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BACKGROUND FOR FUEL DISTRIBUTION SYSTEM (FDS) AREAS 9 AND 10 CNC  
CHARLESTON SC  
10/01/1999  
ENSAFE INC

**ENSAFE**

ENSAFE INC.

ENVIRONMENTAL AND MANAGEMENT CONSULTANTS

Li 10.12.99  
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**RECEIVED**

OCT 4 1999

October 1, 1999

**Water Monitoring, Assessment &  
Protection Division**

Mr. Paul Bristol  
South Carolina Department of Health and Environmental Control  
Groundwater Quality Section  
Bureau of Water  
2600 Bull Street  
Columbia, SC 29201

Zone G

**RE: Fuel Distribution System, Areas 9 and 10, Charleston Naval Complex,  
South Carolina (SCDHEC No. 01184)**

Dear Mr. Bristol:

EnSafe is please to submit, on behalf of the U.S. Navy, Southern Division Naval Facilities Engineering Command, two copies of the letter report for SCDHEC petroleum site number 01184. This submittal addresses SCDHEC comments concerning intrinsic remediation for Areas 9 and 10.

Should you have any questions or concerns regarding this submittal, please contact me.

Sincerely,

ENSAFE INC.



Craig R. Smith

Attachment

cc: T. Haverkost, EnSafe - Charleston  
0144 File

Monitoring Schedule

## **Areas 9 and 10**

(SCDHEC No. 01184)

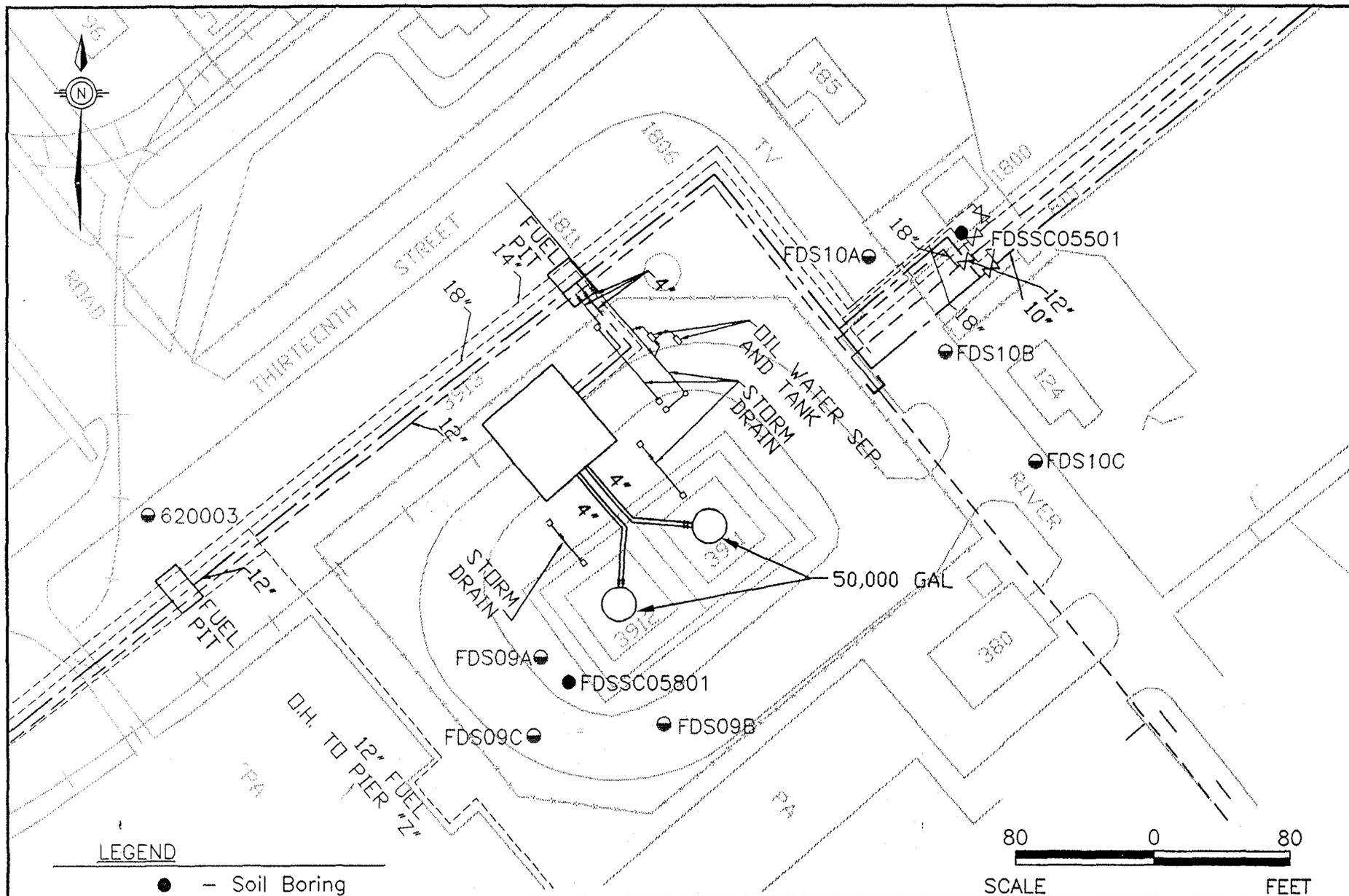
### **Background**

The combined Areas 9 and 10 of the Fuel Distribution System (FDS) are associated with Phase I soil samples FDSSC05501 and FDSSC05801. As reported in the *FDS Contamination Assessment Report (CAR)*, these samples exhibited total petroleum hydrocarbons-gasoline range organics of 63.7 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ) at FDSSC05501 and 10  $\mu\text{g}/\text{kg}$  at FDSSC05801, which prompted Phase II soil and groundwater sampling within Areas 9 and 10. Phase II soil sampling revealed total naphthalenes of 250  $\mu\text{g}/\text{kg}$  in sample FDSSC05801 which exceeded the risk-based screening level (RBSL) of 210  $\mu\text{g}/\text{kg}$ . To determine if groundwater has been adversely impacted by these petroleum chemicals of concern (COCs), 6 shallow groundwater monitoring wells were installed and sampled in the combined area during Phase II. No COCs exceeded their respective RBSLs at the combined area during the Phase II groundwater investigation (CAR EnSafe 1998). Figure 1 depicts the Areas 9 and 10 sample locations.

No follow-on investigative activities were performed at Areas 9 and 10.

### **Conclusions and Recommendations**

As reported in the CAR, the total naphthalene concentration detected in soil sample FDSSC5801 was 250  $\mu\text{g}/\text{kg}$  which exceeds the RBSL of 210  $\mu\text{g}/\text{kg}$ . Because this sample was collected below the water table at a depth of 5 to 9 feet, it is effectively a sample of the aquifer matrix, and therefore Site Specific Target Levels would not apply. This concentration is also below the generic soil-to-groundwater soil screening level (SSL [DAF=20]) of 84,000  $\mu\text{g}/\text{kg}$  (from the *Soil Screening Guidance: Technical Background Document* [USEPA 1996]), suggesting migration to groundwater is unlikely. This is further substantiated by the fact that no naphthalene was detected in the Phase II groundwater sampling at Areas 9 and 10 in two sampling events.



**LEGEND**

- - Soil Boring
- - Shallow Monitoring Well
- ⊗ - Valve
- x-x-x-x- - Fence
- - - - - Diesel Line
- - - - - Fuel Line
- - - - - Sludge Line



FUEL DISTRIBUTION SYSTEM  
 LETTER REPORT  
 CHARLESTON NAVAL COMPLEX  
 CHARLESTON, S.C.

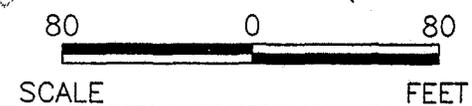


FIGURE 1  
 AREAS 9 AND 10  
 SAMPLE LOCATIONS

No groundwater COCs exceeded their RBSLs at Areas 9 and 10, and there is an apparent lack of leaching of RBSL parameters from soil-to-groundwater. To demonstrate that the naphthalene in soil is not adversely impacting groundwater, the Navy proposes to monitor groundwater at this site. The program will consist of two quarterly sampling events during which the wells surrounding FDSSC05801 (FDS09A, FDS09B, FDS09C) will be sampled for polycyclic aromatic hydrocarbon COCs. If no RBSLs are exceeded in these monitoring samples, the site should be considered for no further action.