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CNC CHARLESTON
5090.3a

UNDERGROUND STORAGE TANK ASSESSMENT (UST) REPORT FOR BUILDING NH-46
CNC CHARLESTON SC
09/22/1998
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Li 10.30.98
L 12.8.98

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

Submit Completed Form to:

Date Received
State Use Only

UST Regulatory Section
SCDHEC
2600 Bull Street
Columbia, South Carolina 29201
Telephone (803) 734-5331

1401206

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: 843 Telephone Number: 743-9985 Contact Person: Henry N. Shepard II, P. E.			

II SITE IDENTIFICATION AND LOCATION

Site I.D. #:	Unregulated		
Facility Name:	Charleston Naval Base Complex, NH46		
Street Address:	Turnbull Avenue		
City:	North Charleston, 29405-2413	County:	Charleston

III CLOSURE INFORMATION

Closure Started: 24 Aug 1998	Closure Completed: 22 Sept 1998
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 I am a duly licensed professional engineer in the State of South Carolina, and that I am duly qualified to obtain this information, I believe that the submitted information is true, accurate and complete.

Henry Shepard II, P. E.
Name (Type or Print)

Henry N. Shepard II P.E.
Signature

RECEIVED

OCT 21 1998

Water Monitoring, Assessment &
Protection Division

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
Fuel oil					
1,500 gal					
1941					
Steel					
Unk.					
6'					
N					
N					
R					
Y					
N					

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

UST NH46-5 was removed, 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 fuel oil from UST NH46-5 were recycled.

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

UST NH46-5 was sound, although covered with rust which had not penetrated the sheet metal. However, the backhoe accidentally punctured the tank at 6 feet below ground surface level during the digging process. See Site Map 3.

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
Steel & copper				
26' See note 1				
1 See note 1				
S				
Y				
Y				
N				
1941				

Note 1: UST NH46-5 provided heating fuel oil to Building NH46.

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

The piping was covered with surface rust throughout the run. One loose joint was found. See Site Map 2.

VII. BRIEF SITE DESCRIPTION AND HISTORY

Facility NH46 was constructed in 1941 and served as part of the Naval Hospital complex. UST NH46-5 provided fuel oil to the boilers and emergency generators of building NH46. The tank was abandoned at an unknown date.

UST NH46-5 was first identified as a possible location for an underground tank. The only evidence that was found for the tank was an open top pipe next to a stairway in an empty parking lot over 100 feet from the tank's actual location. The tank location was approximated through the use of a magnetometer and the Building NH 46 boiler room piping and vent. The asphalt, rock and soil covering the tank had to be removed to find it. The tank was full and could not be emptied until it was uncovered, due to the remote fill line. Unfortunately, during the excavation/search for the tank, the backhoe punctured the tank resulting in a spill of approximately 50 gallons of heating fuel oil that was in the tank (see Attachment I Photo 2).

The fluid, and the soil saturated by the spill was over excavated, and sampled for disposal. Additionally, a sample was taken from the soils below the area that was over excavated during the clean-up. Efforts to remove all soil affected by the spill were taken, but the sample of the area below the over excavation showed no significant difference in contamination levels from the saturated soil which was removed. Both areas had relatively high levels of volatiles (BETX/Naphthalene) and detection levels for semi-volatiles (PAHs) which were too high for significant analysis.

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 style="text-align: center;">See note 1.</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 style="text-align: center;">[beneath pipe run - mild]</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 style="text-align: center;">_____</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>Name of DHEC representative authorizing soil removal:</p> <p style="text-align: center;">See note 2.</p> <p style="text-align: center;">_____</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. See note 3.</p>		N/A	

Notes:

1. The release within the UST excavation was an accident caused by DET personnel. It was not a condition of the subject tank/piping that was discovered .
2. Petroleum impacted soil has been drummed and segregated for disposal by a recycling facility.
3. No groundwater was encountered.

X. SAMPLING METHODOLOGY

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

After the removal of UST NH46-5 soil samples were taken. Sampling was performed in accordance with SC DHEC R.61-92 Part 280 and SC DHEC UST Assessment Guidelines.

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. UST piping soil samples were taken under the piping at the mechanical connections. Samples for volatiles were taken using the Encore sampler and T-handle.

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 SPORTENVDETCHASN until they were transferred to General Engineering Laboratories for analysis as documented in the attached Chain-of-Custody Record.

XI. RECEPTORS

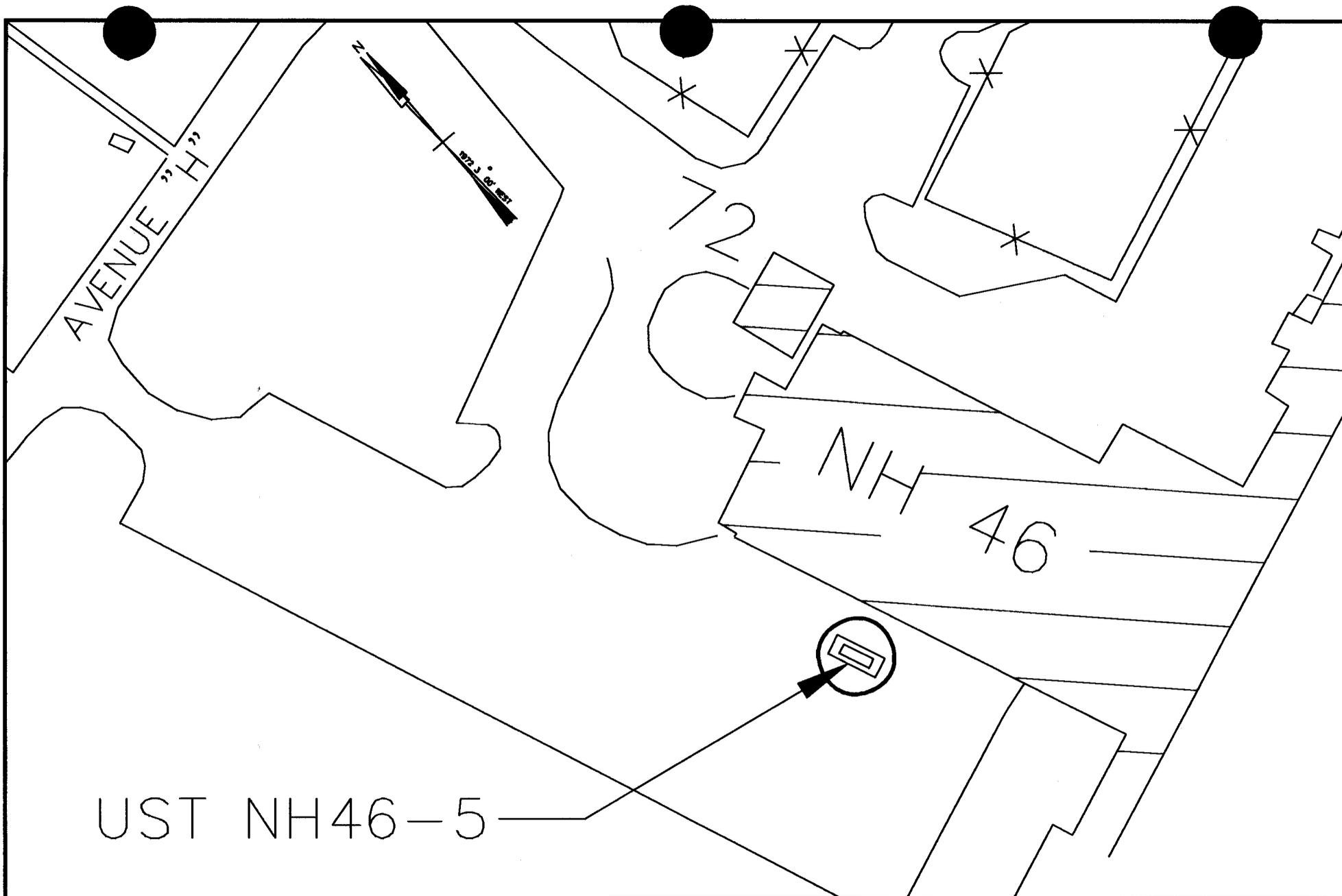
Yes No

<p>A. Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?</p> <p>If yes, indicate type of receptor, distance, and direction on site map.</p>		X
<p>B. 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
<p>C. 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> <p>[Bldg NH46 - ground floor partially below GSL]</p>	X	
<p>D. 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>If yes, indicate the type of utility, distance, and direction on the site map.</p> <p>[storm drain]</p>	X	
<p>E. 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

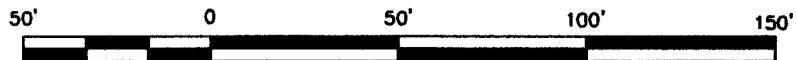
SITE MAP

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, and 3
Photographs 1 thru 4



UST NH46-5



GRAPHIC SCALE

SPORTENVDETHASN
1899 North Hobson Ave.
North Charleston, SC
29405-2108
Ph. (803) 743-6777

Site Map 1
UST NH46-5
Charleston Naval Base
Charleston, SC

DWG DATE: 01 SEP 98 | DWG NAME: NH-46_1

BLDG. NH 46

PIPING EXCAVATION

FILL PIPE INLET

STORM DRAIN

STEPS
S.S. SPORT 0784-1,
LIGHT BROWN SAND,
NO ODOR

BENEATH LOOSE JOINT
S.S. SPORT 0784-3,
LIGHT BROWN SAND,
NO ODOR

FILL PIPE

STORM DRAIN

S.S. SPORT 0788-6,
LIGHT BROWN SAND,
NO ODOR

~A S P H A L T~
(A R E A)

EXCAVATION,
20'x 8'x 8' Deep

FORMER UST NH46-5

S.S. SPORT 0788-1,
LIGHT BROWN SAND,
FUEL OIL ODOR

DIRT PILE

LEGEND

S.S. - SOIL SAMPLE



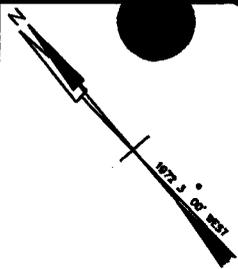
GRAPHIC SCALE

SPORTENVDETHASN
1899 North Hobson Ave.
North Charleston, SC
29405-2108
Ph. (803) 743-6777

Site Map 2
UST NH46-5
Charleston Naval Base
Charleston, SC

DWG DATE: 03 SEP 98 DWG NAME: NH-46_2

BLDG. NH 46



LOCATION OF 6" GASH AT 6'
BELOW GROUND SURFACE LEVEL,
CAUSED BY BACK-HOE DURING EXCAVATION

5-55 GAL DRUMS OF SOIL
IMPACTED WITH CLEAN FUEL OIL
WAS SEGREGATED AND SAMPLED
FOR DISPOSAL (S.S. SPORT 0788-1)

S.S. SPORT0788-4,
8' BELOW GSL,
LIGHT BROWN SAND,
NO ODOR

APPROXIMATELY 50 GAL.
FUEL OIL LEAKED OUT
AT 6' DEPTH

PLUGGED 1/2" OD COPPER
SUPPLY & RETURN PIPES

SIDEWALK

S.S. SPORT 0788-5,
LIGHT BROWN SAND,
NO ODOR

2" STEEL VENT PIPE

UST EXCAVATION,
20'x 8'x 8' Deep

S.S. SPORT 0788-3,
LIGHT BROWN SAND,
NO ODOR
8' BELOW GSL

FORMER UST NH46-5

(* NO GROUND WATER WAS ENCOUNTERED)

LEGEND

S.S. - SOIL SAMPLE
GSL - GROUND SURFACE LEVEL



GRAPHIC SCALE

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

Site Map 3
UST NH46-5
Charleston Naval Base
Charleston, SC

DWG DATE: 16 SEP 98 DWG NAME: NH-46_3



Photo 1: Building NH46 parking lot. The UST was located near the stairs.

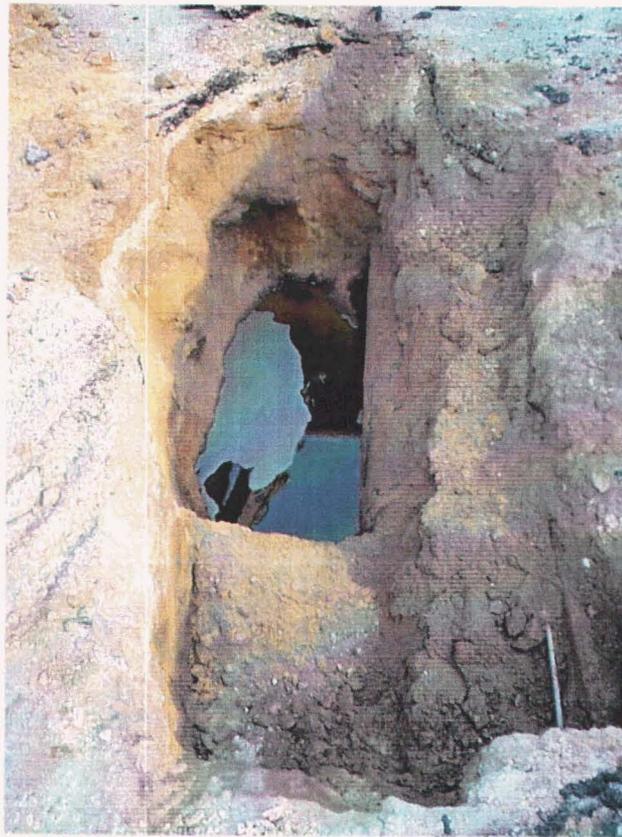


Photo 2: Fuel oil spill.

UST NH46-5

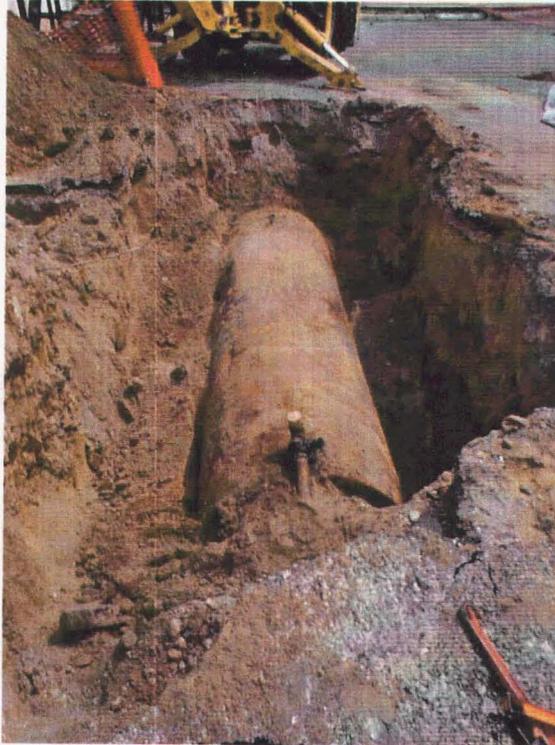


Photo 3: UST NH46-5 exposed.



Photo 4: UST NH46-5 during removal.



Photo 5: UST NH46-5 during cutting and cleaning.

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

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 02, 1998

Page 1 of 3

Sample ID : SPORT0784-1
 Lab ID : 9808866-01
 Matrix : Soil
 Date Collected : 08/25/98
 Date Received : 08/25/98
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
<i>BTEX + NAPTH. - 5 items</i>											
Benzene	U	ND	0.560	1.12	ug/kg	1.0	JEB	08/30/98	1552	129984	
Ethylbenzene	U	ND	0.336	1.12	ug/kg	1.0					
Naphthalene	U	ND	0.672	1.12	ug/kg	1.0					
Toluene	U	ND	1.01	1.12	ug/kg	1.0					
Xylenes (TOTAL)	U	ND	0.784	2.24	ug/kg	1.0					
Extractable Organics											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	ND	158	330	ug/kg	1.0	RLC	08/28/98	1800	129634	2
Acenaphthylene	U	ND	145	330	ug/kg	1.0					
Anthracene	U	ND	85.8	330	ug/kg	1.0					
Benzo(a)anthracene	U	ND	66.0	330	ug/kg	1.0					
Benzo(a)pyrene	U	ND	72.6	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	ND	142	330	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	79.2	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	132	330	ug/kg	1.0					
Chrysene	U	ND	52.8	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	82.5	330	ug/kg	1.0					
Fluoranthene	U	ND	66.0	330	ug/kg	1.0					
Fluorene	U	ND	112	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	79.2	330	ug/kg	1.0					
Naphthalene	U	ND	155	330	ug/kg	1.0					
Phenanthrene	U	ND	59.4	330	ug/kg	1.0					
Pyrene	U	ND	72.6	330	ug/kg	1.0					

The following prep procedures were performed:

CMS Volatiles (8260 High Level)

JEB 08/30/98 0900 129984 3

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414

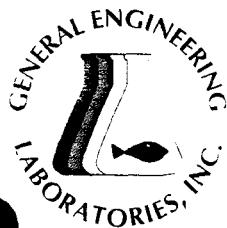
(843) 556-8171 • Fax (843) 766-1178



9808866-01



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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 02, 1998

Page 2 of 3

Sample ID : SPORT0784-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
GC/MS Base/Neutral Compounds							RDH	08/26/98	2015	129634	4

Comments:

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	80.5	(30.0 - 115.)
Nitrobenzene-d5	M610	95.0	(23.0 - 120.)
p-Terphenyl-d14	M610	83.5	(37.3 - 128.)
Bromofluorobenzene	BTEX+NAP-8260B	74.5	(53.5 - 154.)
Dibromofluoromethane	BTEX+NAP-8260B	89.6	(63.4 - 136.)
Toluene-d8	BTEX+NAP-8260B	109.	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:

The qualifiers in this report are defined as follows:

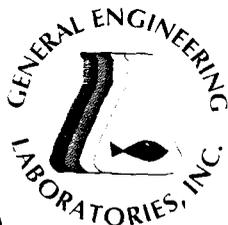
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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.





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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 02, 1998

Page 3 of 3

Sample ID : SPORT0784-1

M = Method

Method-Description

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.

Reviewed By

Karen Blakeney





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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 02, 1998

Page 1 of 2

Sample ID : SPORT0784-2
 Lab ID : 9808866-02
 Matrix : Soil
 Date Collected : 08/25/98
 Date Received : 08/25/98
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
<i>BTEX + NAPTH. - 5 items</i>											
Benzene	U	ND	0.500	1.00	ug/kg	1.0	JEB	08/30/98	1520	129984	
Ethylbenzene	U	ND	0.300	1.00	ug/kg	1.0					
Naphthalene	U	ND	0.600	1.00	ug/kg	1.0					
Toluene	U	ND	0.900	1.00	ug/kg	1.0					
Xylenes (TOTAL)	U	ND	0.700	2.00	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Volatiles (8260 High Level)

JEB 08/30/98 0900 129984 2

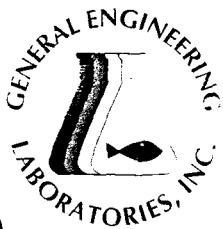
Comments:

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	BTEX+NAP-8260B	83.3	(53.5 - 154.)
Dibromofluoromethane	BTEX+NAP-8260B	81.5	(63.4 - 136.)
Toluene-d8	BTEX+NAP-8260B	95.9	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 5035





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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 02, 1998

Page 2 of 2

Sample ID : SPORT0784-2

M = Method

Method-Description

Notes:

The qualifiers in this report are defined as follows:

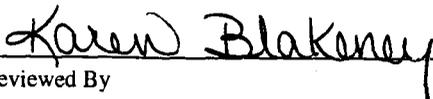
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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

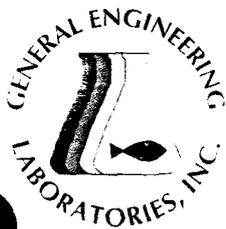
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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.



Reviewed By





GENERAL ENGINEERING LABORATORIES

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STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 02, 1998

Page 1 of 3

Sample ID : SPORT0784-3
 Lab ID : 9808866-03
 Matrix : Soil
 Date Collected : 08/25/98
 Date Received : 08/25/98
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
<i>BTEX + NAPTH. - 5 items</i>											
Benzene	U	ND	54.5	109	ug/kg	50.	JEB	08/31/98	1323	129984	
Ethylbenzene	J	63.2	32.7	109	ug/kg	50.					
Naphthalene		388	65.4	109	ug/kg	50.					
Toluene	U	ND	98.1	109	ug/kg	50.					
Xylenes (TOTAL)	J	183	76.3	218	ug/kg	50.					
Extractable Organics											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	ND	6340	13200	ug/kg	40.	RLC	08/28/98	1828	129634	2
Acenaphthylene	U	ND	5810	13200	ug/kg	40.					
Anthracene	U	ND	3430	13200	ug/kg	40.					
Benzo(a)anthracene	U	ND	2640	13200	ug/kg	40.					
Benzo(a)pyrene	U	ND	2900	13200	ug/kg	40.					
Benzo(b)fluoranthene	U	ND	5680	13200	ug/kg	40.					
Benzo(ghi)perylene	U	ND	3170	13200	ug/kg	40.					
Benzo(k)fluoranthene	U	ND	5280	13200	ug/kg	40.					
Chrysene	U	ND	2110	13200	ug/kg	40.					
Dibenzo(a,h)anthracene	U	ND	3300	13200	ug/kg	40.					
Fluoranthene	U	ND	2640	13200	ug/kg	40.					
Fluorene		14400	4490	13200	ug/kg	40.					
Indeno(1,2,3-c,d)pyrene	U	ND	3170	13200	ug/kg	40.					
Naphthalene		16100	6200	13200	ug/kg	40.					
Phenanthrene		29800	2380	13200	ug/kg	40.					
Pyrene	U	ND	2900	13200	ug/kg	40.					

The following prep procedures were performed:

GC/MS Volatiles (8260 High Level)

JEB 08/30/98 0900 129984 3

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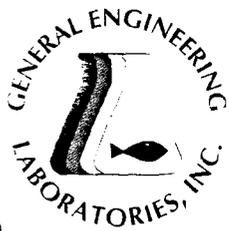
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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 02, 1998

Page 2 of 3

Sample ID : SPORT0784-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
GC/MS Base/Neutral Compounds						RDH		08/26/98	2015	129634	4

Comments:

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	0.00*	(30.0 - 115.)
Nitrobenzene-d5	M610	564.*	(23.0 - 120.)
p-Terphenyl-d14	M610	0.00*	(37.3 - 128.)
Bromofluorobenzene	BTEX+NAP-8260B	93.9	(53.5 - 154.)
Dibromofluoromethane	BTEX+NAP-8260B	81.3	(63.4 - 136.)
Toluene-d8	BTEX+NAP-8260B	93.0	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

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.



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STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 02, 1998

Page 3 of 3

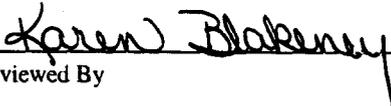
Sample ID : SPORT0784-3

M = Method

Method-Description

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.

Reviewed By





KBB

WC 00197

General Engineering & Construction, Inc.
2040 Savage Road
Charleston, South Carolina 29407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

9808866%

Page 1 of 1

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	BTEX-HAPs	PAHs	Remarks	
Collected by/Company																				WELL	SOIL
D1	SPORT0784-1	8/25/98	0800	X																346 under Fill Pipe	.1
D2	SPORT0784-2	8/25/98	0730	X																Trip Blank	.2
D3	SPORT0784-3	8/25/98	0900	X																Fill Pipe Couple Below Tank	.1
	SPORT0784-4	8/25/98	0900	X																Fill Pipe Couple	
Relinquished by:		Date:	Time:	Received by:		Relinquished by:		Date:	Time:	Received by:											
<i>[Signature]</i>		8/25/98	1236	Omar Washington		<i>[Signature]</i>		8/25/98	1515	Stephanie Betts											
Relinquished by:		Date:	Time:	Received by lab by:		Date:	Time:	Remarks:													
Stephanie Betts		8/25/98	1540	Francis		8/25/98															

White = sample collector Yellow = file Pink = with report



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STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 1 of 3

Sample ID : SPORT0788-1
 Lab ID : 9809045-01
 Matrix : Soil
 Date Collected : 09/01/98
 Date Received : 09/01/98
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
<i>BTEX + NAPTH. - 5 items</i>											
Benzene		5260	680	1360	ug/kg	500	TCL	09/09/98	1407	130654	
Ethylbenzene		47000	408	1360	ug/kg	500					
Naphthalene		50400	816	1360	ug/kg	500					
Toluene		21100	1220	1360	ug/kg	500					
Xylenes (TOTAL)		90400	952	2720	ug/kg	500					
Extractable Organics											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	ND	32000	66600	ug/kg	200	JCB	09/08/98	1625	130324	2
Acenaphthylene	U	ND	29300	66600	ug/kg	200					
Anthracene	U	ND	17300	66600	ug/kg	200					
Benzo(a)anthracene	U	ND	13300	66600	ug/kg	200					
Benzo(a)pyrene	U	ND	14700	66600	ug/kg	200					
Benzo(b)fluoranthene	U	ND	28600	66600	ug/kg	200					
Benzo(ghi)perylene	U	ND	16000	66600	ug/kg	200					
Benzo(k)fluoranthene	U	ND	26600	66600	ug/kg	200					
Chrysene	U	ND	10700	66600	ug/kg	200					
Dibenzo(a,h)anthracene	U	ND	16700	66600	ug/kg	200					
Fluoranthene	U	ND	13300	66600	ug/kg	200					
Fluorene	U	ND	22600	66600	ug/kg	200					
Indeno(1,2,3-c,d)pyrene	U	ND	16000	66600	ug/kg	200					
Naphthalene	U	ND	31300	66600	ug/kg	200					
Phenanthrene	U	ND	12000	66600	ug/kg	200					
Pyrene	U	ND	14700	66600	ug/kg	200					

The following prep procedures were performed:
 GC/MS Volatiles (8260 High Level)

TCL 09/02/98 1038 130654 3

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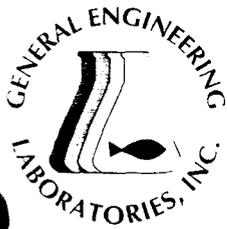
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NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 2 of 3

Sample ID : SPORT0788-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
GC/MS Base/Neutral Compounds						CPU	09/03/98	0045	130324	4	

Comments:

A dilution was required for Extractable Organics due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'

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+NAP-8260B	101.	(53.5 - 154.)
Dibromofluoromethane	BTEX+NAP-8260B	82.4	(63.4 - 136.)
Toluene-d8	BTEX+NAP-8260B	121.	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

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.





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NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 3 of 3

Sample ID : SPORT0788-1

M = Method

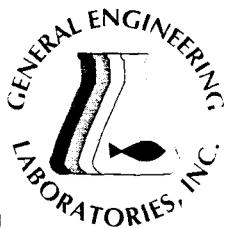
Method-Description

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.

Reviewed By

Karen Blakeney





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SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 1 of 2

Sample ID : SPORT0788-2
 Lab ID : 9809045-02
 Matrix : Soil
 Date Collected : 09/01/98
 Date Received : 09/01/98
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
<i>BTEX + NAPTH. - 5 items</i>											
Benzene	U	ND	0.500	1.00	ug/kg	1.0	TCL	09/04/98	2302	130654	
Ethylbenzene	J	0.520	0.300	1.00	ug/kg	1.0					
Naphthalene	U	ND	0.600	1.00	ug/kg	1.0					
Toluene		1.66	0.900	1.00	ug/kg	1.0					
Xylenes (TOTAL)		2.66	0.700	2.00	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Volatiles (8260 High Level)

TCL 09/02/98 1055 130654 2

Comments:

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	BTEX+NAP-8260B	98.9	(53.5 - 154.)
Dibromofluoromethane	BTEX+NAP-8260B	81.6	(63.4 - 136.)
Toluene-d8	BTEX+NAP-8260B	72.1	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 5035

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NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 2 of 2

Sample ID : SPORT0788-2

M = Method

Method-Description

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).

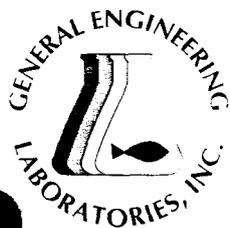
U indicates that the analyte was not detected at a concentration greater than the detection limit.

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

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.


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NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 1 of 3

Sample ID : SPORT0788-3
 Lab ID : 9809045-03
 Matrix : Soil
 Date Collected : 09/01/98
 Date Received : 09/01/98
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
<i>BTEX + NAPTH. - 5 items</i>											
Benzene	U	ND	0.620	1.24	ug/kg	1.0	TCL	09/08/98	1355	130654	1
Ethylbenzene	U	ND	0.372	1.24	ug/kg	1.0					
Naphthalene	J	0.831	0.744	1.24	ug/kg	1.0					
Toluene	J	1.13	1.12	1.24	ug/kg	1.0					
Xylenes (TOTAL)	J	1.18	0.868	2.48	ug/kg	1.0					
Extractable Organics											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	ND	160	333	ug/kg	1.0	JCB	09/08/98	1530	130324	2
Acenaphthylene	U	ND	147	333	ug/kg	1.0					
Anthracene	U	ND	86.6	333	ug/kg	1.0					
Benzo(a)anthracene	U	ND	66.6	333	ug/kg	1.0					
Benzo(a)pyrene	U	ND	73.3	333	ug/kg	1.0					
Benzo(b)fluoranthene	U	ND	143	333	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	79.9	333	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	133	333	ug/kg	1.0					
Chrysene	U	ND	53.3	333	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	83.3	333	ug/kg	1.0					
Fluoranthene	U	ND	66.6	333	ug/kg	1.0					
Fluorene	U	ND	113	333	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	79.9	333	ug/kg	1.0					
Naphthalene	U	ND	157	333	ug/kg	1.0					
Phenanthrene	U	ND	59.9	333	ug/kg	1.0					
Pyrene	U	ND	73.3	333	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Volatiles (8260 High Level)

TCL 09/02/98 1042 130654 3

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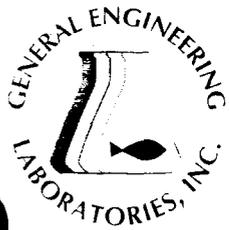
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SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 2 of 3

Sample ID : SPORT0788-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
GC/MS Base/Neutral Compounds						CPU	09/03/98	0045	130324	4	

Comments:

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610	79.2	(30.0 - 115.)
Nitrobenzene-d5	M610	85.3	(23.0 - 120.)
p-Terphenyl-d14	M610	85.4	(37.3 - 128.)
Bromofluorobenzene	BTEX+NAP-8260B	113.	(53.5 - 154.)
Dibromofluoromethane	BTEX+NAP-8260B	78.5	(63.4 - 136.)
Toluene-d8	BTEX+NAP-8260B	72.8	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:

The qualifiers in this report are defined as follows:

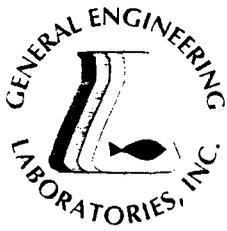
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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.





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NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

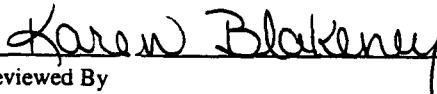
Page 3 of 3

Sample ID : SPORT0788-1

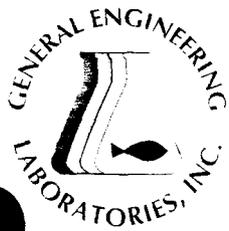
M = Method

Method-Description

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.


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STATE	GEL	EPI
FL	E87156/87294	E87472/874'
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 1 of 3

Sample ID : SPORT0788-4
 Lab ID : 9809045-04
 Matrix : Soil
 Date Collected : 09/01/98
 Date Received : 09/01/98
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
<i>BTEX + NAPTH. - 5 items</i>											
Benzene		6620	588	1180	ug/kg	500	TCL	09/09/98	1753	130654	1
Ethylbenzene		44300	353	1180	ug/kg	500					
Naphthalene		45800	705	1180	ug/kg	500					
Toluene		22500	1060	1180	ug/kg	500					
Xylenes (TOTAL)		81500	823	2350	ug/kg	500					
Extractable Organics											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	ND	32000	66600	ug/kg	200	JCB	09/08/98	1652	130324	2
Acenaphthylene	U	ND	29300	66600	ug/kg	200					
Anthracene	U	ND	17300	66600	ug/kg	200					
Benzo(a)anthracene	U	ND	13300	66600	ug/kg	200					
Benzo(a)pyrene	U	ND	14700	66600	ug/kg	200					
Benzo(b)fluoranthene	U	ND	28600	66600	ug/kg	200					
Benzo(ghi)perylene	U	ND	16000	66600	ug/kg	200					
Benzo(k)fluoranthene	U	ND	26600	66600	ug/kg	200					
Chrysene	U	ND	10700	66600	ug/kg	200					
Dibenzo(a,h)anthracene	U	ND	16700	66600	ug/kg	200					
Fluoranthene	U	ND	13300	66600	ug/kg	200					
Fluorene	U	ND	22600	66600	ug/kg	200					
Indeno(1,2,3-c,d)pyrene	U	ND	16000	66600	ug/kg	200					
Naphthalene	U	ND	31300	66600	ug/kg	200					
Phenanthrene	U	ND	12000	66600	ug/kg	200					
Pyrene	U	ND	14700	66600	ug/kg	200					

The following prep procedures were performed:

C/MS Volatiles (8260 High Level)

TCL 09/02/98 1055 130654 3

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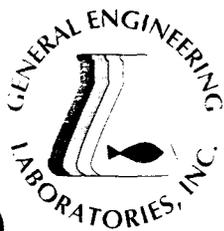
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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874*
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 2 of 3

Sample ID : SPORT0788-4

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
GC/MS Base/Neutral Compounds							CPU	09/03/98	0045	130324	4

Comments:

A dilution was required for Extractable Organics due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

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+NAP-8260B	101.	(53.5 - 154.)
Dibromofluoromethane	BTEX+NAP-8260B	87.8	(63.4 - 136.)
Toluene-d8	BTEX+NAP-8260B	119.	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:

The qualifiers in this report are defined as follows:

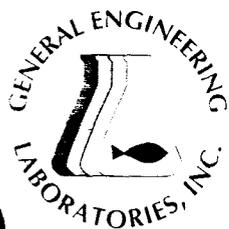
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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.





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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 3 of 3

Sample ID : SPORT0788-4

M = Method

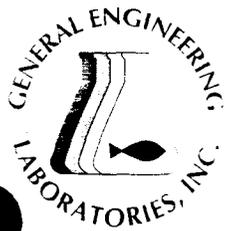
Method-Description

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.

Karen Blakeney

 Reviewed By





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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 1 of 3

Sample ID : SPORT0788-5
 Lab ID : 9809045-05
 Matrix : Soil
 Date Collected : 09/01/98
 Date Received : 09/01/98
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
<i>BTEX + NAPTH. - 5 items</i>											
Benzene	J	0.995	0.765	1.53	ug/kg	1.0	TCL	09/08/98	1428	130654	1
Ethylbenzene	U	ND	0.459	1.53	ug/kg	1.0					
Naphthalene	U	ND	0.918	1.53	ug/kg	1.0					
Toluene	U	ND	1.38	1.53	ug/kg	1.0					
Xylenes (TOTAL)	U	ND	1.07	3.06	ug/kg	1.0					
Extractable Organics											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	ND	160	333	ug/kg	1.0	JCB	09/08/98	1557	130324	2
Acenaphthylene	U	ND	147	333	ug/kg	1.0					
Anthracene	U	ND	86.6	333	ug/kg	1.0					
Benzo(a)anthracene	U	ND	66.6	333	ug/kg	1.0					
Benzo(a)pyrene	U	ND	73.3	333	ug/kg	1.0					
Benzo(b)fluoranthene	U	ND	143	333	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	79.9	333	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	133	333	ug/kg	1.0					
Chrysene	U	ND	53.3	333	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	83.3	333	ug/kg	1.0					
Fluoranthene	U	ND	66.6	333	ug/kg	1.0					
Fluorene	U	ND	113	333	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	79.9	333	ug/kg	1.0					
Naphthalene	U	ND	157	333	ug/kg	1.0					
Phenanthrene	U	ND	59.9	333	ug/kg	1.0					
Pyrene	U	ND	73.3	333	ug/kg	1.0					

The following prep procedures were performed:

C/MS Volatiles (8260 High Level)

TCL 09/02/98 1058 130654 3

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414

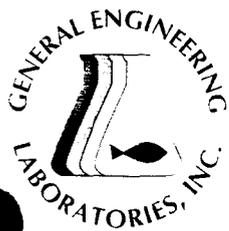
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9809045-05



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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 2 of 3

Sample ID : SPORT0788-5

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
GC/MS Base/Neutral Compounds						CPU	09/03/98	0045	130324	4	

Comments:

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610	83.6	(30.0 - 115.)
Nitrobenzene-d5	M610	91.4	(23.0 - 120.)
p-Terphenyl-d14	M610	89.9	(37.3 - 128.)
Bromofluorobenzene	BTEX+NAP-8260B	123.	(53.5 - 154.)
Dibromofluoromethane	BTEX+NAP-8260B	77.4	(63.4 - 136.)
Toluene-d8	BTEX+NAP-8260B	75.0	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

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.



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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 3 of 3

Sample ID : SPORT0788-5

M = Method

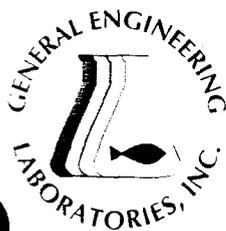
Method-Description

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.

Reviewed By

Karen Blakeney





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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874'
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 1 of 3

Sample ID : SPORT0788-6
 Lab ID : 9809045-06
 Matrix : Soil
 Date Collected : 09/01/98
 Date Received : 09/01/98
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
<i>BTEX + NAPTH. - 5 items</i>											
Benzene		1.81	0.615	1.23	ug/kg	1.0	TCL	09/05/98	0354	130654	!
Ethylbenzene		2.46	0.369	1.23	ug/kg	1.0					
Naphthalene		3.10	0.738	1.23	ug/kg	1.0					
Toluene		3.94	1.11	1.23	ug/kg	1.0					
Xylenes (TOTAL)		5.15	0.861	2.46	ug/kg	1.0					
Extractable Organics											
<i>Polynuclear Aromatic Hydrocarbons - 16 items</i>											
Acenaphthene	U	ND	160	333	ug/kg	1.0	JPA	09/03/98	2042	130324	2
Acenaphthylene	U	ND	147	333	ug/kg	1.0					
Anthracene	U	ND	86.6	333	ug/kg	1.0					
Benzo(a)anthracene	U	ND	66.6	333	ug/kg	1.0					
Benzo(a)pyrene	U	ND	73.3	333	ug/kg	1.0					
Benzo(b)fluoranthene	U	ND	143	333	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	79.9	333	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	133	333	ug/kg	1.0					
Chrysene	U	ND	53.3	333	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	83.3	333	ug/kg	1.0					
Fluoranthene	U	ND	66.6	333	ug/kg	1.0					
Fluorene	U	ND	113	333	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	79.9	333	ug/kg	1.0					
Naphthalene	U	ND	157	333	ug/kg	1.0					
Phenanthrene	U	ND	59.9	333	ug/kg	1.0					
Pyrene	U	ND	73.3	333	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Volatiles (8260 High Level)

TCL 09/02/98 1106 130654 3

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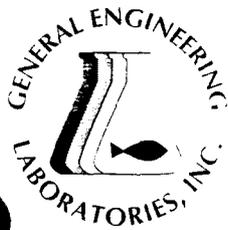
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9809045-06



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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 2 of 3

Sample ID : SPORT0788-6

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
GC/MS Base/Neutral Compounds						CPU	09/03/98	0045	130324	4	

Comments:

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610	87.7	(30.0 - 115.)
Nitrobenzene-d5	M610	75.3	(23.0 - 120.)
p-Terphenyl-d14	M610	75.5	(37.3 - 128.)
Bromofluorobenzene	BTEX+NAP-8260B	95.2	(53.5 - 154.)
Dibromofluoromethane	BTEX+NAP-8260B	81.3	(63.4 - 136.)
Toluene-d8	BTEX+NAP-8260B	72.1	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:

The qualifiers in this report are defined as follows:

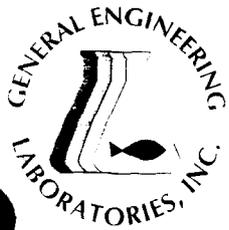
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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.





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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
SC	10120	10582
TN	02934	02934

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: NPWC00197

Report Date: September 10, 1998

Page 3 of 3

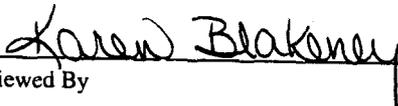
Sample ID : SPORT0788-6

M = Method

Method-Description

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.

Reviewed By





TOP

INP WUUM 1

General Engineering Laboratories, Inc.
 2040 Savage Road
 Charleston, South Carolina 29407
 P.O. Box 30712
 Charleston, South Carolina 29417
 (803) 556-8171

CHAIN OF CUSTODY RECORD

98090456

Page 1 of 1

Client Name/Facility Name SPORT ENV DET CHASN						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						
Collected by/Company SPORT ENV DET CHASN						# 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	BTX+HAP	PAH	Remarks		
SAMPLE ID	DATE	TIME	WELL	SOIL	COMP																				GRAB	
-01	SPORT0788-1	9-1-98	0841	X		4																		NH-46 Dirt Pila - 1	.1	
-02	SPORT0788-2	9-1-98	0800	X		1																			TRIP Blank	.2
-03	SPORT0788-3	9-1-98	0930	X		4																			NH-46 Southend	.1
-04	SPORT0788-4	9-1-98	0920	X		4																			NH46 Northend	.1
-05	SPORT0788-5	9-1-98	09 50 ³⁹ NO	X		4																			Vent Pipe	.1
-06	SPORT0788-6	9-1-98	0950	X		4																			Fill Pipe	.1
Relinquished by: <i>[Signature]</i>						Date: 9-1-98	Time: 1300	Received by: <i>[Signature]</i>						Date: 9/1/98	Time: 1540	Received by: <i>[Signature]</i>										
Relinquished by: <i>[Signature]</i>						Date: 9/1/98	Time: 4:15	Received by lab by: <i>[Signature]</i>						Date: 9/1/98	Time: 1615	Remarks:										

White = sample 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 (843) 743-6482

TANK ID & LOCATION

UST NH46-5; Building NH46, Turnbull Ave., Charleston Naval Base, N. Charleston, SC

DISPOSAL LOCATION

Bldg. 1601 Tank Cleaning
& Disposal Area
Charleston Naval Complex

TYPE OF TANK

Fuel oil

SIZE (GAL)

1,500 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.

Carl Jenkins 1 9/22/98
Carl Jenkins (Date)