** |

COMMENTS : ** Surrogate recoveries based on post-addition because the original surrogate concentration would have been diluted out. Elevated detection limits due to sample matrix interference.

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : _____
Jerry Dees, Laboratory Director

Date: 8/13/96
Report Generated
End of Report



D-3

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Priority Pollutant B/N Extractables by Method 8270

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: ROICC
Address: 655 Industrial
NAS Pensacola, FL 32508
Phone #: not submitted
Contact: Frostie White

Lab Report Number: 62781
Sample Date: 06/27/96
Received Date: 06/27/96
Sample Site: NASP Pier 303
Job Order No.: 130 4124

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 62781 | | | |
| Sample Name / Location | M/H 31- S | | | |
| Collector's Name | P. Keane | | | |
| Date & Time Collected | 06/27/96 @ 1505 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/28/96 - JJ | | | |
| Date of Analysis | 06/28/96 & 07/10/96 | | | |
| Sample Matrix | Soil | | | |
| Dilution | | X | 750 | |
| Compound Name | 1- 62781 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 247500 | |
| Acenaphthylene | BDL | ug/Kg | 127500 | |
| Anthracene | BDL | ug/Kg | 127500 | |
| Benzidine | BDL | ug/Kg | 2475000 | |
| Benzo(a) anthracene | BDL | ug/Kg | 127500 | |
| Benzo[b]fluoranthene | BDL | ug/Kg | 127500 | |
| Benzo[k]fluoranthene | BDL | ug/Kg | 127500 | |
| Benzo[g,h,i]perylene | BDL | ug/Kg | 127500 | |
| Benzo[a]pyrene | BDL | ug/Kg | 127500 | |
| Benzylbutyl phthalate | BDL | ug/Kg | 247500 | |
| Bis(2-chloroethoxy)methane | BDL | ug/Kg | 247500 | |
| Bis(2-chloroethyl)ether | BDL | ug/Kg | 247500 | |
| Bis(2-chloroisopropyl)ether | BDL | ug/Kg | 247500 | |
| Bis(2-Ethylhexyl) phthalate | BDL | ug/Kg | 247500 | |
| 4-Bromophenyl-phenylether | BDL | ug/Kg | 127500 | |
| 2-Chloronaphthalene | BDL | ug/Kg | 127500 | |
| 4-Chlorophenyl-phenylether | BDL | ug/Kg | 127500 | |
| Chrysene | BDL | ug/Kg | 127500 | |
| Dibenz[a,h]anthracene | BDL | ug/Kg | 127500 | |
| Di-n-butyl phthalate | BDL | ug/Kg | 127500 | |
| Di-n-octylphthalate | BDL | ug/Kg | 127500 | |
| 1,2-Dichlorobenzene | BDL | ug/Kg | 247500 | |
| 1,3-Dichlorobenzene | BDL | ug/Kg | 247500 | |
| 1,4-Dichlorobenzene | BDL | ug/Kg | 247500 | |
| 3,3'-Dichlorobenzidine | BDL | ug/Kg | 247500 | |
| Diethylphthalate | BDL | ug/Kg | 127500 | |
| Dimethylphthalate | BDL | ug/Kg | 127500 | |
| 2,4-Dinitrotoluene | BDL | ug/Kg | 127500 | |
| 2,6-Dinitrotoluene | BDL | ug/Kg | 127500 | |
| 1,2-Diphenylhydrazine | BDL | ug/Kg | 127500 | |
| Fluoranthene | BDL | ug/Kg | 127500 | |
| Fluorene | BDL | ug/Kg | 127500 | |
| Hexachlorobenzene | BDL | ug/Kg | 127500 | |
| Hexachlorobutadiene | BDL | ug/Kg | 247500 | |
| Hexachlorocyclopentadiene | BDL | ug/Kg | 247500 | |
| Hexachloroethane | BDL | ug/Kg | 247500 | |
| Indeno[1,2,3-cd]pyrene | BDL | ug/Kg | 127500 | |
| Isophorone | BDL | ug/Kg | 247500 | |
| Naphthalene | BDL | ug/Kg | 247500 | |

D-4

Approved by : _____

Date: 8/13/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

## Analytical Report
### Priority Pollutant B/N Extractables by Method 8270

Client: ROICC
Address: 655 Industrial
NAS Pensacola, FL 32508
Phone #: not submitted
Contact: Frostie White

Lab Report Number: 62781
Sample Date: 06/27/96
Received Date: 06/27/96
Sample Site: NASP Pier 303
Job Order No.: 130 4124

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 62781 | | | |
| Sample Name / Location | M/H 31- S | | | |
| Collector's Name | P. Keane | | | |
| Date & Time Collected | 06/27/96 @ 1505 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/28/96 -JJ | | | |
| Date of Analysis | 06/28/96 & 07/10/96 | | | |
| Sample Matrix | Water | | | |
| Dilution | X 750 | | | |
| Compound Name | 1- 62781 | units | Det. Limit | Flags |
| Nitrobenzene | BDL | ug/L | 247500 | |
| N-Nitroso-di-n-propylamine | BDL | ug/Kg | 247500 | |
| N-Nitrosodimethylamine | BDL | ug/Kg | 247500 | |
| N-Nitrosodiphenylamine | BDL | ug/Kg | 127500 | |
| Phenanthrene | BDL | ug/Kg | 127500 | |
| Pyrene | BDL | ug/Kg | 127500 | |
| 1,2,4-Trichlorobenzene | BDL | ug/Kg | 247500 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene-d5 | 23-120 | 91 ** |
| 2-Flourobiphenyl | 30-115 | 91 ** |
| Terphenyl-d14 | 18-137 | 87 ** |

COMMENTS : ** Surrogate recoveries based on post-addition because the original surrogate concentration would have been diluted out. Elevated detection limits due to sample matrix interference.

Approved by : Date: 8/13/96

Jerry Dees, Laboratory Director
Report Generated

D-5



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Priority Pollutant Pesticides by Method 8081

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** ROICC
**Address:** 655 Industrial
NAS Pensacola, FL 32508
**Phone #:** not submitted
**Contact:** Frostie White

**Lab Report Number:** 62781
**Sample Date:** 06/27/96
**Received Date:** 06/27/96
**Sample Site:** NASP Pier 303
**Job Order No.:** 130 4124

| | |
|---|---|
| LAB Sample ID# | 1- 62781 |
| Sample Name / Location | M/H 31- S |
| Collector's Name | P. Keane |
| Date & Time Collected | 06/27/96 @ 1505 |
| Sample Type (composite or grab) | Grab |
| Analyst | B. Jacquart |
| Date of Extraction / Initials | 06/28/96 -BJ |
| Date of Analysis | 07/01/96 & 07/09/96 |
| Sample Matrix | Soil |
| Dilution | X 5 |

| Compound Name | 1- 62781 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Aldrin | 0.54 | ug/Kg | 0.375 | |
| alpha-BHC | BDL | ug/Kg | 0.125 | |
| beta-BHC | BDL | ug/Kg | 0.750 | |
| gamma-BHC (Lindane) | BDL | ug/Kg | 0.130 | |
| delta-BHC | BDL | ug/Kg | 0.200 | |
| Chlordane | BDL | ug/Kg | 2.900 | |
| 4,4'-DDD | BDL | ug/Kg | 0.365 | |
| 4,4'-DDE | BDL | ug/Kg | 0.360 | |
| 4,4'-DDT | BDL | ug/Kg | 0.600 | |
| Dieldrin | BDL | ug/Kg | 0.315 | |
| Endosulfan I | BDL | ug/Kg | 0.185 | |
| Endosulfan II | BDL | ug/Kg | 0.420 | |
| Endosulfan sulfate | BDL | ug/Kg | 0.345 | |
| Endrin | BDL | ug/Kg | 0.350 | |
| Endrin aldehyde | BDL | ug/Kg | 0.240 | |
| Heptachlor | BDL | ug/Kg | 0.130 | |
| Heptachlor epoxide | 0.16 | ug/Kg | 0.135 | |
| PCB-1016 | BDL | ug/Kg | 7.50 | |
| PCB-1221 | BDL | ug/Kg | 22.50 | |
| PCB-1232 | BDL | ug/Kg | 22.50 | |
| PCB-1242 | BDL | ug/Kg | 6.50 | |
| PCB-1248 | BDL | ug/Kg | 10.50 | |
| PCB-1254 | BDL | ug/Kg | 3.90 | |
| PCB-1260 | BDL | ug/Kg | 2.80 | |
| Toxaphene | BDL | ug/Kg | 6.00 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetrachloro-m-xylene | 60-140 | 112 |
| Decachlorobiphenyl | 60-140 | 122 |

**Explanation of Flags:**

**COMMENTS :**

**Approved by :** _____
Jerry Dees, Laboratory Director
D-6

**Date:** 7/16/96
Report Generated



**End of Report**

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508-6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Requester:** ROICC
**Address:** 655 Industrial Blvd.
NAS Pensacola, FL 32508
**Phone #:** N/S
**Contact:** Frostie White

# Laboratory Report

**Priority Pollutant Total Metals**
**Lab ID Number:** 9607049
**Sample Date:** 27 Jun 96
**Received Date:** 27 Jun 96
**Sample Site:** NAS Pensacola, FL
**Job Order #:** 130 4124

| | | | | | |
|---|---|---|---|---|---|
| **Sample ID#** | Lab | 1- 62780 | 2- | 3- | 4- |
| **Sample Name** | Requester | Pier 303 M/H 31-W | | | |
| **Collector Name** | | P. Keane | | | |
| **Date/Time Collected (Military)** | Comp start | | | | |
| | Comp stop | | | | |
| | Grab | 27 Jun 96 @ 1455 | | | |
| **Sample Type** | Comp/Grab | Grab | | | |
| **Sample Matrix** | | Water | | | |

Analyst(s): Brian Nelson

Date(s) of analysis:
ICP - 9 Jul 96
GFAA - 12 Jul 96
HG - 16-17 Jul 96

| PARAMETER Metals: | METHOD # | ID# 1- 62780 | units | Det. Limit | ID# 2- | units | Det. Limit | ID# 3- | units | Det. Limit | ID# 4- | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Prioirty Pollutant Metals including Total Cyanide and Total Phenolics (CFR 40, Part 122, App. D, Table III)** | | | | | | | | | | | | | | |
| Antimony(Sb) | EPA 7041 | x BDL | mg/kg | 0.005 | | mg/kg | 0.005 | | mg/kg | 0.005 | | mg/kg | 0.005 | $HNO_3$ to pH<2 |
| Arsenic(As) | EPA 6010 | x BDL | mg/kg | 0.15 | | mg/kg | 0.15 | | mg/kg | 0.15 | | mg/kg | 0.15 | $HNO_3$ to pH<2 |
| Beryllium(Be) | EPA 6010 | x BDL | mg/kg | 0.005 | | mg/kg | 0.005 | | mg/kg | 0.005 | | mg/kg | 0.005 | $HNO_3$ to pH<2 |
| Cadmium(Cd) | EPA 6010 | x BDL | mg/kg | 0.01 | | mg/kg | 0.01 | | mg/kg | 0.01 | | mg/kg | 0.01 | $HNO_3$ to pH<2 |
| Chromium(Cr) | EPA 6010 | x BDL | mg/kg | 0.01 | | mg/kg | 0.01 | | mg/kg | 0.01 | | mg/kg | 0.01 | $HNO_3$ to pH<2 |
| Copper(Cu) | EPA 6010 | x BDL | mg/kg | 0.02 | | mg/kg | 0.02 | | mg/kg | 0.02 | | mg/kg | 0.02 | $HNO_3$ to pH<2 |
| Lead(Pb) | EPA 6010 | x BDL | mg/kg | 0.05 | | mg/kg | 0.05 | | mg/kg | 0.05 | | mg/kg | 0.05 | $HNO_3$ to pH<2 |
| Mercury(Hg) | EPA 6010 | x BDL | mg/kg | 0.0002 | | mg/kg | 0.0002 | | mg/kg | 0.0002 | | mg/kg | 0.0002 | $HNO_3$ to pH<2 |
| Nickel(Ni) | EPA 6010 | x BDL | mg/kg | 0.02 | | mg/kg | 0.02 | | mg/kg | 0.02 | | mg/kg | 0.02 | $HNO_3$ to pH<2 |
| Selenium(Se) | EPA 6010 | x BDL | mg/kg | 0.15 | | mg/kg | 0.15 | | mg/kg | 0.15 | | mg/kg | 0.15 | $HNO_3$ to pH<2 |
| Silver(Ag) | EPA 6010 | x BDL | mg/kg | 0.01 | | mg/kg | 0.01 | | mg/kg | 0.01 | | mg/kg | 0.01 | $HNO_3$ to pH<2 |
| Thallium(Tl) | EPA 7841 | x BDL | mg/kg | 0.005 | | mg/kg | 0.005 | | mg/kg | 0.005 | | mg/kg | 0.005 | $HNO_3$ to pH<2 |
| Zinc(Zn) | EPA 6010 | x 0.1 | mg/kg | 0.02 | | mg/kg | 0.02 | | mg/kg | 0.02 | | mg/kg | 0.02 | $HNO_3$ to pH<2 |

V-D

**Comments:** mg/kg=milligrams per kilogram. All Values are reported on a dry weight basis. N/S = Not Submitted

**Approved by:** _____ **Date:** _____

Jerry Dees, Laboratory Director

PWC 5090/14

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

## Analytical Report
### Priority Pollutant Volatiles by Method 8260

| | | | |
|---|---|---|---|
| Client: | ROICC | Lab Report Number: | 62780 |
| Address: | 655 Industrial | Sample Date: | 06/27/96 |
| | NAS Pensacola, FL 32508 | Received Date: | 06/27/96 |
| Phone #: | not submitted | Sample Site: | NASP Pier 303 |
| Contact: | Frostie White | Job Order No.: | 130 4124 |

| | |
|---|---|
| LAB Sample ID# | 1- 62780 |
| Sample Name / Location | M/H 31-W |
| Collector's Name | P. Keane |
| Date & Time Collected | 06/27/96 @ 1455 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 07/09/96 - JM |
| Date of Analysis | 07/09/96 |
| Sample Matrix | Water |
| Dilution | X 1 |

| Compound Name | 1- 62780 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acrolein | BDL | ug/L | 5 | |
| Acrylonitrile | BDL | ug/L | 1 | |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Chloroethylvinylether | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| 1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 128 |
| Toluene-d8 | 86-119 | 107 |
| Bromoflourobenzene | 85-116 | 110 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : _____ Date: 7/16/96
Jerry Dees, Laboratory Director
Report Generated



End of Report

D-8

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Priority Pollutant B/N Extractables by Method 8270

Bldg. 3887, Code 920
AS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** ROICC
**Address:** 655 Industrial
NAS Pensacola, FL 32508
**Phone #:** not submitted
**Contact:** Frostie White

**Lab Report Number:** 62780
**Sample Date:** 06/27/96
**Received Date:** 06/27/96
**Sample Site:** NASP Pier 303
**Job Order No.:** 130 4124

| | |
|---|---|
| LAB Sample ID# | 1- 62780 |
| Sample Name / Location | M/H 31-W |
| Collector's Name | P. Keane |
| Date & Time Collected | 06/27/96 @ 1455 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 06/28/96 - JJ |
| Date of Analysis | 07/10/96 |
| Sample Matrix | Water |
| Dilution | X 1 |

| Compound Name | 1- 62780 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Nitrobenzene | BDL | ug/L | 10 | |
| N-Nitroso-di-n-propylamine | BDL | ug/L | 10 | |
| N-Nitrosodimethylamine | BDL | ug/L | 10 | |
| N-Nitrosodiphenylamine | BDL | ug/L | 5 | |
| Phenanthrene | BDL | ug/L | 5 | |
| Pyrene | BDL | ug/L | 5 | |
| 1,2,4-Trichlorobenzene | BDL | ug/L | 10 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene-d5 | 51-140 | 113 |
| 2-Flourobiphenyl | 49-132 | 108 |
| Terphenyl-d14 | 50-154 | 139 |

**COMMENTS :** No acid extractables analysis was performed due to lack of sample. The manhole was dry when laboratory personnel went to re-sample the site.

**Approved by :** _____
Jerry Dees, Laboratory Director

**Date:** 7/16/96
Report Generated



**End of Report**

D-9

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

## Analytical Report
### Priority Pollutant B/N Extractables by Method 8270

**Client:** ROICC
**Address:** 655 Industrial
NAS Pensacola, FL 32508
**Phone #:** not submitted
**Contact:** Frostie White

**Lab Report Number:** 62780
**Sample Date:** 06/27/96
**Received Date:** 06/27/96
**Sample Site:** NASP Pier 303
**Job Order No.:** 130 4124

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 62780 | | | |
| Sample Name / Location | M/H 31-W | | | |
| Collector's Name | P Keane | | | |
| Date & Time Collected | 06/27/96 @ 1455 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/28/96 - JJ | | | |
| Date of Analysis | 06/28/96 & 07/10/96 | | | |
| Sample Matrix | Water | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 62780 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 5 | |
| Benzidine | BDL | ug/L | 100 | |
| Benzo(a) anthracene | BDL | ug/L | 5 | |
| Benzo[b]fluoranthene | BDL | ug/L | 5 | |
| Benzo[k]fluoranthene | BDL | ug/L | 5 | |
| Benzo[g,h,i]perylene | BDL | ug/L | 5 | |
| Benzo[a]pyrene | BDL | ug/L | 5 | |
| Benzylbutyl phthalate | BDL | ug/L | 5 | |
| s(2-chloroethoxy)methane | BDL | ug/L | 10 | |
| s(2-chloroethyl)ether | BDL | ug/L | 10 | |
| Bis(2-chloroisopropyl)ether | BDL | ug/L | 10 | |
| Bis(2-Ethylhexyl) phthalate | BDL | ug/L | 10 | |
| 4-Bromophenyl-phenylether | BDL | ug/L | 5 | |
| 2-Chloronaphthalene | BDL | ug/L | 10 | |
| 4-Chlorophenyl-phenylether | BDL | ug/L | 5 | |
| Chrysene | BDL | ug/L | 5 | |
| Dibenz[a,h]anthracene | BDL | ug/L | 5 | |
| Di-n-butyl phthalate | BDL | ug/L | 5 | |
| Di-n-octylphthalate | BDL | ug/L | 5 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 10 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 10 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 10 | |
| 3,3'-Dichlorobenzidine | BDL | ug/L | 10 | |
| Diethylphthalate | BDL | ug/L | 5 | |
| Dimethylphthalate | BDL | ug/L | 5 | |
| 2,4-Dinitrotoluene | BDL | ug/L | 5 | |
| 2,6-Dinitrotoluene | BDL | ug/L | 5 | |
| 1,2-Diphenylhydrazine | BDL | ug/L | 5 | |
| Fluoranthene | BDL | ug/L | 5 | |
| Fluorene | BDL | ug/L | 5 | |
| Hexachlorobenzene | BDL | ug/L | 5 | |
| Hexachlorobutadiene | BDL | ug/L | 5 | |
| Hexachlorocyclopentadiene | BDL | ug/L | 10 | |
| Hexachloroethane | BDL | ug/L | 5 | |
| Indeno[1,2,3-cd]pyrene | BDL | ug/L | 5 | |
| Isophorone | BDL | ug/L | 10 | |
| Naphthalene | BDL | ug/L | 10 | |

Approved by : _____
Jerry Dees, Laboratory Director

Date: 7/16/96
Report Generated



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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

## Analytical Report
### Priority Pollutant Pesticides by Method 8081

**Client:** ROICC
**Address:** 655 Industrial
NAS Pensacola, FL 32508
**Phone #:** not submitted
**Contact:** Frostie White

**Lab Report Number:** 62780
**Sample Date:** 06/27/96
**Received Date:** 06/27/96
**Sample Site:** NASP Pier 303
**Job Order No.:** 130 4124

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 62780 | | | |
| Sample Name / Location | M/H 31-W | | | |
| Collector's Name | P. Keane | | | |
| Date & Time Collected | 06/27/96 @ 1455 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 06/26/96 - BJ | | | |
| Date of Analysis | 07/01/96 & 07/09/96 | | | |
| Sample Matrix | Water | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 62780 | units | Det. Limit | Flags |
| Aldrin | 0.050 | ug/L | 0.022 | N |
| alpha-BHC | BDL | ug/L | 0.008 | |
| beta-BHC | BDL | ug/L | 0.045 | |
| gamma-BHC (Lindane) | BDL | ug/L | 0.008 | |
| delta-BHC | BDL | ug/L | 0.012 | |
| Chlordane | BDL | ug/L | 0.580 | |
| 4,4'-DDD | BDL | ug/L | 0.022 | |
| 4,4'-DDE | BDL | ug/L | 0.022 | |
| 4,4'-DDT | BDL | ug/L | 0.035 | |
| Dieldrin | BDL | ug/L | 0.019 | |
| Endosulfan I | BDL | ug/L | 0.011 | |
| Endosulfan II | BDL | ug/L | 0.025 | |
| Endosulfan sulfate | BDL | ug/L | 0.021 | |
| Endrin | BDL | ug/L | 0.021 | |
| Endrin aldehyde | BDL | ug/L | 0.014 | |
| Heptachlor | 0.070 | ug/L | 0.008 | N |
| Heptachlor epoxide | BDL | ug/L | 0.008 | |
| PCB-1016 | BDL | ug/L | 1.50 | |
| PCB-1221 | BDL | ug/L | 4.50 | |
| PCB-1232 | BDL | ug/L | 4.50 | |
| PCB-1242 | BDL | ug/L | 1.30 | |
| PCB-1248 | BDL | ug/L | 2.10 | |
| PCB-1254 | BDL | ug/L | 0.78 | |
| PCB-1260 | BDL | ug/L | 0.56 | |
| Toxaphene | BDL | ug/L | 1.20 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetrachloro-m-xylene | 60-140 | 92 |
| Decachlorobiphenyl | 60-140 | 91 |

**Explanation of Flags:** N = Presumptive evidence of presence of material. The presence of the analyte is indicated, but there is evidence of possible interferences

**COMMENTS :**

**Approved by :** _____
Jerry Dees, Laboratory Director

**Date:** 7/16/96
Report Generated



End of Report

D-11

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 63900
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63900 |
| Sample Name / Location | MW-1<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1000 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63900 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 95 |
| Toluene-d8 | 86-119 | 97 |
| Bromoflourobenzene | 85-116 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

D-12

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
Report Generated

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63900
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63900 | | | |
| Sample Name / Location | MW-1<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 09/11/96 JJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63900 | units | MDL | Flags |
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | BDL | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 5 | |
| 2-Methylnaphthalene | BDL | ug/L | 7 | |
| Naphthalene | BDL | ug/L | 7 | |
| Phenanthrene | BDL | ug/L | 3 | |
| Pyrene | BDL | ug/L | 3 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 86 |
| 2-Flourobiphenyl | 43-116 | 85 |
| Terphenyl -d14 | 33-141 | 91 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
Report Generated

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-4728
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 63900
**Sample Date:** 09/10/96
**Received Date:** 09/11/96
**Sample Site:** NAS Site 20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63900 | | | |
| Sample Name / Location | MW-1<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63900 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 92 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
Report Generated
Page 1 of 1 End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-4728 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 63900 |
| Sample Date: | 09/10/96 |
| Received Date: | 09/11/96 |
| Sample Site: | NAS Site 20 |
| Job Order No.: | 130 5001 |

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63900 | | |
| Sample Name / Location | MW-1<br>Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ 1000 | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/18/96 | | |
| Sample Matrix | Groundwater | | |
| Dilution | | x | 1 |
| **Parameter** | **1- 63900** | **units** | **MDL** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 74 |
| Nonatriacontane (C-39) | 42-193 * | 86 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/25/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 63901
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63901 |
| Sample Name / Location | MW-3<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1030 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63901 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 96 |
| Toluene-d8 | 86-119 | 100 |
| Bromoflourobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
Report Generated

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63901
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63901 | | | |
| Sample Name / Location | MW-3<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 09/11/96 JJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63901 | units | MDL | Flags |
| Acenaphthene | 23 | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | BDL | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 5 | |
| 2-Methylnaphthalene | BDL | ug/L | 7 | |
| Naphthalene | BDL | ug/L | 7 | |
| Phenanthrene | BDL | ug/L | 3 | |
| Pyrene | BDL | ug/L | 3 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 83 |
| 2-Flourobiphenyl | 43-116 | 83 |
| Terphenyl -d14 | 33-141 | 90 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
Report Generated
Page 1 of 1 End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 63901
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63901 | | | |
| Sample Name / Location | MW-3<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63901 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 112 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
Report Generated
Page 1 of 1 End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 63901
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63901 | | |
| Sample Name / Location | MW-3<br>Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ 1030 | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/18/96 | | |
| Sample Matrix | Groundwater | | |
| Dilution | x 1 | | |
| **Parameter** | **1- 63901** | **units** | **MDL** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 81 |
| Nonatriacontane (C-39) | 42-193 * | 103 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/25/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 63902
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63902 |
| Sample Name / Location | MW-4<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63902 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 95 |
| Toluene-d8 | 86-119 | 101 |
| Bromoflourobenzene | 85-116 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63902
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63902 |
| Sample Name / Location | MW-4<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 09/11/96 JJ |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63902 | units | MDL | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | 8 | ug/L | 2 | |
| Flourene | 14 | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 540 | ug/L | 25 | |
| 2-Methylnaphthalene | 580 | ug/L | 35 | |
| Naphthalene | 330 | ug/L | 35 | |
| Phenanthrene | 11 | ug/L | 3 | |
| Pyrene | 10 | ug/L | 3 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 91 |
| 2-Flourobiphenyl | 43-116 | 49 |
| Terphenyl -d14 | 33-141 | 84 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/26/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 63902
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63902 | | | |
| Sample Name / Location | MW-4<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63902 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 78 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Does, Laboratory Director

Date: 9/26/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 |
| | NAS Pensacola,FL 32508 |
| Phone #: | 452-4728 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 63902 |
| Sample Date: | 09/10/96 |
| Received Date: | 09/11/96 |
| Sample Site: | NAS Site 20 |
| Job Order No.: | 130 5001 |

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63902 | | |
| Sample Name / Location | MW-4<br>Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ 1100 | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/18/96, 09/19/96, 09/20/96 | | |
| Sample Matrix | Groundwater | | |
| Dilution | | x | 5 |
| Parameter | 1- 63902 | units | MDL |
| Petroleum Range Organics by FLPRO | 54 | mg/L | 1.25 |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 69 |
| Nonatriacontane (C-39) | 42-193 * | 67 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/25/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 63895
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63895 |
| Sample Name / Location | MW-5<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1130 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63895 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 99 |
| Toluene-d8 | 86-119 | 101 |
| Bromoflourobenzene | 85-116 | 97 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

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Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63895
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63895 | | | |
| Sample Name / Location | MW-5<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 09/11/96 JJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63895 | units | MDL | Flags |
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | BDL | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 5 | |
| 2-Methylnaphthalene | BDL | ug/L | 7 | |
| Naphthalene | BDL | ug/L | 7 | |
| Phenanthrene | BDL | ug/L | 3 | |
| Pyrene | BDL | ug/L | 3 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 82 |
| 2-Flourobiphenyl | 43-116 | 81 |
| Terphenyl -d14 | 33-141 | 90 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 63895
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63895 | | | |
| Sample Name / Location | MW-5<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63895 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 89 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-4728 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 63895 |
| Sample Date: | 09/10/96 |
| Received Date: | 09/11/96 |
| Sample Site: | NAS Site 20 |
| Job Order No.: | 130 5001 |

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63895 | | |
| Sample Name / Location | MW-5<br>Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ 1130 | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/18/96 | | |
| Sample Matrix | Groundwater | | |
| Dilution | x 1 | | |
| Parameter | 1- 63895 | units | MDL |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 86 |
| Nonatriacontane (C-39) | 42-193 * | 106 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/25/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 63896
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63896 |
| Sample Name / Location | MW-6<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1200 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63896 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 100 |
| Toluene-d8 | 86-119 | 98 |
| Bromoflourobenzene | 85-116 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

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Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63896
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63896 | | | |
| Sample Name / Location | MW-6<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 09/11/96 JJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | | X | 1 | |
| Compound Name | 1- 63896 | units | MDL | Flags |
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | BDL | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 5 | |
| 2-Methylnaphthalene | BDL | ug/L | 7 | |
| Naphthalene | BDL | ug/L | 7 | |
| Phenanthrene | BDL | ug/L | 3 | |
| Pyrene | BDL | ug/L | 3 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 81 |
| 2-Flourobiphenyl | 43-116 | 80 |
| Terphenyl -d14 | 33-141 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-4728
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 63896
**Sample Date:** 09/10/96
**Received Date:** 09/11/96
**Sample Site:** NAS Site 20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63896 | | | |
| Sample Name / Location | MW-6<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63896 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 94 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Deus, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 63896
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63896 | | |
| Sample Name / Location | MW-6<br>Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ 1200 | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/18/96 | | |
| Sample Matrix | Groundwater | | |
| Dilution | x 1 | | |
| Parameter | 1- 63896 | units | MDL |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 87 |
| Nonatriacontane (C-39) | 42-193 * | 106 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/25/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 63898
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63898 |
| Sample Name / Location | MW-7<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1230 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63898 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | 2 | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | 37 | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 98 |
| Toluene-d8 | 86-119 | 103 |
| Bromoflourobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

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Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63898
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63898 | | | |
| Sample Name / Location | MW-7<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1230 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 09/11/96 JJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | | X | 1 | |
| Compound Name | 1- 63898 | units | MDL | Flags |
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | 5 | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 220 | ug/L | 25 | |
| 2-Methylnaphthalene | 300 | ug/L | 35 | |
| Naphthalene | 225 | ug/L | 35 | |
| Phenanthrene | BDL | ug/L | 3 | |
| Pyrene | BDL | ug/L | 3 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 97 |
| 2-Flourobiphenyl | 43-116 | 66 |
| Terphenyl -d14 | 33-141 | 89 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 63898
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63898 | | | |
| Sample Name / Location | MW-7<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1230 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63898 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 85 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 |
| | NAS Pensacola,FL 32508 |
| Phone #: | 452-4728 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 63898 |
| Sample Date: | 09/10/96 |
| Received Date: | 09/11/96 |
| Sample Site: | NAS Site 20 |
| Job Order No.: | 130 5001 |

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63898 | | |
| Sample Name / Location | MW-7<br>Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ 1230 | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/18/96 | | |
| Sample Matrix | Groundwater | | |
| Dilution | | x | 1 |
| Parameter | 1- 63898 | units | MDL |
| Petroleum Range Organics by FLPRO | 11 | mg/L | 0.25 |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 93 |
| Nonatriacontane (C-39) | 42-193 * | 101 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/25/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 63903
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63903 |
| Sample Name / Location | MW-9<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1300 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63903 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 87 |
| Toluene-d8 | 86-119 | 100 |
| Bromoflourobenzene | 85-116 | 92 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

D-36

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63903
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63903 |
| Sample Name / Location | MW-9<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1300 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 09/11/96 JJ |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63903 | units | MDL | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,I)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | BDL | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 28 | ug/L | 5 | |
| 2-Methylnaphthalene | 37 | ug/L | 7 | |
| Naphthalene | BDL | ug/L | 7 | |
| Phenanthrene | BDL | ug/L | 3 | |
| Pyrene | BDL | ug/L | 3 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 63 |
| 2-Flourobiphenyl | 43-116 | 56 |
| Terphenyl -d14 | 33-141 | 75 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/26/96
Report Generated

# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-4728
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 63903
**Sample Date:** 09/10/96
**Received Date:** 09/11/96
**Sample Site:** NAS Site 20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63903 | | | |
| Sample Name / Location | MW-9<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1300 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63903 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 83 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-4728 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 63903 |
| Sample Date: | 09/10/96 |
| Received Date: | 09/11/96 |
| Sample Site: | NAS Site 20 |
| Job Order No.: | 130 5001 |

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63903 | | |
| Sample Name / Location | MW-9<br>Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ 1300 | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/19/96 | | |
| Sample Matrix | Groundwater | | |
| Dilution | | x | 1 |
| Parameter | 1- 63903 | units | MDL |
| Petroleum Range Organics by FLPRO | 0.6 | mg/L | 0.25 |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 56 |
| Nonatriacontane (C-39) | 42-193 * | 68 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Millgram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/26/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 63904
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63904 |
| Sample Name / Location | MW-10<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1330 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63904 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 80 |
| Toluene-d8 | 86-119 | 98 |
| Bromoflourobenzene | 85-116 | 89 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

D-40

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63904
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63904 |
| Sample Name / Location | MW-10<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 1330 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 09/11/96 JJ |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63904 | units | MDL | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | BDL | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 7 | ug/L | 5 | |
| 2-Methylnaphthalene | BDL | ug/L | 7 | |
| Naphthalene | BDL | ug/L | 7 | |
| Phenanthrene | BDL | ug/L | 3 | |
| Pyrene | BDL | ug/L | 3 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 81 |
| 2-Flourobiphenyl | 43-116 | 80 |
| Terphenyl -d14 | 33-141 | 80 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/26/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 63904
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63904 | | | |
| Sample Name / Location | MW-10<br>Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 1330 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63904 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 69 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Deex, Laboratory Director

Date: 9/18/96
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Page 1 of 1 End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 NAS Pensacola,FL 32508 |
| Phone #: | 452-4728 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 63904 |
| Sample Date: | 09/10/96 |
| Received Date: | 09/11/96 |
| Sample Site: | NAS Site 20 |
| Job Order No.: | 130 5001 |

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63904 | | |
| Sample Name / Location | MW-10 Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ 1330 | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/19/96 | | |
| Sample Matrix | Groundwater | | |
| Dilution | x 1 | | |
| Parameter | 1- 63904 | units | MDL |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 62 |
| Nonatriacontane (C-39) | 42-193 * | 67 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/25/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 63905
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63905 |
| Sample Name / Location | Trip Blank<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ A.M. |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Deionized Water |
| Dilution | X 1 |

| Compound Name | 1- 63905 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 94 |
| Toluene-d8 | 86-119 | 101 |
| Bromoflourobenzene | 85-116 | 98 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

D-44

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 63899
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63899 |
| Sample Name / Location | Equipment Blank<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ 0945 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Deionized Water |
| Dilution | X 1 |

| Compound Name | 1- 63899 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | 1 | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 96 |
| Toluene-d8 | 86-119 | 100 |
| Bromoflourobenzene | 85-116 | 97 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

D-45

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63899
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63899 | | | |
| Sample Name / Location | Equipment Blank Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 0945 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 09/11/96 JJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Deionized Water | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63899 | units | MDL | Flags |
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | BDL | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 5 | |
| 2-Methylnaphthalene | BDL | ug/L | 7 | |
| Naphthalene | BDL | ug/L | 7 | |
| Phenanthrene | BDL | ug/L | 3 | |
| Pyrene | BDL | ug/L | 3 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 83 |
| 2-Flourobiphenyl | 43-116 | 85 |
| Terphenyl -d14 | 33-141 | 103 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
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# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-4728
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 63899
**Sample Date:** 09/10/96
**Received Date:** 09/11/96
**Sample Site:** NAS Site 20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63899 | | | |
| Sample Name / Location | Equipment Blank Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ 0945 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Deionized Water | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63899 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 90 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
Report Generated
Page 1 of 1 End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-4728
**Contact:** Greg Campbell

## Analytical Report
### Petroleum Range Organics by FLPRO

**Lab Report Number:** 63899
**Sample Date:** 09/10/96
**Received Date:** 09/11/96
**Sample Site:** NAS Site 20
**Job Order No.:** 130 5001

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63899 | | |
| Sample Name / Location | Equipment Blank<br>Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ 0945 | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/18/96 | | |
| Sample Matrix | Deionized Water | | |
| Dilution | x 1 | | |
| Parameter | 1- 63899 | units | MDL |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 77 |
| Nonatriacontane (C-39) | 42-193 * | 107 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Millgram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/25/96

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 63897
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **63897** |
| Sample Name / Location | Duplicate<br>Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ N/S |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 09/16/96 JM |
| Date of Analysis | 09/16/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63897 | units | MDL | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 5 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodiflouromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 5 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 5 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichloroflouromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 97 |
| Toluene-d8 | 86-119 | 101 |
| Bromoflourobenzene | 85-116 | 98 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

D-49

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
Report Generated

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 63897
Sample Date: 09/10/96
Received Date: 09/11/96
Sample Site: NAS Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 63897 |
| Sample Name / Location | Duplicate Site 20 |
| Collector's Name | P. J. Brown |
| Date & Time Collected | 09/10/96 @ N/S |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 09/11/96 JJ |
| Date of Analysis | 09/13/96 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 63897 | units | MDL | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 5 | |
| Acenaphthylene | BDL | ug/L | 5 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 3 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 4 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 3 | |
| Benzo(k)flouranthene | BDL | ug/L | 4 | |
| Chrysene | BDL | ug/L | 3 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 3 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | BDL | ug/L | 4 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 5 | |
| 2-Methylnaphthalene | BDL | ug/L | 7 | |
| Naphthalene | BDL | ug/L | 7 | |
| Phenanthrene | BDL | ug/L | 3 | |
| Pyrene | BDL | ug/L | 3 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 82 |
| 2-Flourobiphenyl | 43-116 | 79 |
| Terphenyl -d14 | 33-141 | 92 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Does, Laboratory Director

Date: 9/18/96
Report Generated

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-4728
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 63897
**Sample Date:** 09/10/96
**Received Date:** 09/11/96
**Sample Site:** NAS Site 20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 63897 | | | |
| Sample Name / Location | Duplicate Site 20 | | | |
| Collector's Name | P. J. Brown | | | |
| Date & Time Collected | 09/10/96 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | B. Jacquart | | | |
| Date of Extraction / Initials | 09/13/96 BJ | | | |
| Date of Analysis | 09/13/96 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 63897 | units | MDL | Flags |
| Ethylene Dibromide (EDB) | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/18/96
Report Generated
Page 1 of 1 End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-4728
**Contact:** Greg Campbell

**Lab Report Number:** 63897
**Sample Date:** 09/10/96
**Received Date:** 09/11/96
**Sample Site:** NAS Site 20
**Job Order No.:** 130 5001

| | | | |
|---|---|---|---|
| LAB Sample ID# | 1- 63897 | | |
| Sample Name / Location | Duplicate Site 20 | | |
| Collector's Name | P. J. Brown | | |
| Date & Time Collected | 09/10/96 @ N/S | | |
| Sample Type (composite or grab) | Grab | | |
| Analyst | J. Moore | | |
| Date of extraction / Initials | 09/12/96 JJ | | |
| Date of Analysis | 09/18/96 | | |
| Sample Matrix | Groundwater | | |
| Dilution | | x | 1 |
| Parameter | 1- 63897 | units | MDL |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 82 |
| Nonatriacontane (C-39) | 42-193 * | 95 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by : Jerry Dees, Laboratory Director

Date: 9/25/96

2 of 3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, FL 32508-6500

Ph#-(904)452-4726
Autovon-922-4726

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 9.10.96
Received Date: 9.11.96
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 6-3899 | #2- 6-3900 | #3- 6-3901 | #4- 6-3902 |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | EQ. BLANK | MW-1 | MW-3 | MW-4 |
| Sampled by | ---------- | PJB | PJB | PJB | PJB |
| Composite Date/Time Collected | Begin / Frequency / End | | | | |
| Grab Time | ---------- | 0945 | 1000 | 1030 | 1100 |
| Sample Matrix | ---------- | DI | GW | GW | GW |

Notes: K.A.b. (Less Pb)

| PARAMETER by Method Name | METHOD # | #1 X | #1 Bottle ID #'s | #2 X | #2 Bottle ID #'s | #3 X | #3 Bottle ID #'s | #4 X | #4 Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 2 PAH | X | 3 PAH | | 1Lx3/4 oz. | 4° C/None |
| **PARAMETER by Group Name** | **METHOD SOURCE** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **Billing Units** | **Containers Required** | **Preservative(s) Used** |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL ~~EPA 418.1~~ PRO | X | 2 TPH | X | 2 TPH | X | 2 TPH | X | 3 TPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 9.11.96 / 0915

Received by: [signature]
Date/Time: 9/11/96 0920

PWC 9510/6

1 of 3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-5500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305 001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 9.10.96
Received Date: 9.11.96
Sample Site: NAS ZO
Lab Due Date:

| Sample ID # | Lab | #1- 6-3895 | | #2- 6-3896 | | #3- 6-3897 | | #4- 6-3898 | | Notes: |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Name or Location | ---------- | MW-5 | | MW-6 | | Duplicate | | MW-7 | | |
| Sampled by | ---------- | PJB | | PJB | | PJB | | PJB | | K.A.G (Less Pb) |
| Composite Date/Time Collected | Begin / Frequency / End | | | | | | | | | |
| Grab Time | ---------- | 1130 | | 1200 | | — | | 1230 | | |
| Sample Matrix | ---------- | GW | | GW | | GW | | GW | | |
| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units / Containers Required / Preservative(s) Used |
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 / 120ml A VOA/4 oz. / None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 / 40 ml VOA Vial x 2 / HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 / 40 ml VOA Vial x 2 / HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 6 / 40 ml VOA Vial x 2 / HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 / 1L Amber x 2 / 4° C |
| Pesticides/GCMS | EPA 624 | | | | | | | | | 8 / 40 ml VOA Vial x 2 / HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 / 1L Amber x 2 / 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 / 40mlx2/1Lx2/4 oz. / HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 / 40ml VOAx2/4 oz. / HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 / 40mlx2/1Lx2/4 oz. / HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 / 40ml VOAx2/4 oz. / HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 / 40ml VOAx2/4 oz. / HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 / 1Lx2/4 oz. / 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 / 40ml VOAx2/4 oz. / HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 / 40ml VOAx2/4 oz. / HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 / 1Lx3/4 oz. / 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 2 PAH | X | 2 PAH | 1Lx3/4 oz. / 4° C/None |
| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units / Containers Required / Preservative(s) Used |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | Consult Lab / Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | Consult Lab / Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | Consult Lab / Consult Lab |
| Total Petroleum Hydrocarbons | FL ~~EPA 418.1~~ PRO | X | 2 TPH | X | 2 TPH | X | 2 TPH | X | 2 TPH | Consult Lab / Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | Consult Lab / Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | Consult Lab / Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | 250ml/4 oz. / $HNO_3$/None |
| Other: | | | | | | | | | | |

Comments:

Relinquished by: Patrick J. Bu / WES, Inc.
Date/Time: 9.11.96 / 0915

Received by: R Regan
Date/Time: 9/11/96 0920

PWC 9510/8

3 of 3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500

Ph#-(904)452-4726
Autovon-922-4726

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 9.10.96
Received Date: 9.11.96
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 6-3903 | #2- 6-3904 | #3- 6-3905 | #4- |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | MW-9 | MW-10 | Trip BLANK | |
| Sampled by | ---------- | RJB | RJB | RJB | |
| Composite Date/Time Collected | Begin / Frequency / End | ↓ | ↓ | ↓ | |
| Grab Time | ---------- | 1300 | 1330 | AM | |
| Sample Matrix | ---------- | GW | GW | DI | |

Notes: K.A.G. (LESS PD)

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 3 VOA | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | | | | | | 1Lx3/4 oz. | 4° C/None |
| **PARAMETER by Group Name** | **METHOD SOURCE** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **Billing Units** | **Containers Required** | **Preservative(s) Used** |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL ~~EPA 418.1~~ PPD | X | 2 TPH | X | 2 TPH | | | | | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 9.11.96 / 0915

Received by: [signature]
Date/Time: 9/11/96 0920

PWC 9510/6

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola, FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

**Lab Report Number:** 64493
**Sample Date:** 11/06/96
**Received Date:** 11/07/96
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64493 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 0900 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 11/12/96 JM | | | |
| Date of Analysis | 11/12/96 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64493 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 104 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated

D-56



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

# Analytical Report
## 610 PAH's by Method 8270

Lab Report Number: 64493
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64493 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 0900 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/12/96 JJ | | | |
| Date of Analysis | 11/13/96 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64493 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 58 |
| 2-Fluorobiphenyl | 43-116 | 62 |
| Terphenyl -d14 | 33-141 | 83 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated

D-57



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola, FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report

## Ethylene Dibromide by Method 504

**Lab Report Number:** 64493
**Sample Date:** 11/06/96
**Received Date:** 11/07/96
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64493 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 0900 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/20/96 MC | | | |
| Date of Analysis | 11/20/96 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64493 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 108 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96
Report Generated

D-58



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 64493
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64493 | | | |
| Sample Name / Location | NAS 20<br>Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 0900 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 11/15/96 JM | | | |
| Date of Analysis | 11/15/96 | | | |
| Sample Matrix | DI | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 64493 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 81 |
| Nonatriacontane (C-39) | 42-193 * | 66 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96

D-59



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 64494
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 64494 |
| Sample Name / Location | NAS 20<br>MW-13 |
| Collector's Name | PJB |
| Date & Time Collected | 11/06/96 @ 0930 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 11/13/96 JM |
| Date of Analysis | 11/13/96 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 64494 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 106 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-60

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 64494
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64494 | | | |
| Sample Name / Location | NAS 20 MW-13 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/12/96 JJ | | | |
| Date of Analysis | 11/13/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64494 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 59 |
| 2-Fluorobiphenyl | 43-116 | 63 |
| Terphenyl -d14 | 33-141 | 81 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated

D-61



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 64494
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64494 | | | |
| Sample Name / Location | NAS 20 MW-13 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/20/96 MC | | | |
| Date of Analysis | 11/20/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64494 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 98 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96
Report Generated

D-62



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola, FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 64494 |
| Sample Date: | 11/06/96 |
| Received Date: | 11/07/96 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64494 | | | |
| Sample Name / Location | NAS 20<br>MW-13 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 11/15/96 JM | | | |
| Date of Analysis | 11/15/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 64494 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 76 |
| Nonatriacontane (C-39) | 42-193 * | 77 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96

D-63



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 64495
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64495 | | | |
| Sample Name / Location | NAS 20 MW-14 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 11/13/96 JM | | | |
| Date of Analysis | 11/13/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64495 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 109 |
| Toluene-d8 | 86-119 | 102 |
| Bromofluorobenzene | 85-116 | 98 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

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Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 64495
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64495 | | | |
| Sample Name / Location | NAS 20 MW-14 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/12/96 JJ | | | |
| Date of Analysis | 11/13/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64495 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 68 |
| 2-Fluorobiphenyl | 43-116 | 72 |
| Terphenyl -d14 | 33-141 | 72 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 64495
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64495 | | | |
| Sample Name / Location | NAS 20 MW-14 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/20/96 MC | | | |
| Date of Analysis | 11/20/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64495 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

## Analytical Report
### Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 |
| | NAS Pensacola, FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 64495 |
| Sample Date: | 11/06/96 |
| Received Date: | 11/07/96 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64495 | | | |
| Sample Name / Location | NAS 20 MW-14 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 11/15/96 JM | | | |
| Date of Analysis | 11/15/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 64495 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 79 |
| Nonatriacontane (C-39) | 42-193 * | 82 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 64496
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 64496 |
| Sample Name / Location | NAS 20<br>MW-15 |
| Collector's Name | PJB |
| Date & Time Collected | 11/06/96 @ 1030 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 11/13/96 JM |
| Date of Analysis | 11/13/96 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 64496 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 107 |
| Toluene-d8 | 86-119 | 102 |
| Bromofluorobenzene | 85-116 | 103 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

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Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola, FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

**Lab Report Number:** 64496
**Sample Date:** 11/06/96
**Received Date:** 11/07/96
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64496 | | | |
| Sample Name / Location | NAS 20 MW-15 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/12/96 JJ | | | |
| Date of Analysis | 11/13/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64496 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 67 |
| 2-Fluorobiphenyl | 43-116 | 71 |
| Terphenyl -d14 | 33-141 | 74 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 64496
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64496 | | | |
| Sample Name / Location | NAS 20 MW-15 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/20/96 MC | | | |
| Date of Analysis | 11/20/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64496 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 85 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Deer, Laboratory Director

Date: 11/21/96
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

## Analytical Report
### Petroleum Range Organics by FLPRO

| | | | |
|---|---|---|---|
| Client: | NPWC Environmental | Lab Report Number: | 64496 |
| Address: | Bldg. 3887, Code 910 | Sample Date: | 11/06/96 |
| | NAS Pensacola, FL 32508 | Received Date: | 11/07/96 |
| Phone #: | 452-3180 | Sample Site: | NAS Pensacola, FL |
| Contact: | Greg Campbell | Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64496 | | | |
| Sample Name / Location | NAS 20 MW-15 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 11/15/96 JM | | | |
| Date of Analysis | 11/15/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 64496 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 81 |
| Nonatriacontane (C-39) | 42-193 * | 82 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 64497
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 64497 |
| Sample Name / Location | NAS 20<br>MW-16 |
| Collector's Name | PJB |
| Date & Time Collected | 11/06/96 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 11/13/96 JM |
| Date of Analysis | 11/13/96 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 64497 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 106 |
| Toluene-d8 | 86-119 | 102 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

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Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 64497
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64497 | | | |
| Sample Name / Location | NAS 20 MW-16 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/12/96 JJ | | | |
| Date of Analysis | 11/13/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64497 | units | Det. Limit | Flags |
| Acenaphthene | 6 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 4 | ug/L | 2 | |
| 2-Methylnaphthalene | 3 | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 80 |
| 2-Fluorobiphenyl | 43-116 | 87 |
| Terphenyl -d14 | 33-141 | 90 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 64497
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64497 | | | |
| Sample Name / Location | NAS 20 MW-16 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/20/96 MC | | | |
| Date of Analysis | 11/20/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64497 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 82 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96
Report Generated

D-74



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 64497
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64497 | | | |
| Sample Name / Location | NAS 20 MW-16 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 11/15/96 JM | | | |
| Date of Analysis | 11/15/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 64497 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 0.66 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 83 |
| Nonatriacontane (C-39) | 42-193 * | 84 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96

D-75



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 64498
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 64498 |
| Sample Name / Location | NAS 20 MW-17 |
| Collector's Name | PJB |
| Date & Time Collected | 11/06/96 @ 1130 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 11/13/96 JM |
| Date of Analysis | 11/13/96 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 64498 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 108 |
| Toluene-d8 | 86-119 | 102 |
| Bromofluorobenzene | 85-116 | 101 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

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Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola, FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 64498
**Sample Date:** 11/06/96
**Received Date:** 11/07/96
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64498 | | | |
| Sample Name / Location | NAS 20 MW-17 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/12/96 JJ | | | |
| Date of Analysis | 11/13/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64498 | units | Det. Limit | Flags |
| Acenaphthene | 4 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | 2 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 54 | ug/L | 2 | |
| 2-Methylnaphthalene | 42 | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 78 |
| 2-Fluorobiphenyl | 43-116 | 68 |
| Terphenyl -d14 | 33-141 | 71 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96
Report Generated

D-77



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 64498
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64498 | | | |
| Sample Name / Location | NAS 20 MW-17 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/20/96 MC | | | |
| Date of Analysis | 11/20/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64498 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 69 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola, FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 64498
**Sample Date:** 11/06/96
**Received Date:** 11/07/96
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64498 | | | |
| Sample Name / Location | NAS 20 MW-17 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 11/15/96, 11/18/96 JM | | | |
| Date of Analysis | 11/15/96, 11/18/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 40 | | | |
| Parameter | 1- 64498 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 42 | mg/L | 10 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 75 |
| Nonatriacontane (C-39) | 42-193 * | 67 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola, FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

**Lab Report Number:** 64499
**Sample Date:** 11/06/96
**Received Date:** 11/07/96
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 64499 |
| Sample Name / Location | NAS 20<br>MW-18 |
| Collector's Name | PJB |
| Date & Time Collected | 11/06/96 @ 1200 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 11/13/96 JM |
| Date of Analysis | 11/13/96 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 64499 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 108 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-80

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 64499
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64499 | | | |
| Sample Name / Location | NAS 20 MW-18 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/12/96 JJ | | | |
| Date of Analysis | 11/13/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64499 | units | Det. Limit | Flags |
| Acenaphthene | 16 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | 5 | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | 7 | ug/L | 2 | |
| Fluorene | 16 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 415 | ug/L | 20 | |
| 2-Methylnaphthalene | 500 | ug/L | 30 | |
| Naphthalene | 320 | ug/L | 20 | |
| Phenanthrene | 14 | ug/L | 2 | |
| Pyrene | 7 | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 81 |
| 2-Fluorobiphenyl | 43-116 | 62 |
| Terphenyl -d14 | 33-141 | 80 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola, FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 64499
**Sample Date:** 11/06/96
**Received Date:** 11/07/96
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64499 | | | |
| Sample Name / Location | NAS 20 MW-18 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/20/96 MC | | | |
| Date of Analysis | 11/20/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64499 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 80 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 64499
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64499 | | | |
| Sample Name / Location | NAS 20 MW-18 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 11/15/96 JM | | | |
| Date of Analysis | 11/15/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 64499 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 10 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 79 |
| Nonatriacontane (C-39) | 42-193 * | 65 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 64500
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 64500 |
| Sample Name / Location | NAS 20 Duplicate |
| Collector's Name | PJB |
| Date & Time Collected | 11/06/96 @ N/S |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 11/13/96 JM |
| Date of Analysis | 11/13/96 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 64500 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 105 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 103 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-64

Approved by : Jerry Does, Laboratory Director

Date: 11/20/96
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 64500
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64500 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/12/96 JJ | | | |
| Date of Analysis | 11/13/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64500 | units | Det. Limit | Flags |
| Acenaphthene | 14 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | 4 | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | 7 | ug/L | 2 | |
| Fluorene | 16 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 375 | ug/L | 20 | |
| 2-Methylnaphthalene | 450 | ug/L | 30 | |
| Naphthalene | 290 | ug/L | 20 | |
| Phenanthrene | 12 | ug/L | 2 | |
| Pyrene | 7 | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene-d5 | 35-114 | 73 |
| 2-Fluorobiphenyl | 43-116 | 65 |
| Terphenyl -d14 | 33-141 | 75 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deas, Laboratory Director

Date: 11/20/96
Report Generated

D-85



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 64500
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64500 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 11/20/96 MC | | | |
| Date of Analysis | 11/20/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 64500 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 84 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96
Report Generated

D-86



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola, FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 64500
**Sample Date:** 11/06/96
**Received Date:** 11/07/96
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 64500 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 11/06/96 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 11/15/96 JM | | | |
| Date of Analysis | 11/15/96, 11/18/96 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 40 | | | |
| Parameter | 1- 64500 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 47 | mg/L | 10 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 72 |
| Nonatriacontane (C-39) | 42-193 * | 58 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 11/21/96

D-87



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 64501
Sample Date: 11/06/96
Received Date: 11/07/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 64501 |
| Sample Name / Location | NAS 20 Trip Blank |
| Collector's Name | PJB |
| Date & Time Collected | 11/06/96 @ AM |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 11/12/96 JM |
| Date of Analysis | 11/12/96 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 64501 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 105 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 11/20/96
Report Generated



End of Report

1.3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305100 1

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 11.01.96
Received Date: 11.07.96
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 64493 | #2- 64494 | #3- 64495 | #4- 64496 |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | EQ. Blank | MW-13 | MW-14 | MW-15 |
| Sampled by | ---------- | PJB | PJB | PJB | PJB |
| Composite Date/Time Collected | Begin / Frequency / End | | | | |
| Grab Time | ---------- | 0900 | 0930 | 1000 | 1030 |
| Sample Matrix | ---------- | DI | GW | GW | GW |

Notes: K.A.G. (Less Pb)

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1-10 | | 1-10 | | | | | | | |
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 3 PAH | X | 2 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4° C/None |
| **PARAMETER by Group Name** | **METHOD SOURCE** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **Billing Units** | **Containers Required** | **Preservative(s) Used** |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL ~~CRA 418.1~~ PRO | X | 2 TPH | X | 3 TPH | X | 2 TPH | X | 2 TPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 11.07.96 / 0930

Received by: [signature]
Date/Time: 11/7/96 0930

PWC 9510/6

Z.3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS


NPWC Environmental Laboratory
Bldg. 3397, Code 920
NAS Pensacola, FL 32508-6500

Ph#-(904)452-4728
Autovon-922-4728


Report Required? Yes No DEP? Yes No

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305 001

Lab ID Number:
Sample Date: 11.06.96
Received Date: 11.07.96
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 64497 | #2- 64498 | #3- 64499 | #4- 64500 |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | MW-16 | MW-17 | MW-18 | Duplicate |
| Sampled by | ---------- | PJB | PJB | PJB | PJB |
| Composite Date/Time Collected | Begin | | | | |
| | Frequency | | | | |
| | End | | | | |
| Grab Time | ---------- | 1100 | 1130 | 1200 | — |
| Sample Matrix | ---------- | GW | GW | GW | GW |

Notes: K.A.G. (Less Pb)

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 2 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL ~~EPA 418.1~~ Pro | X | 2 TPH | X | 2 TPH | X | 2 TPH | X | 2 TPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 11-07-96 / 0930

Received by: [signature]
Date/Time: 11/7/96 0930

D-90

PWC 9510/6

3.3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, FL 32508-6500
Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 11·06·96
Received Date: 11·07·96
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 64501 | #2- | #3- | #4- |
|---|---|---|---|---|---|
| Sample Name | ---------- | Trip Blank | | | |
| or Location | ---------- | | | | |
| Sampled by | ---------- | PJB | | | |
| Composite | Begin | | | | |
| Date/Time | Frequency | | | | |
| Collected | End | | | | |
| Grab Time | ---------- | AM | | | |
| Sample Matrix | ---------- | DI | | | |

Notes: K.A.G. Cross Pb

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCV4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCV4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 3 VOA | | | | | | | 6 | 40 ml VOA Vial x 2 | HCV4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCV4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: Patrick [illegible] / WES, Inc
Date/Time: 11.07.96 / 0930

Received by: [illegible]
Date/Time: 11/7/96 0930

PWC 9510/8

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 70632
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **70632** |
| Sample Name / Location | NAS 20<br>Eq. Blank |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ 0930 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/15/97 JM |
| Date of Analysis | 02/15/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 70632 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 102 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-92

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 70632
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **70632** |
| Sample Name / Location | NAS 20<br>Eq. Blank |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ 0930 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/13/97 JJ |
| Date of Analysis | 02/19/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 70632 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 81 |
| 2-Fluorobiphenyl | 43-116 | 91 |
| Terphenyl -d14 | 33-141 | 104 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### Ethylene Dibromide by Method 504

Lab Report Number: 70632
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70632 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/14/97 JM | | | |
| Date of Analysis | 02/14/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70632 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 63 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-94



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 70632
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70632 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 02/14/97 JJ | | | |
| Date of Analysis | 02/16/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 70632 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 74 |
| Nonatriacontane (C-39) | 42-193 * | 100 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97

D-95



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

**Lab Report Number:** 70633
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70633 | | | |
| Sample Name / Location | NAS 20<br>MW-20 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/15/97 JM | | | |
| Date of Analysis | 02/15/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70633 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 100 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 98 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-86

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

**Lab Report Number:** 70633
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70633 | | | |
| Sample Name / Location | NAS 20<br>MW-20 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/13/97 JJ | | | |
| Date of Analysis | 02/19/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70633 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 87 |
| 2-Fluorobiphenyl | 43-116 | 100 |
| Terphenyl -d14 | 33-141 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-97



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 70633
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70633 | | | |
| Sample Name / Location | NAS 20<br>MW-20 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/14/97 JM | | | |
| Date of Analysis | 02/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70633 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 84 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 70633
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70633 | | | |
| Sample Name / Location | NAS 20<br>MW-20 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 02/14/97 JJ | | | |
| Date of Analysis | 02/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| **Parameter** | **1- 70633** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 70 |
| Nonatriacontane (C-39) | 42-193 * | 89 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 70634
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70634 | | | |
| Sample Name / Location | NAS 20 MW-21 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/15/97 JM | | | |
| Date of Analysis | 02/15/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70634 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 101 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-100

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

**Lab Report Number:** 70634
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70634 | | | |
| Sample Name / Location | NAS 20 MW-21 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/13/97 JJ | | | |
| Date of Analysis | 02/19/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| **Compound Name** | **1- 70634** | **units** | **Det. Limit** | **Flags** |
| Acenaphthene | 67 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | 2 | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | 18 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 11 | ug/L | 2 | |
| 2-Methylnaphthalene | 7 | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | 4 | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 95 |
| 2-Fluorobiphenyl | 43-116 | 97 |
| Terphenyl -d14 | 33-141 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deds, Laboratory Director

Date: 2/25/97
Report Generated

D-101



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 70634
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70634 | | | |
| Sample Name / Location | NAS 20<br>MW-21 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/14/97 JM | | | |
| Date of Analysis | 02/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70634 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 65 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-102



End of Report

# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report

## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 70634 |
| Sample Date: | 02/11/97 |
| Received Date: | 02/12/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70634 | | | |
| Sample Name / Location | NAS 20<br>MW-21 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 02/14/97 JJ | | | |
| Date of Analysis | 02/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 70634 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 0.33 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 74 |
| Nonatriacontane (C-39) | 42-193 * | 95 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97

D-103



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 70635
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **70635** |
| Sample Name / Location | NAS 20<br>MW-22 |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ 1130 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/15/97 JM |
| Date of Analysis | 02/15/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 70635 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 102 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-104

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 70635
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **70635** |
| Sample Name / Location | NAS 20<br>MW-22 |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ 1130 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/13/97 JJ |
| Date of Analysis | 02/19/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 70635 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | 7 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | 2 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 94 |
| 2-Fluorobiphenyl | 43-116 | 102 |
| Terphenyl -d14 | 33-141 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-105



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 70635
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70635 | | | |
| Sample Name / Location | NAS 20 MW-22 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/14/97 JM | | | |
| Date of Analysis | 02/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70635 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 96 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-106



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 |
| | NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 70635 |
| Sample Date: | 02/11/97 |
| Received Date: | 02/12/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70635 | | | |
| Sample Name / Location | NAS 20 MW-22 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 02/14/97 JJ | | | |
| Date of Analysis | 02/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 70635 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 0.27 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 67 |
| Nonatriacontane (C-39) | 42-193 * | 84 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97

D-107



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 70636
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 70636 |
| Sample Name / Location | NAS 20 MW-23 |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ 1200 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/15/97 JM |
| Date of Analysis | 02/15/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 70636 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 101 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-108

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 70636
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **70636** |
| Sample Name / Location | NAS 20<br>MW-23 |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ 1200 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/13/97 JJ |
| Date of Analysis | 02/19/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 70636 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | 130 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | 17 | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | 7 | ug/L | 2 | |
| Fluorene | 86 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 81 | ug/L | 2 | |
| 2-Methylnaphthalene | 140 | ug/L | 3 | |
| Naphthalene | 490 | ug/L | 10 | |
| Phenanthrene | 81 | ug/L | 2 | |
| Pyrene | 4 | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 90 |
| 2-Fluorobiphenyl | 43-116 | 98 |
| Terphenyl -d14 | 33-141 | 89 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-109



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 70636
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70636 | | | |
| Sample Name / Location | NAS 20 MW-23 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/14/97 JM | | | |
| Date of Analysis | 02/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70636 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 65 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-110



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### Petroleum Range Organics by FLPRO

**Lab Report Number:** 70636
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70636 | | | |
| Sample Name / Location | NAS 20 MW-23 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 02/14/97 JJ | | | |
| Date of Analysis | 02/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 70636 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 1.13 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 69 |
| Nonatriacontane (C-39) | 42-193 * | 90 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97

D-111



End of Report

# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

**Lab Report Number:** 70637
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 70637 |
| Sample Name / Location | NAS 20<br>MW-24 |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ 1230 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/15/97 JM |
| Date of Analysis | 02/15/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 70637 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 105 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-12

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 70637
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70637 | | | |
| Sample Name / Location | NAS 20 MW-24 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1230 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/13/97 JJ | | | |
| Date of Analysis | 02/19/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70637 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 63 |
| 2-Fluorobiphenyl | 43-116 | 73 |
| Terphenyl -d14 | 33-141 | 68 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Does, Laboratory Director

Date: 2/25/97
Report Generated

D-113



End of Report

# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 70637
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70637 | | | |
| Sample Name / Location | NAS 20<br>MW-24 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1230 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/14/97 JM | | | |
| Date of Analysis | 02/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70637 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 90 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 70637
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70637 | | | |
| Sample Name / Location | NAS 20 MW-24 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1230 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 02/14/97 JJ | | | |
| Date of Analysis | 02/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| **Parameter** | **1- 70637** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 79 |
| Nonatriacontane (C-39) | 42-193 * | 110 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97

D-115



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 70638
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 70638 |
| Sample Name / Location | NAS 20<br>MW-25 |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ 1300 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/15/97 JM |
| Date of Analysis | 02/15/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 70638 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 104 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-116

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 70638
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70638 | | | |
| Sample Name / Location | NAS 20 MW-25 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1300 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/13/97 JJ | | | |
| Date of Analysis | 02/19/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70638 | units | Det. Limit | Flags |
| Acenaphthene | 6 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 78 |
| 2-Fluorobiphenyl | 43-116 | 87 |
| Terphenyl -d14 | 33-141 | 83 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-117



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 70638
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70638 | | | |
| Sample Name / Location | NAS 20 MW-25 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1300 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/14/97 JM | | | |
| Date of Analysis | 02/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70638 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 65 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-118



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 70638 |
| Sample Date: | 02/11/97 |
| Received Date: | 02/12/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70638 | | | |
| Sample Name / Location | NAS 20<br>MW-25 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1300 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 02/14/97 JJ | | | |
| Date of Analysis | 02/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 70638 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 76 |
| Nonatriacontane (C-39) | 42-193 * | 105 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 70639
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **70639** |
| Sample Name / Location | NAS 20<br>MW-26 |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ 1330 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/15/97 JM |
| Date of Analysis | 02/15/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 70639 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 99 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-120

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 70639
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70639 | | | |
| Sample Name / Location | NAS 20 MW-26 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1330 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/13/97 JJ | | | |
| Date of Analysis | 02/20/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70639 | units | Det. Limit | Flags |
| Acenaphthene | 4 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 87 |
| 2-Fluorobiphenyl | 43-116 | 95 |
| Terphenyl -d14 | 33-141 | 89 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-121

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 70639
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70639 | | | |
| Sample Name / Location | NAS 20 MW-26 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1330 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/14/97 JM | | | |
| Date of Analysis | 02/15/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70639 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 89 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-122



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 70639
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70639 | | | |
| Sample Name / Location | NAS 20 MW-26 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ 1330 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 02/14/97 JJ | | | |
| Date of Analysis | 02/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 70639 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 0.37 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 79 |
| Nonatriacontane (C-39) | 42-193 * | 102 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97

D-123



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 70640
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **70640** |
| Sample Name / Location | NAS 20 Duplicate |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ N/S |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/15/97 JM |
| Date of Analysis | 02/15/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 70640 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 100 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 101 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-124

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 70640
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70640 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/13/97 JJ | | | |
| Date of Analysis | 02/20/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70640 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 91 |
| 2-Fluorobiphenyl | 43-116 | 102 |
| Terphenyl -d14 | 33-141 | 97 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-125



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 70640
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70640 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 02/14/97 JM | | | |
| Date of Analysis | 02/15/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70640 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated

D-126



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 70640
**Sample Date:** 02/11/97
**Received Date:** 02/12/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70640 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 02/11/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 02/14/97 JJ | | | |
| Date of Analysis | 02/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 70640 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 63 |
| Nonatriacontane (C-39) | 42-193 * | 84 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97

D-127



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 70641
Sample Date: 02/11/97
Received Date: 02/12/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **70641** |
| Sample Name / Location | NAS 20<br>Trip Blank |
| Collector's Name | PJB |
| Date & Time Collected | 02/11/97 @ AM |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/15/97 JM |
| Date of Analysis | 02/15/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 70641 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 101 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 98 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-128

Approved by : Jerry Dees, Laboratory Director

Date: 2/25/97
Report Generated



End of Report

1·3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500

Ph#-(904)452-4726
Autovon-922-4726

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 2·11·97
Received Date: 2·12·97
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1-7-0632 | | #2-7-0633 | | #3-7-0634 | | #4-7-0635 | | Notes: | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Name or Location | ---------- | EQ. Blank | | MW-20 | | MW-21 | | MW-22 | | K.A.6. (Less Pb) | | |
| Sampled by | ---------- | AJB | | AJB | | AJB | | AJB | | | | |
| Composite Date/Time Collected | Begin | | | | | | | | | | | |
| | Frequency | | | | | | | | | | | |
| | End | | | | | | | | | | | |
| Grab Time | ---------- | 0930 | | 1030 | | 1100 | | 1130 | | | | |
| Sample Matrix | ---------- | DI | | GW | | GW | | GW | | | | |
| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4°C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCV/4°C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCV/4°C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 6 | 40 ml VOA Vial x 2 | HCV/4°C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4°C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCV/4°C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4°C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCV/4°C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCV/4°C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCV/4°C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCV/4°C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCV/4°C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4°C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV/4°C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV/4°C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4°C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 3 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4°C/None |
| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL ~~EPA 418.1~~ PVO | X | 2 TRPH | X | TRPH | X | 3 TRPH | X | 2 TRPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250mlV/4 oz. | 1HNO3/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] IWES, Inc.
Date/Time: 2·12·97 1125

Received by: [signature]
Date/Time: 2/12/97 1125

D-129

PWC 9510/6

2.3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 820
NAS Pensacola, FL 32508-6500

Ph# -(904) 452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305 001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 2.11.97
Received Date: 2.12.97
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 7-0636 | #2- 7-0637 | #3- 7-0638 | #4- 7-0639 |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | MW-23 | MW-24 | MW-25 | MW-26 |
| Sampled by | ---------- | RJB | RJB | RJB | RJB |
| Composite Date/Time Collected | Begin / Frequency / End | | | | |
| Grab Time | ---------- | 1200 | 1230 | 1300 | 1330 |
| Sample Matrix | ---------- | GW | GW | GW | GW |

Notes: K.A.G. (Less Pb)

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCV4° C |
| Purg Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCV4° C |
| Purg. Halo. & Aro /GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 8 | 40 ml VOA Vial x 2 | HCV4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCV4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Halo. Vol. Org /GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Non-Halo. Vol. Org /GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Arom. Vol. Org /GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Halo./Arom. Vol. Org /GC | EPA SW 8010/8020 | | | | | | | | | 5 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Semivol. Org. /GCMS-Cap. | EPA SW 8270A | | | | | | | | | 18 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 2 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4° C/None |
| **PARAMETER by Group Name** | **METHOD SOURCE** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **Billing Units** | **Containers Required** | **Preservative(s) Used** |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL EPA 418.1 Mod | X | 2 TRPH | X | 2 TRPH | X | 2 TRPH | X | 2 TRPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | HNO3/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 2.12.97 1125

Received by: [signature]
Date/Time: 2/12/97 1125

PWC 9510/8

D-130

3.3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, FL 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 130500

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 2.11.97
Received Date: 2.12.97
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 7-0640 | | #2- 7-0641 | | #3- | | #4- | | Notes: |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Name or Location | ---------- | Duplicate | | Trip Blank | | | | | | K.A.G. (Less DD) |
| Sampled by | ---------- | PJB | | PJB | | | | | | |
| Composite Date/Time Collected | Begin / Frequency / End | | | | | | | | | |
| Grab Time | ---------- | — | | AM | | | | | | |
| Sample Matrix | ---------- | GW | | DI | | | | | | |

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCV4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCV4° C |
| Halo. & Aro /GC | EPA 601/602 | X | 4 VOA | X | 2 VOA | | | | | 6 | 40 ml VOA Vial x 2 | HCV4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCV4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Halo. Vol. Org /GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Non-Halo. Vol. Org /GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Arom. Vol. Org /GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Halo./Arom. Vol. Org /GC | EPA SW 8010,8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Semivol. Org. /GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | | | | | | | | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | X | 2 TRPH | | | | | | | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250mlV4 oz. | HNO3/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 2.12.97 2/12/97 1125

Received by: [signature]
Date/Time: 2/12/97 1125

PWC 9510/8

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 70875
Sample Date: 02/27/97
Received Date: 02/28/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **70875** |
| Sample Name / Location | NAS 20<br>Eq. Blank |
| Collector's Name | SC |
| Date & Time Collected | 02/27/97 @ 1500 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/28/97 JM |
| Date of Analysis | 02/28/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 70875 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 96 |
| Toluene-d8 | 86-119 | 102 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-132

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 70875
**Sample Date:** 02/27/97
**Received Date:** 02/28/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70875 | | | |
| Sample Name / Location | NAS 20<br>Eq. Blank | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1500 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/04/97 JJ | | | |
| Date of Analysis | 03/05/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70875 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 74 |
| 2-Fluorobiphenyl | 43-116 | 88 |
| Terphenyl -d14 | 33-141 | 88 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

D-133

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 70875
Sample Date: 02/27/97
Received Date: 02/28/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70875 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1500 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/05/97 MC | | | |
| Date of Analysis | 03/05/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70875 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 104 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

D-134



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 70875
Sample Date: 02/27/97
Received Date: 02/28/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70875 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1500 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/06/97 JJ | | | |
| Date of Analysis | 03/09/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 70875 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 109 |
| Nonatriacontane (C-39) | 42-193 * | 100 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : _____ Date: 3/12/97
Jerry Dees, Laboratory Director

D-135



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 70876
Sample Date: 02/27/97
Received Date: 02/28/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70876 | | | |
| Sample Name / Location | NAS 20 MW-27 | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1530 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 03/01/97 JM | | | |
| Date of Analysis | 03/01/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70876 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | 1 | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 103 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-136

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

**Lab Report Number:** 70876
**Sample Date:** 02/27/97
**Received Date:** 02/28/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70876 | | | |
| Sample Name / Location | NAS 20 MW-27 | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1530 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/04/97 JJ | | | |
| Date of Analysis | 03/05/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70876 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 83 |
| 2-Fluorobiphenyl | 43-116 | 95 |
| Terphenyl -d14 | 33-141 | 75 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

D-137



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 70876
Sample Date: 02/27/97
Received Date: 02/28/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70876 | | | |
| Sample Name / Location | NAS 20 MW-27 | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1530 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/05/97 MC | | | |
| Date of Analysis | 03/05/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70876 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 88 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

D-138



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 70876
**Sample Date:** 02/27/97
**Received Date:** 02/28/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70876 | | | |
| Sample Name / Location | NAS 20 MW-27 | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1530 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/06/97 JJ | | | |
| Date of Analysis | 03/10/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 70876 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 111 |
| Nonatriacontane (C-39) | 42-193 * | 116 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97

D-139



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 70877
Sample Date: 02/27/97
Received Date: 02/28/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 70877 |
| Sample Name / Location | NAS 20<br>MW-28 |
| Collector's Name | SC |
| Date & Time Collected | 02/27/97 @ 1600 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 03/01/97 JM |
| Date of Analysis | 03/01/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 70877 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | 2 | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 102 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-140

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

**Lab Report Number:** 70877
**Sample Date:** 02/27/97
**Received Date:** 02/28/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70877 | | | |
| Sample Name / Location | NAS 20 MW-28 | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1600 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/04/97 JJ | | | |
| Date of Analysis | 03/05/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70877 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 82 |
| 2-Fluorobiphenyl | 43-116 | 98 |
| Terphenyl -d14 | 33-141 | 77 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

D-141



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 70877
Sample Date: 02/27/97
Received Date: 02/28/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70877 | | | |
| Sample Name / Location | NAS 20 MW-28 | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1600 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/05/97 MC | | | |
| Date of Analysis | 03/05/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 70877 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 80 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

D-142



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 70877
Sample Date: 02/27/97
Received Date: 02/28/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 70877 | | | |
| Sample Name / Location | NAS 20<br>MW-28 | | | |
| Collector's Name | SC | | | |
| Date & Time Collected | 02/27/97 @ 1600 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/06/97 JJ | | | |
| Date of Analysis | 03/09/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 70877 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 0.25 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 104 |
| Nonatriacontane (C-39) | 42-193 * | 111 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : _____ Date: 3/12/97
Jerry Dees, Laboratory Director

D-143



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 70878
Sample Date: 02/27/97
Received Date: 02/28/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 70878 |
| Sample Name / Location | NAS 20<br>Trip Blank |
| Collector's Name | SC |
| Date & Time Collected | 02/27/97 @ AM |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 02/28/97 JM |
| Date of Analysis | 02/28/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 70878 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 96 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-144

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated



End of Report

1.1

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPW[illegible] [illegible]vironmental Laboratory
[illegible], Code 920
N[illegible] Pensacola, FL 32508-6500

Ph# - (904) 452-4728
Autovon - 922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1325001

Report Required? Yes No UEP? Yes No

Lab ID Number:
Sample Date: 2.27.97
Received Date: 2.28.97
Sample Site: NAS/20
Lab Due Date:

| Sample ID # | Lab | #1-7-0875 | #2-7-0876 | #3-7-0877 | #4-7-0878 | Notes |
|---|---|---|---|---|---|---|
| Sample Name or Location | ---------- | EQ. Blank | MW-27 | MW-28 | Trip Blank | KA.G. (Less Pb) |
| Sampled by | ---------- | SC | SC | SC | PJB | |
| Composite | Begin | | | | | |
| Date/Time | Frequency | | | | | |
| Collected | End | | | | | |
| Grab Time | ---------- | 1500 | 1530 | 1600 | AM | |
| Sample Matrix | ---------- | PI | GW | GW | PII | |

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | EDB | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 2 VOA | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| [illegible]romatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| [illegible] Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS - Cap | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS - Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 3 PAH | | | | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL ~~EPA 418.1~~ Pro. | X | 2 TRPH | X | 2 TRPH | X | 3 TRPH | | | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 2.28.97 / 0735

Received by: [signature]
Date/Time: 2/28/97 0735

PWC 9510/8

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 601/602 Volatiles by Method 8260

Lab Report Number: 71252
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71252 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 03/28/97 JM | | | |
| Date of Analysis | 03/28/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71252 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 104 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-146

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 71252
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71252 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71252 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 77 |
| 2-Fluorobiphenyl | 43-116 | 87 |
| Terphenyl -d14 | 33-141 | 120 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

D-147

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 71252
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71252 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 04/07/97 JM | | | |
| Date of Analysis | 04/07/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71252 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 127 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

D-148



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 71252
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71252 | | | |
| Sample Name / Location | NAS 20 Eq. Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 71252 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 115 |
| Nonatriacontane (C-39) | 42-193 * | 93 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97

D-149



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71253
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71253 | | | |
| Sample Name / Location | NAS 20 MW-35 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1015 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 03/28/97 JM | | | |
| Date of Analysis | 03/28/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71253 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 102 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-150

Approved by : Jerry Deds, Laboratory Director

Date: 4/8/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 71253
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71253 | | | |
| Sample Name / Location | NAS 20 MW-35 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1015 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71253 | units | Det. Limit | Flags |
| Acenaphthene | 7 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | 14 | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | 3 | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 81 |
| 2-Fluorobiphenyl | 43-116 | 78 |
| Terphenyl -d14 | 33-141 | 91 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 4/9/97
Report Generated

D-151



End of Report

# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 71253
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71253 | | | |
| Sample Name / Location | NAS 20 MW-35 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1015 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 04/03/97 MC | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71253 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 61 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

D-152



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 71253
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| LAB Sample ID# | 1- 71253 | | | |
|---|---|---|---|---|
| Sample Name / Location | NAS 20 MW-35 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1015 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | | x 1 | |
| Parameter | 1- 71253 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 2.9 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 95 |
| Nonatriacontane (C-39) | 42-193 * | 97 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house taboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97

D-153



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71254
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71254 | | | |
| Sample Name / Location | NAS 20 MW-37 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 03/28/97 JM | | | |
| Date of Analysis | 03/28/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71254 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 100 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 101 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-154

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

**Lab Report Number:** 71254
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71254 | | | |
| Sample Name / Location | NAS 20 MW-37 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71254 | units | Det. Limit | Flags |
| Acenaphthene | 24 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | 6 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 3 | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | 4 | ug/L | 2 | |
| Phenanthrene | 2 | ug/L | 2 | |
| Pyrene | 2 | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 67 |
| 2-Fluorobiphenyl | 43-116 | 75 |
| Terphenyl -d14 | 33-141 | 84 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 4/9/97
Report Generated

D-155

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 71254
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71254 | | | |
| Sample Name / Location | NAS 20 MW-37 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 04/03/97 MC | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71254 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 65 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Debs, Laboratory Director

Date: 4/8/97
Report Generated

D-156



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 71254
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71254 | | | |
| Sample Name / Location | NAS 20 MW-37 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 71254 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 96 |
| Nonatriacontane (C-39) | 42-193 * | 98 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97

D-157



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71255
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71255 | | | |
| Sample Name / Location | NAS 20 MW-38 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1045 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 03/28/97 JM | | | |
| Date of Analysis | 03/28/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71255 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 102 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-158

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 610 PAH's by Method 8270

**Lab Report Number:** 71255
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71255 | | | |
| Sample Name / Location | NAS 20 MW-38 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1045 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| **Compound Name** | **1- 71255** | **units** | **Det. Limit** | **Flags** |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | 5 | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 13 | ug/L | 2 | |
| 2-Methylnaphthalene | 9 | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | 7 | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 48 |
| 2-Fluorobiphenyl | 43-116 | 50 |
| Terphenyl -d14 | 33-141 | 61 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

D-159



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 71255
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| LAB Sample ID# | 1- 71255 | | | |
|---|---|---|---|---|
| Sample Name / Location | NAS 20 MW-38 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1045 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 04/04/97 JM | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71255 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 89 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

D-160



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 71255
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71255 | | | |
| Sample Name / Location | NAS 20 MW-38 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1045 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 10 | | | |
| **Parameter** | **1- 71255** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | 82 | mg/L | 2.5 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 110 |
| Nonatriacontane (C-39) | 42-193 * | 80 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/9/97

D-161



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71256
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **71256** |
| Sample Name / Location | NAS 20<br>MW-39 |
| Collector's Name | PJB |
| Date & Time Collected | 03/27/97 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 03/28/97 JM |
| Date of Analysis | 03/28/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71256 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 101 |
| Toluene-d8 | 86-119 | 102 |
| Bromofluorobenzene | 85-116 | 106 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-162

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 71256
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71256 | | | |
| Sample Name / Location | NAS 20 MW-39 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71256 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | 2 | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | 5 | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | 5 | ug/L | 2 | |
| Pyrene | 5 | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 69 |
| 2-Fluorobiphenyl | 43-116 | 81 |
| Terphenyl -d14 | 33-141 | 97 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 4/9/97
Report Generated

D-163

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 71256
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| LAB Sample ID# | 1- 71256 | | | |
|---|---|---|---|---|
| Sample Name / Location | NAS 20<br>MW-39 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 04/04/97 JM | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71256 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 74 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

D-164



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 71256
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71256 | | | |
| Sample Name / Location | NAS 20<br>MW-39 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | | x 1 | |
| Parameter | 1- 71256 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 97 |
| Nonatriacontane (C-39) | 42-193 * | 86 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97

D-165



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71257
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **71257** |
| Sample Name / Location | NAS 20<br>MW-40 |
| Collector's Name | PJB |
| Date & Time Collected | 03/27/97 @ 1115 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 03/28/97 JM |
| Date of Analysis | 03/28/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71257 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | 2 | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 100 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 101 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-166

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 71257
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71257 | | | |
| Sample Name / Location | NAS 20 MW-40 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1115 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71257 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 59 |
| 2-Fluorobiphenyl | 43-116 | 67 |
| Terphenyl -d14 | 33-141 | 87 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

D-167

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 71257
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71257 | | | |
| Sample Name / Location | NAS 20 MW-40 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1115 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 04/04/97 JM | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71257 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 105 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Deos, Laboratory Director

Date: 4/8/97
Report Generated

D-168



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### Petroleum Range Organics by FLPRO

**Lab Report Number:** 71257
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71257 | | | |
| Sample Name / Location | NAS 20 MW-40 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1115 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | | x 1 | |
| **Parameter** | **1- 71257** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 87 |
| Nonatriacontane (C-39) | 42-193 * | 76 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71258
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71258 | | | |
| Sample Name / Location | NAS 20 MW-41 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 03/28/97 JM | | | |
| Date of Analysis | 03/28/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71258 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 99 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-170

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 71258
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71258 | | | |
| Sample Name / Location | NAS 20 MW-41 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71258 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 70 |
| 2-Fluorobiphenyl | 43-116 | 81 |
| Terphenyl -d14 | 33-141 | 109 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

D-171

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 71258
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71258 | | | |
| Sample Name / Location | NAS 20 MW-41 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 04/04/97 JM | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71258 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 111 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

D-172



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### Petroleum Range Organics by FLPRO

**Lab Report Number:** 71258
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| LAB Sample ID# | 1- 71258 | | | |
|---|---|---|---|---|
| Sample Name / Location | NAS 20<br>MW-41 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 71258 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 98 |
| Nonatriacontane (C-39) | 42-193 * | 91 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97

D-173



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71259
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71259 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 03/28/97 JM | | | |
| Date of Analysis | 03/28/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71259 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 99 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-174

Approved by : Jerry Lees, Laboratory Director

Date: 4/8/97
Report Generated



End of Report

# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 71259
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71259 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71259 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | 3 | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | 2 | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | 8 | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 2 | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | 9 | ug/L | 2 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 82 |
| 2-Fluorobiphenyl | 43-116 | 72 |
| Terphenyl -d14 | 33-141 | 85 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 4/9/97
Report Generated

D-175

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 71259
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71259 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 04/03/97 MC | | | |
| Date of Analysis | 04/03/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71259 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 66 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated

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End of Report

# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report

## Petroleum Range Organics by FLPRO

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 71259
**Sample Date:** 03/27/97
**Received Date:** 03/27/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71259 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 03/27/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 03/31/97 JJ | | | |
| Date of Analysis | 04/04/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | | x 10 | |
| **Parameter** | **1- 71259** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | 94 | mg/L | 2.5 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 120 |
| Nonatriacontane (C-39) | 42-193 * | 100 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/9/97

P-177



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71260
Sample Date: 03/27/97
Received Date: 03/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **71260** |
| Sample Name / Location | NAS 20<br>Trip Blank |
| Collector's Name | PJB |
| Date & Time Collected | 03/27/97 @ AM |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 03/28/97 JM |
| Date of Analysis | 03/28/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 71260 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 100 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-178

Approved by : Jerry Dees, Laboratory Director

Date: 4/8/97
Report Generated



End of Report

1.3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, FL 32508-6500

PH# - (904)452-4728
Autovon - 922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305091

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 3.27.97
Received Date: 3.27.97
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 71252 | #2- 71253 | #3- 71254 | #4- 71255 |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | EQ. Blank | MW-35 | MW-~~36~~ 37 MD | MW-38 |
| Sampled by | ---------- | PJB | PJB | PJB | PJB |
| Composite Date/Time Collected | Begin / Frequency / End | | | | |
| Grab Time | ---------- | 1000 | 1015 | 1030 | 1045 |
| Sample Matrix | ---------- | DI | GW | GW | GW |

Notes: K.A.G. (LESS Pb)

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4°C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCV4°C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCV4°C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 8 | 40 ml VOA Vial x 2 | HCV4°C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4°C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCV4°C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4°C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCV4°C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCV4°C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCV4°C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCV4°C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4°C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4°C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4°C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4°C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4°C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 3 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4°C/None |
| **PARAMETER by Group Name** | **METHOD SOURCE** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **Billing Units** | **Containers Required** | **Preservative(s) Used** |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL ~~EPA 418.1~~ PRO | X | 2 TPH | X | 2 PAH | X | 3 TPH | X | 2 PAH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250mlV4 oz. | HNO3/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: Patrick J. Bu / WES, Inc.
Date/Time: 3.27.97 / 1515

Received by: JW Moore
Date/Time: 3-27-97 1515

PWC 93108

D-179

2.3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 820
NAS Pensacola, Fl. 32508-6500
Ph# -(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305 00

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 3-27-97
Received Date: 3-27-97
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 71256 | #2- 71257 | #3- 71258 | #4- 71259 |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | MW 39 | MW 40 | MW 41 | DUPLICATE |
| Sampled by | ---------- | PB | PB | PB | PB |
| Composite Date/Time Collected | Begin / Frequency / End | | | | |
| Grab Time | ---------- | 1100 | 1115 | 1130 | — |
| Sample Matrix | ---------- | GW | GW | GW | GW |

Notes: K.D.G. (LESS LEAD)

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCV/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCV/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | | 4 VOA | | 4 VOA | 6 | 40 ml VOA Vial x 2 | HCV/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCV/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCV/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCV/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCV/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCV/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCV/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | | 2 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4° C/None |
| **PARAMETER by Group Name** | **METHOD SOURCE** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **Billing Units** | **Containers Required** | **Preservative(s) Used** |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | Fl. ~~EPA 418.1~~ TPH | X | 2 TPH | X | 2 TPH | X | 2 TPH | X | 2 TPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | HNO3/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 3-27-97 / 1515

Received by: J W Moore
Date/Time: 3-27-97 1515

PWC 9510/6

3-3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, FL 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 130500

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 3.27.97
Received Date: 3.27.97
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 71260 | #2- | #3- | #4- |
|---|---|---|---|---|---|
| Sample Name | ---------- | | | | |
| or Location | ---------- | Trip Blank | | | |
| Sampled by | ---------- | PJB | | | |
| Composite | Begin | | | | |
| Date/Time | Frequency | | | | |
| Collected | End | | | | |
| Grab Time | ---------- | AM | | | |
| Sample Matrix | ---------- | DI | | | |

Notes: K.A.G. (cess Pb)

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| [illegible]. Halo. & Are./GC | EPA 601/602 | X | 2 VOA | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| [illegible]uclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 3.27.97 / 1515

Received by: JW Moore
Date/Time: 3-27-97 1515

PWC 9510/6

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

**Lab Report Number:** 71917
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- 71917 |
| Sample Name / Location | Site 20<br>Eq Blank |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 0930 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/05/97 JM |
| Date of Analysis | 05/05/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 71917 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 108 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 103 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-162

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 71917
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- 71917 |
| Sample Name / Location | Site 20<br>Eq Blank |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 0930 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/06/97 JJ |
| Date of Analysis | 05/07/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 71917 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 83 |
| 2-Fluorobiphenyl | 43-116 | 92 |
| Terphenyl -d14 | 33-141 | 108 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

D-183



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 71917
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71917 | | | |
| Sample Name / Location | Site 20<br>Eq Blank | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/14/97 MC | | | |
| Date of Analysis | 05/14/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71917 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 91 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Deese, Laboratory Director

Date: 5/19/97
Report Generated

D - 184



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 71917 |
| Sample Date: | 05/02/97 |
| Received Date: | 05/02/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5002 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71917 | | | |
| Sample Name / Location | Site 20<br>Eq Blank | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/08/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | | x | 1 | |
| **Parameter** | **1- 71917** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 105 |
| Nonatriacontane (C-39) | 42-193 * | 100 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97

D-185



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

**Lab Report Number:** 71918
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- **71918** |
| Sample Name / Location | Site 20<br>Duplicate |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ N/S |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/05/97 JM |
| Date of Analysis | 05/05/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71918 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 108 |
| Toluene-d8 | 86-119 | 98 |
| Bromofluorobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-186

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 71918
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71918 | | | |
| Sample Name / Location | Site 20 Duplicate | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/07/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| **Compound Name** | **1- 71918** | **units** | **Det. Limit** | **Flags** |
| Acenaphthene | 31 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 77 |
| 2-Fluorobiphenyl | 43-116 | 88 |
| Terphenyl -d14 | 33-141 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

D-187



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 71918
Sample Date: 05/02/97
Received Date: 05/02/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71918 | | | |
| Sample Name / Location | Site 20 Duplicate | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/14/97 JM | | | |
| Date of Analysis | 05/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71918 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 78 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/20/97
Report Generated

D-188



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 71918 |
| Sample Date: | 05/02/97 |
| Received Date: | 05/02/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5002 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71918 | | | |
| Sample Name / Location | Site 20<br>Duplicate | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/08/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 71918 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 98 |
| Nonatriacontane (C-39) | 42-193 * | 67 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97

D-189



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

**Lab Report Number:** 71919
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- 71919 |
| Sample Name / Location | Site 20<br>MW-42 |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 1000 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/05/97 JM |
| Date of Analysis | 05/05/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71919 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | 1 | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 108 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter, ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-190

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 71919
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- 71919 |
| Sample Name / Location | Site 20<br>MW-42 |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 1000 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/06/97 JJ |
| Date of Analysis | 05/07/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71919 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | 27 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | 4 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 6 | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 75 |
| 2-Fluorobiphenyl | 43-116 | 82 |
| Terphenyl -d14 | 33-141 | 87 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

D-191



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 71919
Sample Date: 05/02/97
Received Date: 05/02/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71919 | | | |
| Sample Name / Location | Site 20 MW-42 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/14/97 MC | | | |
| Date of Analysis | 05/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71919 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 73 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

D-192



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 71919
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71919 | | | |
| Sample Name / Location | Site 20 MW-42 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/09/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| **Parameter** | **1- 71919** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | 0.97 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 102 |
| Nonatriacontane (C-39) | 42-193 * | 63 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dean, Laboratory Director

Date: 5/19/97

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

**Lab Report Number:** 71920
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- 71920 |
| Sample Name / Location | Site 20<br>MW-43 |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 1030 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/05/97 JM |
| Date of Analysis | 05/05/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71920 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 107 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 101 |

COMMENTS :

D-194

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 71920
Sample Date: 05/02/97
Received Date: 05/02/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71920 | | | |
| Sample Name / Location | Site 20 MW-43 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/07/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71920 | units | Det. Limit | Flags |
| Acenaphthene | 29 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 88 |
| 2-Fluorobiphenyl | 43-116 | 96 |
| Terphenyl -d14 | 33-141 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 71920
Sample Date: 05/02/97
Received Date: 05/02/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71920 | | | |
| Sample Name / Location | Site 20 MW-43 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/14/97 MC | | | |
| Date of Analysis | 05/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71920 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 75 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees/ Laboratory Director

Date: 5/19/97
Report Generated

D-196



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 71920 |
| Sample Date: | 05/02/97 |
| Received Date: | 05/02/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5002 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71920 | | | |
| Sample Name / Location | Site 20<br>MW-43 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/09/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 71920 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 98 |
| Nonatriacontane (C-39) | 42-193 * | 83 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97

D-197



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71921
Sample Date: 05/02/97
Received Date: 05/02/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- 71921 |
| Sample Name / Location | Site 20<br>MW-44 |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/05/97 JM |
| Date of Analysis | 05/05/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71921 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 107 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 101 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-198

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 610 PAH's by Method 8270

**Lab Report Number:** 71921
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- 71921 |
| Sample Name / Location | Site 20<br>MW-44 |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/06/97 JJ |
| Date of Analysis | 05/07/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71921 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | 8 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 80 |
| 2-Fluorobiphenyl | 43-116 | 91 |
| Terphenyl -d14 | 33-141 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

D -199



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 71921
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71921 | | | |
| Sample Name / Location | Site 20<br>MW-44 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/14/97 MC | | | |
| Date of Analysis | 05/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71921 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 81 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Deed, Laboratory Director

Date: 5/19/97
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 71921 |
| Sample Date: | 05/02/97 |
| Received Date: | 05/02/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5002 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71921 | | | |
| Sample Name / Location | Site 20<br>MW-44 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/09/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 71921 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 99 |
| Nonatriacontane (C-39) | 42-193 * | 53 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97

D-201



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

**Lab Report Number:** 71922
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- 71922 |
| Sample Name / Location | Site 20<br>MW-45 |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 1130 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/05/97 JM |
| Date of Analysis | 05/05/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71922 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 107 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-202

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 71922
Sample Date: 05/02/97
Received Date: 05/02/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71922 | | | |
| Sample Name / Location | Site 20 MW-45 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/08/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71922 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 78 |
| 2-Fluorobiphenyl | 43-116 | 84 |
| Terphenyl -d14 | 33-141 | 89 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

D-203



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 71922
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71922 | | | |
| Sample Name / Location | Site 20 MW-45 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/14/97 MC | | | |
| Date of Analysis | 05/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71922 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 70 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

D-204



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 |
| | NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 71922 |
| Sample Date: | 05/02/97 |
| Received Date: | 05/02/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5002 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71922 | | | |
| Sample Name / Location | Site 20<br>MW-45 | | | |
| Collector's Name | CE | | | |
| Data & Time Collected | 05/02/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/09/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 71922 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 102 |
| Nonatriacontane (C-39) | 42-193 * | 101 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Bates, Laboratory Director

Date: 5/19/97

D-205



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 71923
Sample Date: 05/02/97
Received Date: 05/02/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- 71923 |
| Sample Name / Location | Site 20<br>MW-46 |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 1200 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/05/97 JM |
| Date of Analysis | 05/05/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71923 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 104 |
| Toluene-d8 | 86-119 | 98 |
| Bromofluorobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

B-206

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 71923
Sample Date: 05/02/97
Received Date: 05/02/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- **71923** |
| Sample Name / Location | Site 20<br>MW-46 |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 1200 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/06/97 JJ |
| Date of Analysis | 05/08/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 71923 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 76 |
| 2-Fluorobiphenyl | 43-116 | 88 |
| Terphenyl -d14 | 33-141 | 95 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

D-207



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

# Analytical Report
## Ethylene Dibromide by Method 504

Lab Report Number: 71923
Sample Date: 05/02/97
Received Date: 05/02/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71923 | | | |
| Sample Name / Location | Site 20 MW-46 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/14/97 MC | | | |
| Date of Analysis | 05/14/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 71923 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 72 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated

D-208



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 71923 |
| Sample Date: | 05/02/97 |
| Received Date: | 05/02/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5002 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 71923 | | | |
| Sample Name / Location | Site 20 MW-46 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/02/97 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/06/97 JJ | | | |
| Date of Analysis | 05/09/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 71923 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 100 |
| Nonatriacontane (C-39) | 42-193 * | 99 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97

D-209



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

**Lab Report Number:** 71924
**Sample Date:** 05/02/97
**Received Date:** 05/02/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5002

| | |
|---|---|
| LAB Sample ID# | 1- **71924** |
| Sample Name / Location | Site 20<br>Trip |
| Collector's Name | CE |
| Date & Time Collected | 05/02/97 @ 0800 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/05/97 JM |
| Date of Analysis | 05/05/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 71924 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 106 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 101 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-210

Approved by : Jerry Dees, Laboratory Director

Date: 5/19/97
Report Generated



End of Report

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3287, Code 920
NAS Pensacola, FL 32508-6500
Ph# -(904)452-4728
Autovon-922-4728

Requestor: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 130500

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 5-2-97
Received Date: 5-2-97
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 71917 | | #2- 71918 | | #3- 71919 | | #4- 71920 | | Notes: |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Name or Location | ---------- / ---------- | EQ Blank | | Duplicate | | MW-42 | | MW-43 | | K.A.G. NO LEAD |
| Sampled by | ---------- | CE | | CE | | CE | | CE | | |
| Composite Date/Time Collected | Begin / Frequency / End | | | | | | | | | |
| Grab Time | ---------- | 0930 | | — | | 1000 | | 1030 | | |
| Sample Matrix | ---------- | DI | | GW | | GW | | GW | | |

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4°C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4°C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo/Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | PAH (2) | X | 1 PAH | X | 2 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | ~~EPA 418.1~~ 8100 | X | 2 TPH | X | 2 TPH | X | 2 TPH | X | 2 TPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | HNO3/None |
| Other: | | | | | | | | | | | | — |
| | | | | | | | | | | | | — |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Comments: Duplicate - Short 1 PAH - Broken Bottle

Relinquished by: [signature]
Date/Time: 5-2-97 - 1300

Received by: Kathy Bowels
Date/Time: 5/2/97 1300

PSC 2514/96

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
1297, Code 920
NAS Pensacola, FL 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requestor: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 130500

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 5-2-97
Received Date: 5-2-97
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1- 71921 | #2- 71922 | #3- 71923 | #4- 71924 |
|---|---|---|---|---|---|
| Sample Name | ---------- | | | | |
| or Location | ---------- | MW-44 | MW-45 | MW-46 | TRIP |
| Sampled by | ---------- | CE | CE | CE | CE |
| Composite | Begin | | | | |
| Date/Time | Frequency | | | | |
| Collected | End | | | | |
| Grab Time | ---------- | 1100 | 1130 | 1200 | 0800 |
| Sample Matrix | ---------- | GW | GW | GW | D.I. |

Notes: K, A.G. NO LEAD

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | EDB | X | 2 EDB | X | 2 EDB | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 2 VOA | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 2 PAH | | | | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FLA EPA 418.1 | X | 2 TPH(2) | X | 2 TPH | X | 2 TPH | | | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments: MW-44 - QC - SHORT ONE TPH - BROKEN BOTTLE

Relinquished by: [signature]
Date/Time: 5-2-97 - 1300

Received by: Kathy Beuels
Date/Time: 5/2/97 1300

PWC 9510/6

D-212

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

Lab Report Number: 72301
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72301** |
| Sample Name / Location | NASP 20<br>Equipment Blank |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 0830 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/23/97 JM |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Deionized Water |
| Dilution | X 1 |

| Compound Name | 1- 72301 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | 2 | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | 3 | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | 2 | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 107 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 103 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D+213

Approved by : Jerry Deese, Laboratory Director

Date: 6/17/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 610 PAH's by Method 8270

**Lab Report Number:** 72301
**Sample Date:** 05/21/97
**Received Date:** 05/21/97
**Sample Site:** NASP Site 20
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72301** |
| Sample Name / Location | NASP 20<br>Equipment Blank |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 0830 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/22/97 JJ |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Deionized Water |
| Dilution | X 1 |

| Compound Name | 1- 72301 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 15 | |
| Naphthalene | BDL | ug/L | 10 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 85 |
| 2-Fluorobiphenyl | 43-116 | 91 |
| Terphenyl -d14 | 33-141 | 86 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated

D-214



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 72301
**Sample Date:** 05/21/97
**Received Date:** 05/21/97
**Sample Site:** NASP Site 20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72301 | | | |
| Sample Name / Location | NASP 20<br>Equipment Blank | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 0830 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/27/97 JM | | | |
| Date of Analysis | 05/28/97 | | | |
| Sample Matrix | Deionized Water | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72301 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 101 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/12/97
Report Generated

D-215



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 72301
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72301 | | | |
| Sample Name / Location | NASP 20<br>Equipment Blank | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 0830 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/24/97 | | | |
| Sample Matrix | Deionized Water | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 72301 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 83 |
| Nonatriacontane (C-39) | 42-193 * | 83 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97

D-216



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

Lab Report Number: 72302
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72302** |
| Sample Name / Location | NASP 20<br>Duplicate |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ Not Submitted |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/23/97 JM |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72302 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | 3 | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 104 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-2 17

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 72302
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72302** |
| Sample Name / Location | NASP 20 Duplicate |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ Not Submitted |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/22/97 JJ |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72302 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 15 | |
| Naphthalene | BDL | ug/L | 10 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 70 |
| 2-Fluorobiphenyl | 43-116 | 88 |
| Terphenyl -d14 | 33-141 | 56 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated

D-218



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 72302
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72302 | | | |
| Sample Name / Location | NASP 20 Duplicate | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ Not Submitted | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/27/97 & 05/29/97 JM | | | |
| Date of Analysis | 05/28/97 & 05/29/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72302 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 69 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/12/97
Report Generated

D-219



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 72302 |
| Sample Date: | 05/21/97 |
| Received Date: | 05/21/97 |
| Sample Site: | NASP Site 20 |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72302 | | | |
| Sample Name / Location | NASP 20 Duplicate | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ Not Submitted | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/24/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 72302 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 13 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 84 |
| Nonatriacontane (C-39) | 42-193 * | 78 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97

D-220



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 72304
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72304** |
| Sample Name / Location | NASP 20<br>MW - 48 |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 0900 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/23/97 JM |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72304 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 102 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 97 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-221

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

**Lab Report Number:** 72304
**Sample Date:** 05/21/97
**Received Date:** 05/21/97
**Sample Site:** NASP Site 20
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 72304 |
| Sample Name / Location | NASP 20<br>MW - 48 |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 0900 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/22/97 JJ |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72304 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | 33 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 4 | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 15 | |
| Naphthalene | BDL | ug/L | 10 | |
| Phenanthrene | 3 | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 88 |
| 2-Fluorobiphenyl | 43-116 | 90 |
| Terphenyl -d14 | 33-141 | 66 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated

D-222



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

# Analytical Report

## Ethylene Dibromide by Method 504

Lab Report Number: 72304
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72304 | | | |
| Sample Name / Location | NASP 20<br>MW - 48 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 0900 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/29/97 JM | | | |
| Date of Analysis | 05/29/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72304 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 84 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/12/97
Report Generated

D-223



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 72304 |
| Sample Date: | 05/21/97 |
| Received Date: | 05/21/97 |
| Sample Site: | NASP Site 20 |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72304 | | | |
| Sample Name / Location | NASP 20<br>MW - 48 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 0900 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/24/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 72304 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 0.31 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 90 |
| Nonatriacontane (C-39) | 42-193 * | 88 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97

D-224



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

Lab Report Number: 72303
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72303 | | | |
| Sample Name / Location | NASP 20<br>MW - 49 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/23/97 JM | | | |
| Date of Analysis | 05/23/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72303 | units | Det. Limit | Flags |
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 97 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 101 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter, ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

07225

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 72303
**Sample Date:** 05/21/97
**Received Date:** 05/21/97
**Sample Site:** NASP Site 20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72303 | | | |
| Sample Name / Location | NASP 20<br>MW - 49 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/23/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| **Compound Name** | **1- 72303** | **units** | **Det. Limit** | **Flags** |
| Acenaphthene | 69 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | 25 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 17 | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 15 | |
| Naphthalene | BDL | ug/L | 10 | |
| Phenanthrene | 6 | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 91 |
| 2-Fluorobiphenyl | 43-116 | 91 |
| Terphenyl -d14 | 33-141 | 88 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated

D-226



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

# Analytical Report
## Ethylene Dibromide by Method 504

Lab Report Number: 72303
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72303 | | | |
| Sample Name / Location | NASP 20 MW - 49 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/27/97 JM | | | |
| Date of Analysis | 05/28/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72303 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 69 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/12/97
Report Generated

D-227



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 72303 |
| Sample Date: | 05/21/97 |
| Received Date: | 05/21/97 |
| Sample Site: | NASP Site 20 |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72303 | | | |
| Sample Name / Location | NASP 20 MW - 49 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 0930 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/24/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 72303 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 0.36 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 91 |
| Nonatriacontane (C-39) | 42-193 * | 92 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97

D-228



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 72305
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72305** |
| Sample Name / Location | NASP 20<br>MW - 50 |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 1000 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/23/97 JM |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72305 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | 2 | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 107 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-229

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated
End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 72305
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72305** |
| Sample Name / Location | NASP 20<br>MW - 50 |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 1000 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/22/97 JJ |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72305 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | 18 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 15 | |
| Naphthalene | BDL | ug/L | 10 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 88 |
| 2-Fluorobiphenyl | 43-116 | 88 |
| Terphenyl -d14 | 33-141 | 64 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated

D-230



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 72305
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72305 | | | |
| Sample Name / Location | NASP 20<br>MW - 50 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/27/97 JM | | | |
| Date of Analysis | 05/29/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72305 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 75 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/12/97
Report Generated

D-231



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 72305
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72305 | | | |
| Sample Name / Location | NASP 20<br>MW - 50 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/24/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | | x | 1 | |
| Parameter | 1- 72305 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 0.39 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 86 |
| Nonatriacontane (C-39) | 42-193 * | 86 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Bess, Laboratory Director

Date: 5/27/97

D-232



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 72306
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 72306 |
| Sample Name / Location | NASP 20<br>MW - 51 |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 1030 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/23/97 JM |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72306 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 104 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-233

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 72306
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72306** |
| Sample Name / Location | NASP 20<br>MW - 51 |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 1030 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/22/97 JJ |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72306 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 15 | |
| Naphthalene | BDL | ug/L | 10 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 82 |
| 2-Fluorobiphenyl | 43-116 | 88 |
| Terphenyl -d14 | 33-141 | 69 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated

D-234



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

# Analytical Report
## Ethylene Dibromide by Method 504

Lab Report Number: 72306
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72306 | | | |
| Sample Name / Location | NASP 20<br>MW - 51 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/27/97 & 05/29/97 JM | | | |
| Date of Analysis | 05/27/97 & 05/29/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72306 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 77 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/12/97
Report Generated

D-235



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### Petroleum Range Organics by FLPRO

**Lab Report Number:** 72306
**Sample Date:** 05/21/97
**Received Date:** 05/21/97
**Sample Site:** NASP Site 20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72306 | | | |
| Sample Name / Location | NASP 20<br>MW - 51 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/24/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | | x | 1 | |
| **Parameter** | **1- 72306** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 89 |
| Nonatriacontane (C-39) | 42-193 * | 90 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97

D-236



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 72307
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 72307 |
| Sample Name / Location | NASP 20<br>MW - 52 |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/24/97 JM |
| Date of Analysis | 05/24/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72307 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | 2 | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 105 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 97 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-237

Approved by : Jerry Dees, Laboratory Director

Date: 6/17/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 72307
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72307** |
| Sample Name / Location | NASP 20<br>MW - 52 |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | M. Chambers |
| Date of Extraction / Initials | 05/22/97 JJ |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72307 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 15 | |
| Naphthalene | BDL | ug/L | 10 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 74 |
| 2-Fluorobiphenyl | 43-116 | 85 |
| Terphenyl -d14 | 33-141 | 53 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated

D 238



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

# Analytical Report

## Ethylene Dibromide by Method 504

Lab Report Number: 72307
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72307 | | | |
| Sample Name / Location | NASP 20<br>MW - 52 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/27/97 & 05/29/97 JM | | | |
| Date of Analysis | 05/27/97 & 05/29/977 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72307 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 87 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/12/97
Report Generated

D-239



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 72307
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72307 | | | |
| Sample Name / Location | NASP 20<br>MW - 52 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/24/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 72307 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 14 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 87 |
| Nonatriacontane (C-39) | 42-193 * | 77 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Deas, Laboratory Director

Date: 5/27/97

D-240



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

**Lab Report Number:** 72308
**Sample Date:** 05/21/97
**Received Date:** 05/21/97
**Sample Site:** NASP Site 20
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72308** |
| Sample Name / Location | NASP 20<br>MW - 53 |
| Collector's Name | CE |
| Date & Time Collected | 05/21/97 @ 1130 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/24/97 JM |
| Date of Analysis | 05/24/97 |
| Sample Matrix | Groundwater |
| Dilution | X 1 |

| Compound Name | 1- 72308 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 105 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-241

Approved by : Jerry Dees, Laboratory Director

Date: 6/18/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 72308
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72308 | | | |
| Sample Name / Location | NASP 20<br>MW - 53 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/23/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72308 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 15 | |
| Naphthalene | BDL | ug/L | 10 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 83 |
| 2-Fluorobiphenyl | 43-116 | 86 |
| Terphenyl -d14 | 33-141 | 67 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated

D-242



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 72308
Sample Date: 05/21/97
Received Date: 05/21/97
Sample Site: NASP Site 20
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72308 | | | |
| Sample Name / Location | NASP 20<br>MW - 53 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 05/27/97 JM | | | |
| Date of Analysis | 05/29/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72308 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 93 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dess, Laboratory Director

Date: 6/12/97
Report Generated

D-243



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 72308 |
| Sample Date: | 05/21/97 |
| Received Date: | 05/21/97 |
| Sample Site: | NASP Site 20 |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72308 | | | |
| Sample Name / Location | NASP 20 MW - 53 | | | |
| Collector's Name | CE | | | |
| Date & Time Collected | 05/21/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 05/22/97 JJ | | | |
| Date of Analysis | 05/25/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 72308 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 93 |
| Nonatriacontane (C-39) | 42-193 * | 100 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Rees, Laboratory Director

Date: 6/18/97

D-244



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

**Lab Report Number:** 72309
**Sample Date:** 05/21/97
**Received Date:** 05/21/97
**Sample Site:** NASP Site 20
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72309** |
| Sample Name / Location | NASP 20<br>Trip Blank |
| Collector's Name | CE |
| Date & Time Collected | 05/20/97 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/23/97 JM |
| Date of Analysis | 05/23/97 |
| Sample Matrix | Deionized Water |
| Dilution | X 1 |

| Compound Name | 1- 72309 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 103 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-245

Approved by : Jerry Dees, Laboratory Director

Date: 5/27/97
Report Generated



End of Report

(1)

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3287, Code 920
NAS Pensacola, FL 32508-6500
Phone-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 130500

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 5-21-97
Received Date: 5-21-97
Sample Site: NAS 20
Lab Due Date:

| Sample ID # | Lab | #1-72301 | | #2-72302 | | #3-72303 | | #4-72304 | | Notes: | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Name or Location | ---------- | EQ Blank | | Duplicate | | MW-49 | | MW 48 | | K, A.6 NO LEAD | | |
| Sampled by | ---------- | CE | | CE | | CE | | CE | | | | |
| Composite Date/Time Collected | Begin | | | | | | | | | | | |
| | Frequency | | | | | | | | | | | |
| | End | | | | | | | | | | | |
| Grab Time | ---------- | 830 | | — | | 930 | | 700 | | | | |
| Sample Matrix | ---------- | DI | | GW | | GW | | GW | | | | |
| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCV4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCV4° C |
| Purg. Hals. & Aro/GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 8 | 40 ml VOA Vial x 2 | HCV4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCV4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Hals. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Non-Hals. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Hals./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 8 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 2 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4° C/None |
| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | X | 2TPH | X | 2 TPH | X | 3 TPH | X | 2TPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | HNO3/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature]
Date/Time: 1330 5-21-97

Received by: Kathy Bowen
Date/Time: 5/21/97 1500

PWC 95108

D-246

(2)

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3691, Code 920
NAS Pensacola, FL 32508-6500

Ph# -(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 130500

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 5-21-97
Received Date: 5-21-97
Sample Site: NAS-20
Lab Due Date:

| Sample ID # | Lab | #1-72305 | | #2-72306 | | #3-72307 | | #4-72308 | | Notes: | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Name or Location | ---------- | MW-50 | | MW-51 | | MW 52 | | MW-53 | | K.A.G NO LEAD | | |
| Sampled by | ---------- | | | | | | | | | | | |
| Composite Date/Time Collected | Begin | | | | | | | | | | | |
| | Frequency | | | | | | | | | | | |
| | End | | | | | | | | | | | |
| Grab Time | ---------- | 1000 | | 1030 | | 1100 | | 1130 | | | | |
| Sample Matrix | ---------- | GW | | GW | | GW | | GW | | | | |
| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCV4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCV4° C |
| Purg. Hals. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 8 | 40 ml VOA Vial x 2 | HCV4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCV4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Hals. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Non-Hals. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCV4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Hals./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCV4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCV4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 2 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4° C/None |
| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | X | 2 TPH | X | 2 TPH | X | 2 TPH | X | 2 TPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250mlV4 oz. | HNO3/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature]
Date/Time: 5-21-97 1330

Received by: Kathy Reeves
Date/Time: 5/21/97 1300

PWC 9510/6

D-247

(3)

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
J.3287, Code 920
NAS Pensacola, FL 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 130500

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 5-21-97
Received Date: 5-21-97
Sample Site: NAS-20/SE 240.
Lab Due Date:

| Sample ID # | Lab | #1- 12309 | #2- | #3- | #4- |
|---|---|---|---|---|---|
| Sample Name | ---------- | | | | |
| or Location | ---------- | TRIP | | | |
| Sampled by | ---------- | CE | | | |
| Composite | Begin | | | | |
| Date/Time | Frequency | | | | |
| Collected | End | | | | |
| Grab Time | ---------- | 1100 | | | |
| Sample Matrix | ---------- | DI | | | |

Notes: X. A6 NO LEAD

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 2VOA | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo/Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 18 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | | 1Lx3/4 oz. | 4° C/None |
| **PARAMETER by Group Name** | **METHOD SOURCE** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **X** | **Bottle ID #'s** | **Billing Units** | **Containers Required** | **Preservative(s) Used** |
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250mlV4 oz. | HNO/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature]
Date/Time: 5-21-97 1330

Received by: Kathy Lewis
Date/Time: 5/21/97 1300

PWC 1510/9

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

**Lab Report Number:** 72518
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72518** |
| Sample Name / Location | NAS 20<br>Eq Blank |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ 1000 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/30/97 JM |
| Date of Analysis | 05/30/97 |
| Sample Matrix | DI |
| Dilution | X 1 |

| Compound Name | 1- 72518 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 103 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-249

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 72518
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72518 | | | |
| Sample Name / Location | NAS 20 Eq Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/11/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72518 | units | Det. Limit | Flags |
| Acenaphthene | BDL | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 88 |
| 2-Fluorobiphenyl | 43-116 | 92 |
| Terphenyl -d14 | 33-141 | 114 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-250



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## Ethylene Dibromide by Method 504

**Lab Report Number:** 72518
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72518 | | | |
| Sample Name / Location | NAS 20 Eq Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/06/97 MC | | | |
| Date of Analysis | 06/06/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72518 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 99 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-251



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 72518 |
| Sample Date: | 05/30/97 |
| Received Date: | 05/30/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72518 | | | |
| Sample Name / Location | NAS 20 Eq Blank | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1000 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/16/97 | | | |
| Sample Matrix | DI | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 72518 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 72 |
| Nonatriacontane (C-39) | 42-193 * | 84 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97

D-252



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 72519
Sample Date: 05/30/97
Received Date: 05/30/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 72519 |
| Sample Name / Location | NAS 20<br>DMW-54 |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ 1300 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/30/97 JM |
| Date of Analysis | 05/30/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 72519 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | 2 | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | 29 | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 104 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-253

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 610 PAH's by Method 8270

**Lab Report Number:** 72519
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72519 | | | |
| Sample Name / Location | NAS 20 DMW-54 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1300 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/12/97, 06/13/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72519 | units | Det. Limit | Flags |
| Acenaphthene | 207 | ug/L | 40 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | 28 | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | 15 | ug/L | 2 | |
| Fluorene | 124 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 365 | ug/L | 40 | |
| 2-Methylnaphthalene | 440 | ug/L | 60 | |
| Naphthalene | 4700 | ug/L | 80 | |
| Phenanthrene | 118 | ug/L | 2 | |
| Pyrene | 10 | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 88 |
| 2-Fluorobiphenyl | 43-116 | 85 |
| Terphenyl -d14 | 33-141 | 86 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Does, Laboratory Director

Date: 6/23/97
Report Generated

D-254



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 72519
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72519 | | | |
| Sample Name / Location | NAS 20 DMW-54 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1300 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/06/97 MC | | | |
| Date of Analysis | 06/06/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72519 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 77 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-255



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910<br>NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 72519 |
| Sample Date: | 05/30/97 |
| Received Date: | 05/30/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72519 | | | |
| Sample Name / Location | NAS 20<br>DMW-54 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1300 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| **Parameter** | **1- 72519** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | 9.7 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 71 |
| Nonatriacontane (C-39) | 42-193 * | 40 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Bees, Laboratory Director

Date: 6/23/97

D-256



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 72520
Sample Date: 05/30/97
Received Date: 05/30/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 72520 |
| Sample Name / Location | NAS 20<br>DMW-55 |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ 1100 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/30/97 JM |
| Date of Analysis | 05/30/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 72520 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | 2 | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | 1 | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | 2 | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 102 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-257

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 72520
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72520 | | | |
| Sample Name / Location | NAS 20 DMW-55 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/12/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| **Compound Name** | **1- 72520** | **units** | **Det. Limit** | **Flags** |
| Acenaphthene | 3 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 42 | ug/L | 2 | |
| 2-Methylnaphthalene | 28 | ug/L | 3 | |
| Naphthalene | 9 | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 87 |
| 2-Fluorobiphenyl | 43-116 | 93 |
| Terphenyl -d14 | 33-141 | 98 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-258



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 72520
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72520 | | | |
| Sample Name / Location | NAS 20 DMW-55 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/06/97 MC | | | |
| Date of Analysis | 06/06/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72520 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 83 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-259



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 72520
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72520 | | | |
| Sample Name / Location | NAS 20 DMW-55 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1100 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| **Parameter** | **1- 72520** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | 1 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 74 |
| Nonatriacontane (C-39) | 42-193 * | 69 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Does, Laboratory Director

Date: 6/23/97

D-260



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

**Lab Report Number:** 72521
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 72521 |
| Sample Name / Location | NAS 20<br>MW-56 |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ 1130 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/30/97 JM |
| Date of Analysis | 05/30/97 |
| Sample Matrix | GW |
| Dilution | X 2 * |

| Compound Name | 1- 72521 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 2 | |
| Bromodichloromethane | BDL | ug/L | 2 | |
| Bromoform | BDL | ug/L | 4 | |
| Bromomethane | BDL | ug/L | 6 | |
| Carbon Tetrachloride | BDL | ug/L | 2 | |
| Chlorobenzene | BDL | ug/L | 2 | |
| Chloroethane | BDL | ug/L | 2 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 2 | |
| Chloroform | BDL | ug/L | 2 | |
| Chloromethane | BDL | ug/L | 2 | |
| Dibromochloromethane | BDL | ug/L | 2 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 2 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 2 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 2 | |
| Dichlorodifluoromethane | BDL | ug/L | 2 | |
| 1,1-Dichloroethane | BDL | ug/L | 2 | |
| 1,2-Dichloroethane | BDL | ug/L | 2 | |
| 1,1-Dichloroethene | BDL | ug/L | 2 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 2 | |
| 1,2-Dichloropropane | BDL | ug/L | 2 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 2 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 2 | |
| Ethylbenzene | BDL | ug/L | 2 | |
| Methylene Chloride | BDL | ug/L | 2 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 2 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 2 | |
| Tetrachloroethene | BDL | ug/L | 2 | |
| Toluene | BDL | ug/L | 2 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 2 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 2 | |
| Trichloroethene | BDL | ug/L | 2 | |
| Trichlorofluoromethane | BDL | ug/L | 2 | |
| Vinyl Chloride | BDL | ug/L | 2 | |
| Xylenes (Total) | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 99 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS : * = Dilution due to high amount of silt.

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/kg = microgram per Kilogram. * = FL HRS certification pending.

D-261

Approved by : Jerry Dees, Laboratory Director

Date: 9/17/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 72521
Sample Date: 05/30/97
Received Date: 05/30/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72521 | | | |
| Sample Name / Location | NAS 20 MW-56 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/12/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72521 | units | Det. Limit | Flags |
| Acenaphthene | 15 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 3 | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | 2 | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 89 |
| 2-Fluorobiphenyl | 43-116 | 94 |
| Terphenyl -d14 | 33-141 | 105 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 9/17/97
Report Generated

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 72521
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72521 | | | |
| Sample Name / Location | NAS 20 MW-56 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/06/97 MC | | | |
| Date of Analysis | 06/06/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72521 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 90 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 9/17/97
Report Generated

D-263



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 72521
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72521 | | | |
| Sample Name / Location | NAS 20 MW-56 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1130 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | | x | 1 | |
| **Parameter** | **1- 72521** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 74 |
| Nonatriacontane (C-39) | 42-193 * | 81 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 9/17/97

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

**Lab Report Number:** 72522
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72522** |
| Sample Name / Location | NAS 20<br>MW-57 |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ 1200 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 06/02/97 JM |
| Date of Analysis | 06/02/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 72522 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 104 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-265

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 72522
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72522** |
| Sample Name / Location | NAS 20<br>MW-57 |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ 1200 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 06/11/97 JJ |
| Date of Analysis | 06/12/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 72522 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Acenaphthene | 11 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 88 |
| 2-Fluorobiphenyl | 43-116 | 94 |
| Terphenyl -d14 | 33-141 | 109 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-266



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## Ethylene Dibromide by Method 504

**Lab Report Number:** 72522
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72522 | | | |
| Sample Name / Location | NAS 20 MW-57 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/06/97 MC | | | |
| Date of Analysis | 06/06/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72522 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 91 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/23/97
Report Generated

D-267



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

# Analytical Report
## Petroleum Range Organics by FLPRO

| | |
|---|---|
| Client: | NPWC Environmental |
| Address: | Bldg. 3887, Code 910 |
| | NAS Pensacola,FL 32508 |
| Phone #: | 452-3180 |
| Contact: | Greg Campbell |

| | |
|---|---|
| Lab Report Number: | 72522 |
| Sample Date: | 05/30/97 |
| Received Date: | 05/30/97 |
| Sample Site: | NAS Pensacola, FL |
| Job Order No.: | 130 5001 |

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72522 | | | |
| Sample Name / Location | NAS 20 MW-57 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1200 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| Parameter | 1- 72522 | units | Det. Limit | Flags |
| Petroleum Range Organics by FLPRO | 0.55 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 67 |
| Nonatriacontane (C-39) | 42-193 * | 77 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97

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End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

**Lab Report Number:** 72523
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72523** |
| Sample Name / Location | NAS 20<br>MW-58 |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ 1230 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/30/97 JM |
| Date of Analysis | 05/30/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 72523 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 106 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-269

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

Lab Report Number: 72523
Sample Date: 05/30/97
Received Date: 05/30/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72523 | | | |
| Sample Name / Location | NAS 20 MW-58 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1230 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/12/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72523 | units | Det. Limit | Flags |
| Acenaphthene | 3 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 88 |
| 2-Fluorobiphenyl | 43-116 | 89 |
| Terphenyl -d14 | 33-141 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-270



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 72523
Sample Date: 05/30/97
Received Date: 05/30/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72523 | | | |
| Sample Name / Location | NAS 20 MW-58 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1230 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/06/97 MC | | | |
| Date of Analysis | 06/06/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72523 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 93 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-271



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 72523
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72523 | | | |
| Sample Name / Location | NAS 20 MW-58 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1230 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| **Parameter** | **1- 72523** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 74 |
| Nonatriacontane (C-39) | 42-193 * | 82 |

**COMMENTS :** * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97

D-272



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

**Lab Report Number:** 72524
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- **72524** |
| Sample Name / Location | NAS 20<br>MW-59 |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ 1030 |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/30/97 JM |
| Date of Analysis | 05/30/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 72524 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 105 |
| Toluene-d8 | 86-119 | 101 |
| Bromofluorobenzene | 85-116 | 102 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-273

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

**Lab Report Number:** 72524
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72524 | | | |
| Sample Name / Location | NAS 20 MW-59 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/12/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72524 | units | Det. Limit | Flags |
| Acenaphthene | 16 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 89 |
| 2-Fluorobiphenyl | 43-116 | 92 |
| Terphenyl -d14 | 33-141 | 101 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-274



End of Report

# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

**Lab Report Number:** 72524
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72524 | | | |
| Sample Name / Location | NAS 20 MW-59 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/06/97 MC | | | |
| Date of Analysis | 06/06/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72524 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 92 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-275



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 72524
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72524 | | | |
| Sample Name / Location | NAS 20 MW-59 | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ 1030 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| **Parameter** | **1- 72524** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | 1.1 | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 69 |
| Nonatriacontane (C-39) | 42-193 * | 75 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97

D-276



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report
### 601/602 Volatiles by Method 8260

Lab Report Number: 72525
Sample Date: 05/30/97
Received Date: 05/30/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 72525 |
| Sample Name / Location | NAS 20 Duplicate |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ N/S |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/30/97 JM |
| Date of Analysis | 05/30/97 |
| Sample Matrix | GW |
| Dilution | X 2 * |

| Compound Name | 1- 72525 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 2 | |
| Bromodichloromethane | BDL | ug/L | 2 | |
| Bromoform | BDL | ug/L | 4 | |
| Bromomethane | BDL | ug/L | 6 | |
| Carbon Tetrachloride | BDL | ug/L | 2 | |
| Chlorobenzene | BDL | ug/L | 2 | |
| Chloroethane | BDL | ug/L | 2 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 2 | |
| Chloroform | BDL | ug/L | 2 | |
| Chloromethane | BDL | ug/L | 2 | |
| Dibromochloromethane | BDL | ug/L | 2 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 2 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 2 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 2 | |
| Dichlorodifluoromethane | BDL | ug/L | 2 | |
| 1,1-Dichloroethane | BDL | ug/L | 2 | |
| 1,2-Dichloroethane | BDL | ug/L | 2 | |
| 1,1-Dichloroethene | BDL | ug/L | 2 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 2 | |
| 1,2-Dichloropropane | BDL | ug/L | 2 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 2 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 2 | |
| Ethylbenzene | BDL | ug/L | 2 | |
| Methylene Chloride | BDL | ug/L | 2 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 2 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 2 | |
| Tetrachloroethene | BDL | ug/L | 2 | |
| Toluene | BDL | ug/L | 2 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 2 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 2 | |
| Trichloroethene | BDL | ug/L | 2 | |
| Trichlorofluoromethane | BDL | ug/L | 2 | |
| Vinyl Chloride | BDL | ug/L | 2 | |
| Xylenes (Total) | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 98 |
| Toluene-d8 | 86-119 | 99 |
| Bromofluorobenzene | 85-116 | 96 |

COMMENTS : * = Dilution due to high amount of silt.

BDL = Below Detection Limit. ug/L = microgram per liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-277

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

Lab Report Number: 72525
Sample Date: 05/30/97
Received Date: 05/30/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72525 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of Extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/12/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72525 | units | Det. Limit | Flags |
| Acenaphthene | 13 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)fluoranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)fluoranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Fluoranthene | BDL | ug/L | 2 | |
| Fluorene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 3 | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 93 |
| 2-Fluorobiphenyl | 43-116 | 94 |
| Terphenyl -d14 | 33-141 | 107 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-278



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

## Analytical Report

### Ethylene Dibromide by Method 504

Lab Report Number: 72525
Sample Date: 05/30/97
Received Date: 05/30/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72525 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 06/06/97 MC | | | |
| Date of Analysis | 06/06/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 72525 | units | Det. Limit | Flags |
| Ethylene Dibromide | BDL | ug/L | 0.02 | |

SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Tetra-Chloro-m-Xylene | 54-140 | 91 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97
Report Generated

D-279



End of Report

# Navy Public Works Center
## Environmental Laboratory

# Analytical Report
## Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

**Lab Report Number:** 72525
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 72525 | | | |
| Sample Name / Location | NAS 20 Duplicate | | | |
| Collector's Name | PJB | | | |
| Date & Time Collected | 05/30/97 @ N/S | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | J. Moore | | | |
| Date of extraction / Initials | 06/11/97 JJ | | | |
| Date of Analysis | 06/16/97 | | | |
| Sample Matrix | GW | | | |
| Dilution | x 1 | | | |
| **Parameter** | **1- 72525** | **units** | **Det. Limit** | **Flags** |
| Petroleum Range Organics by FLPRO | BDL | mg/L | 0.25 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| ortho-Terphenyl | 82-142 * | 69 |
| Nonatriacontane (C-39) | 42-193 * | 62 |

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/23/97

D-280



End of Report

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

**Client:** NPWC Environmental
**Address:** Bldg. 3887, Code 910
NAS Pensacola,FL 32508
**Phone #:** 452-3180
**Contact:** Greg Campbell

# Analytical Report
## 601/602 Volatiles by Method 8260

**Lab Report Number:** 72526
**Sample Date:** 05/30/97
**Received Date:** 05/30/97
**Sample Site:** NAS Pensacola, FL
**Job Order No.:** 130 5001

| | |
|---|---|
| LAB Sample ID# | 1- 72526 |
| Sample Name / Location | NAS 20<br>Trip Blank |
| Collector's Name | PJB |
| Date & Time Collected | 05/30/97 @ AM |
| Sample Type (composite or grab) | Grab |
| Analyst | J. Moore |
| Date of Extraction / Initials | 05/30/97 JM |
| Date of Analysis | 05/30/97 |
| Sample Matrix | GW |
| Dilution | X 1 |

| Compound Name | 1- 72526 | units | Det. Limit | Flags |
|---|---|---|---|---|
| Benzene | BDL | ug/L | 1 | |
| Bromodichloromethane | BDL | ug/L | 1 | |
| Bromoform | BDL | ug/L | 2 | |
| Bromomethane | BDL | ug/L | 3 | |
| Carbon Tetrachloride | BDL | ug/L | 1 | |
| Chlorobenzene | BDL | ug/L | 1 | |
| Chloroethane | BDL | ug/L | 1 | |
| 2-Chloroethylvinyl ether | BDL | ug/L | 1 | |
| Chloroform | BDL | ug/L | 1 | |
| Chloromethane | BDL | ug/L | 1 | |
| Dibromochloromethane | BDL | ug/L | 1 | |
| 1,2-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,3-Dichlorobenzene | BDL | ug/L | 1 | |
| 1,4-Dichlorobenzene | BDL | ug/L | 1 | |
| Dichlorodifluoromethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethane | BDL | ug/L | 1 | |
| 1,2-Dichloroethane | BDL | ug/L | 1 | |
| 1,1-Dichloroethene | BDL | ug/L | 1 | |
| trans-1,2-Dichloroethene | BDL | ug/L | 1 | |
| 1,2-Dichloropropane | BDL | ug/L | 1 | |
| cis-1,3-Dichloropropene | BDL | ug/L | 1 | |
| trans-1,3-Dichloropropene | BDL | ug/L | 1 | |
| Ethylbenzene | BDL | ug/L | 1 | |
| Methylene Chloride | BDL | ug/L | 1 | |
| Methyl-tert-butyl ether (MTBE) * | BDL | ug/l | 1 | |
| 1,1,2,2-Tetrachloroethane | BDL | ug/L | 1 | |
| Tetrachloroethene | BDL | ug/L | 1 | |
| Toluene | BDL | ug/L | 1 | |
| 1,1,1-Trichloroethane | BDL | ug/L | 1 | |
| 1,1,2-Trichloroethane | BDL | ug/L | 1 | |
| Trichloroethene | BDL | ug/L | 1 | |
| Trichlorofluoromethane | BDL | ug/L | 1 | |
| Vinyl Chloride | BDL | ug/L | 1 | |
| Xylenes (Total) | BDL | ug/L | 1 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| 1,2-Dichloroethane-d4 | 75-133 | 104 |
| Toluene-d8 | 86-119 | 100 |
| Bromofluorobenzene | 85-116 | 100 |

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

D-281

Approved by : Jerry Dees, Laboratory Director

Date: 6/24/97
Report Generated



End of Report

1.3 Kath

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
1.3297, Code 920
NAS Pensacola, FL 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 5.30.97
Received Date: 5.30.97
Sample Site: NAS.20
Lab Due Date:

| Sample ID # | Lab | #1-72518 | #2-72519 | #3-72520 | #4-72521 |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | EQ. Blank | DMW-54 | DMW-55 | MW-56 |
| Sampled by | ---------- | PJB | PJB | PJB | PJB |
| Composite Date/Time Collected | Begin | | | | |
| | Frequency | | | | |
| | End | | | | |
| Crab Time | ---------- | 1000 | 1300 | 1100 | 1130 |
| Sample Matrix | ---------- | DI | GW | GW | GW |

Notes: K.A.G. (Less Pb).

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4°C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4°C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4°C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 8 | 40 ml VOA Vial x 2 | HCl/4°C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4°C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4°C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4°C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4°C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4°C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4°C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4°C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 2 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4°C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL ~~EPA 418.1~~ 8100 | X | 2 TPH | X | 2 TPH | X | 2 TPH | X | 2 TPH | | Consult Lab | Consult Lab |
| RCRA Metals (5) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (5) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 5.30.97 / 1400

Received by: Kathy Bennett
Date/Time: 5/30/97 1410

PWC 25123

2-3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, FL 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requestor: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 5-30-97
Received Date: 5-30-97
Sample Site: NAS-20
Lab Due Date:

| Sample ID # | Lab | #1-72522 | #2-72523 | #3-72524 | #4-72525 |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | MW-57 | MW-58 | MW-59 | Duplicate |
| Sampled by | ---------- | RTB | RTB | RTB | RTB |
| Composite Date/Time Collected | Begin | | | | |
| | Frequency | | | | |
| | End | | | | |
| Grab Time | ---------- | 1200 | 1230 | 1030 | — |
| Sample Matrix | ---------- | GW | GW | GW | GW |

Notes: K.A.G. (LESS RB)

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | X | 2 EDB | X | 2 EDB | X | 2 EDB | X | 2 EDB | 3 | 120ml A VOA/4 oz. | None/4°C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4°C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4°C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 4 VOA | X | 4 VOA | X | 4 VOA | X | 4 VOA | 8 | 40 ml VOA Vial x 2 | HCl/4°C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4°C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4°C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4°C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4°C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4°C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4°C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4°C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 18 | 1Lx3/4 oz. | 4°C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 2 PAH | X | 2 PAH | X | 2 PAH | X | 2 PAH | | 1Lx3/4 oz. | 4°C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | ~~EPA 418.1~~ 8100 | X | 2 TPH | X | 2 TPH | X | 2 TPH | X | 2 TPH | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | 1NO3/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 5-30-97 / 1400

Received by: Kathy Bevels
Date/Time: 5/30/97 1410

PWC 9510/8

3-3

# UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, FL 32508-6500

Ph# -(904)452-4728
Autovon-922-4728

Requested: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 5.30.97
Received Date: 5.30.97
Sample Site: NAS. 20
Lab Due Date:

| Sample ID # | Lab | #1- 72526 | #2- | #3- | #4- |
|---|---|---|---|---|---|
| Sample Name or Location | ---------- | Try Blank | | | |
| Sampled by | ---------- | DVB | | | |
| Composite Date/Time Collected | Begin | | | | |
| | Frequency | | | | |
| | End | | | | |
| Grab Time | ---------- | AM | | | |
| Sample Matrix | ---------- | DI | | | |

Notes: K.A.G. (Less Pb)

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | X | 2 VOA | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 8 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 18 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | | Consult Lab | Consult Lab |
| Lead (Pb) | EPA 239.2 | | | | | | | | | | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 5.30.97 11:00

Received by: Kathy Reeves
Date/Time: 5/30/97 14:10

PWC 25108

# Navy Public Works Center
## Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

**Client:** NPWC Engineering
**Address:** Bldg. 458, code 400
NAS Pensacola, FL 32508
**Phone #:** (850) 452-4315
**Contact:** Greg Campbell

## Analytical Report
### 610 PAH's by Method 8270

**Lab Report Number:** 74152
**Sample Date:** 09/18/97
**Received Date:** 09/18/97
**Sample Site:** NASP Site#20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 74152 | | | |
| Sample Name / Location | Site #20 Well # 44 | | | |
| Collector's Name | BH/PK | | | |
| Date & Time Collected | 09/18/97 @ 1320 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 09/22/97 JJ | | | |
| Date of Analysis | 09/25/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| Compound Name | 1- 74152 | units | MDL | Flags |
| Acenaphthene | 22 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)flouranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | BDL | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | BDL | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 82 |
| 2-Flourobiphenyl | 43-116 | 86 |
| Terphenyl -d14 | 33-141 | 92 |

**Explanation of Flags:**

**COMMENTS :** Surrogate recovery limits derived from EPA OLM01.0 SOW 3/90.

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

**Approved by :** Jerry Dees, Laboratory Director D-285

**Date:** 10/3/97
Report Generated



End of Report

# Navy Public Works Center

## Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

**Client:** NPWC Engineering
**Address:** Bldg. 458, code 400
NAS Pensacola, FL 32508
**Phone #:** (850) 452-4315
**Contact:** Greg Campbell

## Analytical Report

### 610 PAH's by Method 8270

**Lab Report Number:** 74153
**Sample Date:** 09/18/97
**Received Date:** 09/18/97
**Sample Site:** NASP Site#20
**Job Order No.:** 130 5001

| | | | | |
|---|---|---|---|---|
| LAB Sample ID# | 1- 74153 | | | |
| Sample Name / Location | Site #20<br>Well # 43 | | | |
| Collector's Name | BH/PK | | | |
| Date & Time Collected | 09/18/97 @ 1350 | | | |
| Sample Type (composite or grab) | Grab | | | |
| Analyst | M. Chambers | | | |
| Date of Extraction / Initials | 09/22/97 JJ | | | |
| Date of Analysis | 09/25/97 | | | |
| Sample Matrix | Groundwater | | | |
| Dilution | X 1 | | | |
| **Compound Name** | **1- 74153** | **units** | **MDL** | **Flags** |
| Acenaphthene | 49 | ug/L | 2 | |
| Acenaphthylene | BDL | ug/L | 2 | |
| Anthracene | BDL | ug/L | 2 | |
| Benzo(a)anthracene | BDL | ug/L | 2 | |
| Benzo(a)pyrene | BDL | ug/L | 2 | |
| Benzo(b)flouranthene | BDL | ug/L | 2 | |
| Benzo(g,h,i)perylene | BDL | ug/L | 2 | |
| Benzo(k)flouranthene | BDL | ug/L | 3 | |
| Chrysene | BDL | ug/L | 2 | |
| Dibenz(a,h)anthracene | BDL | ug/L | 2 | |
| Flouranthene | BDL | ug/L | 2 | |
| Flourene | 15 | ug/L | 2 | |
| Indeno(1,2,3-cd)pyrene | BDL | ug/L | 2 | |
| 1-Methylnaphthalene * | 6 | ug/L | 2 | |
| 2-Methylnaphthalene | BDL | ug/L | 3 | |
| Naphthalene | BDL | ug/L | 2 | |
| Phenanthrene | BDL | ug/L | 2 | |
| Pyrene | BDL | ug/L | 2 | |

### SURROGATE SPIKE RECOVERIES

| | Acceptance Limits | Percent Recovery |
|---|---|---|
| Nitrobenzene- d5 | 35-114 | 86 |
| 2-Flourobiphenyl | 43-116 | 87 |
| Terphenyl -d14 | 33-141 | 95 |

**Explanation of Flags:**

**COMMENTS :** Surrogate recovery limits derived from EPA OLM01.0 SOW 3/90.

**BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.**
**MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.**

**Approved by :** Jerry Dees, Laboratory Director
D-286

**Date:** 10/3/97
Report Generated



**End of Report**

# Navy Public Works Center
## Environmental Laboratory

Bldg.3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642

# Laboratory Report

**Lead in Water by Method 239.2**

**Requester:** NPWC Engineering
**Address:** Bldg. 458, Code 431
NAS Pensacola, FL 32508
**Phone #:** 452-4315
**Contact:** Greg Campbell

**Lab ID Number:** 9710004
**Sample Date:** 18 Sep 97
**Received Date:** 18 Sep 97
**Sample Site:** NASP Site #20
**Job Order #:** 130 5001

| Sample ID# | Lab | 1- 74152 | 2- 74153 | 3- 74154 | 4- 74155 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #44 | Site 20 MW #43 | Site 20 MW #50 | Site 20 MW #42 | Brian Nelson |
| Collector Name | | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 18 Sep 97 @ 1320 | 18 Sep 97 @ 1350 | 18 Sep 97 @ 1430 | 18 Sep 97 @ 1440 | 29 Sep 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 1- 74152 | units | Det. Limit | ID# 2- 74153 | units | Det. Limit | ID# 3- 74154 | units | Det. Limit | ID# 4- 74155 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | X 0.006 | mg/l | 0.003 | X BDL | mg/l | 0.003 | $HNO_3$ to pH <2 |

| Sample ID# | Lab | 5- 74156 | 6- 74157 | 7- | | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #49 | Site 20 MW #56 | | | Brian Nelson |
| Collector Name | | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | | | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 18 Sep 97 @ 1455 | 18 Sep 97 @ 1510 | | 1545 | 29 Sep 97 |
| Sample Type | Comp/Grab | Grab | Grab | | | |
| Sample Matrix | | Groundwater | Groundwater | | | |

| PARAMETER Metals: | METHOD # | ID# 5- 74156 | units | Det. Limit | ID# 6- 74157 | units | Det. Limit | ID# 7- | units | Det. Limit | ID# 8- | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X BDL | mg/l | 0.003 | X 0.020 | mg/l | 0.003 | | mg/l | 0.003 | | mg/l | 0.003 | $HNO_3$ to pH <2 |

**Comments:** mg/l=milligrams per liter.

**Approved by:** Jerry Dees, Laboratory Director

**Date/Time:** 03-Oct-97 09:46

PWC 5090/14

**End of Report**

D-287

1 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

NPWC Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NASP – B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9-18-97
Received Date: 9-18-97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1 7-4152 | #2 7-4153 | #3 7-4154 | #4 7-4155 |
|---|---|---|---|---|---|
| Sample Name | ---------- | Site 20 | Site 20 | Site 20 | Site 20 |
| or Location | ---------- | Well #44 | Well 43 | Well #60 | Well #42 |
| Sampled by | ---------- | BH/PK | BH/PK | BH/PK | BH/PK |
| Composite | Begin | | | | |
| Date/Time | Frequency | 9-18-97 | 9-18-97 | 9-18-97 | 9-18-97 |
| Collected | End | | | | |
| Grab Time | ---------- | 1320 | 1350 | 1430 | 1440 |
| Sample Matrix | ---------- | GW | GW | GW | GW |

Notes: Pb QUIESCENT SAMPLES – Note: Well 43 & 44 – PAH & Pb

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | X | 3 bott | X | 3 bott | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | X | 1-1 | X | 1-1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments: * Wells 43 + 44 → PAH & Pb

Relinquished by: [signature]
Date/Time: 9/18/97 1520 Departed Site 20

Received by: [signature]
Date/Time: 9-18-97 1533

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D-288

2 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

NPWC Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? (Yes) No  QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P- B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9-18-97
Received Date: 9-18-97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1- 7-4156 | #2- 7-4157 | #3- | #4- |
|---|---|---|---|---|---|
| Sample Name | ---------- | Site 20 | Site 20 | | |
| or Location | ---------- | MW# 49 | MW#56 | | |
| Sampled by | ---------- | BN/PK | BN/PK | | |
| Composite | Begin | | | | |
| Date/Time | Frequency | 9-18-97 | 9-18-97 | | |
| Collected | End | | | | |
| Grab Time | ---------- | 1455 | 1510 | | |
| Sample Matrix | ---------- | GW | GW | | |

Notes: Pb QUIESCENT SAMPLES

| PARAMETER by Method Name | METHOD # | X | 1-1 Bottle ID #'s | X | 1-1 Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | | | | | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature]
Date/Time: 9/15/97 1520

Received by: [signature]
Date/Time: 9/15/97 1535

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Departed Site 20

D-289

# Navy Public Works Center
## Environmental Laboratory

Bldg.3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642

# Laboratory Report

**Lead in Water by Method 239.2**

**Requester:** NPWC Engineering
**Address:** Bldg. 458, Code 431
NAS Pensacola, FL 32508
**Phone #:** 452-4315
**Contact:** Greg Campbell

**Lab ID Number:** 9710006
**Sample Date:** 19 Sep 97
**Received Date:** 19 Sep 97
**Sample Site:** NASP Site #20
**Job Order #:** 130 5001

| Sample ID# | Lab | 1- 74189 | 2- 74190 | 3- 74191 | 4- 74192 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #59 | Site 20 MW #58 | Site 20 MW #23 | Site 20 MW #17 | Brian Nelson |
| Collector Name | | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 19 Sep 97 @ 1310 | 19 Sep 97 @ 1330 | 19 Sep 97 @ 1400 | 19 Sep 97 @ 1430 | 1 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 1- 74189 | units | Det. Limit | ID# 2- 74190 | units | Det. Limit | ID# 3- 74191 | units | Det. Limit | ID# 4- 74192 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X BDL | mg/l | 0.003 | X 0.005 | mg/l | 0.003 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | $HNO_3$ to pH <2 |

D-290

| Sample ID# | Lab | 5- 74193 | 6- 74194 | 7- 74195 | 8- 74196 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #37 | Site 20 MW #48 | Site 20 MW #57 | Site 20 Duplicate | Brian Nelson |
| Collector Name | | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | B. Hagendorfer/P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 19 Sep 97 @ 1010 | 19 Sep 97 @ 1135 | 19 Sep 97 @ 1235 | 19 Sep 97 @ NS | 1 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 5- 74193 | units | Det. Limit | ID# 6- 74194 | units | Det. Limit | ID# 7- 74195 | units | Det. Limit | ID# 8- 74196 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | X 0.003 | mg/l | 0.003 | $HNO_3$ to pH <2 |

**Comments:** mg/l=milligrams per liter.

**Approved by:** Jerry Dees, Laboratory Director

**Date/Time:** 03-Oct-97 09:49

PWC 5090/14

**End of Report**

2 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

NPWC Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P- B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/19/97
Received Date: 9/19/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1-7-4189 | #2-7-4190 | #3-7-4191 | #4-7-4192 |
|---|---|---|---|---|---|
| Sample Name | ---------- | Site #20 | Site #20 | Site 20 | Site 20 |
| or Location | ---------- | MW #59 | MW #58 | MW #23 | MW #17 |
| Sampled by | ---------- | PR/BH | PR/BH | PR/BH | PR/BH |
| Composite | Begin | | | | |
| Date/Time | Frequency | 9-19-97 | 9/19/97 | 9/19/97 | 9-19-97 |
| Collected | End | | | | |
| Grab Time | ---------- | 1310 | 1330 | 1400 | 1450 |
| Sample Matrix | ---------- | GW | GW | GW | GW |

Notes: Pb QUIESCENT SAMPLES

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| rgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| ase/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 8 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | X | 1-1 | X | 1-1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: B. Haynie
Date/Time: 9-19-97 1448

Received by: B. Haynie
Date/Time: 9-19-97 1450

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See site D-291

2 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)


'C Environmental Laboratory
...g. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387


Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P– B-458
Phone #: 452– 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/19/97
Received Date: 9/19/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1-7-4193 | #2-7-4194 | #3-7-4195 | #4-7-4196 | Notes: |
|---|---|---|---|---|---|---|
| Sample Name | ---------- | Site#20 | Site#20 | Site#20 | Site#20 | |
| or Location | ---------- | MW#37 | MW#48 | MW#57 | DUPLICATE | |
| Sampled by | ---------- | PKeane | PKeane | PKeane | PKeane | QUIESCENT SAMPLES |
| Composite | Begin | | | | | |
| Date/Time | Frequency | | | | | |
| Collected | End | | | | | |
| Grab Time | ---------- | 1010 | 1135 | 1235 | | |
| Sample Matrix | ---------- | GW | GW | GW | GW | |

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1-1 | | 1-1 | | | | | | | |
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 16 | 1L Amber x 2 | 4° C |
| s Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 8 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | X | 1-1 | X | 1-1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: B. Henderson
Date/Time: 9-19-97 1443

Received by: B. Henderson
Date/Time: 9-19-97 1450

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Last site
D-292

# Navy Public Works Center
## Environmental Laboratory

Bldg.3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642

# Laboratory Report
**Lead in Water by Method 239.2**

**Requester:** NPWC Engineering
**Address:** Bldg. 458, Code 431
NAS Pensacola, FL 32508
**Phone #:** 452-4315
**Contact:** Greg Campbell

**Lab ID Number:** 9710005
**Sample Date:** 22 Sep 97
**Received Date:** 22 Sep 97
**Sample Site:** NASP Site #20
**Job Order #:** 130 5001

| Sample ID# | Lab | 1- 74210 | 2- 74211 | 3- 74212 | 4- 74213 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #14 | Site 20 MW #15 | Site 20 MW #26 | Site 20 MW #16 | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | Date(s) of analysis: |
| | Comp stop | | | | | |
| | Grab | 22 Sep 97 @ 1200 | 22 Sep 97 @ 1320 | 22 Sep 97 @ 1410 | 22 Sep 97 @ 1445 | 1 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 1- 74210 | units | Det. Limit | ID# 2- 74211 | units | Det. Limit | ID# 3- 74212 | units | Det. Limit | ID# 4- 74213 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | x 0.008 | mg/l | 0.003 | x BDL | mg/l | 0.003 | x BDL | mg/l | 0.003 | x BDL | mg/l | 0.003 | None |

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| Sample ID# | Lab | 5- 74214 | 6- 74215 | 7- 74216 | 74217 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 Duplicate | Site 20 MW #25 | Site 20 MW #24 | Site 20 MW #3 | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | Date(s) of analysis: |
| | Comp stop | | | | | |
| | Grab | 22 Sep 97 @ NS | 22 Sep 97 @ 1500 | 22 Sep 97 @ 1510 | 22 Sep 97 @ 1520 | 1 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 5- 74214 | units | Det. Limit | ID# 6- 74215 | units | Det. Limit | ID# 7- | units | Det. Limit | ID# 8- | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | x BDL | mg/l | 0.003 | x BDL | mg/l | 0.003 | BDL | mg/l | 0.003 | 0.004 | mg/l | 0.003 | None |

**Comments:** mg/l=milligrams per liter.

**Approved by:** Jerry Dees, Laboratory Director

**Date/Time:** 02-Oct-97 14:46

PWC 5090/14

**End of Report**

1 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

NPWC Environmental Laboratory
P. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P- B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/22/97
Received Date: 9/22/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1- 7-4210 | #2- 7-4211 | #3- 7-4212 | #4- 7-4213 | Notes: |
|---|---|---|---|---|---|---|
| Sample Name | ---------- | SITE # 20 | SITE # 20 | SITE # 20 | SITE # 20 | |
| or Location | ---------- | MW # 14 | MW # 15 | MW # 26 | MW # 16 | |
| Sampled by | ---------- | PKeane | PKeane | PKeane | PKeane | QUIESCENT SAMPLES |
| Composite | Begin | | | | | |
| Date/Time | Frequency | | | | | |
| Collected | End | | | | | |
| Grab Time | ---------- | 1200 | 1320 | 1410 | 1445 | |
| Sample Matrix | ---------- | GW | GW | GW | GW | |

| PARAMETER by Method Name | METHOD # | X | 1-1 Bottle ID #'s | X | 1-1 Bottle ID #'s | X | 1-1 Bottle ID #'s | X | 1-1 Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| as Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| alo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | X | 1-1 | X | 1-1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: PKeane
Date/Time: 9/22/97 Departed Site # 20 1535

Received by: PKeane
Date/Time: 9/22/97 1550 To Labs

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D-294

2 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)


WC Environmental Laboratory
.g. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387


Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P – B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/22/97
Received Date: 9/22/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1-7-4214 | #2-7-4215 | #3-7-4216 | #4-7-4217 | Notes: |
|---|---|---|---|---|---|---|
| Sample Name | ---------- | Site #20 | Site #20 | Site #20 | Site 20 | |
| or Location | ---------- | Duplicate | MW #25 | MW #24 | MW #3 | |
| Sampled by | ---------- | PKane | PKane | PKane | PKane | QUIESCENT SAMPLES |
| Composite | Begin | | | | | |
| Date/Time | Frequency | | | | | |
| Collected | End | | | | | |
| Grab Time | ---------- | — | 1500 | 1510 | 1520 | |
| Sample Matrix | ---------- | GW | GW | GW | GW | |

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| s Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C./None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C./None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C./None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C./None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C./None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C./None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C./None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C./None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C./None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 8 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1–1 | X | 1–1 | X | 1–1 | X | 1–1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: PKane
Date/Time: 9/22/97 Departed Site #20 1535

Received by: PKane
Date/Time: 9/22/97 1520 To YAB

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D-295

# Navy Public Works Center
## Environmental Laboratory

Bldg.3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642

# Laboratory Report

**Lead in Water by Method 239.2**

**Requester:** NPWC Engineering
**Address:** Bldg. 458, Code 431
NAS Pensacola, FL 32508
**Phone #:** 452-4315
**Contact:** Greg Campbell

**Lab ID Number:** 9710003
**Sample Date:** 23 Sep 97
**Received Date:** 23 Sep 97
**Sample Site:** NASP Site #20
**Job Order #:** 130 5001

| Sample ID# | Lab | 1- 74229 | 2- 74230 | 3- 74231 | 4- 74232 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #13 | Site 20 MW #10 | Site 20 MW #1 | Site 20 MW #6 | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 23 Sep 97 @ 1135 | 23 Sep 97 @ 1210 | 23 Sep 97 @ 1305 | 23 Sep 97 @ 1325 | 29 Sep 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 1- 74229 | units | Det. Limit | ID# 2- 74230 | units | Det. Limit | ID# 3- 74231 | units | Det. Limit | ID# 4- 74232 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X 0.022 | mg/l | 0.003 | X 0.008 | mg/l | 0.003 | X 0.006 | mg/l | 0.003 | X BDL | mg/l | 0.003 | None |

| Sample ID# | Lab | 5- 74233 | 6- 74234 | 7- 74235 | 8- 74236 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #7 | Site 20 MW #5 | Site 20 Eq. Blank | Site 20 MW #4 | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 23 Sep 97 @ 1450 | 23 Sep 97 @ 1520 | 23 Sep 97 @ 1530 | 23 Sep 97 @ 1545 | 29 Sep 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Deionized Water | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 5- 74233 | units | Det. Limit | ID# 6- 74234 | units | Det. Limit | ID# 7- 74235 | units | Det. Limit | ID# 8- 74236 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X 0.004 | mg/l | 0.003 | X 0.041 | mg/l | 0.003 | X BDL | mg/l | 0.003 | X 0.031 | mg/l | 0.003 | None |

D-396

**Comments:** mg/l=milligrams per liter.

**Approved by:** Jerry Dees, Laboratory Director

**Date/Time:** 03-Oct-97 12:30

PWC 5090/14

**End of Report**

1 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)


WC Environmental Laboratory
.g. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387


Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P– B-458
Phone #: 452– 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/23/97
Received Date: 9/23/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1- 7-4229 | #2- 7-4230 | #3- 7-4231 | #4- 7-4232 | Notes: |
|---|---|---|---|---|---|---|
| Sample Name | ---------- | Site # 20 | Site # 20 | Site # 20 | Site # 20 | |
| or Location | ---------- | MW # 13 | MW # 10 | MW # 1 | MW # 6 | |
| Sampled by | ---------- | P Kearn | P Kearn | P Kearn | P Kearn | QUIESCENT SAMPLES |
| Composite | Begin | | | | | |
| Date/Time | Frequency | | | | | |
| Collected | End | | | | | |
| Grab Time | ---------- | 1135 | 1210 | 1305 | 1325 | |
| Sample Matrix | ---------- | GW | GW | GW | GW | |

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1-1 | | 1-1 | | 1-1 | | 1-1 | | | |
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| is Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 8 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 18 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | X | 1-1 | X | 1-1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: P Kearn
Date/Time: 9/23/97 1555
Departed Site # 20

Received by: P Kearn
Date/Time: 9/23/97 1610
To LAB

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# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

NPWC Environmental Laboratory
P. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P- B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/23/97
Received Date: 9/23/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1- 74233 | #2- 74234 | #3- 74235 | #4- 74236 |
|---|---|---|---|---|---|
| Sample Name | ---------- | Site# 20 | Site# 20 | Site# 20 | Site# 20 |
| or Location | ---------- | MW#7 | MW#5 | EQ Blank | MW#4 |
| Sampled by | ---------- | PKane | PKane | PKane | PKane |
| Composite | Begin | | | | |
| Date/Time | Frequency | | | | |
| Collected | End | | | | |
| Grab Time | ---------- | 1450 | 1520 | 1530 | 1545 |
| Sample Matrix | ---------- | GW | GW | DI WATER | GW |

Notes: QUIESCENT SAMPLES

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| [illegible]as Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| [illegible]alo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 8 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | X | 1-1 | X | 1-1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: PKane
Date/Time: 9/23/97 1555
Departed Site #20

Received by: PKane
Date/Time: 9/23/97 1610
To LAB

# Navy Public Works Center
## Environmental Laboratory

Bldg.3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642

# Laboratory Report

**Lead in Water by Method 239.2**

**Requester:** NPWC Engineering
**Address:** Bldg. 458, Code 431
NAS Pensacola, FL 32508
**Phone #:** 452-4315
**Contact:** Greg Campbell

**Lab ID Number:** 9710007
**Sample Date:** 24 Sep 97
**Received Date:** 24 Sep 97
**Sample Site:** NASP Site #20
**Job Order #:** 130 5001

| Sample ID# | Lab | 1- 74252 | 2- 74253 | 3- 74254 | 4- 74255 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #18 | Site 20 MW #20 | Site 20 MW #21 | Site 20 MW #27 | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 24 Sep 97 @ 1310 | 24 Sep 97 @ 1355 | 24 Sep 97 @ 1410 | 24 Sep 97 @ 1435 | 1 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 1- 74252 | units | Det. Limit | ID# 2- 74253 | units | Det. Limit | ID# 3- 74254 | units | Det. Limit | ID# 4- 74255 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | None |

| Sample ID# | Lab | 5- 74256 | 6- 74257 | 7- 74258 | 8- 74259 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #22 | Site 20 Duplicate | Site 20 MW #28 | Site 20 MW #35 | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 24 Sep 97 @ 1445 | 24 Sep 97 @ NS | 24 Sep 97 @ 1500 | 24 Sep 97 @ 1515 | 1 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Deionized Water | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 5- 74256 | units | Det. Limit | ID# 6- 74257 | units | Det. Limit | ID# 7- 74258 | units | Det. Limit | ID# 8- 74259 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | None |

D-299

**Comments:** mg/l=milligrams per liter.

**Approved by:** Jerry Dees, Laboratory Director

**Date/Time:** 03-Oct-97 12:29

PWC 5090/14

**End of Report**

1 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)


,C Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387


Report Required? (Yes) No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P- B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/24/97
Received Date: 9/24/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | 01-7-4252 | 02-7-4253 | 03-7-4254 | 04-7-4255 |
|---|---|---|---|---|---|
| Sample Name | ---------- | Site #20 | Site #20 | Site 20 | Site 20 |
| or Location | ---------- | MW #18 | MW #20 | MW #21 | MW #27 |
| Sampled by | ---------- | R Keane | R Keane | R Keane | R Keane |
| Composite | Begin | | | | |
| Date/Time | Frequency | | | | |
| Collected | End | | | | |
| Grab Time | ---------- | 1310 | 1355 | 1410 | 1435 |
| Sample Matrix | ---------- | GW | GW | GW | GW |

Notes: QUIESCENT SAMPLES

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| ss/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1–1 | X | 1–1 | X | 1–1 | X | 1–1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: R Keane
Date/Time: 9/24/97 1525

Received by: R Keane
Date/Time: 9/24/97 1540

Departed Site # 20

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D-300

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

"WC Environmental Laboratory
,g. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? (Yes) No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P- B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/24/97
Received Date: 9/24/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1-7-4256 | #2-7-4257 | #3-7-4258 | #4-7-4259 | Notes: |
|---|---|---|---|---|---|---|
| Sample Name | ---------- | Site 20 | Site 20 | SITE 20 | SITE 20 | |
| or Location | ---------- | MW#22 | Duplicate | MW#28 | MW#35 | |
| Sampled by | ---------- | PKane | PKane | PKane | PKane | QUIESCENT SAMPLES |
| Composite | Begin | | | | | |
| Date/Time | Frequency | | | | | |
| Collected | End | | | | | |
| Grab Time | ---------- | 1445 | — | 1500 | 1515 | |
| Sample Matrix | ---------- | GW | GW | GW | GW | |

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| ıs Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non-Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS-Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS-Cap. | EPA SW 8270A | | | | | | | | | 18 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW-846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW-846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW-846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL-PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 8 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW-846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | X | 1-1 | X | 1-1 | 1 | 250ml/4 oz. | HNO3/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: PKane
Date/Time: 9/24/97 1525
Departed Site #20

Received by: PKane
Date/Time: 9/24/97 1540

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# Navy Public Works Center
## Environmental Laboratory

Bldg.3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642

# Laboratory Report

**Lead in Water by Method 239.2**

**Requester:** NPWC Engineering
**Address:** Bldg. 458, Code 431
NAS Pensacola, FL 32508
**Phone #:** 452-4315
**Contact:** Greg Campbell

**Lab ID Number:** 9710008
**Sample Date:** 25 Sep 97
**Received Date:** 25 Sep 97
**Sample Site:** NASP Site #20
**Job Order #:** 130 5001

| Sample ID# | Lab | 1- 74324 | 2- 74325 | 3- 74326 | 4- 74327 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #51 | Site 20 MW #53 | Site 20 MW #52 | Site 20 MW #46 | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | P. Keane | |
| Date/Time | Comp start | | | | | |
| Collected | Comp stop | | | | | Date(s) of analysis: |
| (Military) | Grab | 25 Sep 97 @ 1305 | 25 Sep 97 @ 1320 | 25 Sep 97 @ 1350 | 25 Sep 97 @ 1410 | 1 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 1- 74324 | units | Det. Limit | ID# 2- 74325 | units | Det. Limit | ID# 3- 74326 | units | Det. Limit | ID# 4- 74327 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | X BDL | mg/l | 0.003 | X 0.004 | mg/l | 0.003 | None |

D-302

| Sample ID# | Lab | 5- 74328 | 6- 74329 | 7- 74330 | 8- | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #45 | Site 20 MW #38 | Site 20 MW #39 | | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | | |
| Date/Time | Comp start | | | | | |
| Collected | Comp stop | | | | | Date(s) of analysis: |
| (Military) | Grab | 25 Sep 97 @ 1510 | 25 Sep 97 @ 1540 | 25 Sep 97 @ 1615 | | 1 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | | |

| PARAMETER Metals: | METHOD # | ID# 5- 74328 | units | Det. Limit | ID# 6- 74329 | units | Det. Limit | ID# 7- 74330 | units | Det. Limit | ID# 8- | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | X 0.062 | mg/l | 0.003 | X BDL | mg/l | 0.003 | X 0.144 | mg/l | 0.006 | . | mg/l | 0.003 | None |

**Comments:** mg/l=milligrams per liter.

**Approved by:** Jerry Dees, Laboratory Director

**Date/Time:** 03-Oct-97 12:36

PWC 5090/14

**End of Report**

1 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

NPWC Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? (Yes) No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P– B-458
Phone #: 452– 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/25/97
Received Date: 9/25/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1- 7-4324 | #2- 7-4325 | #3- 7-4326 | #4- 7-4327 | Notes: |
|---|---|---|---|---|---|---|
| Sample Name | ---------- | Site# 20 | Site#20 | Site#20 | Site#20 | |
| or Location | ---------- | MW#51 | MW#53 | MW#52 | MW 46 | |
| Sampled by | ---------- | PKane | PKane | PKane | PKane | QUIESCENT SAMPLES |
| Composite | Begin | | | | | |
| Date/Time | Frequency | | | | | |
| Collected | End | | | | | |
| Grab Time | ---------- | 1305 | 1320 | 1350 | 1410 | |
| Sample Matrix | ---------- | GW | GW | GW | GW | |

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| ...geables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| ...se/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org. /GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1–1 | X | 1–1 | X | 1–1 | X | 1–1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Comments:

Relinquished by: PM Kane
Date/Time: 9/25/97 1638

Received by: PKane
Date/Time: 9/25/97 1655

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Depicted Site #20 D-303

TC LAB

2 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

; Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? (Yes) No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P– B-458
Phone #: 452– 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/25/97
Received Date: 9/25/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1-7-4328 | #2-7-4329 | #3-7-4330 | #4- |
|---|---|---|---|---|---|
| Sample Name | ---------- | Site #20 | Site #20 | Site #20 | |
| or Location | ---------- | mw #45 | mw #38 | mw #39 | |
| Sampled by | ---------- | PKeane | PKeane | PKeane | |
| Composite | Begin | | | | |
| Date/Time | Frequency | | | | |
| Collected | End | | | | |
| Grab Time | ---------- | 1510 | 1540 | 1615 | |
| Sample Matrix | ---------- | GW | GW | GW | |

Notes: QUIESCENT SAMPLES

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | X | 1-1 | | | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: PKeane
Date/Time: 9/25/97 1638 Departed Site #20

Received by: PKeane
Date/Time: 9/25/97 1655 TO LAB

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D-304

# Navy Public Works Center
## Environmental Laboratory

Bldg.3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642

# Laboratory Report

**Lead in Water by Method 239.2**

**Requester:** NPWC Engineering
**Address:** Bldg. 458, Code 431, NAS Pensacola, FL 32508
**Phone #:** 452-4315
**Contact:** Greg Campbell

**Lab ID Number:** 9710038
**Sample Date:** 25, 26, 29 Sep 97
**Received Date:** 26, 29 Sep 97
**Sample Site:** NASP Site #20
**Job Order #:** 130 5001

| Sample ID# | Lab | 1- 74361 | 2- 74362 | 3- 74363 | 4- 74364 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #29 | Site 20 MW #30 | Site 20 Duplicate | Site 20 MW #9 | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 25 Sep 97 @ 1025 | 25 Sep 97 @ 1040 | 25 Sep 97 @ NS | 25 Sep 97 @ 1250 | 6 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 1- 74361 | units | Det. Limit | ID# 2- 74362 | units | Det. Limit | ID# 3- 74363 | units | Det. Limit | ID# 4- 74364 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | x BDL | mg/l | 0.003 | x 0.004 | mg/l | 0.003 | x BDL | mg/l | 0.003 | x BDL | mg/l | 0.003 | $HNO_3$ to pH <2 |

D-305

| Sample ID# | Lab | 5- 74365 | 6- 74366 | 7- 74383 | 8- 74384 | Analyst(s): |
|---|---|---|---|---|---|---|
| Sample Name | Requester | Site 20 MW #41 | Site 20 MW #40 | Site 20 DMW #55 | Site 20 MW #54 | Brian Nelson |
| Collector Name | | P. Keane | P. Keane | P. Keane | P. Keane | |
| Date/Time Collected (Military) | Comp start | | | | | |
| | Comp stop | | | | | Date(s) of analysis: |
| | Grab | 26 Sep 97 @ 1315 | 26 Sep 97 @ 1435 | 29 Sep 97 @ 1145 | 29 Sep 97 @ 1305 | 6 Oct 97 |
| Sample Type | Comp/Grab | Grab | Grab | Grab | Grab | |
| Sample Matrix | | Groundwater | Groundwater | Groundwater | Groundwater | |

| PARAMETER Metals: | METHOD # | ID# 5- 74365 | units | Det. Limit | ID# 6- 74366 | units | Det. Limit | ID# 7- 74383 | units | Det. Limit | ID# 8- 74384 | units | Det. Limit | Preservative(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead(Pb) | EPA 239.2 | x 0.014 | mg/l | 0.003 | x 0.008 | mg/l | 0.003 | x BDL | mg/l | 0.003 | x BDL | mg/l | 0.003 | $HNO_3$ to pH <2 |

**Comments:** mg/l=milligrams per liter. NS=Not Submitted.

**Approved by:** Jerry Dees, Laboratory Director **Date/Time:** 09-Oct-97 10:19

PWC 5090/14

**End of Report**

1 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P– B-458
Phone #: 452– 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/26/97
Received Date: 9/26/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1-7-4361 | #2-7-4362 | #3-7-4363 | #4-7-4364 | Notes: |
|---|---|---|---|---|---|---|
| Sample Name | ---------- | Site #20 | Site #20 | Site #20 | Site #20 | |
| or Location | ---------- | MW# 29 | MW# 30 | Duplicate | MW# 9 | |
| Sampled by | ---------- | RKane | RKane | RKane | RKane | QUIESCENT SAMPLES |
| Composite | Begin | | | | | |
| Date/Time | Frequency | | | | | |
| Collected | End | | | | | |
| Grab Time | ---------- | 1025 | 1040 | — | 1250 | |
| Sample Matrix | ---------- | GW | GW | GW | GW | |

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1-1 | | 1-1 | | 1-1 | | 1-1 | | | |
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| ase/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| as Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | X | 1-1 | X | 1-1 | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments: MW# 30 HAS FUEL SPECKS IN SAMPLE BK

Relinquished by: RKane
Date/Time: 9/26/97 1440

Received by: RKane
Date/Time: 9/26/97 1453

Total

Departed Site #20

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D-306

2 of 2

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

NC Environmental Laboratory
3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 460
Address: NAS P- B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/26/97
Received Date: 9/26/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1- 7-4365 | #2- 7-4366 | #3- | #4- |
|---|---|---|---|---|---|
| Sample Name | ---------- | Site # 20 | Site # 20 | | |
| or Location | ---------- | MW # 41 | MW # 40 | | |
| Sampled by | ---------- | [illegible] | [illegible] | | |
| Composite | Begin | | | | |
| Date/Time | Frequency | | | | |
| Collected | End | | | | |
| Grab Time | ---------- | 1315 | 1435 | | |
| Sample Matrix | ---------- | GW | GW | | |

Notes: QUIESCENT SAMPLES

| PARAMETER by Method Name | METHOD # | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 17 | | | | | | | | | |
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| [illegible]us Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| [illegible]alo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
| TCLP Metals (8) w/extraction | EPA SW–846 | | | | | | | | | 10 | Consult Lab | Consult Lab |
| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | | | | | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [illegible]
Date/Time: 9/24/97 1440
Departed Site 20

Received by: [illegible]
Date/Time: 9/26/97 1455
To lab

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D-307

# CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

WC Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? Yes No QC Required? Yes No

Requester: PWC ENGINEERING CODE 400
Address: NAS P- B-458
Phone #: 452- 4315
Contact: GREG GAMBELL
Job Order #: 1305001

Lab ID Number:
Sample Date: 9/29/97
Received Date: 9/29/97
Sample Site: NASP SITE # 20
Lab Due Date:

| Sample ID # | Lab | #1- 7-4383 | #2- 7-4384 | #3- | #4- | Notes: |
|---|---|---|---|---|---|---|
| Sample Name | ---------- | Site #20 | Site #20 | | | QUIESCENT SAMPLES |
| or Location | ---------- | DMW 55 | DMW 54 | | | |
| Sampled by | ---------- | [illegible] | [illegible] | | | |
| Composite | Begin | | | | | |
| Date/Time | Frequency | | | | | |
| Collected | End | | | | | |
| Grab Time | ---------- | 1145 | 1305 | | | |
| Sample Matrix | ---------- | GW | GW | | | |

| PARAMETER by Method Name | METHOD # | X | 1-1 Bottle ID #'s | X | 1-1 Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide (EDB) | EPA 504 | | | | | | | | | 3 | 120ml A VOA/4 oz. | None/4° C |
| Purg. Halocarbons/GC | EPA 601 | | | | | | | | | 4 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Aromatics/GC | EPA 602 | | | | | | | | | 3 | 40 ml VOA Vial x 2 | HCl/4° C |
| Purg. Halo. & Aro./GC | EPA 601/602 | | | | | | | | | 6 | 40 ml VOA Vial x 2 | HCl/4° C |
| Polynuclear Aromatics/HPLC | EPA 610 | | | | | | | | | 7 | 1L Amber x 2 | 4° C |
| Purgeables/GCMS | EPA 624 | | | | | | | | | 8 | 40 ml VOA Vial x 2 | HCl/4° C |
| Base/Neutrals & Acids/GCMS | EPA 625 | | | | | | | | | 15 | 1L Amber x 2 | 4° C |
| Gas Chromatography | EPA SW 8000 | | | | | | | | | 5 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Halo. Vol. Org./GC | EPA SW 8010 | | | | | | | | | 4 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Non–Halo. Vol. Org./GC | EPA SW 8015(MOD) | | | | | | | | | 4 | 40mlx2/1Lx2/4 oz. | HCl/4° C/None |
| Arom. Vol. Org./GC | EPA SW 8020 | | | | | | | | | 3 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Halo./Arom. Vol. Org./GC | EPA SW 8010/8020 | | | | | | | | | 6 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Polynuclear Aromatics/GC | EPA SW 8100 | | | | | | | | | 6 | 1Lx2/4 oz. | 4° C/None |
| VOC/GCMS | EPA SW 8240A | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| VOC/GCMS–Cap. | EPA SW 8260 | | | | | | | | | 8 | 40ml VOAx2/4 oz. | HCl/4° C/None |
| Semivol. Org./GCMS–Cap. | EPA SW 8270A | | | | | | | | | 16 | 1Lx3/4 oz. | 4° C/None |
| Polynuclear Aromatics (PAH's) | EPA SW 8310 | | | | | | | | | 9 | 1Lx3/4 oz. | 4° C/None |

| PARAMETER by Group Name | METHOD SOURCE | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | X | Bottle ID #'s | Billing Units | Containers Required | Preservative(s) Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Analytical Group | EPA SW–846 | | | | | | | | | 47 | Consult Lab | Consult Lab |
| Kerosene Analytical Group | EPA SW–846 | | | | | | | | | 39 | Consult Lab | Consult Lab |
| Mixed Product Analytical Group | EPA SW–846 | | | | | | | | | 24 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | EPA 418.1 | | | | | | | | | 2 | Consult Lab | Consult Lab |
| Total Petroleum Hydrocarbons | FL–PRO | | | | | | | | | 7 | Consult Lab | Consult Lab |
| RCRA Metals (8) | EPA Various | | | | | | | | | 6 | Consult Lab | Consult Lab |
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| Lead (Pb) only | EPA 239.2 | X | 1-1 | X | 1-1 | | | | | 1 | 250ml/4 oz. | $HNO_3$/None |
| Other: | | | | | | | | | | | | |

Comments:

Relinquished by: [signature]
Date/Time: 9/29/97 1312
Departed Site #20

Received by: [signature]
Date/Time: 9/29/97 1330

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