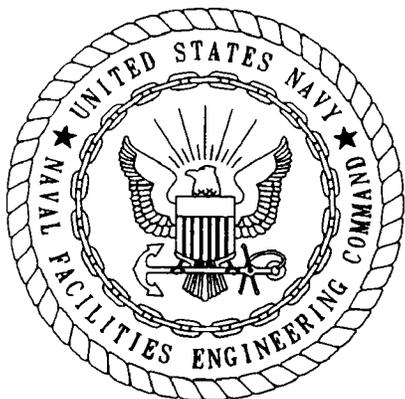


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SITE ASSESSMENT REPORT DAY TANK 2 FACILITY 342 WITH TRANSMITTAL NAS CECIL
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HARDING LAWSON ASSOCIATES



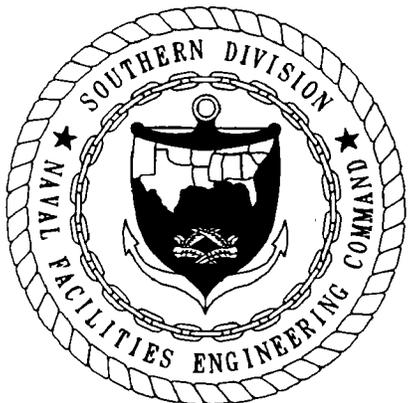
SITE ASSESSMENT REPORT

**DAY TANK 2
FACILITY 342**

**NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

**UNIT IDENTIFICATION CODE: N60020
CONTRACT NO.: N62467-89-D-0317/139**

JULY 1998



**SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29418**



NAS CECIL FIELD
JACKSONVILLE, FLORIDA

**SITE ASSESSMENT REPORT
DAY TANK 2, FACILITY 342**

JULY 1998

**SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29418**



NAS CECIL FIELD
JACKSONVILLE, FLORIDA

**SITE ASSESSMENT REPORT
DAY TANK 2, FACILITY 342**

JULY 1998

**SOUTHERN DIVISION
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NAS CECIL FIELD
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DAY TANK 2, FACILITY 342**

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DAY TANK 2, FACILITY 342**

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NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29418**



Harding Lawson Associates



2549-0008

July 20, 1998

Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blainstone Road
Tallahassee, Florida 32399-2400
Attention: Mr. Mike Deliz

**Subject: Site Assessment Report
Day Tank 2, Facility 342
NAS Cecil Field, Jacksonville, Florida
Contract No. N62467-89-D-0317/139**

Dear Mr. Deliz:

On behalf of Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), Harding Lawson Associates (formerly ABB Environmental Services, Inc.) is pleased to forward two copies of the subject document for your review and approval.

Comments or questions you may have concerning this report should be directed to Mr. Bryan Kizer at SOUTHNAVFACENGCOM (843-820-5896).

Very truly yours,

Harding Lawson Associates

A handwritten signature in cursive script, appearing to read "Rao Angara".

Rao Angara
Task Order Manager

cc: B. Kizer, SDIV (1 copy)
D. Porter, SDIV (1 copy)
D. Kruzicki, NASCF (1 copy)
D. Obenauer, BEI (1 copy)
D. Vaughn-Wright, USEPA (1 copy)
S. Pratt, TTNUS (3 copies)
E. Blomberg, HLA (1 copy)
City of Jacksonville (1 copy)
file



SITE ASSESSMENT REPORT

**DAY TANK 2
FACILITY 342**

**NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

Unit Identification Code: N60020

Contract No.: N62467-89-D-0317/139

Prepared by:

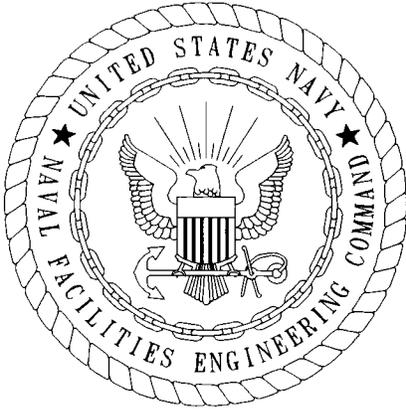
**Harding Lawson Associates
2590 Executive Center Circle, East
Tallahassee, Florida 32301**

Prepared for:

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

Bryan Kizer, Code 1842, Engineer-in-Charge

July 1998



CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, Harding Lawson Associates (formerly ABB Environmental Services, Inc.), hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/139 are complete and accurate and comply with all requirements of this contract.

DATE: July 16, 1998

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric Blomberg, P.G.
Project Technical Lead

(DFAR 252.227-7036)



FOREWORD

Subtitle I of the Hazardous and Solid Waste Amendments of 1984 to the Solid Waste Disposal Act (SWDA) of 1965 established a national regulatory program for managing underground storage tanks (USTs) containing hazardous materials, primarily petroleum products. Hazardous wastes stored in USTs were already regulated under the Resource Conservation and Recovery Act of 1976, which was also an amendment to SWDA. Subtitle I requires that the U.S. Environmental Protection Agency (USEPA) promulgate UST regulations. The program was designed to be administered by the individual states, who were allowed to develop more stringent standards, but not less stringent standards. Local governments were permitted to establish regulatory programs and standards that are more stringent, but not less stringent than either State or Federal regulations. The USEPA UST regulations are found in the Code of Federal Regulations (CFR), Title 40, Part 280 (Title 40 CFR 280), *Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks*, and Title 40 CFR 281, *Approval of State Underground Storage Tank Programs*. Title 40 CFR 280 was revised and published on September 23, 1988, and became effective December 22, 1988.

The Navy's UST Program policy is to comply with all Federal, State, and local regulations pertaining to USTs. This report was prepared to satisfy the requirements of the Florida Department of Environmental Protection, Chapter 62-770, Florida Administrative Code, *State Underground Petroleum Environmental Response*, regulations pertaining to petroleum contamination in Florida's environment as a result of spills or leaking tanks or piping.

Questions regarding this report should be addressed to the Commanding Officer, Naval Air Station Cecil Field, Jacksonville, Florida, or to Southern Division, Naval Facilities Engineering Command, Code 1842, at AUTOVON 563-0528 or 843-820-5896.

EXECUTIVE SUMMARY

Day Tank 2, Facility 342 is located at Naval Air Station Cecil Field in Jacksonville, Florida. The site formerly contained a 200,000-gallon earth-mounded tank that stored jet propellant 5 (JP-5), an aviation fuel. The South Fuel Farm (SFF), Facility 43 is located north of and adjacent to the Day Tank 2 site. The SFF site consisted of multiple tanks, which contained leaded and unleaded gasoline, aviation gasoline, diesel fuel, and JP-5. These two facilities, which were used over a 50-year period, are inactive now and all tanks have been removed.

ABB Environmental Services (ABB-ES) (presently Harding Lawson Associates [HLA]) performed a contamination assessment for the SFF (ABB-ES, 1992a; 1996a). At that time the Day Tank 2 was not a separate site and was included in the contamination assessment. This assessment indicated that excessively contaminated soil (per Chapter 62-770, Florida Administrative Code [FAC]) was present throughout the site. Petroleum contamination in groundwater was also detected in groundwater beneath the site extending vertically to a depth of 65 feet below land surface (bls). ABB-ES developed a remedial action plan (RAP) for the shallow groundwater (up to 30 feet bls) and soil at the SFF (ABB-ES, 1996b). The Day Tank 2 area was not included in the RAP because the characterization of contamination in that area was not complete. The RAP was implemented by Bechtel Environmental, Inc. (BEI), in 1997 and is ongoing.

In October 1996, free-petroleum product was observed in a piezometer located south of Day Tank 2. Free-product recovery in the form of manual bailing was initiated by ABB-ES in October 1996, and in November 1996 free-product recovery using trenches and dewatering was initiated by BEI. Approximately 29,000 gallons of free product were recovered with these efforts. The source of the free product was not identified during free-product recovery operations. The Day Tank 2 was taken out of operation in October 1996 and demolished in August 1997. No apparent source (e.g. leaking pipes or tank) of free product was identified during demolition of Day Tank 2. To establish site conditions after the release, a site assessment (SA) was proposed for Day Tank 2. In June 1997, ABB-ES prepared a contamination assessment plan to be implemented at the Day Tank 2 site (ABB-ES, 1997).

ABB-ES began SA activities in July 1997 by evaluating the surface and subsurface soil, delineating the extent of free product, and assessing the horizontal and vertical extent of groundwater contamination. The investigation conclusions are as follows:

- The geologic materials at the site are composed of silty fine-grained sand, fine-grained sands, and clayey sands to a depth of approximately 85 feet bls where the top of the Hawthorn formation is encountered in the form of dolomite.
- Excessively contaminated soil (greater than 50 parts per million as measured by an organic vapor analyzer) was detected (primarily between 2 and 6 feet bls) and estimated to cover approximately 75,000 square feet (ft²) or 1.7 acres. Excessively contaminated soil between 0 and 2 feet bls was only identified in two soil borings (SB-2 and SB-28) at the site. Assuming a 6-foot-depth to the water table,

11,000 cubic yards of soil is estimated to be present between 2 and 6 feet bls.

- Ethylbenzene, toluene, xylene, acenaphthene, fluoranthene, naphthalene, and total recoverable petroleum hydrocarbons (TRPH) were detected at concentrations above Florida Department of Environmental Protection (FDEP) cleanup target levels in the six confirmatory Kerosene Analytical Group soil samples collected at the site.
- Free product was detected in five piezometers and three monitoring wells in June 1998. The apparent extent of free product is approximately 62,000 ft² or 1.4 acres. The maximum apparent free-product thickness measured during a 7-month-period of free-product monitoring and manual recovery was 3.15 feet measured in monitoring well CEF-043-41.
- The surficial aquifer at the site is considered Class G-II as established by Chapter 62-520, FAC, Water Quality Standards.
- The average depth to groundwater throughout the site was 5.44 feet in April 1998 and 6.14 in May 1998. The groundwater flow direction is to the south-southeast.
- The average hydraulic conductivity in the saturated zone is 3.97 feet per day (ft/day). Using an estimated porosity of 25 percent and a hydraulic gradient of 0.003 feet per foot, the calculated pore water velocity is 0.05 ft/day.
- The vertical and horizontal extent of petroleum contamination in groundwater is approximately 88 feet bls and 2,000 feet, respectively.
- Benzene, xylenes (total), naphthalene, and TRPH were detected in groundwater collected from monitoring wells at concentrations exceeding Chapter 62-770, FAC, cleanup target levels.
- The total mass of petroleum contamination in the subsurface at the Day Tank 2 is estimated to be over 1.8 million kilograms. The total mass and mass percentage of petroleum contamination in the subsurface by media is shown in E-1.
- Tetrachloroethene and trichloroethene were detected in groundwater samples collected from downgradient monitoring wells at concentrations exceeding FDEP groundwater guidance concentrations.
- Natural attenuation sampling conducted at the site provides preliminary evidence that intrinsic degradation of contaminants at the site is occurring (HLA, 1998).

Table E-1
Summary of Mass of Petroleum Contamination in the Subsurface

Site Assessment Report
Day Tank 2, Facility 342
Naval Air Station Cecil Field
Jacksonville, Florida

Media	Petroleum Contaminant Mass (kilograms) ¹	Mass Percentage
Soil (sorbed)	90,000	12.7
Free and Residual Product	621,000	87.3
Groundwater (dissolved)	162	<1

¹ Based on calculations and surface areas shown in Appendix E and Figures 5-1, 5-2, 5-5, 5-6, and 5-7.

Note: < = less than.

Recommendations for future action at the Day Tank 2 site include the following:

- Free-product removal as outlined in Chapter 62-770.300, FAC, should continue in the area south of the Day Tank 2 site.
- A separate investigation should be conducted to assess chlorinated solvent groundwater contamination, which was found to be commingled with the Day Tank 2 petroleum-contaminated groundwater plume.
- Free-product, excessively contaminated soil, and soil and groundwater contamination (in excess of Chapter 62-770, FAC, cleanup target levels for soil and Class G-II groundwater) are present at the Day Tank 2 site; therefore, it is recommended that an RAP be prepared for the Day Tank 2 site.

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Naval Air Station Cecil Field
Jacksonville, Florida

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- Appendix C: Lithologic Logs
- Appendix D: Analytical Data
- Appendix E: Soil Screening Results
- Appendix F: Contaminant Mass Calculations
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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AST	aboveground storage tank
BEI	Bechtel Environmental, Inc.
bls	below land surface
CA	contamination assessment
CAP	contamination assessment plan
CAR	contamination assessment report
cm/sec	centimeters per second
DPT	direct-push technology
EMT	earth-mounded tank
ERA	emergency response action
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FL-PRO	Florida-petroleum residual organics
ft ²	square feet
ft/day	feet per day
ft/ft	feet per foot
HLA	Harding Lawson Associates
IRA	interim remedial action
JP-5	jet propellant 5 (Navy jet fuel)
kg	kilogram
msl	mean sea level
mg/kg	milligrams per kilogram
μg/l	micrograms per liter
NAS	Naval Air Station
NEESA	Naval Energy and Environmental Support Activity
OVA	organic vapor analyzer
PCE	tetrachloroethene
ppm	parts per million
PVC	polyvinyl chloride
RAP	remedial action plan
SA	site assessment
SAR	site assessment report
SFF	South Fuel Farm
SPORTENV- DETCHASN	Supship Portsmouth Environmental Detachment Charleston

GLOSSARY (Continued)

TCE	trichloroethene
TRPH	total recoverable petroleum hydrocarbons
$\mu\text{g}/\ell$	micrograms per liter
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound

1.0 INTRODUCTION

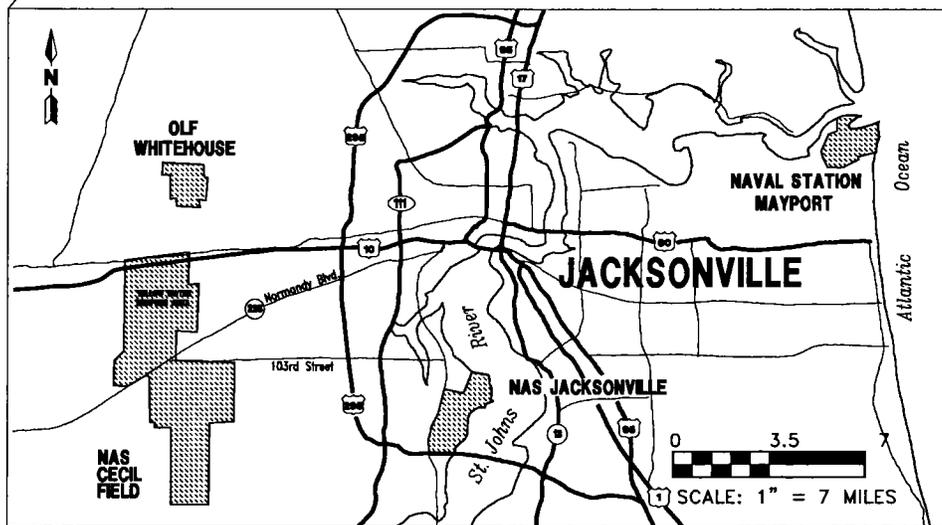
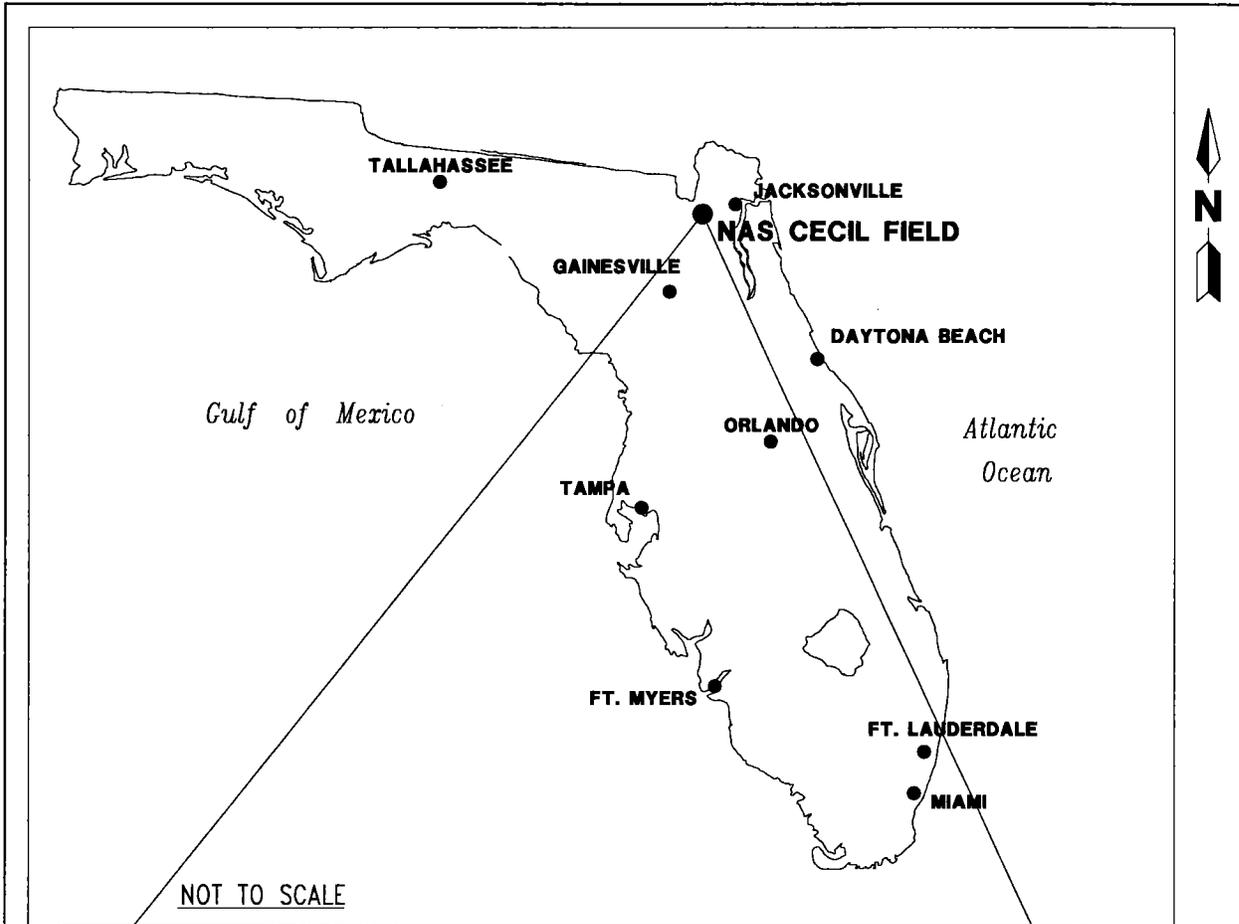
Harding Lawson Associates (HLA) (formerly ABB Environmental Services Inc. [ABB-ES]) was authorized by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to conduct a site assessment (SA) and develop a site assessment report (SAR) for Day Tank 2, Facility 342 at Naval Air Station (NAS) Cecil Field in Jacksonville, Duval County, Florida. Figure 1-1 shows the general location of NAS Cecil Field. The Day Tank 2 site is located in the southeastern portion of the main base just south of the former South Fuel Farm (SFF) (Figure 1-2).

1.1 PURPOSE. The purpose of the SA was to assess the vertical and horizontal extent of the petroleum contamination in the soil and groundwater beneath the site. The purpose of this SAR is to present the findings and conclusions of the SA and recommend appropriate further action for this site. Information obtained from the SA will be used to assess the need for site remediation and to develop a remedial action plan (RAP), if necessary.

1.2 SCOPE AND RATIONALE. The scope of services developed to perform the SA included

- review of Navy files, previous site reports, and other pertinent information;
- advancement of soil borings and collection of soil samples for head space analysis using an organic vapor analyzer (OVA) to assess the extent of soil contamination at the site;
- collection of confirmatory subsurface soil samples for Kerosene Analytical Group laboratory analysis;
- installation of temporary piezometers to delineate the extent of free product;
- advancement of direct-push technology (DPT) points to delineate the extent of groundwater contamination and aid in downgradient monitoring well placement;
- installation of monitoring wells (shallow, intermediate, and deep);
- collection of groundwater samples for Kerosene Analytical Group analysis;
- collection of water levels for the assessment of the groundwater flow direction;
- a field survey of monitoring well elevations and locations; and
- reduction and analysis of all data gathered during the SA.

The following sections of the report present the site background, field investigation, SA results, and conclusions and recommendations of the SA.



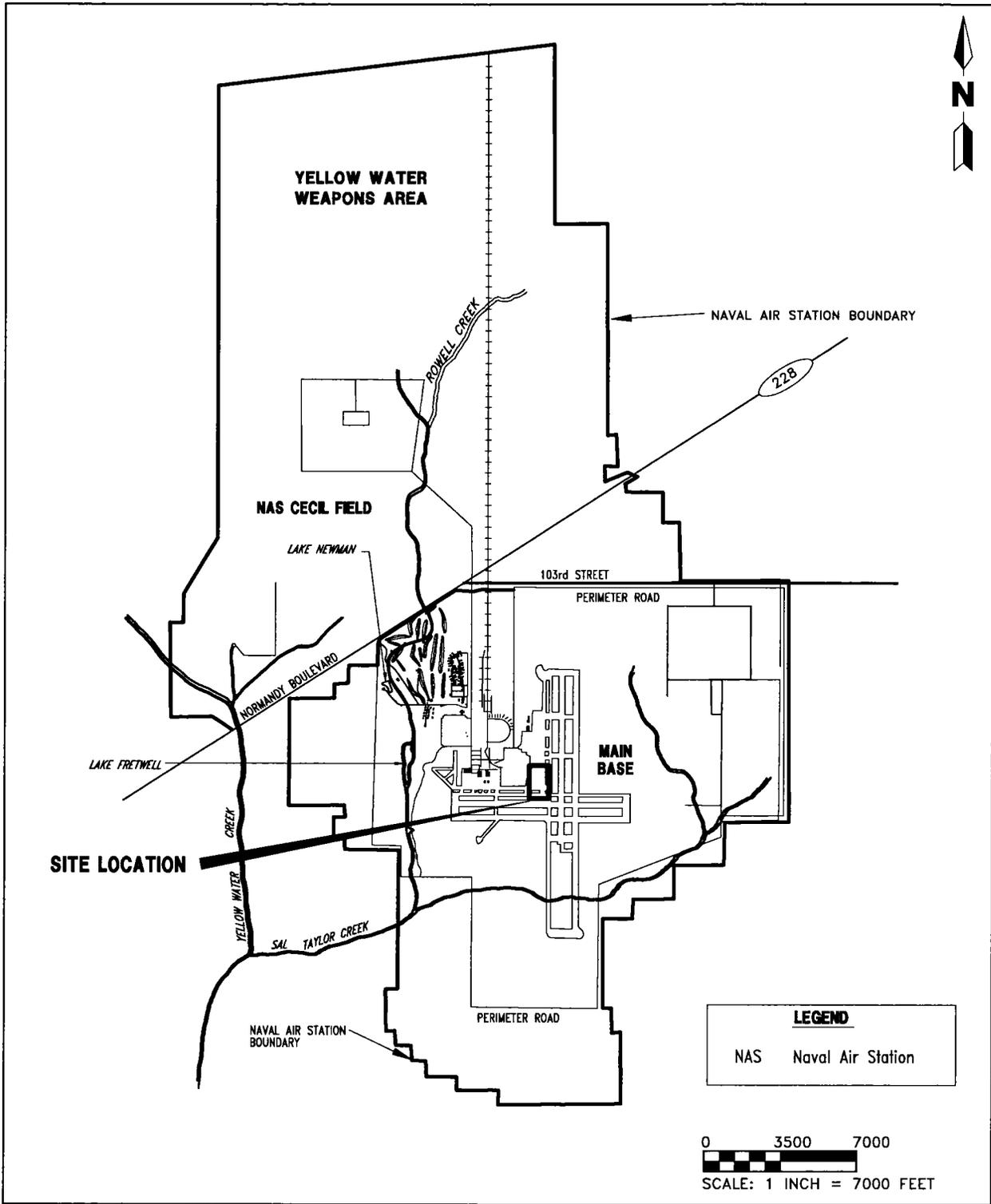
**FIGURE 1-1
FACILITY LOCATION MAP**



**SITE ASSESSMENT REPORT
DAY TANK 2
FACILITY 342**

**NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

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**FIGURE 1-2
SITE LOCATION MAP**



**SITE ASSESSMENT REPORT
DAY TANK 2
FACILITY 342**

**NAVAL AIR STATION CECL FIELD
JACKSONVILLE, FLORIDA**

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2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION. The Day Tank 2 site consists of one former earth-mounded tank (EMT) location and is located south of the former SFF, which formerly had three aboveground storage tanks (ASTs), four underground storage tanks (USTs) and three EMTs. Information regarding these tanks is provided in Table 2-1. A site map of the Day Tank 2 facility as it appeared prior to its demolition (August 1997) is presented on Figure 2-1. The tank was installed in 1957 with a capacity of 200,000 gallons and contained jet propellant 5 (JP-5), an aviation fuel. The steel tank was 53.5 feet in diameter and 13 feet high. The mounded tank was buried beneath 4 feet of soil and had a 9-inch reinforced concrete slab poured on top of the tank. The tank rested on a 15-inch reinforced concrete slab (Supship Portsmouth Environmental Detachment Charleston [SPORTENVDETCNASN], 1997). Overfill protection and impressed current-type corrosion protection were installed. The associated piping was corrosion-resistant coated steel and was cathodically protected. The site was covered by asphalt and grass.

Two additional tanks were associated with Day Tank 2. Tank 342-ST was a 3,000-gallon UST used to store a JP-5-water mixture and was located west of the fuel filters. Tank 342-RT was a 420-gallon AST used to store JP-5 and was located within the fuel return pit.

JP-5 was supplied to Day Tank 2 through a 10-inch-diameter steel pipeline that was connected to Day Tank 1 and the North Fuel Farm (Figures 1-2 and 2-1). From Day Tank 2, a 14-inch-diameter fuel supply line led southward before heading west toward the high speed refueling pits, which formerly served the east-west runways.

2.2 SITE HISTORY. In 1989, a release detection program was initiated at the SFF, at which time four release detection, or compliance, monitoring wells were installed in the vicinity of Tanks 43-G and 43-H. In 1990, Navy personnel detected several inches of free product in these compliance wells. At the Day Tank 2 site, petroleum-contaminated soil was discovered during excavation for the construction of the spill containment pond, which is located east of the Day Tank 2 site.

To assess the extent of petroleum contamination at the SFF (including the Day Tank 2 area), ABB-ES performed a contamination assessment (CA) for the SFF from December 1990 to December 1991. A contamination assessment report (CAR) was submitted to the Florida Department of Environmental Protection (FDEP) in July 1992, and the FDEP requested that a supplemental assessment be conducted to fill data gaps in the CAR. The supplemental assessment was put on hold until the SFF USTs and EMTs were removed.

In July 1994, four USTs (Tanks 43-E, 43-F, 43-G, and 43-H) and three EMTs (Tanks 43-B, 43-C, and 43-D) were excavated and removed. During the UST removal excessively contaminated soil was excavated and returned to the site to be addressed in an RAP.

In March 1995, ABB-ES began the supplemental assessment at the SFF to establish site conditions after the tank removals. In January 1996, ABB-ES submitted a CAR Addendum recommending that an RAP be prepared for the site (ABB-ES, 1996a). The extent

**Table 2-1
Storage Tank Information**

Site Assessment Report
Day Tank 2, Facility 342
Naval Air Station Cecil Field
Jacksonville, Florida

Tank Number	Date Installed	Tank Type	Capacity (gallons)	Contents	Construction	Status
43-B	1943	EMT	100,000	MOGAS and un-leaded gasoline	Concrete with epoxy-lined interior	Removed 1994
43-C	1943	EMT	50,000	Aviation gasoline	Concrete with epoxy-lined interior	Removed 1994
43-D	1943	EMT	250,000	Diesel fuel	Concrete with epoxy-lined interior	Removed 1994
43-E	1943	UST	26,000	Aviation fuel and water	Asphalt-coated steel	Removed 1994
43-F	1943	UST	26,000	Aviation fuel and water	Asphalt-coated steel	Removed 1994
43-G	1943	UST	26,000	Aviation fuel, water, and nonspecific fuel	Asphalt-coated steel	Removed 1994
43-H	1943	UST	26,000	Aviation fuel, water, and nonspecific fuel	Asphalt-coated steel	Removed 1994
43-J	1944	AST	15,000	Diesel fuel	Asphalt-coated steel	Removed 1985
43-K	1944	AST	15,000	Diesel fuel	Asphalt-coated steel	Removed 1985
43-L	1944	AST	15,000	Diesel fuel	Asphalt-coated steel	Removed 1985
342-DT	1957	EMT	200,000	JP-5	Interior-lined, asphalt-coated steel	Removed 1997
342-ST	1957	UST	3,000	JP-5-water mixture	Field-constructed steel	Removed 1997
342-RT	1957	AST	420	JP-5	Steel	Closed in place 1997

Notes: EMT = earth-mounded tank.
MOGAS = motor gasoline.
UST = underground storage tank.
AST = aboveground storage tank.
nonspecific = fuel not meeting required specifications.
JP-5 = jet propellant 5.

Figure 2-1 Site Map Before Day Tank 2 Demolition and Approximate Location of Utilities

C - size

of soil and groundwater contamination at the SFF and Day Tank 2 sites as defined in the CAR are shown on Figure 2-2.

An RAP for the SFF site was completed in October 1996 to address excessively contaminated soil and surficial groundwater north and upgradient the Day Tank 2 site (ABB-ES, 1996b). The Day Tank 2 area was not included in the RAP because the characterization of the contamination in that area was not complete. Remedial actions described in the RAP include bioventing in the vadose zone soil and biosparging of the shallow groundwater (less than 30 feet below land surface [bls]).

In October 1996, free petroleum product was observed in a piezometer located south of Day Tank 2. The release was believed to have been from the Day Tank 2 site or associated piping. Free-product recovery in the form of manual bailing was implemented by ABB-ES following the release detection. In November 1996, free-product recovery using trenches and dewatering was initiated by Bechtel Environmental, Inc. (BEI). BEI completed the free-product recovery efforts in April 1997, and approximately 29,000 gallons of free product were recovered. Details of the emergency response performed by BEI including a figure showing trench locations are presented in Appendix A, Day Tank 2 Emergency Response Report. The source of the free product was not identified during the emergency response action (ERA). ABB-ES resumed manual bailing of free product on a monthly basis in May 1997 and continue recovery efforts to date.

To establish current site conditions after the release, an SA was proposed for the Day Tank 2 site. In June 1997, ABB-ES prepared a contamination assessment plan (CAP) and a health and safety plan. The CAP outlined the strategy for the SA field investigation, which is the subject of this report.

Day Tank 2 was taken out of operation in October 1996, and on August 11, 1997, SPORTENVDETHASN began decommissioning the facility. Day Tank 2 was unearthed, drained, steam-cleaned, and removed. Tank steel was delivered for recycling as scrap metal at the NAS Cecil Field Recycling Center. Residual fuel (approximately 800 gallons) was pumped out of the tank and transported off base to a licensed recycling agent. Excessively contaminated soil (greater than 50 parts per million (ppm) on the OVA/flame ionization detector) was detected in the UST excavation, under the fuel filter slab, and near the fuel return pit. This soil was not removed from the site because it was to be addressed during future remedial actions. Closure activities were completed on August 29, 1997. The completion report for this work was submitted to the FDEP and is presented in Appendix B.

ABB-ES conducted SA activities for the Day Tank 2 site from July 1997 to April 1998. Figure 2-3 illustrates present site conditions following the Day Tank 2 closure and removal.

Figure 2-2 Extent of Groundwater and Soil Contamination in 1995

C-size

Figure 2-3 Current Day Tank 2 Site Plan, 1998

C-size

3.0 FIELD INVESTIGATION

All methodologies and equipment that were used during this SA are in accordance with the HLA (formerly ABB-ES), FDEP-approved, Comprehensive Quality Assurance Plan (ABB-ES, 1992b).

3.1 SOIL SCREENING PROGRAM. Thirty-three shallow soil borings (SB-1 through SB-33) were advanced to the water table at the Day Tank 2 site to reevaluate site conditions. The locations of these borings are shown on Figure 3-1. The borings were advanced with 3¼-inch (inside diameter) stainless-steel hand augers. Soil samples were collected from each boring at 1 foot bls, and every other foot thereafter to the groundwater table. Each sample was screened for organic vapors using an OVA equipped with a flame ionization detector as described in Chapter 62-770.200(8), Florida Administrative Code (FAC). Samples were also screened for methane using an OVA and a charcoal filter. The maximum soil headspace reading observed was recorded for each sample. The results of the soil boring program are discussed in Section 5.1 of this report.

3.2 SOIL SAMPLING PROGRAM. On March 18, 1998, six confirmatory subsurface soil samples were collected for analysis of Kerosene Analytical Group parameters, which include U.S. Environmental Protection Agency (USEPA) Methods 8020 and 8310 and Florida-petroleum residual organics (FL-PRO) for total recoverable petroleum hydrocarbons (TRPH). These soil samples were collected at locations of high, medium, and low levels of petroleum contamination at depth intervals ranging from 1 to 5 feet bls. Soil sample locations are shown on Figure 3-1. The analyses were performed by Quanterra Environmental Laboratories, Tampa, Florida. The data quality level for these samples was Naval Energy and Environmental Support Activity (NEESA) Level C (NEESA, 1988).

3.3 FREE-PRODUCT DELINEATION. Ten piezometers, PZ-01 through PZ-10, were installed during the SFF CA to delineate free product (ABB-ES, 1996a). Eight piezometers, PZ-11 through PZ-18, were installed during the 1997 Day Tank 2 investigation to complete free-product delineation. Piezometer locations are shown on Figure 3-2.

All piezometers were hand-installed to depths ranging from 8 to 14 feet bls using a 4-inch bucket auger with 5 feet of 0.010-inch slotted well screen placed across the water table. A 20/30 grade sand pack was placed in the annulus of each piezometer.

3.4 GROUNDWATER SCREENING PROGRAM. Prior to the installation of permanent monitoring wells, 17 DPT points were advanced to collect groundwater screening samples. Groundwater samples were typically collected at depth intervals of 10, 25, 45, 65, and 85 feet bls. Deviations from these prescribed intervals occurred when dense sand was encountered (causing refusal) or when the top of the dolomite was deeper than 85 feet bls. To collect the samples, water-tight rods connected to a sample collection chamber were driven to the sampling depth. Once at depth, the sample chamber was opened and filled. Once full, the chamber was closed and

Figure 3-1 Soil Screening and Soil Sampling Locations

C-size

the surrounding casement was pressurized using Argon gas to maintain sample integrity. The rods with the chamber were retracted to the surface for sample transfer to 40 milliliter glass vials. Groundwater samples were analyzed by Environmental Conservation Laboratories, Jacksonville, Florida, using USEPA Method 602 with a two-day turnaround time. The data quality level for all screening samples was NEESA Level E. Groundwater screening results are presented in Appendix D and shown on figures in Appendix G.

3.5 MONITORING WELL INSTALLATION PROGRAM. ABB-ES (presently HLA) field personnel supervised the drilling and installation of 20 monitoring wells at the Day Tank 2 site. Monitoring well construction details are presented in Table 3-1. Table 3-1 also includes monitoring well information from wells (identified by the prefix CEF-043-) installed during the SFF CA. Monitoring well locations are shown on Figure 3-2. The following naming convention was used for the wells installed during the SA: CEF-342-XXS, CEF-342-XXI, and CEF-342-XXD. CEF-342 represents Cecil Field, Facility 342. The XX represents the well number. Wells with an "S" are screened from 5 to 15 feet bls, those with an "I" are screened from 40 to 45 feet bls, and those with a "D" are screened from just above the dolomite, greater than 80 feet bls.

All monitoring wells were installed using the hollow-stem auger drilling method. Monitoring well CEF-342-2D was double-cased and was installed in an area of known free-product contamination. An 18½-inch outside diameter hollow stem auger was advanced to a depth of approximately 30 feet bls and a 10-inch-diameter, 30-foot-long polyvinyl chloride (PVC) surface casing was set in the borehole. The annular space surrounding the surface casing was filled with a neat cement grout to land surface. Within the surface casing, a 4½-inch hollow-stem auger was used to advance the borehole to a depth of 86.5 feet for monitoring well installation.

All monitoring wells were constructed of a 2-inch inside diameter, Schedule 40 PVC screen and casing. The screen lengths were 5 to 10 feet with a slotted opening of 0.010 inch. A quartz sand filter pack of 20/30 grade was placed around the screen to at least 1 foot above the top of the screen. The seals consisted of at least two feet of fine sand (30/65 grade) placed directly on top of the filter pack. The remainder of the annular space on all wells was filled with a neat cement grout to land surface. Monitoring well boring and construction logs are presented in Appendix C.

3.6 GROUNDWATER SAMPLING PROGRAM. In January 1998, groundwater quality samples were collected from all 20 newly installed monitoring wells using low-flow sampling techniques. Turbidity, temperature, conductivity, and pH were monitored during purging to ensure that groundwater samples were representative of aquifer conditions. The data quality level for the groundwater samples collected was NEESA Level C.

All samples were analyzed by Quanterra Environmental Laboratories, Tampa, Florida. The samples were analyzed for the Chapter 62-770, FAC, Kerosene Analytical Group, which includes USEPA Methods 601 (volatile halogenated inorganics), 602 (volatile organic compounds [VOCs]), 610 and 239.2 (dissolved lead) plus FL-PRO analysis for TRPH.

**Table 3-1
Monitoring Well Construction and Water Table Elevation Data**

Site Assessment Report
Day Tank 2, Facility 342
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well	Well Depth (feet)	Top-of-Casing Elevation ¹	Screened Interval (feet bls)	April 10, 1998			May 18, 1998		
				Depth to Water (BTOC)	Depth to Product (BTOC)	Water-Level Elevation ¹	Depth to Water (BTOC)	Depth to LNAPL (BTOC)	Water-Level Elevation ¹
CEF-342-1I	45.0	77.84	40.0 to 45.0	9.05	--	68.79	9.39	--	68.45
CEF-342-2D	87.0	74.89	77.0 to 87.0	6.49	--	68.40	7.44	--	67.45
CEF-342-3I	45.0	71.60	40.0 to 45.0	4.04	--	67.56	4.97	--	66.63
CEF-342-4D	85.0	71.77	75.0 to 85.0	4.18	--	67.59	5.12	--	66.65
CEF-342-5I	45.0	74.58	40.0 to 45.0	7.59	--	66.99	9.18	--	65.40
CEF-342-6S	15.0	70.89	5.0 to 15.0	6.65	--	64.24	6.99	--	63.90
CEF-342-7I	45.0	70.91	40.0 to 45.0	4.32	--	66.59	5.36	--	65.55
CEF-342-8D	84.0	70.83	74.0 to 84.0	4.30	--	66.53	5.35	--	65.48
CEF-342-9S	15.0	71.28	5.0 to 15.0	5.70	--	65.58	6.53	--	64.75
CEF-342-10I	45.0	71.21	40.0 to 45.0	5.20	--	66.01	6.27	--	64.94
CEF-342-11D	82.0	71.43	72.0 to 82.0	5.33	--	66.10	6.46	--	64.97
CEF-342-12S	15.0	71.28	5.0 to 15.0	6.99	--	64.29	7.60	--	63.68
CEF-342-13I	45.0	70.48	40.0 to 45.0	4.80	--	65.68	5.90	--	64.58
CEF-342-14D	88.0	70.46	78.0 to 88.0	4.75	--	65.71	5.93	--	64.53
CEF-342-15S	15.0	71.33	5.0 to 15.0	6.30	--	65.03	7.27	--	64.06
CEF-342-16I	45.0	71.34	40.0 to 45.0	5.10	--	66.24	6.31	--	65.03
CEF-342-17D	84.5	71.11	74.5 to 84.5	4.80	--	66.31	6.02	--	65.09
CEF-342-18S	15.0	68.53	5.0 to 15.0	1.30	--	67.23	3.86	--	64.67
CEF-342-19I	45.0	68.59	40.0 to 45.0	3.95	--	64.64	5.08	--	63.051
CEF-342-20D	86.5	68.57	76.5 to 86.5	3.80	--	64.77	5.04	--	63.53
CEF-043-13R	13.5	74.19	3.5 to 13.5	6.63	--	67.56	6.01	--	68.18
CEF-043-15	15.0	76.86	5.0 to 15.0	6.03	--	70.83	7.83	--	69.03
CEF-043-23	15.0	75.97	5.0 to 15.0	5.35	--	70.62	5.76	--	70.21
CEF-043-24	15.2	73.64	5.2 to 15.2	5.42	--	68.22	5.88	--	67.76
CEF-043-25	15.5	72.81	5.5 to 15.5	4.97	--	67.84	NA	--	NA
CEF-043-28D	57.0	73.72	52.0 to 57.0	3.86	--	69.86	4.63	--	69.09
CEF-043-40	15.0	75.65	5.0 to 15.0	5.55	5.09	² 70.47	6.50	6.16	² 69.15
CEF-043-41	14.5	74.98	4.5 to 14.5	6.62	5.51	² 69.25	9.03	5.88	² 65.95
CEF-043-43	14.5	73.16	4.5 to 14.5	5.99	--	67.17	6.38	--	66.78
CEF-043-44	13.5	74.66	3.5 to 13.5	5.35	--	69.31	5.75	--	68.91
CEF-043-45	13.5	74.66	3.5 to 13.5	5.08	--	69.58	5.45	--	69.21
CEF-043-47D	43	74.99	38 to 43	6.69	--	68.3	7.32	--	67.67
CEF-043-49D	35.0	NS	30 to 35	8.67	--	NA	9.43	--	NA

See notes on following page.

Table 3-1 (Continued)
Monitoring Well Construction and Water Table Elevation Data

Site Assessment Report
Day Tank 2, Facility 342
Naval Air Station Cecil Field
Jacksonville, Florida

¹ Benchmark reference elevation equals 72.564 feet.

² Free product was detected in monitoring wells CEF-342-40 and CEF-342-41 during each sampling event. Groundwater elevations were corrected to account for density differentials by the following relation:

Notes: Actual elevation = Measured elevation + (0.8 * [Depth to product - Depth to water])

Monitoring wells designated CEF-043 were installed during the South Fuel Farm contamination assessment.

bls = below land surface.

BTOC = below top of casing.

-- = free product not detected.

NA = access to well was not available at the time of survey.

NS = not surveyed.

Figure 3-2 Monitoring Well and Piezometer Locations

C-size

To evaluate the biological degradation of contaminants, natural attenuation parameters were collected in May 1998 from 17 monitoring wells located along the center axis of the contaminant plume. Table 3-2 summarizes the analyses performed. Table 3-3 presents monitoring wells used for natural attenuation monitoring.

3.7 STORM DRAIN SAMPLING. The depth of the storm drain invert to the south of the Day Tank 2 site is below the groundwater table. Flow has been detected in the drain during dry weather, and a petroleum odor can be detected near the drain grate. For these reasons, it is suspected that groundwater infiltrates into the drain.

To evaluate the presence of site contaminants within the drain, one surface water sample, CEF-342-SW1, was collected from the storm drain junction (which connects to the drainage lines from the east-west runway) southeast of the Day Tank 2 site. This sample was analyzed for the Kerosene Analytical Group parameters by Quanterra Environmental Laboratories. The data quality level for the storm drain sample collected was NEESA Level C.

3.8 MONITORING WELL ELEVATION SURVEY. A monitoring well elevation survey was conducted at the Day Tank 2 site by a Florida-registered land surveyor. The horizontal and vertical control was referenced to a benchmark located on a one-half-inch iron pipe approximately 500 feet southwest of Building 341 (Figure 3-2). The horizontal datum is referenced to the North American Datum 1983-1990, Florida State Plane Coordinate System Zone East. The vertical datum is based on the National Geodetic Vertical Datum of 1929. Elevation and water-level data for all monitoring wells were measured on the north side of the well casing.

**Table 3-2
Groundwater Natural Attenuation Data Collection**

Site Assessment Report
Day Tank 2, Facility 342
Naval Air Station Cecil Field
Jacksonville, Florida

Analysis	Method/Reference	Comments	Field or Fixed Base Laboratory
Temperature	Orion 250A Meter	Analyzed immediately after sampling	Field
pH	Orion 250A Meter	The optimum pH for most biological activity is 7.0	Field
Redox	Orion 250A Meter	Analyzed immediately after sampling	Field
Dissolved oxygen	HACH Method 8215	Analyzed immediately after sampling; azide modification of Winkler Method Buret Titration	Field
Carbon dioxide	HACH Kit Analysis		Field
Nitrate	HACH Method 8192 using the DR-850 Colorimeter	Low Range: 0 to 0.40 mg/ℓ; filtered if turbidity was greater than 5 NTUs	Field
Nitrite	HACH Method 8507 using the DR-850 Colorimeter	Low Range: 0 to 0.300 mg/ℓ; filtered if turbidity was greater than 5 NTUs	Field
Sulfate	HACH Method 8051 using the DR-850 Colorimeter	Detection Range: 0 to 70 mg/ℓ; filtered if turbidity was greater than 5 NTUs	Field
Sulfide	USEPA Method 353.2	Filtered if turbidity was greater than 5 NTUs	Fixed
Ferrous	HACH Method 8146 using the DR-850 Colorimeter	Analyzed immediately after sampling; filtered if turbidity was greater than 5 NTUs	Field
Alkalinity	HACH Kit Analysis		Field
Chloride	HACH Kit Analysis	Chloride ions are released in the dechlorination process; filtered if turbidity was greater than 5 NTUs	Field
Methane	USEPA Method 8015	Collected with no headspace and refrigerated to 4° Centigrade for shipment to laboratory	Fixed
Volatile organic compounds	USEPA Method 8010/8020	Collected with no headspace and refrigerated to 4° Centigrade for shipment to laboratory	Fixed

Notes: HACH refers to the HACH Water Analysis Handbook, 3rd Edition, 1997.

mg/ℓ = milligrams per liter.

NTU = nephelometry turbidity unit.

USEPA = U.S. Environmental Protection Agency.

**Table 3-3
Natural Attenuation Monitoring Wells**

Site Assessment Report
Day Tank 2, Facility 342
Naval Air Station Cecil Field
Jacksonville, Florida

Zone	Monitoring Wells Included in the Network	
Shallow (0 to 15 ft bls)	CEF-043-2N (Source) CEF-043-6N (Source) CEF-043-18 (Fringe) CEF-043-24 (Fringe)	CEF-342-33 (Upgradient) CEF-342-6S (Characterization) CEF-342-12S (Downgradient)
Intermediate (15 to 45 ft bls)	CEF-342-1I (Upgradient) CEF-043-47D (Source) CEF-342-3I (Source)	CEF-342-7I (Characterization) CEF-342-13I (Characterization) CEF-342-19I (Downgradient)
Deep (45 to 85 ft bls)	CEF-043-50D (Upgradient) CEF-342-20D (Downgradient)	CEF-342-14D (Characterization) CEF-342-8D (Characterization)
<p>Notes: Wells designated CEF-043 were part of the South Fuel Farm contamination assessment. Wells designated CEF-342 were part of the Day Tank 2 site assessment.</p> <p>ft bls = feet below land surface.</p>		

4.0 SITE-SPECIFIC GEOLOGY AND HYDROGEOLOGY

This section presents the site-specific geology and hydrogeology of the Day Tank 2 area. General information about the physical characteristics, geology, and hydrogeology of NAS Cecil Field and the surrounding area are presented in the General Information Report (ABB-ES, 1996c).

Contaminants at the Day Tank 2 site are confined to the surficial aquifer; therefore, subsurface investigations were limited to 88 feet bls (top of the dolomite or Hawthorn formation). Shallow monitoring wells were screened from the water table to 15 feet bls, intermediate wells from 40 to 45 feet bls, and deep wells from approximately 75 to 85 feet bls.

4.1 SITE-SPECIFIC AQUIFER CHARACTERIZATION. The surficial deposits at the site are composed primarily of silty fine-grained sand, fine-grained sand, and clayey sand to depths of 88 feet bls. A hardpan layer consisting of dense fine-grained sand is discontinuous throughout the site at depths ranging from 2 to 15 feet bls. Borings logs for each monitoring well are presented in Appendix C.

Depth to groundwater across the site varied between 4 and 9 feet bls (Table 3-1). Groundwater elevations from monitoring wells indicate that the general groundwater flow direction is to the southeast. Figures 4-1 and 4-2 present groundwater potentiometric surfaces for the shallow, intermediate, and deep parts of the surficial aquifer.

4.2 HYDROGEOLOGIC PARAMETERS. Rising-head aquifer slug tests were performed during the 1996 SFF CA in shallow and intermediate monitoring wells CEF-043-21, CEF-043-2N, CEF-043-41, and CEF-043-46D. Slug test results as presented in the 1996 CAR for the shallow and intermediate monitoring wells showed hydraulic conductivity values that ranged from 3.3×10^{-4} to 3.5×10^{-3} centimeters per second (cm/sec) with an arithmetic mean value of 1.4×10^{-3} cm/sec (ABB-ES, 1996a).

By evaluating the hydraulic conductivity, hydraulic gradient, and effective porosity of an aquifer, the average pore water velocity (ν) can be estimated from the following relationship:

$$\nu = K \times i / n_e \quad (1)$$

where

- ν = average linear pore water velocity in feet per day (ft/day),
- K = hydraulic conductivity in ft/day,
- i = hydraulic gradient in feet per foot (ft/ft), and
- n_e = effective porosity in percent.

Because the predominant lithology underlying the site is fine-grained silty sand, an effective porosity of 25 percent or 0.25 is estimated for the shallow aquifer (Driscoll, 1986).

Figure 4-1 Shallow Water Table Contour Map, May 18, 1998

C-Size

Figure 4-2 Intermediate and Deep Water Table Contour Map, May 18, 1998

C-Size

Therefore, for the surficial aquifer

$$\begin{aligned}K &= 3.97 \text{ ft/day,} \\i &= 0.003 \text{ ft/ft, and} \\n_e &= 0.25.\end{aligned}$$

By substituting these parameters into Equation (1), an average linear velocity of 0.05 ft/day is calculated for the surficial aquifer.

5.0 SITE ASSESSMENT RESULTS

This chapter presents the results of the soil, free product, and groundwater investigations conducted at the Day Tank 2 site. The results are summarized in tables and on figures. A complete soil and groundwater analytical data set is presented in Appendix D.

5.1 SOIL ASSESSMENT RESULTS. Soil screening samples were collected from each soil boring location for OVA analysis as outlined in Chapter 62-770, FAC. Per Chapter 62-770, soil at the site is considered excessively contaminated when the OVA detects organic vapor concentrations in excess of 50 ppm.

The results of the OVA soil screening indicate that the lateral extent of excessively contaminated soil is significantly larger than the area delineated during the 1995 CA. Figure 5-1 presents the soil OVA concentrations from the 1997-98 SA and shows the extent of excessively contaminated soil in the Day Tank 2 area in 1995 and 1998. The results of the OVA headspace survey are presented in Table E-1 of Appendix E. The soil contamination in this area appears to originate near the former Day Tank 2 location and extends south to the storm water drainage line that runs northwest to southeast across the southern area of the site. The highest OVA readings (greater than 5,000 ppm) were associated with soil located in the free-product saturated zone. Excessively contaminated soil was also detected beneath the Day Tank 2 during the tank removal. OVA readings from this area are presented in the Day Tank 2 closure assessment in Appendix B. With the exception of soil borings SB-2 and SB-28, excessively contaminated soil was not detected in surface soil (between 0 to 2 feet bls) during the Day Tank 2 SA. The approximate extent of excessively contaminated soil is 75,000 square feet, or 1.7 acres. The average depth to groundwater (May 1998) in the area of contaminated soil is approximately 5 feet. Therefore, the volume of excessively contaminated soil (excluding the 0- to 2-foot bls interval) is approximately 11,000 cubic yards.

Six subsurface soil samples were collected for Kerosene Analytical Group laboratory analysis from OVA soil screening locations with high (greater than 5,000 ppm), medium (1,000 to 5000 ppm), and low (less than 1,000 ppm) levels of contamination. Soil boring locations, sample depth intervals and the results of the Kerosene Analytical Group analyses are presented on Figure 5-1. Detections of ethylbenzene, toluene, xylene, naphthalene, and TRPH exceeded FDEP cleanup target levels for leachability based on groundwater cleanup target levels. The only soil sample collected between 0 and 2 feet bls that exceeded the residential or industrial direct exposure cleanup target level was soil sample CEF-342-SB28(1-3) which had a TRPH concentration of 470 milligrams per kilogram (mg/kg) (exceeding the residential direct exposure cleanup target level of 350 mg/kg).

Based on an average TRPH concentration of 3,980 mg/kg in the contaminated zone, the mass of petroleum in soil is approximately 90,000 kilograms (kg). Contaminant mass calculations are presented in Appendix F.

5.2 EXTENT OF FREE PRODUCT. Free-product recovery in the form of manual bailing has been conducted once per month following the BEI ERA. On May 29, 1998, apparent thicknesses of free product ranged from 0.58 feet in monitoring well CEF-

Figure 5-1 Soil Contamination Distribution Map, 1995 and 1998

C-size

Figure 5-2 Extent of Free Product, May 29, 1998

C-size

043-25 to 3.85 feet in monitoring well CEF-043-41. Monthly thickness measurements for monitoring wells CEF-043-25 and CEF-043-41 and an estimation of the free-product smear zone are provided in Appendix F. Figure 5-2 illustrates the extent and apparent free-product thicknesses observed during the May product collection event. The approximate extent of free product is 62,000 ft² or 1.4 acres. Based on the free-product elevations recorded, the free-product smear zone at the Day Tank 2 site ranges from 65.35 to 72.43 feet mean sea level (msl). Assuming a conservative JP-5 saturation of 0.5 over this 7-foot-zone with a porosity of 0.25, the total volume of free product at the Day Tank 2 site is approximately 204,638 gallons. This constitutes a petroleum mass associated with the smear zone of approximately 0.6 million kg.

5.3 STORM SEWER WATER SAMPLING RESULTS. One water sample, CEF-342-SW1, was collected for Kerosene Analytical Group analysis on May 26, 1998, from the storm sewer junction box located south of the former Day Tank 2 (Figure 5-3). Analytical results indicate that concentrations of benzene (5.6 µg/l), TRPH (14 µg/l), and tetrachloroethene (PCE) (6.7 µg/l) in the storm sewer exceed their respective FDEP groundwater cleanup target levels and groundwater guidance concentrations.

The presence of petroleum contaminants in the storm sewer water indicates that the shallow groundwater and petroleum contaminants from the Day Tank 2 are discharging into the storm sewer. The storm sewer carries the water under the runways and ultimately to Sal Taylor Creek, approximately 1 mile south of the site.

5.4 GROUNDWATER ASSESSMENT. Groundwater quality parameters were collected from the 20 newly installed monitoring wells at the Day Tank 2 site. In general, groundwater contamination is present from north of the Day Tank 2 source area to approximately 1,680 feet downgradient to the southeast. It appears that petroleum contamination from the former SFF (located north of the Day Tank 2 site) and the Day Tank 2 site has commingled to form one large groundwater plume that is approximately 2,000 feet long. Groundwater remediation at the SFF site is currently underway. A biosparge system has been installed and has been in operation since early 1998. The system was designed to treat groundwater contamination to a depth of 30 feet bls. Although the upgradient SFF source area is being remediated, a large pool of free product at the Day Tank 2 site (see Figure 5-2) continues to act as a source of groundwater contamination.

Petroleum contamination is present from the water table to the top of the dolomite (Hawthorn group) approximately 88 feet bls. The horizontal extent of petroleum contamination is depicted on Figure 5-3. The vertical extent of petroleum contamination along the plume centerline (cross section A-A' on Figure 5-3) is shown on Figure 5-4. As shown on Figure 5-4, groundwater contamination in the source area extends from the water table to the top of the dolomite (approximately 88 feet bls), but as you move downgradient, the plume appears to be diving deeper into the surficial aquifer as evidenced by the absence of contamination in the shallow groundwater.

Groundwater data collected from the DPT groundwater screening program was used when necessary to present a clearer picture of the contaminant distribution. A comparison of DPT screening data to monitoring well data at the same location

Figure 5-3 Petroleum Contaminants Exceeding Cleanup Target Levels in the Surficial Aquifer

C-Size

Figure 5-4 Vertical Distribution of Petroleum Contaminants Along Flowpath

11 x 17

showed good correlation in both detected contaminants and concentrations. A comparison between DPT and monitoring well data is presented in Appendix G.

Chlorinated solvent contamination was also detected at the Day Tank 2 site. Trichloroethene (TCE) and PCE were detected approximately 660 feet downgradient of the Day Tank 2 source area at concentrations exceeding FDEP groundwater guidance concentrations. The chlorinated solvent detections will be discussed in this report but a separate investigation will be conducted to assess the source and extent of solvent contamination in groundwater.

Table 5-1 summarizes the groundwater analytical results and Figure 5-3 shows the lateral extent of all contaminants detected. The following sections discuss the distribution of groundwater contamination in the shallow (5 to 15 feet bls), intermediate (40 to 45 feet bls), and deep (approximately 75 to 85 feet bls) zones of the surficial aquifer.

5.4.1 Shallow Surficial Aquifer VOCs, polynuclear aromatic hydrocarbons, TRPH, and lead were detected in groundwater samples collected from shallow monitoring wells. However, the VOCs benzene, ethylbenzene, toluene, and total xylenes (Figure 5-5) were the only compounds detected that exceeded FDEP cleanup target levels. Detections of these VOCs were generally at low concentrations ranging from 1 to 850 micrograms per liter ($\mu\text{g}/\ell$) with the majority of the detections below 200 $\mu\text{g}/\ell$.

The shallow groundwater plume originates north of the former Day Tank 2 location (at the SFF site) and extends approximately 1,300 feet to the southeast. The lateral extent of shallow groundwater contaminants extends a maximum of 260 feet from the plume centerline near the source area, and narrows to a distance of 85 feet downgradient of the source area. It appears that shallow groundwater flow and contaminant migration is heavily influenced by the storm sewers, which traverse the area south of the former Day Tank 2 location. Storm sewer invert elevations in the Day Tank 2 site area range from 60 to 62 feet msl compared to groundwater elevations of 63 to 64 feet msl. The lateral extent of petroleum contamination in shallow groundwater is nearly truncated by the storm sewer, which runs parallel to the groundwater plume just south of the former Day Tank 2.

The volume of contaminated groundwater contained in the shallow surficial aquifer is approximately 7 million gallons, which contain a petroleum mass of approximately 50.9 kg. Volume calculations are presented in Appendix F.

5.4.2 Intermediate Surficial Aquifer Compounds of the Kerosene Analytical Group that exceeded FDEP cleanup target levels in the intermediate groundwater include benzene, xylenes, naphthalene, and TRPH. The highest levels of benzene (2,600 $\mu\text{g}/\ell$), xylene (1,900 $\mu\text{g}/\ell$), naphthalene (79 $\mu\text{g}/\ell$), and TRPH (7.5 mg/ℓ) concentrations at the Day Tank 2 site were observed in groundwater samples collected from the intermediate part of the surficial aquifer. Nonpetroleum VOCs were also detected. Both PCE and TCE were detected in one groundwater sample at a concentration of 17 $\mu\text{g}/\ell$, which exceeds the Florida groundwater guidance concentration of 3 $\mu\text{g}/\ell$ for each compound. The lateral distribution of contaminants in the intermediate surficial aquifer is presented on Figure 5-6.

The plume originates southeast of the SFF area beneath the Day Tank 2 site. The maximum horizontal extent is 1,700 feet in the direction of groundwater flow

**Table 5-1
Summary of Groundwater Analytical Results,
January 1998**

Site Assessment Report
Day Tank 2, Facility 342
Naval Air Station Cecil Field
Jacksonville, Florida

Parameter	Monitoring well number, CEF-342-										Groundwater Cleanup Target Levels ¹
	1I	2D	3I	4D	5I	6S	7I	8D	9S	10I	
<u>Volatile Organic Compounds (µg/l)</u>											
Benzene	3.1	4	2,600	3.2	110	96	7.2	1.9	ND	ND	1
Ethylbenzene	17	ND	ND	ND	22	ND	ND	ND	ND	ND	30
Xylenes	19	ND	1,900	ND	470	12	ND	ND	ND	ND	20
Trichloroethene	ND	ND	ND	ND	ND	ND	17	ND	ND	ND	3
Tetrachloroethene	ND	ND	ND	ND	ND	ND	17	ND	ND	ND	3
<u>Polynuclear Aromatic Hydrocarbons (µg/l)</u>											
1-Methylnaphthalene	12	ND	29	ND	6.7	ND	ND	ND	ND	ND	NA
2-Methylnaphthalene	15	ND	14	ND	3.1	ND	ND	ND	ND	ND	NA
Naphthalene	9.4	ND	74	ND	17	ND	ND	ND	ND	ND	20
<u>Lead (µg/l)</u>											
Lead	3.5	ND	ND	ND	ND	4.5	ND	ND	ND	ND	15
<u>Total Recoverable Petroleum Hydrocarbons (TRPH) mg/l</u>											
TRPH	4.8	ND	7.5	ND	7.5	ND	ND	ND	ND	ND	5
See notes at end of table..											

Table 5-1 (Continued)
Summary of Groundwater Analytical Results,
January 1998

Site Assessment Report
Day Tank 2, Facility 342
Naval Air Station Cecil Field
Jacksonville, Florida

Parameter	Monitoring Well Number, CEF-342-										Groundwater Cleanup Target Levels ¹
	11D	12S	13I	14D	15S	16I	17D	18S	19I	20D	
<u>Volatile Organic Compounds (µg/l)</u>											
Benzene	2.4	ND	71	16	ND	ND	ND	ND	ND	13	1
Ethylbenzene	ND	ND	17	ND	ND	ND	ND	ND	ND	ND	30
Xylenes	ND	ND	100	ND	ND	ND	ND	ND	ND	ND	20
Trichloroethene	6.7	ND	ND	130	ND	ND	170	ND	ND	ND	3
Tetrachlorethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
<u>Polynuclear Aromatic Hydrocarbons (µg/l)</u>											
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20
<u>Lead (µg/l)</u>											
Lead	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15
<u>TRPH (mg/l)</u>											
TRPH	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5

¹ Based on Chapter 62-770, Florida Administrative Code, except trichloroethene and tetrachlorethene, which are based on the Florida Department of Environmental Protection groundwater guidance concentrations.

Notes: Bold-faced values exceed applicable regulatory criteria.

µg/l = micrograms per liter.

ND = not detected.

NA = not applicable.

mg/l = milligrams per liter.

S = monitoring well screened in the shallow surficial aquifer (5 to 15 feet below land surface [bls]).

I = monitoring well screened in the intermediate surficial aquifer (40 to 45 feet bls).

D = monitoring well screened in the deep surficial aquifer (80 to 85 feet bls).

Figure 5-5 Petroleum Contaminants Exceeding FDEP Cleanup Target Levels in Shallow Groundwater (5 to 15 Feet Below Land Surface)

C-size

Figure 5-6 Petroleum Contaminants Exceeding FDEP Cleanup Target Levels in Intermediate Groundwater (40 to 45 Feet Below Land Surface)

C-size

(southeast). The lateral extent of the plume, which is generally uniform throughout, is a maximum of 200 feet from the plume centerline. The volume of contaminated groundwater in the intermediate zone is approximately 30.4 million gallons, which includes 89.8 kg of VOCs. Volume calculations are presented in Appendix F.

5.4.3 Deep Surficial Aquifer Benzene was the only compound (detected in monitoring wells) of the Kerosene Analytical Group that exceeded FDEP cleanup target levels in the deep part of the surficial aquifer. Concentrations of benzene ranged from 1 to 280 $\mu\text{g}/\ell$. TCE was detected in groundwater samples collected from three monitoring wells at concentrations ranging between 6.7 and 170 $\mu\text{g}/\text{kg}$, which exceed the FDEP groundwater guidance concentration of 3 $\mu\text{g}/\ell$. The lateral distribution of contaminants in the deep surficial aquifer is shown on Figure 5-7.

As with the shallow and intermediate zones, the deep surficial contamination originates beneath the SFF and Day Tank 2 areas. The horizontal extent of contamination is approximately 2,000 feet. The lateral extent of petroleum in groundwater, measured from the plume centerline ranges from 260 feet in the source area to about 200 feet downgradient of the source area. The volume of contaminated groundwater in the deep zone is approximately 60.8 million gallons. The mass of VOCs dissolved in the deep zone is approximately 21.0 kg. Volume calculations are presented in Appendix F.

5.5 NATURAL ATTENUATION SAMPLING. Selected monitoring wells were sampled from May 13 through May 15, 1998, for natural attenuation parameters to evaluate if the physical and chemical conditions of the aquifer are conducive for natural attenuation to occur. If the conditions are favorable, natural attenuation could potentially be used as part of a remedial alternative for dissolved-phase groundwater contamination. Natural attenuation data are summarized in Appendix H. Further information on the natural attenuation sampling can be obtained from the Natural Attenuation Sampling Report (HLA, 1998).

Seventeen shallow, intermediate, and deep monitoring wells were selected to monitor the site for natural attenuation. Upgradient, perimeter, source area, and downgradient locations were chosen to establish background and plume conditions. The natural attenuation monitoring wells are listed in Table 3-3.

Based on the sampling results, the electron acceptor data and other natural attenuation parameters support the conclusion that natural attenuation is occurring within the contaminant plume in all zones. The predominant microbial process at the site is anaerobic due to an overabundance of substrate (the source area). Methanogenesis and sulfate reduction appear to be the predominant degradation mechanisms (HLA, 1998).

Figure 5-7 Petroleum Contaminants Exceeding FDEP Cleanup Target Levels in Deep Groundwater (75 to 85 Feet Below Land Surface)

C-size

6.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on the results of this SA.

6.1 CONCLUSIONS. Based on the field investigation and laboratory analysis of soil and groundwater, the following conclusions can be made:

- The geologic materials at the site are composed of silty fine-grained sand, fine-grained sands, and clayey sands to a depth of approximately 88 feet bls where the top of the Hawthorn group is encountered in the form of dolomite.
- Excessively contaminated soil (greater than 50 ppm as measured by an OVA) was detected (primarily between 2 and 6 feet bls) and estimated to cover approximately 75,000 square feet (ft²) or 1.7 acres. Excessively contaminated soil between 0 and 2 feet bls was only identified in two soil borings (SB-2 and SB-28) at the site. Assuming a 6-foot-depth to the water table, 11,000 cubic yards of soil is estimated to be present between 2 and 6 feet bls.
- Ethylbenzene, toluene, xylene, acenaphthene, fluoranthene, naphthalene, and TRPH were detected at concentrations above FDEP cleanup target levels in the six confirmatory Kerosene Analytical Group soil samples collected at the site.
- Free product was detected in five piezometers and three monitoring wells in June 1998. The apparent extent of free product is approximately 62,000 ft² or 1.4 acres. The maximum apparent free-product thickness measured during a 7-month-period of free-product monitoring and manual recovery was 3.15 feet measured in monitoring well CEF-043-41.
- Benzene, TRPH, and PCE were detected above FDEP groundwater cleanup target levels and guidance concentrations in the storm sewer water south of the former Day Tank 2 location. The presence of these contaminants in the storm sewer indicates contaminated groundwater from the Day Tank 2 site is discharging to the storm sewer.
- The average depth to groundwater throughout the site was 5.44 feet in April 1998 and 6.14 in May 1998. The groundwater flow direction is to the south-southeast.
- The average hydraulic conductivity in the saturated zone is 3.97 ft/day. Using an estimated porosity of 25 percent and a hydraulic gradient of 0.003 ft/ft, the calculated pore water velocity is 0.05 ft/day.
- The vertical and horizontal extent of petroleum contamination in groundwater is approximately 88 feet bls and 2,000 feet, respectively.
- Benzene, xylenes (total), naphthalene, and TRPH were detected in groundwater collected from monitoring wells at concentrations exceeding Chapter 62-770, FAC, cleanup target levels.

- The total mass of petroleum contamination in the subsurface at the Day Tank 2 is estimated to be over 1.8 million kilograms. The total mass and mass percentage of petroleum contamination in the subsurface by media is shown in Table 6-1.

Table 6-1
Summary of Mass of Petroleum Contamination in the Subsurface

Site Assessment Report
Day Tank 2, Facility 342
Naval Air Station Cecil Field
Jacksonville, Florida

Media	Petroleum Contaminant Mass (kilograms) ¹	Mass Percentage
Soil (sorbed)	90,000	12.7
Free and Residual Product	621,000	87.3
Groundwater (dissolved)	162	<1

¹ Based on calculations and surface areas shown in Appendix E and Figures 5-1, 5-2, 5-5, 5-6, and 5-7.

Note: < = less than.

- PCE and TCE were detected in groundwater samples collected from downgradient monitoring wells at concentrations exceeding FDEP groundwater guidance concentrations.
- Natural attenuation sampling conducted at the site provides preliminary evidence that intrinsic degradation of contaminants at the site is occurring (HLA, 1998).

6.2 RECOMMENDATIONS.

- Free-product removal as outlined in Chapter 62-770.300, FAC, should continue in the area south of the Day Tank 2 site.
- A separate investigation should be conducted to assess chlorinated solvent groundwater contamination, which was found to be commingled with the Day Tank 2 petroleum-contaminated groundwater plume.
- Free-product, excessively contaminated soil, and soil and groundwater contamination (in excess of Chapter 62-770, FAC, cleanup target levels for soil and Class G-II groundwater) are present at the Day Tank 2 site; therefore, it is recommended that an RAP be prepared for the Day Tank 2 site.

7.0 PROFESSIONAL REVIEW CERTIFICATION

The SA contained in this report was prepared using sound hydrogeologic principles and judgment. 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 geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This SAR was developed for the Day Tank 2, Facility 342, site at Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.

Eric A. Blomberg
Professional Geologist
P.G. No. 0001695

Date

REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1992a. *Contamination Assessment Report, South Fuel Farm, Facility 43*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOC), Charleston, South Carolina (July).
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- Driscoll, F.G. 1986. *Groundwater and Wells*, Johnson Filtration Systems, Inc., St. Paul, Minnesota, 2nd Edition.
- HACH. 1997. *Products for Analysis, Catalog*, Loveland, Colorado.
- Harding Lawson Associates. 1998. *Natural Attenuation Monitoring Report, Naval Air Station, Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOC, Charleston, South Carolina (July).
- Naval Energy and Environmental Support Activity. 1988. *Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation and Restoration Program: NEESA 20.2-047b*, Port Hueneme, California.
- Supship Portsmouth Environmental Detachment Charleston (SPORTENVDETCHASN). 1997. *Completion Report for the Day Tank 2 Removal at NAS Cecil Field, Jacksonville, Florida* (October).

APPENDIX A

BECHTEL ENVIRONMENTAL, INC., EMERGENCY RESPONSE INFORMATION

Bechtel

Quarters E, G Avenue
P. O. Box 171
Jacksonville, Florida 32215
Telephone: (904) 779-8900
Facsimile: (904) 779-8999

August 8, 1997

ABB-ES
2590 Executive Center Circle, East
Berkeley Building
Tallahassee, FL 32301
Attn: Eric Blomberg

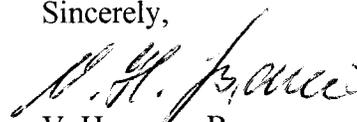
SUBJECT: Bechtel Job No. 22567
Department of the Navy Contract No. N62467-93-D-0936
DO #62: FREE PRODUCT RECOVERY DATA ON STFF
NAS CECIL FIELD, FLORIDA
Subject Code: 5320

Dear Mr. Blomberg:

On behalf of Southern Division, Naval Facilities Engineering Command, and at your request, we are transmitting information relative to our free product recovery operations at the South Tank Fuel Farm, NAS Cecil Field, Florida.

If you have any comments, please feel free to contact Dale Obenauer at (904) 779-8900.

Sincerely,



V. Hermann Bauer
Project Manager

VHB/tdfj
Encl.: As Stated.
cc: B. Kizer w/o



Bechtel Environmental, Inc.

**SUMMARY OF INFORMATION
SOUTH FUEL FARM
NAS CECIL FIELD, FL**

1. Free product discovered on ground surface in October, 1996.
2. Bechtel conducted soil borings for headspace analyses on October 14, 1996.
3. Free product recovery conducted by Bechtel from October 1996 to April 1997.
4. Approximately 34,000 gallons of free product recovered at site.
5. Attached information includes:
 - Headspace sampling at E/W Flightline (and associated maps)
 - Navy Situation Report #2
 - Well and piezometer gauging data
 - Topographic survey map

Bechtel

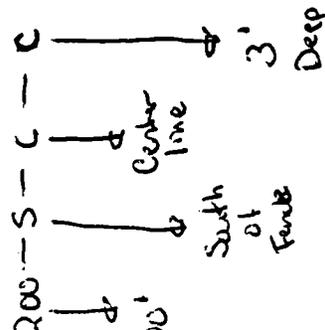
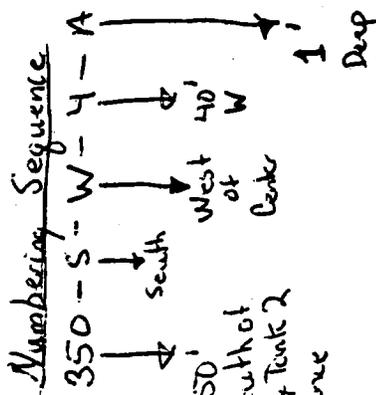
Interoffice Memorandum

To Bill Poppell *File No.* 5230
Subject Headspace Sampling @ E/W Flightline *Date* 15Oct96
From Trent Rogers *TR*
Of Cecil Field SSHR
Copies To Hermann Bauer *At* 779-8900 *Ext*
Eddie Najmola
File

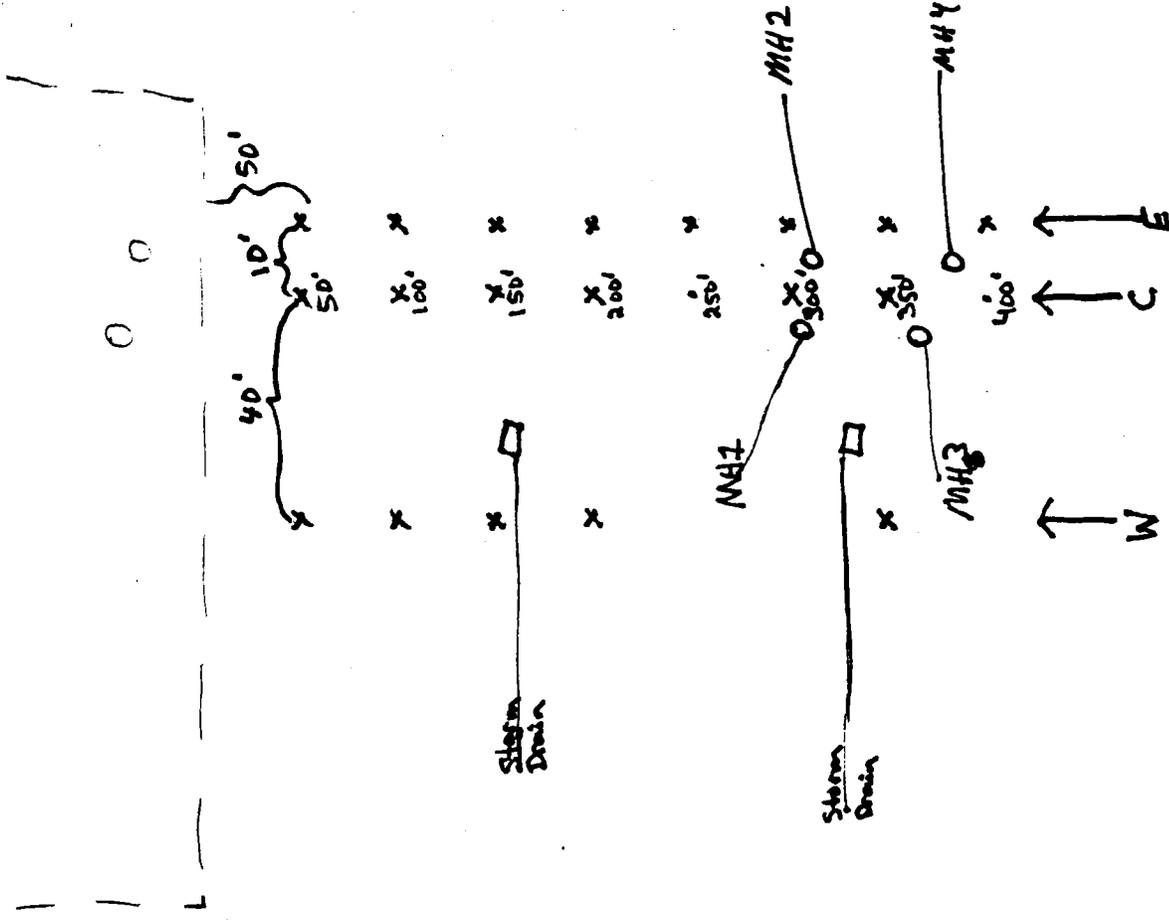
Attached are the records for headspace sampling along the East - West taxiway, NAS Cecil Field. Sampling was completed on 10-14-96.



Day Tank 2



* Basic Grade is NW to SE



X = Headspace Smp. Locs

Site ID NAJ - Cecil Field
 Facility Flight Line E/W between Tarmac & Fire Dept
 SEIR ID _____
 Date 14 Oct 96
 Analyst Trent J Rogner

Analysis Head Space
 Manufacturer Health Tech DP-0VD
 Instrument ID (#1) 1129-3
 Date of Calibration (#1) 14 Oct 96
 Instrument ID (#2) _____
 Date of Calibration (#2) _____

Sample ID	Sample type	Location	Matrix	Temp (°F)	Instr. ID Reference	Time Military	ppm			Units	Carbon filtered (y/n)
							%	Result	NET		
SOS - E1A	ENV/PTS	Flight Line E/W (Tarmac / Fire Dept)	SBS	70°	1129-3 DP-0VD	1358	0	0	0	PPM	Y
E1B						1400	0	0	0		
E1C						1401	0	0	0		
E1D						1401	0	0	0		
100S - E1A						1359	0	0	0		
E1B						1402	0	0	0		
150S - E1A						1404	0	0	0		
E1B						1405	0	0	0		
200S - E1A						1406	0	0	0		0
E1B						1408	0	0	0		N
E1C						1411	0	0	0		
E1D						1413	0	0	0		
250S - E1A						1407	0	0	0		
E1B						1409	0	0	0		
300S - E1A						1415	0	0	0		0
E1B						1416	3	1	2		Y
E1C						1417	150	8	150		Y

Matrix Codes: GWT - Groundwater SED - Sediment SOL - Solid SLW - Solid Waste
 PTW - Potable water SFS - Surface Soil SLG - Sludge WTR - Water
 SBS - Subsurface Soil SFW - Surface Water WWT - Wastewater

Sample types: ENV - Environmental
 PTS - Point source
 FDP - Field duplicate

112288

NAVI HAZFIELD SCREENING FORM

Site ID NAS Cecil Field
 Facility Flight Line Elw Between Terminal & Fire Dept
 SEIR ID _____
 Date 14 Oct 96
 Analyst TREW J ROGERS

Analysis Lead Spore
 Manufacturer Health Tech DP-00D
 Instrument ID (#1) 1129-3
 Date of Calibration (#1) 14 Oct 96
 Instrument ID (#2) _____
 Date of Calibration (#2) _____

Sample ID	Sample type	Location	Matrix	Temp (°F)	Instr. ID Reference	Time Military	W/O	W/ Result	Nd	Units	Carbon filtered (y/n)
3005-E2D	ENV/PTS	Flight Line Elw (Terminal / Fire Dept)	SBS	70'	1129-3 DP-00D	1419	800	0	AP 800	PPM	Y
3005-E2A						1418	0	0	0		Y
-E2B						1420	0	0	0		N
E2C						1422	0	0	0		N
E2D						1425	650	0	650		Y
4005-E2A						1423	0	0	0		N
E2B						1424	0	0	0		N
E2C						1426	0	0	0		N
E2D						1428	0	0	0		N
5005-CA						1451	3	0	3		Y
-CB						1453	7	0	7		Y
-CC						1454	6	0	6		Y
-CD						1456	0	0	0		N
1005-CA						1452	0	0	0		N
-CB						1454	0	0	0		N
CC						1455	2	0	2		Y
CD						1457	425	0	425		Y

Matrix Codes: GWT - Groundwater SED - Sediment SOL - Solid SLW - Solid Waste
 PTW - Potable water SFS - Surface Soil SLG - Sludge WTR - Water
 SBS - Subsurface Soil SFW - Surface Water WWT - Wastewater

Sample types: ENV - Environmental
 PTS - Point source
 FDP - Field duplicate

Site ID NAS Cecil Field
 Facility Flight Line E/W between Terminal & Fire Dept
 SEIR ID _____
 Date 14 Oct 96
 Analyst TRENT J ROGERS

Analysis Head Space
 Manufacturer Health Tech DP-DVD
 Instrument ID (#1) 1129-3
 Date of Calibration (#1) 14 Oct 96
 Instrument ID (#2) _____
 Date of Calibration (#2) _____

Sample ID	Sample type	Location	Matrix	Temp (°F)	Instr. ID Reference	Time Military	u/o	w/o Result	u/t	Units	Carbon filtered (y/n)
152S-CA	ENV/PTS	Flight Line E/W (Terminal/Fire Dept)	SBS	70°	1129-3 DP-DVD	1458	25	0	25	PPM	Y
CB						1500	1800	0	1800		
CC						1502	10000 ^{1st} 10000	0	10000 ^{1st} 10000		
CD						1504	9000 ^{1st} 9000	0	9000 ^{1st} 9000		
200S-CA						1459	2	0	2		
CB						1501	0	0	0		N
CC						1503	0	0	0		
CD						1505	0	0	0		
300S-CA						1529	5000	0	5000		Y
CB						1530	3100	0	3100		
CC						1531	175	0	175		
CD						1532	2000	0	2000		
350S-CA						1533	3	0	3		
CB						1534	4	0	4		
CC						1535	600	0	600		
CD						1538	900	0	900		
350S-W4A						1540	4	0	4		

Matrix Codes: GWT - Groundwater SED - Sediment SOL - Solid SLW - Solid Waste
 PTW - Potable water SFS - Surface Soil SLG - Sludge WTR - Water
 SBS - Subsurface Soil SFW - Surface Water WWT - Wastewater

Sample types: ENV - Environmental
 PTS - Point source
 FDP - Field duplicate

NAVY PAC FIELD SCREENING FORM

Site ID NAS Cecil Field
 Facility Flight Line E/W between Terrace & Fire Dept
 SEIR ID _____
 Date 14 Oct 96
 Analyst TRIST J ROGERS

Analysis Heard Spore
 Manufacturer Health Tech - DP-0VD
 Instrument ID (#1) 1129.3
 Date of Calibration (#1) 14 Oct 96
 Instrument ID (#2) _____
 Date of Calibration (#2) _____

Sample ID	Sample type	Location	Matrix	Temp (°F)	Instr. ID Reference	Time Military	u/o	✓ Result	u/l	Units	Carbon filtered (y/n)
3SDS-W4B	ENV/PST	Flight Line E/W (Terrace / Fire Dept)	SBS	70°	1129-3 DP-0VD	1543	⊖	⊖	⊖	PPM	N
W4C						1547	⊖		⊖		
W4D						1552	⊖		⊖		
1SDS-W4A						1545	⊖		⊖		
W4B						1546	⊖		⊖		
W4C						1548	⊖		⊖		
5SDS-W4A						1555	⊖	⊖	⊖		Y
-W4B						1556	9500	⊖	2000		
-W4C						1556	9000	⊖	9000		
W4D						1559	21000	⊖	71400		
10SDS-W4A						1558	800	⊖	800		
W4B						1600	3200	⊖	2200		
W4C						1602	7000	⊖	7000		
W4D						1605	7800	⊖	7800		
20SDS-W4A						1602	60	⊖	60		
W4B						1604	40	⊖	40		
W4C						1606	25	⊖	25		

Matrix Codes: GWT - Groundwater SED - Sediment SOL - Solid SLW - Solid Waste
 PTW - Potable water SFS - Surface Soil SLG - Sludge WTR - Water
 SBS - Subsurface Soil SFW - Surface Water WWT - Wastewater

Sample types: ENV - Environmental
 PTS - Point source
 FDP - Field duplicate

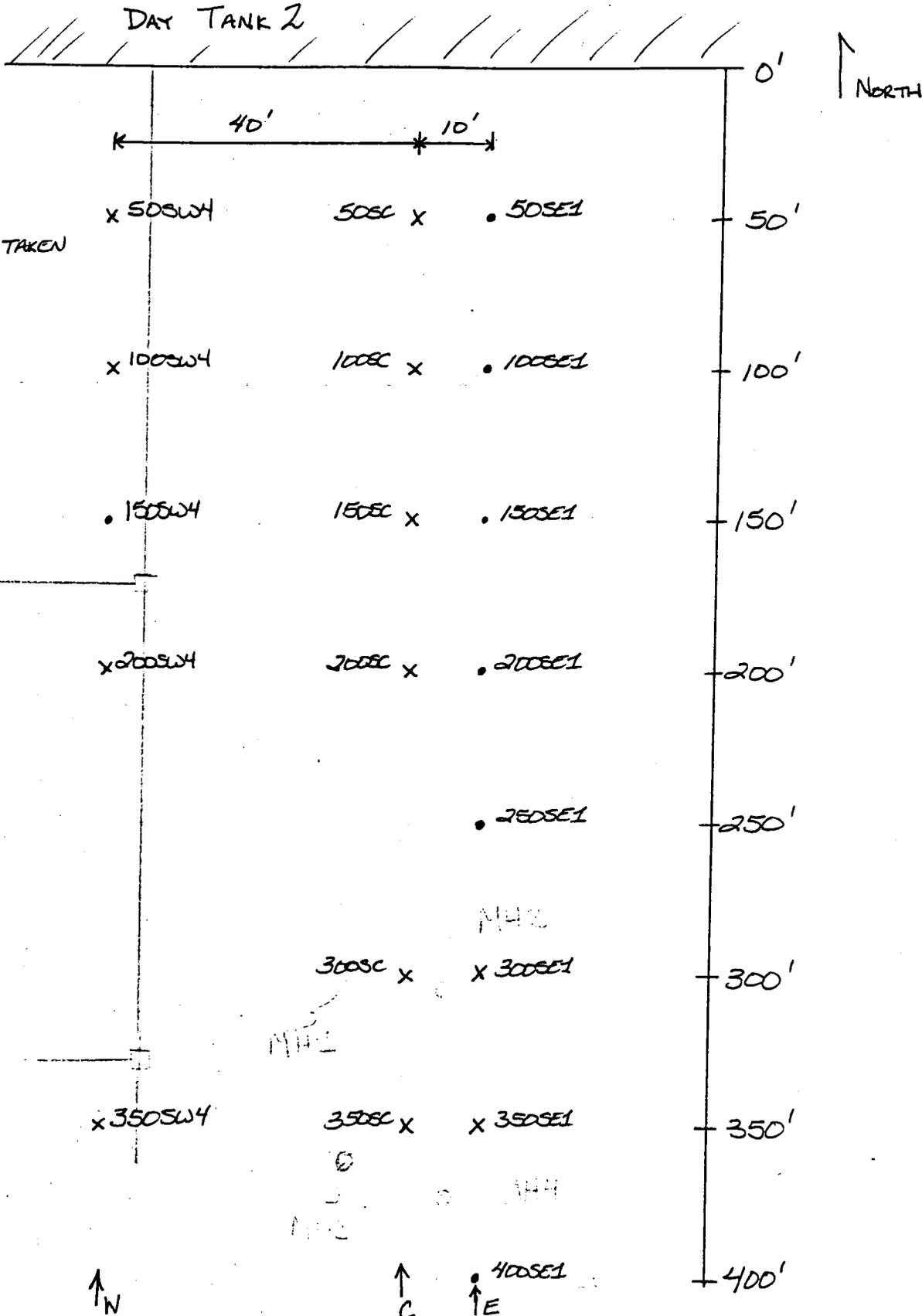


Calculation Sheet

Headspace Sampling @ Main Fuel Line - E/W Runway

Originator _____ Date _____ Calc. No. _____ Rev. No. _____
 Project _____ Job No. _____ Checked _____ Date _____
 Subject _____ Sheet No. _____

PLAN



KEY

- SAMPLE TAKEN
- X HIT

STAIN DRAIN

STAIN DRAIN

MHC

MHC

MHC

MHC

N

C

E



Calculation Sheet

Headspace Sampling @ Main Fuel Line - E/W Runway

Originator _____ Date _____ Calc. No. _____ Rev. No. _____
 Project _____ Job No. _____ Checked _____ Date _____
 Subject _____ Sheet No. _____

Section	Point	Height	Concentration	Calculation	Result
EAST	A	1A			
	B	2ft	2 ppm		
	C	3ft	150 ppm		
	D	4ft	800 ppm		
CENTER	A	1ft	3 ppm		
	B	2ft	7 ppm		
	C	3ft	6 ppm		
	D	4ft	425 ppm		
WEST	A	1ft	800 ppm		
	B	2ft	9,000 ppm		
	C	3ft	9,000 ppm		
	D	4ft	714,000 ppm		

KEY • SAMPLE TAKEN
 X HIT

SECTION

SITREP #2

NAS CECIL FIELD

Situation Report on Day Tank 2 Release

Background: Day Tank 2 (DT-2) is a 1940's era mounded jet fuel tank located on the south side of the base, just north of the east-west runway. A mounded tank is basically a tank that is constructed above ground and then covered with soil to control temperature variations and to provide protection from aerial attack. Jet Fuel is pumped from the North Fuel Farm (NFF) via an underground line to DT-1 and to DT-2 for distribution to the North-South and the East-West hot pits. The hot pits are the end point where fuel is actually dispensed into Navy aircraft.

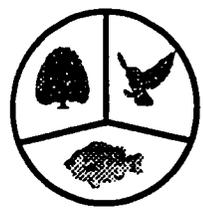
What happened: Jet Fuel was discovered on the ground surface to the South of DT-2 in October 1996 after an extended period of heavy rainfall. Initially, it was believed that the fuel had floated to the surface with the rising water table. The source was assumed to be from the previously identified South Fuel Farm (SFF) jet fuel plume just north of the Day Tank.

What we did: First, DT-2 was immediately taken off-line and its contents were pumped back to the North Fuel Farm. This was done to prevent any further release should the source be determined to be a tank leak. Next, Bechtel (BEI), NAS Cecil Field's remedial action contractor, was contracted to start free product recovery.

BEI constructed a cut-off trench along the north side of the storm drain to the South of the Day Tank to prevent migration of free product into the storm drain. Concurrently, BEI constructed a series of pits to vacuum free product. To date, approximately 29,000 gallons of jet fuel have been recovered. The recovery effort is still ongoing, but the rate of recharge of free product has dropped substantially. The recovery phase will probably be terminated by the end of the month.

Where did the fuel come from?: Soil borings were installed around the north perimeter of the tank (groundwater flow is roughly north to south) to determine if fuel came from an off-site source, either the old South Fuel Farm (SFF) plume or the underground fuel line supplying fuel from the North Fuel Farm (NFF). All results were negative, indicating that the absence of an off-site source. Next, the tank and all associated piping were leak-tested to determine the integrity of the tank and the associated piping. Again, all results came back negative. There are no other potential sources in the immediate area.

Since no source was discovered, the Judge Advocate General (JAG), the Navy's legal investigative department, was asked to investigate the spill to determine if foul play was involved. The preliminary investigation has been completed and it is expected that the JAG findings will be published sometime in 1997.



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SITREP #2

NAS CECIL FIELD

Situation Report on Day Tank 2 Release

Background: Day Tank 2 (DT-2) is a 1940's era mounded jet fuel tank located on the south side of the base, just north of the east-west runway. A mounded tank is basically a tank that is constructed above ground and then covered with soil to control temperature variations and to provide protection from aerial attack. Jet Fuel is pumped from the North Fuel Farm (NFF) via an underground line to DT-1 and to DT-2 for distribution to the North-South and the East-West hot pits. The hot pits are the end point where fuel is actually dispensed into Navy aircraft.

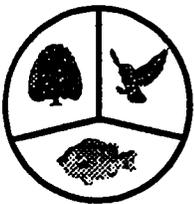
What happened: Jet Fuel was discovered on the ground surface to the South of DT-2 in October 1996 after an extended period of heavy rainfall. Initially, it was believed that the fuel had floated to the surface with the rising water table. The source was assumed to be from the previously identified South Fuel Farm (SFF) jet fuel plume just north of the Day Tank.

What we did: First, DT-2 was immediately taken off-line and its contents were pumped back to the North Fuel Farm. This was done to prevent any further release should the source be determined to be a tank leak. Next, Bechtel (BEI), NAS Cecil Field's remedial action contractor, was contracted to start free product recovery.

BEI constructed a cut-off trench along the north side of the storm drain to the South of the Day Tank to prevent migration of free product into the storm drain. Concurrently, BEI constructed a series of pits to vacuum free product. To date, approximately 29,000 gallons of jet fuel have been recovered. The recovery effort is still ongoing, but the rate of recharge of free product has dropped substantially. The recovery phase will probably be terminated by the end of the month.

Where did the fuel come from?: Soil borings were installed around the north perimeter of the tank (groundwater flow is roughly north to south) to determine if fuel came from an off-site source, either the old South Fuel Farm (SFF) plume or the underground fuel line supplying fuel from the North Fuel Farm (NFF). All results were negative, indicating that the absence of an off-site source. Next, the tank and all associated piping were leak-tested to determine the integrity of the tank and the associated piping. Again, all results came back negative. There are no other potential sources in the immediate area.

Since no source was discovered, the Judge Advocate General (JAG), the Navy's legal investigative department, was asked to investigate the spill to determine if foul play was involved. The preliminary investigation has been completed and it is expected that the JAG findings will be published sometime in 1997.



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March 1997

Day Tank 2 Trenching and Free Product Recovery

Wells and Piezometers

Identifier: PZ-2 (2")

Date:	11/6/96	11/7/96	11/8/96	11/9/96	11/10/96	11/11/96	11/12/96	11/13/96	11/14/96	11/18/96	11/19/96	11/20/96
Total Depth:	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"
Liquid Depth:	7' 11"	8' 1"	8' 1"	8' 0.5"	8' 1"	7' 2"	7' 2"	7' 10"	7' 6"	7' 10"	7' 6"	7' 1.5"
Water Depth:	6' 9.5"	7' 4.5"	7' 4.5"	7' 3.5"	7' 3.5"	6' 6"	7' 0"	7' 6"	7' 2"	7' 0"	7' 0"	7' 0"
Product Depth:	1' 1.5"	8.5"	8.5"	9"	9.5"	8"	2"	4"	4"	10"	6"	1.5"

Identifier: PZ-3 (2")

Date:	11/6/96	11/7/96	11/8/96	11/9/96	11/10/96	11/11/96	11/12/96	11/13/96	11/14/96	11/18/96	11/19/96	11/20/96
Total Depth:	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"
Liquid Depth:	7' 6.5"	7' 3.5"	7' 2.5"	7' 3"	6' 11"	7' 2"	7' 1"	7' 0"	7' 2"	6' 8"	7' 1"	7' 7.5"
Water Depth:	3' 4"	3' 9.5"	4' 4.5"	4' 5.5"	4' 0"	4' 3"	4' 0"	3' 8"	4' 0"	4' 4"	6' 1"	3' 8.5"
Product Depth:	4' 2.5"	3' 6"	2' 10"	2' 9.5"	2' 11"	2' 11"	3' 1"	3' 4"	3' 2"	2' 4"	1' 0"	3' 10.5"

Wells and Piezometers

Identifier: PZ-4 (2")

Date:	11/6/96	11/7/96	11/8/96	11/9/96	11/10/96	11/11/96	11/12/96	11/13/96	11/14/96	11/18/96	11/19/96	11/20/96
Total Depth:	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"
Liquid Depth:	9' 8"	9' 0.5"	9' 1.5"	9' 1.5"	9' 0.5"	9' 2"	8' 11"	8' 11"	9' 0"	8' 10"	8' 10"	8' 8"
Water Depth:	3' 7.5"	5' 5.5"	4' 8"	4' 11.5"	4' 9.5"	4' 10"	5' 0"	4' 6"	7' 2"	5' 0"	7' 2"	8' 3"
Product Depth:	6' 0.5"	3' 7"	4' 5.5"	4' 2"	4' 3"	4' 4"	3' 11"	4' 5"	1' 10"	3' 10"	1' 8"	5"

Identifier: CEF-043-41 (2")

Date:	11/6/96	11/7/96	11/8/96	11/9/96	11/10/96	11/11/96	11/12/96	11/13/96	11/14/96	11/18/96	11/19/96	11/20/96
Total Depth:	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"
Liquid Depth:	6' 0.5"	5' 9.5"	5' 9"	5' 9.5"	5' 5.5"	8' 6"	8' 4"	8' 6"	8' 6"	8' 8"	8' 6"	8' 6"
Water Depth:	2' 11.75"	3' 11"	3' 10"	3' 10.5"	3' 9.5"	6' 10"	7' 0"	7' 1"	7' 4"	7' 7"	7' 6"	7' 8"
Product Depth:	3' 0.75"	1' 10.5"	1' 11"	1' 11"	1' 8"	1' 8"	1' 4"	1' 5"	1' 2"	1' 1"	1' 0"	10"

Identifier: PZ-2 (2")

Date:	11/21/96	11/22/96	11/25/96	11/26/96	11/27/96	12/2/96	12/3/96	12/4/96	12/5/96	12/9/96	12/10/96	12/11/96
Total Depth:	14' 1.5"		14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"	14' 1.5"
Liquid Depth:	7' 7.5"		6' 5"	7' 7.5"	7' 6.5"	7' 7.5"	7' 5.5"	7' 6.5"	7' 6.5"	7' 10"	7' 11.5"	8'
Water Depth:	6' 6.5"		4' 11"	6' 6"	5' 4.5"	6' 6.5"	6' 10.5"	6' 7.5"	6' 9.5"	7' 0"	7' 1.5"	7' 7"
Product Depth:	1' 1"		1' 6"	1' 1.5"	1' 2"	1' 1"	7"	11"	9"	10"	10"	5"

Wells and Piezometers

Identifier: PZ-3 (2")

Date:	11/21/96	11/22/96	11/25/96	11/26/96	11/27/96	12/2/96	12/3/96	12/4/96	12/5/96	12/9/96	12/10/96	12/11/96
Total Depth:	15' 0"		15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"
Liquid Depth:	6' 10"		7' 6"	7' 2"	7' 0"	7' 1"	7' 1"	6' 11"	8' 11"	7' 6"	7' 3"	7' 5"
Water Depth:	3' 6"		5' 4"	3' 9"	4' 4"	4' 3"	4' 4"	4' 4"	6' 6.5"	4' 6"	3' 9"	3' 10.5"
Product Depth:	3' 4"		2' 2"	3' 5"	2' 8"	2' 10"	2' 9"	2' 7"	2' 4.5"	3' 0"	3' 6"	3' 6.5"

Identifier: PZ-4 (2")

Date:	11/21/96	11/22/96	11/25/96	11/26/96	11/27/96	12/2/96	12/3/96	12/4/96	12/5/96	12/9/96	12/10/96	12/11/96
Total Depth:	16' 2.5"		16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"	16' 2.5"
Liquid Depth:	8' 7.5"		7' 4"	8' 8"	8' 7"	8' 8"	8' 8"	8' 6.5"	8' 7"	8' 3"	8' 2.5"	8' 3"
Water Depth:	4' 11.5"		4' 11"	4' 3"	4' 2"	4' 4"	5' 5"	4' 0.5"	4' 0.5"	5' 1"	4' 11.5"	5' 0"
Product Depth:	3' 8"		2' 5"	4' 5"	4' 5"	4' 4"	3' 3"	4' 6"	4' 6.5"	3' 2"	3' 3"	3' 3"

Identifier: CEF-043-41 (2")

Date:	11/21/96	11/22/96	11/25/96	11/26/96	11/27/96	12/2/96	12/3/96	12/4/96	12/5/96	12/9/96	12/10/96	12/11/96
Total Depth:	14' 6"		14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"	14' 6"
Liquid Depth:	8' 5"		6' 0"	8' 5.5"	8' 3.5"	8' 6"	8' 4.5"	6' 6.5"	8' 5"	9' 1.5"	8' 6"	8' 7"
Water Depth:	7' 1"		5' 0"	7' 1.5"	6' 10"	7' 2"	6' 11"	4' 10"	6' 11.5"	7' 10.5"	6' 6"	6' 6"
Product Depth:	1' 4"		1' 0"	1' 4"	1' 5.5"	1' 4"	1' 5.5"	1' 8.5"	1' 5.5"	1' 3"	2' 0"	2' 1"

Wells and Piezometers

Identifier: PZ-2 (2")

Date: 12/12/96

Total Depth:	14' 1.5"											
Liquid Depth:	7' 9"											
Water Depth:	7' 4"											
Product Depth:	5"											

Identifier: PZ-3 (2")

Date: 12/12/96

Total Depth:	15' 0"											
Liquid Depth:	6' 6"											
Water Depth:	4' 1"											
Product Depth:	2' 5"											

Identifier: PZ-4 (2")

Date: 12/12/96

Total Depth:	16' 2.5"											
Liquid Depth:	8' 11"											
Water Depth:	5' 9"											
Product Depth:	3' 2"											

Wells and Piezometers

Identifier: CEF-043-41 (2")

Date: 12/12/96

Total Depth:	14' 6"											
Liquid Depth:	8' 10.5"											
Water Depth:	7' 1"											
Product Depth:	1' 9.5"											

Identifier: PZ-1 (2")

Date: 12/2/96

Total Depth:	15' 6"											
Liquid Depth:	8' 2"											
Water Depth:	8' 2"											
Product Depth:	0' 0"											

Identifier: PZ-8 (2")

Date: 12/2/96

Total Depth:	15' 0"											
Liquid Depth:	8' 2"											
Water Depth:	8' 2"											
Product Depth:	0' 0"											

Wells and Piezometers

Identifier: CEF-043-44 (2")

Date: 12/2/96

Total Depth:	14' 2.5"											
Liquid Depth:	8' 7.5"											
Water Depth:	8' 7.5"											
Product Depth:	0' 0"											

Identifier: CEF-043-25 (2")

Date: 12/2/96

Total Depth:	15' 2"											
Liquid Depth:	10' 4"											
Water Depth:	10' 2"											
Product Depth:	2"											

Identifier: CEF-043-28 (2")

Date: 12/2/96

Total Depth:	62' 1"											
Liquid Depth:	57' 1"											
Water Depth:	57' 1"											
Product Depth:	0' 0"											

Wells and Piezometers

Identifier: Frac Tanks (recordings in gallons)

Date:	12/3/96	12/4/96	12/5/96	12/9/96	12/10/96	12/11/96	12/12/96					
204	5409.5	5584	5584	5584	7154.5	8550.5	8725					
205	2268.5	3490	3490	3490	3490	3490	3490					
206	2792	2792	2792	2792	2792	2792	2792					
213*	1899	1899	1899	1899	1899	1899	1899					

Total gallons in Frac Tanks: 16906

Gallons recovered by Navy: 4000

Gallons removed during dewatering: 2268

23174

*A previous calculation stated this tank to contain 7599.7 gallons. This calculation was an error. All records show this tank to contain 1899 gallons.

All recordings for frac tanks are in gallons.

APPENDIX B

**COMPLETION REPORT FOR THE DAY TANK 2 REMOVAL
AT NAS CECIL FIELD, JACKSONVILLE, FLORIDA**



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, S.C. 29419-9010

5090
Code 1842
31 Oct 1997

Mr. Eric Blomberg
ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, FL 32301

**COMPLETION REPORT FOR THE JET ENGINE TEST CELL & DAY TANK 2 REMOVAL
AT NAS CECIL FIELD, JACKSONVILLE, FL**

Dear Eric,

Enclosures (1) and (2) are forwarded for your information. Please incorporate the Day Tank 2 closure report into the Master Tank Document being produced. If you have any questions or comments please call me at (803) 820-5896.

Sincerely,

A handwritten signature in black ink, appearing to read "Bryan Kizer".

BRYAN KIZER
Remedial Project Manager
Petroleum Branch

Enclosures:

- (1) Completion Report for the Jet Engine Test Cell
- (2) Tank Closure Report for the Day Tank 2

SPORTENVDETHASN
SUPSHIP PORTSMOUTH ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE
NORTH CHARLESTON, S.C. 29405-2106
Underground Storage Tank (UST) Assessment Report

I OWNERSHIP OF UST(S)

Agency/Owner: Naval Air Station, Cecil Field				DER Facility No. 168507293	
Mailing Address: N.P.W.C., Box 101, Cecil Field Zone, NAS Cecil Field.					
City:	Jacksonville	State:	FL	Zip Code:	32215-0101
Area Code:	904	Telephone Number:	778-5620	Contact Person:	Lloyd Cruz

II SITE IDENTIFICATION AND LOCATION

Site I.D. #:	South Fuel Farm, Day Tank # 2				
Facility Name:	Naval Air Station Cecil Field				
Street Address:	Day Tank # 2, Near 2nd Street & Avenue "A"				
City:	Jacksonville, 32215-0101	County:	Duval		

III CLOSURE INFORMATION

Closure Started: 8/11/97	Closure Completed: 8/29/97
Number of USTs Closed: 1	
N/A	SPORTENVDETHASN
Consultant	UST Removal Contractor

IV. CERTIFICATION (Read and Sign after completing entire submittal)

<small>I certify that I have personally examined and am familiar with the information submitted in this and all attached documents; and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate and complete.</small>	
T.L. McElwee - Project Manager	
Name (Type or Print)	
	
Signature	

VI. PIPING INFORMATION

- A. Construction Material.....
- B. Distance from UST to Dispenser.....
- C. Number of Dispensers.....
- D. Type of System P/S.....
- E. Was Piping Removed from the Ground? Y/N....
- F. Visible Corrosion or Pitting Y/N.....
- G. Visible Holes Y/N.....
- H. Age.....

Tank 1	Tank 2	Tank 3	Tank 4
Steel			
2700 feet see note 1			
see note 1			
S			
Y			
N			
N			
>40 yrs			

Note 1: The tank provided JP5 fuel to Dispenser Islands on the flight line.

- I. If any corrosion, pitting, or holes were observed, describe the location and extent for each line.

The piping for Day Tank # 2 was in good condition and had no holes or pitting.

VII. BRIEF SITE DESCRIPTION AND HISTORY

Day Tank # 2 was an earthen mounded steel tank located at the South Fuel Farm on NAS Cecil Field. The tank was 53'6" in diameter and 13' high. The tank was buried beneath 4' of soil and had a 9" concrete slab poured on top of the tank. The concrete was reinforced by rebar and steel flatbar welded to the top of the tank, 8" on center. The walls of the tank were constructed of 5/16" steel plate with six 4" T-bar stiffener rings welded all the way around the inside of the tank at varying intervals. The top and bottom of the tank was 1/4" plate supported by ten 8" vertical I-beams around the perimeter of the tank and twelve 8" vertical I-beams that were spaced evenly throughout the tank. The perimeter I-beams were welded to the top and bottom plates. The inside I-beams were welded to the bottom plate and 15" horizontal support beams at the top. Underneath the tank bottom plate was a 15" concrete slab reinforced by steel rebar. This out of service tank was removed due to base closure.

V. UST INFORMATION

- A. Product.....
- B. Capacity(gallons).....
- C. Age.....
- D. Construction Material.....
- E. Month/Year of Last Use.....
- F. Depth (ft.) To Base of Tank.....
- G. Spill Prevention Equipment Y/N.....
- H. Overfill Prevention Equipment Y/N.....
- I. Method of Closure Removed/Filled.....
- J. Visible Corrosion or Pitting Y/N.....
- K. Visible Holes Y/N.....

	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6
JP5						
200,000						
>40 yrs						
steel						
unk						
2'						
N						
N						
R						
N						
N						

- L. Method of disposal for any USTs removed from the ground (attach disposal manifests)

Day Tank # 2 was unearthed, drained, cleaned, and removed. It was then cut up for recycling as scrap metal and delivered to the Cecil Field Recycling Center. (See Attachment III.)

- M. Method of disposal for any liquid petroleum, sludges, or waste waters removed from the USTs (attach disposal manifests)

The residual fuel was pumped out of the tank by contractor and transported offbase. The disposal manifest is included in Attachment III. The oily rinse water was recycled through the oil/water separator at the Transportation Office, Building 80, NAS Cecil Field. There was no sludge.

- N. If any corrosion, pitting, or holes were observed, describe the location and extent for each UST

The tank had no areas of corrosion or pitting.

VIII. SITE CONDITIONS

Yes No Unk

		Yes	No	Unk
A.	<p>Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells?</p> <p>If yes, indicate depth and location on the site map.</p> <p>[UST excavation, under filter slab & near fuel return pit]</p>	X		
B.	<p>Were any petroleum odors detected in the excavation, soil borings, trenches, or monitoring wells?</p> <p>If yes, indicate location on site map and describe the odor (strong, mild, etc.)</p> <p>[Throughout UST excavation, moderate to strong]</p>		X	
C.	<p>Was water present in the UST excavation, soil borings, or trenches?</p> <p>If yes, how far below land surface (indicate location and depth)?</p> <p>_____</p>		X	
D.	<p>Did contaminated soils remain stockpiled on site after closure?</p> <p>If yes, indicate the stockpile location on the site map.</p> <p>_____</p>		*X	
E.	<p>Was a petroleum sheen or free product detected on any excavation or boring waters?</p> <p>If yes, indicate location and thickness on the site map.</p>		N/A	

*Per agreement with SouthDiv, Cecil Field Environmental, and FDEP, clean soil from Day Tank # 2 excavation was used as backfill at the Jet Engine Test Cell Site and all remaining soil from the excavation was left on site for backfill since it had already been classified as a contaminated site. The soil was graded out over the area, raked and seeded.

IX. SAMPLING METHODOLOGY

Provide a detailed description of the methods used to collect and store (preserve) the samples.

After the removal of Day Tank # 2 and the 15" thick concrete slab underneath, an Organic Vapor Analyzer-Flame Ionization Detector (PE PHOTOVAC MicroFid, Serial Number CZEF215) was used to screen the soils for petroleum hydrocarbon vapors. OVA headspace samples were taken 1' below the 15" tank slab at the North, South, East and West quadrants of the tank slab and one in the center of the excavation. In this excavation, the bottom of the 15" concrete slab was at 3' below GSL. OVA headspace soil samples were extracted using the backhoe bucket and sampled from the middle of the bucket. Sampling was performed in accordance with the FDEP Pollutant Storage Tank Closure Assessment Requirements and the FDEP Quality Assurance Standard Operating Procedures for Petroleum Storage System Closure Assessments.

No ground water samples were collected since no groundwater was encountered and the area had already been identified as a petroleum contaminated site.

SITE MAPS/PHOTOGRAPHS

- Site Map 1- Day Tank 2 Site Layout
- Site Map 2 - Day Tank 2 Site after demolition
- Site Map 3 - Day Tank 2 OVA/FID sample locations
- Site Map 4 - Day Tank 2 Fuel piping Removal

Photographs 1 thru 36

EXISTING 10" FUEL PPG
VALVE PIT



FORMER 10" FUEL PIPING TO FUEL FARM

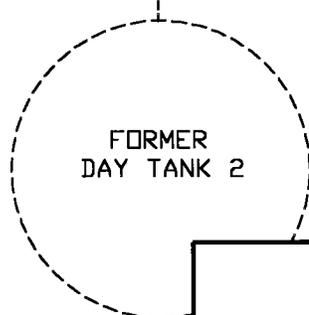
150 ppm

1500 ppm

60 ppm

NOTE:

XX ppm -- FLAME IONIZATION DETECTOR ORGANIC VAPOR ANALYZER READING. ALL OTHER READINGS IN PPG TRENCH WERE <50 ppm.



FORMER DAY TANK 2

GRAPHIC SCALE



SPORTENVDETHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (803) 743-6777

Site Map 4
Day Tank 2 Fuel PPG Removal
Naval Air Station Cecil Field
Jacksonville, FL

DWG DATE: 28 OCT 97 | DWG NAME: CF-DYTK4

Removal of Day Tank # 2 and associated equipment



Photo 1: Day Tank #2 prior to commencement of work.



Photo 2: Day Tank Skim Tank and filter assembly. Skim tank was emptied, cleaned and abandoned in place (empty).

Removal of Day Tank # 2 and associated equipment



Photo 3: Day tank filters. Filters, concrete slab and piping were removed and recycled.



Photo 4: Additional manways under 4' of soil on top of Day tank. Concrete encased conduit ran from vent pit manway to electrical manifold.

Removal of Day Tank # 2 and associated equipment

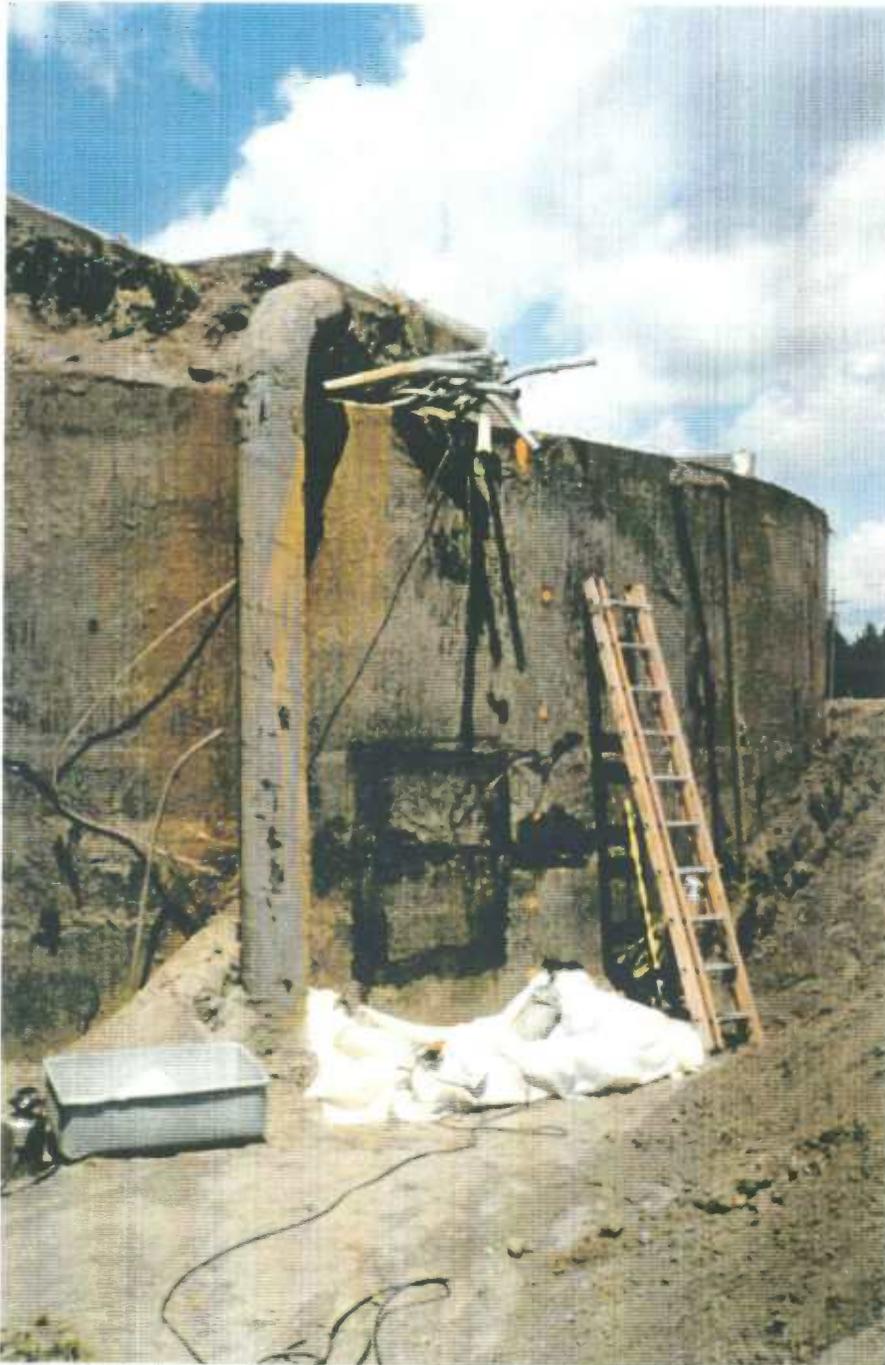


Photo 5: Southeast side of Day tank exposed. Note 14" fuel supply line from pump pit and area cleaned for tank access.

Removal of Day Tank # 2 and associated equipment



Photo 6: Demolition of Day tank concrete filter pad after filter removal. Note valve pits and pump pit cover over fuel return pit. Valve pits and valves were removed with piping.

Removal of Day Tank # 2 and associated equipment



Photo 7: Demolition of Day tank filter piping after removal.



Photo 8: Day tank pump pit on top of tank prior to removal of cover, pumps and motors.

Removal of Day Tank # 2 and associated equipment

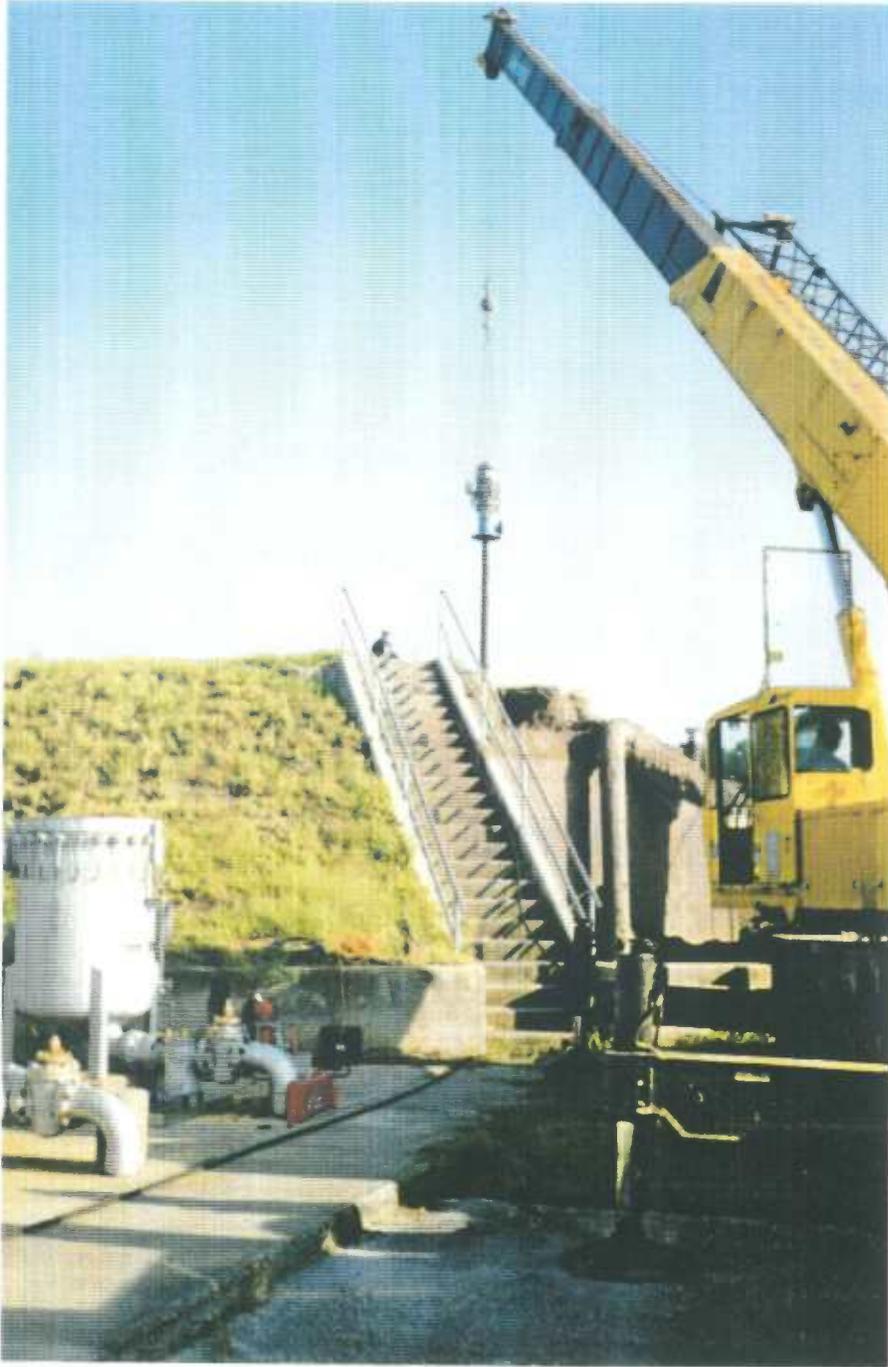


Photo 9: Removal of pump & motor from pump pit.

Removal of Day Tank # 2 and associated equipment



Photo 10: Vent pit with cover prior to commencement of work.



Photo 11: Vent pit after cover removal showing tank and pit vent piping.

Removal of Day Tank # 2 and associated equipment



Photo 12: Demolition of 9" concrete slab on top of tank. Note 9" steel lip that extends above tank top. Flatbar was welded to tank top and concrete poured over it.



Photo 13: Continuation of 9" concrete slab demolition with hydraulic hammer. Manways shown were in pump pit.

Removal of Day Tank # 2 and associated equipment

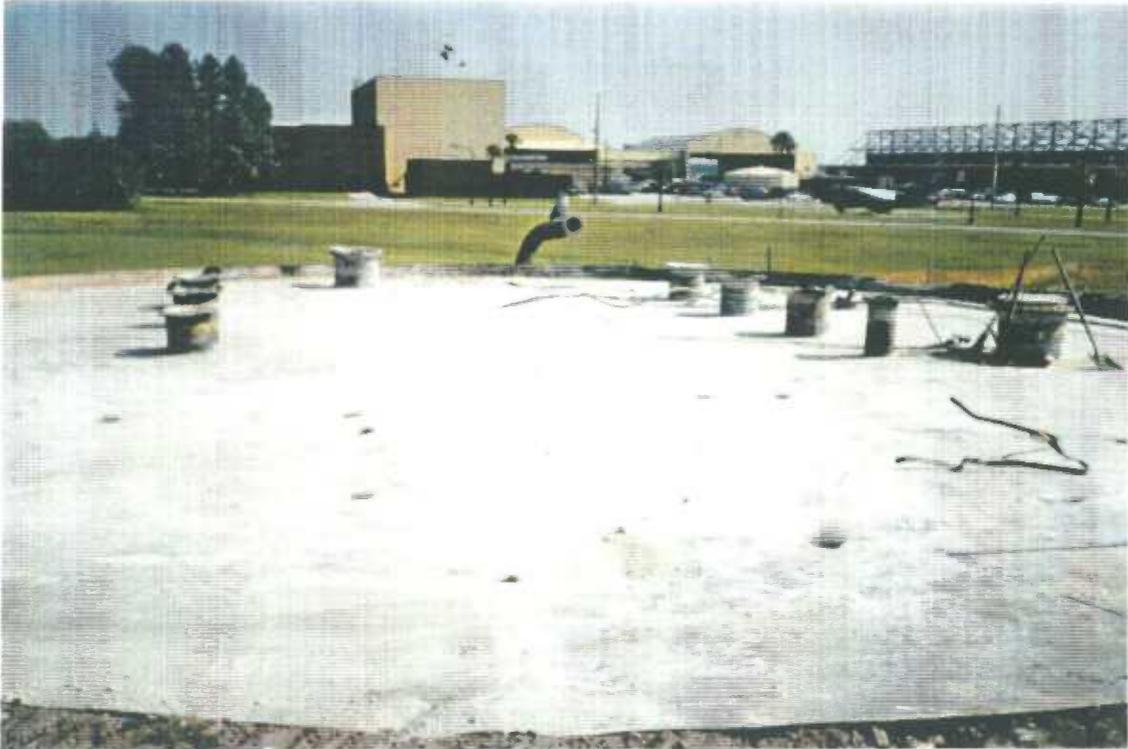


Photo 14: Day tank top after concrete removal.



Photo 15: Day tank internals after access cut.

Removal of Day Tank # 2 and associated equipment



Photo 16: Day tank internal support structure. Note pump pit manway and pump/motor penetrations.



Photo 17: Day tank top removal.

Removal of Day Tank # 2 and associated equipment



Photo 18: Day tank internal walls after partial top removal. Note 14" fuel supply line above wall near access.



Photo 19: Steel bottom of Day tank prior to removal.

Removal of Day Tank # 2 and associated equipment



Photo 20: Steel tank bottom during removal.



Photo 21: 15" concrete slab under Day tank. Note 14" fuel supply line cut off next to slab.

Removal of Day Tank # 2 and associated equipment



Photo 22: Day tank slab being removed from excavation.



Photo 23: Excavation after concrete slab removal. Bottom of excavation was 3' below ground surface level.

Removal of Day Tank # 2 and associated equipment



Photo 24: Fuel return pit prior to commencing work.



Photo 25: Removal of piping and components from fuel return pit.

Removal of Day Tank # 2 and associated equipment

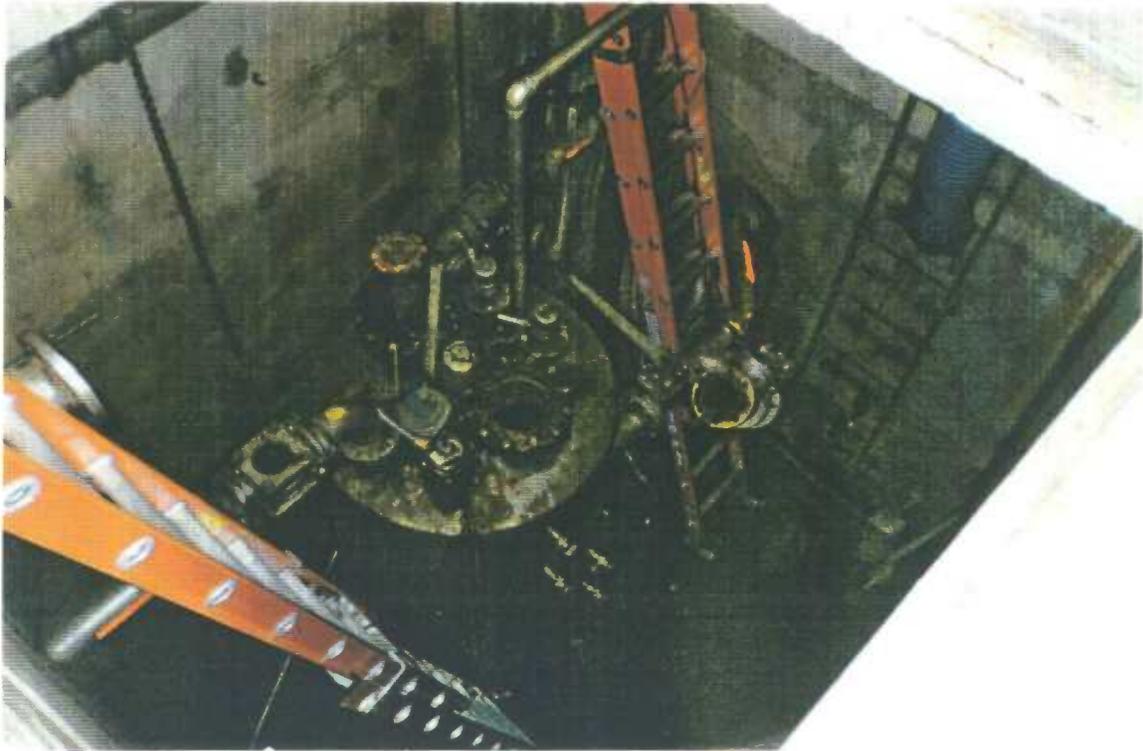


Photo 26: Fuel return tank prior to removal from return pit. All components were removed, the pit cleaned and closed in place (empty).



Photo 27: Skim tank and fuel return pit after closure and during site restoration.

Removal of Day Tank # 2 and associated equipment



Photo 28: View of Day tank from 10" fuel line valve pit. 10" piping from valve pit to Day tank was removed.



Photo 29: 10" coated steel pipe removed from valve pit and trench. Piping was in good shape.

Removal of Day Tank # 2 and associated equipment



Photo 30: Piping trench heading east from valve pit. All FID readings in the trench shown were 0 ppm.

Removal of Day Tank # 2 and associated equipment



Photo 31: Removal of 10" fuel supply line heading south towards Day tank.
FID readings in this trench ranged from 60 ppm to 1500 ppm.

Removal of Day Tank # 2 and associated equipment



Photo 32: Removal of 10" fuel supply line heading west towards Day tank.

Removal of Day Tank # 2 and associated equipment



Photo 33: View of 10" piping over tank wall as well as piping trench in the background.



Photo 34: Steel sections of tank and piping being loaded on flatbeds for recycling.

Removal of Day Tank # 2 and associated equipment



Photo 35: The Day tank site, looking northeast, during restoration.



Photo 36: The Day tank site, looking north, during restoration.

ANALYTICAL RESULTS

OVA headspace samples were the only analytical performed (see Site Map 3).

Attachment III

Certificate of Disposal (tank)
Disposal Manifest (fuel oil)

UST Certificate of Disposal

CONTRACTOR

Supervisor of Shipbuilding, Conversion and Repair, USN
Portsmouth, VA
Environmental Detachment Charleston
1899 North Hobson Avenue
North Charleston 29405-2106

Telephone (803) 743-6482

TANK ID & LOCATION

Day Tank # 2, NAS Cecil Field, Jacksonville, Florida

DISPOSAL LOCATION

Recycling Center
NAS Cecil Field, Jacksonville

TYPE OF TANK

Steel

SIZE (GAL)

200,000

CLEANING/DISPOSAL METHOD

The tank was unearthed, cut open, cleaned with a steam cleaner, cut into sections, and disposed of at the Base Recycling Center.

DISPOSAL CERTIFICATION

I certify that the above tank has been properly cleaned and disposed of.

T. L. McElwee / 10/24/97
T. L. MCELWEE (Name) (Date)

103216

Customer's Order No. _____ DATE 8-18- 1997

Rec'd FR Charleston Env. Detach.
SOLD TO _____

ADDRESS: Charleston S.C.

SALESMAN _____ TERMS _____

CASH	CHARGE	C.O.D.	PAID OUT	RETD. MDSE.	RECD. ON ACCT.
------	--------	--------	----------	-------------	----------------

QUAN.	DESCRIPTION	PRICE	AMOUNT
	Picked up NON HAZ		
	Waste Fuel	gals 800	
	75 Ga. Petroleum		
	EPA # 6AD981222433		
	PH 912-244-9110		
	Valdosta GA.		
	By A76 Oil Services		
	EPA # 6AR000010884		
	PH 912-372-4950		
	Cedar Springs, GA.		
	Tommy Davis		

All claims and returned goods MUST be accompanied by this bill.

SIGNATURE _____



Florida Department of Environmental Regulation

Twin Towers Office Bldg • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form # 17-761 900161
Form Title Closure Assessment Form
Effective Date December 10, 1990
DER Application No. _____

Closure Assessment Form

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

Please Print or Type
Complete All Applicable Blanks

- Date: 10/24/97
- DER Facility ID Number: 158507293
- County: Duval
- Facility Name: Day Tank #2
- Facility Owner: Naval Air Station Cecil Field
- Facility Address: South Fuel Farm, 2nd St. @ Avenue "A"
- Mailing Address: N.P.W.C., Box 101, Cecil Field Zone, Jacksonville, Fla 32215-01
- Telephone Number: (904) 773-5620
- Facility Operator: Lloyd Cruz
- Are the Storage Tank(s): (Circle one or both) A. Aboveground or B. Underground
- Type of Product(s) Stored: J25
- Were the Tank(s): (Circle one) A. Replaced B. Removed C. Closed in Place D. Upgraded (aboveground tanks only)
- Number of Tanks Closed: One
- Age of Tanks: 40 Yrs

Facility Assessment Information

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

DER Form #	17-761.900(6)
Form Title	Closure Assessment Form
Effective Date	December 10, 1990
DER Application No.	(Filled in by DER)

12. A detailed drawing or sketch of the facility that includes the storage system location, monitoring wells, buildings, storm drains, sample locations, and dispenser locations must accompany this form.
13. If a facility has a pollutant storage tank system that has both gasoline and kerosene/diesel stored on site, both EPA Method 602 and EPA Method 610 must be performed on the ground water samples obtained.
14. Amount of soils removed and receipt or proper disposal.
15. If yes is answered to any one of questions 5-9, a Discharge Reporting Form 17-761.900(1) indicating a suspected release shall be submitted to the Department within one working day.
16. A copy of this form and any attachments must be submitted to the Department's district office in your area and to the locally administered program office under contract with the Department within 60 days of completion of tank removal or filling a tank with an inert material.

Signature of Owner

Date

T.H. Maguire

Signature of Person Performing Assessment

10/24/97

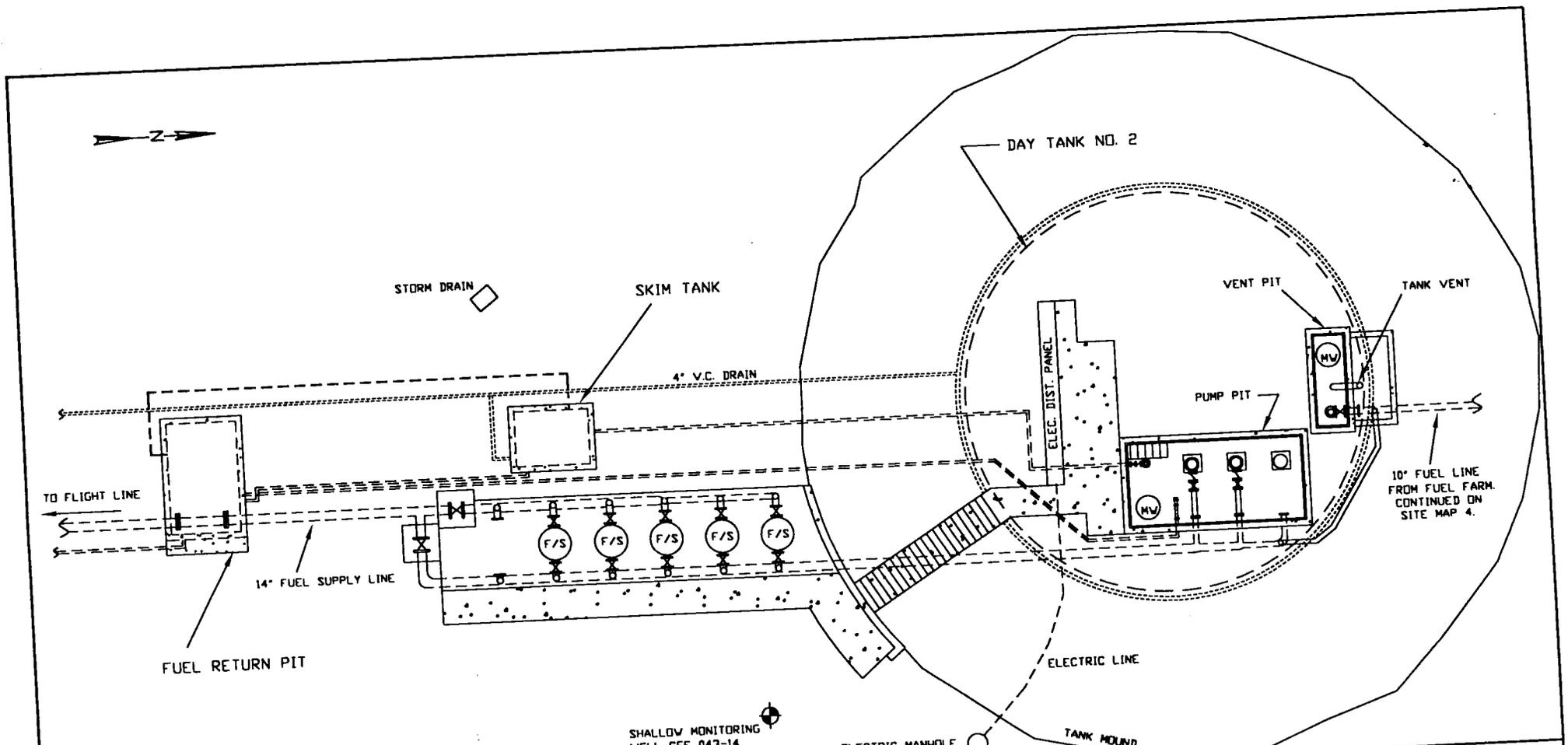
Date

Environmental Specialist
Title of Person Performing Assessment

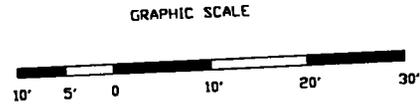
State Ground Water Target Levels That Affect A Pollutant Storage Tank System Closure Assessment

State ground water target levels are as follows:

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. For gasoline (EPA Method 602): <ul style="list-style-type: none"> a. Benzene 1 ug/l b. Total VOA 50 ug/l <ul style="list-style-type: none"> - Benzene - Toluene - Total Xylenes - Ethylbenzene c. Methyl Tert-Butyl Ether (MTBE) 50 ug/l | <ol style="list-style-type: none"> 2. For kerosene/diesel (EPA Method 610): <ul style="list-style-type: none"> a. Polynuclear Aromatic Hydrocarbons (PAHS)
(Best achievable detection limit, 10 ug/l maximum) |
|---|--|



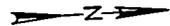
KEY
 MW - MANWAY
 F/S - FILTER/SEPARATOR



SHALLOW MONITORING WELL CEP 043-14

SPORTENVDETHASN
 1899 North Hobson Ave.
 North Charleston, SC
 29405-2108
 Ph. (803) 743-8777

Site Map 1
 Day Tank 2 Site Layout
 Naval Air Station Cecil Field
 Jacksonville, FL
 DWG DATE: 28 OCT 97
 DWG NAME: CF-DYTK1



STORM DRAIN

SKIM TANK #
(EMPTIED & CLOSED)

LOCATION OF FORMER
DAY TANK NO. 2

HARD
BLANKED

CAPPED

14" FUEL SUPPLY LINE

TO FLIGHT LINE

FUEL RETURN PIT #
(EMPTIED & CLOSED)

LOCATION OF FORMER
FILTER/SEPARATOR PAD
& VALVE PITS

SHALLOW MONITORING
WELL CEF 043-14

ELECTRIC MANHOLE

FUEL RETURN PIT & SKIM TANK,
WITH CONNECTING PPG, LEFT IN PLACE
FOR FUTURE USE BY THE ARMY, PER
MR. BRIAN KIZER (SOUTHDIV) & MR. RICH DONAHUE (BTC).

GRAPHIC SCALE



SPORTENVDETHASN
1899 North Hobson Ave.
North Charleston, SC
29405-2106
Ph. (803) 743-8777

Site Map 2
Day Tank 2 Site After Demolition
Naval Air Station Cecil Field
Jacksonville, FL

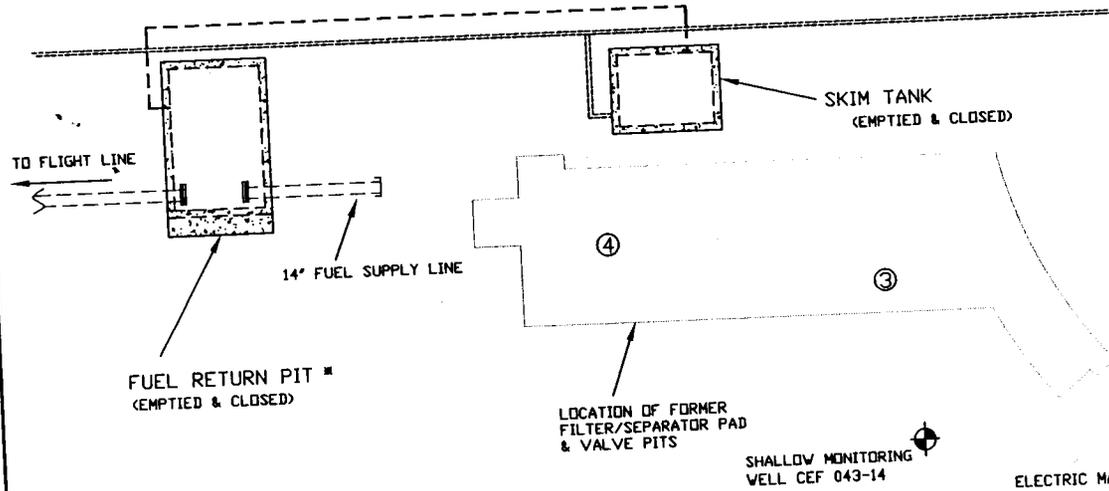
DWG DATE: 28 OCT 97

DWG NAME: CF-DYTK2

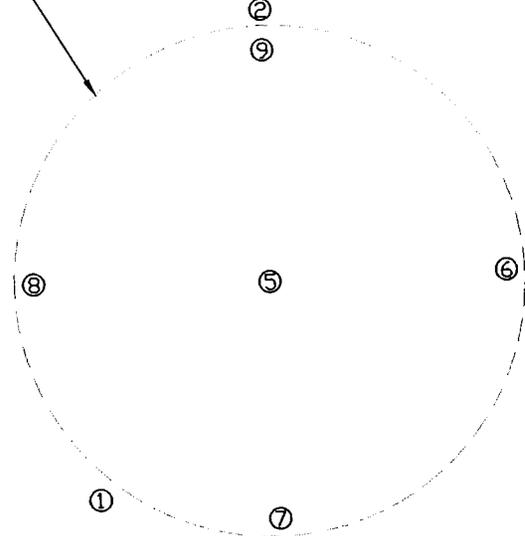


SAMPLE #	DEPTH BGSL	DATE	TIME	READING (ppm)
1	1' 6"	8/13	1030	3,791
2	1' 6"	8/22	1430	250
3*	1'	8/24	1120	7,828
4*	1'	8/24	1130	7,350
5	4'	8/27	0815	385
6	4'	8/27	0820	6,583
7	4'	8/27	0825	6,563
8	4'	8/27	0830	3,639
9	4'	8/27	0835	4,529

STORM DRAIN



LOCATION OF FORMER DAY TANK NO. 2



* READINGS 3 & 4 WERE TYPICAL OF THE SOIL IN THE FUEL RETURN PIT/SKIM TANK AREA. ALL SOIL HAD A VERY STRONG PETROLEUM ODDOR.

GRAPHIC SCALE

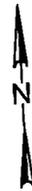


SPORTENVDETHASN
1899 North Hobson Ave.
North Charleston, SC
29405-2106
Ph. (803) 743-6777

Site Map 3
Day Tank 2 OVA/FID Sample Loc.
Naval Air Station Cecil Field
Jacksonville, FL

DWG DATE: 28 OCT 97 | DWG NAME: CF-DYTK3

EXISTING 10" FUEL PPG
VALVE PIT



FORMER 10" FUEL PIPING TO FUEL FARM

150 ppm

1500 ppm

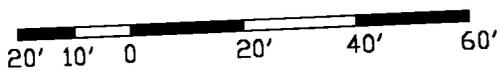
60 ppm

NOTE:

XX ppm -- FLAME IONIZATION DETECTOR ORGANIC VAPOR ANALYZER READING. ALL OTHER READINGS IN PPG TRENCH WERE <50 ppm.

FORMER DAY TANK 2

GRAPHIC SCALE



SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (803) 743-6777

Site Map 4
Day Tank 2 Fuel PPG Removal
Naval Air Station Cecil Field
Jacksonville, FL

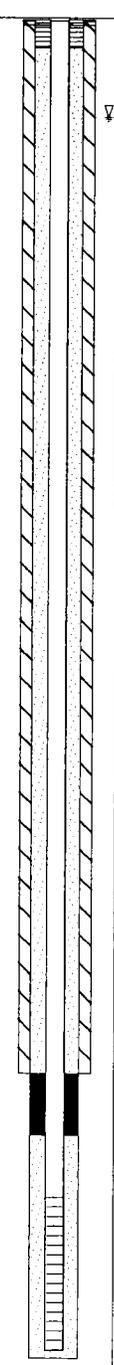
DWG DATE: 28 OCT 97 | DWG NAME: CF-DYTK4

APPENDIX C
LITHOLOGIC LOGS

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-II	BORING NO. CEF-342-II
CLIENT: SOUTH DIVNAV FACENCOM		PROJECT NO: 02549-03	
CONTRACTOR: Custom Drilling		DATE STARTED: 11-19-97	COMPLTD: 11-19-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 40-45 ft.	PROTECTION LEVEL: D
TOC ELEV.: 77.84 FT.	MONITOR INST.: FID	TOT DPTH: 45.5FT.	DPTH TO ∇ 9.05 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 11-19-97		SITE: Day Tank 2

DEPTH F.T.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1								
2			>5,000	SILTY SAND: Dark brown to black, fine grain. Very strong petroleum odor.		SM		
3								
4								
5								
6								
7								
8			>5,000					
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19				Hard Pan: Drilling difficult.		CH		
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30				CLAYEY SAND: Brown, wet.		SC		
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-2D	BORING NO. CEF-342-2D
CLIENT: SOUTHDIVNAVFACENCOM			PROJECT NO: 02549-03
CONTRACTOR: Custon Drilling		DATE STARTED: 12-10-97	COMPLTD: 12-10-97
METHOD: 4.25 HSA	CASE SIZE: 2"	SCREEN INT.: 77-87 FT.	PROTECTION LEVEL: 0.010"
TOC ELEV.: 74.89 FT.	MONITOR INST.: FID	TOT DPTH: 87.5FT.	DPTH TO ∇ 6.49 FT.
LOGGED BY: J. Tarr	WELL DEVELOPMENT DATE: 12-11-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
			0	Unable to collect soil cuttings due to surface casing.		SM	posthole	

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-31	BORING NO. CEF-342-31
CLIENT: SOUTH DIV NAV FAC ENG COM		PROJECT NO: 02549-03	
CONTRACTOR: Custom Drilling		DATE STARTED: 11-23-97	COMPLTD: 11-23-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 40-45 ft.	PROTECTION LEVEL: D
TOC ELEV.: 71.60 FT.	MONITOR INST.: FID	TOT DPTH: 45.5 FT.	DPTH TO ∇ 4.04 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 11-24-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1					SILTY SAND: Dark brown to black, fine grained.		SM	posthole	
2									
3									
4									
5									
6									
7									
8				20					
9					SILTY SAND: Light brown to reddish brown, fine grained.				
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20				10					
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40				5					
41									
42									
43									
44									
45									
46					Petroleum odor.				
47									
48									
49									
50									

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-4D	BORING NO. CEF-342-4D
CLIENT: SOUTH DIV NAV FAC ENG COM		PROJECT NO: 02549-03	
CONTRACTOR: Custon Drilling		DATE STARTED: 11-21-97	COMPLTD: 11-21-97
METHOD: 4.25" HSA	CASE SIZE: 2"	SCREEN INT.: 75-85 FT.	PROTECTION LEVEL: 0.010"
TOC ELEV.: 71.77 FT.	MONITOR INST.: FID	TOT DPTH: 85.5 FT.	DPTH TO ∇ 4.18 FT.
LOGGED BY: J. Tarr	WELL DEVELOPMENT DATE: 11-26-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0					SILTY SAND: dark brown to black, fine grain.		SM		
0								posthole	
20					SILTY SAND: light brown to reddish brown,				
12					Hard Pan: grey.		SC		
					SILTY SAND: brown, saturated.		SM		
5					Petroleum odor.				
100					Strong petroleum odor.				
					Top of dolomite.		GP		

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-51	BORING NO. CEF-342-51
CLIENT: SOUTH DIV NAV FAC ENG COM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 11-19-97	COMPLTD: 11-19-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 40-45 ft.	PROTECTION LEVEL: D
TOC ELEV.: 74.58 FT.	MONITOR INST.: FID	TOT DPTH: 45.5 FT.	DPTH TO ∇ 7.59 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 11-19-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1					SILTY SAND: Dark brown to black, fine grain. No apparent petroleum odor.		SM		
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
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26									
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47									
48									
49									
50									

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-6S	BORING NO. CEF-342-6S
CLIENT: SOUTH DIV NAV FAC ENG COM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 11-18-97	COMPLTD: 11-18-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 5-15 ft.	PROTECTION LEVEL: D
TOC ELEV.: 70.89 FT.	MONITOR INST.: FID	TOT DPTH: 15.5 FT.	DPTH TO ∇ 6.65 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 11-18-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1				0	SILTY SAND: Dark gray to black, fine grain.		SM	posthole	
2									
3									
4				0					
5									
6									
7									
8									
9									
10				0	Hard Pan				
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

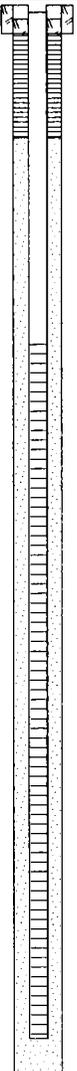
TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-7I	BORING NO. CEF-342-7I
CLIENT: SOUTH DIV NAV FAC ENG COM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 11-22-97	COMPLTD: 11-22-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 40-45 ft.	PROTECTION LEVEL: D
TOC ELEV.: 70.91 FT.	MONITOR INST.: FID	TOT DPTH: 45.5 FT.	DPTH TO ∇ 4.32 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 11-23-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1					SILTY SAND: Dark brown to black, fine grain, dense.		SM		
2				0					
3									
4				0					
5									
6				0					
7									
8									
9									
10									
11									
12				16	SILTY SAND: Light brown, fine grain, sulfur odor.				
13									
14									
15									
16				14					
17									
18									
19									
20					SILTY SAND: Light to dark brown, fine grain, some clay.				
21									
22				28					
23									
24									
25									
26				10	CLAYEY SAND: Greenish grey, soft.		SC		
27									
28									
29									
30									
31									
32				22	SILTY SAND: Light brown, poorly graded.		SM		
33									
34									
35									
36									
37									
38									
39									
40				12					
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

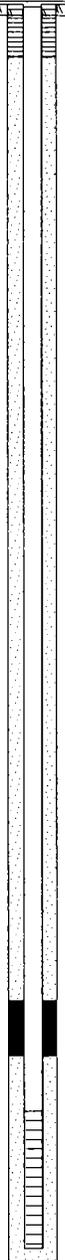
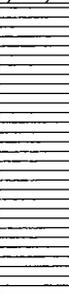
TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-8D	BORING NO. CEF-342-8D
CLIENT: SOUTH DIV NAV FAC ENG COM			PROJECT NO: 02549-03
CONTRACTOR: Custon Drilling		DATE STARTED: 11-20-97	COMPLTD: 11-20-97
METHOD: 4.25" HSA	CASE SIZE: 2"	SCREEN INT.: 74-84 FT.	PROTECTION LEVEL: 0.010"
TOC ELEV.: 70.83 FT.	MONITOR INST.: FID	TOT DPTH: 84.5 FT.	DPTH TO ∇ 4.30 FT.
LOGGED BY: J. Tarr	WELL DEVELOPMENT DATE: 11-26-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0					SILTY SAND: light brown to black, dense to very dense, fine grain.		SM	posthole	
0									
0								7,7,12,50	
16								9,16,25,34	
14								3,10,18,20	
28								5,5,6,9	
10					CLAYEY SAND: greenish grey.		SC	3,3,5,4	
22								4,7,6,7	
NA								No Recovery	
12					SILTY SAND: light brown, coarse grain.		SM	14,14,12,16	
13								8,7,9,2	
21								4,5,5,4	
24								8,11,11,12	
15					SAND: Dark grey to olive grey, a trace of clay.		SP	7,16,18,18	
29					CLAYEY SAND: greenish grey, dry.		CL	2,2,4,5	
10					SANDY CLAY: dark to olive grey, very soft.		SC	2,2,3,2	
					LIMESTONE and DOLOSTONE: fossiliferous, grey to tan with dark green clay.		GP	1,1,1	
2								7,14,5	
NA									

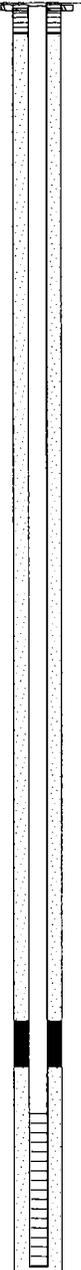
TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-9S	BORING NO. CEF-342-9S
CLIENT: SOUTH DIVNAVFACENGC.COM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 12-09-97	COMPLTD: 12-09-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 5-15 ft.	PROTECTION LEVEL: 0
TOC ELEV.: 71.28 FT.	MONITOR INST.: FID	TOT DPTH: 15.5FT.	DPTH TO ∇ 5.70 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 12-10-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1				0	SILTY SAND: Dark gray to black, fine grain.		SM	posthole	
2									
3									
4			0						
5									
6									
7									
8									
9			0						
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

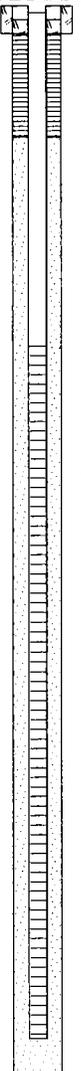
TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-101	BORING NO. CEF-342-101
CLIENT: SOUTHDIVNAVFACENGCOM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 12-09-97	COMPLTD: 12-09-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 40-45 ft.	PROTECTION LEVEL: D
TOC ELEV.: 71.21 FT.	MONITOR INST.: FID	TOT DPTH: 45.5FT.	DPTH TO ∇ 5.20 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 12-10-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1				0	SILTY SAND: Dark brown to black, fine grain.		SM	posthole	
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20				0			CH		
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-11D	BORING NO. CEF-342-11D
CLIENT: SOUTHDIVNAVFACENGCOM			PROJECT NO: 02549-03
CONTRACTOR: Custon Drilling		DATE STARTED: 12-09-97	COMPLTD: 12-09-97
METHOD: 4.25" HSA	CASE SIZE: 2"	SCREEN INT.: 72-82 FT.	PROTECTION LEVEL: 0.010"
TOC ELEV.: 71.43 FT.	MONITOR INST.: FID	TOT DPTH: 82.5FT.	DPTH TO ∇ 5.33 FT.
LOGGED BY: J. Tarr	WELL DEVELOPMENT DATE: 12-10-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0					SITLY SAND: brown, fine to very fine grain, sub-rounded to sub-angular.		SM	posthole	
0					Saturated.				
0									
0									
0									

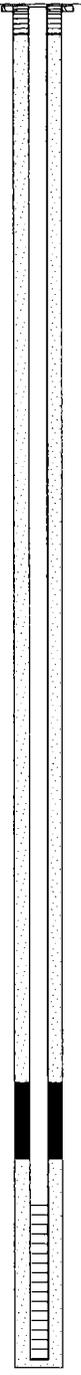
TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-12S	BORING NO. CEF-342-12S
CLIENT: SOUTH DIV NAV FAC ENG COM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 11-18-97	COMPLTD: 11-18-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 5-15 ft.	PROTECTION LEVEL: D
TOC ELEV.: 71.28 FT.	MONITOR INST.: FID	TOT DPTH: 15.5 FT.	DPTH TO ∇ 6.99 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 11-18-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1			0	SILTY SAND: Dark gray to black, fine grain.		SM	posthole	
2								
3								
4								
5								
6			0					
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-131	BORING NO. CEF-342-131
CLIENT: SOUTHDIVNAVFACENGCOM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 11-24-97	COMPLTD: 11-24-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 40-45 ft.	PROTECTION LEVEL: D
TOC ELEV.: 70.48 FT.	MONITOR INST.: FID	TOT DPTH: 45.5FT.	DPTH TO ∇ 4.80 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 11-25-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1			0	SILTY SAND: Medium grey to black, fine grain. No odor.		SM	posthole	
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14			0	SILTY SAND: Dark brown, fine grain. No odor.				
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
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36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-14D	BORING NO. CEF-342-14D
CLIENT: SOUTHDIVNAVFACENGCOM			PROJECT NO: 02549-03
CONTRACTOR: Custon Drilling		DATE STARTED: 11-22-97	COMPLTD: 11-22-97
METHOD: 4.25" HSA	CASE SIZE: 2"	SCREEN INT.: 78-88 FT.	PROTECTION LEVEL: 0.010"
TOC ELEV.: 70.46 FT.	MONITOR INST.: FID	TOT DPTH: 88.5FT.	DPTH TO ∇ 4.75 FT.
LOGGED BY: J. Tarr	WELL DEVELOPMENT DATE: 11-25-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0					SITLY SAND: dark brown to black, fine gran.		SM	posthole	
0									
0									
0									
35					Slight petroleum odor.				
30					Slight petroleum odor.				

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-15S	BORING NO. CEF-342-15S
CLIENT: SOUTHDIVNAVFACENGCOM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 11-18-97	COMPLTD: 11-18-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 5-15 ft.	PROTECTION LEVEL: D
TOC ELEV.: 71.33 FT.	MONITOR INST.: FID	TOT DPTH: 15.5FT.	DPTH TO ∇ 6.30 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 11-18-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1					SILTY SAND: Dark gray to black, fine grain.		SM		
2				0			posthole		
3									
4									
5									
6				0					
7									
8									
9									
10									
11									
12				0					
13									
14									
15									
16									
17									
18									
19									
20									

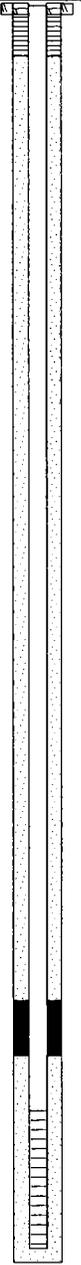
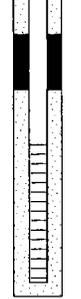
TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-161	BORING NO. CEF-342-161
CLIENT: SOUTH DIV NAV FAC ENG COM		PROJECT NO: 02549-03	
CONTRACTOR: Custom Drilling		DATE STARTED: 11-24-97	COMPLTD: 11-24-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 40-45 ft.	PROTECTION LEVEL: D
TOC ELEV.: 71.34 FT.	MONITOR INST.: FID	TOT DPTH: 45.5 FT.	DPTH TO ∇ 5.10 FT.
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 11-25-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1					SILTY SAND: Medium grey to black, fine grain. No odor.		SM		
2								posthole	
3									
4				0					
5									
6									
7									
8				0	SILTY SAND: Dark brown, fine grain. No odor.				
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20				0					
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
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42									
43									
44									
45									
46									
47									
48									
49									
50									

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-18S	BORING NO. CEF-342-18S
CLIENT: SOUTHDIIVNAVFACENGCOM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 11-18-97	COMPLTD: 11-18-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 5-15 ft.	PROTECTION LEVEL: D
TOC ELEV.: 68.53 FT.	MONITOR INST.: FID	TOT DPTH: 15.5FT.	DPTH TO ∇ 1.30 FT.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 11-18-97		SITE: Day Tank 2

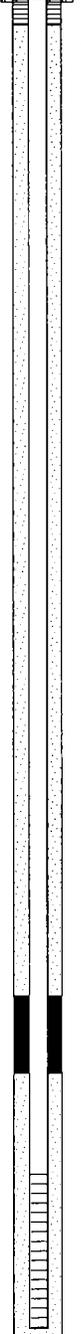
DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1				SILTY SAND: Dark gray to black, fine grain.		SM		
2			0			posthole		
3								
4								
5								
6								
7								
8			0					
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-191	BORING NO. CEF-342-191
CLIENT: SOUTHDIVNAVFACENCOM			PROJECT NO: 02549-03
CONTRACTOR: Custom Drilling		DATE STARTED: 11-25-97	COMPLTD: 11-25-97
METHOD: HSA	CASE SIZE: 2in.	SCREEN INT.: 40-45 ft.	PROTECTION LEVEL: D
TOC ELEV.: 68.59 FT.	MONITOR INST.: FID	TOT DPTH: 45.5FT.	DPTH TO ∇ 3.95 FT.
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 11-26-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1					SILTY SAND: Dark brown to black, fine grain. No odor.		SM	posthole	
2									
3									
4									
5									
6									
7									
8									
9									
10									
11				0					
12									
13									
14									
15									
16									
17									
18									
19									
20				0					
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34				0					
35					SILTY SAND: Medium grey to brown, fine grain. No odor.				
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

TITLE: NAS Cecil Field, Day Tank 2 Site Assessment Report		LOG of WELL: CEF-342-20D	BORING NO. CEF-342-20D
CLIENT: SOUTHDIVNAVFACENGCOM			PROJECT NO: 02549-03
CONTRACTOR: Custon Drilling		DATE STARTED: 11-24-97	COMPLTD: 11-24-97
METHOD: 4.25 HSA	CASE SIZE: 2"	SCREEN INT.: 76.5-86.5 FT.	PROTECTION LEVEL: 0.010"
TOC ELEV.: 68.57 FT.	MONITOR INST.: FID	TOT DPTH: 87FT.	DPTH TO ∇ 3.80 FT.
LOGGED BY: J. Tarr	WELL DEVELOPMENT DATE: 11-25-97		SITE: Day Tank 2

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0					SITLY SAND: black, fine grain.		SM		
0					Hard pan.				
0									
20									
2									



APPENDIX D
ANALYTICAL DATA

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR68891	JR68892	JR68893	JR68894								
Site	DAYTANK2	DAYTANK2	DAYTANK2	DAYTANK2								
Locator	DPT1-10	DPT1-25	DPT1-45	DPT1-65								
Collect Date:	18-AUG-97	18-AUG-97	18-AUG-97	18-AUG-97								
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX, MTBE, & DICHLOROBENZENES		ug/l											
Benzene	1	ug/l	1	170	ug/l	10	2	ug/l	1	1	ug/l	1	
Ethylbenzene	1 U	ug/l	1	34	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	
Toluene	1 U	ug/l	1	8	ug/l	1	2	ug/l	1	2	ug/l	1	
Chlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	
Methyl tert-butyl ether	2 U	ug/l	2	11	ug/l	2	2 U	ug/l	2	2 U	ug/l	2	
1,2-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	
1,3-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	
1,4-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	
m,p-Xylene	1 U	ug/l	1	490	ug/l	10	1 U	ug/l	1	7	ug/l	1	
o-Xylene	6	ug/l	1	180	ug/l	10	1 U	ug/l	1	4	ug/l	1	

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:
Site
Locator
Collect Date:

JR69051
DAYTANK2
DPT2-10
19-AUG-97
VALUE QUAL UNITS DL

JR69052
DAYTANK2
DPT2-25
19-AUG-97
VALUE QUAL UNITS DL

JR69053
DAYTANK2
DPT2-45
19-AUG-97
VALUE QUAL UNITS DL

JR69054
DAYTANK2
DPT2-61
19-AUG-97
VALUE QUAL UNITS DL

BETX, MTBE, & DICHLOROBENZENES

ug/l

Compound	JR69051 VALUE	JR69051 QUAL UNITS	JR69051 DL	JR69052 VALUE	JR69052 QUAL UNITS	JR69052 DL	JR69053 VALUE	JR69053 QUAL UNITS	JR69053 DL	JR69054 VALUE	JR69054 QUAL UNITS	JR69054 DL
Benzene	46	ug/l	1	52	ug/l	1	86	ug/l	1	40	ug/l	1
Ethylbenzene	4	ug/l	1	3	ug/l	1	24	ug/l	1	3	ug/l	1
Toluene	3	ug/l	1	1 U	ug/l	1	5	ug/l	1	1 U	ug/l	1
Chlorobenzene	9	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Methyl tert-butyl ether	3	ug/l	2	2 U	ug/l	2	3	ug/l	2	2 U	ug/l	2
1,2-Dichlorobenzene	3	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,3-Dichlorobenzene	23	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,4-Dichlorobenzene	75	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
m,p-Xylene	71	ug/l	1	7	ug/l	1	60	ug/l	1	7	ug/l	1
o-Xylene	45	ug/l	1	3	ug/l	1	32	ug/l	1	3	ug/l	1

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR69055		JR69056		JR69057		JR69058		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	DPT3-10		DPT3-25		DPT3-45		DPT3-65		
Collect Date:	19-AUG-97		19-AUG-97		19-AUG-97		19-AUG-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX, MTBE, & DICHLOROBENZENES		ug/l										
Benzene	2	ug/l	1	1	ug/l	1	17	ug/l	1	1	ug/l	1
Ethylbenzene	1 U	ug/l	1	1 U	ug/l	1	5	ug/l	1	2	ug/l	1
Toluene	2	ug/l	1	2	ug/l	1	1 U	ug/l	1	2	ug/l	1
Chlorobenzene	1 U	ug/l	1									
Methyl tert-butyl ether	2 U	ug/l	2									
1,2-Dichlorobenzene	1 U	ug/l	1									
1,3-Dichlorobenzene	1 U	ug/l	1									
1,4-Dichlorobenzene	1 U	ug/l	1									
m,p-Xylene	1 U	ug/l	1	7	ug/l	1	7	ug/l	1	7	ug/l	1
o-Xylene	1 U	ug/l	1	3	ug/l	1	3	ug/l	1	3	ug/l	1

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR69121		JR69122		JR69251		JR69252		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	DPT4-10		DPT4-25		DPT4-45		DPT4-65		
Collect Date:	19-AUG-97		19-AUG-97		20-AUG-97		20-AUG-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX, MTBE, & DICHLOROBENZENES		ug/l										
Benzene	2	ug/l	1	41	ug/l	1	2900	ug/l	50	480	ug/l	20
Ethylbenzene	37	ug/l	1	1 U	ug/l	1	120	ug/l	1	23	ug/l	1
Toluene	2	ug/l	1	1 U	ug/l	1	46	ug/l	1	6	ug/l	1
Chlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Methyl tert-butyl ether	2 U	ug/l	2	2 U	ug/l	2	2 U	ug/l	2	2 U	ug/l	2
1,2-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
m,p-Xylene	32	ug/l	1	1 U	ug/l	1	1200	ug/l	50	280	ug/l	20
o-Xylene	1 U	ug/l	1	4	ug/l	1	650	ug/l	50	120	ug/l	1

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR69253		JR69254		JR69255		JR69291		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	DPT5-10		DPT5-25		DPT5-45		DPT5-65		
Collect Date:	20-AUG-97		20-AUG-97		20-AUG-97		20-AUG-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX, MTBE, & DICHLOROBENZENES		ug/l										
Benzene	1	ug/l	1	1	ug/l	1	1	ug/l	1	270	ug/l	10
Ethylbenzene	1 U	ug/l	1	1 U	ug/l	1	2	ug/l	1	61	ug/l	1
Toluene	1 U	ug/l	1	1 U	ug/l	1	2	ug/l	1	8	ug/l	1
Chlorobenzene	1 U	ug/l	1									
Methyl tert-butyl ether	2 U	ug/l	2									
1,2-Dichlorobenzene	1 U	ug/l	1									
1,3-Dichlorobenzene	1 U	ug/l	1									
1,4-Dichlorobenzene	1 U	ug/l	1									
m,p-Xylene	1 U	ug/l	1	1 U	ug/l	1	7	ug/l	1	420	ug/l	10
o-Xylene	1 U	ug/l	1	3	ug/l	1	3	ug/l	1	200	ug/l	10

U = NOT DETECTED J = ESTIMATED VALUE
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 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR69461		JR69462		JR69463		JR69464		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	DPT6-10		DPT6-25		DPT6-45		DPT6-65		
Collect Date:	21-AUG-97		21-AUG-97		21-AUG-97		21-AUG-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX, MTBE, & DICHLOROBENZENES		ug/l										
Benzene	40	ug/l	10	1	ug/l	1	1 U	ug/l	1	10 U	ug/l	10
Ethylbenzene	30	ug/l	10	1 U	ug/l	1	3	ug/l	1	10 U	ug/l	10
Toluene	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1	10 U	ug/l	10
Chlorobenzene	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1	10 U	ug/l	10
Methyl tert-butyl ether	20 U	ug/l	20	2 U	ug/l	2	2 U	ug/l	2	20 U	ug/l	20
1,2-Dichlorobenzene	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1	10 U	ug/l	10
1,3-Dichlorobenzene	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1	10 U	ug/l	10
1,4-Dichlorobenzene	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1	10 U	ug/l	10
m,p-Xylene	70	ug/l	10	7	ug/l	1	8	ug/l	1	130	ug/l	10
o-Xylene	70	ug/l	10	1 U	ug/l	1	1 U	ug/l	1	70	ug/l	10

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NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:
Site
Locator
Collect Date:

JR69465
DAYTANK2
DPT7-10
21-AUG-97
VALUE QUAL UNITS DL

JR69466
DAYTANK2
DPT7-25
21-AUG-97
VALUE QUAL UNITS DL

JR69511
DAYTANK2
DPT7-45
21-AUG-97
VALUE QUAL UNITS DL

JR69512
DAYTANK2
DPT7-65
21-AUG-97
VALUE QUAL UNITS DL

		VALUE	QUAL UNITS	DL									
BETX, MTBE, & DICHLOROBENZENES			ug/l										
Benzene		17	ug/l	1	36	ug/l	1	1 U	ug/l	1	61	ug/l	1
Ethylbenzene		1 U	ug/l	1	5	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Toluene		1 U	ug/l	1									
Chlorobenzene		1 U	ug/l	1									
Methyl tert-butyl ether		2 U	ug/l	2									
1,2-Dichlorobenzene		1 U	ug/l	1									
1,3-Dichlorobenzene		1 U	ug/l	1									
1,4-Dichlorobenzene		1 U	ug/l	1									
m,p-Xylene		1 U	ug/l	1	9	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
o-Xylene		1 U	ug/l	1	13	ug/l	1	1 U	ug/l	1	1 U	ug/l	1

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NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR69513		JR69711		JR69712		JR69713		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	DPT7-81		DPT8-10		DPT8-25		DPT8-45		
Collect Date:	21-AUG-97		22-AUG-97		22-AUG-97		22-AUG-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX, MTBE, & DICHLOROBENZENES		ug/l										
Benzene	13	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Ethylbenzene	1 U	ug/l	1									
Toluene	2	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1									
Methyl tert-butyl ether	2 U	ug/l	2									
1,2-Dichlorobenzene	1 U	ug/l	1									
1,3-Dichlorobenzene	1 U	ug/l	1									
1,4-Dichlorobenzene	1 U	ug/l	1									
m,p-Xylene	1 U	ug/l	1									
o-Xylene	1 U	ug/l	1									

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:
Site
Locator
Collect Date:

JR70741
DAYTANK2
DPT8-62
02-SEP-97
VALUE QUAL UNITS DL

JR70742
DAYTANK2
DPT8-91
02-SEP-97
VALUE QUAL UNITS DL

JR69714
DAYTANK2
DPT9-10
22-AUG-97
VALUE QUAL UNITS DL

JR69715
DAYTANK2
DPT9-25
22-AUG-97
VALUE QUAL UNITS DL

BETX, MTBE, & DICHLOROBENZENES

ug/l

	VALUE	QUAL UNITS	DL									
Benzene	1	U ug/l	1	2	ug/l	1	1	U ug/l	1	1	U ug/l	1
Ethylbenzene	1	U ug/l	1									
Toluene	1	U ug/l	1									
Chlorobenzene	1	U ug/l	1									
Methyl tert-butyl ether	2	U ug/l	2									
1,2-Dichlorobenzene	1	U ug/l	1									
1,3-Dichlorobenzene	1	U ug/l	1									
1,4-Dichlorobenzene	1	U ug/l	1									
m,p-Xylene	1	U ug/l	1									
o-Xylene	1	U ug/l	1									

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
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NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR69851		JR70871		JR70872		JR70991		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	DPT9-45		DPT9-65		DPT9-82		DPT10-65		
Collect Date:	22-AUG-97		03-SEP-97		03-SEP-97		03-SEP-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

		VALUE	QUAL UNITS	DL									
BETX, MTBE, & DICHLOROBENZENES	ug/l												
Benzene		1 U	ug/l	1	1	ug/l	1	1 U	ug/l	1	8	ug/l	1
Ethylbenzene		1 U	ug/l	1									
Toluene		1 U	ug/l	1									
Chlorobenzene		1 U	ug/l	1									
Methyl tert-butyl ether		2 U	ug/l	2									
1,2-Dichlorobenzene		1 U	ug/l	1									
1,3-Dichlorobenzene		1 U	ug/l	1									
1,4-Dichlorobenzene		1 U	ug/l	1									
m,p-Xylene		1 U	ug/l	1									
o-Xylene		1 U	ug/l	1	3	ug/l	1	1 U	ug/l	1	1 U	ug/l	1

U = NOT DETECTED J = ESTIMATED VALUE
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 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:
Site
Locator
Collect Date:

JR70992
DAYTANK2
DPT10-84
03-SEP-97
VALUE QUAL UNITS DL

JR70993
DAYTANK2
DPT11-14
04-SEP-97
VALUE QUAL UNITS DL

JR70994
DAYTANK2
DPT11-25
04-SEP-97
VALUE QUAL UNITS DL

JR70995
DAYTANK2
DPT11-45
04-SEP-97
VALUE QUAL UNITS DL

BETX, MTBE, & DICHLOROBENZENES

ug/l

	VALUE	QUAL UNITS	DL									
Benzene	82	ug/l	1	16	ug/l	1	1	ug/l	1	1 U	ug/l	1
Ethylbenzene	1 U	ug/l	1	80	ug/l	1	39	ug/l	1	1 U	ug/l	1
Toluene	1 U	ug/l	1	7	ug/l	1	6	ug/l	1	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1									
Methyl tert-butyl ether	2 U	ug/l	2	14	ug/l	2	2 U	ug/l	2	2 U	ug/l	2
1,2-Dichlorobenzene	1 U	ug/l	1									
1,3-Dichlorobenzene	1 U	ug/l	1									
1,4-Dichlorobenzene	1 U	ug/l	1									
m,p-Xylene	1 U	ug/l	1	250	ug/l	5	23	ug/l	1	1 U	ug/l	1
o-Xylene	1 U	ug/l	1	43	ug/l	1	42	ug/l	1	1 U	ug/l	1

U = NOT DETECTED J = ESTIMATED VALUE
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R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:
Site
Locator
Collect Date:

JR70996
DAYTANK2
DPT11-65
04-SEP-97
VALUE QUAL UNITS DL

JR71341
DAYTANK2
DPT11-85
05-SEP-97
VALUE QUAL UNITS DL

JR71342
DAYTANK2
DPT12-65
05-SEP-97
VALUE QUAL UNITS DL

JR71361
DAYTANK2
DPT12-86
05-SEP-97
VALUE QUAL UNITS DL

		VALUE	QUAL UNITS	DL									
BETX, MTBE, & DICHLOROBENZENES													
	ug/l												
	Benzene	1 U	ug/l	1	19	ug/l	1	10 U	ug/l	10	20	ug/l	10
	Ethylbenzene	1 U	ug/l	1	1 U	ug/l	1	60	ug/l	10	110	ug/l	10
	Toluene	1 U	ug/l	1	3	ug/l	1	20	ug/l	10	30	ug/l	10
	Chlorobenzene	1 U	ug/l	1	1 U	ug/l	1	10 U	ug/l	10	10 U	ug/l	10
	Methyl tert-butyl ether	2 U	ug/l	2	2 U	ug/l	2	20 U	ug/l	20	20 U	ug/l	20
	1,2-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	10 U	ug/l	10	10 U	ug/l	10
	1,3-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	10 U	ug/l	10	10 U	ug/l	10
	1,4-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	10 U	ug/l	10	10 U	ug/l	10
	m,p-Xylene	1 U	ug/l	1	7	ug/l	1	140	ug/l	10	260	ug/l	10
	o-Xylene	1 U	ug/l	1	1 U	ug/l	1	140	ug/l	10	360	ug/l	10

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NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:
Site
Locator
Collect Date:

JR74713
DAYTANK2
DPT13-10
03-OCT-97
VALUE QUAL UNITS DL

JR74714
DAYTANK2
DPT13-25
03-OCT-97
VALUE QUAL UNITS DL

JR74715
DAYTANK2
DPT13-45
03-OCT-97
VALUE QUAL UNITS DL

JR74941
DAYTANK2
DPT13-57
03-OCT-97
VALUE QUAL UNITS DL

BETX, MTBE, & DICHLOROBENZENES

ug/l

	VALUE	QUAL UNITS	DL									
Benzene	38	ug/l	1	2	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Ethylbenzene	270	ug/l	10	2	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Toluene	380	ug/l	10	2	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1									
Methyl tert-butyl ether	2 U	ug/l	2									
1,2-Dichlorobenzene	1 U	ug/l	1									
1,3-Dichlorobenzene	1 U	ug/l	1									
1,4-Dichlorobenzene	1 U	ug/l	1									
m,p-Xylene	620	ug/l	10	7	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
o-Xylene	230	ug/l	10	3	ug/l	1	1 U	ug/l	1	1 U	ug/l	1

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NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR74711		JR74712		JR74581		JR74582		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	DPT14-65		DPT14-80		DPT15-45		DPT15-65		
Collect Date:	02-OCT-97		03-OCT-97		02-OCT-97		02-OCT-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX, MTBE, & DICHLOROBENZENES		ug/l			ug/l			ug/l			ug/l		
Benzene	2	ug/l	1	1	ug/l	1	1024	ug/l	10	1100	ug/l	10	
Ethylbenzene	1 U	ug/l	1	1 U	ug/l	1	49	ug/l	1	18	ug/l	1	
Toluene	1 U	ug/l	1	1 U	ug/l	1	18	ug/l	1	8	ug/l	1	
Chlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	
Methyl tert-butyl ether	2 U	ug/l	2	2 U	ug/l	2	2 U	ug/l	2	2 U	ug/l	2	
1,2-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	
1,3-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	
1,4-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	
m,p-Xylene	7	ug/l	1	1 U	ug/l	1	829	ug/l	10	65	ug/l	1	
o-Xylene	3	ug/l	1	3	ug/l	1	452	ug/l	10	48	ug/l	1	

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR74583		JR74942		JR74943		JR75031		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	DPT15-80		DPT16-61		DPT16-70		DPT17-45		
Collect Date:	02-OCT-97		04-OCT-97		04-OCT-97		06-OCT-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX, MTBE, & DICHLOROBENZENES		ug/l											
Benzene		280	ug/l	5	35	ug/l	1	2	ug/l	1	1 U	ug/l	1
Ethylbenzene		5	ug/l	1	2	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Toluene		4	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Chlorobenzene		1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Methyl tert-butyl ether		2 U	ug/l	2	2 U	ug/l	2	2 U	ug/l	2	2 U	ug/l	2
1,2-Dichlorobenzene		1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,3-Dichlorobenzene		1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,4-Dichlorobenzene		1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
m,p-Xylene		26	ug/l	1	1 U	ug/l	1	7	ug/l	1	1 U	ug/l	1
o-Xylene		16	ug/l	1	1 U	ug/l	1	3	ug/l	1	1 U	ug/l	1

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER DPT and SCREENING DATA -- REPORT NO. 9600

Lab Sample Number:	JR70873	JR70874	JR70875
Site	DAYTANK2	DAYTANK2	DAYTANK2
Locator	CEF-043-47D	CEF-043-50D	DUPLICATE-2
Collect Date:	03-SEP-97	03-SEP-97	03-SEP-97
	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL

BETX, MTBE, & DICHLOROBENZENES		ug/l								
Benzene	1	ug/l	1	1 U	ug/l	1	1	ug/l	1	1
Ethylbenzene	2	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1
Toluene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1
Chlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1
Methyl tert-butyl ether	2 U	ug/l	2	2 U	ug/l	2	2 U	ug/l	2	2
1,2-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1
1,3-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1
1,4-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1
m,p-Xylene	7	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1
o-Xylene	1 U	ug/l	1	3	ug/l	1	3	ug/l	1	1

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
 SOIL ANALYTICAL DATA -- REPORT REQUEST NO. 9967

Lab Sample Number:	A8E0601690	A8C1901890	A8C1901890	A8C1901890
Site	DAYTANK2	DAYTANK2	DAYTANK2	DAYTANK2
Locator	CEF-342-SB1H	CEF-342-SB4	CEF-342-SB6	CEF-342-SB18
Collect Date:	05-MAY-98	18-MAR-98	18-MAR-98	18-MAR-98
	VALUE QUAL UNITS DL			

	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
BETX												
Benzene	720	U ug/kg	720	1.1	U ug/kg	1.1	780	U ug/kg	780	780	U ug/kg	780
Ethylbenzene	33000	J ug/kg	720	1.1	U ug/kg	1.1	7300	J ug/kg	780	11000	J ug/kg	780
Toluene	3700	J ug/kg	720	1.1	U ug/kg	1.1	820	J ug/kg	780	2400	J ug/kg	780
Xylenes (total)	42000	J ug/kg	720	1.1	U ug/kg	1.1	14000	J ug/kg	780	16000	J ug/kg	780
PAHs												
Acenaphthene	4600	U ug/kg	4600	220	U ug/kg	220	1200	U ug/kg	1200	1000	U ug/kg	500
Acenaphthylene	4600	U ug/kg	4600	220	U ug/kg	220	1200	U ug/kg	1200	500	U ug/kg	500
Anthracene	4600	U ug/kg	4600	220	U ug/kg	220	1200	U ug/kg	1200	500	U ug/kg	500
Benzo (a) anthracene	120	U ug/kg	120	5.6	U ug/kg	5.6	31	U ug/kg	31	12	U ug/kg	12
Benzo (b) fluoranthene	120	U ug/kg	120	5.6	U ug/kg	5.6	31	U ug/kg	31	19	U ug/kg	12
Benzo (k) fluoranthene	120	U ug/kg	120	5.6	U ug/kg	5.6	31	U ug/kg	31	12	U ug/kg	12
Benzo (a) pyrene	120	U ug/kg	120	5.6	U ug/kg	5.6	31	U ug/kg	31	18	U ug/kg	12
Chrysene	460	U ug/kg	460	22	U ug/kg	22	120	U ug/kg	120	50	U ug/kg	50
Dibenzo (a,h) anthracene	120	U ug/kg	120	5.6	U ug/kg	5.6	31	U ug/kg	31	12	U ug/kg	12
Fluoranthene	130	J ug/kg	120	5.6	U ug/kg	5.6	250	U ug/kg	31	210	U ug/kg	12
Fluorene	4600	U ug/kg	4600	220	U ug/kg	220	1200	U ug/kg	1200	500	U ug/kg	500
Indeno (1,2,3-cd) pyrene	120	U ug/kg	120	5.6	U ug/kg	5.6	31	U ug/kg	31	12	U ug/kg	12
Benzo (g,h,i) perylene	120	U ug/kg	120	5.6	U ug/kg	5.6	31	U ug/kg	31	12	U ug/kg	12
Naphthalene	13000	U ug/kg	4600	220	U ug/kg	220	3900	U ug/kg	1200	4100	U ug/kg	500
Phenanthrene	4600	U ug/kg	4600	220	U ug/kg	220	1200	U ug/kg	1200	500	U ug/kg	500
Pyrene	120	U ug/kg	120	5.6	U ug/kg	5.6	31	U ug/kg	31	12	U ug/kg	12
FLA PRO												
TPH C8-C40	10000	mg/kg	230	11	U mg/kg	11	3600	mg/kg	250	5500	mg/kg	250

U = NOT DETECTED J = ESTIMATED VALUE
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NAS CECIL FIELD -- DAY TANK 2
 SOIL ANALYTICAL DATA -- REPORT REQUEST NO. 9967

Lab Sample Number:	A8C1901890	A8C1901890			
Site	DAYTANK2	DAYTANK2			
Locator	CEF-342-SB25	CEF-342-SB28			
Collect Date:	18-MAR-98	18-MAR-98			
VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
BETX						
Benzene	1.2	U ug/kg	1.2	1.1	U ug/kg	1.1
Ethylbenzene	4	J ug/kg	1.2	1.1	U ug/kg	1.1
Toluene	1.2	U ug/kg	1.2	1.1	U ug/kg	1.1
Xylenes (total)	25	J ug/kg	1.2	1.1	U ug/kg	1.1
PAHs						
Acenaphthene	230	U ug/kg	230	220	U ug/kg	220
Acenaphthylene	230	U ug/kg	230	220	U ug/kg	220
Anthracene	230	U ug/kg	230	220	U ug/kg	220
Benzo (a) anthracene	5.8	U ug/kg	5.8	5.5	U ug/kg	5.5
Benzo (b) fluoranthene	12	U ug/kg	5.8	5.5	U ug/kg	5.5
Benzo (k) fluoranthene	5.8	U ug/kg	5.8	5.5	U ug/kg	5.5
Benzo (a) pyrene	15	U ug/kg	5.8	5.5	U ug/kg	5.5
Chrysene	23	U ug/kg	23	22	U ug/kg	22
Dibenzo (a,h) anthracene	11	U ug/kg	5.8	5.5	U ug/kg	5.5
Fluoranthene	9	U ug/kg	5.8	5.5	U ug/kg	5.5
Fluorene	230	U ug/kg	230	220	U ug/kg	220
Indeno (1,2,3-cd) pyrene	9	U ug/kg	5.8	5.5	U ug/kg	5.5
Benzo (g,h,i) perylene	14	U ug/kg	5.8	5.5	U ug/kg	5.5
Naphthalene	230	U ug/kg	230	220	U ug/kg	220
Phenanthrene	230	U ug/kg	230	220	U ug/kg	220
Pyrene	14	U ug/kg	5.8	5.5	U ug/kg	5.5
FLA PRO						
TPH C8-C40	330	mg/kg	12	470	mg/kg	11

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NAS CECIL FIELD -- DAY TANK 2

GROUNDWATER -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9965

Lab Sample Number:
Site
Locator
Collect Date:

A8A1601400
DAYTANK2
CEF-342-1I
15-JAN-98

A8A0701470
DAYTANK2
CEF-342-2D
06-JAN-98

A8A0601220
DAYTANK2
CEF-342-3I
05-JAN-98

A8A0701470
DAYTANK2
CEF-342-4D
06-JAN-98

VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL

BETX AND DICHLOROBENZENES

Benzene	3.1	ug/l	1	4	ug/l	1	2600	ug/l	200	3.2	ug/l	1
Ethylbenzene	17	ug/l	1	1 U	ug/l	1	200 U	ug/l	200	1 U	ug/l	1
Toluene	1 U	ug/l	1	1 U	ug/l	1	200 U	ug/l	200	1 U	ug/l	1
Xylenes (total)	19	ug/l	1	1 U	ug/l	1	1900	ug/l	200	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1	1 U	ug/l	1	100 U	ug/l	100	1 U	ug/l	1
1,2-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	100 U	ug/l	100	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	100 U	ug/l	100	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	100 U	ug/l	100	1 U	ug/l	1

PAHs

Acenaphthene	1 U	ug/l	1	1 U	ug/l	1	2 U	ug/l	2	1 U	ug/l	1
Acenaphthylene	1 U	ug/l	1	1 U	ug/l	1	2 U	ug/l	2	1 U	ug/l	1
Anthracene	1 U	ug/l	1	1 U	ug/l	1	2 U	ug/l	2	1 U	ug/l	1
Benzo (a) anthracene	.1 U	ug/l	.1	.1 U	ug/l	.1	.2 U	ug/l	.2	.1 U	ug/l	.1
Benzo (b) fluoranthene	.1 U	ug/l	.1	.1 U	ug/l	.1	.2 U	ug/l	.2	.1 U	ug/l	.1
Benzo (k) fluoranthene	.05 U	ug/l	.05	.05 U	ug/l	.05	.1 U	ug/l	.1	.05 U	ug/l	.05
Benzo (a) pyrene	.1 U	ug/l	.1	.1 U	ug/l	.1	.2 U	ug/l	.2	.1 U	ug/l	.1
Chrysene	.1 U	ug/l	.1	.1 U	ug/l	.1	.2 U	ug/l	.2	.1 U	ug/l	.1
Dibenzo (a,h) anthracene	.1 U	ug/l	.1	.1 U	ug/l	.1	.2 U	ug/l	.2	.1 U	ug/l	.1
Fluoranthene	.1 U	ug/l	.1	.1 U	ug/l	.1	.2 U	ug/l	.2	.1 U	ug/l	.1
Fluorene	1 U	ug/l	1	1 U	ug/l	1	2 U	ug/l	2	1 U	ug/l	1
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	.1 U	ug/l	.1	.2 U	ug/l	.2	.1 U	ug/l	.1
Benzo (g,h,i) perylene	.1 U	ug/l	.1	.1 U	ug/l	.1	.2 U	ug/l	.2	.1 U	ug/l	.1
Naphthalene	9.4	ug/l	1	1 U	ug/l	1	74	ug/l	2	1 U	ug/l	1
Phenanthrene	1 U	ug/l	1	1 U	ug/l	1	2 U	ug/l	2	1 U	ug/l	1
Pyrene	.1 U	ug/l	.1	.1 U	ug/l	.1	.2 U	ug/l	.2	.1 U	ug/l	.1

FLA PRO

TPH C8-C40	4.8	mg/l	.5	.5 U	mg/l	.5	7.5	mg/l	.5	.5 U	mg/l	.5
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U = NOT DETECTED J = ESTIMATED VALUE
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R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
 GROUNDWATER -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9965

Lab Sample Number:	A8A0601220		A8A1501240		JR13951		A8A1001170		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	CEF-342-5I		CEF-342-6S		CEF-342-6S		CEF-342-7I		
Collect Date:	05-JAN-98		14-JAN-98		14-MAY-98		09-JAN-98		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX AND DICHLOROENZENES

Benzene	110	ug/l	10	96	ug/l	10	32	ug/l	1	7.2	ug/l	1
Ethylbenzene	22	ug/l	10	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
Toluene	10 U	ug/l	10	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
Xylenes (total)	470	ug/l	10	12	ug/l	10	-			1 U	ug/l	1
Chlorobenzene	5 U	ug/l	5	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
1,2-Dichlorobenzene	5 U	ug/l	5	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
1,3-Dichlorobenzene	5 U	ug/l	5	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
1,4-Dichlorobenzene	10 U	ug/l	10	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1

PAHs

Acenaphthene	1 U	ug/l	1	1 U	ug/l	1	-			1 U	ug/l	1
Acenaphthylene	1 U	ug/l	1	1 U	ug/l	1	-			1 U	ug/l	1
Anthracene	1 U	ug/l	1	1 U	ug/l	1	-			1 U	ug/l	1
Benzo (a) anthracene	.1 U	ug/l	.1	.1 U	ug/l	.1	-			.1 U	ug/l	.1
Benzo (b) fluoranthene	.1 U	ug/l	.1	.1 U	ug/l	.1	-			.1 U	ug/l	.1
Benzo (k) fluoranthene	.05 U	ug/l	.05	.05 U	ug/l	.05	-			.05 U	ug/l	.05
Benzo (a) pyrene	.1 U	ug/l	.1	.1 U	ug/l	.1	-			.1 U	ug/l	.1
Chrysene	.1 U	ug/l	.1	.1 U	ug/l	.1	-			.1 U	ug/l	.1
Dibenzo (a,h) anthracene	.1 U	ug/l	.1	.1 U	ug/l	.1	-			.1 U	ug/l	.1
Fluoranthene	.1 U	ug/l	.1	.1 U	ug/l	.1	-			.1 U	ug/l	.1
Fluorene	1 U	ug/l	1	1 U	ug/l	1	-			1 U	ug/l	1
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	.1 U	ug/l	.1	-			.1 U	ug/l	.1
Benzo (g,h,i) perylene	.1 U	ug/l	.1	.1 U	ug/l	.1	-			.1 U	ug/l	.1
Naphthalene	17	ug/l	1	1 U	ug/l	1	-			1 U	ug/l	1
Phenanthrene	1 U	ug/l	1	1 U	ug/l	1	-			1 U	ug/l	1
Pyrene	.1 U	ug/l	.1	.1 U	ug/l	.1	-			.1 U	ug/l	.1

FLA PRO

TPH C8-C40	7.5	mg/l	.5	.5 U	mg/l	.5	-			.5 U	mg/l	.5
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U = NOT DETECTED J = ESTIMATED VALUE
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 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9965

Lab Sample Number:	A8A0901070		A8A1501240		A8A1301270		A8A0901440		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	CEF-342-8D		CEF-342-9S		CEF-342-10I		CEF-342-11D		
Collect Date:	07-JAN-98		14-JAN-98		12-JAN-98		08-JAN-98		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX AND DICHLOROENZENES

Benzene	1.9	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	2.4	ug/l	1
Ethylbenzene	1 U	ug/l	1									
Toluene	1 U	ug/l	1									
Xylenes (total)	1 U	ug/l	1									
Chlorobenzene	1 U	ug/l	1									
1,2-Dichlorobenzene	1 U	ug/l	1									
1,3-Dichlorobenzene	1 U	ug/l	1									
1,4-Dichlorobenzene	1 U	ug/l	1									

PAHs

Acenaphthene	1 U	ug/l	1									
Acenaphthylene	1 U	ug/l	1									
Anthracene	1 U	ug/l	1									
Benzo (a) anthracene	.1 U	ug/l	.1									
Benzo (b) fluoranthene	.1 U	ug/l	.1									
Benzo (k) fluoranthene	.05 U	ug/l	.05									
Benzo (a) pyrene	.1 U	ug/l	.1									
Chrysene	.1 U	ug/l	.1									
Dibenzo (a,h) anthracene	.1 U	ug/l	.1									
Fluoranthene	.1 U	ug/l	.1									
Fluorene	1 U	ug/l	1									
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1									
Benzo (g,h,i) perylene	.1 U	ug/l	.1									
Naphthalene	1 U	ug/l	1									
Phenanthrene	1 U	ug/l	1									
Pyrene	.1 U	ug/l	.1									

FLA PRO

TPH C8-C40	.5 U	mg/l	.5									
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NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9965

Lab Sample Number:	A8A1501240	A8A1301270	A8A0901440	A8A1601400								
Site	DAYTANK2	DAYTANK2	DAYTANK2	DAYTANK2								
Locator	CEF-342-12S	CEF-342-13I	CEF-342-14D	CEF-342-15S								
Collect Date:	14-JAN-98	12-JAN-98	08-JAN-98	15-JAN-98								
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX AND DICHLOROBENZENES

Benzene	1 U	ug/l	1	71	ug/l	5	16	ug/l	5	1 U	ug/l	1
Ethylbenzene	1 U	ug/l	1	17	ug/l	5	5 U	ug/l	5	1 U	ug/l	1
Toluene	1 U	ug/l	1	5 U	ug/l	5	5 U	ug/l	5	1 U	ug/l	1
Xylenes (total)	1 U	ug/l	1	100	ug/l	5	5 U	ug/l	5	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1	5 U	ug/l	5	5 U	ug/l	5	1 U	ug/l	1
1,2-Dichlorobenzene	1 U	ug/l	1	5 U	ug/l	5	5 U	ug/l	5	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1	5 U	ug/l	5	5 U	ug/l	5	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1	5 U	ug/l	5	5 U	ug/l	5	1 U	ug/l	1

PAHs

Acenaphthene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1.2 U	ug/l	1.2
Acenaphthylene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1.2 U	ug/l	1.2
Anthracene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1.2 U	ug/l	1.2
Benzo (a) anthracene	.1 U	ug/l	.1	.1 U	ug/l	.1	.1 U	ug/l	.1	.12 U	ug/l	.12
Benzo (b) fluoranthene	.1 U	ug/l	.1	.1 U	ug/l	.1	.1 U	ug/l	.1	.12 U	ug/l	.12
Benzo (k) fluoranthene	.05 U	ug/l	.05	.05 U	ug/l	.05	.05 U	ug/l	.05	.059 U	ug/l	.059
Benzo (a) pyrene	.1 U	ug/l	.1	.1 U	ug/l	.1	.1 U	ug/l	.1	.12 U	ug/l	.12
Chrysene	.1 U	ug/l	.1	.1 U	ug/l	.1	.1 U	ug/l	.1	.12 U	ug/l	.12
Dibenzo (a,h) anthracene	.1 U	ug/l	.1	.1 U	ug/l	.1	.1 U	ug/l	.1	.12 U	ug/l	.12
Fluoranthene	.1 U	ug/l	.1	.1 U	ug/l	.1	.1 U	ug/l	.1	.12 U	ug/l	.12
Fluorene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1.2 U	ug/l	1.2
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	.1 U	ug/l	.1	.1 U	ug/l	.1	.12 U	ug/l	.12
Benzo (g,h,i) perylene	.1 U	ug/l	.1	.1 U	ug/l	.1	.1 U	ug/l	.1	.12 U	ug/l	.12
Naphthalene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1.2 U	ug/l	1.2
Phenanthrene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1.2 U	ug/l	1.2
Pyrene	.1 U	ug/l	.1	.1 U	ug/l	.1	.1 U	ug/l	.1	.12 U	ug/l	.12

FLA PRO

TPH C8-C40	.5 U	mg/l	.5									
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NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9965

Lab Sample Number:	A8A1001170	A8A0901070	A8A1601400	A8A1401230					
Site	DAYTANK2	DAYTANK2	DAYTANK2	DAYTANK2					
Locator	CEF-342-16I	CEF-342-17D	CEF-342-18S	CEF-342-19I					
Collect Date:	09-JAN-98	07-JAN-98	15-JAN-98	13-JAN-98					
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX AND DICHLOROBENZENES

Benzene	1 U	ug/l	1	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
Ethylbenzene	1 U	ug/l	1	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
Toluene	1 U	ug/l	1	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
Xylenes (total)	1 U	ug/l	1	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
1,2-Dichlorobenzene	1 U	ug/l	1	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1	10 U	ug/l	10	1 U	ug/l	1	1 U	ug/l	1

PAHs

Acenaphthene	1 U	ug/l	1									
Acenaphthylene	1 U	ug/l	1									
Anthracene	1 U	ug/l	1									
Benzo (a) anthracene	.1 U	ug/l	.1									
Benzo (b) fluoranthene	.1 U	ug/l	.1									
Benzo (k) fluoranthene	.05 U	ug/l	.05									
Benzo (a) pyrene	.1 U	ug/l	.1									
Chrysene	.1 U	ug/l	.1									
Dibenzo (a,h) anthracene	.1 U	ug/l	.1									
Fluoranthene	.1 U	ug/l	.1									
Fluorene	1 U	ug/l	1									
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1									
Benzo (g,h,i) perylene	.1 U	ug/l	.1									
Naphthalene	1 U	ug/l	1									
Phenanthrene	1 U	ug/l	1									
Pyrene	.1 U	ug/l	.1									

FLA PRO

TPH C8-C40	.5 U	mg/l	.5									
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NAS CECIL FIELD -- DAY TANK 2

GROUNDWATER -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9965

Lab Sample Number: A8A1401230
 Site: DAYTANK2
 Locator: CEF-342-20D
 Collect Date: 13-JAN-98

VALUE QUAL UNITS DL

BETX AND DICHLOROBENZENES

Benzene	13	ug/l	1
Ethylbenzene	1 U	ug/l	1
Toluene	1 U	ug/l	1
Xylenes (total)	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1
1,2-Dichlorobenzene	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1

PAHs

Acenaphthene	1 U	ug/l	1
Acenaphthylene	1 U	ug/l	1
Anthracene	1 U	ug/l	1
Benzo (a) anthracene	.1 U	ug/l	.1
Benzo (b) fluoranthene	.1 U	ug/l	.1
Benzo (k) fluoranthene	.05 U	ug/l	.05
Benzo (a) pyrene	.1 U	ug/l	.1
Chrysene	.1 U	ug/l	.1
Dibenzo (a,h) anthracene	.1 U	ug/l	.1
Fluoranthene	.1 U	ug/l	.1
Fluorene	1 U	ug/l	1
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1
Benzo (g,h,i) perylene	.1 U	ug/l	.1
Naphthalene	1 U	ug/l	1
Phenanthrene	1 U	ug/l	1
Pyrene	.1 U	ug/l	.1

FLA PRO

TPH C8-C40	.5 U	mg/l	.5
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U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2 -- GROUNDWATER
 LEAD -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9978

Lab Sample Number:	A8A1601400		A8A0701470		A8A0601220		A8A0701470		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	CEF-342-1I		CEF-342-2D		CEF-342-3I		CEF-342-4D		
Collect Date:	15-JAN-98		06-JAN-98		05-JAN-98		06-JAN-98		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Lead	.0035	mg/l	.003	.003 U	mg/l	.003	.003 U	mg/l	.003	.003 U	mg/l	.003
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U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2 -- GROUNDWATER
 LEAD -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9978

Lab Sample Number:	A8A0601220		A8A1501240		A8A1001170		A8A0901070		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	CEF-342-5I		CEF-342-6S		CEF-342-7I		CEF-342-8D		
Collect Date:	05-JAN-98		14-JAN-98		09-JAN-98		07-JAN-98		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Lead	.003 U	mg/l	.003	.0045	mg/l	.003	.003 U	mg/l	.003	.003 U	mg/l	.003
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U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2 -- GROUNDWATER
 LEAD -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9978

Lab Sample Number:	A8A1501240	A8A1301270	A8A0901440	A8A1501240							
Site	DAYTANK2	DAYTANK2	DAYTANK2	DAYTANK2							
Locator	CEF-342-9S	CEF-342-10I	CEF-342-11D	CEF-342-12S							
Collect Date:	14-JAN-98	12-JAN-98	08-JAN-98	14-JAN-98							
VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Lead	.003 U	mg/l	.003	.003 U	mg/l	.003	.003 U	mg/l	.003	.0043	mg/l	.003
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U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2 -- GROUNDWATER
 LEAD -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9978

Lab Sample Number:	A8A1301270		A8A0901440		A8A1601400		A8A1001170		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	CEF-342-13I		CEF-342-14D		CEF-342-15S		CEF-342-16I		
Collect Date:	12-JAN-98		08-JAN-98		15-JAN-98		09-JAN-98		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Lead	.003 U	mg/l	.003	.003 U	mg/l	.003	.02	mg/l	.003	.003 U	mg/l	.003
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U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2 -- GROUNDWATER
 LEAD -- JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9978

Lab Sample Number:	A8A0901070	A8A1601400	A8A1401230	A8A1401230					
Site	DAYTANK2	DAYTANK2	DAYTANK2	DAYTANK2					
Locator	CEF-342-17D	CEF-342-18S	CEF-342-19I	CEF-342-20D					
Collect Date:	07-JAN-98	15-JAN-98	13-JAN-98	13-JAN-98					
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Lead	.003	U mg/1	.003									
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U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2 -- GROUNDWATER
 DISSOLVED LEAD - JANUARY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9979

Lab Sample Number:
 Site
 Locator
 Collect Date:

A8A0601220
 DAYTANK2
 CEF-342-5I
 05-JAN-98

A8A1501240
 DAYTANK2
 CEF-342-6S
 14-JAN-98

A8A0901440
 DAYTANK2
 CEF-342-14D
 08-JAN-98

A8A1601400
 DAYTANK2
 CEF-342-15S
 15-JAN-98

VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL

Lead-DISS .003 U mg/1 .003 .003 U mg/1 .003 .003 U mg/1 .003 .016 mg/1 .003

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER -- MAY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9966

Lab Sample Number:	JR13954	JR13951	JR13952	JR13953							
Site	DAYTANK2	DAYTANK2	DAYTANK2	DAYTANK2							
Locator	CEF-342-3I	CEF-342-6S	CEF-342-7I	CEF-342-8D							
Collect Date:	14-MAY-98	14-MAY-98	14-MAY-98	14-MAY-98							
VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BETX, MTBE, & DICHLOROBENZENES

Benzene	2400	ug/l	100	32	ug/l	1	29	ug/l	1	3	ug/l	1
Ethylbenzene	280	ug/l	20	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Toluene	43	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Methyl tert-butyl ether	12	ug/l	2	2 U	ug/l	2	2 U	ug/l	2	2 U	ug/l	2
1,2-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
m,p-Xylene	1800	ug/l	20	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
o-Xylene	1000	ug/l	20	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER -- MAY 1998 ANALYTICAL DATA -- REPORT REQUEST NO. 9966

Lab Sample Number:	JR14303	JR14302	JR14301
Site	DAYTANK2	DAYTANK2	DAYTANK2
Locator	CEF-342-13I	CEF-342-14D	CEF-342-20D
Collect Date:	15-MAY-98	15-MAY-98	15-MAY-98
	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL

BETX, MTBE, & DICHLOROBENZENES

Benzene	170	ug/l	5	25	ug/l	1	19	ug/l	1
Ethylbenzene	35	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Toluene	6	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
Methyl tert-butyl ether	5	ug/l	2	2 U	ug/l	2	2 U	ug/l	2
1,2-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
m,p-Xylene	100	ug/l	1	1 U	ug/l	1	1 U	ug/l	1
o-Xylene	67	ug/l	1	1 U	ug/l	1	1 U	ug/l	1

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER -- ETHANE, ETHENE & METHANE -- REPORT REQUEST NO. 9964

Lab Sample Number:	I8E1502040			I8E1502040				I8E1502040				I8E1502040		
Site	DAYTANK2			DAYTANK2				DAYTANK2				DAYTANK2		
Locator	CEF-043-2N			CEF-043-2NDL				CEF-043-6N				CEF-043-6NDL		
Collect Date:	13-MAY-98			13-MAY-98				13-MAY-98				13-MAY-98		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL		

Ethane	14	ug/l	.5	15	ug/l	1.5	7.7	ug/l	.5	25 U	ug/l	25
Ethene	.5 U	ug/l	.5	1.5 U	ug/l	1.5	.5 U	ug/l	.5	25 U	ug/l	25
Methane	110	ug/l	.5	110	ug/l	1.5	310 J	ug/l	.5	630	ug/l	25

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
GROUNDWATER -- ETHANE, ETHENE & METHANE -- REPORT REQUEST NO. 9964

Lab Sample Number:	I8E1502040		I8E1901230		I8E1502040		I8E1901230		
Site	DAYTANK2		DAYTANK2		DAYTANK2		DAYTANK2		
Locator	CEF-043-18		CEF-043-24		CEF-043-33		CEF-043-47D		
Collect Date:	13-MAY-98		14-MAY-98		13-MAY-98		14-MAY-98		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Ethane	.5	U	ug/l	.5	.5	U	ug/l	.5	.5	U	ug/l	.5			
Ethene	.5	U	ug/l	.5	.5	U	ug/l	.5	.5	U	ug/l	.5			
Methane	3.5		ug/l	.5	.5	U	ug/l	.5	7.7		ug/l	.5			
												210	R	ug/l	.5

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
 GROUNDWATER -- ETHANE, ETHENE & METHANE -- REPORT REQUEST NO. 9964

Lab Sample Number:	I8E1901230	I8E1502040	I8E1502040
Site	DAYTANK2	DAYTANK2	DAYTANK2
Locator	CEF-043-47DDL	CEF-043-50D	CEF-043-50DDL
Collect Date:	14-MAY-98	13-MAY-98	13-MAY-98
	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL

Ethane	-			.5 U	ug/1	.5	2.5 U	ug/1	2.5
Ethene	-			.5 U	ug/1	.5	2.5 U	ug/1	2.5
Methane	190	ug/1	2.5	150 J	ug/1	.5	130	ug/1	2.5

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- DAY TANK 2
 STORM SEWER -- REPORT REQ NO. 9926

Lab Sample Number: A8E2701310
 Site: DAYTANK2
 Locator: CEF-342-SW1
 Collect Date: 26-MAY-98

	VALUE	QUAL UNITS	DL
BETX AND DICHLOROBENZENES			
Benzene	5.6	ug/l	1
Ethylbenzene	3.3	ug/l	1
Toluene	1 U	ug/l	1
Xylenes (total)	17	ug/l	1
Chlorobenzene	1 U	ug/l	1
1,2-Dichlorobenzene	9.4 J	ug/l	1
1,3-Dichlorobenzene	1.6 J	ug/l	1
1,4-Dichlorobenzene	11 J	ug/l	1
Trichloroethene	2.9	ug/l	1
Tetrachloroethene	6.7	ug/l	1
PAHs			
Acenaphthene	1 U	ug/l	1
Acenaphthylene	1 U	ug/l	1
Anthracene	1 U	ug/l	1
Benzo (a) anthracene	.1 U	ug/l	.1
Benzo (b) fluoranthene	.1 U	ug/l	.1
Benzo (k) fluoranthene	.05 U	ug/l	.05
Benzo (a) pyrene	.1 U	ug/l	.1
Chrysene	.1 U	ug/l	.1
Dibenzo (a,h) anthracene	.1 U	ug/l	.1
Fluoranthene	.1 U	ug/l	.1
Fluorene	1 U	ug/l	1
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1
Benzo (g,h,i) perylene	.1 U	ug/l	.1
Naphthalene	9.7	ug/l	1
Phenanthrene	1 U	ug/l	1
Pyrene	.1 U	ug/l	.1
FLA PRO			
TPH C8-C40	14	mg/l	.5

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

APPENDIX E
SOIL SCREENING RESULTS

DAY TANK 2
SOIL OVA SCREENING RESULTS (ppm)

Table E-1					
Soil Sample Organic Vapor Analyzer Results					
June & July, 1997					
Boring No.	Depth (ft bls)	Date Sampled	Unfiltered Concentration	Filtered Concentration	Actual Concentration
SB-1	1	6/30/97	0	0	0
	3	6/30/97	80	0	80
	5	6/30/97	1,600	0	1,600
	7	6/30/97	2,400	0	2,400
	7.5 wet	6/30/97	1,200	0	1,200
SB-2	1	6/30/97	100	0	100
	3	6/30/97	1,300	0	1,300
	5	6/30/97	1,200	0	1,200
	7 wet	6/30/97	1,000	0	1,000
SB-3	1	6/30/97	42	0	42
	3	6/30/97	3,500	0	3,500
	5	6/30/97	>5,000	0	>5,000
	7 wet	6/30/97	>5,000	0	>5,000
SB-4	1	6/30/97	0	0	0
	3	6/30/97	0	0	0
	5	6/30/97	0	0	0
	7 wet	6/30/97	0	0	0
SB-5	1	6/30/97	0	0	0
	3	6/30/97	1,700	0	1,700
	5	6/30/97	>5,000	0	>5,000
	6 wet	6/30/97	>5,000	0	>5,000
SB-6	1	6/30/97	0	0	0
	3	6/30/97	1,700	0	1,700
	5	6/30/97	4,300	0	4,300
	7 wet	6/30/97	3,300	0	3,300
SB-7	1	6/30/97	0	0	0
	3	6/30/97	2,700	0	2,700
	5	6/30/97	4,900	0	4,900
	7	6/30/97	>5,000	0	>5,000
	7.5 wet	6/30/97	>5,000	0	>5,000
SB-8	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	5	7/1/97	0	0	0
	7 wet	7/1/97	0	0	0
SB-9	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	5	7/1/97	0	0	0
	7 wet	7/1/97	0	0	0
SB-10	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	4*	7/1/97	NA	NA	NA
SB-10A	5	7/1/97	2,000	0	2,000
	6.5 wet	7/1/97	400	0	400
SB-11	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	5	7/1/97	0	0	0

DAY TANK 2
SOIL OVA SCREENING RESULTS (ppm)

	7	7/1/97	0	0	0
	7.5 wet	7/1/97	0	0	0
SB-12	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	5	7/1/97	0	0	0
	7 wet	7/1/97	0	0	0
SB-13	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	5	7/1/97	0	0	0
	6.5 wet	7/1/97	0	0	0
SB-14	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	5	7/1/97	0	0	0
	6 wet	7/1/97	0	0	0
SB-15	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	5	7/1/97	0	0	0
	7 wet	7/1/97	0	0	0
SB-16	1	7/1/97	0	0	0
	3	7/1/97	1,300	0	1,300
	5	7/1/97	>5,000	0	>5,000
	6 wet	7/1/97	2,300	0	2,300
SB-17	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	5	7/1/97	0	0	0
	7 wet	7/1/97	95	0	95
SB-18	1	7/1/97	0	0	0
	3	7/1/97	0	0	0
	5	7/1/97	360	0	360
	6 wet	7/1/97	2,100	0	2,100
SB-19	1	7/2/97	0	0	0
	3	7/2/97	0	0	0
	5	7/2/97	0	0	0
	6 wet	7/2/97	0	0	0
SB-20	1	7/2/97	10	0	10
	3	7/2/97	85	0	85
	4 wet	7/2/97	120	0	120
SB-21	1	7/2/97	15	0	15
	3	7/2/97	35	0	35
	4 wet	7/2/97	210	0	210
SB-22	1	7/2/97	5	0	5
	3	7/2/97	4,000	0	4,000
	5	7/2/97	>5,000	0	>5,000
	7	7/2/97	>5,000	0	>5,000
	7.5 wet	7/2/97	>5,000	0	>5,000
SB-23	1	7/2/97	0	0	0
	3	7/2/97	0	0	0
	5	7/2/97	2,300	0	2,300
	7 wet	7/2/97	3,400	0	3,400
SB-24	1	7/2/97	0	0	0
	3	7/2/97	0	0	0

DAY TANK 2
SOIL OVA SCREENING RESULTS (ppm)

	5	7/2/97	0	0	0
	7	7/2/97	0	0	0
	7.5 wet	7/2/97	0	0	0
SB-25	1	7/2/97	47	0	47
	3	7/2/97	>5,000	0	>5,000
	5	7/2/97	1,300	0	1,300
	7 wet	7/2/97	1,300	0	1,300
SB-26	1	7/3/97	0	0	0
	3	7/3/97	0	0	0
	5	7/3/97	0	0	0
	7	7/3/97	0	0	0
	7.5 wet	7/3/97	0	0	0
SB-27	1	7/3/97	0	0	0
	3	7/3/97	0	0	0
	5	7/3/97	0	0	0
	7 wet	7/3/97	0	0	0
SB-28	1	7/3/97	1,500	0	1,500
	3	7/3/97	3,000	0	3,000
	5	7/3/97	1,300	0	1,300
	7	7/3/97	3,700	0	3,700
	7.5 wet	7/3/97	1,100	0	1,100
SB-29	1	7/3/97	0	0	0
	3	7/3/97	14	0	14
	5	7/3/97	33	0	33
	7 wet	7/3/97	2,500	0	2,500
SB-30	1	7/3/97	0	0	0
	3	7/3/97	0	0	0
	5	7/3/97	0	0	0
	7 wet	7/3/97	0	0	0
SB-31	1	7/3/97	0	0	0
	3	7/3/97	0	0	0
	5	7/3/97	0	0	0
	7 wet	7/3/97	0	0	0
SB-32	1	7/7/97	0	0	0
	3	7/7/97	0	0	0
	5	7/7/97	0	0	0
	5.5 wet	7/7/97	0	0	0
SB-33	1	7/7/97	0	0	0
	3	7/7/97	0	0	0
	5	7/7/97	0	0	0
	7 wet	7/7/97	8	0	8

APPENDIX F
CONTAMINANT MASS CALCULATIONS

PROJECT	COMP. BY	JOB NO.
	CHK. BY	DATE
DAY TANK 2 SITE ASSESSMENT REPORT	JOE VELLO MOJ	2549.03 5/22/98

MASS OF CONTAMINANT IN THE SUBSTANCE

SOIL:

AREA OF SOIL CONTAMINATION:

74,503 ft² (Average of 3 planimeter readings)

AVG DEPTH TO THE GROUNDWATER IN THE AREA

OF CONTAMINATED SOIL: 6.0'

ASSUMING 6' of contaminated soil:

VOLUME OF EXCESSIVELY CONTAMINATED SOIL (IN PLACE)

447,018 ft³ or 16,556 yd³

MASS OF SOIL:

$$16,556 \text{ yd}^3 \times 1.5 \frac{\text{tons}}{\text{yd}^3} = 24,834 \text{ tons}$$

$$\text{or } 2.26 \times 10^7 \text{ kg}$$

MASS OF TRPN IN SOIL:

$$3,980 \text{ mg/kg} \times 2.26 \times 10^7 \text{ kg} =$$

$$89,854 \text{ kg of CP-5}$$

PROJECT
 DAY TRIP 2 SITE ASSESSMENT REGION

COMP. BY
 JOE ULLO
 CHK. BY
 MOJ

JOB NO.
 2549.03
 DATE
 5/22/98

GROUNDWATER

AREA OF SHALLOW GROUNDWATER CONTAMINATION, A_s

417,872 ft² (Avg. of 3 Planimeter Readings)

DEPTH OF SHALLOW GROUNDWATER CONTAMINATION, D_s

6' - 15' or 9'

VOLUME OF CONTAMINATED GROUNDWATER IN THE SHALLOW ZONE:

$A_s \times D_s \times 0.25$ (Porosity)
 94,246.2 ft³
 or 7.0 million gallons

AREA OF INTERMEDIATE GROUNDWATER CONTAMINATION, A_I

542,377 ft² (Avg. of 3 Planimeter Readings)

DEPTH INTERVAL OF INTERMEDIATE GROUNDWATER CONTAMINATION, D_I

15' - 45' or 30'

VOLUME OF CONTAMINATED GROUNDWATER IN THE INTERMEDIATE ZONE:

$A_I \times D_I \times 0.25$
 4,067,827 ft³
 or 30.4 million gallons

PROJECT DAY TANK 2 SITE ASSESSMENT REPORT	COMP. BY JOE ULLD	JOB NO. 2549.03
	CHK. BY WCOJ	DATE 5/22/98

AREA OF DEEP GROUNDWATER CONTAMINATION: A_D

813565.6 A^2

DEPTH INTERVAL OF DEEP GROUNDWATER CONTAMINATION: D_D

45' - 85' or 40'

VOLUME OF CONTAMINATED GROUNDWATER IN THE DEEP ZONE:

$A_D \times D_D \times 0.25 = 8,135,656 \text{ cu ft}$

or 60.8 million gallons.

AVG. CONCENTRATION: SHALLOW ZONE (TOTAL VOCs)

VOLUME OF GROUNDWATER BENEATH FREE PRODUCT

(Avg of 3 Planimeter Readings) $\leftarrow A_{FP} = 61,826 \text{ ft}^2$; DEPTH OF FREE PRODUCT COVERED GROUNDWATER: 9' (D_{FP})

$A_{FP} \times D_{FP} \times 0.25 = 139,109 \text{ cu ft}$ or 1.0 million gallons

Assume a concentration of total VOCs = 330 $\mu\text{g/l}$ - value from

Day Tank 1 RFP, (ABB-ES)

1998 pg 3/

PROJECT DAY TANK 2 SITE FLSLSCHMERT REPORT	COMP. BY JDE ULLO	JOB NO. 2549.03
	CHK. BY MOJ	DATE 5/26/98

AVG. VOC concentration outside free product: 276.22 $\mu\text{g/l}$

\therefore MASS OF VOCs IN SHALLOW ZONE

$$\text{IN FP ZONE: } 3710 \frac{\mu\text{g/l}}{\text{ft}} \times 2.4 \text{ mill gal} \times \frac{3.78 \cancel{\text{L}}}{\cancel{\text{gal}}} \times \frac{1 \text{ kg}}{10^6 \mu\text{g}}$$

$$= 14.6 \text{ kg VOCs}$$

$$\text{IN SHALLOW GW: } 276.22 \frac{\mu\text{g/l}}{\text{ft}} \times 7.0 \text{ mill gal} \times \frac{3.78 \cancel{\text{L}}}{\cancel{\text{gal}}} \times \frac{1 \text{ kg}}{10^6 \mu\text{g}}$$

(OUTSIDE FREE PRODUCT)

$$= 7.3 \text{ kg VOCs}$$

\therefore 50.9 kg in the shallow zone

AVG. VOC concentration in intermediate groundwater: 781.33 $\mu\text{g/l}$

\therefore MASS OF VOCs IN INTERMEDIATE ZONE

$$781.33 \frac{\mu\text{g/l}}{\text{ft}} \times 30.4 \text{ mill gal} \times \frac{3.78 \cancel{\text{L}}}{\cancel{\text{gal}}} \times \frac{1 \text{ kg}}{10^6 \mu\text{g}}$$

$$= 89.8 \text{ kg VOCs in the intermediate zone}$$

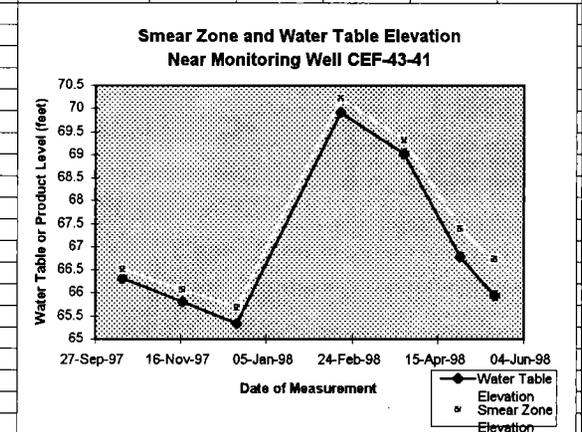
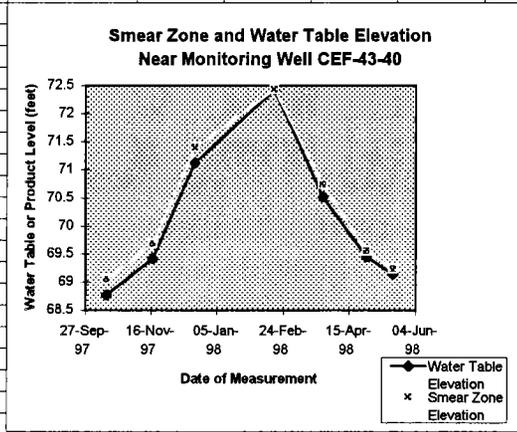
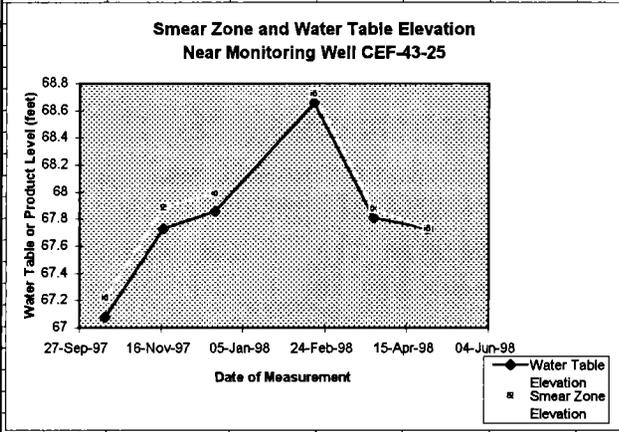
AVG. VOC concentration in deep zone:

$$21.21 \frac{\mu\text{g/l}}{\text{ft}} \times 60.8 \text{ mill gal} \times \frac{3.78 \cancel{\text{L}}}{\cancel{\text{gal}}} \times \frac{1 \text{ kg}}{10^6 \mu\text{g}}$$

$$= 21.0 \text{ kg VOCs in the deep zone}$$

PRODELEV

NAS Cecil Field, Day Tank 2															
Product Level vs. Groundwater															
Site Name: Day Tank 2															
CEF-043-25 (TOC Elev. 72.81' NGVD)						CEF-043-40 (TOC Elev. 75.65' NGVD)					CEF-043-41 (TOC Elev. 74.98)				
Date	Depth to Water (ft) btoc	Product Thickness (ft)	Smear Zone	Water Table Elevation	Smear Zone Elevation	Depth to Water (ft) btoc	Product Thickness (ft)	Smear Zone	Water Table Elevation	Smear Zone Elevation	Depth to Water (ft) btoc	Product Thickness (ft)	Smear Zone	Water Table Elevation	Smear Zone Elevation
13-Oct-97	-5.73	0.56	-5.59	67.08	67.22	-6.88	1.11	-6.6025	68.77	69.0475	-8.66	0.79	-8.4625	66.32	66.5175
17-Nov-97	-5.08	0.62	-4.925	67.73	67.885	-6.23	1.02	-5.975	69.42	69.675	-9.17	1.05	-8.9075	65.81	66.0725
19-Dec-97	-4.95	0.51	-4.8225	67.86	67.9875	-4.52	1.08	-4.25	71.13	71.4	-9.63	1.34	-9.295	65.35	65.685
17-Feb-98	-4.15	0.26	-4.085	68.66	68.725	-3.22	0	-3.22	72.43	72.43	-5.06	1.23	-4.7525	69.92	70.2275
26-Mar-98	-5	0.27	-4.9325	67.81	67.8775	-5.13	0.9	-4.905	70.52	70.745	-5.96	1.2	-5.66	69.02	69.32
28-Apr-98	-5.08	0.01	-5.0775	67.73	67.7325	-6.2	0.43	-6.0925	69.45	69.5575	-8.19	2.41	-7.5875	66.79	67.3925
18-May-98	NA	NA	NA	NA	NA	-6.5	0.36	-6.41	69.15	69.24	-9.03	3.15	-8.2425	65.95	66.7375



Considering the area to be relatively flat, the smear zone thickness is estimated to range from the highest free product-air interface level (72.43' in MW-40) to the lowest water-free product interface level (65.35' in MW-41).

PROJECT DAY TASK 2 SITE ASSESSMENT REPORT	COMP. BY JOE ULLO	JOB NO. 2549.03
	CHK. BY MOJ	DATE 6/16/98

FREE PHASE:
 VOLUME OF FREE PHASE VPE

AERIAL EXTENT OF FREE PRODUCT, $A_{FP} = 61,827 \text{ ft}^2$

MAXIMUM SMEAR ZONE LENGTH, $D_{SZ} = 7.08 \text{ ft}$

AVG POROSITY, 0.25, assumed

AVG PRODUCT SATURATION, 0.25 S_{FP} ← Assumed

$A_{FP} \times D_{SZ} \times 0.25 \times 0.25 = 27,358 \text{ ft}^3$ or 0.20 millgallons

@ $C_0 = 0.8 \text{ lb/ft}^3$ the mass of petroleum measured as free product is approximately

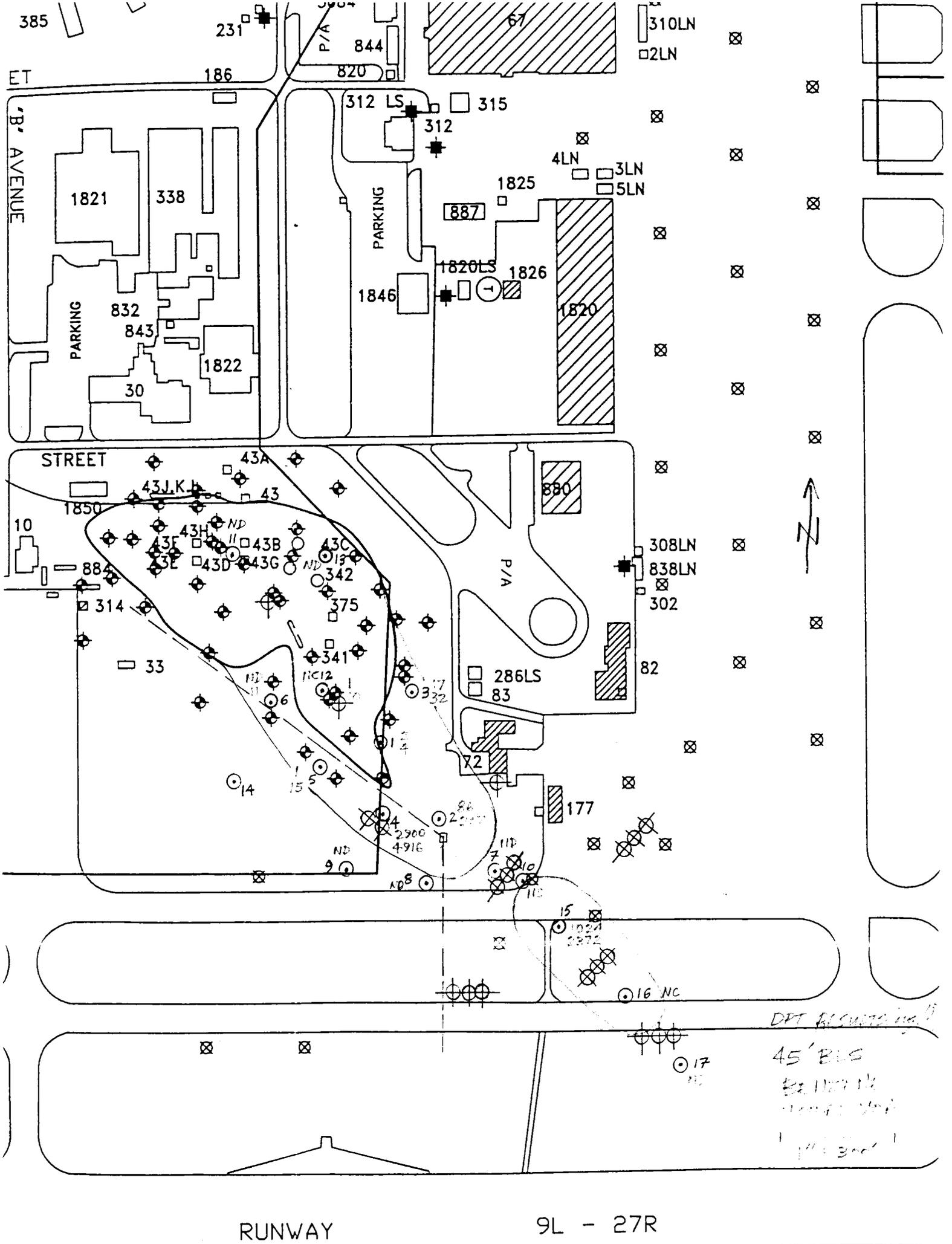
$204,641 \text{ gal} \times \frac{8.34 \text{ lb}}{\text{gal}} \times \frac{\gamma_o}{\gamma_w} = 1,365,361 \text{ lb}$

or 620,621 kg

APPENDIX G

DPT AND GROUNDWATER ANALYTICAL RESULTS COMPARISON

DAY TANK 2 - MONITORING WELL AND DPT GROUNDWATER DATA COMPARISON										
Well Number	Screened Interval	Benzene	Toluene	Ethylbenzene	Xylene	Corresponding DPT	Benzene	Toluene	Ethylbenzene	Xylene
CEF-342-2D	77 to 87	4	ND	ND	ND	DPT-12 (86' bls)	20	30	110	620
CEF-342-3I	40 to 45	2600	ND	ND	1900	DPT-4 (45' bls)	2900	46	120	1850
CEF-342-4D	75 to 85	3.2	ND	ND	ND	DPT-4 (65' bls)	480	6	23	400
CEF-342-6S	5 to 15	96	ND	ND	12	DPT-7 (10' BLS)	17	ND	ND	ND
CEF-342-7I	40 to 45	7.2	ND	ND	ND	DPT-7 (45' BLS)	ND	ND	ND	ND
CEF-342-8D	74 to 84	1.9	ND	ND	ND	DPT-7 (81' BLS)	13	2	ND	ND
CEF-342-19I	40 to 45	ND	ND	ND	ND	DPT-17 (45' BLS)	ND	ND	ND	ND
NOTE: All concentrations in ug/l except TRPH which is in mg/l.										
62-770 Target Values:		Benzene	1 ug/l							
		Ethylbenzene	30 ug/l							
		Toluene	40 ug/l							
		Xylenes	20 ug/l							

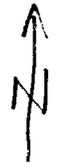


ET
'B' AVENUE

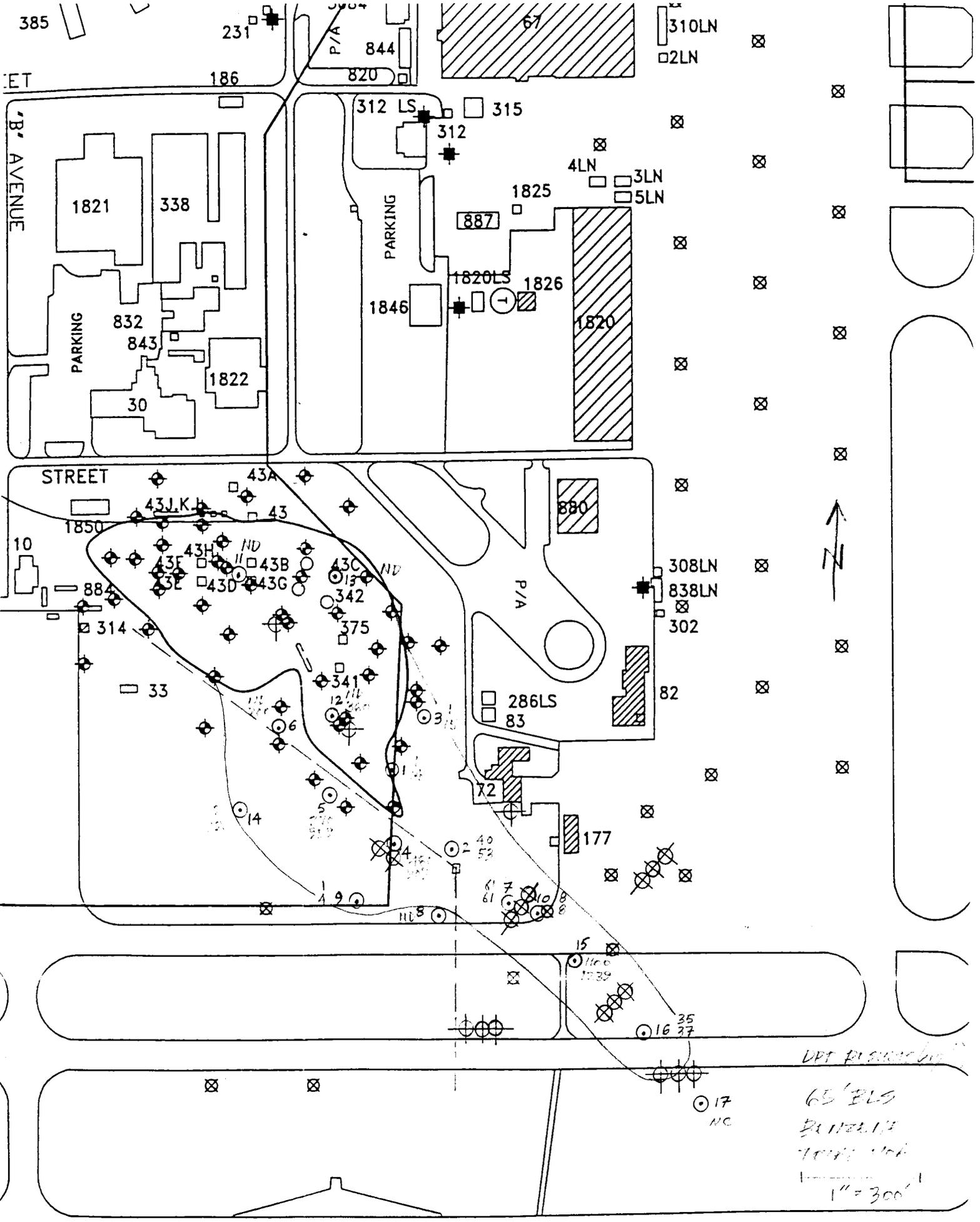
STREET

RUNWAY

9L - 27R



DPT ASSESSING
45' BUS
E2 112 12
112 300'



385

231

844

820

310LN

2LN

ET

186

312 LS

315

312

4LN

3LN

5LN

1821

338

1825

887

1820LS

1826

1846

1820

832

843

1822

30

STREET

43A

43

10

1850

43J, K, L

ND

43B

43C

ND

342

375

341

12

6

14

4

2

52

7

8

10

11

13

14

15

16

35

37

17

NC

880

308LN

838LN

302

82

286LS

83

72

177

15

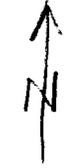
16

35

37

17

NC



DPT PLANS

65' ELS
 BY 11/22/13
 1" = 300'

RUNWAY

9L - 27R

