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CONTAMINATION ASSESSMENT REPORT FOR SITE 1101 OUTLYING LANDING FIELD BRONSON NAS PENSACOLA FL

01/01/1997

NAVY PUBLIC WORKS CENTER

CONTAMINATION ASSESSMENT REPORT

U.S. NAVY OUTLYING LANDING FIELD (OLF) BRONSON
SITE 1101
PENSACOLA, FLORIDA

PREPARED BY:

NAVY PUBLIC WORKS CENTER
BUILDING 3887
PENSACOLA, FLORIDA 32508-6500

AUTHOR: GREG CAMPBELL, P.E.

JANUARY 1997

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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Site 1101
Pensacola, Florida

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1.0 INTRODUCTION

1.1 PURPOSE

The Navy Public Works Center, Naval Air Station Pensacola, Pensacola, Florida was retained by Southern Division Navy Facilities Engineering Command (SOUTHNAVFACENGCOM) to conduct a contamination assessment and remediation plan (if warranted) at the U.S. Navy Outlying Landing Field (OLF) Bronson, Site 1101, Naval Air Station Pensacola, Pensacola, Florida.

Petroleum contamination was discovered at the site on June 17, 1994 during the removal of one (l) underground tank (1,050 gallon capacity) from building 1101. The underground tank, approximately 50 years old, was used to store heating fuel oil. The analytical laboratory results of the groundwater sample collected during the closure assessment of the tank indicated that the concentration of petroleum contaminants at the site was greater than the allowable state target level.

The findings and conclusions of the field investigation for the contamination assessment for OLF Bronson, Site 1101, are presented herein.

1.2 SITE LOCATION AND AREA OF INVESTIGATION

Site 1101 is located within the confines of OLF Bronson which consists of approximately 950 acres of mostly grass and forest. OLF Bronson is located in northwest Florida, on the east side of Perdido Bay, approximately 5 miles west of Pensacola, Florida and about one mile from the Alabama border. Four abandoned airstrips and the remains of old support buildings for the airfield are located on OLF Bronson. OLF Bronson is now known as Blue Angel Recreation Park and is used for recreational purposes. Figure 1-1 shows the facility in relation to the surrounding area. Most runoff from the property is toward the southwest through a network of culverts that lead to Perdido Bay. Figures 1-2 thru 1-5 show topographic and local surface drainage features.

The area surrounding OLF Bronson is sparsely populated. Two small communities, Paradise Beach and Perdido Heights, are located about a mile to the north of the old airfield. A few houses are located around the perimeter of the old airfield, but most of the surrounding area is either wetland, forest, or the waters of Perdido Bay. The areas north, south, and east of OLF Bronson are characterized by scattered residential structures, mobile homes, farm buildings, stores, and churches. Perdido Bay is located west of OLF Bronson.

Specifically, Site 1101 is located at latitude 30°23'08" N, longitude 87°24'59" W. The fuel oil tank removed from the site was located on the south side of the remains of building 1101. To the north of the site are dense woods, to the south through a wooded area is a dirt road running east to west, to the east is the main entrance road to Bronson, and to the west through a wooded area is a dirt road running north to south. Site location maps (Figures 1-6 thru 1-8)

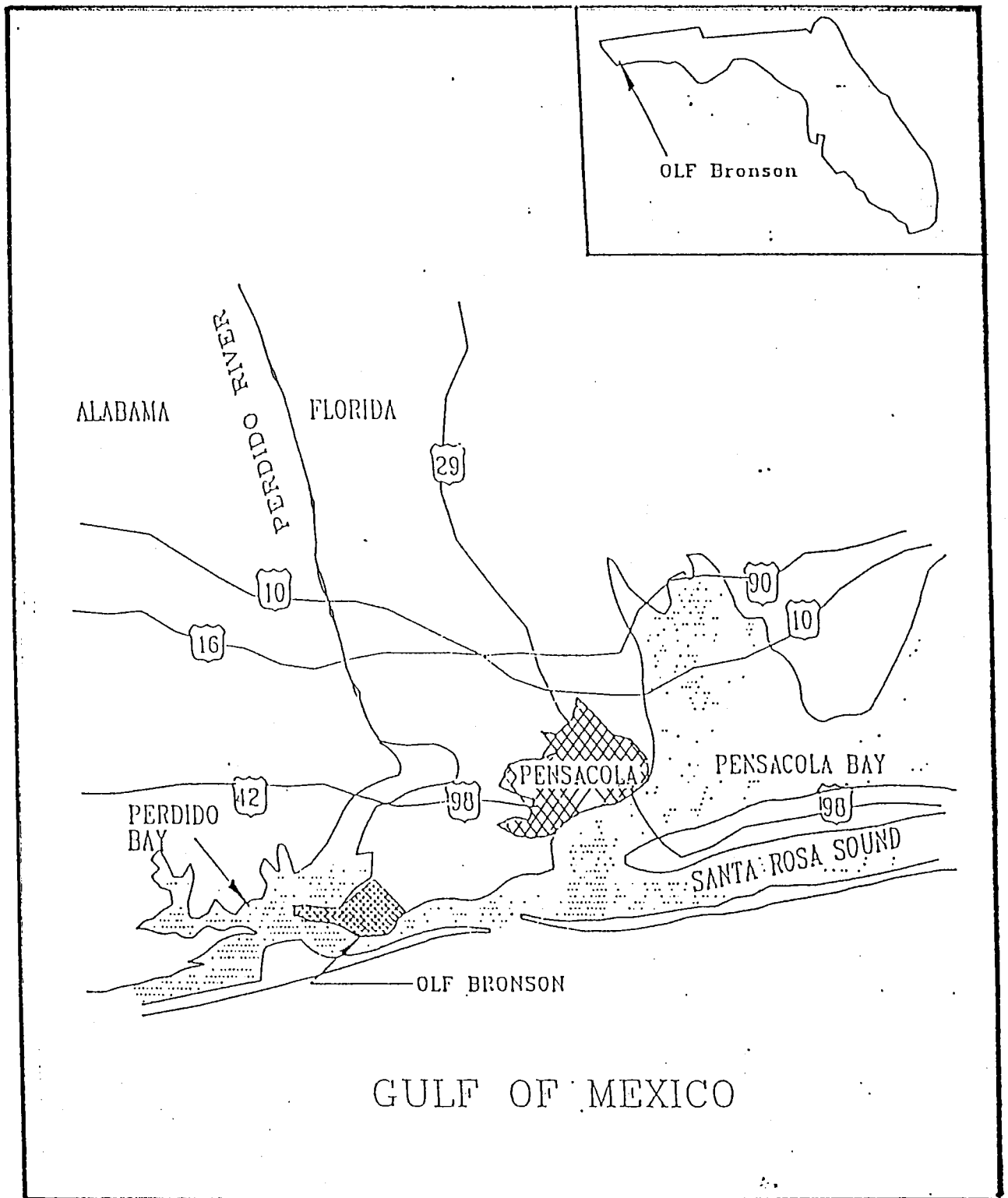


FIGURE 1-1.
OLF Bronson
VICINITY MAP

Key:

Highway

Water Way

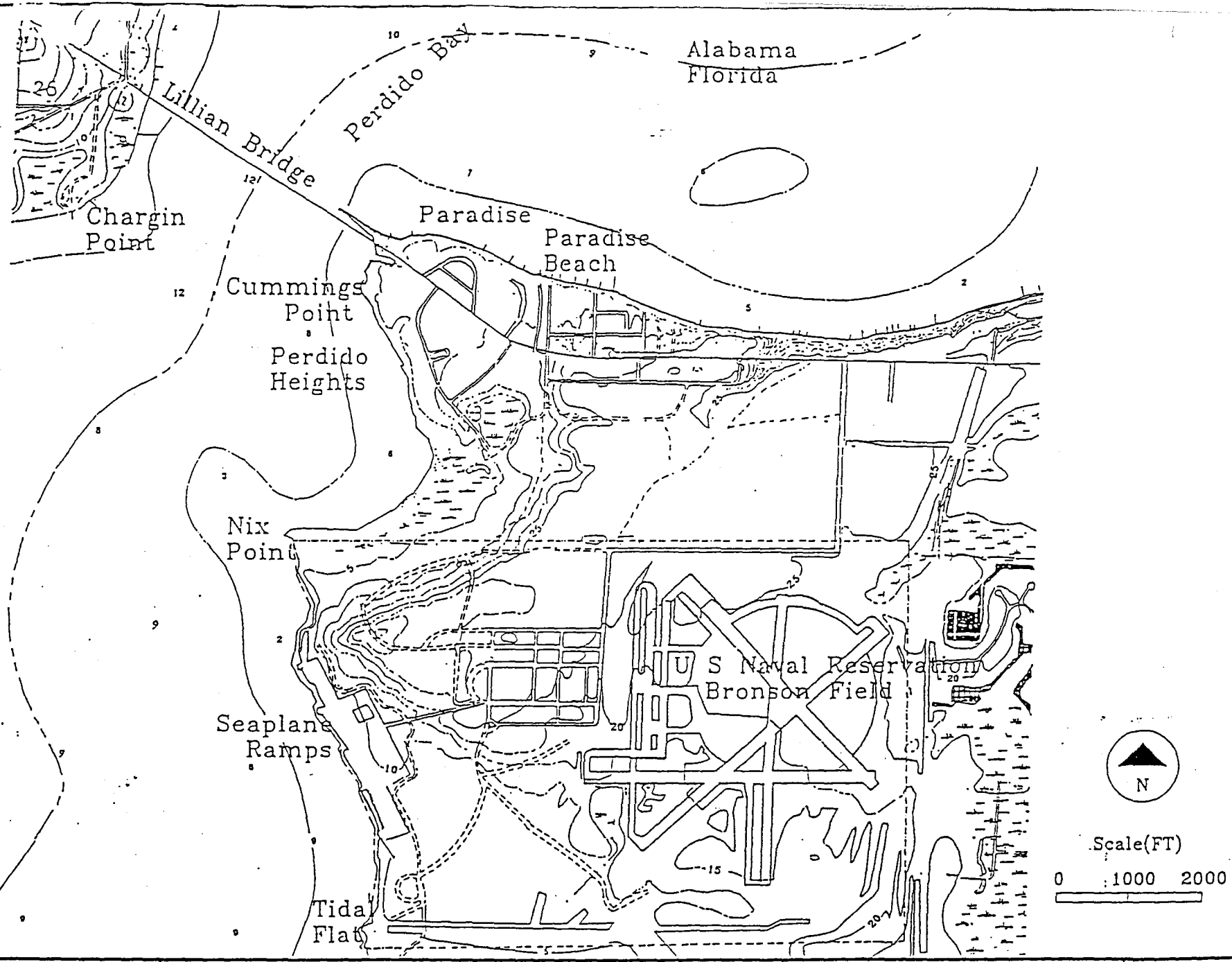


Figure 1-2
OLF Bronson
Topographic Map

Key:
Base Border ----------

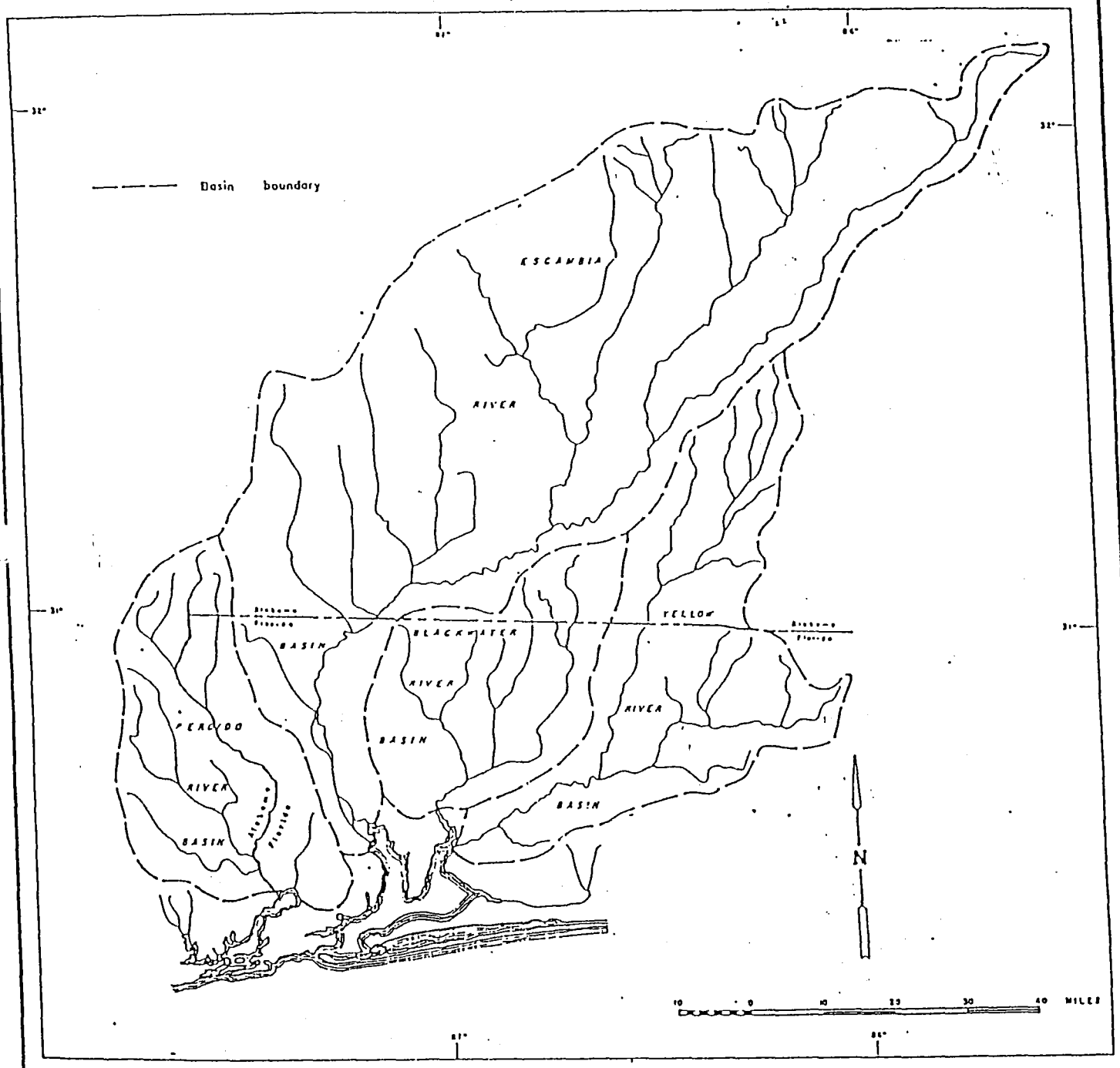


Figure 1-3
OLF BRONSON

Key: Basin Map of Perdido, Escambia, Blackwater, & Yellow Rivers (Modified After Musgrove ET. AL., 1965).

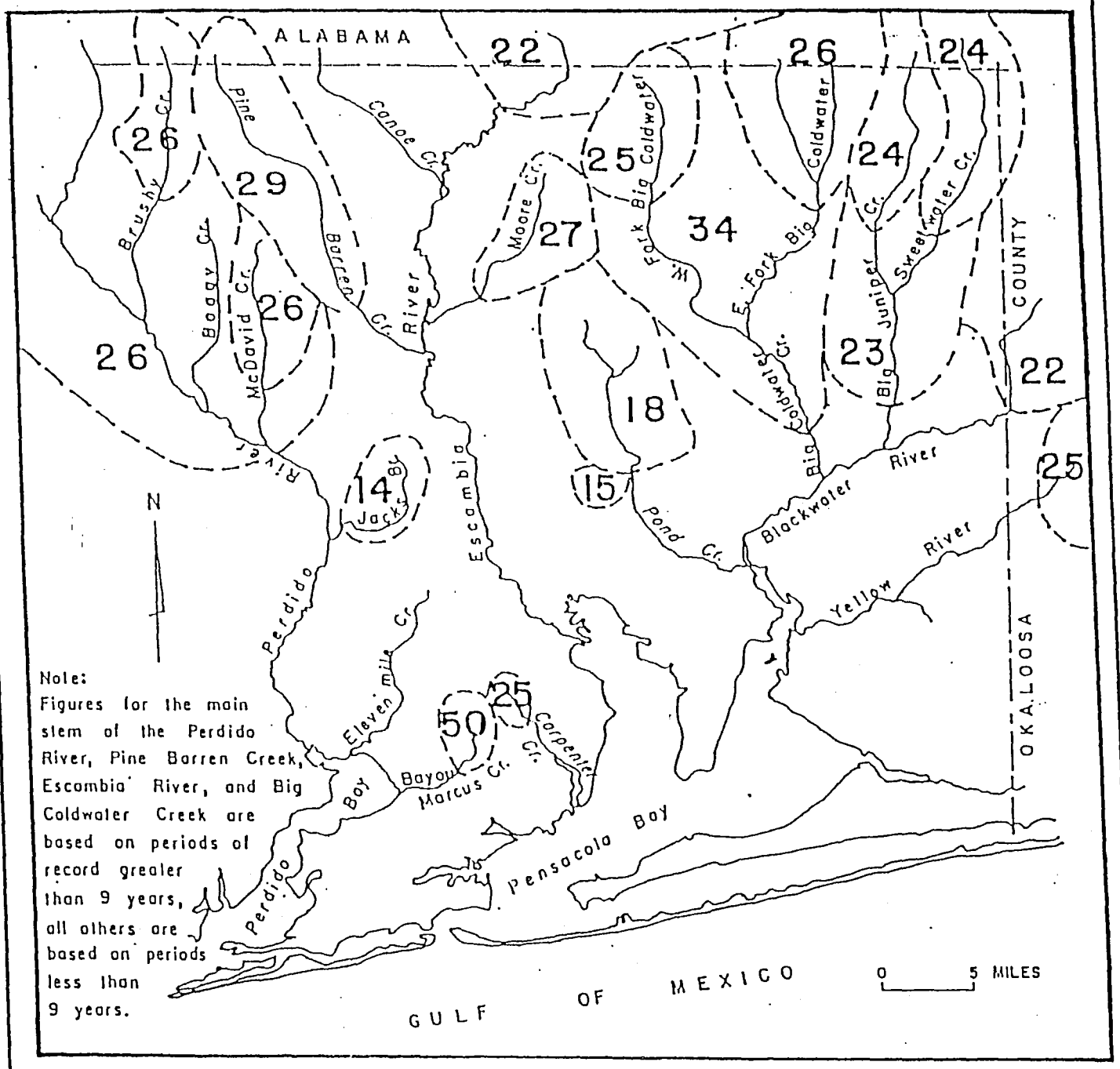


Figure 1-4
OLF BRONSON

Key: Approximate Average Annual Runoff (Inches) From Areas Within Escambia & Santa Rosa Counties (Modified After Musgrove ET. AL.,1965).

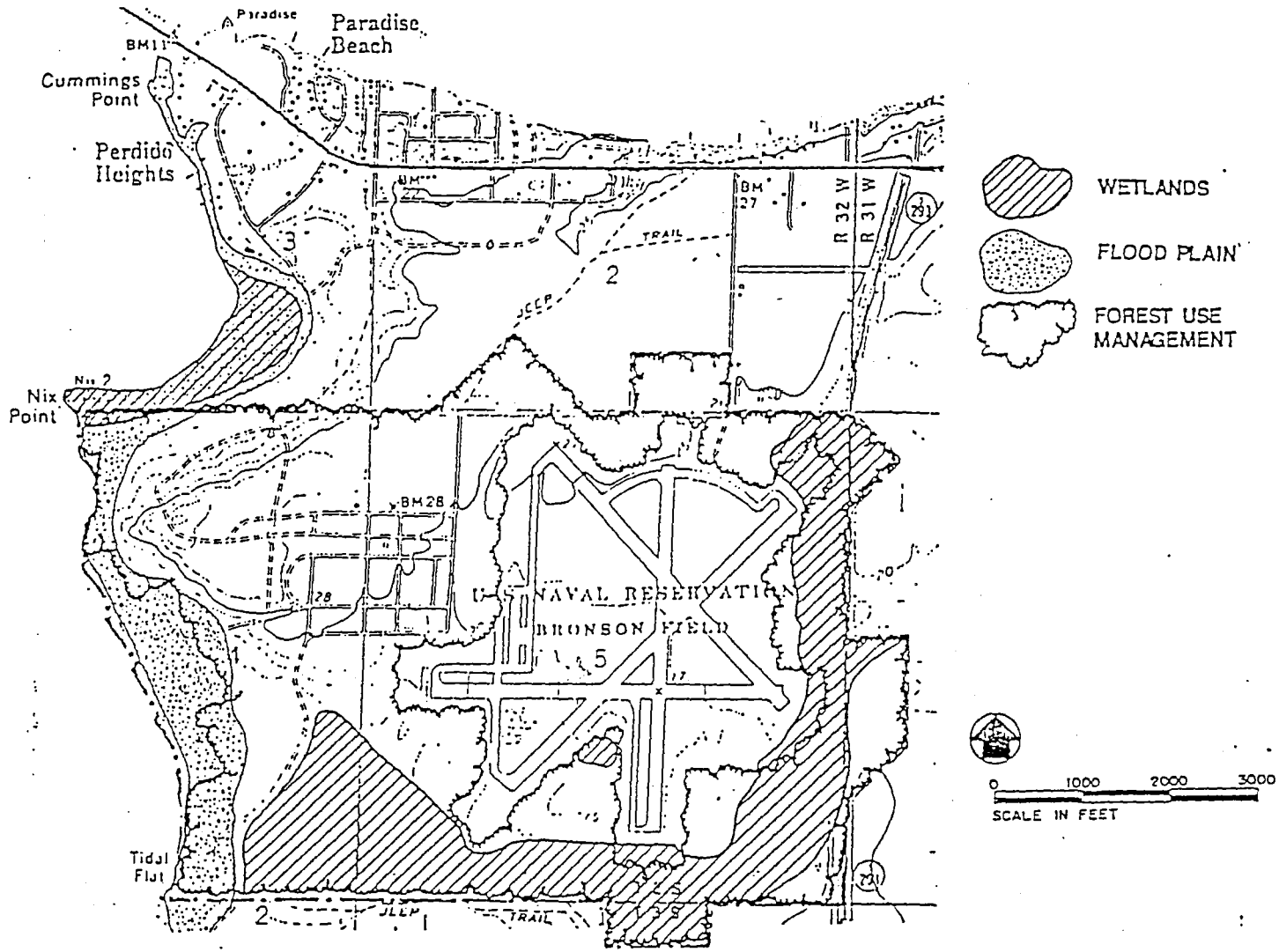


Figure 1-5
OLF Bronson
Flood Plain Area

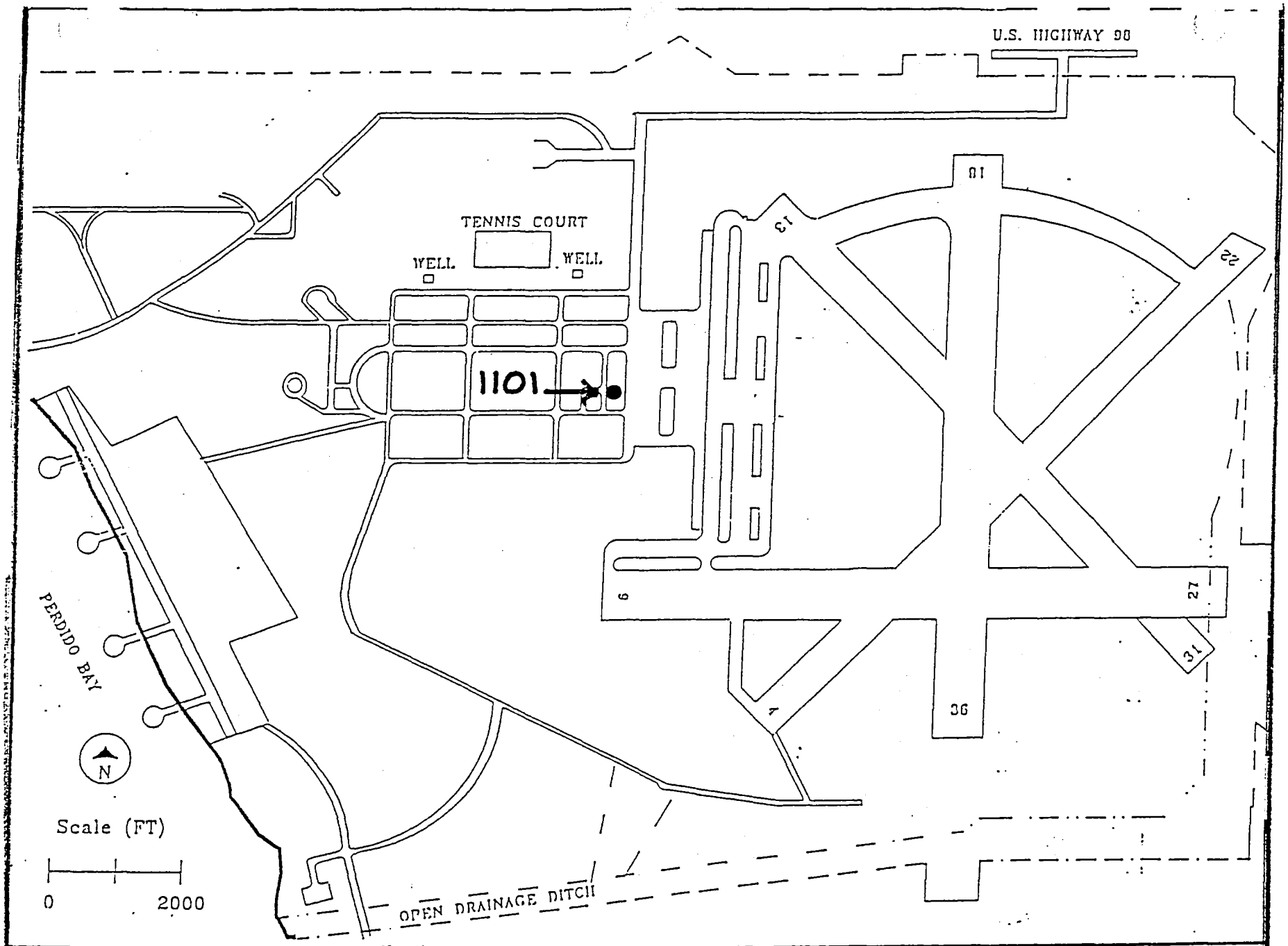


FIGURE 1-6
OLF BRONSON BASE MAP

KEY
— — OPEN DRAINAGE DITCH
—·— NAVAL PROPERTY LINE

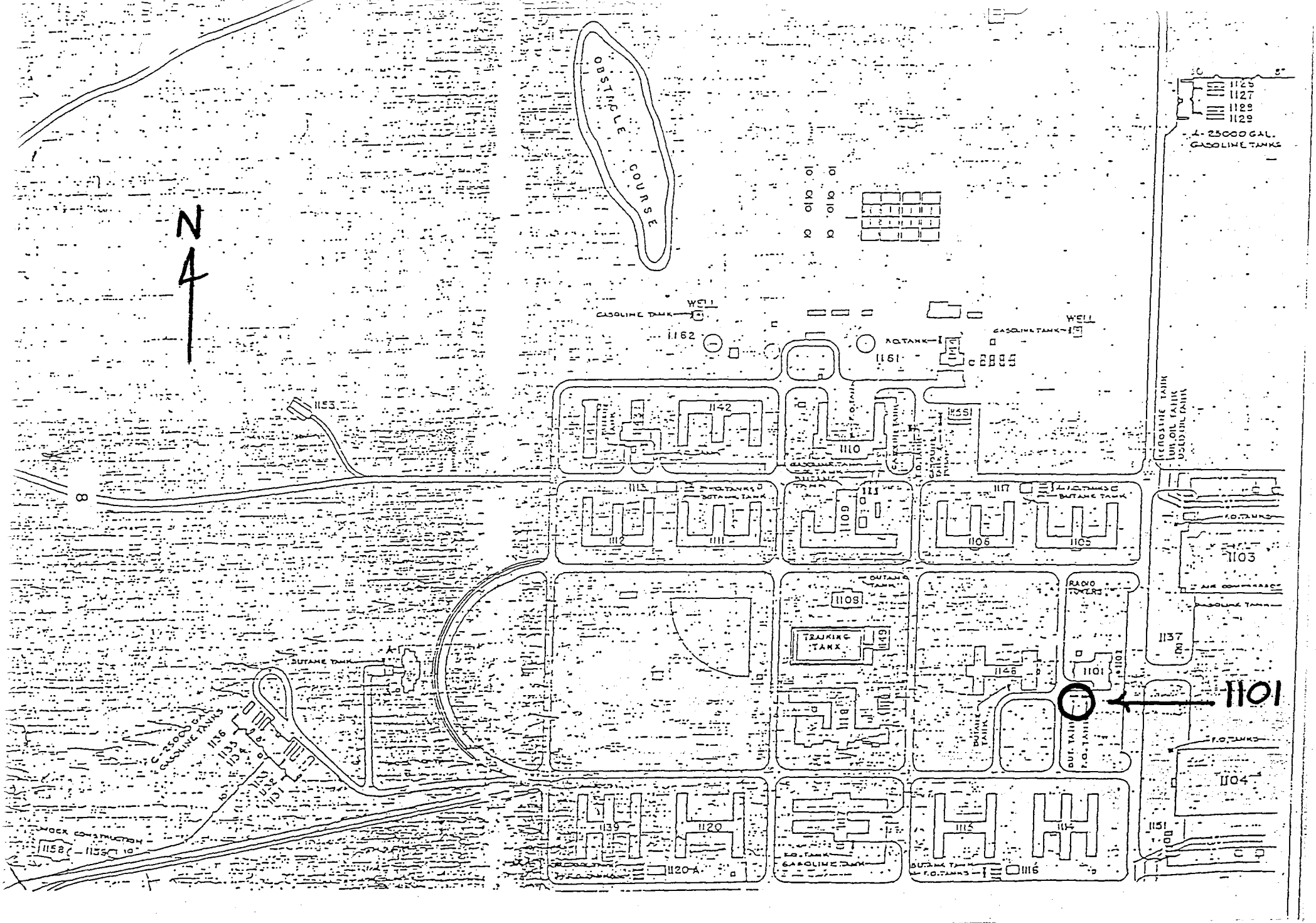


FIGURE 1-7
OLF Bronson
SITE LOCATION MAP, SITE 1101

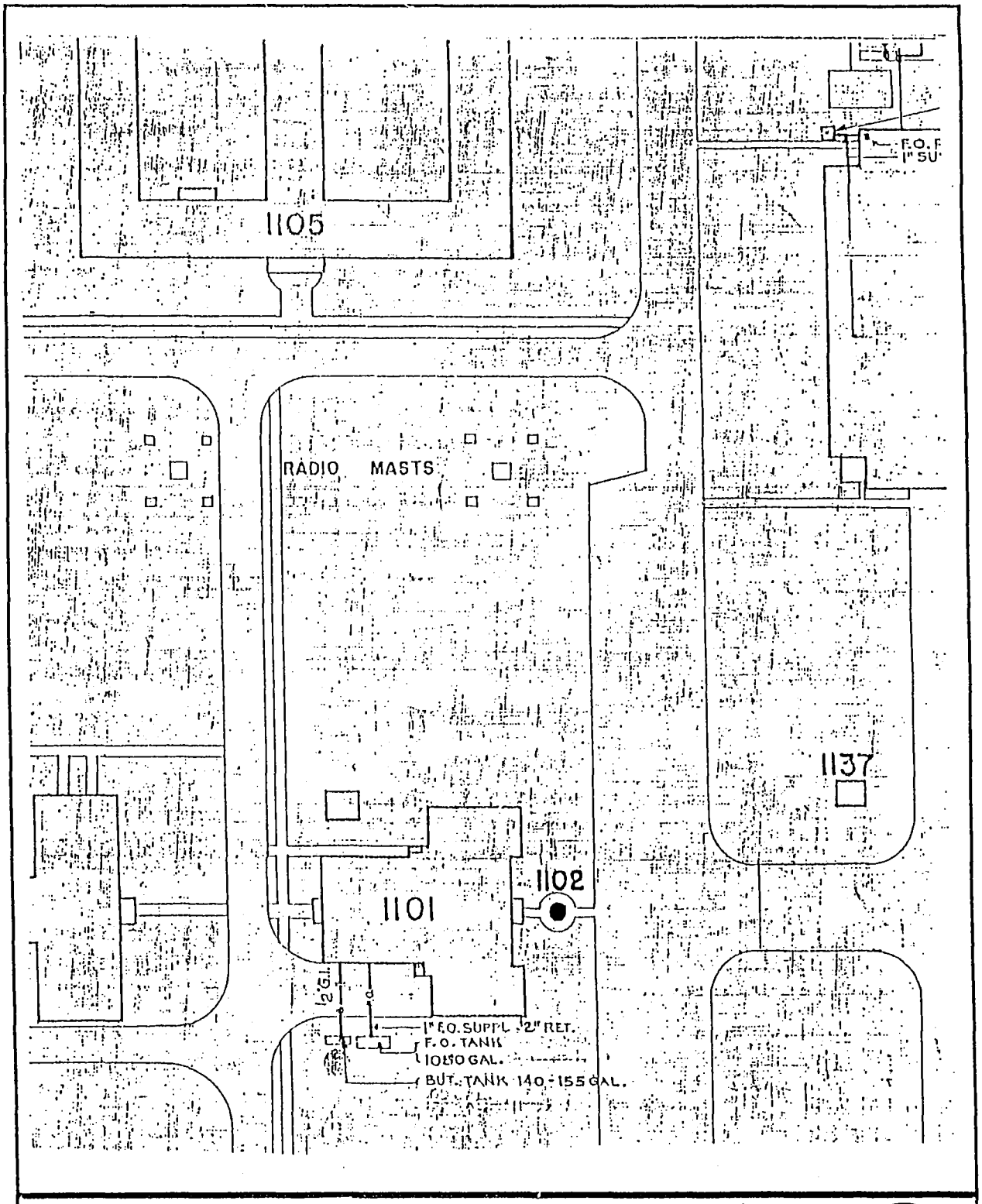


Figure 1-8
OLF Bronson
Site Specific Map, Site 1101

N

show locations of buildings, facility boundaries, and tanks.

1.3 SITE HISTORY AND OPERATIONS

OLF Bronson was used as an Outlying Landing Field for NAS Pensacola from 1942-1950. When first opened in 1942, the 950-acre airfield was originally called Tarkiln Field, but in 1944 the name was changed to OLF Bronson. During that time the base used large amounts of aviation gasoline, oil products, and solvents. OLF Bronson was closed as an active airfield in the late 1950's. Helicopters from Combat Support Squadron 16 continued to use the area for occasional training until the squadron was dismantled in 1995. Presently, all the runways are inactive. All buildings at OLF Bronson have been dismantled and parts of the base have been sold to private parties. Maps of OLF Bronson identify building 1101 as the Administration Building Quarters. The only current employees at Bronson are Morale Recreation and Welfare (MWR) personnel. Duties of MWR personnel at OLF Bronson include operating the campground, minor maintenance of the facility, and teaching sailing and windsurfing.

In 1990, Southern Division Naval Facilities Engineering Command contracted the engineering services of E.C. Jordon Consultants to develop a petroleum underground storage tank program for OLF Bronson. Under that contract all but 35 underground storage tanks (UST) and the piping associated with the tanks were removed. In September 1993, the Navy Public Works Center Pensacola was retained by Southern Division Naval Facilities Engineering Command to remove the remaining 35 underground storage tanks.

1.4 INITIAL REMEDIAL ACTION

Navy Public Works Center personnel found contamination at Site 1101 during the removal of the underground fuel oil storage tank located at the site. A Discharge Reporting Form (DRF) was submitted to FDEP on June 24, 1994. Approximately 20 CY of contaminated soil was removed from the excavation area on June 17 and July 6, 1994. The contaminated soil was spread on plastic at the site and then retested using an organic vapor analyzer (OVA). Eight soil samples were collected and analyzed for total volatile organic concentration using an organic vapor analyzer with a flame ionization detector. The total organic concentration of each of the 8 soil samples was found to be less than 10 parts per million (ppm). The excavation was then backfilled.

1.5 RESULTS OF PREVIOUS INVESTIGATIONS

A closure assessment was performed during the removal of the underground fuel oil tank which consisted of collecting and analyzing soil and groundwater samples. Soil samples collected from the sides and bottom of the excavation on July 6, 1994, and analyzed for priority pollutant volatiles, indicated all contamination levels were below detection limits (see Appendix D).

A groundwater monitoring well (MW-13) was installed approximately 22 feet below land surface (BLS) by FGS, Inc. and Pensacola Testing Laboratories, Inc. (drilling subcontractors) to perform the closure assessment at Site 1101 on May 25, 1995. A copy of the well construction details for monitoring well MW-13 is shown in Appendix A. The groundwater depth was found to be approximately 14 feet below land surface (BLS). No soil samples were collected and screened with an OVA during installation of MW-13 since soil samples had already been collected near the well. A monitoring well location map is included as Figure 2-2.

A groundwater sample was collected from monitoring well MW-13 on May 30, 1995 and analyzed by PWC Environmental Laboratory for volatile organic aromatics (VOAs) and polynuclear aromatic hydrocarbons (PAHs) using EPA Methods 8260 and 8270A, respectively. A summary of the laboratory analytical results for monitoring well MW-13 is shown in Tables 1-1 and 1-2 and copies of the laboratory analytical reports are included in Appendix D. Toluene was detected in the groundwater sample at concentrations of 2 ppb which is below the FDEP Groundwater Guidance concentration of 24 ppb. Acenaphthene, fluorene, phenanthrene, 1-methylnaphthalene, 2-methylnaphthalene, and total naphthalenes were detected in the groundwater sample at concentrations of 370 ppb, 270 ppb, 150 ppb, 330 ppb, 230 ppb, and 560 ppb, respectively. The levels of acenaphthene, fluorene, phenanthrene, 1-methylnaphthalene, 2-methylnaphthalene, and total naphthalenes were above the state cleanup levels of detection limit for individual PAHs and 100 ppb for total naphthalenes.

1.6 REGIONAL GEOLOGY AND HYDROGEOLOGY

Figure 1-9 displays the soil configuration map as of 1991. Surface sediments in the Bronson Field area are classified with the Croatan, Foxworth, Hurricane, Lakeland, Leon, Pickney, Pottsburg, and Urban Land associations.

OLF Bronson resides along the western edge of the Florida Panhandle within the Coastal Plain Province. The Coastal Plain, a major physiographic division of the United States, extends eastward from Texas and northward as far as New York. It consists of cretaceous to recent age beds of sand, silt, limestone, and clay that dip gently seaward. Most of these sediments were deposited during higher stands of the sea as the Mississippi River system transported eroded debris southward. The Gulf Coast region of the United States is the landward side of the most active geosyncline in North America. The formations which make up the landward side of the geosyncline are all wedge-shaped, thickening rapidly from the outcrop gulfward to the south.

More precisely, OLF Bronson resides with the Coastal Lowland topographic subdivision of the Coastal Plain which consists of relatively undissected, nearly level plains lying less than 100 feet above sea level (Marsh, 1966). It is situated along the north flank of the Mississippi Embayment, which accounts for the characteristic southwestward dip of cretaceous and younger strata (Figure 1-10 thru Figure 1-13).

TABLE 1-1

SUMMARY OF VOLATILE AROMATICS
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLE
COLLECTED FROM CLOSURE ASSESSMENT MONITORING WELL MW-13*
U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1101

VOLATILES	
PARAMETER	**B1101 MW-13***
Benzene	BDL
Ethylbenzene	BDL
Toluene	2
Xylenes (Total)	BDL
Methyl-tert-butyl ether (MTBE)	BDL
TOTAL VOAs	2

NOTES: BDL = Below detection limits.
Groundwater sample was collected on May 30, 1995.
All results are reported in parts per billion (ppb) unless otherwise noted.

*MW-13 was later renumbered MW-1

TABLE 1-2

SUMMARY OF POLYNUCLEAR AROMATIC HYDROCARBONS ANALYTICAL RESULTS FOR GROUNDWATER SAMPLE COLLECTED FROM CLOSURE ASSESSMENT MONITORING WELL MW-13* U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1101

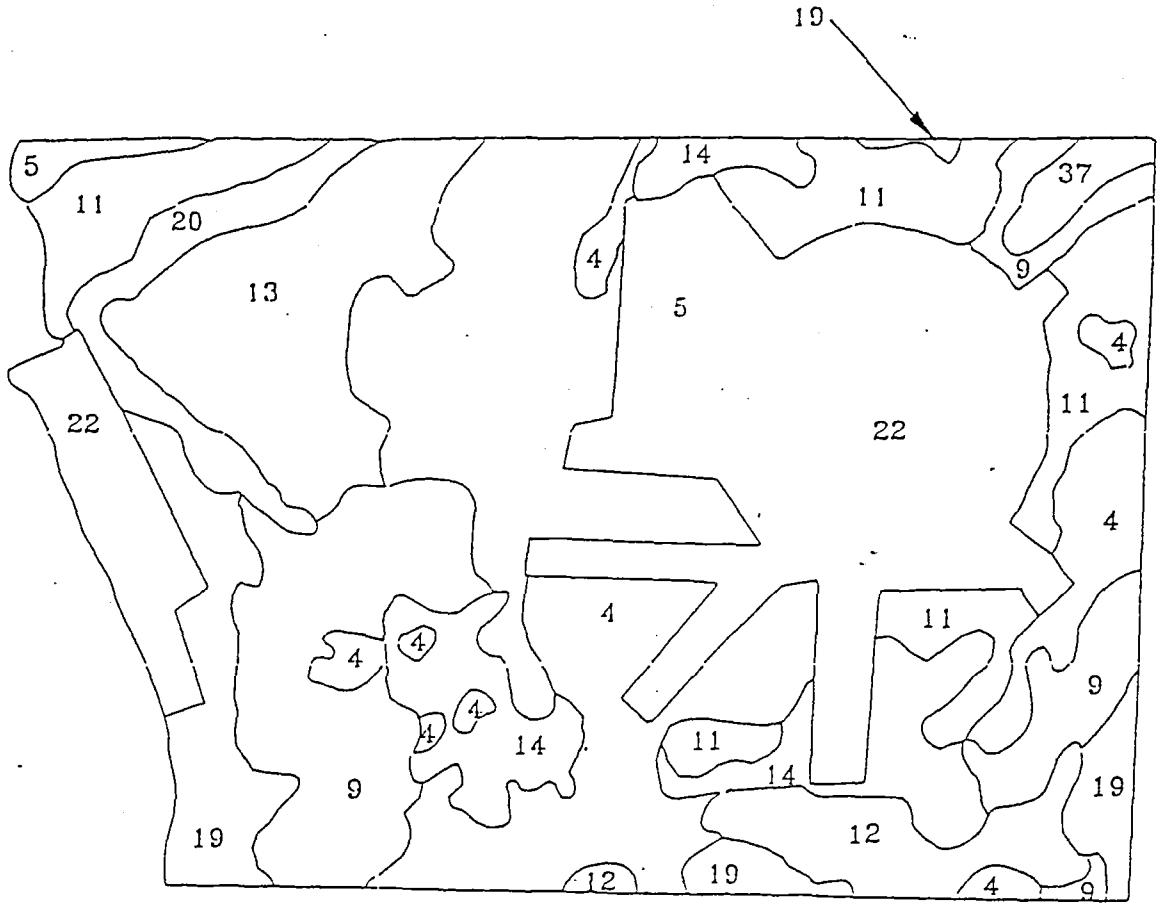
PAHs	
PARAMETER	B1101 MW-13*
Acenaphthene	370
Acenaphthylene	BDL
Anthracene	BDL
Benzo(a)anthracene	BDL
Benzo(a)pyrene	BDL
Benzo(b)fluoranthene	BDL
Benzo(g,h,i)perylene	BDL
Benzo(k)fluoranthene	BDL
Chrysene	BDL
Dibenzo(a,h)anthracene	BDL
Fluoranthene	BDL
Fluorene	270
Indeno(1,2,3-cd)pyrene	BDL
* Naphthalene	BDL
Phenanthrene	150
Pyrene	BDL
* 1-Methylnaphthalene	330
* 2-Methylnaphthalene	230
TOTAL NAPHTHALENES	560

Detected limit <10

<100

NOTES: BDL = Below detection limits.
Groundwater sample was collected on May 30, 1995.
All results are reported in parts per billion (ppb) unless otherwise noted.

*MW-13 was later renumbered MW-1



4 Pickney Sand

5 Croatan & Pickney Soils, Depressional

9 Leon Sand

11 Hurrricane Sand

12 Croatab Muck Depressional

13 Lakeland Sand, Level

14 Pottsburg Sand

19 Foxworth Sand

20 Lakeland Sand Gentle Slope

22 Urban Land

37 Pickney Mucky Sand Depressional

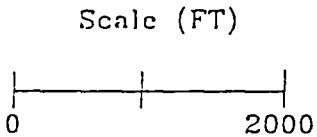


Figure 1-9
OLF Bronson
Soil Configuration Map
(Modified After U.S.D.A. 1991)

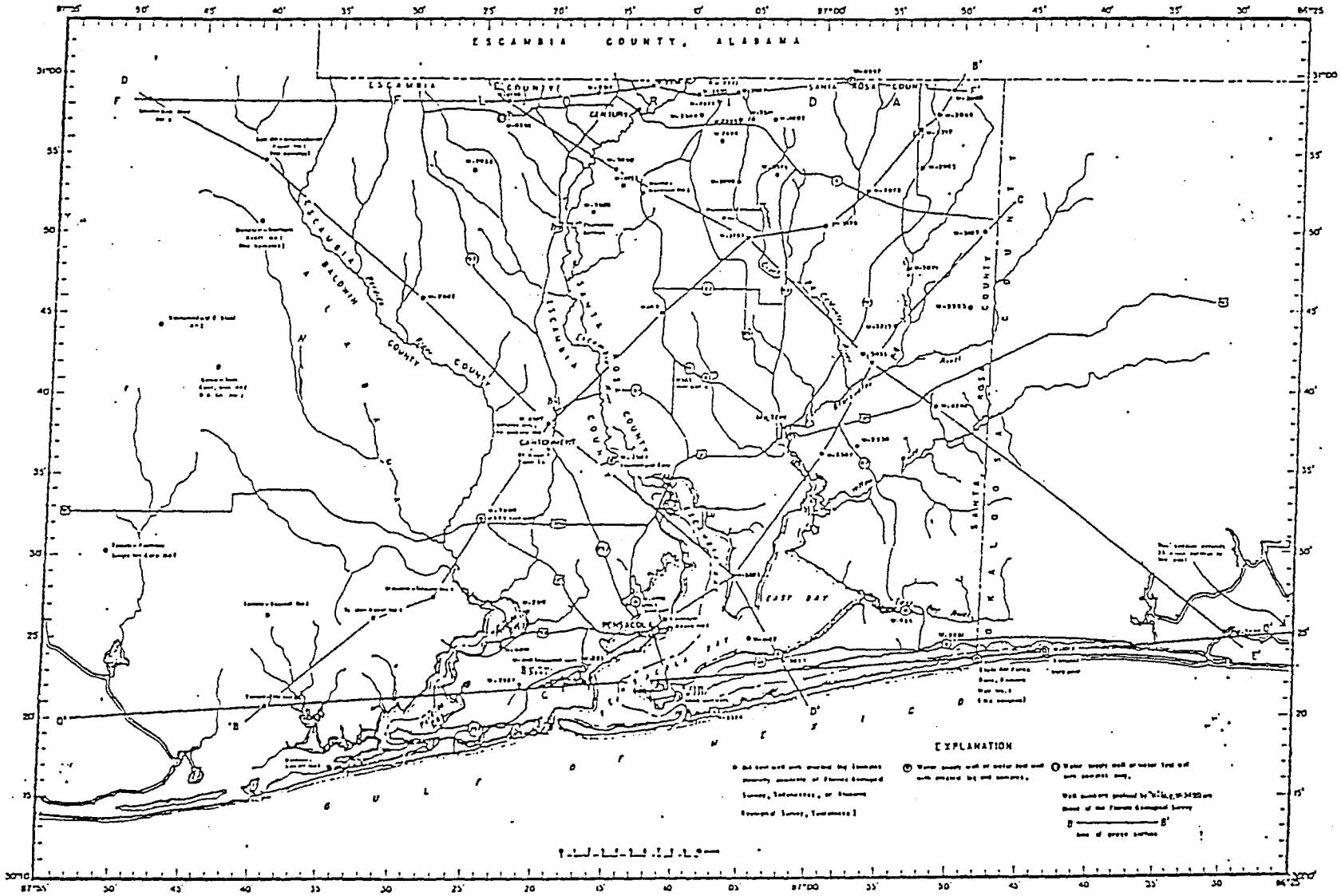


Figure 1-10
OLF Bronson

Key: Map of Westernmost Florida & Southwestern Alabama Showing Locations of Cross Sections & Wells Used in This Report (Modified After Marsh, 1966).

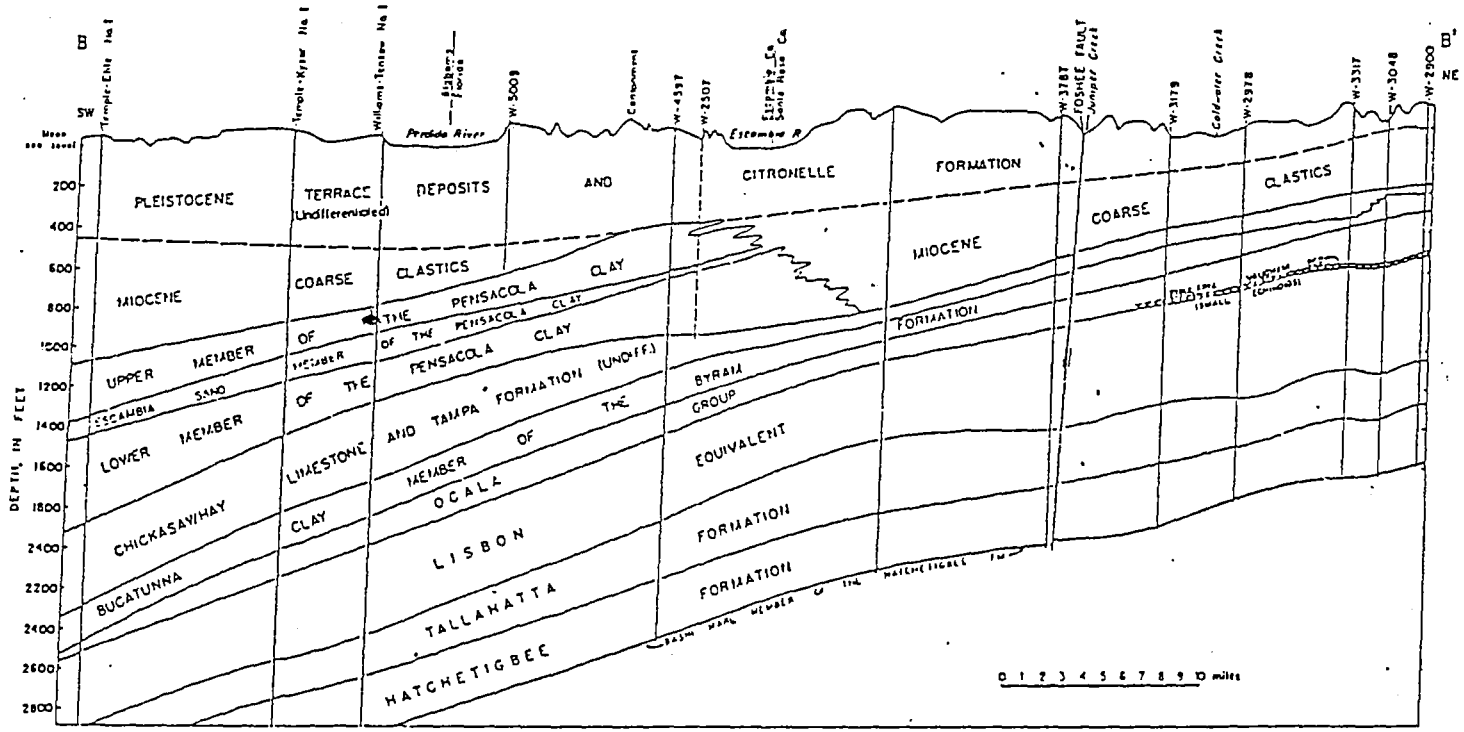


Figure 1-11
OLF Bronson

Key: Geologic Cross Section B–B' Across Escabia & Santa Rosa Couties (Modified After Marsh, 1966). Section Parallels the Regional Dip.

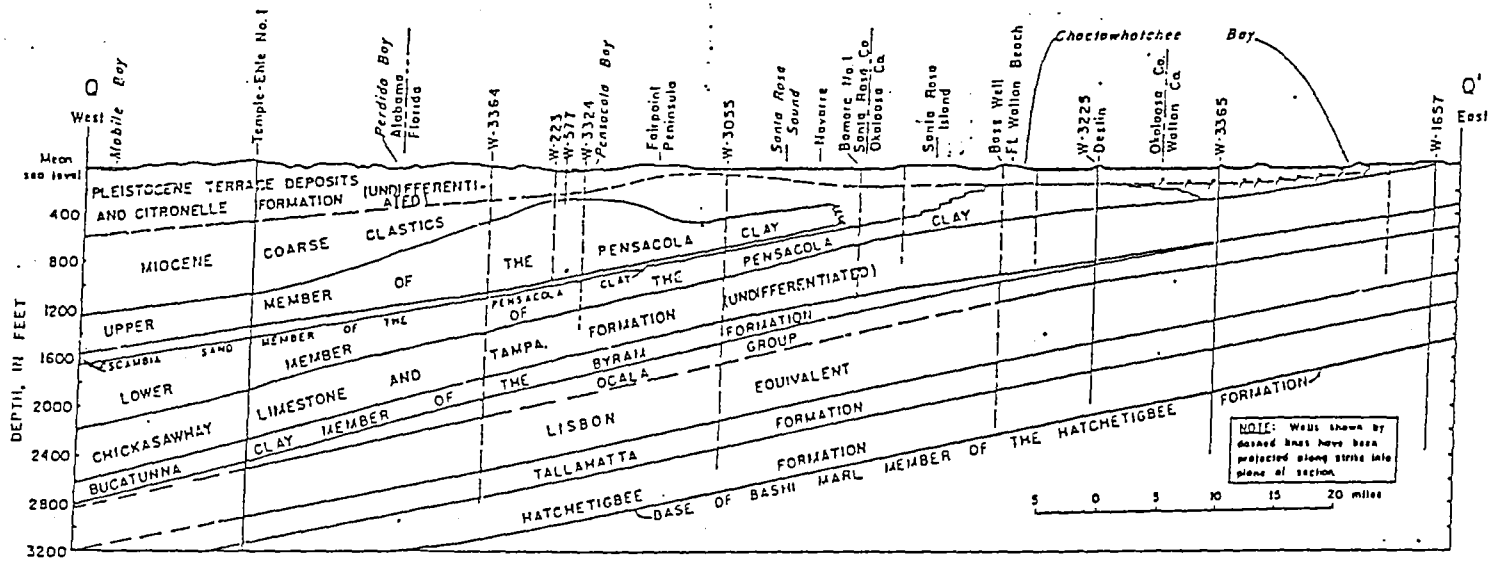


Figure 1-12
OLF Bronson

Key: Geologic Section Q—Q' From Mobile Bay to the Choctawhatchee River (115 Miles) Showing Formations along the Gulf Coast of Western Florida (Modified After Marsh, 1966).

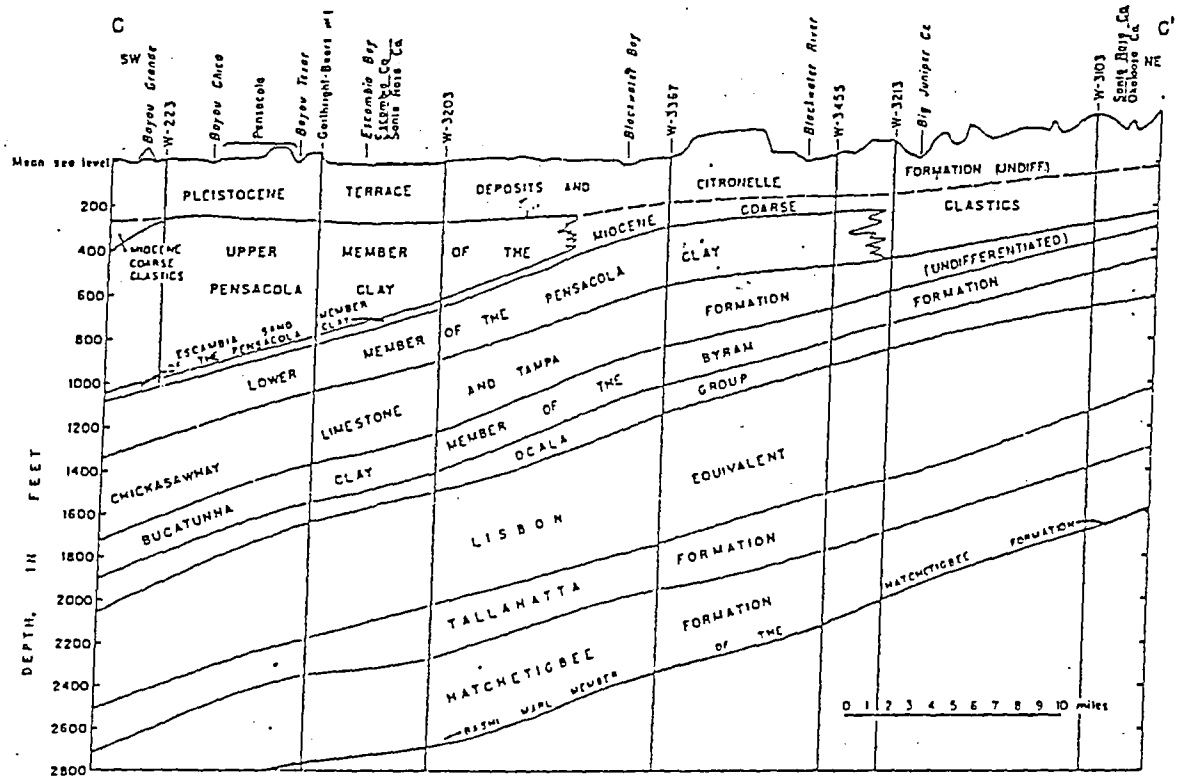


Figure 1-13 :
OLF Bronson

Key: Geologic Section C–C' Across Escambia & Santa Rosa Counties (ModifiedAfter Marsh, 1966). Section is Parallel to Regional Dip.

Figure 1-14 describes the geologic sequence by a representative log of an oil test well near Pensacola. For the region of study, a thick sequence of sand, gravel, and clay extends from the surface to as much as 1000 feet deep. Nearly all wells in this area tap permeable sediments within this sequence - collectively referred to as the Sand-and-Gravel Aquifer. In the southern part (where OLF Bronson resides), the two aquifers are separated by a thick clay unit of Miocene age, which serves to confine the water that is present in the upper limestone of the Floridan Aquifer (Figure 1-15). An extensive clay bed, the Bucatunna Clay Member of the Byram Formation, underlies the upper limestone of the Floridan Aquifer and forms an aquiclude throughout the area. The lower limestone of the Floridan Aquifer underlies the Bucatunna and rests upon relatively impermeable clay and shale. Within the area, no freshwater aquifers occur below the lower limestone of the Floridan Aquifer. More than 99 percent of groundwater utilized for drinking and industrial purposes in the region is obtained from the Sand-and-Gravel Aquifer.

Parts of the Sand-and-Gravel Aquifer have a rather high average porosity and permeability and are thus excellent reservoirs for groundwater. The aquifer primarily consists of relatively insoluble quartz grains, which accounts for the low mineral content and softness of this water. The groundwater conditions are complicated by great lithologic variability due to facies changes during deposition. Groundwater is under artesian pressure where lenses and layers of clay, sandy clay, or hardpan overlie a saturate permeable bed. Groundwater is under non-artesian conditions where such clays or hardpan are absent or where the permeability is not completely saturated. It is common for a well to tap both artesian and non-artesian sources. Groundwater in the Sand-and-Gravel Aquifer is derived almost entirely from rain falling in the area. Recharge is greatest where land is relatively flat. The aquifer is discharged by pumping, evapotranspiration, and seepage into streams, swamps, bays and the Gulf of Mexico.

The gradient along the potentiometric surface in the shallow beds of the Sand-and-Gravel Aquifer generally indicates movement of groundwater toward nearby streams. The seepage of this groundwater supplies more than half of the entire flow of the smaller streams in Escambia and neighboring Santa Rosa counties. Average velocity of groundwater was previously computed to be approximately 100 feet per year in the Pensacola area. The water table tends to be highest under the broad, relatively level lands that are at a higher elevation than the surrounding lands.

The artesian pressure head of water in the lower permeable beds of the Sand-and-Gravel Aquifer does not conform to the topography of the land as much as the water table. The artesian pressure head of water from the lower beds indicates a general movement of water to the south. The head of water in the northern part of Escambia and Santa Rosa counties is usually more than 100 feet above sea level and at some places exceeds 150 feet. In the central part of the counties, the artesian pressure head is about 30 to 80 feet above sea level except near the large rivers. Upward leakage of groundwater probably occurs, which lowers the pressure head of the groundwater. The artesian pressure head of water under the lands adjacent to the bays is usually less than 20 feet above sea level and is often less than 10 feet above sea level.

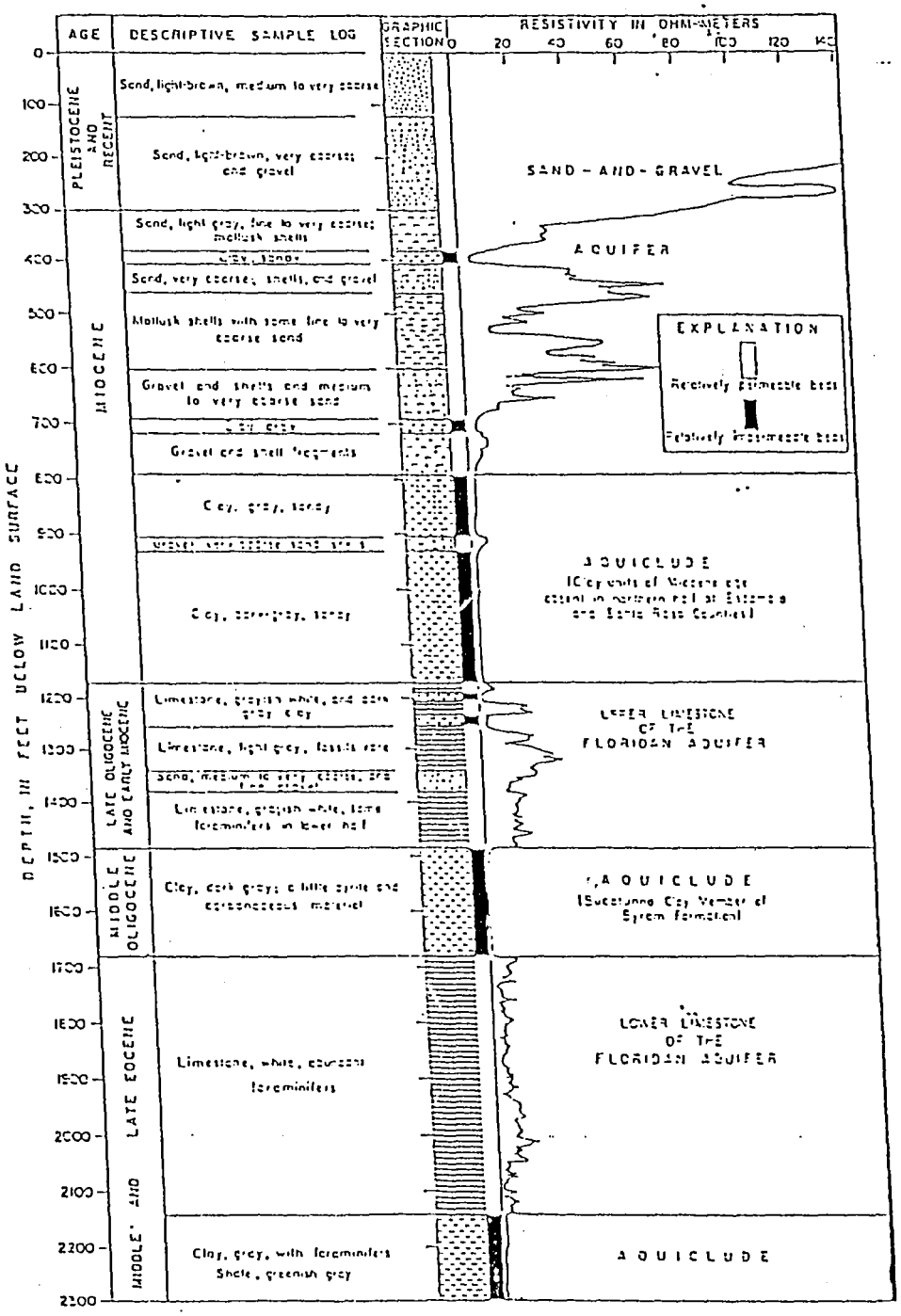


Figure 1-14
OLF Bronson

Key: Representative Geologic Sequence Based on Log of Oil Test Well Located Near Pensacola (After Marsh, 1966).

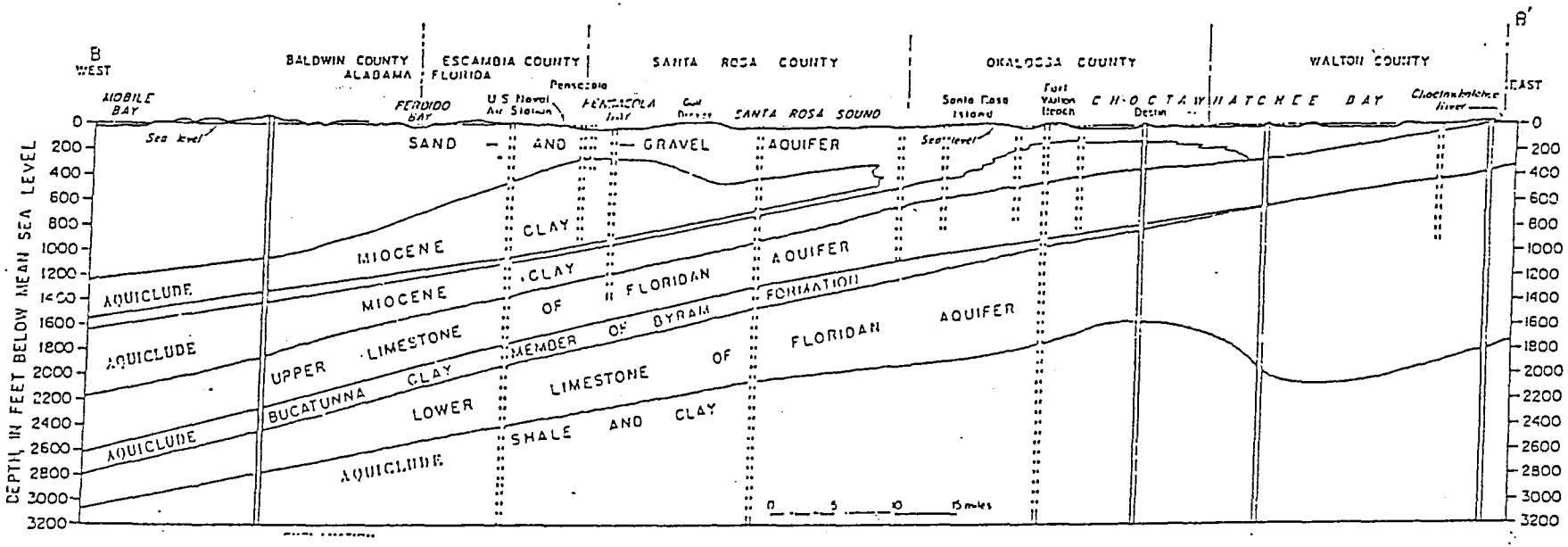


Figure 1-15
OLF Bronson

Key: Geologic Section Across Escambia & Santa Rosa Counties Showing Aquifers & Aquicludes Along Section B–B' in Figure 8 (Modified After musgrove ET. AL., 1965).

Pumping tests on nearby wells screened within the Sand-and-Gravel Aquifer indicate specific capacity values that range from 30 to 80 gallons per minute per foot of drawdown. Aquifer tests performed on wells penetrating the Sand-and-Gravel Aquifer owned by the City of Pensacola, the U. S. Navy (at NTTC Station), and Newport Industries indicate transmissivities ranging from 58,800 to 94,000 gallons per day per foot.

With few exceptions, the sum of the mineral constituents in the groundwater of the Sand-and-Gravel Aquifer is very low, ranging from 12 to 36 ppm. Water in this aquifer is exceptionally soft, generally containing 4 to 30 ppm of calcium and magnesium carbonates. The fluoride content of this water is usually less than 0.2 ppm. Iron content of water from this aquifer ranges from 0.06 to 4.9 ppm, although it is generally less than 0.15 ppm. Copious amounts of carbon dioxide render much of the water acidic. In some areas water contains hydrogen sulfide in solution. Carbon dioxide measurements in waters beneath NAS Pensacola have been as high as 100 mg/l. However, elsewhere in the area, carbon dioxide concentrations are generally less than 30 mg/l. In Bronson Field groundwater reserves, chloride is the major anion and is generally accompanied by a predominant sodium cation.

1.7 WELL SURVEY

Escambia County Utilities Authority (ECUA) operates two potable water wells (#1 and #2) located at OLF Bronson. The wells are permitted by the Northwest Florida Water Management District and are used to supply potable water to the base and to ECUA customers in the Perdido Key community. Potable water well #2 is within a quarter-mile radius of the site. Construction details of the two wells are shown in Table 1-3. Potable water well #1 was taken out of service in June 1995.

2.0 SITE ASSESSMENT

2.1 SOIL BORING AND MONITORING WELL CONSTRUCTION DETAILS

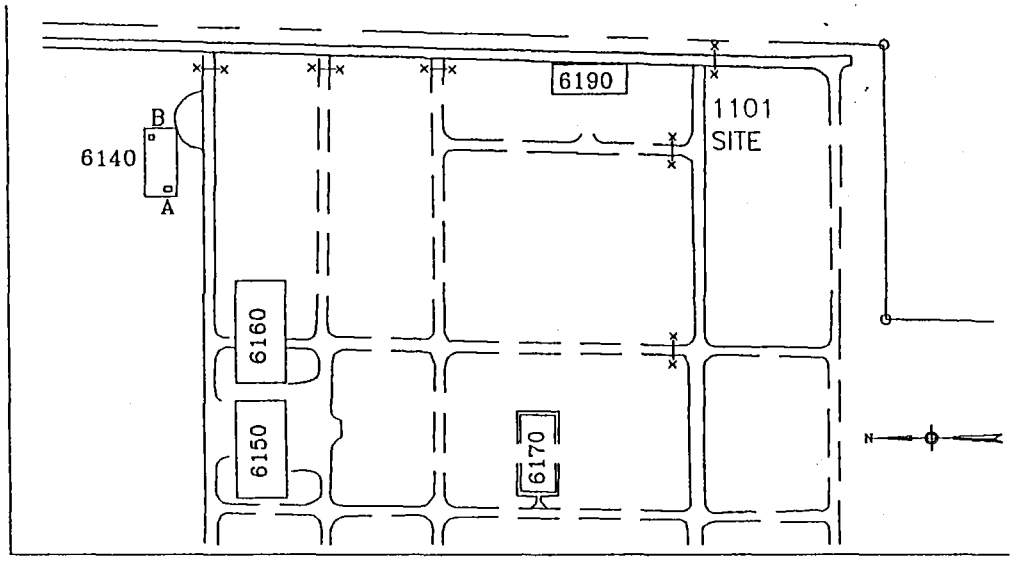
Thirteen soil borings were installed at the site on February 1, 1996 by W.E.S., Inc. to a depth of approximately 13 feet BLS. The soil borings were installed by W.E.S., Inc. using a hollow stem auger. Soil samples were collected from each borehole at 1, 4, 7, 10, and 11 feet BLS and analyzed for volatile organic vapors using an organic vapor analyzer (OVA) with a flame ionization detector. A location map showing the boring hole locations is shown in Figure 2-1. Soil samples were collected from the boreholes during the installation of monitoring wells MW-2 thru MW-6 and DMW-6 and analyzed for volatile organic vapors by W.E.S., Inc. personnel using an organic vapor analyzer (OVA) with a flame ionization detector.

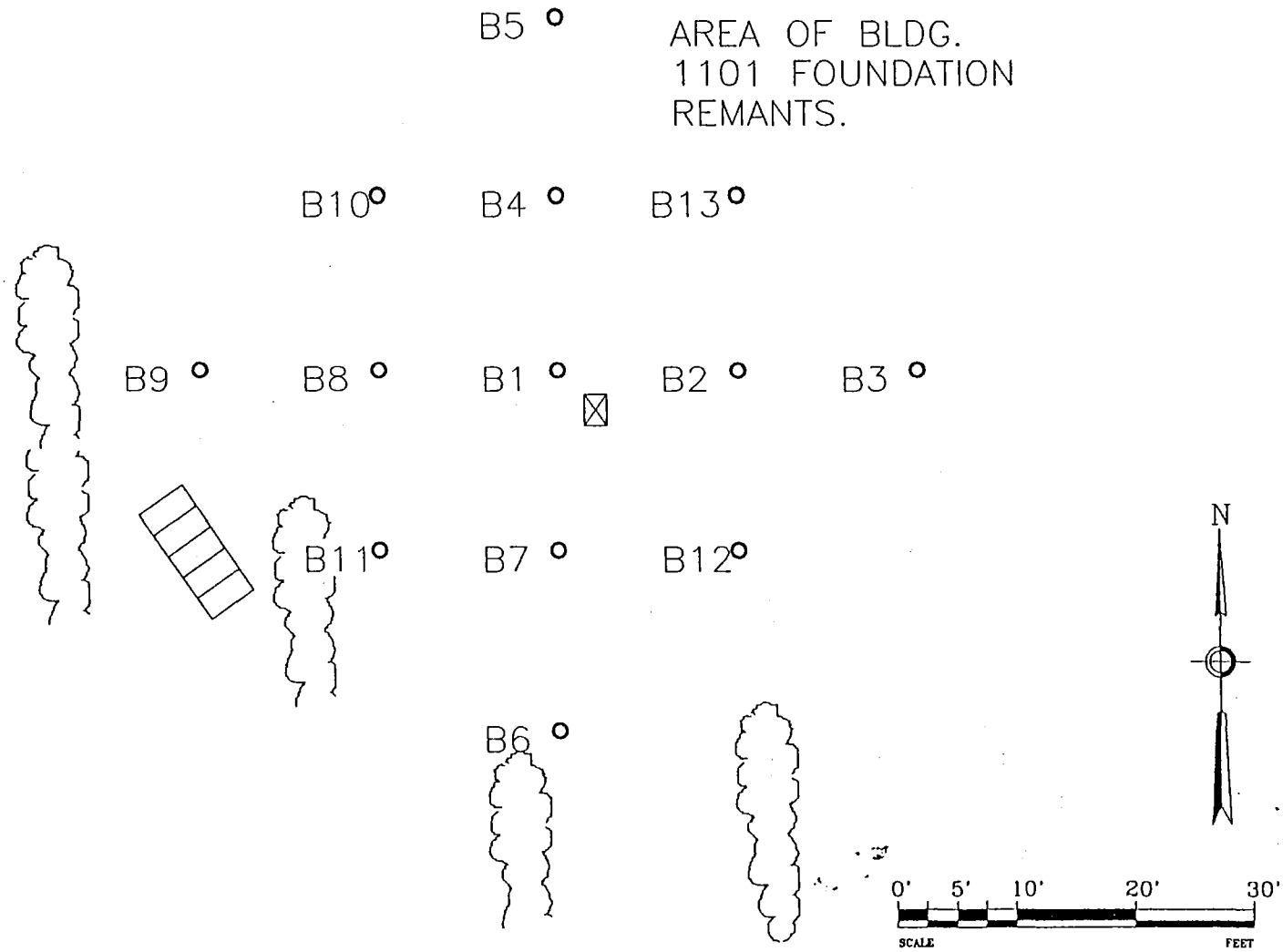
Shallow monitoring wells MW-2 thru MW-6 and a deep vertical extent monitoring well, designated DMW-6, were installed at the site by W.E.S., Inc. on March 29 and May 16, 1996, respectfully. Monitoring wells MW-2 thru MW-6 were installed approximately 21 feet BLS using a hollow stem auger with an inside diameter of approximately 4.0 inches. The monitoring wells consist of a 2-inch diameter by 10 feet of

TABLE 1-3
CONSTRUCTION DETAILS OF WATER-SUPPLY WELLS

OLF BRONSON WELL NUMBER	#1	#2
Year Drilled	1942	1943
Depth Drilled	245ft	248ft
Length, outside casing	126ft 9in	120ft
Diameter, outside casing	24in	24in
Material, outside casing	Black Steel	Black Steel
Depth to static water level	26ft	23ft 4in
Normal suction lift (wkng. level)	53ft	43ft
Normal yield, GPM	800	800
Test yield, GPM	1007	1012
Type of grout	Type 1 Portland	Type 1 Portland
Drilling method	Reverse Flow	Reverse Flow
Type of strainer	Shutter Bronze	Shutter Bronze
Depth to top of strainer	135ft	144ft
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	11 8MH	11 8MH
Capacity GPM	750	800
Check valve present in line?	Yes	Yes
Date of last servicing	4/26/94	5/11/95
Maintenance schedule (day/mo.)	Daily	Daily

Notes: uk=unknown
s.s.=stainless





LEGEND

HOT CUTTINGS STORED ON PLASTIC SHEETING

MONITORING WELL

B9 BORING HOLE NUMBER

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE:	FIGURE 2-1	DRAWN BY: DWG. NO: REVISED BY:
SOIL BORING LOCATION MAP SITE 1101, BRONSON FIELD		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		

0.010-inch slotted schedule 40 PVC screen, threaded to 10.5 feet of solid schedule 40 PVC riser casing. The filter sand pack consisting of course silica sand (sand pack mesh size 20-30) was extended approximately one and a half feet above the top of the well screen. A one foot bentonite seal (Wyoming Bentonite) was placed above the sand pack with the remaining annular space filled with neat cement grout. The PVC casing was brought up to 0.2 feet below ground level. A steel manhole casing (8-inches diameter x 4-inches deep) was placed in borehole around the PVC riser and set with neat cement. An 8-inch diameter steel manhole cover was placed over the manhole. A 6-inch thick concrete encasement (4,000 psi) was installed around the outside of the manhole and flush to the land surface. Monitoring well locations are shown in Figure 2-2. Monitoring well construction diagrams for MW-2 thru MW-6 are shown in Appendix A. Lithological logs for monitoring wells MW-2 thru MW-6 are shown in Appendix B.

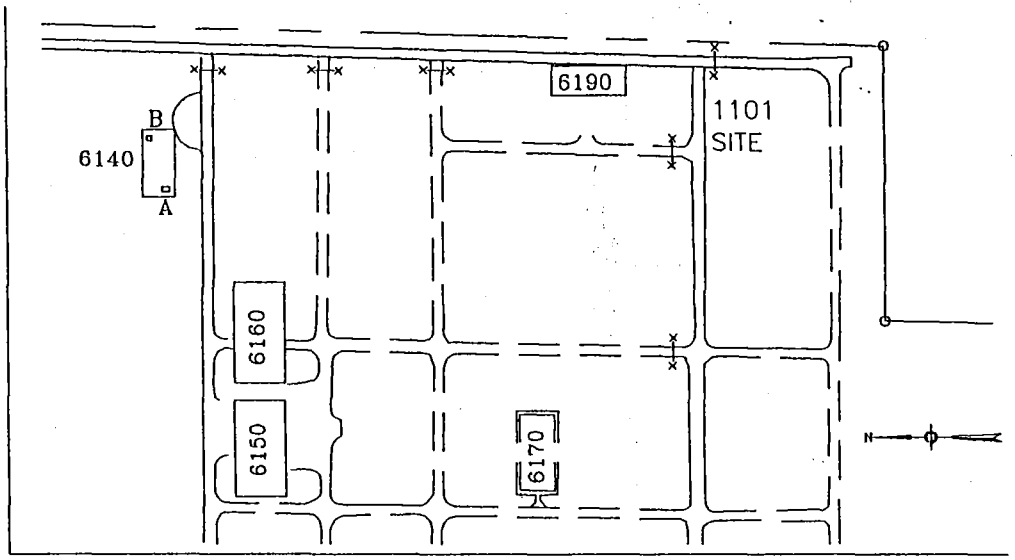
A deep vertical extent monitoring well, designated DMW-6, was installed by W.E.S., Inc., on May 16, 1996. The monitoring well was set at 35 feet BLS with 5 feet of 2-inch diameter 0.010-inch slotted schedule 40 PVC screen, threaded to 29 feet of solid schedule 40 PVC riser casing. The PVC casing was extended to 0.2 feet below ground level. A steel manhole casing (8-inches diameter x 4-inches deep) was placed in the bore hole around the PVC riser and set with neat cement grout. An 8-inch diameter steel manhole cover was placed over the manhole. A 6-inch thick concrete encasement (4,000 psi) was installed around the outside of the manhole and flush to the land surface. A sand pack consisting of course silica sand (sand pack mesh size 20-30) was filled from the bottom to one foot above the screen, followed by a one foot fine sand seal above the sand filter pack, followed by neat cement grout from the top of the fine sand seal to the surface. DMW-6 well location is shown in Figure 2-2. The monitoring well construction diagram for DMW-6 is shown in Appendix A. The lithological log for DMW-6 is shown in Appendix B.

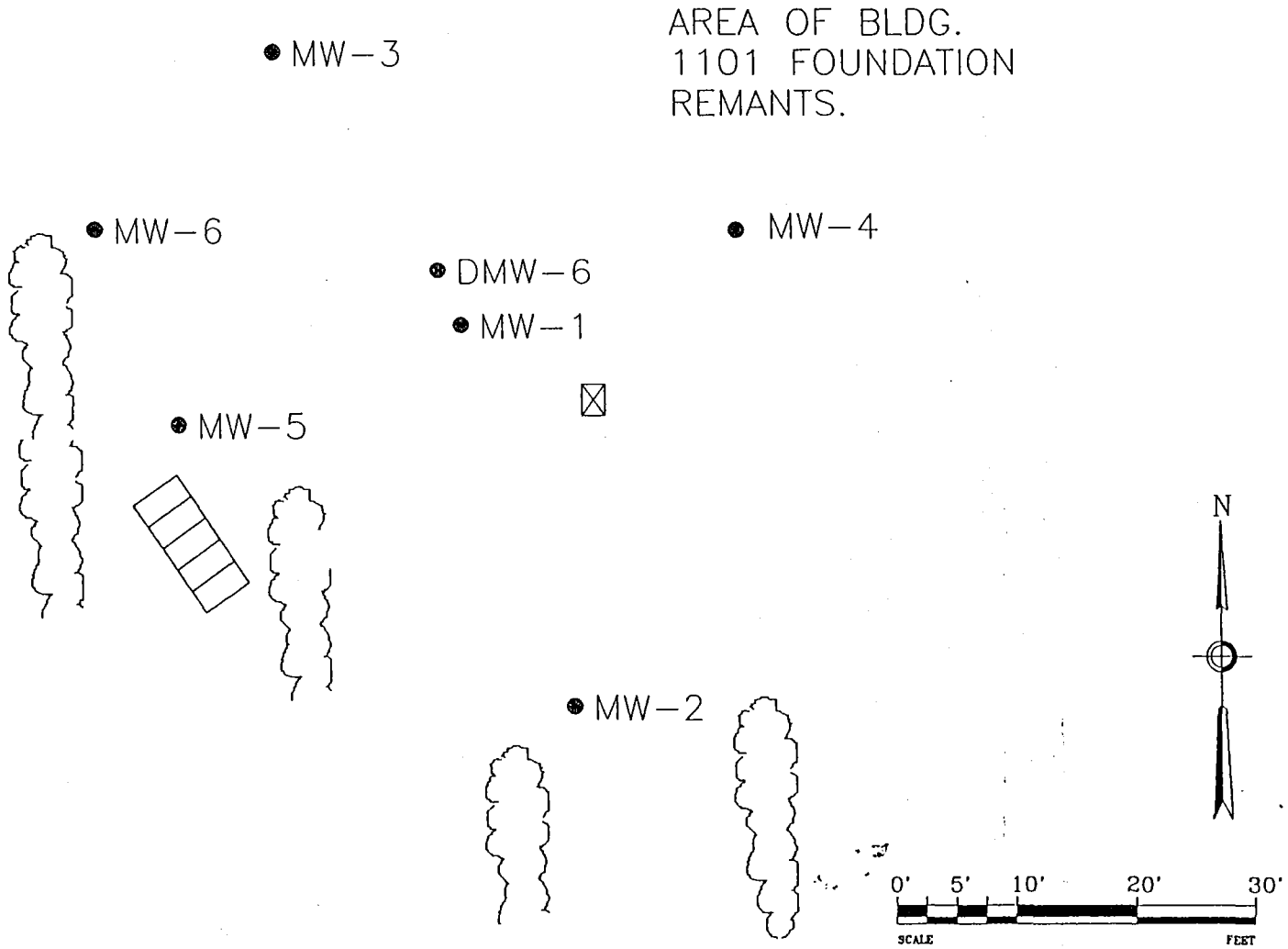
2.2 GROUNDWATER FLOW DIRECTION

The top of casing elevations for monitoring wells MW-2 thru MW-6 (Table 2-1) were surveyed by W.E.S., Inc. personnel on April 5, 1996. No survey bench marks were located near the site and therefore the top of casing elevations were based on monitoring well MW-1 having an assumed top of casing elevation of 30.0 feet above mean seal level (MSL). A groundwater flow direction map for the groundwater level measurements taken on April 5, 1996 is shown in Figure 2-3. The groundwater flow direction map indicates the groundwater flows toward the east direction.

2.3 GROUNDWATER FLOW RATE

Because of the close proximity and the similar lithology at sites 1101 and 1116, the groundwater flow characteristics obtained from the results of the slug test/aquifer parameter evaluation of monitoring well MW-3, Site 1116 performed on September 11, 1996 should be accurate in assessing the groundwater flow rate at Site 1101.





LEGEND

HOT CUTTINGS STORED ON PLASTIC SHEETING

● MW-6 MONITORING WELL BORING HOLE NUMBER

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE:	FIGURE 2-2	DRAWN BY: DWG. NO: REVISED BY:
MONITORING WELL LOCATION MAP SITE 1101, BRONSON FIELD		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		

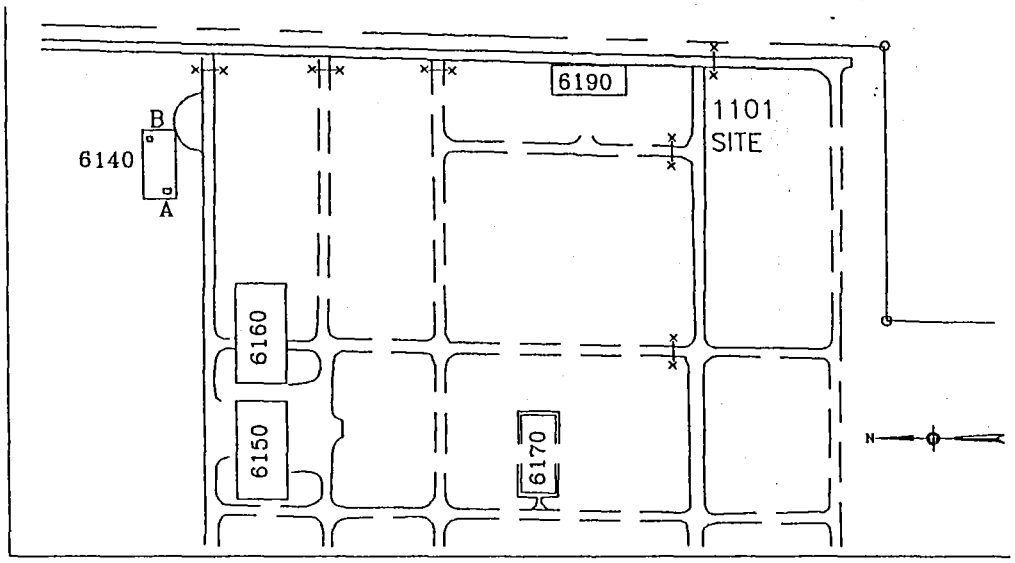
TABLE 2-1

TOP OF CASING AND GROUNDWATER ELEVATION
U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1101

WELL NUMBER	TOC FT. M.S.L.	DTW (FT) 4/5/96	GROUNDWATER ELEVATION 4/5/96
MW-2	28.34	11.39	16.95
MW-3	28.83	11.90	16.93
MW-4	28.80	11.82	16.98
MW-5	28.37	11.47	16.90
MW-6	28.67	11.76	16.91

NOTES: TOC = Top of Casing
DTW = Depth to Water

Benchmark assumes elevation of 30.00 ft., Top of Casing Existing MW-1, Bronson Field, Florida.



16.94

16.96

16.92

AREA OF BLDG.
1101 FOUNDATION
REMANTS.

MW-3
(16.93)

MW-6
(16.91)

(NM)
DMW-6

MW-4
(16.98)

MW-1
(NM)

MW-5
(16.90)

MW-2
(16.95)

N

0' 5' 10' 20' 30'
SCALE FEET

LEGEND

HOT CUTTINGS STORED ON PLASTIC SHEETING

MW-6 MONITORING WELL

BORING HOLE NUMBER

(16.91) TOTAL NAPHTHALENE CONCENTRATION (PPB)

(NM) NOT MEASURED

16.92 ISOCONCENTRATIONN CONTOUR

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE:	FIGURE 2-3	DRAWN BY: DWG. NO: REVISED BY:
GROUNDWATER FLOW DIRECTION MAP SITE-1101, BRONSON FIELD		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		

Procedures for conducting the slug test, slug test data graphs and calculations are attached in Appendix C. The slug test result indicates the horizontal hydraulic conductivity (K) at the site to be 0.6899 feet per day (ft/day). The calculated pore water velocity (V) is 0.0069 ft/day (2.5181 ft/yr).

2.4 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 a depth of 35 feet during this investigation. This zone is generally composed of very-fine to coarse grained silty quartz sands. The sands are primarily tan/white in color. The groundwater at the site was encountered at approximately 13-14 feet BLS. Lithologic logs describing the soils encountered at various depths, approximate groundwater level, and OVA screening results for the soil borings installed for the monitoring well installations are provided in Appendix B.

2.5 SOIL ASSESSMENT

The extent of soil contamination at the site was determined by OVA screening. Thirteen soil borings (B1 thru Bl3) were installed by W.E.S., Inc. on February 1, 1996 using a hollow stem auger. Soil samples from each borehole were collected at 1, 4, 7, 10, and 11 feet BLS. The hollow stem auger borings were installed at around the former tank location. In addition to the hand auger borings, soil samples were collected from the boreholes performed during the installation of monitoring wells MW-2 thru MW-6. Location maps depicting the location of the soil borings and monitoring wells are shown in Figure 2-1 and Figure 2-2, respectfully.

The OVA results are shown in Table 2-2. Volatile organic compounds (VOCs) were only detected in the soil samples collected from soil boring B3. No VOCs were detected in the soil samples collected from any of the other soil borings. The OVA headspace concentration detected in soil samples collected from soil boring B3 at a depth of 7, 10, and 11 feet BLS was 15 ppm, 25 ppm, and 20 ppm, respectively. The OVA headspace concentration in the other soil samples collected from soil boring B3 was 0 ppm. The concentration of VOCs detected in the soil samples collected from soil boring B3 were below the FDEP regulatory level of 50 ppm for excessively contaminated soil by kerosene product.

2.6 SURFACE WATER ASSESSMENT

No surface water was observed at the site and therefore no surface water assessment was performed for this report.

2.7 GROUNDWATER QUALITY ASSESSMENT

Groundwater samples were extracted from shallow groundwater monitoring wells MW-2 thru MW-6 by W.E.S., Inc. on April 4 and April 5, 1996. Groundwater samples were analyzed for volatile organic aromatics (VOAs), polynuclear aromatic hydrocarbons (PAHs), total

TABLE 2-2

VOLATILE ORGANIC VAPOR CONCENTRATIONS IN SOIL (OVA HEADSPACE ANALYSIS)

SOIL BORING B-1 THRU MW-5
FEBRUARY 1 AND MARCH 28, 1996

SITE 1101
U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1101

Boring Designation	Depth (Feet BLS)	VOCs Concentration (ppm)[1]
B1	1	0
	4	0
	7	0
	10	0
	11	0
B2	1	0
	4	0
	7	0
	10	0
	11	0
B3	1	0
	4	0
	7	15
	10	25
	11	20
B4	1	0
	4	0
	7	0
	10	0
	11	0

[1] VOCs concentration assessed by organic vapor analyzer headspace techniques. Results are total VOCs less methane.

Notes: BLS = below land surface
NS = not sampled
ppm = parts per million
Soil samples analyzed and VOC results reported by NPWC, Pensacola, FL

TABLE 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
B5	1	0
	4	0
	7	0
	10	0
	11	0
B6	1	0
	4	0
	7	0
	10	0
	11	0
B7	1	0
	4	0
	7	0
	10	0
	11	0
B8	1	0
	4	0
	7	0
	10	0
	11	0
B9	1	0
	4	0
	7	0
	10	0
	11	0

[1] VOCs concentration assessed by organic vapor analyzer headspace techniques. Results are total VOCs less methane.

Notes: BLS = below land surface
NS = not sampled
ppm = parts per million
Soil samples analyzed and VOC results reported by NPWC, Pensacola, FL

TABLE 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
B10	1	0
	4	0
	7	0
	10	0
	11	0
B11	1	0
	4	0
	7	0
	10	0
	11	0
B12	1	0
	4	0
	7	0
	10	0
	11	0
B13	1	0
	4	0
	7	0
	10	0
	11	0
MW-2	1	0
	4	0
	7	0
	10	0
	11	0

[1] VOCs concentration assessed by organic vapor analyzer headspace techniques. Results are total VOCs less methane.

Notes: BLS = below land surface
NS = not sampled
ppm = parts per million
Soil samples analyzed and VOC results reported by NPWC, Pensacola, FL

TABLE 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
MW-3	1	0
	4	0
	7	0
	10	0
	11	0
MW-4	1	0
	4	0
	7	0
	10	0
	11	0
MW-5	1	0
	4	0
	7	0
	10	0
	11	0
MW-6	1	0
	4	0
	7	0
	10	0
	11	0

[1] VOCs concentration assessed by organic vapor analyzer headspace techniques. Results are total VOCs less methane.

Notes: BLS = below land surface
NS = not sampled
ppm = parts per million
Soil samples analyzed and VOC results reported by NPWC, Pensacola, FL

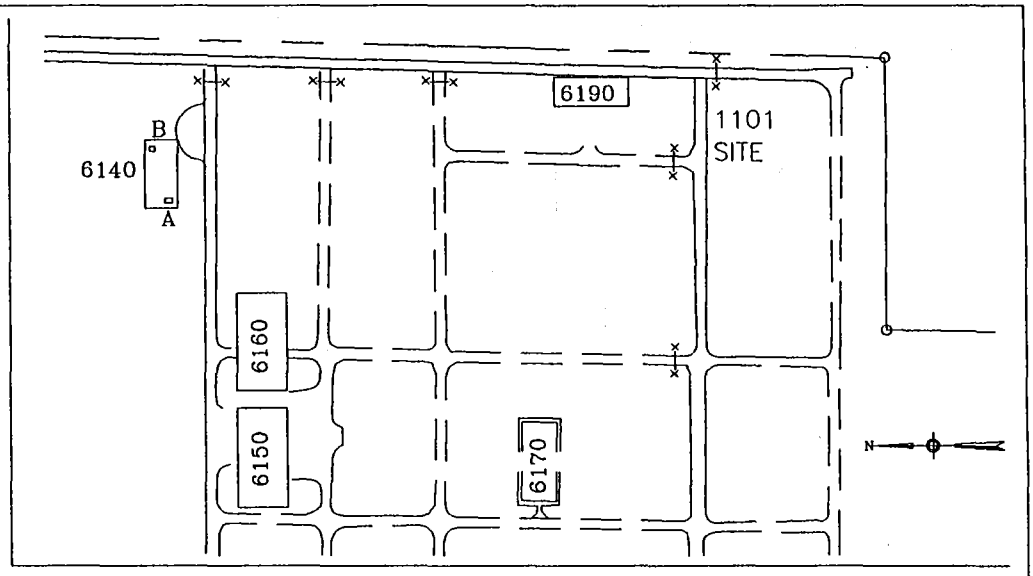
petroleum hydrocarbons (TPHs), and ethylene dibromide (EDB) utilizing EPA Methods 8260, 8270A, FLPRO 8015, and 504, respectively. Groundwater samples were extracted from groundwater monitoring wells MW-2 thru MW-6 by W.E.S., Inc. on May 17, 1996 using the quiescent sampling technique. Groundwater samples were analyzed for total lead using method SW6010. The analytical laboratory results are found in Appendix D.

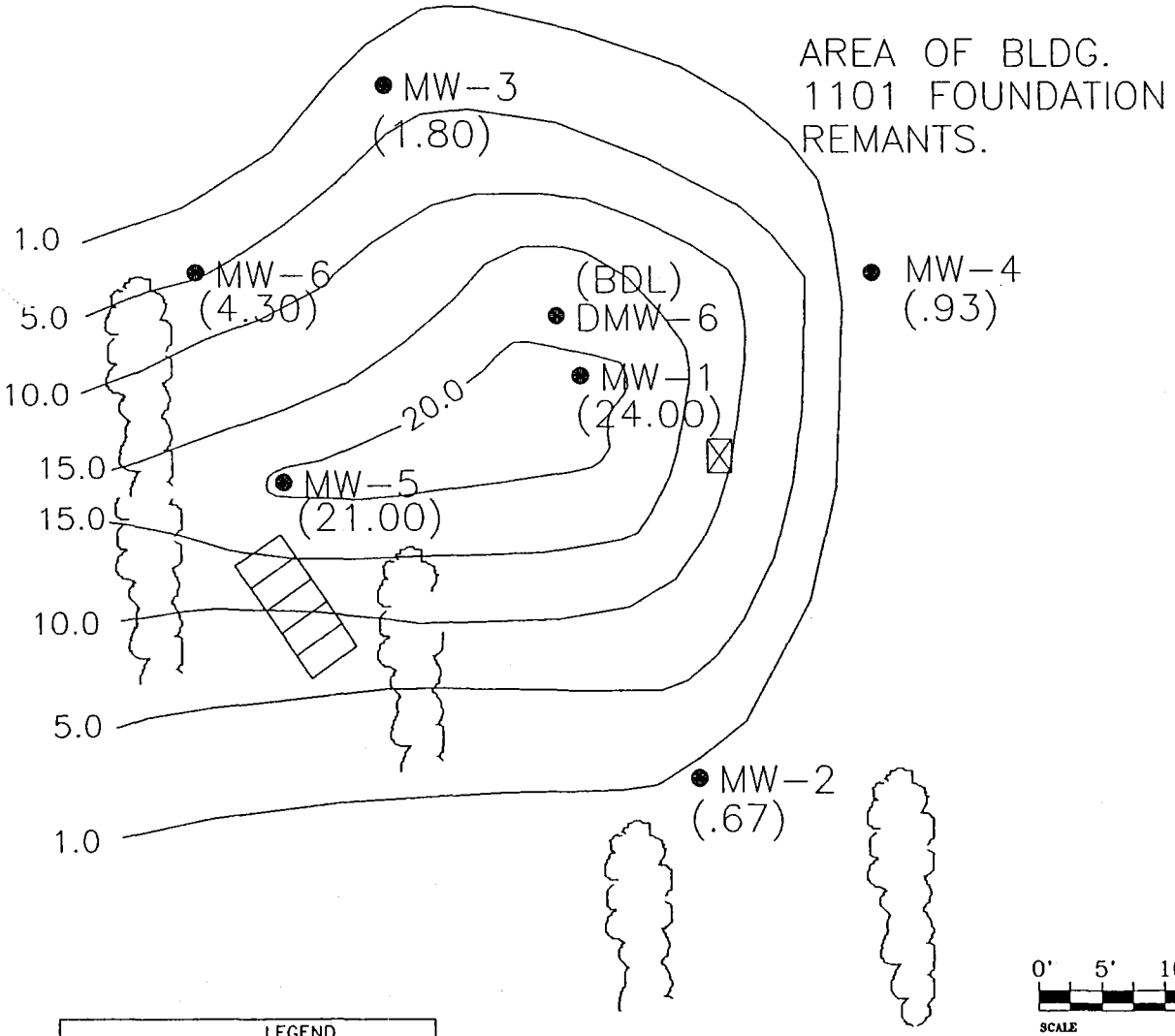
No VOAs or PAHs were detected in the groundwater samples collected from monitoring wells MW-2 thru MW-6. TPH contamination levels of .67 ppm, 1.80 ppm, .93 ppm, 21 ppm, and 4.30 ppm were detected in the groundwater samples collected from MW-2 thru MW-6, respectfully. Only MW-5 exceeded the FDEP allowable limits of 5 ppm for TPHs. A TRH contamination distribution map is shown in Figure 2-4. Laboratory analyses performed on groundwater samples collected May 17, 1996 indicated lead levels in MW-2 thru MW-6 were below detection limits. EDB laboratory analyses of groundwater samples collected from monitoring wells MW-1 thru MW-6 indicated levels were below detection limits in monitoring wells MW-2, MW-3, MW-4, and MW-6, however analyses of MW-5 indicated EDB levels of 0.02 ppb which is equal to the FDEP regulatory limit of 0.02 ppb. A summary of the analytical results for the groundwater samples is shown in Table 2-3.

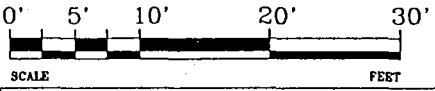
A groundwater sample was extracted from shallow groundwater monitoring well MW-1 by W.E.S., Inc. on May 20, 1996. Groundwater samples were analyzed for volatile organic aromatics (VOAs), polynuclear aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons (TPHs) utilizing EPA Methods 8260, 8270A, and FLPRO 8015, respectively. The analytical laboratory results are found in Appendix D.

Toluene was detected in the groundwater sample collected from MW-1 at a concentration of 2 ppb. Total VOAs were detected in the groundwater sample collected from monitoring well MW-1 at a concentration of 2 ppb which is below the FDEP target level of 50 ppb for total VOAs. Contamination levels of 1-methylnaphthalene and 2-methylnaphthalene were detected at concentrations of 9 ppb and 7 ppb, respectfully. The concentrations of 1-methylnaphthalene and 2-methylnaphthalene detected in the groundwater sample from monitoring well MW-1 exceeded the FDEP target cleanup level for individual PAHs. Laboratory analyses for TPHs indicated a contamination level of 24 ppm which exceeded the FDEP regulatory limit of 5 ppm for TPH. A TPH contamination distribution map is shown in Figure 2-4. A summary of the analytical results for monitoring wells MW-1 thru MW-6 are shown in Tables 2-3, Table 2-4, and Table 2-5.

A groundwater sample was extracted from deep vertical extent monitoring well, designated DMW-6, by W.E.S., Inc. on June 3, 1996 and analyzed for volatile organic aromatics (VOAs), polynuclear aromatic hydrocarbons (PAHs), ethylene dibromide (EDB), and total petroleum hydrocarbons (TPHs) utilizing EPA Methods 8260, 8270A, 504, and FLPRO 8015, respectively. No VOAs, PAHs, EDB, or TPHs were detected in the groundwater sample from DMW-6. A groundwater sample was extracted from deep vertical extent monitoring well, designated DMW-6, by W.E.S., Inc. on June 28, 1996 and analyzed for lead utilizing EPA SW6010. No lead was detected in the groundwater sample. Analytical laboratory results are







LEGEND

- HOT CUTTINGS STORED ON PLASTIC SHEETING
- MW-6 MONITORING WELL
- (4.30) TRPH CONCENTRATION (PPM)
- (BDL) BELOW DETECTION LIMIT
- 20.0 ISOCONCENTRATION LINE

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE:	FIGURE 2-4	DRAWN BY: DWG. NO: REVISED BY:
TPH CONTAMINATION DISTRIBUTION MAP SITE 1101, BRONSON FIELD		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		

TABLE 2-3

SUMMARY OF TOTAL PETROLEUM HYDROCARBONS, LEAD, AND ETHYLENE DIBROMIDE ANALYTICAL RESULTS FOR GROUNDWATER SAMPLE COLLECTED FROM MONITORING WELLS MW-1 THRU MW-6 AND DMW-6 U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1101

	MONITORING WELL NUMBER						
	5/20/96	4/5/96	4/5/96	4/5/96	4/5/96	4/5/96	6/3/96
PARAMETER	MW-1*	MW-2	MW-3	MW-4	MW-5	MW-6	DMW-6
TPHs (ppm)	24	.67	1.80	.93	21	4.30	BDL
Lead[1]	BDL	BDL	BDL	BDL	BDL	BDL	BDL
EDB	NS	BDL	BDL	BDL	0.02	BDL	BDL

NOTES: (1) Groundwater samples for lead analysis of monitoring wells MW-1 thru MW-6 were collected on May 17, 1996.

All results reported in parts per billion (ppb) unless otherwise noted.
Groundwater monitoring analyses for dates noted unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
NS = Not Sampled
TPHs = Total Petroleum Hydrocarbons

*MW-1 was previously numbered MW-13

TABLE 2-4

SUMMARY OF VOLATILE ORGANIC COMPOUNDS
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
COLLECTED FROM MONITORING WELL MW-1 THRU MW-6
U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1101

VOLATILES						
	MONITORING WELL NUMBERS					
PARAMETER	MW-1*	MW-2	MW-3	MW-4	MW-5	MW-6
Toluene	2	BDL	BDL	BDL	BDL	BDL
TOTAL VOAs	2	BDL	BDL	BDL	BDL	BDL

NOTES: BDL = Below detection limits.
Groundwater sample from MW-1 was collected on May 20, 1996.
Groundwater samples from MW-2 thru MW-6 were collected on April 5, 1996.
All results are reported in parts per billion (ppb) unless otherwise noted.

*MW-1 was previously numbered MW-13

TABLE 2-5

SUMMARY OF POLYNUCLEAR AROMATICS
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
COLLECTED FROM MONITORING WELLS MW-1 THRU MW-6
U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1101

PAHs						
	MONITORING WELL NUMBERS					
PARAMETER	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
1-Methylnaphthalene	9	BDL	BDL	BDL	BDL	BDL
2-Methylnaphthalene	7	BDL	BDL	BDL	BDL	BDL
TOTAL NAPHTHALENES	16	BDL	BDL	BDL	BDL	BDL

NOTES: BDL = Below detection limits.
Groundwater sample from MW-1 was collected on May 20, 1996.
Groundwater samples from MW-2 thru MW-6 were collected on April 5, 1996.
All results are reported in parts per billion (ppb) unless otherwise noted.

found in Appendix D. The FDEP target levels for the kerosene analytical group are shown in Table 2-6.

Mr. Jack Walters, Escambia County Utilities Authority (ECUA) chemist, was contacted on December 6, 1996 to inquire if any groundwater samples were collected from Bronson Field potable water wells designated east (Bldg. 1162) and west (Bldg. 1161) and analyzed for VOAs. He noted that potable water well east was sampled monthly and analyzed for VOAs since 1987. He noted that this potable water well was removed from service on June 1995. He noted that the only contaminant detected during this period was tetrachloroethylene which ranged in concentration from 0.06 ppb to 1.19 ppb. Mr. Walters noted that Bronson Field potable water well west has been sampled monthly since 1987 and the samples were analyzed for VOAs. He noted that the only VOAs detected in the samples collected from this potable water well was also tetrachloroethylene which ranged in concentration from 0.7 ppb to 2 ppb. The maximum concentrations of tetrachloroethylene detected in both potable water wells at Bronson Field did not exceed the FDEP Groundwater Guidance Concentration of 3 ppb for tetrachloroethylene. A copy of the memo summarizing the telephone conversation between Mr. Walters (ECUA) and Mr. Greg Campbell (PWC Environmental Department) is shown in Appendix E.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

- The source of the discharge has been eliminated and the approximate gallons of heating fuel oil released is unknown.

- Initial remedial actions included the removal and proper disposal of approximately 20 cubic yards of contaminated soil.

- During the construction of monitoring wells MW-2 thru MW-6 and deep vertical extent well DMW-6 no volatile organic vapors were detected in soil borings analyzed for VOCs using an OVA.

- Six shallow groundwater monitoring wells (MW-1 thru MW-6) and one deep vertical extent monitoring well (DMW-6) 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(8)(b).

- No free-phase petroleum hydrocarbons were detected in any of the monitoring wells.

- Groundwater depths measured in monitoring wells MW-2 thru MW-6 on April 5, 1996 indicated the groundwater flows toward the east direction.

TABLE 2-6

FDEP TARGET LEVELS FOR KEROSENE ANALYTICAL GROUP

FDEP TARGET LEVELS FOR KEROSENE ANALYTICAL GROUP	
KEROSENE ANALYTICAL GROUP	**TARGET LEVEL**
Benzene	1 ug/l
1,2-dibromoethane (EDB)	0.02 ug/l
Total VOAs (total of benzene, ethyl-benzene, toluene, and xylene)	50 ug/l
PAHs	Detection limits of EPA Method conditions of the sample, 10 ug/l maximum
Total Naphthalenes (total of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene)	100 ug/l
Lead	50 ug/l
Methyl Tert-Butyl Ether (MTBE)	50 ug/l
Total Recoverable Petroleum Hydrocarbons (TRPHs)	5 mg/l

NOTES: ug/l = ppb
mg/l = ppm

- A total naphthalene concentration of 16 ppb was detected in the groundwater sample collected from monitoring well MW-1 which is below the FDEP target level of 100 ppm for total naphthalene. No total naphthalenes were detected in the groundwater samples collected from monitoring wells MW-2 thru MW-6 or DMW-6.

- Total VOAs were only detected in the groundwater sample collected from monitoring well MW-1 (2 ppb) which was below the FDEP target level of 50 ppb for total VOAs. VOAs were not detected in monitoring wells MW-2 thru MW-6 or DMW-6.

- EDB (0.02 ppb) was detected in monitoring well MW-5 at the FDEP target level of 0.02 ppb. No EDBs were detected in monitoring wells MW-2 thru MW-6 or DMW-6.

- TPH concentrations detected in groundwater samples collected from monitoring well MW-1 (24 ppm) and MW-5 (21 ppm) exceeded the FDEP target level of 5 ppm for TPHs. TPHs detected in monitoring wells MW-2 (0.67 ppm), MW-3 (1.80 ppm), MW-4 (0.93 ppm), MW-6 (4.30 ppm), and DMW-6 (0 ppm) were below the FDEP target level of 5 ppm for TPHs.

- No lead was detected in groundwater samples collected from monitoring wells MW-1 thru MW-6 or DMW-6.

- The average estimated horizontal hydraulic conductivity at the site is 0.6899 feet per day (ft/day).

- The average estimated linear velocity at the site is 0.0069 ft/day (2.5181 ft/yr).

- The areal extent of the soil and groundwater contamination at the site appears to be limited to a small area and the levels of contamination are minimal.

- A potable water well is located within 1/4 mile radius of the site. Tetrachloroethylene was detected in the groundwater samples collected monthly since 1987 at concentrations below the FDEP Guidance Concentration of 3 ppb for tetrachloroethylene.

3.2 RECOMMENDATIONS

PWC Pensacola recommends, based upon the findings and conclusions contained in this report, "no further action" be required for the soil and that a groundwater Monitoring Only Plan be implemented for the groundwater at Site 1101 located at U.S. Navy Outlying Landing Field Bronson, NAS Pensacola, Pensacola, Florida as follows:

(1) Monitoring wells MW-1, MW-4, and MW-5 be sampled and analyzed for TPH by FLPRO and PAHs by EPA method 610, quarterly for one year.

(2) Monitoring well MW-1, which had the highest petroleum contamination, is considered the source monitoring well. Monitoring wells MW-4 and MW-5 are considered the upgradient and downgradient wells, respectively.

4.0 PROFESSIONAL REVIEW CERTIFICATION

The Contamination 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 Contamination Assessment Report was developed for U.S. Navy Outlying Landing Field (OLF) Bronson, Site 1101, Pensacola, Florida and should not be construed to apply to any other site.

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

1/28/07
Date

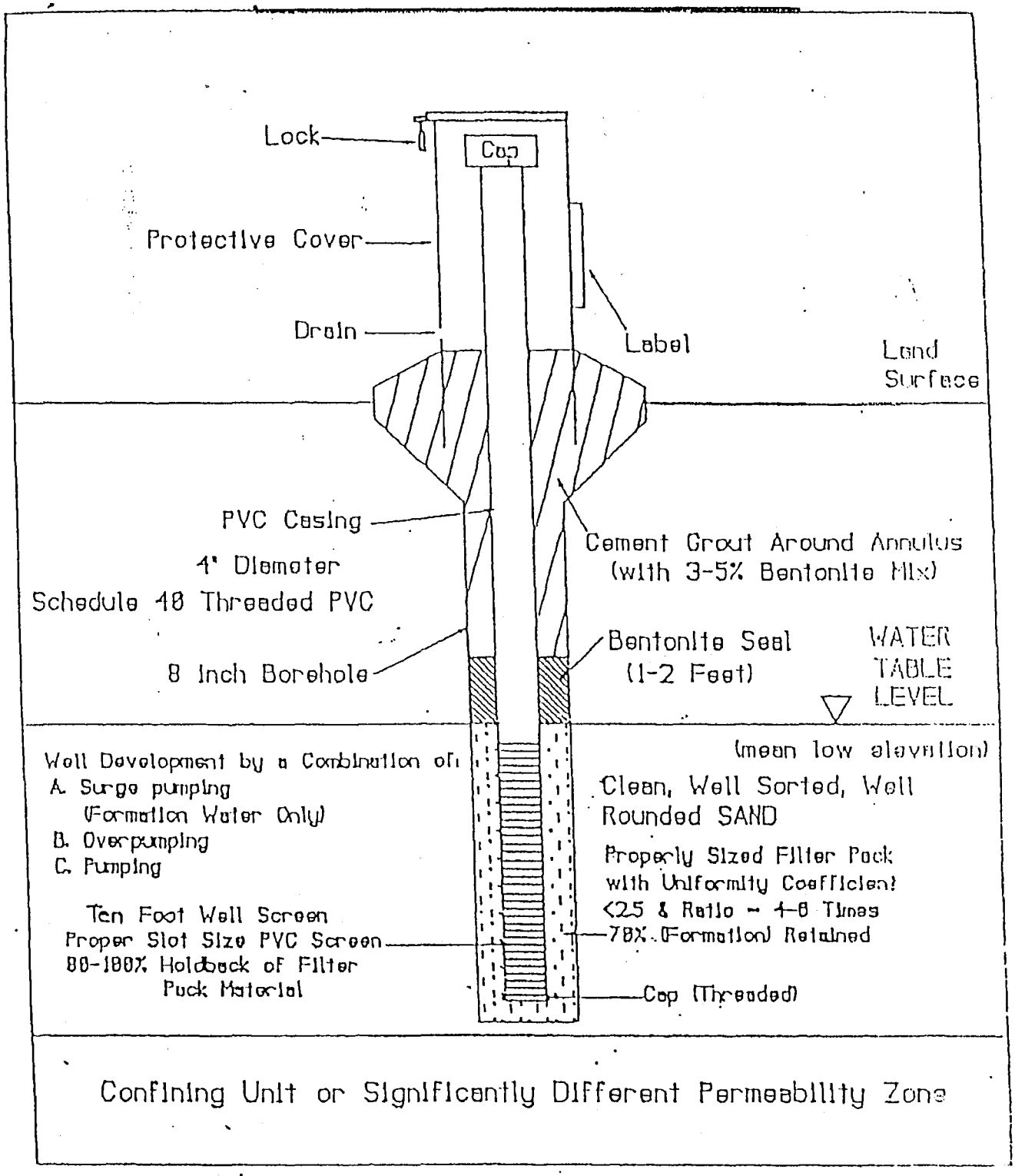
5.0 REFERENCES

Naval Energy and Environmental Support Activity, Port Hueneme, California, Preliminary Assessment Report of Outlying Landing Field (OLF) Bronson, Escambia County, Florida, January 1991.

8.0 APPENDICES

APPENDIX A

TYPICAL MONITORING WELL CONSTRUCTION DIAGRAMS



DECEMBER, 1991
M. KENNEDY &
D. STAPLES

BASIC MONITOR WELL DESIGN IN A WATER TABLE AQUIFER

W. E. S., Inc.
Environmental Division

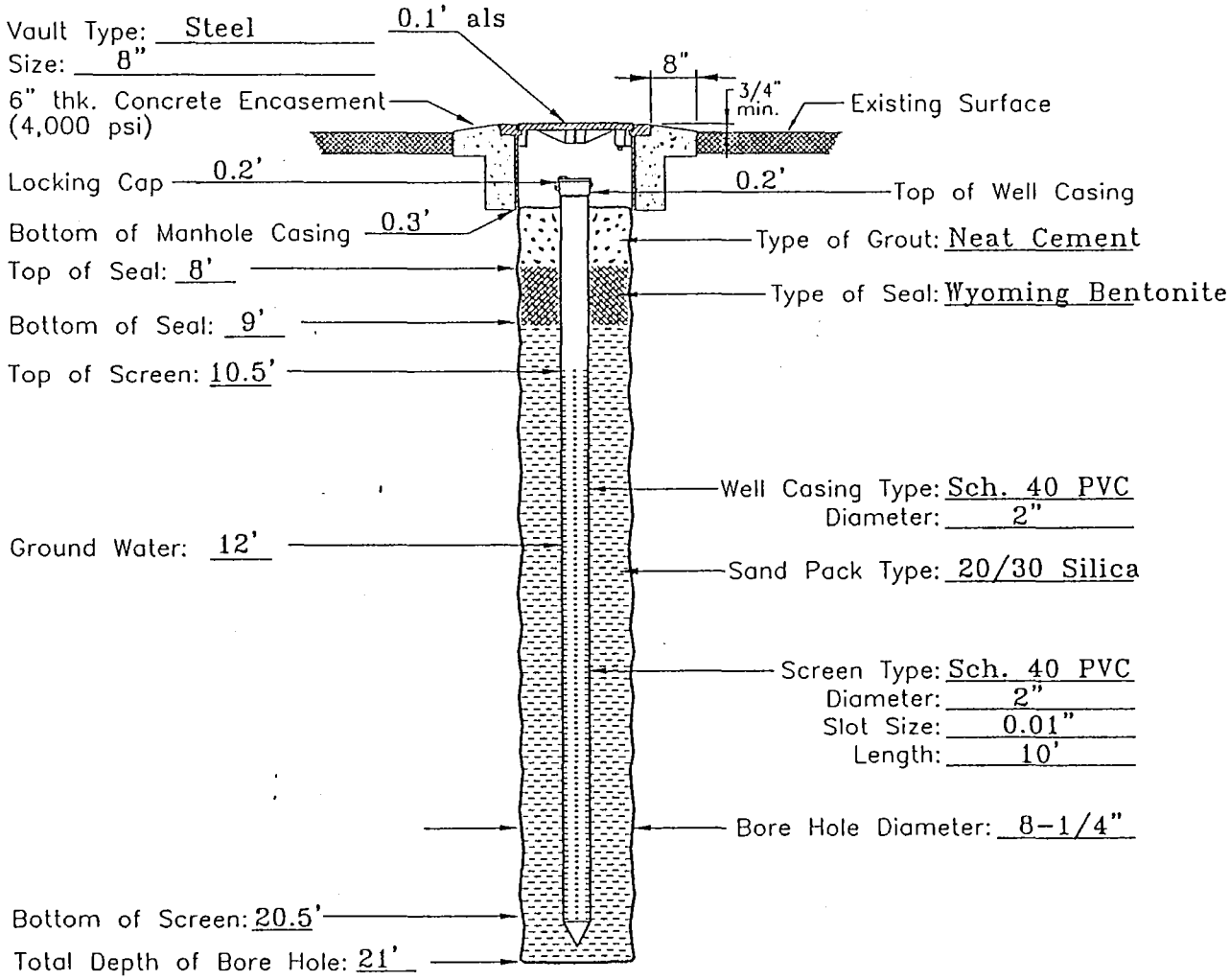
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Victor A. Spooner
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-2

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 1101, Bronson Field
JOB NUMBER: N65114-95-D-2126
DATE Start: 3/28/96 Finish: 3/29/96
TIME Start: 0815 Finish: 0700

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

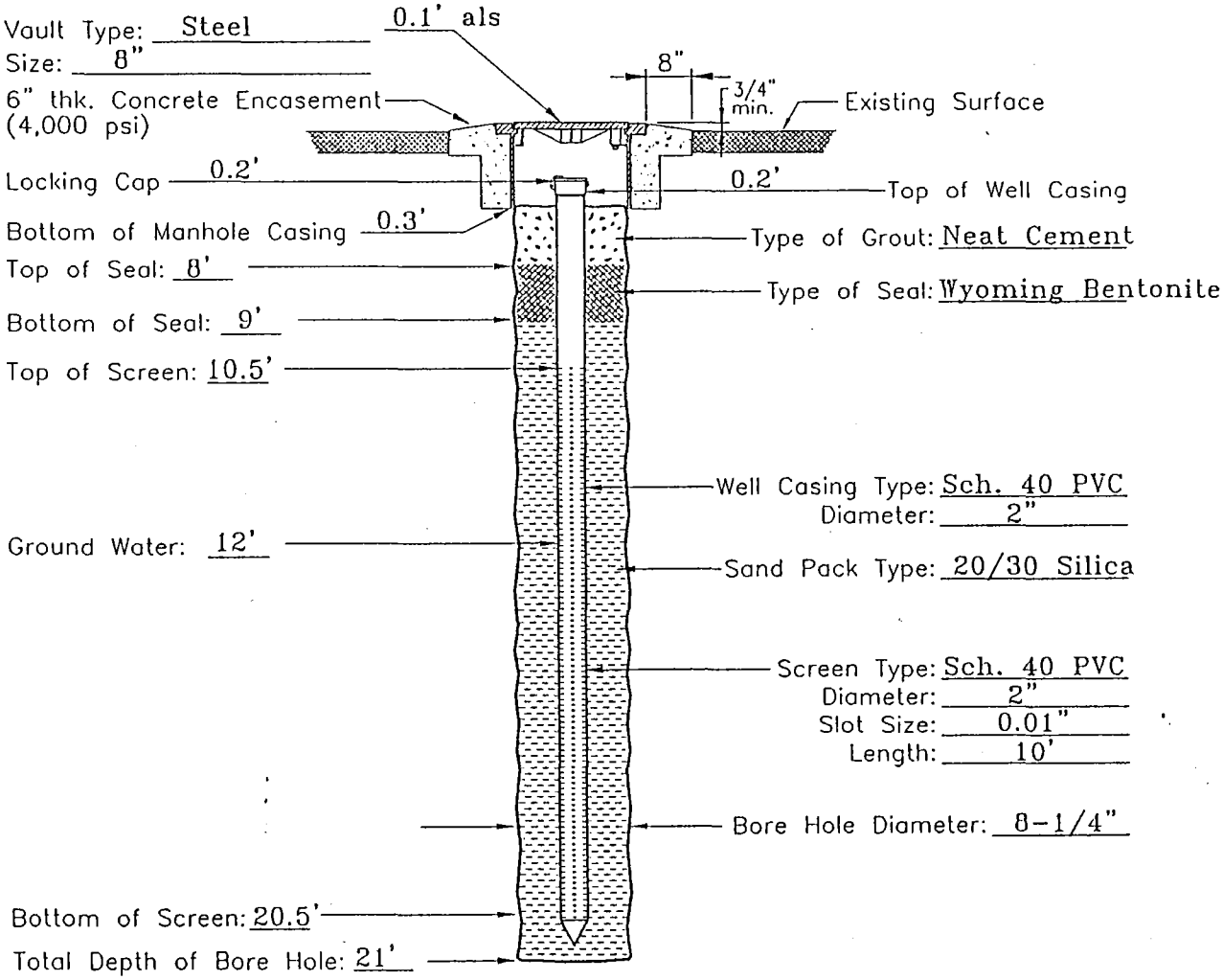
MONITOR WELL CONSTRUCTION DETAIL

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

LOGGED BY: Victor A. Spooner
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-3

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 1101, Bronson Field
JOB NUMBER: N65114-95-D-2126
DATE Start: 3/28/96 Finish: 3/29/96
TIME Start: 0905 Finish: 0715

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

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Environmental Division

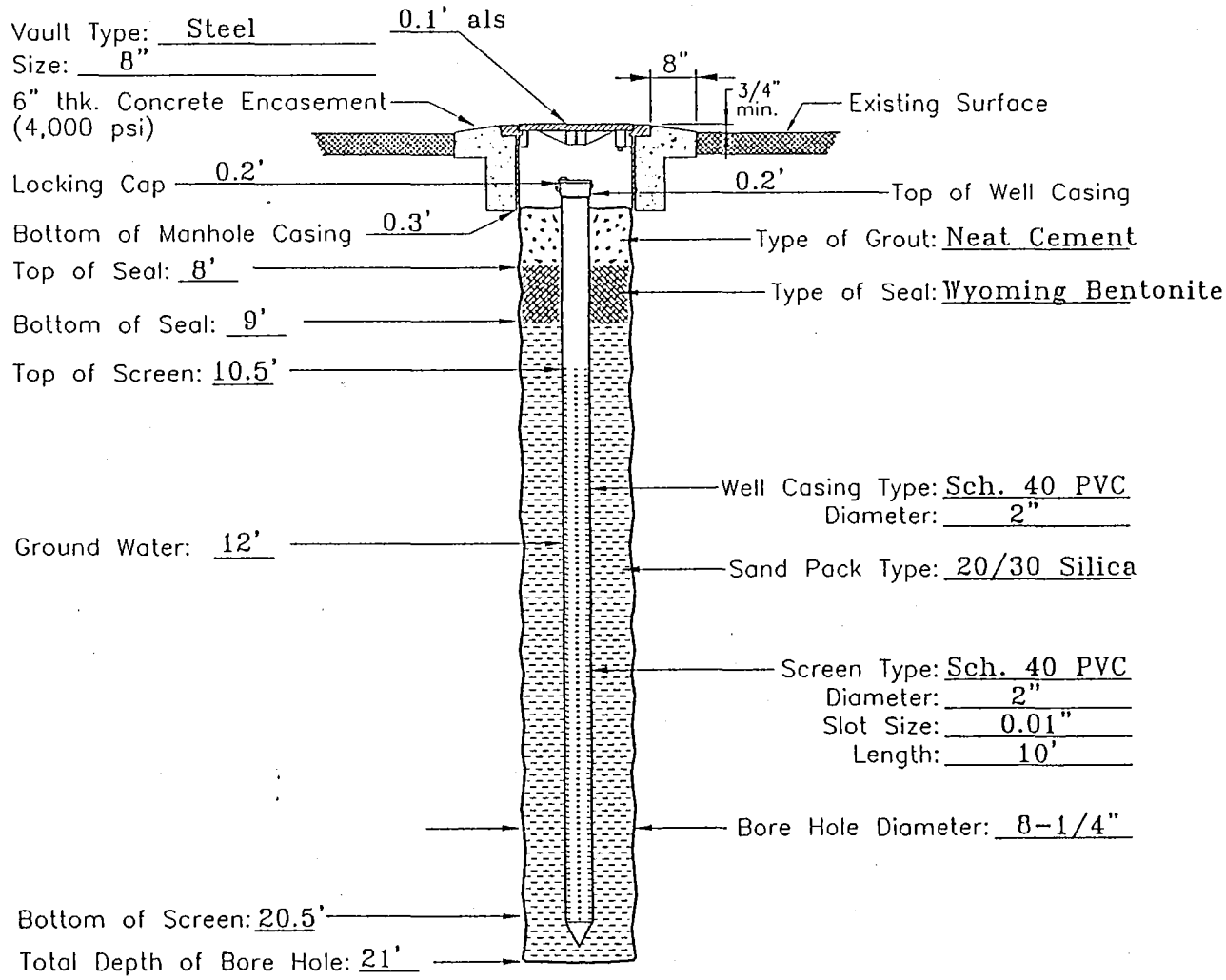
MONITOR WELL CONSTRUCTION DETAIL

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

LOGGED BY: Victor A. Spooner
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-4

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 1101, Bronson Field
JOB NUMBER: N65114-95-D-2126
DATE Start: 3/28/96 Finish: 3/29/96
TIME Start: 0945 Finish: 0730

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

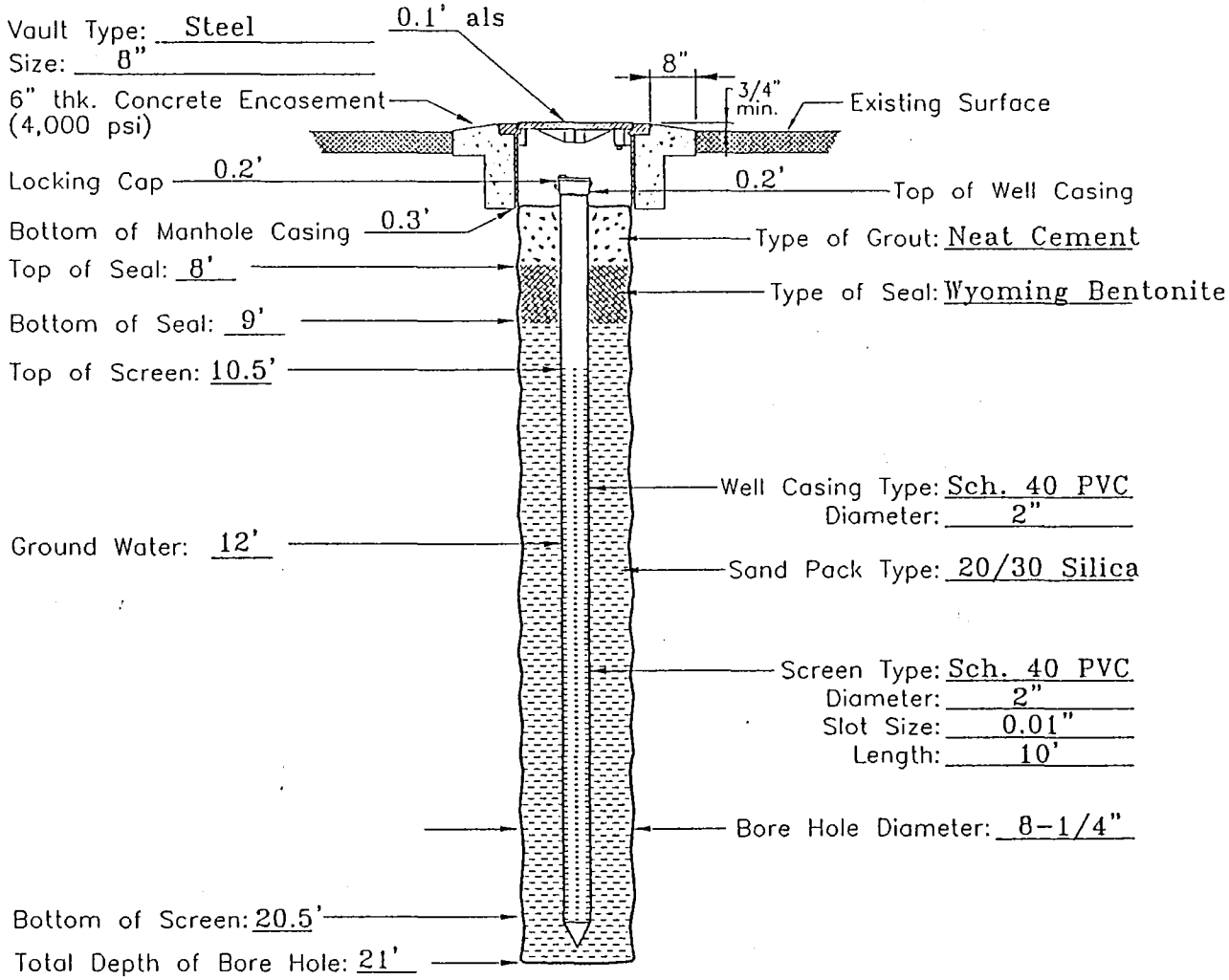
MONITOR WELL CONSTRUCTION DETAIL

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

LOGGED BY: Victor A. Spooner
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-5

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 1101, Bronson Field
JOB NUMBER: N65114-95-D-2126
DATE Start: 3/28/96 Finish: 3/29/96
TIME Start: 1035 Finish: 0745

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

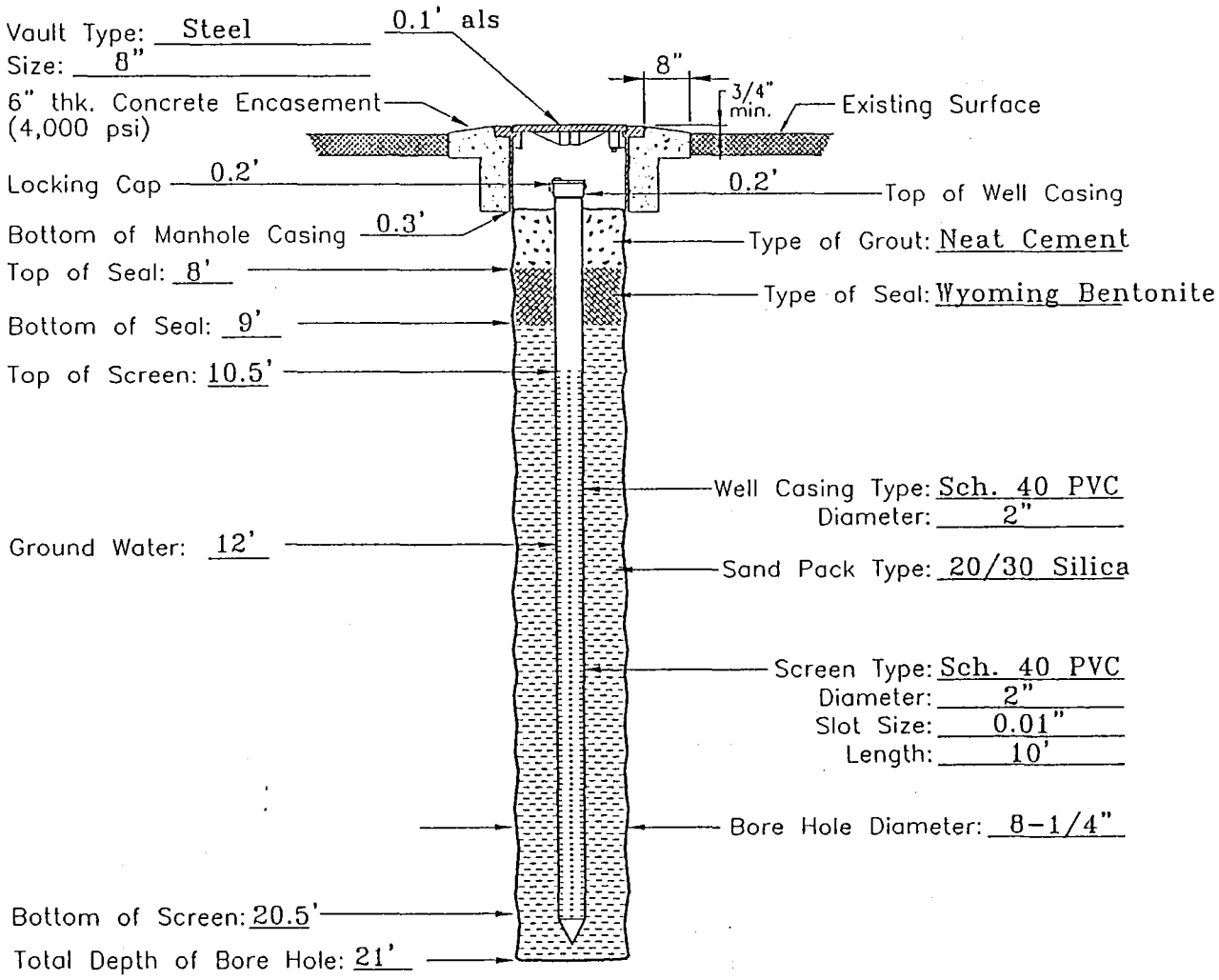
MONITOR WELL CONSTRUCTION DETAIL

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

LOGGED BY: Victor A. Spooner
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-6

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 1101, Bronson Field
JOB NUMBER: N65114-95-D-2126
DATE Start: 3/28/96 Finish: 3/29/96
TIME Start: 1115 Finish: 0800

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

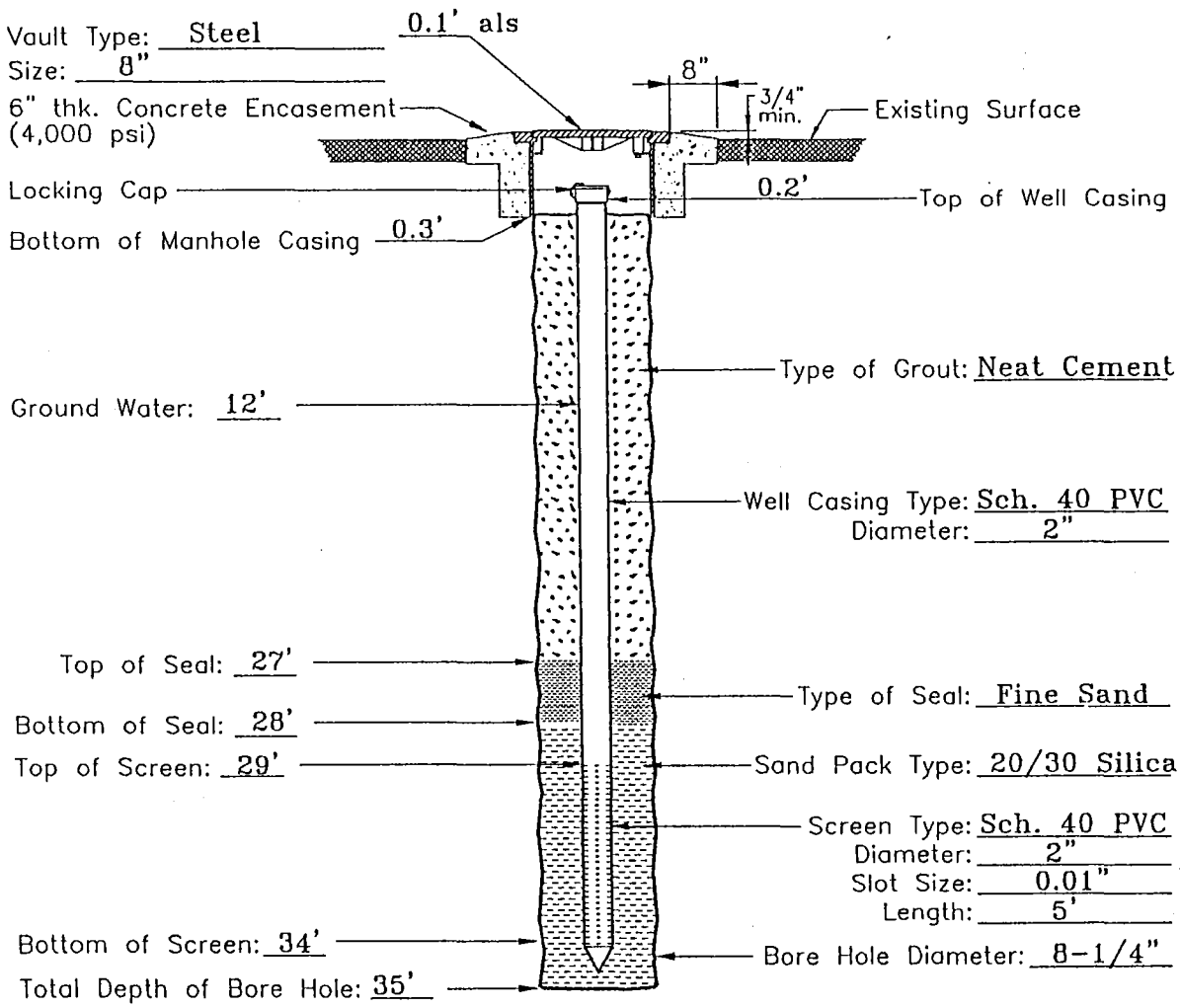
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

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-6

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 1101, Bronson Field
JOB NUMBER: N65114-95-D-2126
DATE Start: 5/16/96 Finish: 5/16/96
TIME Start: 1300 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

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

APPENDIX B

LITHOLOGIC LOGS

LOG OF MONITORING WELL

Project Name: Bronson Field

Job # P95-255.34

Location: 1101

Facility: NAS

Start Date/Time: 5/25/95

MW Number: MW 13

Finish Date/Time: 5/25/95

Logged By: Darryl Gates

Top Of Casing Elevation: N/A

Drilling Contractor: Pensacola Testing Labs

Surface Elevation: N/A

Total Depth: 22'

Driller: Larry Minchu

Depth Feet	Sampler Type H2O	Sample ID #	Contamination: Odor	Contamination: OVA/HNu ppm SOIL	Contamination: Visible Y=Yes N=No	Soil Rock Symbol	Soil and Rock Description/Comment	Monitor Well Data: Material Description	Monitor Well Data: Concrete Pad
							Dirt Surface		
							Reddish brown fine to med grained sand	2" pvc riser; grout	
5									
							8'		
10							Tan fine to med grained sand	Bentonite Seal	
	X		N	0.4	N		13'		
			Y				14'		
15							Gray fine to med grained sand	0.010 Slotted Screen	
20								16/40 silica sand	
							22' End of Boring		
25									

B-1

WELL SAMPLE RECORD

PROJECT NO. _____ DATE 5/30/95 CHECKED BY _____

PROJECT Bronson Field SAMPLED BY Joy Jones / Darryl Gates DATE CHECKED _____

WELL I.D.	DEPTH TO WATER (FT. BMP)	TOTAL WELL DEPTH (FT. BMP)	WELL TYPE AND DIAMETER	WATER VOLUME IN WELL (GAL.)	PURGE RATE (GPM)	DURATION OF PURGING (MIN.)	VOLUME PURGED (GAL.)	PURGE METHOD	METHOD OF SAMPLE COLLECTION	DATE OF SAMPLE COLLECTION	TIME OF SAMPLE COLLECTION	SAMPLE TEMP. (°C)	SAMPLE pH / ODOR	SAMPLE CONDUCTIVITY UMHOS/CM	COMMENTS (ODOR, COLOR, ETC.)
MW1	15.5	24.3	2" pvc	1.5	~0.5	15	~8	C	TB	5/30/95	1220		NONE		*In lieu of temp,
MW2	14.1	25.15		1.9		13	~10				1230		Slight petro		pH, and Conductivity
MW3	14.8	24.85		1.7		20	~10				1235		NONE		all 18 wells were
MW4	13.12	24.6		1.95		14	~10				1237		NONE		purged 5 volumes
MW5	14.35	24.6		1.74		19	~9				1248		NONE		
MW6	7.00	14.8		1.32		9	~7				1355		NONE		
MW7	14.61	18.85		0.72		7	~4				1515		SEWAGE		
8	19.20	23.7		0.76		18	~4				1425		NONE		
9	15.0	23.7		1.5		20	~7.5				1830		Slight petro		
10	3.25	11.8		1.45		16	~7.5				1636		Sulfur		
MW11	7.95	16.64		1.48		7	~7.5				1727		NONE		
MW12	6.35	14.5		1.39		11	~7				1650		Petro		
MW13	13.05	24.60		1.96		11	~10				1452		Sewage		
MW14	19.8	23.4		0.61		6	~3				1559		NONE		
MW15	18.0	24.8		1.2		9	~6				1542		NONE		
MW16	5.42	14.65		1.57		17	~8				1705		NONE		
MW17	8.20	15.9		1.31		18	~6.5				1758		PETRO		
MW18	18.50	22.50		0.68		8	~4				1355		NONE		

B-2

PURGE AND COLLECTION METHODS: C = CENTRIFUGAL PUMP; P = PERISTALTIC PUMP; TB = TEFLON BAILER; PB = PVC BAILER; X = OTHER (DESCRIBE)

Site 1101	LOGGED BY: Victor A. Spooner, P.G.	SHEET 1 OF 1
Bronson Field	Contractor: W.E.S., Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile B61HDX
MONITORING WELL NO.: MW2	Start Date: 03/28/96	Completed: 03/29/96
(MW1 RESERVED FOR EXISTING PIT-AREA MON. WELL)	Start Time: 0815	Finish Time: 0700 (pad/cover)
Delivery Order 0012	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						0'-1.5'; Dark/Light Brown, Silty (50% organic/50% qtz)			
				100%	0	Quartz Sand (v. fine - fine); No Odors/Sheens; OVA=0 ppm.	0	NR	0
						1.5' - 21': Tan/White, Silty Quartz Sand (v. fine - fine); Grain Size Range Increases			
				100%	4	With Depth (to very fine - coarse); No Odors/Sheens; OVA = 0 ppm.	0	NR	0
							0	NR	0
				100%	8				
							0	NR	0
				100%	12				
			Water Table @ Approx 13' BLS				0	NR	0
				100%	16		0		
							0	NR	0
				100%	20				
						End of Boring @ 21' BLS			

I certify that this lithologic log, including geologic and hydrogeologic interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Prepared by: Victor A. Spooner, P.G., C.P.G
Florida Professional Geologist No. 0001615

Date 03/29/96

Site 1101	LOGGED BY: Victor A. Spooner, P.G.	SHEET 1 OF 1
Bronson Field	Contractor: W.E.S., Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile B61HDX
MONITORING WELL NO.: MW3	Start Date: 03/28/96	Completed: 03/29/96
(MW1 RESERVED FOR EXISTING PIT-AREA MON. WELL)	Start Time: 0905	Finish Time: 0715 (pad/cover)
Delivery Order 0012	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						0'-1.5'; Dark/Light Brown, Silty (50% organic/50% qtz)			
				100%	0	Quartz Sand (v. fine - fine); No Odors/Sheens; OVA=0 ppm.	0	NR	0
						1.5' - 21': Tan/White, Silty Quartz Sand (v. fine - fine); Grain Size Range Increases			
				100%	4	With Depth (to very fine - coarse); No Odors/Sheens; OVA = 0 ppm.	0	NR	0
							0	NR	0
				100%	8				
							0	NR	0
				100%	12				
			Water Table @ Approx 13' BLS				0	NR	0
HA				100%	16		0		
							0	NR	0
				100%	20				
						End of Boring @ 21' BLS			

I certify that this lthologic log, including geologic and hydrogeologic interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Prepared by: Victor A. Spooner, P.G., C.P.G
Florida Professional Geologist No. 0001615

Date 03/29/96

Site 1101	LOGGED BY: Victor A. Spooner, P.G.	SHEET 1 OF 1
Bronson Field	Contractor: W.E.S., Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile B61HDX
MONITORING WELL NO.: MW4	Start Date: 03/28/96	Completed: 03/29/96
(MW1 RESERVED FOR EXISTING PIT-AREA MON. WELL)	Start Time: 0945	Finish Time: 0730 (pad/cover)
Delivery Order 0012	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						0'-1.5'; Dark/Light Brown, Silty (50% organic/50% qtz)			
				100%	0	Quartz Sand (v. fine - fine); No Odors/Sheens; OVA=0 ppm.	0	NR	0
						1.5' - 21': Tan/White, Silty Quartz Sand (v. fine - fine); Grain Size Range Increases			
				100%	4	With Depth (to very fine - coarse); No Odors/Sheens; OVA = 0 ppm.	0	NR	0
							0	NR	0
				100%	8				
							0	NR	0
				100%	12				
			Water Table @ Approx 13' BLS				0	NR	0
				100%	16		0		
							0	NR	0
				100%	20				
						End of Boring @ 21' BLS			

I certify that this lthologic log, including geologic and hydrogeologic interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Prepared by: Victor A. Spooner, P.G., C.P.G
Florida Professional Geologist No. 0001615

Date 03/29/96

Site 1101	LOGGED BY: Victor A. Spooner, P.G.	SHEET 1 OF 1	
Bronson Field	Contractor: W.E.S., Inc.	Dr. Method:	HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig:	Mobile B61HDX
MONITORING WELL NO.: MW5	Start Date: 03/28/96	Completed:	03/29/96
(MW1 RESERVED FOR EXISTING PIT-AREA MON. WELL)	Start Time: 1035	Finish Time:	0745 (pad/cover)
Delivery Order 0012	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						0'-1.5'; Dark/Light Brown, Silty (50% organic/50% qtz)			
				100%	0	Quartz Sand (v. fine - fine); No Odors/Sheens; OVA=0 ppm.	0	NR	0
				100%	4	1.5' - 21': Tan/White, Silty Quartz Sand (v. fine - fine); Grain Size Range Increases With Depth (to very fine - coarse); No Odors/Sheens Detected In Cuttings Collected Above Water Table.	0	NR	0
				100%	8	Strong Degraded Petrol. Odor Present In Cuttings Collected Below the Water Table (i.e., > 13' BLS; OVA = 30 ppm in saturated cuttings).	0	NR	0
				100%	12		0	NR	0
			Water Table @ Approx 13' BLS						
				100%	16		0		
				100%	20		0	NR	0
						End of Boring @ 21' BLS			

I certify that this lithologic log, including geologic and hydrogeologic interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Prepared by: Victor A. Spooner, P.G., C.P.G
Florida Professional Geologist No. 0001615

Date 03/29/96

Site 1101	LOGGED BY: Victor A. Spooner, P.G.	SHEET 1 OF 1
Bronson Field	Contractor: W.E.S., Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile B61HDX
MONITORING WELL NO.: MW6	Start Date: 03/28/96	Completed: 03/29/96
(MW1 RESERVED FOR EXISTING PIT-AREA MON. WELL)	Start Time: 1115	Finish Time: 0800 (pad/cover)
Delivery Order 0012	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						0'-1.5'; Dark/Light Brown, Silty (50% organic/50% qtz)			
				100%	0	Quartz Sand (v. fine - fine); No Odors/Sheens; OVA=0 ppm.	0	NR	0
						1.5' - 21': Tan/White, Silty Quartz Sand (v. fine - fine); Grain Size Range Increases With Depth (to very fine - coarse); No Odors/Sheens Detected In Cuttings. OVA = 0 ppm.			
				100%	4		0	NR	0
				100%	8		0	NR	0
							0	NR	0
				100%	12		0	NR	0
			Water Table @ Approx 13' BLS						
				100%	16		0		
				100%	20		0	NR	0
						End of Boring @ 21' BLS			

I certify that this lthologic log, including geologic and hydrogeologic interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Prepared by: Victor A. Spooner, P.G., C.P.G
Florida Professional Geologist No. 0001615

Date 03/29/96

Site 1101	LOGGED BY: Lisa M. Greer	SHEET 1 OF 1
Bronson Field	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobil
	Start Date: 05/16/96	Completed: 05/16/96
MONITOR WELL NO.: DMW-6	Start Time: 1300	Finish Time: 1430
Delivery Order 0017	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
P. H.				100%			0	NR	0
					4	0'-8'; Red/Brown, Silty Fine Sand.	0	NR	0
HOLLOW STEM AUGER				100%	8	8'-10'; Lt. Brown, Silty Fine Grained Sand.	0	NR	0
							0	NR	0
			Water Table @ Approx. 12' BLS						
					16	10'-20' Grey, Silty, Medium Grained Sand.			
				100%	20				
					24	20'-30'; White, Medium Grained Sand.			
				100%					
					28	30'-35'; White, Fine Grained Sand, Sub-rounded, Frosted.			
				100%	32				
					36	End of Boring @ 35' 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

06/30/96
Date

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

APPENDIX C

GROUNDWATER FLOW VELOCITY CALCULATIONS

W.E.S., Inc.

October 31, 1996

Slug Test/Aquifer Parameter Evaluation
Bronson Field, Site 1116
as performed on September 11, 1996.
Contract No. N65114-95-D-2126
Delivery Order No. 0027

A single well recovery test (slug test) was performed on Monitor Well No. 3 of Site 1116, located at Bronson Field, in Pensacola, Florida. Single well recovery tests involve the displacement of a known volume of water in a well and measuring the resulting change in hydraulic head over time until the water stabilized to its initial level. The water level measurements were made with a pressure transducer and recorded on a Thor Environmental Data Logger.

The calculation of hydraulic conductivity was based on the assumptions presented by Bouwer and Rice (1976). The well is assumed to be partially penetrating (That is, the saturated aquifer thickness is greater than the saturated monitor well screen length).

The movement of contaminants in a groundwater system depends, in part, on the flow characteristics of the aquifer beneath the site. In order to evaluate the flow characteristics, the following parameters were calculated: 1) hydraulic conductivity, 2) average linear flow velocity, and 3) transmissivity (effective soil porosity).

The relative ability of a porous medium to transmit fluid is measured by the hydraulic conductivity, a function of both the aquifer material and the fluid (Freeze and Cheery, 1979). Hydraulic Conductivity (K) values for the shallow saturated deposits were estimated from the single well recovery test (slug test) conducted on MW-3. The hydraulic conductivity calculations and field data from the single well slug test are presented following the text portion of this report. The hydraulic conductivity (K) in MW-3 at Bronson Field's Site No. 1116 Well No. 3 is calculated at **0.0004791 ft/min.**, or **0.6899 ft/day**.

The average hydraulic gradient for this site was calculated at **0.0025 ft/ft**. This value was derived utilizing existing groundwater elevation data from the site.

Therefore, using a hydraulic gradient of 0.0025, the hydraulic conductivity value obtained from the single well slug test (0.6899 ft/day) and an assumed effective porosity of **0.25**, the average linear groundwater flow velocity was estimated to be **0.0069 ft/day (2.5181 ft per year)**, using the following formula:

$$V = \frac{Ki}{n}$$

where:
V = average linear flow velocity
K = hydraulic conductivity
i = gradient
n = effective soil porosity

These values should be viewed as an approximation only. The slug tests provide hydraulic conductivity values only for the materials immediately adjacent to the tested well screen. Although the calculated

• Corporate Headquarters •
6389 Tower Lane • Sarasota, Florida 34240 • (941) 371-7617 • Fax (941) 378-5218
• Web Site: http://www.wesinc.com/water

groundwater flow velocity may be used as an approximation of the rate of contaminant migration in water, the method does not account for hydrodynamic dispersion, chemical sorption, or degradation, which are factors affecting contaminant velocity.

Sincerely,

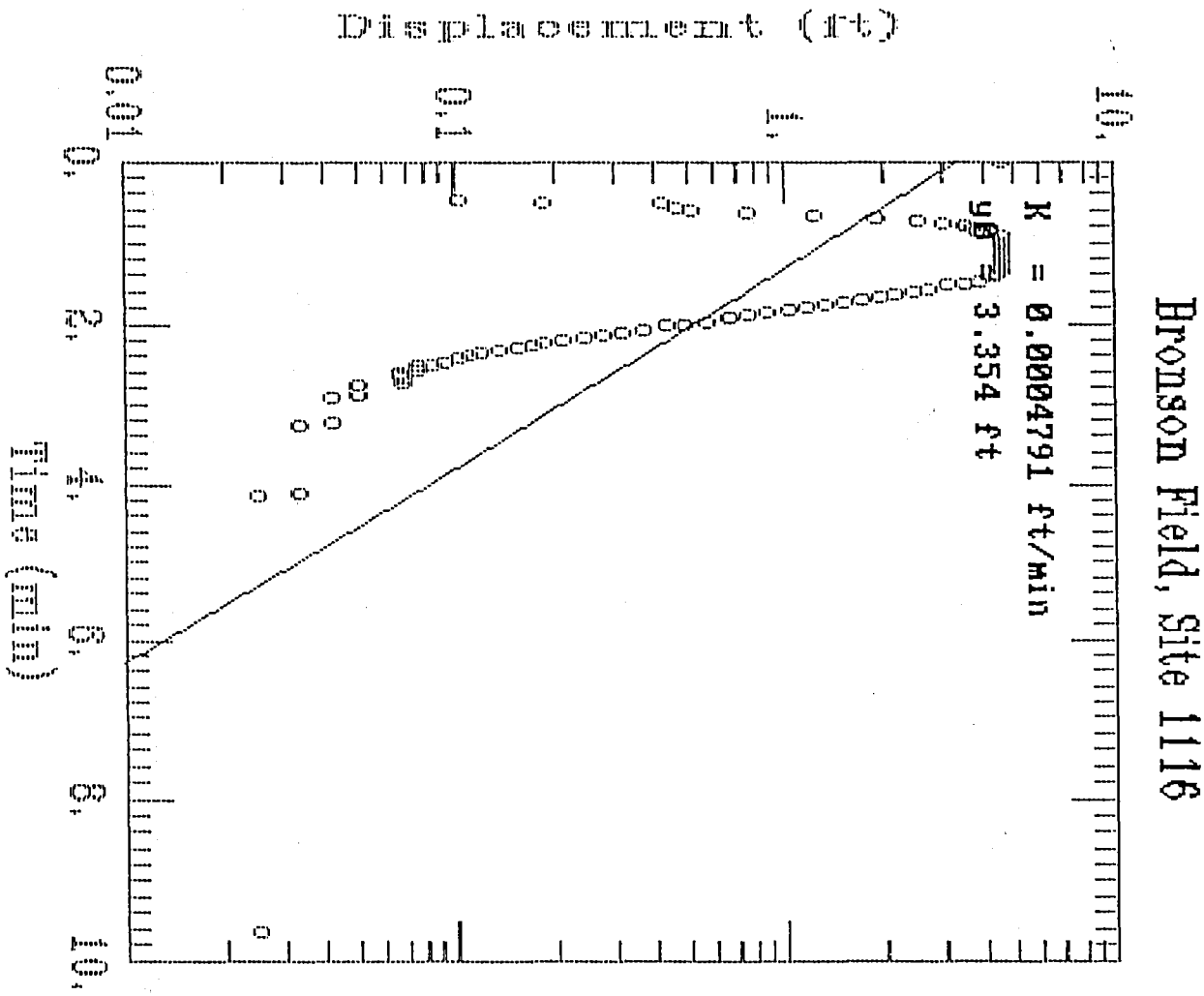
W.E.S., Inc.
Environmental Division

Patrick J. Brown
Staff Geologist

Michael J. Walsh, P.G.
Project Administrator

cc: File

g:\clients\nas-pen\slgtst\ty150.doc


Bronson Field, Site 1116
K = 0.0004791 ft/min
y0 = 3.354 ft
10.
1.0
0.1
0.01
Displacement (ft)
0.
20.
40.
60.
80.
100.
Time (min)

S/N SDEE-03A-SN-3098 Block 1

Program: STEP TEST
Readings: 290
Start Time: 13:22:04
Start Date: 09/11
Range: 0015 PSI
Channels: 1
Units: Ft-H2O

Step 1
Interval 00:00:02
Readings 300

Time	Chnl 1						
0.00	+6.4552	1.13	+1.8926	2.27	+6.2863	3.40	+6.4214
0.03	+6.4552	1.17	+1.8926	2.30	+6.3032	3.43	+6.4214
0.07	+6.4552	1.20	+1.8842	2.33	+6.3200	3.47	+6.4214
0.10	+6.4552	1.23	+1.8926	2.37	+6.3369	3.50	+6.4214
0.13	+6.4552	1.27	+1.9010	2.40	+6.3454	3.53	+6.4214
0.17	+6.4552	1.30	+1.8926	2.43	+6.3538	3.57	+6.4214
0.20	+6.4552	1.33	+1.9010	2.47	+6.3623	3.60	+6.4214
0.23	+6.4552	1.37	+1.9010	2.50	+6.3707	3.63	+6.4214
0.27	+6.4552	1.40	+1.9686	2.53	+6.3792	3.67	+6.4214
0.30	+6.4552	1.43	+2.1630	2.57	+6.3792	3.70	+6.4214
0.33	+6.4552	1.47	+2.5263	2.60	+6.3876	3.73	+6.4214
0.37	+6.4552	1.50	+2.9572	2.63	+6.3876	3.77	+6.4214
0.40	+6.4552	1.53	+3.3290	2.67	+6.3961	3.80	+6.4214
0.43	+6.4552	1.57	+3.7008	2.70	+6.3961	3.83	+6.4214
0.47	+6.3538	1.60	+3.9965	2.73	+6.3961	3.87	+6.4214
0.50	+6.2694	1.63	+4.2838	2.77	+6.4045	3.90	+6.4214
0.53	+6.0328	1.67	+4.5288	2.80	+6.4045	3.93	+6.4214
0.57	+5.9905	1.70	+4.7316	2.83	+6.4045	3.97	+6.4214
0.60	+5.9314	1.73	+4.9597	2.87	+6.4045	4.00	+6.4214
0.63	+5.6948	1.77	+5.1371	2.90	+6.4045	4.03	+6.4214
0.67	+5.2385	1.80	+5.2977	2.93	+6.4130	4.07	+6.4214
0.70	+4.5795	1.83	+5.4329	2.97	+6.4130	4.10	+6.4214
0.73	+3.9373	1.87	+5.5765	3.00	+6.4130	4.13	+6.4299
0.77	+3.4557	1.90	+5.6863	3.03	+6.4130	4.17	+6.4299
0.80	+2.9657	1.93	+5.7877	3.07	+6.4130	4.20	+6.4299
0.83	+2.7544	1.97	+5.8807	3.10	+6.4130	4.23	+6.4299
0.87	+2.6023	2.00	+5.9567	3.13	+6.4130	4.27	+6.4299
0.90	+2.2644	2.03	+6.0243	3.17	+6.4130	4.30	+6.4299
0.93	+1.8842	2.07	+6.0835	3.20	+6.4130	4.33	+6.4299
0.97	+1.8842	2.10	+6.1342	3.23	+6.4130	4.37	+6.4299
1.00	+1.8842	2.13	+6.1764	3.27	+6.4214	4.40	+6.4299
1.03	+1.8842	2.17	+6.2102	3.30	+6.4214	4.43	+6.4299
1.07	+1.8926	2.20	+6.2440	3.33	+6.4214	4.47	+6.4299
1.10	+1.9010	2.23	+6.2694	3.37	+6.4214	4.50	+6.4299

S/N SDEE-03A-SN-3098 Block 1

Program: STEP TEST
Readings: 290
Start Time: 13:22:04
Start Date: 09/11
Range: 0015 PSI
Channels: 1
Units: Ft-H2O

Step 1
Interval 00:00:02
Readings 300

Time	Chnl 1						
4.53	+6.4299	5.67	+6.4299	6.80	+6.4299	7.93	+6.4299
4.57	+6.4299	5.70	+6.4299	6.83	+6.4299	7.97	+6.4299
4.60	+6.4299	5.73	+6.4299	6.87	+6.4299	8.00	+6.4299
4.63	+6.4299	5.77	+6.4299	6.90	+6.4299	8.03	+6.4299
4.67	+6.4299	5.80	+6.4299	6.93	+6.4299	8.07	+6.4299
4.70	+6.4299	5.83	+6.4299	6.97	+6.4299	8.10	+6.4299
4.73	+6.4299	5.87	+6.4299	7.00	+6.4299	8.13	+6.4299
4.77	+6.4299	5.90	+6.4299	7.03	+6.4299	8.17	+6.4299
4.80	+6.4299	5.93	+6.4299	7.07	+6.4299	8.20	+6.4299
4.83	+6.4299	5.97	+6.4299	7.10	+6.4299	8.23	+6.4299
4.87	+6.4299	6.00	+6.4299	7.13	+6.4299	8.27	+6.4299
4.90	+6.4299	6.03	+6.4299	7.17	+6.4299	8.30	+6.4299
4.93	+6.4299	6.07	+6.4299	7.20	+6.4299	8.33	+6.4299
4.97	+6.4299	6.10	+6.4299	7.23	+6.4299	8.37	+6.4299
5.00	+6.4299	6.13	+6.4299	7.27	+6.4299	8.40	+6.4299
5.03	+6.4299	6.17	+6.4299	7.30	+6.4299	8.43	+6.4299
5.07	+6.4299	6.20	+6.4299	7.33	+6.4299	8.47	+6.4299
5.10	+6.4299	6.23	+6.4299	7.37	+6.4299	8.50	+6.4299
5.13	+6.4299	6.27	+6.4299	7.40	+6.4299	8.53	+6.4299
5.17	+6.4299	6.30	+6.4299	7.43	+6.4299	8.57	+6.4299
5.20	+6.4299	6.33	+6.4299	7.47	+6.4299	8.60	+6.4299
5.23	+6.4299	6.37	+6.4299	7.50	+6.4299	8.63	+6.4299
5.27	+6.4299	6.40	+6.4299	7.53	+6.4299	8.67	+6.4299
5.30	+6.4299	6.43	+6.4299	7.57	+6.4299	8.70	+6.4299
5.33	+6.4299	6.47	+6.4299	7.60	+6.4299	8.73	+6.4299
5.37	+6.4299	6.50	+6.4299	7.63	+6.4299	8.77	+6.4299
5.40	+6.4299	6.53	+6.4299	7.67	+6.4299	8.80	+6.4299
5.43	+6.4299	6.57	+6.4299	7.70	+6.4299	8.83	+6.4299
5.47	+6.4299	6.60	+6.4299	7.73	+6.4299	8.87	+6.4299
5.50	+6.4299	6.63	+6.4299	7.77	+6.4299	8.90	+6.4299
5.53	+6.4299	6.67	+6.4299	7.80	+6.4299	8.93	+6.4299
5.57	+6.4299	6.70	+6.4299	7.83	+6.4299	8.97	+6.4299
5.60	+6.4299	6.73	+6.4299	7.87	+6.4299	9.00	+6.4299
5.63	+6.4299	6.77	+6.4299	7.90	+6.4299	9.03	+6.4299

S/N SDEE-03A-SN-3098 Block 1							

Program: STEP TEST							
Readings: 290							
Start Time: 13:22:04							
Start Date: 09/11							
Range: 0015 PSI							
Channels: 1							
Units: Ft-H2O							

Step 1							
Interval 00:00:02							
Readings 300							

Time	Chnl 1						
7.97	+6.4299	9.10	+6.4299	9.60	+6.4299		
8.00	+6.4299	8.50	+6.4299	9.63	+6.4299		
8.03	+6.4299	8.53	+6.4299	test 1 aborted at Step 1			
8.07	+6.4299	8.57	+6.4299				
8.10	+6.4299	8.60	+6.4299				
8.13	+6.4299	8.63	+6.4299				
8.17	+6.4299	8.67	+6.4299				
8.20	+6.4299	8.70	+6.4299				
8.23	+6.4299	8.73	+6.4299				
8.27	+6.4299	8.77	+6.4299				
8.30	+6.4299	8.80	+6.4299				
8.33	+6.4299	8.83	+6.4299				
8.37	+6.4299	8.87	+6.4299				
8.40	+6.4299	8.90	+6.4299				
8.43	+6.4299	8.93	+6.4299				
8.47	+6.4299	8.97	+6.4299				
8.50	+6.4299	9.00	+6.4299				
8.53	+6.4299	9.03	+6.4299				
8.57	+6.4299	9.07	+6.4299				
8.60	+6.4299	9.10	+6.4299				
8.63	+6.4299	9.13	+6.4299				
8.67	+6.4299	9.17	+6.4299				
8.70	+6.4299	9.20	+6.4299				
8.73	+6.4299	9.23	+6.4299				
8.77	+6.4299	9.27	+6.4299				
8.80	+6.4299	9.30	+6.4299				
8.83	+6.4299	9.33	+6.4299				
8.87	+6.4299	9.37	+6.4299				
8.90	+6.4299	9.40	+6.4299				
8.93	+6.4299	9.43	+6.4299				
8.97	+6.4299	9.47	+6.4299				
9.00	+6.4299	9.50	+6.4299				
9.03	+6.4299	9.53	+6.4299				
9.07	+6.4299	9.57	+6.4299				

APPENDIX D

SOIL AND GROUNDWATER ANALYTICAL RESULTS

Navy Public Works Center
Environmental Laboratory

Bldg.3297, Code 020
NAS Pensacola, Fl. 32508-6500
Phone 904-452-3642/4758
Autovon 922-3642

Requester: PWC Environmental
Address: Bldg. 3691
NAS Pensacola, FL 32508
Phone #: 452-3094
Contact: Paul Semmes

Laboratory Report
Priority Pollutant Volatiles

Lab ID Number: 9407198A
Sample Date: 6 Jul 94
Received Date: 6 Jul 94
Sample Site: Bronson Field
Job Order #: 120 6810

Sample ID#	Lab	1- 4769			2- 4770			3- 4771			4- 4772		
Sample Name	Requester	B1101 Tank Hole Center			B1101 Tank Hole West			B1101 Tank Hole South			B1101 Tank Hole North		
Collector Name		P. Semmes/M. Chambers			P. Semmes/M. Chambers			P. Semmes/M. Chambers			P. Semmes/M. Chambers		
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	6 Jul 94 @ 0919			6 Jul 94 @ 0922			6 Jul 94 @ 0924			6 Jul 94 @ 0926		
Sample Type	Comp/Grab	Grab			Grab			Grab			Grab		
Analyst		Joe Moore			Joe Moore			Joe Moore			Joe Moore		
Date of Analysis		9 Jul 94			9 Jul 94			9 Jul 94			9 Jul 94		
Sample Matrix		Soil			Soil			Soil			Soil		
Dilution		Dilution X 1			Dilution X 1			Dilution X 1			Dilution X 1		
PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 4769	units	Limit	2- 4770	units	Limit	3- 4771	units	Limit	4- 4772	units	Limit
Priority Pollutant Volatiles (CFR 122, App. D, Table II Volatiles)													
Acrolein	EPA 8260	BDL	ug/kg	100	BDL	ug/kg	100	BDL	ug/kg	100	BDL	ug/kg	100
Acrylonitrile	EPA 8260	BDL	ug/kg	2	BDL	ug/kg	2	BDL	ug/kg	2	BDL	ug/kg	2
Benzene	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Bromoform	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Carbon Tetrachloride	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Chlorobenzene	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Chlorodibromomethane	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Chloroethane	EPA 8260	BDL	ug/kg	2	BDL	ug/kg	2	BDL	ug/kg	2	BDL	ug/kg	2
2-Chloroethylvinyl ether	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Chloroform	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Dichlorobromomethane	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
1,1-Dichloroethane	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
1,2-Dichloroethane	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
1,1-Dichloroethylene	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
1,2-Dichloropropane	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
1,3-Dichloropropylene	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Ethylbenzene	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Methyl bromide	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Methyl chloride	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Methylene chloride	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
1,1,2,2-Tetrachloroethane	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Tetrachloroethylene	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Toluene	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
1,2-trans-dichloroethylene	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
1,1,1-Trichloroethane	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
1,1,2-Trichloroethane	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Trichloroethene	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1
Vinyl Chloride	EPA 8260	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1	BDL	ug/kg	1

Surrogate Recoveries Compound	Acceptance Limits				
1,2-Dichloroethane-d4	70-121	107	111	112	115
Toluene-d8	84-138	102	101	103	105
Bromofluorobenzene	59-113	101	108	103	96

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 11-Jul-94 / 14:32

PWC 5090/14

End of PP Vol Report

Navy Public Works Center
Environmental Laboratory

Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500
Phone 904-452-3642/4758
Autovon 922-3642

Requester: PWC Environmental
Address: Bldg. 3691
NAS Pensacola, FL 32508
Phone #: 452-3094
Contact: Paul Semmes

Laboratory Report
Priority Pollutant Volatiles

Lab ID Number: 9407198B
Sample Date: 6 Jul 94
Received Date: 6 Jul 94
Sample Site: Bronson Field
Job Order #: 120 6810

Sample ID#	Lab	1- 4769			2-			3-			4-		
Sample Name	Requester	B1101 Tank Hole East											
Collector Name		P. Semmes/M. Chambers											
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	6 Jul 94 @ 0928											
Sample Type	Comp/Grab	Grab											
Analyst		Joe Moore											
Date of Analysis		9 Jul 94											
Sample Matrix		Soil											
Dilution		Dilution	X	1	Dilution	X	1	Dilution	X	1	Dilution	X	1
PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 4769	units	Limit	2-	units	Limit	3-	units	Limit	4-	units	Limit
Priority Pollutant Volatiles (CFR 122, App. D, Table II Volatiles)													
Acrolein	EPA 8260	BDL	ug/kg	100		ug/kg	100		ug/kg	100		ug/kg	100
Acrylonitrile	EPA 8260	BDL	ug/kg	2		ug/kg	2		ug/kg	2		ug/kg	2
Benzene	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Bromoform	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Carbon Tetrachloride	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Chlorobenzene	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Chlorodibromomethane	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Chloroethane	EPA 8260	BDL	ug/kg	2		ug/kg	2		ug/kg	2		ug/kg	2
2-Chloroethylvinyl ether	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Chloroform	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Dichlorobromomethane	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
1,1-Dichloroethane	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
1,2-Dichloroethane	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
1,1-Dichloroethylene	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
1,2-Dichloropropane	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
1,3-Dichloropropylene	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Ethylbenzene	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Methyl bromide	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Methyl chloride	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Methylene chloride	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
1,1,2,2-Tetrachloroethane	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Tetrachloroethylene	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Toluene	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
1,2-trans-dichloroethylene	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
1,1,1-Trichloroethane	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
1,1,2-Trichloroethane	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Trichloroethene	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1
Vinyl Chloride	EPA 8260	BDL	ug/kg	1		ug/kg	1		ug/kg	1		ug/kg	1

Surrogate Recoveries Compound	Acceptance Limits				
1,2-Dichloroethane-d4	70-121	103			
Toluene-d8	84-138	105			
Bromofluorobenzene	59-113	100			

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.

Approved by: Jerry Deer, Laboratory Director

Date/Time: 11-Jul-94 / 14:34

PWC 5090/14

End of PP Vol Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3691, Code 920
NAS Pensacola, Fl. 32508
Phone (904) 452-4728/3642
Autovon 922-4728/3642

Requester: NPWC Environmental
Address: Bldg. 3691
NAS Pensacola, Fl 32508
Phone #: 452-3094
Contact: Paul Semmes

Laboratory Report

Volatile Aromatics by Method 8260

Lab ID Number: 9506010 A
Sample Date: 30 May 95
Received Date: 31 May 95
Sample Site: Bronson Field
Job Order #: 168 4195

Sample ID#	Lab	1- 53092	2- 53093	3- 53094	4- 53095
Sample Name	Requester	MW13/1101	MW7/1120	MW15/1113	MW14/1143
Collector Name		JJ/DG	JJ/DG	JJ/DG	JJ/DG
Date/Time	Comp start				
Collected	Comp stop				
(Military)	Grab	30 May 95 @ 1452	30 May 95 @ 1515	30 May 95 @ 1542	30 May 95 @ 1559
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab
Analyst		J. Moore	J. Moore	J. Moore	J. Moore
Date of Analysis		5 Jun 95	31 May 95	31 May 95	31 May 95
Sample Matrix		Groundwater	Groundwater	Groundwater	Groundwater
Dilution		Dilution X 1	Dilution X 1	Dilution X 1	Dilution X 1

PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 53092	units	Limit	2- 53093	units	Limit	3-	units	Limit	4-	units	Limit
Benzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Ethylbenzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Toluene	EPA 8260	2	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Xylenes (Total)	EPA 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Methyl-tert-butyl ether (MTBE)	EPA 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Total VOA	EPA 8260	2	ug/l	1		ug/l	1		ug/l	1		ug/l	1

Surrogate Recoveries Compound	Acceptance Limits				
1,2-Dichloroethane-d4	76-114	110	92	90	93
Toluene-d8	88-110	107	100	107	102
Bromofluorobenzene	86-115	113	111	97	104

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.
Please Note: Sample ID #53092 had MEK and MIBK present at 38 and 18 ug/l respectively.

Approved by: Jerry Dees, Laboratory Director
Date/Time: 09-Jun-95 @ 10:55
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PWC 5090/14

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Navy Public Works Center
Environmental Laboratory

Laboratory Report
PAH's by Method 8270A

Bldg. 3691, Code 020
NAS Pensacola, Fl. 32508
Phone (904) 452-4720/3642
Autovon 922-4720/3642

Requester: NPWC Environmental
Address: Bldg. 3691
NAS Pensacola, Fl 32508
Phone #: 452-3034
Contact: Paul Semmes

Lab ID Number: 9500018 B
Sample Date: 30 May 95
Received Date: 31 May 95
Sample Site: Bronson Field
Job Order #: 168 4195

Sample ID#	Lab	1- 53092			2- 53093			3- 53094			4- 53095		
Sample Name	Requester	MW13/1101			MW7/1120			MW15/1113			MW14/1143		
Collector Name		JJ/DG			JJ/DG			JJ/DG			JJ/DG		
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	30 May 95	@	1452	30 May 95	@	1515	30 May 95	@	1542	30 May 95	@	1559
Sample Type	Comp/Grab	Grab			Grab			Grab			Grab		
Analyst		J. Moore			J. Moore			J. Moore			J. Moore		
Date of Analysis		6 Jun 95			2 Jun 95			5 Jun 95			5 Jun 95		
Sample Matrix		Groundwater			Groundwater			Groundwater			Groundwater		
Dilution		Dilution	X	10	Dilution	X	1	Dilution	X	1	Dilution	X	1
PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Polynuclear Aromatics (PAH's)	METHOD #	1- 53092	units	Limit	2- 53093	units	Limit	3- 53094	units	Limit	4- 53095	units	Limit
Acenaphthene	SW 8270A	370	ug/l	50	18	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Acenaphthylene	SW 8270A	BDL	ug/l	50	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Anthracene	SW 8270A	BDL	ug/l	20	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(a)anthracene	SW 8270A	BDL	ug/l	30	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(a)pyrene	SW 8270A	BDL	ug/l	20	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(b)fluoranthene	SW 8270A	BDL	ug/l	40	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Benzo(g,h,i)perylene	SW 8270A	BDL	ug/l	30	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(k)fluoranthene	SW 8270A	BDL	ug/l	40	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Chrysene	SW 8270A	BDL	ug/l	30	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Dibenzo(a,h)anthracene	SW 8270A	BDL	ug/l	30	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Fluoranthene	SW 8270A	BDL	ug/l	20	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Fluorene	SW 8270A	270	ug/l	40	5	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Indeno(1,2,3-cd)pyrene	SW 8270A	BDL	ug/l	20	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Naphthalene	SW 8270A	BDL	ug/l	70	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7
Phenanthrene	SW 8270A	150	ug/l	30	4	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Pyrene	SW 8270A	BDL	ug/l	30	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
1-Methylnaphthalene*	SW 8270A	330	ug/l	50	36	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
2-Methylnaphthalene	SW 8270A	230	ug/l	70	37	ug/l	7	BDL	ug/l	7	BDL	ug/l	7

SURROGATE RECOVERIES Compound	Acceptance Limits				
Nitrobenzene-d5	35-114	84	66	55	62
2-Fluorobiphenyl	43-116	95	68	61	65
Terphenyl-d14	33-141	93	66	55	66

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.
* - HRS certification pending.

Approved by: Jerry Bees, Laboratory Director

Date/Time: 09-Jun-95 @ 10:24
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PWC 5090/14

Navy Public Works Center
Environmental Laboratory

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NAS Pensacola, FL 32508-5303
Phone (904) 452-4728
DSN 922-4728
FAX (904) 452-2387/2799

Laboratory Report
601/602 Volatiles by Method 8260

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9604021 B
Sample Date: 5 Apr 96
Received Date: 5 Apr 96
Sample Site: Bronson Field, Bldg. 1101
Job Order #: 130 5001

Sample ID#		1- 61381			2- 61382			3- 61383			4- 61384		
Sample Name		MW-2			MW-3			MW-4			MW-5		
Collector Name		P. J. B.			P. J. B.			P. J. B.			P. J. B.		
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	5 Apr 96	@	1030	5 Apr 96	@	0930	5 Apr 96	@	1000	5 Apr 96	@	1100
Sample Type	Comp/Grab	Grab			Grab			Grab			Grab		
Analyst		J. Moore			J. Moore			J. Moore			J. Moore		
Date of Analysis		6 Apr 96			6 Apr 96			6 Apr 96			6 Apr 96		
Sample Matrix		Groundwater			Groundwater			Groundwater			Groundwater		
Dilution		Dilution	X	1	Dilution	X	1	Dilution	X	1	Dilution	X	1
PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 61381	units	Limit	2- 61382	units	Limit	3- 61383	units	Limit	4- 61384	units	Limit
Benzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromodichloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromoform	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromomethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Carbon Tetrachloride	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chloroethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
2-Chloroethylvinyl ether	SW 8260	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Chloroform	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Dibromochloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,3-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,4-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Dichlorodifluoromethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
1,1-Dichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1-Dichloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
trans-1,2-Dichloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichloropropane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
cis-1,3-Dichloropropene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
trans-1,3-Dichloropropene	SW 8260	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Ethylbenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Methylene chloride	SW 8260	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Methyl-tert-butyl Ether (MTBE)	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1,2,2-Tetrachloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Tetrachloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Toluene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1,1-Trichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1,2-Trichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Trichloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Trichlorofluoromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Vinyl Chloride	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Xylenes (Total)	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2

Surrogate Recoveries Compound	Acceptance Limits				
1,2-Dichloroethane-d4	76-114	94	94	89	93
Toluene-d8	88-110	102	103	103	104
Bromofluorobenzene	86-115	99	97	99	99

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 03-May-96 @ 13:00
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End of Report

Navy Public Works Center
Environmental Laboratory

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DSN 922-4728
FAX (904) 452-2367/2799

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Laboratory Report
601/602 Volatiles by Method 8260

Report Number: 9604022 B
Sample Date: 5 Apr 96
Received Date: 5 Apr 96
Sample Site: Bronson Field, Bldg. 1101
Job Order #: 130 5001

Sample ID#		1- 61385			2- 61386			3- 61387			4- 61388		
Sample Name		MW-6			Duplicate			Eq. Blank			Trip Blank		
Collector Name		P. J. B.			P. J. B.			P. J. B.			P. J. B.		
Date/Time Collected (Military)	Comp start												
	Comp stop												
	Grab	5 Apr 96	@	0900	5 Apr 96	@	N/S	5 Apr 96	@	0830	5 Apr 96	@	N/S
Sample Type	Comp/Grab	Grab			Grab			Grab			Grab		
Analyst		J. Moore			J. Moore			J. Moore			J. Moore		
Date of Analysis		6 Apr 96			6 Apr 96			6 Apr 96			6 Apr 96		
Sample Matrix		Groundwater			Groundwater			Deionized Water			Deionized Water		
Dilution		Dilution	X	1	Dilution	X	1	Dilution	X	1	Dilution	X	1
PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 61385	units	Limit	2- 61386	units	Limit	3- 61387	units	Limit	4- 61388	units	Limit
Benzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromodichloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromoform	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Bromomethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Carbon Tetrachloride	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chloroethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
2-Chloroethylvinyl ether	SW 8260	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Chloroform	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Chloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Dibromochloromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,3-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,4-Dichlorobenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Dichlorodifluoromethane	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
1,1-Dichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1-Dichloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
trans-1,2-Dichloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,2-Dichloropropane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
cis-1,3-Dichloropropene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
trans-1,3-Dichloropropene	SW 8260	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Ethylbenzene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Methylene chloride	SW 8260	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Methyl-tert-butyl Ether (MTBE)	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1,2,2-Tetrachloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Tetrachloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Toluene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1,1-Trichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
1,1,2-Trichloroethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Trichloroethene	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Trichlorofluoromethane	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Vinyl Chloride	SW 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Xylenes (Total)	SW 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2

Surrogate Recoveries Compound	Acceptance Limits				
1,2-Dichloroethane-d4	76-114	94	95	96	95
Toluene-d8	88-110	101	103	103	100
Bromofluorobenzene	86-115	99	100	100	97

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.
N/S = Not Submitted.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 03-May-96 @ 13:36
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PWC 5090/14

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Navy Public Works Center
Environmental Laboratory

Laboratory Report
Total PAH's by Method 8270A

Bldg. 3887, Code 920
NAS Pensacola, FL 32508-5303
Phone (904) 452-4728
DSN 922-4728

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9604021C
Sample Date: 5 Apr 96
Received Date: 5 Apr 96
Sample Site: Bronson Field, Bldg. 1101
Job Order #: 130 5001

Sample ID#	Lab	1- 61381	2- 61382	3- 61383	4- 61384
Sample Name	Requester	MW-2	MW-3	MW-4	MW-5
Collector Name		P. J. B.	P. J. B.	P. J. B.	P. J. B.
Date/Time	Comp start				
Collected	Comp stop				
(Military)	Grab	5 Apr 96 @ 1030	5 Apr 96 @ 0930	5 Apr 96 @ 1000	5 Apr 96 @ 1100
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab
Analyst		J. Moore/M. Chambers	J. Moore/M. Chambers	J. Moore/M. Chambers	J. Moore/M. Chambers
Date of Analysis		25 Apr 96	21 Apr 96	26 Apr 96	22 Apr 96
Sample Matrix		Groundwater	Groundwater	Groundwater	Groundwater
Dilution		Dilution X 1	Dilution X 1	Dilution X 1	Dilution X 1

PARAMETER	ANALYSIS	ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Polynuclear Aromatics (PAH's)	METHOD #	1- 61381	units	Limit	2- 61382	units	Limit	3- 61383	units	Limit	4- 61384	units	Limit
Acenaphthene	SW846 8270	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Acenaphthylene	SW846 8270	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Anthracene	SW846 8270	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(a)anthracene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(a)pyrene	SW846 8270	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(b)fluoranthene	SW846 8270	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Benzo(g,h,i)perylene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(k)fluoranthene	SW846 8270	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Chrysene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Dibenzo(a,h)anthracene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Fluoranthene	SW846 8270	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Fluorene	SW846 8270	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Indeno(1,2,3-cd)pyrene	SW846 8270	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Naphthalene	SW846 8270	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7
Phenanthrene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Pyrene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
1-Methylnaphthalene	SW846 8270	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
2-Methylnaphthalene	SW846 8270	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7

SURROGATE RECOVERIES Compound	Acceptance Limits				
Nitrobenzene-d5	35-114	102	86	89	106
2-Fluorobiphenyl	43-116	104	90	89	94
Terphenyl-d14	33-141	127	100	114	99

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.

Approved by: Jerry Dess, Laboratory Director

Date/Time: 03-May-96 @ 13:39
Report Generated

End of Report

PWC 5090/14

Navy Public Works Center
Environmental Laboratory

Laboratory Report
Total PAH's by Method 8270A

Bldg. 3887, Code 920
NAS Pensacola, FL 32508-5303
Phone (904) 452-4728
DSN 922-4728

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9604022 C
Sample Date: 5 Apr 96
Received Date: 5 Apr 96
Sample Site: Bronson Field, Bldg. 1101
Job Order #: 130 5001

Sample ID#	Lab	1- 61385			2- 61386			3- 61387			4-		
Sample Name	Requester	MW-6			Duplicate			Eq. Blank					
Collector Name		P. J. B.			P. J. B.			P. J. B.					
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	5 Apr 96 @ 0900			5 Apr 96 @ N/S			5 Apr 96 @ 0830					
Sample Type	Comp/Grab	Grab			Grab			Grab					
Analyst		J. Moore/M. Chambers			J. Moore/M. Chambers			J. Moore/M. Chambers					
Date of Analysis		22 Apr 96			22 Apr 96			21 Apr 96					
Sample Matrix		Groundwater			Groundwater			Deionized Water					
Dilution		Dilution X 1			Dilution X 1			Dilution X 1			Dilution X 1		
PARAMETER	ANALYSIS	ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Polynuclear Aromatics (PAH's)	METHOD #	1- 61385	units	Limit	2- 61386	units	Limit	3- 61387	units	Limit	4-	units	Limit
Acenaphthene	SW846 8270	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5		ug/l	5
Acenaphthylene	SW846 8270	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5		ug/l	5
Anthracene	SW846 8270	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2		ug/l	2
Benzo(a)anthracene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3		ug/l	3
Benzo(a)pyrene	SW846 8270	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2		ug/l	2
Benzo(b)fluoranthene	SW846 8270	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4		ug/l	4
Benzo(g,h,i)perylene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3		ug/l	3
Benzo(k)fluoranthene	SW846 8270	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4		ug/l	4
Chrysene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3		ug/l	3
Dibenzo(a,h)anthracene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3		ug/l	3
Fluoranthene	SW846 8270	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2		ug/l	2
Fluorene	SW846 8270	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4		ug/l	4
Indeno(1,2,3-cd)pyrene	SW846 8270	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2		ug/l	2
Naphthalene	SW846 8270	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7		ug/l	7
Phenanthrene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3		ug/l	3
Pyrene	SW846 8270	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3		ug/l	3
1-Methylnaphthalene	SW846 8270	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5		ug/l	5
2-Methylnaphthalene	SW846 8270	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7		ug/l	7

SURROGATE RECOVERIES Compound	Acceptance Limits				
Nitrobenzene-d5	35-114	101	95	75	
2-Fluorobiphenyl	43-116	105	104	81	
Terphenyl-d14	33-141	111	117	90	

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.
N/S = Not Submitted.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 03-May-96 @ 13:40
Report Generated

End of Report

PWC 5090/14

American Environmental Network, Inc.

11 East Olive Road • Pensacola, FL 32514 • (904) 474-1001

SIGNATURE PAGE

Reviewed by: _____
AEN Project Manager

Client:	NAS, CO, PWC NAS PENSACOLA, FLORIDA
Project Name:	FLPRO
Project Number:	CALL #9029
Project Location:	BRONSON 1120, 1101
Accession Number:	604259
Project Manager:	JERRY DEES
Sampled By:	PJB

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: FLPRO\PETRO. HYDROCARBON RANGE C8-C40

Accession:	604259
Client:	NAS, CO, PWC
Project Number:	CALL #9029
Project Name:	FLPRO
Project Location:	BRONSON 1120, 1101
Department:	SEMI-VOLATILE FUELS

"FINAL REPORT FORMAT - SINGLE"

Accession: 604259
Client: NAS, CO, PWC
Project Number: CALL #9029
Project Name: FLPRO
Project Location: BRONSON 1120, 1101
Test: FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method: PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix: GROUNDWATER
QC Level: I

Lab Id: 008 Sample Date/Time: 05-APR-96 1030
Client Sample Id: 61381 BRONSON 1101 MW2 Received Date: 12-APR-96

Batch: FPW032 Extraction Date: 13-APR-96
Blank: B Dry Weight %: N/A Analysis Date: 18-APR-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	670	100	
NONATRIACONTANE	%REC/SURR	79	42-193	
ORTHO TER PHENYL	%REC/SURR	86	82-142	
ANALYST	INITIALS	KS		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 604259
Client: NAS, CO, PWC
Project Number: CALL #9029
Project Name: FLPRO
Project Location: BRONSON 1120, 1101
Test: FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method: PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix: GROUNDWATER
QC Level: I

Lab Id: 009 Sample Date/Time: 05-APR-96 0930
Client Sample Id: 61382 BRONSON 1101 MW3 Received Date: 12-APR-96

Batch: FPW032 Extraction Date: 13-APR-96
Blank: B Dry Weight %: N/A Analysis Date: 19-APR-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	1800	100	
NONATRIACONTANE	%REC/SURR	88	42-193	
ORTHO TER PHENYL	%REC/SURR	106	82-142	
ANALYST	INITIALS	KS		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession:	604259
Client:	NAS, CO, PWC
Project Number:	CALL #9029
Project Name:	FLPRO
Project Location:	BRONSON 1120, 1101
Test:	FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method:	PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method:	3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix:	GROUNDWATER
QC Level:	I

Lab Id:	010	Sample Date/Time:	05-APR-96 1000
Client Sample Id:	61383 BRONSON 1101 MW4	Received Date:	12-APR-96
Batch: FPW032		Extraction Date:	13-APR-96
Blank: B	Dry Weight %: N/A	Analysis Date:	19-APR-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	930	100	
NONATRIACONTANE	%REC/SURR	74	42-193	
ORTHO TER PHENYL	%REC/SURR	115	82-142	
ANALYST	INITIALS	KS		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession:	604259
Client:	NAS, CO, PWC
Project Number:	CALL #9029
Project Name:	FLPRO
Project Location:	BRONSON 1120, 1101
Test:	FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method:	PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method:	3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix:	GROUNDWATER
QC Level:	I

Lab Id:	011	Sample Date/Time:	05-APR-96 1100
Client Sample Id:	61384 BRONSON 1101 MW5	Received Date:	12-APR-96
Batch: FPW032		Extraction Date:	13-APR-96
Blank: B	Dry Weight %: N/A	Analysis Date:	19-APR-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	21000	100	
NONATRIACONTANE	%REC/SURR	44	42-193	
ORTHO TER PHENYL	%REC/SURR	130	82-142	
ANALYST	INITIALS	KS		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 604259
Client: NAS, CO, PWC
Project Number: CALL #9029
Project Name: FLPRO
Project Location: BRONSON 1120, 1101
Test: FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method: PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix: GROUNDWATER
QC Level: I

Lab Id: 012 Sample Date/Time: 05-APR-96 0900
Client Sample Id: 61385 BRONSON 1101 MW6 Received Date: 12-APR-96

Batch: FPW032 Extraction Date: 13-APR-96
Blank: B Dry Weight %: N/A Analysis Date: 19-APR-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	4300	100	
NONATRIACONTANE	%REC/SURR	76	42-193	
ORTHO TER PHENYL	%REC/SURR	128	82-142	
ANALYST	INITIALS	KS		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession:	604259
Client:	NAS, CO, PWC
Project Number:	CALL #9029
Project Name:	FLPRO
Project Location:	BRONSON 1120, 1101
Test:	FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method:	PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method:	3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix:	GROUNDWATER
QC Level:	I

Lab Id:	013	Sample Date/Time:	05-APR-96 N/S
Client Sample Id:	61386 BRONSON 1101 DUP	Received Date:	12-APR-96
Batch: FPW032		Extraction Date:	13-APR-96
Blank: B	Dry Weight %: N/A	Analysis Date:	19-APR-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	810	100	
NONATRIACONTANE	%REC/SURR	50	42-193	
ORTHO TER PHENYL	%REC/SURR	86	82-142	
ANALYST	INITIALS	KS		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession:	604259
Client:	NAS, CO, PWC
Project Number:	CALL #9029
Project Name:	FLPRO
Project Location:	BRONSON 1120, 1101
Test:	FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method:	PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method:	3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix:	WATER
QC Level:	I

Lab Id:	014	Sample Date/Time:	05-APR-96 0830
Client Sample Id:	61387 BRONSON 1101 EQ BLNK	Received Date:	12-APR-96
Batch: FPW032		Extraction Date:	13-APR-96
Blank: B	Dry Weight %: N/A	Analysis Date:	19-APR-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	210	100	
NONATRIACONTANE	%REC/SURR	74	42-193	
ORTHO TER PHENYL	%REC/SURR	93	82-142	
ANALYST	INITIALS	KS		

Comments:

"Method Report Summary"

Accession Number: 604259
Client: NAS, CO, PWC
Project Number: CALL #9029
Project Name: FLPRO
Project Location: BRONSON 1120, 1101
Test: FLPRO\PETRO. HYDROCARBON RANGE C8-C40

Client Sample Id:	Parameter:	Unit:	Result:
61368 BRONSON 1120 MW2	TOTAL PETROLEUM HYDROCARBON	UG/L	110000
61369 BRONSON 1120 MW3	TOTAL PETROLEUM HYDROCARBON	UG/L	31000
61370 BRONSON 1120 MW4	TOTAL PETROLEUM HYDROCARBON	UG/L	6300
61371 BRONSON 1120 MW5	TOTAL PETROLEUM HYDROCARBON	UG/L	4800
61372 BRONSON 1120 MW6	TOTAL PETROLEUM HYDROCARBON	UG/L	15000
61373 BRONSON 1120 DUP	TOTAL PETROLEUM HYDROCARBON	UG/L	47000
61381 BRONSON 1101 MW2	TOTAL PETROLEUM HYDROCARBON	UG/L	670
61382 BRONSON 1101 MW3	TOTAL PETROLEUM HYDROCARBON	UG/L	1800
61383 BRONSON 1101 MW4	TOTAL PETROLEUM HYDROCARBON	UG/L	930
61384 BRONSON 1101 MW5	TOTAL PETROLEUM HYDROCARBON	UG/L	21000
61385 BRONSON 1101 MW6	TOTAL PETROLEUM HYDROCARBON	UG/L	4300
61386 BRONSON 1101 DUP	TOTAL PETROLEUM HYDROCARBON	UG/L	810
61387 BRONSON 1101 EQ BLNK	TOTAL PETROLEUM HYDROCARBON	UG/L	210

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Quality Control Report

Analysis: FLPRO\PETRO. HYDROCARBON RANGE C8-C40

Accession:	604259
Client:	NAS, CO, PWC
Project Number:	CALL #9029
Project Name:	FLPRO
Project Location:	BRONSON 1120, 1101
Department:	SEMI-VOLATILE FUELS

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"QC Report"

Title: Water Blank
Batch: FPW032
Analysis Method: PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Blank Id: B Date Analyzed: 18-APR-96 Date Extracted: 13-APR-96

Parameters:	Units:	Results:	Reporting Limits:
TOTAL PETROLEUM HYDROCARBON	UG/L	ND	100
ORTHO TER PHENYL	%REC/SURR	82	37-140
ANALYST	INITIALS	KS	
C-39	UG/L	78	42-193

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Date 23-Apr-96

"QC Report"

Title: Water Reagent
Batch: FPW032
Analysis Method: PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

RS Date Analyzed: 16-APR-96
RSD Date Analyzed: 16-APR-96
RS Date Extracted: 11-APR-96
RSD Date Extracted: 11-APR-96

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
TOTAL PETROLEUM HYDROCARBON	294	<100	249	85	241	82	4	30	57-122
Surrogates:									
ORTHO TER PHENYL				114		107			82-142
C-39				75		73			42-193

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

ATI/GC/FID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

ATI/GC/FIX
ATI GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

ATI/GC/FPD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

ATI/GC/PID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

ATI/GC/TCD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

LJT = LISA THOMASON
SW = STEVE WILHITE
KW = KAREN WADSWORTH
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
BV = BEN VAUGHN
BC = BETH COLEMAN
KS = KENDALL SMITH
KK = KERRY KUST
DWB = DAVID W. BOWERS
RP = ROB PEREZ

8363/227

Analytical Technologies, Inc.
11 East Olive Road • Pensacola, Florida 32514 • (904) 474-1001

CHAIN OF CUSTODY

pg 1 of 2

PART 1 - Bottle Shipment Information

ATI ACCESSION #: 604259

CLIENT: NPWC ENV. LAB

CLIENT PROJECT NUMBER: STUB 6102-6170

QUANTITY OF SAMPLE CONTAINERS SHIPPED	PRESERVATIVE							PLASTIC CONTAINERS							GLASS CONTAINERS									NOTES
	H_2SO_4	HNO3	HCL	Zn Acetate	$Na_2S_2O_3$	Unpreserved	NaOH	8 oz.	16 oz.	32 oz.	½ gallon	1 gallon	Whirl-pak	100-ML Cup	120 ml (A)	1 liter (A)	1 liter (C)	40 ml Vial	4 oz. wm	8 oz. wm	16 oz. wm	32 oz. wm	D.I. Trip Blank	
28																✓								

Relinquished By:	Time	Date	Received By:	Time	Date

PART 2 - Sample/Project Information

SAMPLE MATRIX CODES

DW DRINKING WATER — AI AIR — SW SURFACE WATER (DI DEIONIZED)
WW WASTEWATER — SO SOIL — SL SLUDGE
GW GROUNDWATER — OI OIL — ST STORMWATER

PARAMETERS AND PRESERVATIVES REQUESTED

SAMPLE I.D.		SAMPLE DATE	SAMPLE TIME	MATRIX	FL PRO												TOTAL # OF BOTTLES
61368 BRONSON 1120	MW2	4/4/96	1400	GW	✓											1	+2
61369	MW3		1330		✓											2	+2
61370	MW4		1530		✓											3	+2
61371	MW5		1500		✓											4	+2
61372	MW6		1430		✓											5	+2
61373	DUP		NS	↓	✓											6	+2
61374	EQ BLNK	✓	1315	DI	✓											7	+2
61381 1101	MW2	4/5/96	1030	GW	✓											8	+2
61382	MW3		0930		✓											9	+2
61383 ✓	MW4	✓	1000	↓	✓											10	+2

Total Number of Bottles/Containers: ~~10~~ 20

Relinquished By	Date	Time	Received By	Date	Time
Kathy Rouse	4/12/96	1120	[illegible]	4-12-96	1120
[illegible]	4/12/96	1325	Linda D. Kitt	4/12/96	1325

Client NPWC ENV. LAB CODE 920			Purchase Order Number STUB 6102-6170
Address BLDG 3297			Project Number CALL #9029
City PENSACOLA	State FL	Zip 32508	Project Name FL PRO
Phone Number (904) 452-3642	Fax Number 904 452-2799		Project Location BRONSON 1120, 1101
Project Manager JERRY OEES			Sampled By PJB

TURNAROUND TIMES	check below	SPECIAL INSTRUCTIONS
Standard - 14-21 days	✓	STUB 6102-6170 VERBAL DUE 4/19/96
RUSH (must be approved in advance)		CALL 9029 WRITTEN DUE 4/26/96
<- 48 hours - 2x standard price		JON 1305001
3-7 days - 1.5x standard price		ITEN #007
TCLP - 1 week rush 1.5x standard price		D-23
QC Level none I II III IV (circle one)		Copies of report needed 1

FORM # 12694 — METRO PRINTING, INC., HUNTSVILLE, ALABAMA 35801 WHITE — LAB CANARY — REPORT PINK — CLIENT

Analytical Technologies, Inc.
11 East Olive Road • Pensacola, Florida 32514 • (904) 474-1001

CHAIN OF CUSTODY

pg 2 of 2

ATI ACCESSION #: 604259

PART 1 - Bottle Shipment Information

CLIENT:

CLIENT PROJECT NUMBER: 6102-6170

QUANTITY OF SAMPLE CONTAINERS SHIPPED	PRESERVATIVE							PLASTIC CONTAINERS							GLASS CONTAINERS									NOTES
	H_2SO_4	HNO3	HCL	Zn Acetate	$Na_2S_2O_3$	Unpreserved	NaOH	8 oz.	16 oz.	32 oz.	½ gallon	1 gallon	Whirl-pak	100-ML Cup	120 ml (A)	1 liter (A)	1 liter (C)	40 ml Vial	4 oz. wm	8 oz. wm	16 oz. wm	32 oz. wm	D.I. Trip Blank	

Relinquished By:	Time	Date	Received By:	Time	Date

PART 2 - Sample/Project Information

SAMPLE MATRIX CODES

DW DRINKING WATER — AI AIR — SW SURFACE WATER
WW WASTEWATER — SO SOIL — SL SLUDGE
GW GROUNDWATER — OI OIL — ST STORMWATER

PARAMETERS AND PRESERVATIVES REQUESTED

SAMPLE I.D.	SAMPLE DATE	SAMPLE TIME	MATRIX	FL PRO											TOTAL # OF BOTTLES
61384 BRONSON 1101 MW5	4/5/96	1100	GW	✓										11	+ 2
61385 MW6		0900		✓										12	+ 2
61386 DUP		NS		✓										13	+ 2
61387 EQ BLNK	✓	0830	DI	✓										14	+ 2

Total Number of Bottles/Containers: 48

Relinquished By	Date	Time	Received By	Date	Time
Kathy Reeves	4/12/96	1120	[illegible]	4-12-96	1120
[illegible]	4-12-96	1325	Linda L. Litt	4/12/96	1325

Client NPWC EN LAB CODE 920		Purchase Order Number STUB 6102-6170	
Address BLDG 3297		Project Number CALL 9029	
City PENSACOLA	State FL	Zip 32508	Project Name FL PRO
Phone Number 904 452-3642	Fax Number 904 452-2799		Project Location BRONSON 1120, 1101
Project Manager JERRY REES			Sampled By P.J.B

TURNAROUND TIMES	check below	SPECIAL INSTRUCTIONS
Standard - 14-21 days	✓	STUB 6102-6170 VERBAL DUE 4/19/96
RUSH (must be approved in advance)		CALL 9029 WRITTEN DUE 4/26/96
<- 48 hours - 2x standard price		JON 1305001
3-7 days - 1.5x standard price		ITEM #007
TCLP - 1 week rush 1.5x standard price		D-24
QC Level none I II III IV (circle one)		Copies of report needed 1

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508-5303
Phone (904) 452-4728/3642
DSN 922-4728/3642

Laboratory Report
EDB by Method 504

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9604021 A
Sample Date: 5 Apr 96
Received Date: 5 Apr 96
Sample Site: Bronson Field, Bldg. 1101
Job Order #: 130 5001

Sample ID#	Lab	1- 61381			2- 61382			3- 61383			4- 61384		
Sample Name	Requester	MW-2			MW-3			MW-4			MW-5		
Collector Name		P. J. B.			P. J. B.			P. J. B.			P. J. B.		
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	5 Apr 96 @ 1030			5 Apr 96 @ 0930			5 Apr 96 @ 1000			5 Apr 96 @ 1100		
Sample Type	Comp/Grab	Grab			Grab			Grab			Grab		
Analyst		B. Jacquart			B. Jacquart			B. Jacquart			B. Jacquart		
Date of Analysis		14 Apr 96			14 Apr 96			14 Apr 96			14 Apr 96		
Sample Matrix		Groundwater			Groundwater			Groundwater			Groundwater		
Dilution		Dilution	X	1	Dilution	X	1	Dilution	X	1	Dilution	X	1
PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 61381	units	Limit	2- 61382	units	Limit	3- 61383	units	Limit	4- 61384	units	Limit
Ethylene Dibromide	EPA 504	BDL	ug/l	0.02	BDL	ug/l	0.02	BDL	ug/l	0.02	0.02	ug/l	0.02

SURROGATE RECOVERIES Compound	Acceptance Limits				
2,4,5,6-Tetrachloro-m-xylene	60-140	106	102	109	78

Comments: ug/l=micrograms per liter. BDL=Below Detection Limit.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 03-May-96 @ 12:40
Report Generated

PWC 5090/14

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End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508-5303
Phone (904) 452-4728/3642
DSN 922-4728/3642

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Laboratory Report
EDB by Method 504

Report Number: 9604022 A
Sample Date: 5 Apr 96
Received Date: 5 Apr 96
Sample Site: Bronson Field, Bldg. 1101
Job Order #: 130 5001

Sample ID#	Lab	1- 61385			2- 61386			3- 61387			4-		
Sample Name	Requester	MW-6			Duplicate			Eq. Blank					
Collector Name		P. J. B.			P. J. B.			P. J. B.					
Date/Time	Comp start												
Collected	Comp stop												
(Military)	Grab	5 Apr 96 @ 0900			5 Apr 96 @ NS			5 Apr 96 @ 0830					
Sample Type	Comp/Grab	Grab			Grab			Grab					
Analyst		B. Jacquart			B. Jacquart			B. Jacquart					
Date of Analysis		14 Apr 96			14 Apr 96			14 Apr 96			14 Apr 96		
Sample Matrix		Groundwater			Groundwater			Deionized Water			Deionized Water		
Dilution		Dilution	X	1	Dilution	X	1	Dilution	X	1	Dilution	X	1
PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 61385	units	Limit	2- 61386	units	Limit	3- 61387	units	Limit	4-	units	Limit
Ethylene Dibromide	EPA 504	BDL	ug/l	0.02	BDL	ug/l	0.02	BDL	ug/l	0.02		ug/l	0.02

SURROGATE RECOVERIES Compound	Acceptance Limits				
2,4,5,6-Tetrachloro-m-xylene	60-140	93	92	118	

Comments: ug/l=micrograms per liter. BDL=Below Detection Limit.
N/S = Not Submitted.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 03-May-96 @ 12:42
Report Generated

PWC 5090/14

Page 1 of 1

End of Report

PESTICIDES MATRIX SPIKE RECOVERY FOR AQUEOUS SAMPLES
METHOD #504A03 BY GC WITH DUAL ECD.
FOR ANALYSIS OF EDB & DBCP

Spiked Sample Number:	61386	Extraction method:	504 (mod.)
Analysis Date:	04/14/1996	Extraction Date:	04/12/1996
Analyst:	B. Jacquart	Batch number:	504W001

MATRIX SPIKE RESULTS : CHANNEL - A (1701)

Compou	Spike Added	Sample Conc.	Mtx. Spike Conc.	Mtx.Spike Dup. Conc.		Mtx. Spike % Recovery	Mtx.Spk.Dup. % Recovery	% Rec. Limits	RPD	RPD Limits
	(ppb)	(ppb)	(ppb)	(ppb)						
EDB	0.25	0.0	0.192	0.171		77	68	60-140	12	15
DBCP	0.25	0.0	0.209	0.183		84	73	60-140	13	20
Surrogates		Amt.								
Tet-Cl-m-Xylene		1.00	1.07	1.07		107	107	60-140	0	20

Comments: Sample was BDL Brent Jacquart

METHOD BLANK DATA :

OMPOUND	AMOUNT	DETECTION LIMIT
(None Detected)		0.02ppb

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3227, Code 820
NAS Pensacola, FL 32508-5500

PH#-(904)452-4728
Autovon-922-4726

Report Required? Yes No DEPT Yes No

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Lab ID Number:
Sample Date: 4.5.96
Received Date: 4.5.96
Sample Site: BRONSON FIELD 1101
Lab Due Date:

Sample ID #	Lab	#1-6-1381	#2-6-1382	#3-6-1383	#4-6-1384	Notes:
Sample Name or Location	----------	MW-2	MW-3	MW-4	MW-5	RAG
Sampled by	----------	PJB	PJB	PJB	PJB	
Composite	Begin					
Date/Time Collected	Frequency					
	End					
Grab Time	----------	1030	0930	1000	1100	
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	3 VOA	X	3 VOA	X	3 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/GC/MS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GC/MS	EPA 625									13	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/GC/MS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GC/MS - Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GC/MS - 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	X		X		X		X			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	X	1 Pb	X	1 Pb	X	1 Pb	X	1 Pb		250ml/4 oz.	HNO3/None
Other:												

Comments:

Relinquished by: [signature]
Date/Time: 4.5.96 /

Received by:
Date/Time: 4-5-96 1345

PWC 0510/8

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 820
NAS Pensacola, FL 32508-5500

Ph#-(904) 452-4728
Autovon-922-4728

Report Required? Yes No DEPT Yes No

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Lab ID Number:
Sample Date: 4.5.96
Received Date: 4.5.96
Sample Site: BRONSON FIELD 1101
Lab Due Date:

Sample ID #	Lab	#1-6-1385		#2-6-1386		#3-6-1387		#4-6-1388		Notes:		
Sample Name	----------	MW-6		Duplicate		EQ. BLANK		Trip Blank		KAG		
or Location	----------											
Sampled by	----------	PJB		PJB		PJB		PJB				
Composite	Begin											
Date/Time	Frequency											
Collected	End											
Grab Time	----------	0900		—		0830		—				
Sample Matrix	----------	GW		GW		DI		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	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	3 VOA	X	3 VOA	X	3 VOA	X	2 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									6	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							PJB		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	X		X		X					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				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	X	1 Pb	X	1 Pb	X	1 Pb				250ml/4 oz.	HNO/None
Other:												

Comments:

Relinquished by: Patrick J. Bo
Date/Time: 4.5.96

Received by:
Date/Time: 4-5-96 1345

PWC 8510/8

Navy Public Works Center
Environmental Laboratory

Bldg 3887, Code 920
NAS Pensacola, FL 32508-5303
Phone (904) 452-4728
DSN 922-4728
FAX (904) 452-2387/2799

Laboratory Report
Total Lead

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9606060
Sample Date: 17 May 96
Received Date: 21 May 96
Sample Site: Bronson Field Site 1101
Job Order #: 130 5001

Sample ID#	Lab	1- 62242	2- 62243	3- 62244	4- 62245	Analyst(s):
Sample Name	Requester	MW-3	MW-4	MW-6	MW-1	ICP - Brian Nelson
Collector Name		RDH	RDH	RDH	RDH	
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	17 May 96 @ 1156	17 May 96 @ 1206	17 May 96 @ 1305	17 May 96 @ 1306	ICP - 12, 13 Jun 96
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab	
Sample Matrix		Groundwater	Groundwater	Groundwater	Groundwater	

PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.	
Metals:	METHOD #	1- 62242	units	Limit	2- 62243	units	Limit	3- 62244	units	Limit	4- 62245	units	Limit	Preservative(s)
Lead(Pb)	SW 6010A	X BDL	mg/l	0.05	BDL	mg/l	0.05	BDL	mg/l	0.05	BDL	mg/l	0.05	None

Comments: mg/kg=milligrams per kilogram. mg/l=milligrams per liter. BDL=Below Detection Limit.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 18-Jun-96 13:55

End of Report

PWC 5090/14

Navy Public Works Center
Environmental Laboratory

Bldg 3887, Code 920
NAS Pensacola, FL 32508-5303
Phone (904) 452-4728
DSN 922-4728
FAX (904) 452-2387/2799

Laboratory Report
Total Lead

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9606061
Sample Date: 17 May 96
Received Date: 21 May 96
Sample Site: Bronson Field Site 1101
Job Order #: 130 5001

Sample ID#	Lab	1- 62246	2- 62247	3-	4-	Analyst(s):
Sample Name	Requester	MW-2	MW-5			ICP - Brian Nelson
Collector Name		RDH	RDH			
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	17 May 96 @ 1435	17 May 96 @ 1436			ICP - 13 Jun 96
Sample Type	Comp/Grab	Grab	Grab			
Sample Matrix		Groundwater	Groundwater			

PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.	
Metals:	METHOD #	1- 62246	units	Limit	2- 62247	units	Limit	3-	units	Limit	4-	units	Limit	Preservative(s)
Lead(Pb)	SW 6010A	X BDL	mg/l	0.05	BDL	mg/l	0.05		mg/l	0.05		mg/l	0.05	None

Comments: mg/kg=milligrams per kilogram. mg/l=milligrams per liter. BDL=Below Detection Limit.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 18-Jun-96 13:54

End of Report

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

Client: NPWC Environmental
Address: Bldg 3887
NAS Pensacola, Fl 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 62269
Sample Date: 05/20/96
Received Date: 05/21/96
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 62269			
Sample Name / Location	MW-1 BF1101			
Collector's Name	RDH			
Date & Time Collected	5/20/96 @ 1940			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	05/25/96 / JM			
Date of Analysis	05/25/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 62269	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	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	
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	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	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	
1,2-Dichloroethane-d4	75-133	129
Toluene-d8	86-119	102
Bromofluorobenzene	85-116	109

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Rees Laboratory Director

Date: 6/23/96
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
D 922-4728/3642

Client: NPWC Environmental
Addres Bldg 3887
NAS Pensacola, Fl 32508
Phone 452-4728
Contac Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 62269
Sample Date: 05/20/96
Received Date: 05/21/96
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 62269		
Sample Name / Location	MW-1 BF1101		
Collector's Name	RDH		
Date & Time Collected	5/20/96 @ 1940		
Sample Type (composite or grab)	Grab		
Analyst	M. Chambers		
Date of Extraction / Initials	5/24/96; JJ		
Date of Analysis	6/5/96		
Sample Matrix	GW		
Dilution		X	1
COMPOUND NAME	1- 62269	units	Det. Limit
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
ene	BDL	UG/L	4
Indeno(1,2,3-cd)pyrene	BDL	UG/L	2
1-Methylnaphthalene	9	UG/L	5
2-Methylnaphthalene	7	UG/L	7
Naphthalene	BDL	UG/L	7
Phenanthrene	BDL	UG/L	3
Pyrene	BDL	UG/L	3

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	
Nitrobenzene- d5	35-114	78
2-Flourobiphenyl	43-116	78
Terphenyl -d14	33-141	73

COMMENTS :

BDL = Below detection limit. UG/L = Microgram per liter * = FL HRS certification pending

Approved by : Date/Time : 6/21/96 1500

"FINAL REPORT FORMAT - SINGLE"

Accession: 605459
Client: NAS, CO, PWC
Project Number: CALL #9037
Project Name: FL PRO
Project Location: BRONSON FIELD 1101, 1116, 1107
Test: FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method: PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix: GROUNDWATER
QC Level: I

Lab Id: 003 Sample Date/Time: 20-MAY-96 1940
Client Sample Id: MW-1 (1101) Received Date: 21-MAY-96

Batch: FPW043 Extraction Date: 23-MAY-96
Blank: A Dry Weight %: N/A Analysis Date: 03-JUN-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	24000	200	
NONATRIACONTANE	%REC/SURR	94	42-193	
ORTHO TER PHENYL	%REC/SURR	104	82-142	
ANALYST	INITIALS	KS		

Comments:

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
NAS Pensacola, Fl 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 62480
Sample Date: 06/3/96
Received Date: 06/4/96
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 62480
Sample Name / Location	D MW-6 BF-1101
Collector's Name	LMG/SC
Date & Time Collected	6/3/96 @ 1525
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	06/11/96 / JM
Date of Analysis	06/11/96
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 62480	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	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	
1,2-Dichloroethane-d4	75-133	101
Toluene-d8	86-119	105
Bromoflourobenzene	85-116	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: 6/24/96
Report Generated

Navy Public Works Center
Environmental Laboratory
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NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg 3887
NAS Pensacola, Fl 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 62481
Sample Date: 06/3/96
Received Date: 06/4/96
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 62481
Sample Name / Location	Equipment Blank BF-1101
Collector's Name	LMG/SC
Date & Time Collected	6/3/96 @ 1510
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	06/12/96 / JM
Date of Analysis	06/12/96
Sample Matrix	DI
Dilution	X 1

Compound Name	1- 62481	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	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	
1,2-Dichloroethane-d4	75-133	104
Toluene-d8	86-119	105
Bromoflourobenzene	85-116	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: 6/24/96
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
NAS Pensacola, Fl 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 62482
Sample Date: 06/3/96
Received Date: 06/4/96
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 62482
Sample Name / Location	Trip Blank BF-1101
Collector's Name	LMG/SC
Date & Time Collected	6/3/96
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	06/12/96 / JM
Date of Analysis	06/12/96
Sample Matrix	DI Water
Dilution	X 1

Compound Name	1- 62482	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	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	
1,2-Dichloroethane-d4	75-133	102
Toluene-d8	86-119	104
Bromoflourobenzene	85-116	103

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: 6/23/96
Report Generated

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
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Phone (904) 452-4728/3642
N 922-4728/3642

Client: NPWC Environmental
Addres Bldg 3887
NAS Pensacola, Fl 32508
Phone 452-4728
Contac Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 62480
Sample Date: 06/3/96
Received Date: 06/4/96
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 62480		
Sample Name / Location	D MW-6 BF-1101		
Collector's Name	LMG/SC		
Date & Time Collected	6/3/96 @ 1525		
Sample Type (composite or grab)	Grab		
Analyst	M. Chambers		
Date of Extraction / Initials	6/6/96; JJ		
Date of Analysis	6/10/96		
Sample Matrix	GW		
Dilution	X 1.11		
COMPOUND NAME	1- 62480	units	Det. Limit
Acenaphthene	BDL	UG/L	6
Acenaphthylene	BDL	UG/L	6
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
urene	BDL	UG/L	4
indeno(1,2,3-cd)pyrene	BDL	UG/L	2
1-Methylnaphthalene *	BDL	UG/L	6
2-Methylnaphthalene	BDL	UG/L	8
Naphthalene	BDL	UG/L	8
Phenanthrene	BDL	UG/L	3
Pyrene	BDL	UG/L	3

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	
Nitrobenzene- d5	35-114	79
2-Flourobiphenyl	43-116	83
Terphenyl -d14	33-141	88

COMMENTS :

BDL = Below detection limit. UG/L = Microgram per liter. * = FL HRS certification pending

Approved by : Date/Time : 6/25/96 1025

Navy Public Works Center
Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
AUTOVON 922-4728/3642

Client: NPWC Environmental
Addres Bldg 3887
NAS Pensacola, Fl 32508
Phone 452-4728
Contac Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 62481
Sample Date: 06/3/96
Received Date: 06/4/96
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 62481		
Sample Name / Location	Equipment Blank BF-1101		
Collector's Name	LMG/SC		
Date & Time Collected	6/3/96 @ 1510		
Sample Type (composite or grab)	Grab		
Analyst	M. Chambers		
Date of Extraction / Initials	6/6/96; JJ		
Date of Analysis	6/10/96		
Sample Matrix	DI Water		
Dilution	X 1.02		
COMPOUND NAME	1- 62481	units	Det. Limit
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
Fluorene	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	
Nitrobenzene- d5	35-114	76
2-Flourobiphenyl	43-116	82
Terphenyl -d14	33-141	89

COMMENTS :

BDL = Below detection limit. UG/L = Microgram per liter. * = FL HRS certification pending

Approved by : Date/Time : 6/25/96 1025

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

Ethylene Dibromide by Method 504

Client: NPWC Environmental
Address: Bldg 3887
NAS Pensacola, Fl 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 62480 A
Sample Date: 06/3/96
Received Date: 06/4/96
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 62480			
Sample Name / Location	D MW-6 BF-1101			
Collector's Name	LMG/SC			
Date & Time Collected	6/3/96 @ 1525			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	06/12/96 -BJ			
Date of Analysis	06/12/96			
Sample Matrix	GW			
Dilution		X	1	
Compound Name	1- 62480	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	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 Dees, Laboratory Director

Date: 6/24/96
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

Ethylene Dibromide by Method 504

Client: NPWC Environmental
Address: Bldg 3887
NAS Pensacola, Fl 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 62481 A
Sample Date: 06/3/96
Received Date: 06/4/96
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 62481			
Sample Name / Location	Equipment Blank BF-1101			
Collector's Name	LMG/SC			
Date & Time Collected	6/3/96 @ 1510			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	06/12/96 -BJ			
Date of Analysis	06/12/96			
Sample Matrix	DI			
Dilution	X 1			
Compound Name	1- 62481	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	113 %

COMMENTS :

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

Approved by : Jerry Dees, Laboratory Director

Date: 6/24/96
Report Generated
Page 1 of 1 End of Report

"FINAL REPORT FORMAT - SINGLE"

Accession: 606092
Client: NAS, CO, PWC
Project Number: CALL #9044
Project Name: FLPRO
Project Location: BRONSON SITE 1101
Test: FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method: PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix: GROUNDWATER
QC Level: I

Lab Id: 003 Sample Date/Time: 03-JUN-96 1525
Client Sample Id: 62480 BF SITE 1101(DMW-6) Received Date: 06-JUN-96

Batch: FPW049 Extraction Date: 07-JUN-96
Blank: A Dry Weight %: N/A Analysis Date: 12-JUN-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	ND	100	
NONATRIACONTANE	%REC/SURR	61	42-193	
ORTHO TER PHENYL	%REC/SURR	99	82-142	
ANALYST	INITIALS	KS		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession:	606092
Client:	NAS, CO, PWC
Project Number:	CALL #9044
Project Name:	FLPRO
Project Location:	BRONSON SITE 1101
Test:	FLPRO\PETRO. HYDROCARBON RANGE C8-C40
Analysis Method:	PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method:	3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix:	GROUNDWATER
QC Level:	I

Lab Id:	004	Sample Date/Time:	03-JUN-96 1510
Client Sample Id:	62481 BF SITE 1101 (EQ. BLK OMW-6)	Received Date:	06-JUN-96
Batch: FPW049		Extraction Date:	07-JUN-96
Blank: A	Dry Weight %: N/A	Analysis Date:	12-JUN-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	UG/L	ND	100	
NONATRIACONTANE	%REC/SURR	54	42-193	
ORTHO TER PHENYL	%REC/SURR	86	82-142	
ANALYST	INITIALS	KS		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Quality Control Report

Analysis: FLPRO\PETRO. HYDROCARBON RANGE C8-C40

Accession:	606092
Client:	NAS, CO, PWC
Project Number:	CALL #9044
Project Name:	FLPRO
Project Location:	BRONSON SITE 1101
Department:	SEMI-VOLATILE FUELS

AnalyticalTechnologies, Inc.
11 East Olive Road • Pensacola, Florida 32514 • (904) 474-1001

CHAIN OF CUSTODY

ART 1 - Bottle Shipment Information ATI ACCESSION #: 606092

CLIENT: NPWC ENV LAB CLIENT PROJECT NUMBER: 6150-9285

QUANTITY OF SAMPLE CONTAINERS SHIPPED	PRESERVATIVE							PLASTIC CONTAINERS							GLASS CONTAINERS									NOTES
	H_2SO_4	HNO3	HCL	Zn Acetate	$Na_2S_2O_3$	Unpreserved	NaOH	8 oz.	16 oz.	32 oz.	½ gallon	1 gallon	Whirl-pak	100-ML Cup	120 ml (A)	1 liter (A)	1 liter (C)	40 ml Vial	4 oz. wm	8 oz. wm	16 oz. wm	32 oz. wm	D.I. Trip Blank	
7																✓								

Relinquished By:	Time	Date	Received By:	Time	Date

PART 2 - Sample/Project Information

SAMPLE MATRIX CODES

DW DRINKING WATER — AI AIR — SW SURFACE WATER
WW WASTEWATER — SO SOIL — SL SLUDGE
GW GROUNDWATER — OI OIL — ST STORMWATER

	SAMPLE I.D.	SITE	SAMPLE DATE	SAMPLE TIME	MATRIX	PARAMETERS AND PRESERVATIVES REQUESTED	TOTAL # OF BOTTLES
DMW-6	62477	BF 1142 1101	6/3/96	GW	1440	1	1
EQ. HK	62478	1142	↓	↓	1425	2	2
DMW-6	62480	1101			1525	3	2
EQ. BIK	62481	✓ 1101	✓	✓	1510	4	2

Total Number of Bottles/Containers: 7

Relinquished By	Date	Time	Received By	Date	Time
Kathy Bennett	6/6/96	1130	[illegible]	6/6/96	1130
[illegible]	6/6/96	1230			

Client NPWC ENV LAB CODE 920			Purchase Order Number 6150-9285
Address BLDG 3297			Project Number CALL #9044
City PENSACOLA	State FL	Zip 32508	Project Name FL PRD
Phone Number 904 452-3642	Fax Number 904 452-2797		Project Location BRONSON SITE 1101
Project Manager			Sampled By PJB

TURNAROUND TIMES	check below	SPECIAL INSTRUCTIONS
Standard - 14-21 days	✓	JOB 1305001
RUSH (must be approved in advance)		ITEM # 012
<- 48 hours - 2x standard price		Verbal due 6/13/96
3-7 days - 1.5x standard price		Written due 6/20/96
TCLP - 1 week rush 1.5x standard price		
QC Level none I II III IV (circle one)		Copies of report needed 1

FORM # 12694 — METRO PRINTING, INC., HUNTSVILLE, ALABAMA 35801 WHITE — LAB CANARY — REPORT PINK — CLIENT

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"QC Report"

Title: Water Blank
Batch: FPW049
Analysis Method: PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Blank Id: A Date Analyzed: 13-JUN-96 Date Extracted: 07-JUN-96

Parameters:	Units:	Results:	Reporting Limits:
TOTAL PETROLEUM HYDROCARBON	UG/L	ND	100
ORTHO TER PHENYL	%REC/SURR	88	82-142
ANALYST	INITIALS	KS	
C-39	%REC/SURR	48	42-193

Comments:

"QC Report"

Title: Water Reagent
Batch: FPW049
Analysis Method: PRO / 8015 - SW 846, EPA UST Work Group Nov. 1990, Mod. 8015
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

RS Date Analyzed: 14-JUN-96
RSD Date Analyzed: 14-JUN-96

RS Date Extracted: 07-JUN-96
RSD Date Extracted: 07-JUN-96

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
TOTAL PETROLEUM HYDROCARBON	4998	<100	3918	78	4004	80	3	30	57-122
Surrogates:									
ORTHO TER PHENYL				88		88			82-142
C-39				44		46			42-193

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

ATI/GC/FID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

ATI/GC/FIX
ATI GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

ATI/GC/FPD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

ATI/GC/PID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

ATI/GC/TCD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

LJT = LISA THOMASON
SW = STEVE WILHITE
KW = KAREN WADSWORTH
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
BV = BEN VAUGHN
BC = BETH COLEMAN
KS = KENDALL SMITH
KK = KERRY KUST
DWB = DAVID W. BOWERS
RP = ROB PEREZ

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 #:

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 6.3.96
Received Date: 6.4.96
Sample Site: BF 1101
Lab Due Date:

Sample ID #	Lab	#1- 6-2480	#2- 6-2481	#3- 6-2482	#4-	Notes:
Sample Name or Location		DMW-6	EQ. BLANK	Trip BLANK		KAG
Sampled by		LMG/SC	LMG/SC	LMG/SC		
Composite Date/Time Collected	Begin					
	Frequency					
	End					
Grab Time		1525	1510	AM		
Sample Matrix		GW	DF	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	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	3 VOA	X	3 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						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 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										250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: Peter J. Kom / WES, Inc
Date/Time: 6.4.96 / 0920

Received by: R. Hoxsteffer
Date/Time: 6-4-96 0920

PWC 2510/8

Navy Public Works Center
Environmental Laboratory

Bldg. 3297, Code 920
NAS Pensacola, Fl. 32508-6500
Phone 904-452-3642/4758
Autovon 922-3642

Laboratory Report
Lead in Water

Requester:	PWC Environmental	Lab ID Number:	9607111 A
Address:	Bldg. 3887	Sample Date:	28 Jun 96
	NAS Pensacola, Fl. 32508	Received Date:	08 Jul 96
Phone #:	452-4728	Sample Site:	Bronson Field Site 1101
Contact:	Greg Campbell	Job Order #:	130 5001

Sample ID#	Lab	1- 62885	2-	3-	4-	Analyst(s):
Sample Name	Requester	Site 1101 DMW-6				ICP- Brian Nelson
Collector Name		T.H.				
Date/Time Collected (Military)	Comp start					
	Comp stop					Date(s) of analysis:
	Grab	28 Jun 96 @ 2230				ICP- 22 Jul 96
Sample Type	Comp/Grab	Grab				
Sample Matrix		Groundwater				

PARAMETER Metals:	METHOD #	ID# 1- 62885	units	Det. Limit	ID# 2-	units	Det. Limit	ID# 3-	units	Det. Limit	ID# 4-	units	Det. Limit	Preservative(s)
Lead(Pb)	SW 6010	X BDL	mg/l	0.05		mg/l	0.05		mg/l	0.05		mg/l	0.05	N/S

Comments: mg/l=milligrams per liter. N/S=Not Submitted.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 14-Aug-96 12:45
Report Date

End of Report

PWC 5090/14