

N61165.AR.005362  
CNC CHARLESTON  
5090.3a

UNDERGROUND STORAGE TANK (UST) ASSESSMENT REPORT DATED 5 FEBURARY  
1997 FOR BUILDING NS-44 UNDERGROUND STORAGE TANK NS-44A (UST NS-44A) WITH  
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL REVIEW  
LETTER CNC CHARLESTON SC  
03/21/1997  
NAVFAC SOUTHERN

Commissioner: Douglas E. Bryant

Board: John H. Burriss, Chairman  
William M. Hull, Jr., MD, Vice Chairman  
Roger Leaks, Jr., Secretary

Richard E. Jabbour, DDS  
Cyndi C. Mosteller  
Brian K. Smith  
Rodney L. Grandy

*Promoting Health, Protecting the Environment*

Mr. Gabriel L. Magwood  
Southern Division NFEC  
P.O. Box 190010  
2155 Eagle Drive  
North Charleston, South Carolina 29419-9010

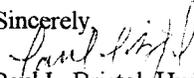
Re: Underground Storage Tank Assessment Report dated February 5, 1997  
Building NS-44, UST NS-44A (DHEC Identification # 17779)  
Charleston Naval Complex/Charleston Naval Base  
Charleston, SC  
Charleston County

Date: March 21, 1997

Dear Mr. Magwood:

The author has completed technical review of the referenced document. As submitted, the report provides analytical results of environmental sampling conducted to determine if releases have occurred from operation of the referenced vessel and/or associated piping system. The data presented indicate low levels of petroleum hydrocarbons and elevated levels of lead (total analysis) were detected in soil samples obtained from the tank excavation. Groundwater grab sample(s) indicate several RCRA metals (total analysis) at or above applicable maximum contaminant levels (mcl) and volatile organic analysis (BTEX) were reported as below detection limits. It should be noted that the reported detection limits for BTEX were elevated due to required dilutions (factor of 1000) as a high concentration of hydrocarbons was present in the sample. Based on the foregoing discussion, the results appear to indicate that additional endeavors for remedial actions (soils removal) and contaminant characterization are warranted at the referenced site. As provided in the Tank Management Plan dated October 1996, a reasonable sampling and analysis plan for additional assessment activities should be provided to my attention for review and approval, as appropriate, on or before June 30, 1997. Please be reminded that groundwater sampling (if necessary) will require the construction of sampling points and will need to be submitted for review and approval, as above.

Should you have any questions please contact me at (803) 734-5328.

Sincerely,  
  
Paul L. Bristol, Hydrologist  
Groundwater Assessment and Development Section  
Bureau of Water

cc: Trident District EQC



DEPARTMENT OF THE NAVY

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

Li 3.11.97  
Lo 3.25.97  
RLW

5090  
Code 1849  
5 Feb 1997

**RECEIVED**  
FEB 07 1997  
Groundwater Assessment  
and Development Section

Mr. Paul Bristol  
South Carolina Department of Health  
and Environmental Control  
Ground-Water Protection Division  
2600 Bull Street  
Columbia, SC 29201

**UST ASSESSMENT REPORT FOR: UST 641, UST 648, NS 44A, UST B42,  
UST 650 and NH 21 CHARLESTON NAVAL COMPLEX, CHARLESTON, SC**

Dear Mr. Bristol:

Enclosed are the Assessment Reports for the closure of underground storage tanks 641, 648, NS 44A, B42, 650 and NH 21 located at the Charleston Naval Complex, Charleston, SC.

If you have any questions please contact me at (803) 820-7307.

Sincerely,

GABRIEL L. MAGWOOD  
Petroleum/UST

- NS 44A - 17779
- B42 - 17780
- 641 - 17783
- 648 - 17784
- 650 - 17781
- NH 21 - 17782

Draft Letter 3.14.97

Li 3.11.97  
Lo 3.25.97

South Carolina Department of Health and Environmental Control (S.C.D.H.E.C.)  
Underground Storage Tank (UST) Assessment Report

**RECEIVED**  
FEB 07 1997  
Groundwater Assessment  
and Development Section

Date Received \_\_\_\_\_  
State Use Only

Submit Completed Form to:  
UST Regulatory Section  
SCDHEC  
2600 Bull Street  
Columbia, South Carolina 29201  
Telephone (803) 734-5331

**I OWNERSHIP OF UST(S)**

Agency/Owner: Southern Division, Naval Facilities Engineering Command, Caretaker Site Office  
Mailing Address: P.O. Box 190010  
City: N. Charleston State: SC Zip Code: 29419-9010  
Area Code: 803 Telephone Number: 743-9985 Contact Person: LCDR Paul Rose

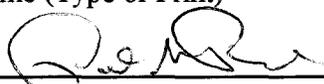
**II SITE IDENTIFICATION AND LOCATION**

Site I.D. #: Unregulated  
Facility Name: Charleston Naval Base Complex, NS 44A 17779  
Street Address: Partridge Avenue  
City: North Charleston, 29405-2413 County: Charleston

**III CLOSURE INFORMATION**

Closure Started: 24 July 96 Closure Completed: 19 August 96  
Number of USTs Closed: 1  
N/A Consultant SPORTENVDETCNASN UST Removal Contractor

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

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.  
LCDR Paul Rose  
Name (Type or Print)  
  
Signature

**V. UST INFORMATION**

- A. Product.....
- B. Capacity.....
- 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
Waste oil						
550 gal.						
3/77						
Steel						
3/96						
8'						
N						
N						
R						
N						
N						

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

The UST was removed from the ground, drained, cut open at both ends, and cleaned with a steam cleaner. It was then cut up for recycling as scrap metal. (See Attachment III.)

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

The sludge, waste water, and residual waste oil were recycled.

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

UST NS44A was in good condition and contained no holes or leaks. It was covered with a protective coating of tar.

## 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	Tank 5	Tank 6
Steel						
5'						
N/A See note 1						
N/A See note 2						
Y						
Y						
N						
3/77						

Note 1: UST NS44A was a waste oil collection tank for an oil/water separator.

Note 2: UST NS44A was gravity fed.

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

The supply line from the oil/water separator was corroded and contained a loose mechanical joint. See Attachment I, Site Map 2.

## VII. BRIEF SITE DESCRIPTION AND HISTORY

Building NS44 is a boiler house that supplied steam to ships and parts of Naval Base Charleston prior to base closure. Presently, NS 44 supplies steam to the Border Patrol cafeteria. UST NS44A was a gravity fed waste oil collection tank for an oil/water separator. It was located 3 feet from UST NS 45, a 25,000 gallon fuel oil tank.

A mild petroleum odor was present in UST NS44A's excavation, but the technicians were unable to discern its source.

## VIII. SITE CONDITIONS

Yes No Unk

	Yes	No	Unk
<p>A. 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. [* 6.5']</p>	*X		
<p>B. 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.) [*slight]</p>	*X		
<p>C. Was water present in the UST excavation, soil borings, or trenches?</p> <p>If yes, how far below land surface (indicate location and depth)?  <u>Northern side of excavation, 6.5' below GSL</u></p>	X		
<p>D. Did contaminated soils remain stockpiled on site after closure?</p> <p>If yes, indicate the stockpile location on the site map.</p> <p>Name of DHEC representative authorizing soil removal:            _____</p>		**X	
<p>E. Was a petroleum sheen or free product detected on any excavation or boring waters?</p> <p>If yes, indicate location and thickness.</p>		X	

\*\* Angular rock was used to fill the area covered by the groundwater. Geofabric was laid over the rock and then all soil from the excavation was returned to the tank pit.



## X. SAMPLING METHODOLOGY

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

After the removal of UST NS44A soil and ground water samples were taken. Sampling was performed in accordance with SC DHEC R.61-92 Part 280 and SC DHEC UST Assessment Guidelines.

The samples are identified as follows:

	Detachment Charleston		General Engineering Labs
Ground Water Sample	NS44A-1	=	SPORT -0118-1
Soil Sample	NS44A-2	=	SPORT -0118-2
Soil Sample	NS44A-3	=	SPORT -0118-3

Sample jars were prepared by the testing laboratory. The grab method was utilized to fill the sample containers leaving as little head space as possible and immediately capped. Soil samples were extracted at the tank ends just above the ground water level. Ground water samples were taken at the bottom of the excavation as marked in Site Map 4.

The samples were marked, logged, and immediately placed in sample coolers packed with ice to maintain an approximate temperature of 4° C. Tools were thoroughly cleaned and decontaminated with organic-free soap and water after each sample.

The samples remained in the custody of SPORTENVDETHASN until they were transferred to General Engineering Laboratories for analysis as documented in the attached Chain-of-Custody Record.

## XI. RECEPTORS

Yes    No

A.	<p>Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?</p> <p style="text-align: center;">[*Cooper R. ≈ 1068']</p> <p>If yes, indicate type of receptor, distance, and direction on site map.</p>		*X
B.	<p>Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?</p> <p>If yes, indicate type of well, distance, and direction on site map.</p>		X
C.	<p>Are there any underground structures (e.g., basements) located within 100 feet of the UST system?</p> <p>If yes, indicate the type of structure, distance, and direction on site map.</p>		X
D.	<p>Are there any underground utilities (e.g., telephone, electricity, gas, water, sewer, storm drain) located within 100 feet of the UST system that could potentially come in contact with the contamination?</p> <p style="text-align: center;">[*Sewer]</p> <p>If yes, indicate the type of utility, distance, and direction on the site map.</p>	*X	
E.	<p>Has contaminated soil been identified at a depth of less than 3 feet below land surface in an area that is not capped by asphalt or concrete?</p> <p>If yes, indicate the area of contaminated soil on the site map.</p>		X

**SITE MAP**

You must supply a scaled site map. It should include all buildings, road names, utilities, tank and pump island locations, sample locations, extent of excavation, and any other pertinent information.

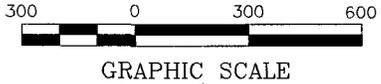
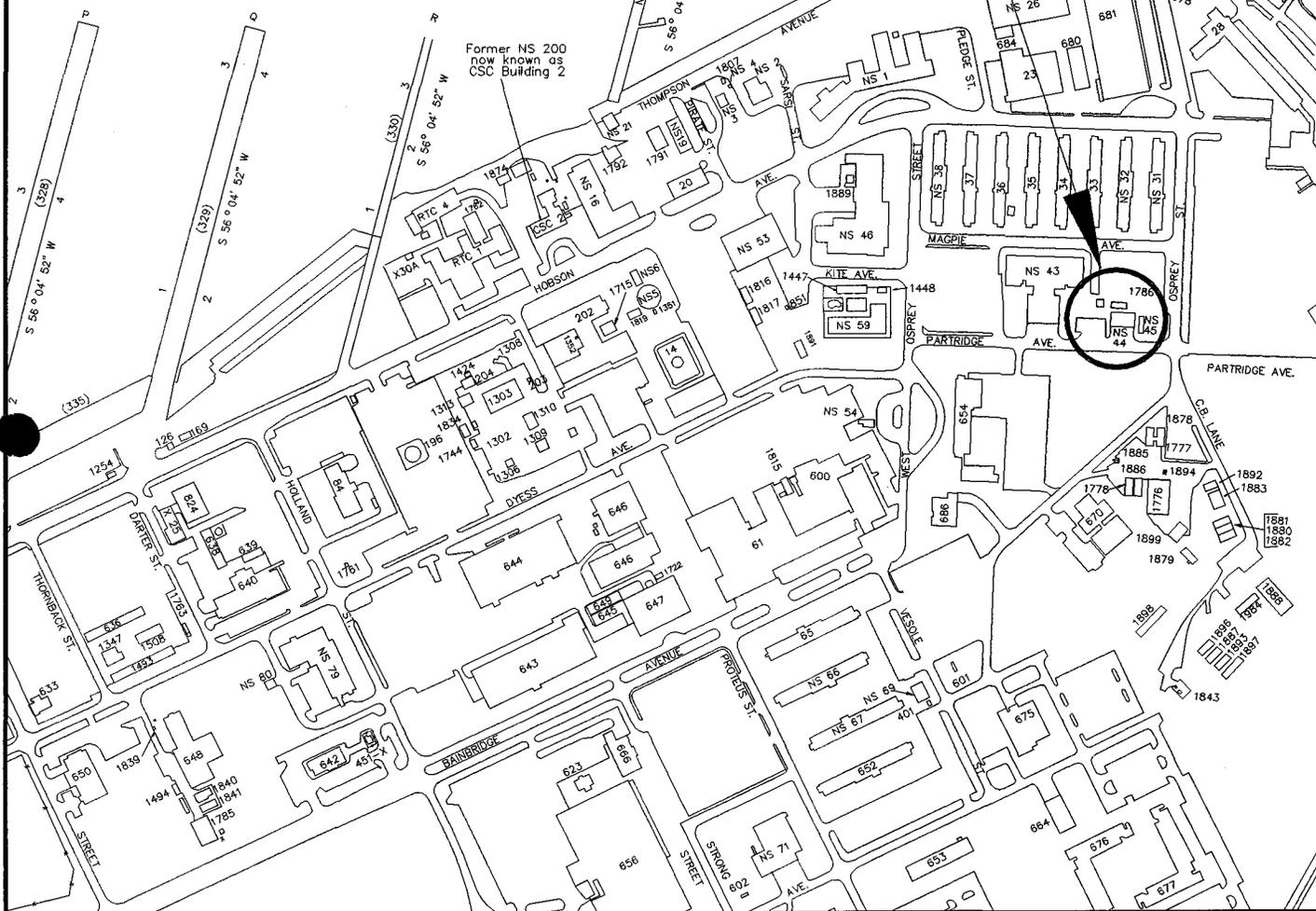
Site Maps 1, 2, 3, and 4  
Photographs 1 and 2

NS 44

Cooper River

TWO IN. MARK AT TORREY  
LOADED ON JANUARY 1940  
(APPROXIMATE LOCATION)

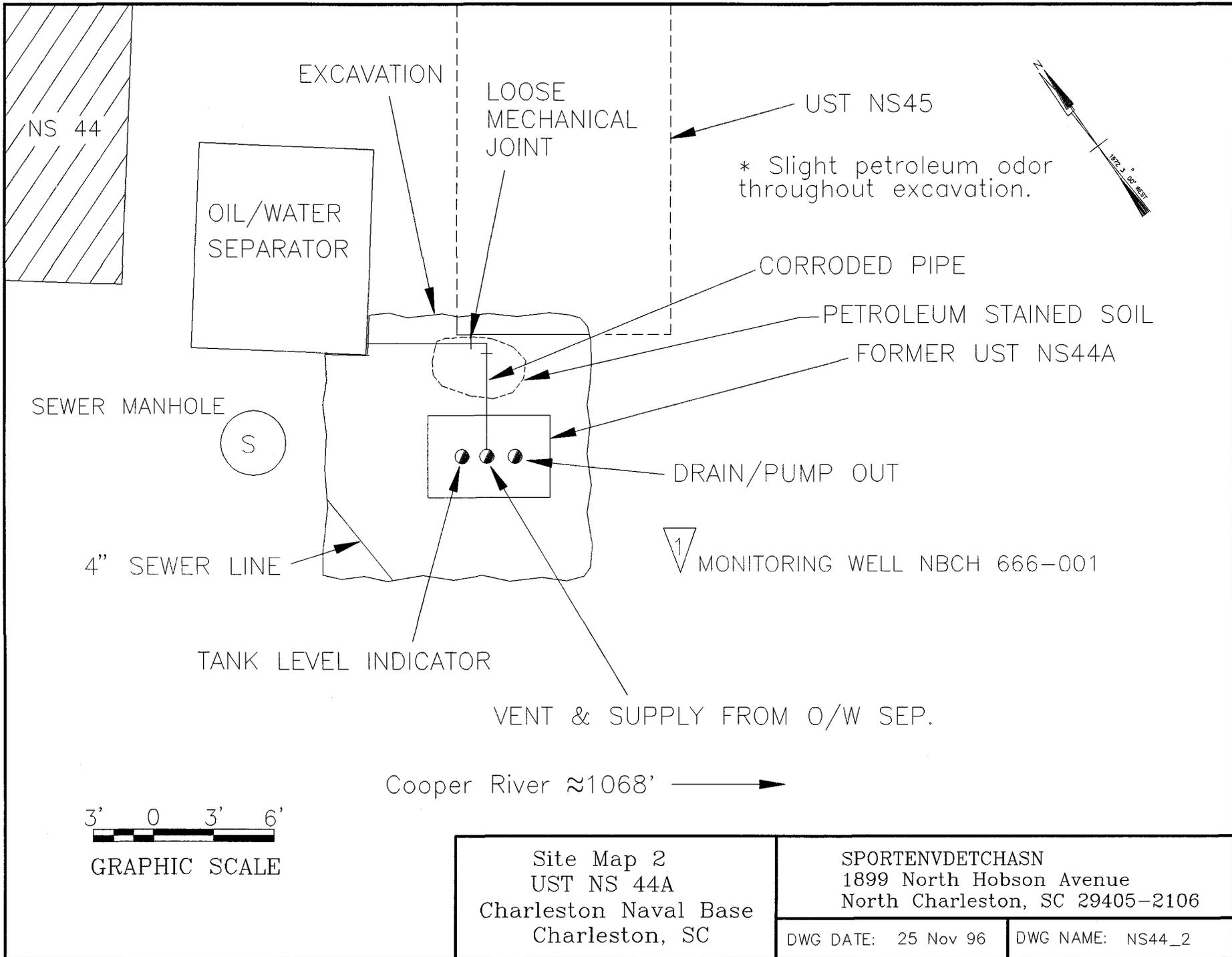
Former NS 200  
now known as  
CSC Building 2



Site Map 1  
UST NS44A  
Charleston Naval Base  
Charleston, SC

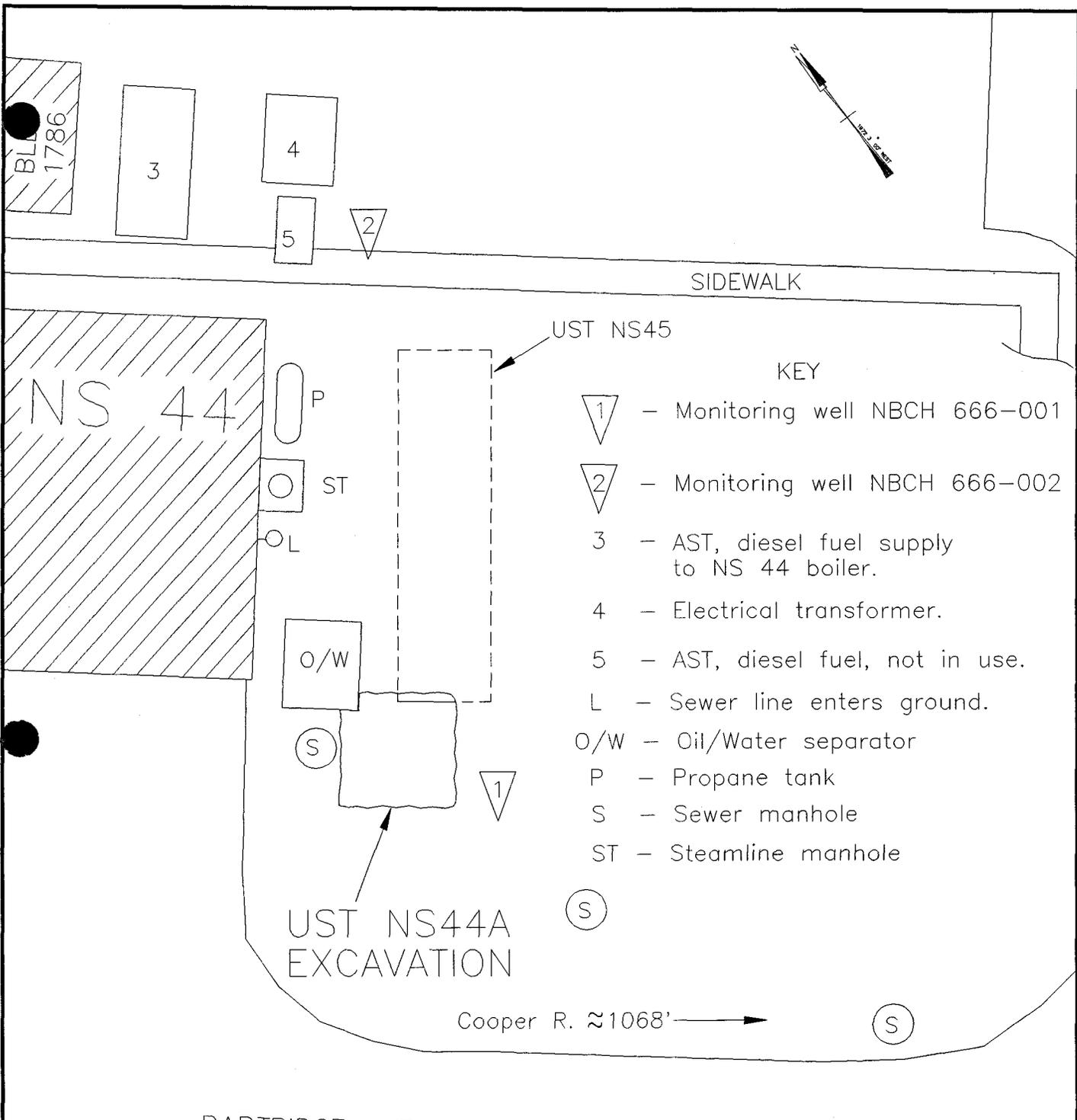
SPORTENVDETCASN  
1899 North Hobson Avenue  
North Charleston, SC 29405-2106

DWG NAME: NS44\_1      DWG DATE: 6 NOV 96

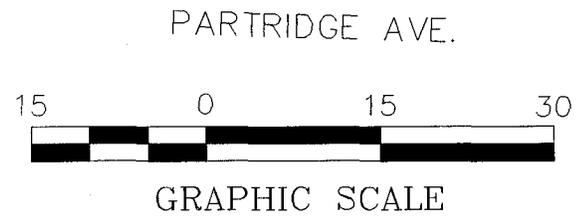


Site Map 2  
 UST NS 44A  
 Charleston Naval Base  
 Charleston, SC

SPORTENVDETHASN  
 1899 North Hobson Avenue  
 North Charleston, SC 29405-2106  
 DWG DATE: 25 Nov 96 | DWG NAME: NS44\_2



- KEY
- ▽1 - Monitoring well NBCH 666-001
  - ▽2 - Monitoring well NBCH 666-002
  - 3 - AST, diesel fuel supply to NS 44 boiler.
  - 4 - Electrical transformer.
  - 5 - AST, diesel fuel, not in use.
  - L - Sewer line enters ground.
  - O/W - Oil/Water separator
  - P - Propane tank
  - S - Sewer manhole
  - ST - Steamline manhole



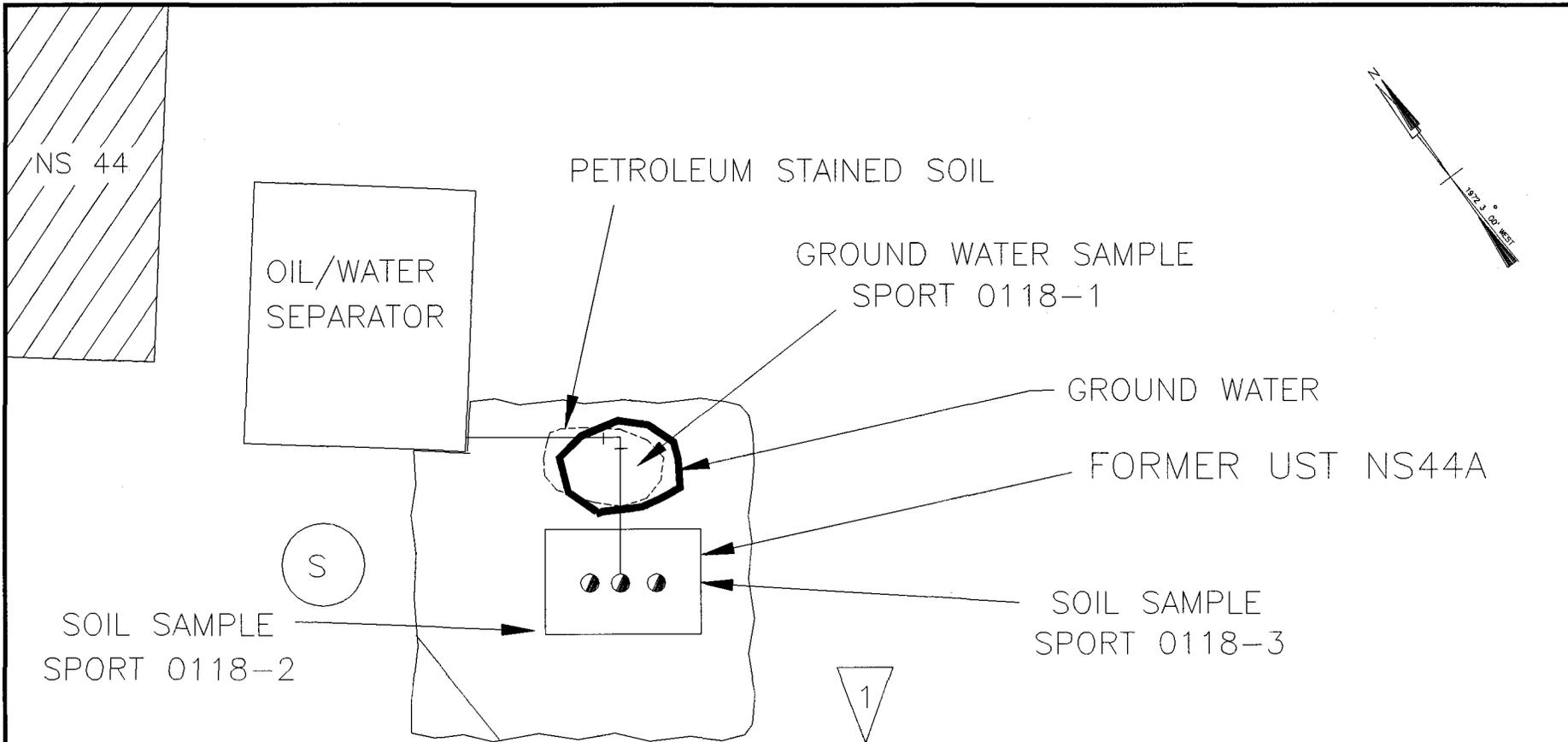
Site Map 3  
 UST NS44A  
 Charleston Naval Base  
 Charleston, SC

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SPORTENVDETHASN  
 1899 North Hobson Avenue  
 North Charleston, SC 29405-2106

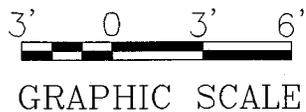
---

DWG NAME: NS44\_3 | DWG DATE: 8 NOV 96



\* Slight petroleum odor throughout excavation.

Cooper River  $\approx 1068'$  →



Site Map 4  
UST NS 44A  
Charleston Naval Base  
Charleston, SC

SPORTENVDETHASN  
1899 North Hobson Avenue  
North Charleston, SC 29405-2106

DWG DATE: 25 Nov 96

DWG NAME: NS44\_4

UST NS44A



Photo 1: UST NS44A being removed from the excavation.

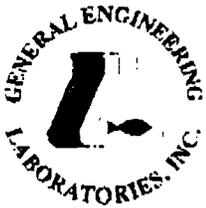


Photo 2: UST NS44A being raised out of the excavation.

**ANALYTICAL RESULTS**

You must submit the laboratory report and chain-of-custody form for the samples. These samples must be analyzed by a South Carolina certified laboratory.

Certified Analytical Results  
Chain-of-Custody



# GENERAL ENGINEERING LABORATORIES

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## CERTIFICATE OF ANALYSIS

Client: Supervisor of Ship Building & Conversion  
 SUPSHIP-Portsmouth Detachment-Env.  
 1899 North Hobson Ave.  
 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 1 of 4

Sample ID : SPORT0118-1  
 Lab ID : 9607572-01  
 Matrix : GroundH2O  
 Date Collected : 07/29/96  
 Date Received : 07/30/96  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Volatile Organics</b>											
<i>BTEX - 4 items</i>											
Benzene	U	0.00	1000	2000	ug/l	1000	IGS	08/02/96	1406	88130	1
Ethylbenzene	U	0.00	1000	2000	ug/l	1000					
Toluene	U	0.00	1000	2000	ug/l	1000					
Xylenes (TOTAL)	U	0.00	1000	2000	ug/l	1000					
Naphthalene	U	0.00	1000	2000	ug/l	1000					
<b>Extractable Organics</b>											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	0.00	100	200	ug/l	20.	ICB	08/06/96	1631	88140	2
Acenaphthylene	U	0.00	100	200	ug/l	20.					
Anthracene	U	0.00	100	200	ug/l	20.					
Benzo(a)anthracene	U	0.00	100	200	ug/l	20.					
Benzo(a)pyrene	U	0.00	100	200	ug/l	20.					
Benzo(b)fluoranthene	U	0.00	100	200	ug/l	20.					
Benzo(ghi)perylene	U	0.00	100	200	ug/l	20.					
Benzo(k)fluoranthene	U	0.00	100	200	ug/l	20.					
Chrysene	U	0.00	100	200	ug/l	20.					
Dibenzo(a,h)anthracene	U	0.00	100	200	ug/l	20.					
Fluoranthene	U	0.00	100	200	ug/l	20.					
Fluorene	U	0.00	100	200	ug/l	20.					
Indeno(1,2,3-c,d)pyrene	U	0.00	100	200	ug/l	20.					
Naphthalene	U	0.00	100	200	ug/l	20.					
Phenanthrene	U	0.00	100	200	ug/l	20.					
Pyrene	U	0.00	100	200	ug/l	20.					
<b>Metals Analysis</b>											
Mercury		0.564	0.0148	0.500	ug/l	1.0	RMJ	08/02/96	1232	88085	N
Silver	U	0.705	2.49	10.0	ug/l	1.0	NRM	08/03/96	1426	88078	3
Arsenic		66.3	1.86	10.0	ug/l	1.0					



\*9607572-01\*

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## CERTIFICATE OF ANALYSIS

Client: Supervisor of Ship Building & Conversion  
 SUPSHIP-Portsmouth Detachment-Env.  
 1899 North Hobson Ave.  
 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 2 of 4

Sample ID : SPORT0118-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Barium		301	0.0663	10.0	ug/l	1.0					
Cadmium	J	4.30	0.0970	5.00	ug/l	1.0	NRM	08/05/96	1426	88078	3
Chromium		58.4	0.596	10.0	ug/l	1.0					
Lead		392	1.13	5.00	ug/l	1.0					
Selenium	J	3.93	1.43	5.00	ug/l	1.0					
<b>General Chemistry</b>											
Total Rec. Petro. Hydrocarbons		42.0	2.00	2.00	mg/l	1.0	SDW	08/02/96	1200	88131	4

**The following prep procedures were performed:**

GC/MS Base/Neutral Compounds	TNF	08/01/96	0925	88140	5
Mercury	RMJ	08/01/96	2015	88085	6
TRACE	FGD	08/01/96	1530	88078	7

**Comments:**

A dilution was required for Volatile Organics due to a high concentration of hydrocarbons. A dilution was required for Extractable Organics due to matrix interferences. As a result, the detection limits are elevated.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	0.00*	(43.0 - 108.)
Nitrobenzene-d5	M610	0.00*	(35.0 - 111.)
p-Terphenyl-d14	M610	0.00*	(33.0 - 125.)
Bromofluorobenzene	BTEX-8260	93.9	(80.0 - 128.)
Dibromofluoromethane	BTEX-8260	91.0	(67.7 - 135.)
Toluene-d8	BTEX-8260	92.0	(76.8 - 122.)
Bromofluorobenzene	NAP-8260	93.9	(80.0 - 128.)
Dibromofluoromethane	NAP-8260	91.0	(67.7 - 135.)
Toluene-d8	NAP-8260	92.0	(76.8 - 122.)

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Page 3 of 4

Sample ID : SPORT0118-1

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 6010A
M 4	EPA 9070A
M 5	EPA 3510
M 6	EPA 7470
M 7	EPA 3005

### Notes:

The qualifiers in this report are defined as follows:

ND indicates that the analyte was not detected at a concentration greater than the detection limit.

J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

U indicates that the analyte was not detected at a concentration greater than the detection limit.

\* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

### GEL Laboratory Certifications

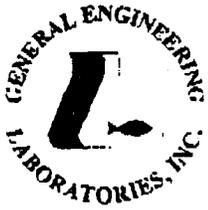
### EPI Laboratory Certifications

AL - 41040	AZ - AZ0514	AL - 41050	AZ - AZ0514
CA - 2089	CT - PH-0169	CA - I-1023/2056	CT - PH-0175
DE - SC012	FL - E87156/87294	FL - E87472/87458	MS - 29417
ME - SC012	MS - 10120	NY - 11502	RI - 138
NC - 233	NY - 11501	SC - 10582	TN - 02934
RI - 135	SC - 10120	UT - E-227	VA - 00111
TN - 02934	UT - E-251	WA - C225	NJ - 79002

\*9607572-01\*

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**Contact:** Mr. Bill Hiers

**Project Description:** SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 4 of 4

Sample ID : SPORT0118-1

### GEL Laboratory Certifications

### EPI Laboratory Certifications

VA - 00151

WA - C223

PA - 68-485

WV - 235

WI - 999887790

WV - 236

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakney at (803) 769-7386.

  
Analytical Report Specialist

\*9607572-01\*

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P. 011

TEL: 803-852-5812

GEN. ENGINEERING 60:51 (THU) 15:09 AUG. -08 96



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Page 1 of 4

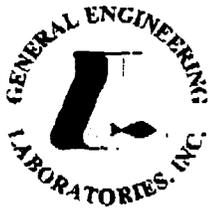
Sample ID : SPORT0118-2  
 Lab ID : 9607572-02  
 Matrix : Soil  
 Date Collected : 07/29/96  
 Date Received : 07/30/96  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Volatle Organics</b>											
<i>BTEX - 4 items</i>											
Benzene	U	0.00	40.0	80.0	ug/kg	40.	MKP	08/02/96	1103	88049	1
Ethylbenzene	U	3.36	40.0	80.0	ug/kg	40.					
Toluene	U	14.4	40.0	80.0	ug/kg	40.					
Xylenes (TOTAL)	U	0.00	40.0	80.0	ug/kg	40.					
Naphthalene	U	0.00	40.0	80.0	ug/kg	40.					
<b>Extractable Organics</b>											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	0.00	1670	3330	ug/kg	10.	BDG	08/06/96	1439	88234	2
Acenaphthylene	U	0.00	1670	3330	ug/kg	10.					
Anthracene	U	0.00	1670	3330	ug/kg	10.					
Benzo(a)anthracene	U	0.00	1670	3330	ug/kg	10.					
Benzo(a)pyrene	U	0.00	1670	3330	ug/kg	10.					
Benzo(b)fluoranthene	U	0.00	1670	3330	ug/kg	10.					
Benzo(ghi)perylene	U	0.00	1670	3330	ug/kg	10.					
Benzo(k)fluoranthene	U	0.00	1670	3330	ug/kg	10.					
Chrysene	U	0.00	1670	3330	ug/kg	10.					
Dibenzo(a,h)anthracene	U	0.00	1670	3330	ug/kg	10.					
Fluoranthene	J	1930	1670	3330	ug/kg	10.					
Fluorene	U	0.00	1670	3330	ug/kg	10.					
Indeno(1,2,3-c,d)pyrene	U	0.00	1670	3330	ug/kg	10.					
Naphthalene	U	0.00	1670	3330	ug/kg	10.					
Phenanthrene	U	0.00	1670	3330	ug/kg	10.					
Pyrene	J	3300	1670	3330	ug/kg	10.					
<b>Metals Analysis</b>											
Mercury	J	0.0367	0.00207	0.200	mg/kg	1.0	RMJ	08/01/96	1741	88109	N
Silver	U	62.4	247	990	ug/kg	2.0	WCC	08/02/96	1207	88135	3
Arsenic		6640	184	990	ug/kg	2.0					



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# GENERAL ENGINEERING LABORATORIES

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## CERTIFICATE OF ANALYSIS

Client: Supervisor of Ship Building & Conversion  
 SUPSHIP-Portsmouth Detachment-Env.  
 1899 North Hobson Ave.  
 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 2 of 4

Sample ID : SPORT0118-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Barium		28100	6.56	990	ug/kg	2.0					
Cadmium		650	9.60	495	ug/kg	2.0	WCC	08/02/96	1207	88135	3
Chromium		29100	59.0	990	ug/kg	2.0					
Lead		120000	112	495	ug/kg	2.0					
Selenium	J	472	142	495	ug/kg	2.0					
<b>General Chemistry</b>											
Total Rec. Petro. Hydrocarbons		3830	10.0	50.0	mg/kg	1.0	JEN	08/06/96	1400	88318	4

The following prep procedures were performed:  
 GC/MS Base/Neutral Compounds  
 Mercury  
 TRACE

TNF 08/05/96 1030 88234 5  
 RMJ 08/01/96 1340 88109 6  
 FGD 08/01/96 1500 88135 7

**Comments:**

A dilution was required for Volatile Organics due to a high concentration of hydrocarbons. A dilution was required for Extractable Organics due to matrix interferences. As a result, the detection limits are elevated.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	0.00*	(30.0 - 115.)
Nitrobenzene-d5	M610	0.00*	(23.0 - 120.)
p-Terphenyl-d14	M610	130.*	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	117.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	85.6	(74.0 - 128.)
Toluene-d8	BTEX-8260	101.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	117.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	85.6	(74.0 - 128.)
Toluene-d8	NAP-8260	101.	(53.4 - 163.)

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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 3 of 4

Sample ID : SPORT0118-2

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 6010A
M 4	EPA 9071
M 5	EPA 3550
M 6	EPA 7471
M 7	EPA 3050

### Notes:

The qualifiers in this report are defined as follows:

ND indicates that the analyte was not detected at a concentration greater than the detection limit.

J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

U indicates that the analyte was not detected at a concentration greater than the detection limit.

\* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

### GEL Laboratory Certifications

AL - 41040  
 CA - 2089  
 DE - SC012  
 ME - SC012  
 NC - 233  
 RI - 135  
 TN - 02934

AZ - AZ0514  
 CT - PH-0169  
 FL - E87156/87294  
 MS - 10120  
 NY - 11501  
 SC - 10120  
 UT - E-251

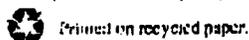
### EPI Laboratory Certifications

AL - 41050  
 CA - I-1023/2056  
 FL - E87472/87458  
 NY - 11502  
 SC - 10582  
 UT - E-227  
 WA - C225

AZ - AZ0514  
 CT - PH-0175  
 MS - 29417  
 RI - 138  
 TN - 02934  
 VA - 00111  
 NJ - 79002

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1899 North Hobson Ave.  
North Charleston, South Carolina 29405-2106

**Contact:** Mr. Bill Hiern

**Project Description:** SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 4 of 4

Sample ID : SPORT0118-2

### GEL Laboratory Certifications

### EPI Laboratory Certifications

VA - 00151

WA - C223

PA - 68-485

WV - 235

WI - 999887790

WV - 236

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

  
Analytical Report Specialist



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 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 1 of 4

Sample ID : SPORT0118-3  
 Lab ID : 9607572-03  
 Matrix : Soil  
 Date Collected : 07/29/96  
 Date Received : 07/30/96  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Volatile Organics</b>											
<i>BTEX - 4 items</i>											
Benzene	U	0.00	40.0	80.0	ug/kg	40.	MKP	08/02/96	1132	88049	1
Ethylbenzene	U	0.00	40.0	80.0	ug/kg	40.					
Toluene	U	18.8	40.0	80.0	ug/kg	40.					
Xylenes (TOTAL)	U	0.00	40.0	80.0	ug/kg	40.					
Naphthalene	U	0.00	40.0	80.0	ug/kg	40.					
<b>Extractable Organics</b>											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	0.00	1670	3330	ug/kg	10.	BDG	08/06/96	1511	88234	2
Acenaphthylene	U	0.00	1670	3330	ug/kg	10.					
Anthracene	U	0.00	1670	3330	ug/kg	10.					
Benzo(a)anthracene	U	0.00	1670	3330	ug/kg	10.					
Benzo(a)pyrene	U	0.00	1670	3330	ug/kg	10.					
Benzo(b)fluoranthene	U	0.00	1670	3330	ug/kg	10.					
Benzo(ghi)perylene	U	0.00	1670	3330	ug/kg	10.					
Benzo(k)fluoranthene	U	0.00	1670	3330	ug/kg	10.					
Chrysene	U	0.00	1670	3330	ug/kg	10.					
Dibenzo(a,h)anthracene	U	0.00	1670	3330	ug/kg	10.					
Fluoranthene	U	0.00	1670	3330	ug/kg	10.					
Fluorene	U	0.00	1670	3330	ug/kg	10.					
Indeno(1,2,3-c,d)pyrene	U	0.00	1670	3330	ug/kg	10.					
Naphthalene	U	0.00	1670	3330	ug/kg	10.					
Phenanthrene	U	0.00	1670	3330	ug/kg	10.					
Pyrene	U	0.00	1670	3330	ug/kg	10.					
<b>Metals Analysis</b>											
Mercury	J	0.0277	0.00207	0.200	mg/kg	1.0	RMJ	08/01/96	1743	88109	N
Silver	U	-13.3	247	990	ug/kg	2.0	WCC	08/02/96	1211	88135	3
Arsenic		5160	184	990	ug/kg	2.0					



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 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 2 of 4

Sample ID : SPORT0118-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Barium		11600	6.56	990	ug/kg	2.0					
Cadmium	J	360	9.60	495	ug/kg	2.0	WCC	08/02/96	1211	88135	3
Chromium		13600	59.0	990	ug/kg	2.0					
Lead		28000	112	495	ug/kg	2.0					
Selenium	J	266	142	495	ug/kg	2.0					
<b>General Chemistry</b>											
Total Rec. Petro. Hydrocarbons	U	-20.0	10.0	50.0	mg/kg	1.0	JEN	08/06/96	1400	88318	4

The following prep procedures were performed:  
 GC/MS Base/Neutral Compounds  
 Mercury  
 TRACE

TNF 08/05/96 1030 88234 5  
 RMJ 08/01/96 1340 88109 6  
 FGD 08/01/96 1500 88135 7

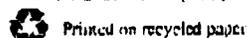
**Comments:**

A dilution was required for Volatile Organics due to a high concentration of hydrocarbons. A dilution was required for Extractable Organics due to matrix interferences. As a result, the detection limits are elevated.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	0.00*	(30.0 - 115.)
Nitrobenzene-d5	M610	0.00*	(23.0 - 120.)
p-Terphenyl-d14	M610	0.00*	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	97.2	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	79.2	(74.0 - 128.)
Toluene-d8	BTEX-8260	95.6	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	97.2	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	79.2	(74.0 - 128.)
Toluene-d8	NAP-8260	95.6	(53.4 - 163.)

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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 3 of 4

Sample ID : SPORT0118-3

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 6010A
M 4	EPA 9071
M 5	EPA 3550
M 6	EPA 7471
M 7	EPA 3050

### Notes:

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\* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

### GEL Laboratory Certifications

AL - 41040  
 CA - 2089  
 DE - SC012  
 ME - SC012  
 NC - 233  
 RI - 135  
 TN - 02934

AZ - AZ0514  
 CT - PH-0169  
 FL - E87156/87294  
 MS - 10120  
 NY - 11501  
 SC - 10120  
 UT - E-251

### EPI Laboratory Certifications

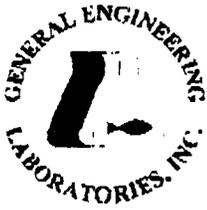
AL - 41050  
 CA - I-1023/2056  
 FL - B87472/87458  
 NY - 11502  
 SC - 10582  
 UT - E-227  
 WA - C225

AZ - AZ0514  
 CT - PH-0175  
 MS - 29417  
 RI - 138  
 TN - 02934  
 VA - 00111  
 NJ - 79002

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1899 North Hobson Ave.  
North Charleston, South Carolina 29405-2106

**Contact:** Mr. Bill Hiers

**Project Description:** SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 08, 1996

Page 4 of 4

Sample ID : SPORT0118-3

### GEL Laboratory Certifications

VA - 00151  
WI - 999887790

WA - C223  
WV - 236

### EPI Laboratory Certifications

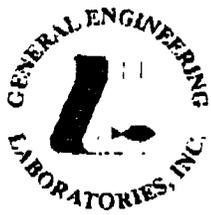
PA - 68-485

WV - 235

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

  
Analytical Report Specialist





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 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 06, 1996

Page 1 of 3

Sample ID : SPORT0118-4  
 Lab ID : 9607572-04  
 Matrix : GroundH2O  
 Date Collected : 07/29/96  
 Date Received : 07/30/96  
 Priority : Routine  
 Collector : Client

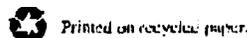
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Volatile Organics</b>											
<i>BTEX - 4 items</i>											
Benzene	U	0.00	1.00	2.00	ug/l	1.0	JGS	08/02/96	0155	88130	1
Ethylbenzene	U	0.00	1.00	2.00	ug/l	1.0					
Toluene	U	0.00	1.00	2.00	ug/l	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/l	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/l	1.0					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	BTEX-8260	101.	(80.0 - 128.)
Dibromofluoromethane	BTEX-8260	102.	(67.7 - 135.)
Toluene-d8	BTEX-8260	99.5	(76.8 - 122.)
Bromofluorobenzene	NAP-8260	101.	(80.0 - 128.)
Dibromofluoromethane	NAP-8260	102.	(67.7 - 135.)
Toluene-d8	NAP-8260	99.5	(76.8 - 122.)

M = Method	Method-Description
M 1	EPA 8260



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 1899 North Hobson Ave.  
 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 06, 1996

Page 2 of 3

Sample ID : SPORT0118-4

M = Method	Method-Description
------------	--------------------

### Notes:

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ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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U indicates that the analyte was not detected at a concentration greater than the detection limit.

\* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

### GEL Laboratory Certifications

### EPI Laboratory Certifications

AL - 41040	AZ - AZ0514	AL - 41050	AZ - AZ0514
CA - 2089	CT - PH-0169	CA - I-1023/2056	CT - PH-0175
DE - SC012	FL - E87156/87294	FL - E87472/87458	MS - 29417
ME - SC012	MS - 10120	NY - 11502	RI - 138
NC - 233	NY - 11501	SC - 10582	TN - 02934
RJ - 135	SC - 10120	UT - E-227	VA - 00111
TN - 02934	UT - E-251	WA - C225	NJ - 79002
VA - 00151	WA - C223	PA - 68-485	WV - 235
WI - 999887790	WV - 236		

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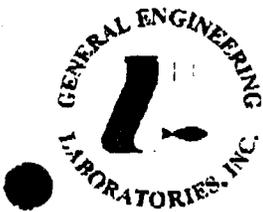
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P 021

TEL: 803-852-5812

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SUPSHIP-Portsmouth Detachment-Env.  
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North Charleston, South Carolina 29405-2106

**Contact:** Mr. Bill Hiers

**Project Description:** SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 06, 1996

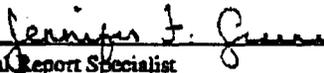
Page 3 of 3

Sample ID : SPORT0118-4

### GEL Laboratory Certifications

### EPI Laboratory Certifications

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Analytical Report Specialist



# CHAIN OF CUSTODY RECORD

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General Engineering Laboratories, Inc.  
2040 Savage Road  
Charleston, South Carolina 29414  
P.O. Box 30712  
Charleston, South Carolina 29417  
(803) 556-8171

Client Name/Facility Name		SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods										Use F or P in the boxes to indicate whether sample was filtered and/or preserved									
SPORT ENV DETCHASN		# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	TPH/PART	ORX/MATH	Remarks	
Collected by/Company																					WELL
SPORT ENV DETCHASN																					
-01	SPORT 0118-1	7/29/96	1245																	NS-44A-1 GW	.1
-02	SPORT 0118-2	7/29/96	1256																	NS-44A-2 SOIL	.2
-03	SPORT 0118-3	7/29/96	1310																	NS-44A-3 SOIL	.2
-04	SPORT 0118-4	7/27/96	1245																	NS-44A UDA TRIP ISLAND	.3

Relinquished by: <i>[Signature]</i>	Date: 7/29/96	Time: 1415	Received by: <i>[Signature]</i>	Relinquished by: W. R. Hiers, Jr.	Date: 7/30/96	Time: 1438	Received by: <i>[Signature]</i>
Relinquished by: <i>[Signature]</i>	Date: 7/30/96	Time: 1458	Received by lab by: <i>[Signature]</i>	Date: 7/30/96	Time: 1458	Remarks:	

White      ple collector      Yellow = file      Pink = with report

**Attachment III**

Certificate of Disposal (tank)

# 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

NS44A, Building NS 44, Charleston Naval Base, N. Charleston, SC

## DISPOSAL LOCATION

Bldg. 1601 Tank Cleaning  
& Disposal Area  
Charleston Naval Complex

### TYPE OF TANK

Waste oil

### SIZE (GAL)

550 gal.

## CLEANING/DISPOSAL METHOD

The tank was cut open on both ends, cleaned with a steam cleaner, cut into sections, and disposed of as recyclable scrap metal.

## DISPOSAL CERTIFICATION

I certify that the above tank has been properly cleaned and disposed of as recyclable scrap metal.

  
\_\_\_\_\_  
Sidney C. Ladson (Name) 1/11-02-96 (Date)