

N61165.AR.005723
CNC CHARLESTON
5090.3a

UNDERGROUND STORAGE TANK (UST) ASSESSMENT REPORT FOR BUILDING 641 CNC
CHARLESTON SC
09/19/1996
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

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

Li 3.11.97
Lo 3.25.97
PLW

RECEIVED
FEB 07 1997

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

Groundwater Assessment
and Development Section

| |
|----------------|
| Date Received |
| State Use Only |

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 | |

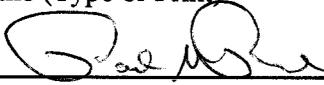
II SITE IDENTIFICATION AND LOCATION

| | | | |
|-----------------|---|---------|------------|
| Site I.D. #: | Unregulated | | |
| Facility Name: | Charleston Naval Base Complex, Bldg 641 17783 | | |
| Street Address: | Brumby Street | | |
| City: | North Charleston, 29405-2413 | County: | Charleston |

III CLOSURE INFORMATION

| | |
|------------------------------|---|
| Closure Started: 19 Aug 1996 | Closure Completed: 19 Sept 1996 |
| Number of USTs Closed: 1 | |
| N/A Consultant | SPORTENVDETHASN UST Removal Contractor |

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

| | |
|--|--|
| <small>I certify that I have personally examined and am familiar with the information submitted in this and all attached documents; and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate and complete.</small> | |
| 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 |
|----------|--------|--------|--------|--------|--------|--------|
| Fuel oil | | | | | | |
| 560 gal. | | | | | | |
| 1979 | | | | | | |
| Steel | | | | | | |
| Unk. | | | | | | |
| 4' | | | | | | |
| N | | | | | | |
| N | | | | | | |
| R | | | | | | |
| N | | | | | | |
| N | | | | | | |

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

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

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

No corrosion, pitting, or holes were found.

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 |
|---------------------|--------|--------|--------|--------|--------|--------|
| Copper | | | | | | |
| 37' (see note 1) | | | | | | |
| 1 | | | | | | |
| S | | | | | | |
| Y | | | | | | |
| N | | | | | | |
| N | | | | | | |
| 1979 | | | | | | |

Note 1: UST 641 provided fuel oil to building 641's boiler.

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

No corrosion, pitting, or holes were found. Thirty-three feet of the pipe run was above ground, along the side of building 641.

VII. BRIEF SITE DESCRIPTION AND HISTORY

Building 641 was a warehouse on the Charleston Naval Base. UST 641 provided fuel oil to building 641's boiler.

X. SAMPLING METHODOLOGY

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

After the removal of UST 641 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 | UST641-1 | = | SPORT -0147-1 |
| Soil Sample | UST641-2 | = | SPORT -0147-2 |
| Soil Sample | UST641-3 | = | SPORT -0147-3 |
| Soil Sample | UST641-4 | = | SPORT -0147-4 |

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 from the center of the excavation.

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

| | | | |
|----|---|----|---|
| A. | <p>Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?</p> <p style="text-align: right;">[*Cooper R. 729']</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: right;">[*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 style="text-align: right;">[*SPORT 0147-2]</p> <p>If yes, indicate the area of contaminated soil on the site map.</p> | *X | |

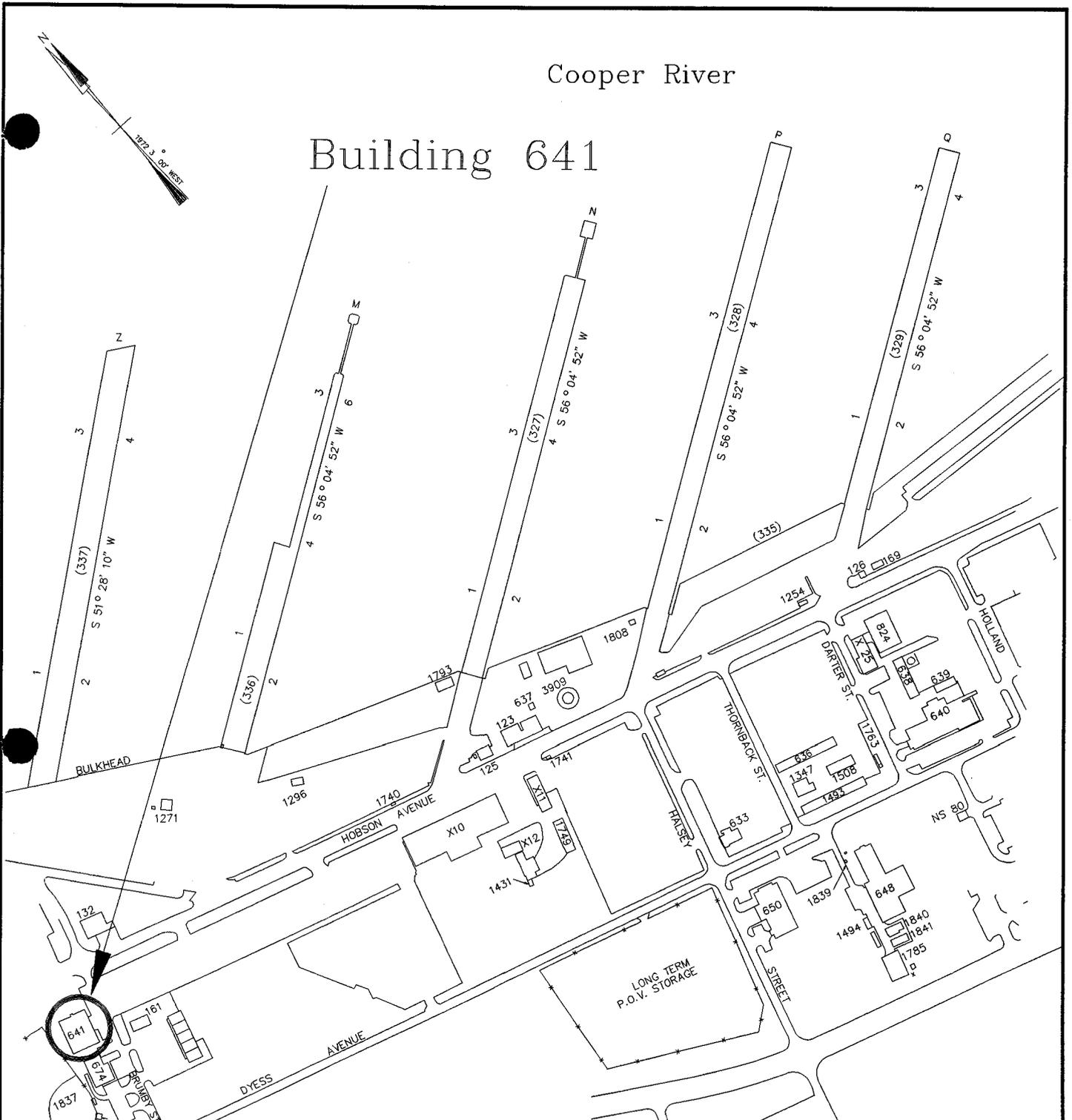
SITE MAP

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.

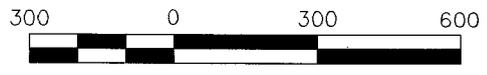
Site Maps 1, 2, 3, and 4
Photographs 1 and 2

Cooper River

Building 641

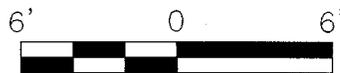
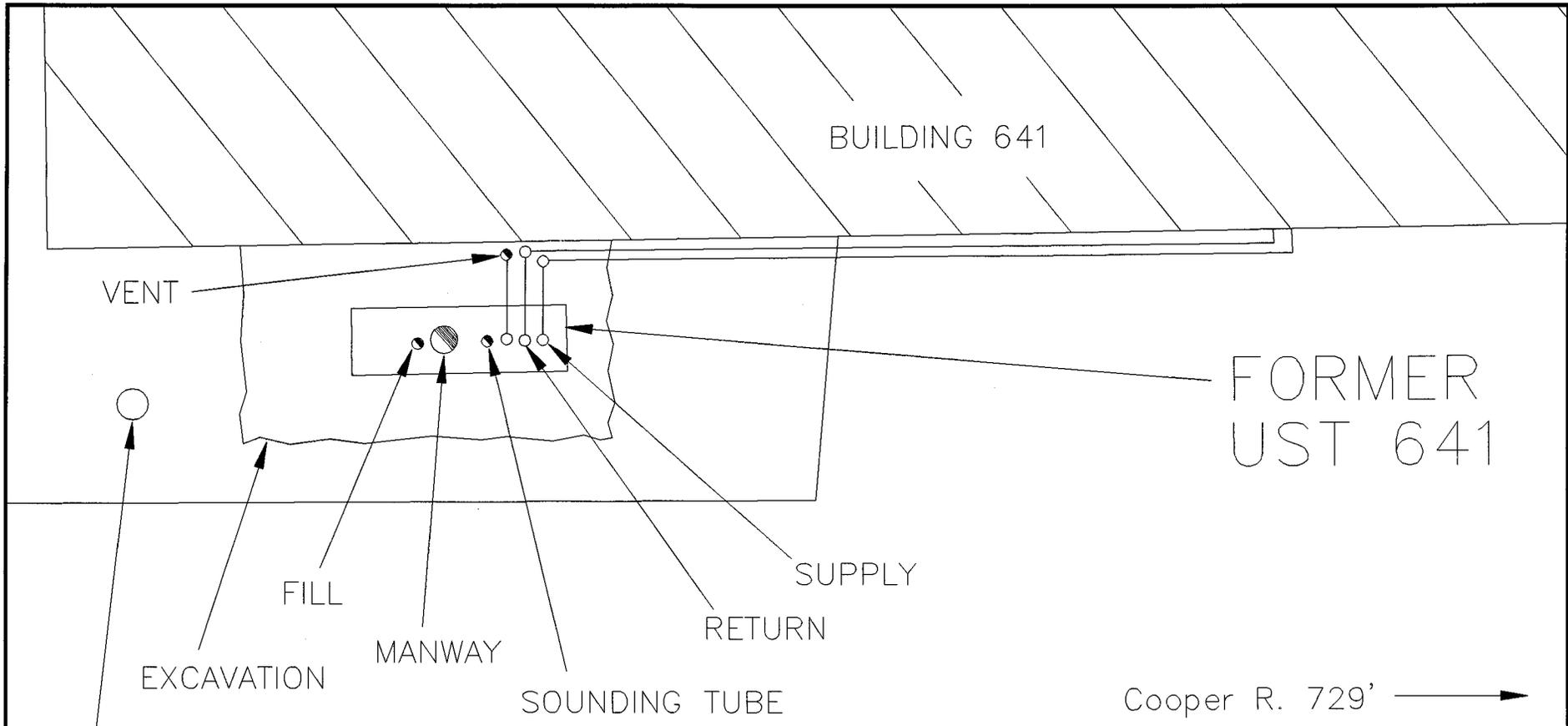


CHARLESTON NAVAL BASE
CHARLESTON, SC



GRAPHIC SCALE

| | |
|---|---------------------|
| <p>Site Map 1 UST 641 Charleston Naval Base Charleston, SC</p> | |
| <p>SPORTENVDETHASN 1899 North Hobson Avenue North Charleston, SC 29405-2106</p> | |
| DWG NAME: B641_1 | DWG DATE: 16 Dec 96 |



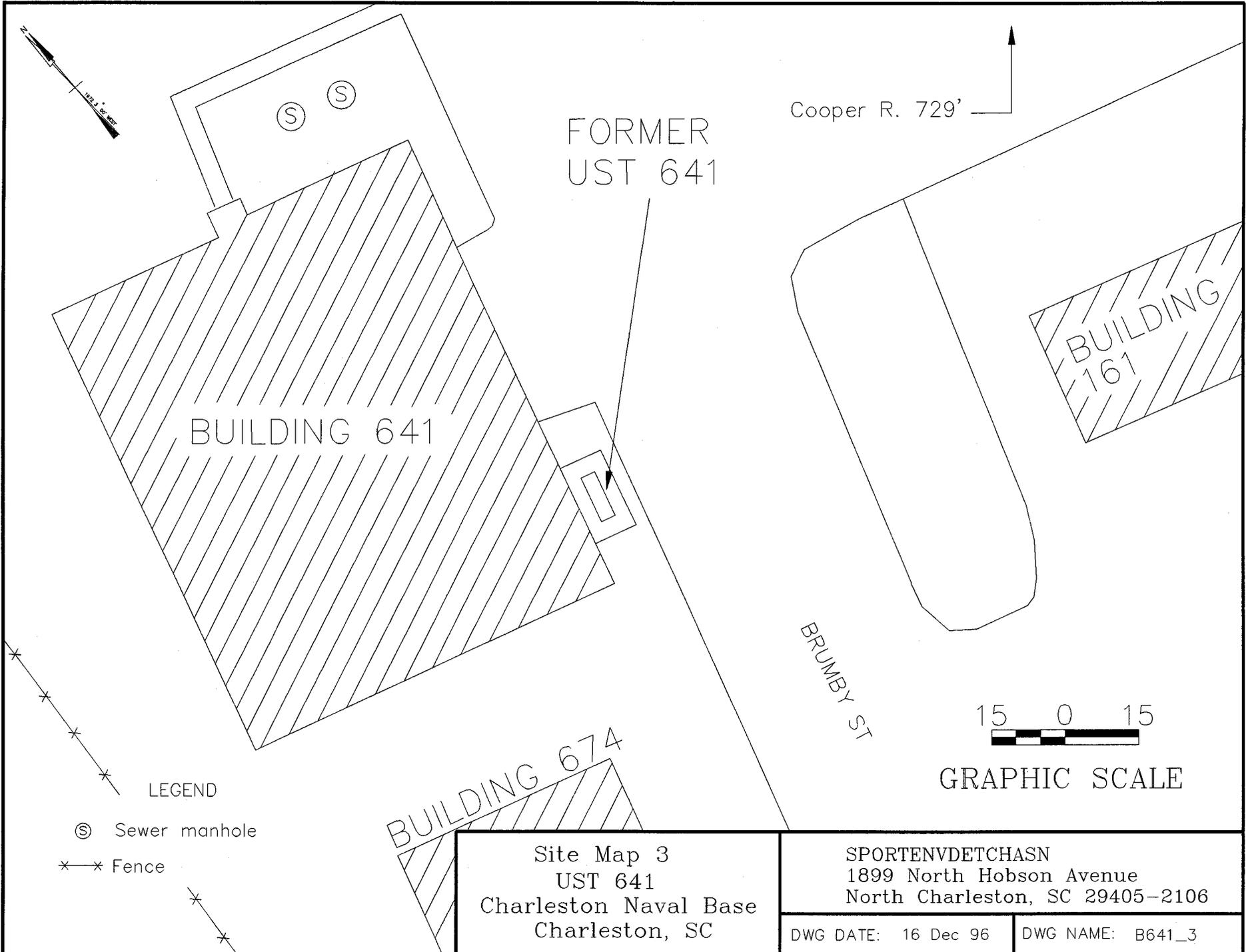
GRAPHIC SCALE

Site Map 2
 UST 641
 Charleston Naval Base
 Charleston, SC

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

DWG DATE: 16 Dec 96

DWG NAME: B641_2



FORMER
UST 641

Cooper R. 729'

BUILDING 641

BUILDING
161

BUILDING 674

BRUMBY ST



GRAPHIC SCALE

LEGEND

Ⓢ Sewer manhole

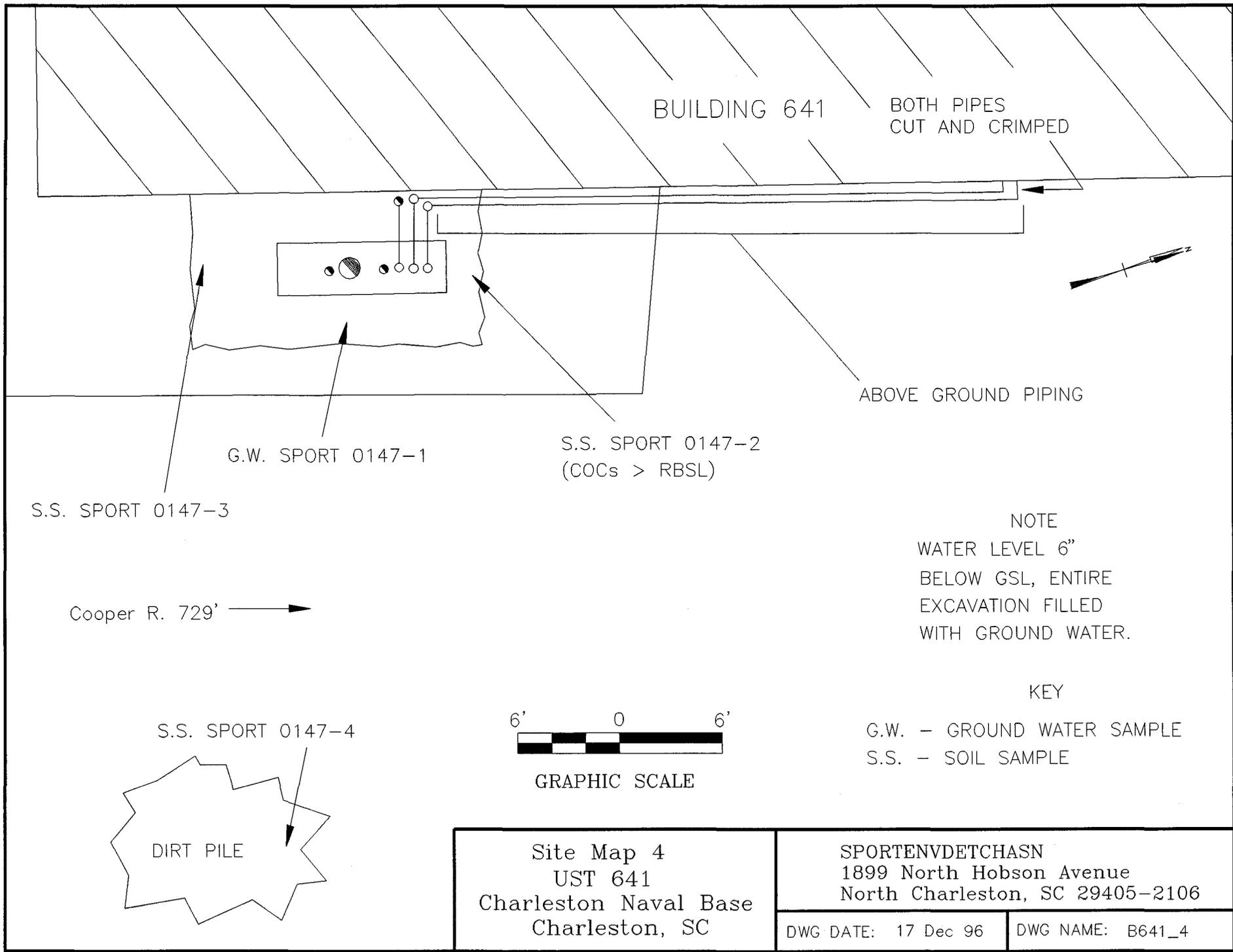
- Fence

Site Map 3
UST 641
Charleston Naval Base
Charleston, SC

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

DWG DATE: 16 Dec 96

DWG NAME: B641_3



Site Map 4
 UST 641
 Charleston Naval Base
 Charleston, SC

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

DWG DATE: 17 Dec 96

DWG NAME: B641_4

UST 641

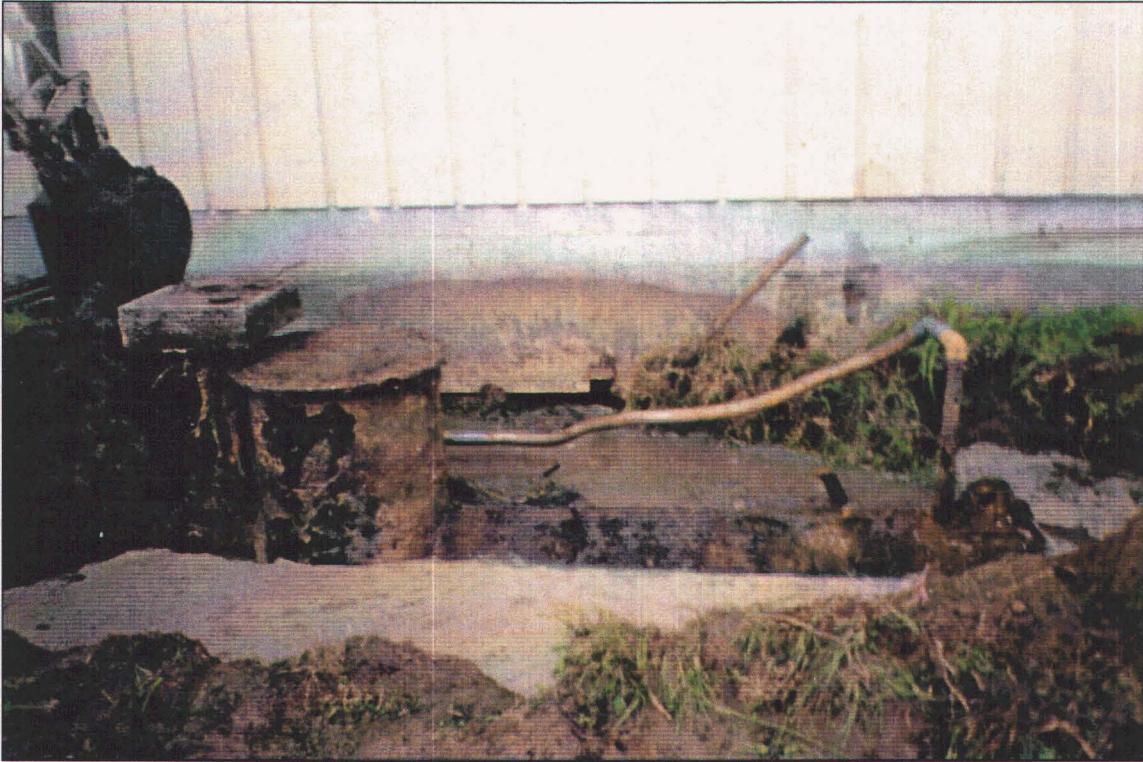


Photo 1: UST 641 during excavation.



Photo 2: UST 641 during 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



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641 825

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 30, 1996

Page 1 of 3

Sample ID : SPORT0147-1
 Lab ID : 9608440-01
 Matrix : GroundH2O
 Date Collected : 08/21/96
 Date Received : 08/21/96
 Priority : Routine
 Collector : Client

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | M |
|---|-----------|--------|------|------|-------|-----|---------|----------|------|-------|---|
| Volatile Organics | | | | | | | | | | | |
| <i>BTEX - 4 items</i> | | | | | | | | | | | |
| Benzene | U | 0.00 | 1.00 | 2.00 | ug/l | 1.0 | JLS | 08/28/96 | 1651 | 89692 | 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 | | | | | |
| Methyl Tert Butyl Ether | U | 0.00 | 2.00 | 2.00 | ug/l | 1.0 | | | | | |
| Naphthalene | U | 0.520 | 1.00 | 2.00 | ug/l | 1.0 | | | | | |
| Extractable Organics | | | | | | | | | | | |
| <i>Polynuclear Aromatic Hydrocarbons - 16 items</i> | | | | | | | | | | | |
| Acenaphthene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | BDG | 08/27/96 | 1700 | 89446 | 2 |
| Acenaphthylene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Anthracene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Benzo(a)anthracene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Benzo(a)pyrene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Benzo(b)fluoranthene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Benzo(ghi)perylene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Benzo(k)fluoranthene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Chrysene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Dibenzo(a,h)anthracene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Fluoranthene | J | 7.70 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Fluorene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Indeno(1,2,3-c,d)pyrene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Naphthalene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Phenanthrene | U | 0.00 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |
| Pyrene | J | 5.60 | 5.00 | 10.0 | ug/l | 1.0 | | | | | |



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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 30, 1996

Page 2 of 3

Sample ID : SPORT0147-1

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | M |
|-----------|-----------|--------|----|----|-------|----|---------|------|------|-------|---|
|-----------|-----------|--------|----|----|-------|----|---------|------|------|-------|---|

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

GWL 08/23/96 1800 89446 3

| Surrogate Recovery | Test | Percent% | Acceptable Limits |
|----------------------|-----------|----------|-------------------|
| 2-Fluorobiphenyl | M610 | 65.8 | (43.0 - 108.) |
| Nitrobenzene-d5 | M610 | 49.6 | (35.0 - 111.) |
| p-Terphenyl-d14 | M610 | 61.4 | (33.0 - 125.) |
| Bromofluorobenzene | BTEX-8260 | 104. | (80.0 - 128.) |
| Dibromofluoromethane | BTEX-8260 | 98.9 | (67.7 - 135.) |
| Toluene-d8 | BTEX-8260 | 102. | (76.8 - 122.) |
| Bromofluorobenzene | MTBE-8260 | 104. | (80.0 - 128.) |
| Dibromofluoromethane | MTBE-8260 | 98.9 | (67.7 - 135.) |
| Toluene-d8 | MTBE-8260 | 102. | (76.8 - 122.) |
| Bromofluorobenzene | NAP-8260 | 104. | (80.0 - 128.) |
| Dibromofluoromethane | NAP-8260 | 98.9 | (67.7 - 135.) |
| Toluene-d8 | NAP-8260 | 102. | (76.8 - 122.) |

| M = Method | Method-Description |
|------------|--------------------|
| M 1 | EPA 8260 |
| M 2 | EPA 8270 |
| M 3 | EPA 3510 |

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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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

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Report Date: August 30, 1996

Page 3 of 3

Sample ID : SPORT0147-1

GEL Laboratory Certifications

AL - 41040
CA - 2089
DE - SC012
ME - SC012
NC - 233
RI - 135
TN - 02934
VA - 00151
WI - 999887790

AZ - AZ0514
CT - PH-0169
FL - E87156/87294
MS - 10120
NY - 11501
SC - 10120
UT - E-251
WA - C223
WV - 236

EPI Laboratory Certifications

AL - 41050
CA - I-1023/2056
FL - E87472/87458
NY - 11502
SC - 10582
UT - E-227
WA - C225
PA - 68-485

AZ - AZ0514
CT - PH-0175
MS - 29417
RI - 138
TN - 02934
VA - 00111
NJ - 79002
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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 1899 North Hobson Ave.
 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 27, 1996

Page 1 of 3

Sample ID : SPORT0147-2
 Lab ID : 9608440-02
 Matrix : Soil
 Date Collected : 08/21/96
 Date Received : 08/21/96
 Priority : Routine
 Collector : Client

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | M |
|---|-----------|--------|------|-----|-------|-----|---------|----------|------|-------|---|
| Volatile Organics | | | | | | | | | | | |
| <i>BTEX - 4 items</i> | | | | | | | | | | | |
| Benzene | U | 0.00 | 50.0 | 100 | ug/kg | 50. | THL | 08/23/96 | 2216 | 89427 | 1 |
| Ethylbenzene | U | 0.00 | 50.0 | 100 | ug/kg | 50. | | | | | |
| Toluene | U | 0.00 | 50.0 | 100 | ug/kg | 50. | | | | | |
| Xylenes (TOTAL) | U | 0.00 | 50.0 | 100 | ug/kg | 50. | | | | | |
| Naphthalene | | 362 | 50.0 | 100 | ug/kg | 50. | | | | | |
| Extractable Organics | | | | | | | | | | | |
| <i>Polynuclear Aromatic Hydrocarbons - 16 items</i> | | | | | | | | | | | |
| Acenaphthene | U | 0.00 | 166 | 331 | ug/kg | 1.0 | BDG | 08/24/96 | 2050 | 89408 | 2 |
| Acenaphthylene | U | 0.00 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Anthracene | U | 0.00 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Benzo(a)anthracene | | 655 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Benzo(a)pyrene | | 447 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Benzo(b)fluoranthene | | 679 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Benzo(ghi)perylene | U | 0.00 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Benzo(k)fluoranthene | U | 0.00 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Chrysene | | 490 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Dibenzo(a,h)anthracene | U | 0.00 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Fluoranthene | | 2030 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Fluorene | U | 0.00 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Indeno(1,2,3-c,d)pyrene | U | 0.00 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Naphthalene | U | 0.00 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Phenanthrene | | 430 | 166 | 331 | ug/kg | 1.0 | | | | | |
| Pyrene | | 1790 | 166 | 331 | ug/kg | 1.0 | | | | | |

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

TNF 08/24/96 1200 89408 3



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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

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Page 2 of 3

Sample ID : SPORT0147-2

| Surrogate Recovery | Test | Percent% | Acceptable Limits |
|----------------------|-----------|----------|-------------------|
| 2-Fluorobiphenyl | M610 | 65.1 | (30.0 - 115.) |
| Nitrobenzene-d5 | M610 | 50.7 | (23.0 - 120.) |
| p-Terphenyl-d14 | M610 | 74.1 | (37.3 - 128.) |
| Bromofluorobenzene | BTEX-8260 | 109. | (59.7 - 159.) |
| Dibromofluoromethane | BTEX-8260 | 103. | (74.0 - 128.) |
| Toluene-d8 | BTEX-8260 | 104. | (53.4 - 163.) |
| Bromofluorobenzene | NAP-8260 | 109. | (59.7 - 159.) |
| Dibromofluoromethane | NAP-8260 | 103. | (74.0 - 128.) |
| Toluene-d8 | NAP-8260 | 104. | (53.4 - 163.) |

| M = Method | Method-Description |
|------------|--------------------|
| M 1 | EPA 8260 |
| M 2 | EPA 8270 |
| M 3 | EPA 3550 |

Notes:

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* 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 |

9608440-02

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 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 27, 1996

Page 3 of 3

Sample ID : SPORT0147-2

GEL Laboratory Certifications

EPI Laboratory Certifications

| | | | |
|----------------|-------------------|-------------------|------------|
| 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 |
| 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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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 27, 1996

Page 1 of 3

Sample ID : SPORT0147-3
 Lab ID : 9608440-03
 Matrix : Soil
 Date Collected : 08/21/96
 Date Received : 08/21/96
 Priority : Routine
 Collector : Client

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | M |
|---|-----------|--------|------|------|-------|-----|---------|----------|------|-------|---|
| Volatile Organics | | | | | | | | | | | |
| <i>BTEX - 4 items</i> | | | | | | | | | | | |
| Benzene | U | 0.00 | 1.00 | 2.00 | ug/kg | 1.0 | THL | 08/23/96 | 2245 | 89427 | 1 |
| Ethylbenzene | U | 0.00 | 1.00 | 2.00 | ug/kg | 1.0 | | | | | |
| Toluene | U | 0.00 | 1.00 | 2.00 | ug/kg | 1.0 | | | | | |
| Xylenes (TOTAL) | U | 0.510 | 1.00 | 4.00 | ug/kg | 1.0 | | | | | |
| Naphthalene | | 4.85 | 1.00 | 2.00 | ug/kg | 1.0 | | | | | |
| Extractable Organics | | | | | | | | | | | |
| <i>Polynuclear Aromatic Hydrocarbons - 16 items</i> | | | | | | | | | | | |
| Acenaphthene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | BDG | 08/24/96 | 2123 | 89408 | 2 |
| Acenaphthylene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Anthracene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Benzo(a)anthracene | J | 272 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Benzo(a)pyrene | J | 179 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Benzo(b)fluoranthene | J | 282 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Benzo(ghi)perylene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Benzo(k)fluoranthene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Chrysene | J | 249 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Dibenzo(a,h)anthracene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Fluoranthene | | 813 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Fluorene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Indeno(1,2,3-c,d)pyrene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Naphthalene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Phenanthrene | U | 0.00 | 166 | 332 | ug/kg | 1.0 | | | | | |
| Pyrene | | 764 | 166 | 332 | ug/kg | 1.0 | | | | | |

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

TNF 08/24/96 1200 89408 3



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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 27, 1996

Page 2 of 3

Sample ID : SPORT0147-3

| Surrogate Recovery | Test | Percent% | Acceptable Limits |
|----------------------|-----------|----------|-------------------|
| 2-Fluorobiphenyl | M610 | 62.8 | (30.0 - 115.) |
| Nitrobenzene-d5 | M610 | 51.6 | (23.0 - 120.) |
| p-Terphenyl-d14 | M610 | 82.9 | (37.3 - 128.) |
| Bromofluorobenzene | BTEX-8260 | 110. | (59.7 - 159.) |
| Dibromofluoromethane | BTEX-8260 | 107. | (74.0 - 128.) |
| Toluene-d8 | BTEX-8260 | 106. | (53.4 - 163.) |
| Bromofluorobenzene | NAP-8260 | 110. | (59.7 - 159.) |
| Dibromofluoromethane | NAP-8260 | 107. | (74.0 - 128.) |
| Toluene-d8 | NAP-8260 | 106. | (53.4 - 163.) |

| M = Method | Method-Description |
|------------|--------------------|
| M 1 | EPA 8260 |
| M 2 | EPA 8270 |
| M 3 | 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.

| GEL Laboratory Certifications | | EPI Laboratory Certifications | |
|-------------------------------|--------------|-------------------------------|--------------|
| AL - 41040 | AZ - AZ0514 | AL - 41050 | AZ - AZ0514 |
| CA - 2089 | CT - PH-0169 | CA - 1-1023/2056 | CT - PH-0175 |

9608440-03

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

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 27, 1996

Page 3 of 3

Sample ID : SPORT0147-3

GEL Laboratory Certifications

DE - SC012
ME - SC012
NC - 233
RI - 135
TN - 02934
VA - 00151
WI - 999887790

FL - E87156/87294
MS - 10120
NY - 11501
SC - 10120
UT - E-251
WA - C223
WV - 236

EPI Laboratory Certifications

FL - E87472/87458
NY - 11502
SC - 10582
UT - E-227
WA - C225
PA - 68-485

MS - 29417
RI - 138
TN - 02934
VA - 00111
NJ - 79002
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 Blakney at (803) 769-7386.


Analytical Report Specialist



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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 Hicks

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 27, 1996

Page 1 of 3

Sample ID : SPORT0147-4
 Lab ID : 9608440-04
 Matrix : Soil
 Date Collected : 08/21/96
 Date Received : 08/21/96
 Priority : Routine
 Collector : Client

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | M |
|---|-----------|--------|------|------|-------|-----|---------|----------|------|-------|---|
| Volatile Organics | | | | | | | | | | | |
| <i>BTEX - 4 items</i> | | | | | | | | | | | |
| Benzene | U | 0.00 | 1.00 | 2.00 | ug/kg | 1.0 | THL | 08/26/96 | 1129 | 89427 | 1 |
| Ethylbenzene | U | 0.00 | 1.00 | 2.00 | ug/kg | 1.0 | | | | | |
| Toluene | U | 0.00 | 1.00 | 2.00 | ug/kg | 1.0 | | | | | |
| Xylenes (TOTAL) | U | 0.00 | 1.00 | 4.00 | ug/kg | 1.0 | | | | | |
| Naphthalene | U | 0.00 | 1.00 | 2.00 | ug/kg | 1.0 | | | | | |
| Extractable Organics | | | | | | | | | | | |
| <i>Polynuclear Aromatic Hydrocarbons - 16 items</i> | | | | | | | | | | | |
| Acenaphthene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | BDG | 08/25/96 | 0005 | 89408 | 2 |
| Acenaphthylene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Anthracene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Benzo(a)anthracene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Benzo(a)pyrene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Benzo(b)fluoranthene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Benzo(ghi)perylene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Benzo(k)fluoranthene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Chrysene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Dibenzo(a,h)anthracene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Fluoranthene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Fluorene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Indeno(1,2,3-c,d)pyrene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Naphthalene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Phenanthrene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |
| Pyrene | U | 0.00 | 165 | 330 | ug/kg | 1.0 | | | | | |

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

TNF 08/24/96 1200 89408 3



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 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 27, 1996

Page 2 of 3

Sample ID : SPORT0147-4

| Surrogate Recovery | Test | Percent% | Acceptable Limits |
|----------------------|-----------|----------|-------------------|
| 2-Fluorobiphenyl | M610 | 58.1 | (30.0 - 115.) |
| Nitrobenzene-d5 | M610 | 45.2 | (23.0 - 120.) |
| p-Terphenyl-d14 | M610 | 84.9 | (37.3 - 128.) |
| Bromofluorobenzene | BTEX-8260 | 117. | (59.7 - 159.) |
| Dibromofluoromethane | BTEX-8260 | 108. | (74.0 - 128.) |
| Toluene-d8 | BTEX-8260 | 109. | (53.4 - 163.) |
| Bromofluorobenzene | NAP-8260 | 117. | (59.7 - 159.) |
| Dibromofluoromethane | NAP-8260 | 108. | (74.0 - 128.) |
| Toluene-d8 | NAP-8260 | 109. | (53.4 - 163.) |

| M = Method | Method-Description |
|------------|--------------------|
| M 1 | EPA 8260 |
| M 2 | EPA 8270 |
| M 3 | EPA 3550 |

Notes:

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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

AZ - AZ0514
 CT - PH-0169

EPI Laboratory Certifications

AL - 41050
 CA - I-1023/2056

AZ - AZ0514
 CT - PH-0175

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North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: August 27, 1996

Page 3 of 3

Sample ID : SPORT0147-4

GEL Laboratory Certifications

DE - SC012
ME - SC012
NC - 233
RI - 135
TN - 02934
VA - 00151
WI - 999887790

FL - E87156/87294
MS - 10120
NY - 11501
SC - 10120
UT - E-251
WA - C223
WV - 236

EPI Laboratory Certifications

FL - E87472/87458
NY - 11502
SC - 10582
UT - E-227
WA - C225
PA - 68-485

MS - 29417
RI - 138
TN - 02934
VA - 00111
NJ - 79002
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

1 WC 00196

KBB

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

CHAIN OF CUSTODY RECORD

Page 1 of 1 96082440

| Client Name/Facility Name SPORTENDETCHASN | | | | SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods | | | | | | | | | | | | | | | | | Remarks | | | | | | |
|--|-------------|---------|-----------------|--|---------|-----|-----------------------------|-----------------|-------------------------------|------------------|-----------|-----------|--------------|-------------------|------------------|-----|---------|-------------------------|----------------|------|---------|----------------|---|---|--------------|------------------------|----|
| Collected by/Company SPORTENVDETCHASN | | | | 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 | PAH | Cyanide | Coliform - specify type | STYRENA PHENOL | MTBE | | STYRENA PHENOL | | | | | |
| SAMPLE ID | DATE | TIME | # OF CONTAINERS | | | | | | | | | | | | | | | | | | | | | | | | |
| -01 | SPORT0147-1 | 8/21/96 | 0900 | | | | | | | | | | | | | | | | | | | | X | X | UST 641-1 GW | .1 | |
| -02 | SPORT0147-2 | 8/21/96 | 0915 | X | X | | | | | | | | | | | | | | | | | | | X | X | UST 641-2 soil | .2 |
| -03 | SPORT0147-3 | 8/21/96 | 0930 | | | | | | | | | | | | | | | | | | | | | X | X | UST 641-3 soil | .2 |
| -04 | SPORT0147-4 | 8/21/96 | 0949 | | | | | | | | | | | | | | | | | | | | | X | X | UST 641-4 soil | .2 |
| -05 | SPORT0147-5 | 8/21/96 | 0900 | | X | | | | | | | | | | | | | | | | | | | X | | UST 641 VOA TRIP BLANK | .3 |

Relinquished by: [Signature] Date: 8/21/96 Time: 1330 Received by: W.R. Hiery, Jr. Relinquished by: Fred S. McLean, Jr. Date: 8/21/96 Time: 1450 Received by: [Signature]

Relinquished by: [Signature] Date: 8/21/96 Time: 1515 Received by: [Signature] Date: 8-21-96 Time: 1515 Remarks:

White = sample collector Yellow = file Pink = with report

Attachment III

Certificate of Disposal (tank)

