N61165.AR.003999
CNC CHARLESTON
5090.3a

COMPLETION REPORT SOLID WASTE MANAGEMENT UNIT 17 (SWMU17) GROUNDWATER MONITORING WITH TRANSMITTAL CNC CHARLESTON SC
4/15/1999
CNC CHARLESTON

COMPLETION REPORT

SWMU 17 GROUND WATER MONITORING
NAVAL BASE CHARLESTON
CHARLESTON, SC

Prepared for:

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON SC

Prepared by:

Supervisor of Shipbuilding, Conversion and Repair,
USN, (SUPSHIP) Portsmouth Va.,
Environmental Detachment Charleston, S.C.
1899 North Hobson Ave.
North Charleston, SC 29405-2106

April 16, 1999

DEPARTMENT OF THE NAVY
SUPERVISOR OF SHIPBUILDING, CONVERSION AND REPAIR, USN
PORTSMOUTH, VIRGINIA, ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE, BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

IN REPLY REFER TO:

Ser 309
April 15, 1999

MEMORANDUM

From: Director, Supervisor of Shipbuilding, Conversion and Repair, USN, Portsmouth, VA, Environmental Detachment (DET), Charleston, SC

To: Southern Division Naval Facilities Engineering Command (SOUTHDIV) (Code 18B, Attn. Hayes Patterson)

Subj: SWMU 17 GROUND WATER MONITORING COMPLETION REPORT

Encl: Completion Report SWMU 17 Ground Water Monitoring Naval Base Charleston, Charleston SC

1. The Environmental Detachment Charleston (DET) has finished all actions required with ground water monitoring at SWMU 17 and is issuing this report as complete

2. Inquires concerning this report can be addressed to Chris Militzer @ 743-6777 ext. 225 or Jed Heames @ 743-6777 ext. 123.

for E.R. Dearhart

Copy to:
Ensafe, Inc. (Todd Havercost)

COMPETION REPORT

SWMU 17 GROUND WATER MONITORING
Naval Base Charleston
Charleston, South Carolina

Engineering Branch Head: _____ **Date:** 4/15/99

Interim Measures Team Leader: _____ **Date:** 4-15-99

Prepared By: _____ **Date:** 4-14-99

REPORT GENERATED BY:
ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE
NORTH CHARLESTON, SC 29405

TABLE OF CONTENTS

Section **Page**

Table of Contents ii

List of Appendices iii

Acronyms, Abbreviations and Symbols iv

1. Introduction 1-1
   - 1.1 Installation Restoration Program 1-1
     - 1.1.1 Naval Base Charleston Installation Restoration Program 1-1
   - 1.2 SWMU 17 1-1

2. Project Execution 2-1
   - 2.1 SWMU 17 Ground Water Monitoring Investigation 2-1
   - 2.2 Actions Required by Work Plan 2-1
   - 2.3 Execution Summary 2-1
     - 2.3.1 Observations Noted 2-2
     - 2.3.2 Plan Modifications and Justification 2-2

3. Investigation Outcome 3-1
   - 3.1 Site Conditions Following Completion of Work 3-1
   - 3.2 Sampling Evolutions and Results 3-1
     - 3.2.1 Product Sampling 3-1
   - 3.3 Waste Generated 3-1
     - 3.3.1 Hazardous/Potentially Hazardous Waste 3-1
     - 3.3.2 Non-Hazardous Waste 3-1

TABLE OF CONTENTS (cont'd)

LIST OF APPENDICES

Appendix A Figures and Sample Results A-1
Appendix B Photographs B-1
Appendix C Sampling Documentation C-1

ACRONYMS, ABBREVIATIONS and SYMBOL

ACM	Asbestos Containing Material
AOC	Area of Concern
BLS	Below Land Surface
CMS	Corrective Measures Study
DERP	Defense Environmental Restoration Program
DET	Environmental Detachment Charleston
DNAPL	Dense Non-aqueous Phased Liquid
DON	Department of the Navy
FO	Fuel Oil
IDW	Investigation Derived Waste
IM	Interim Measure
LNAPL	Light non-aqueous Phased Liquid
IR	Installation Restoration
PCBs	Polychlorinated Biphenyls
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
ROC	Run of Crusher
SARA	Superfund Amendments and Reauthorization Act
SCDHEC	South Carolina Department of Health and Environmental Control
SOUTHDIV	Southern Division Naval Facilities Engineering Command
SUPSHIP	Supervisor of Shipbuilding, Conversion and Repair, USN
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
USN	United States Navy

1. INTRODUCTION

1.1 INSTALLATION RESTORATION PROGRAM The purpose of the Department of the Navy (DON) Installation Restoration (IR) Program is to identify, assess, characterize and clean up or control contamination from past hazardous waste disposal operations and hazardous material spills at Navy and Marine Corps activities. The Defense Environmental Restoration Program (DERP) is codified in the Superfund Amendments and Reauthorization Act (SARA) Section 211 (10 USC 2701). The IR Program is a component of DERP.

1.1.1 Naval Base Charleston IR Program At Naval Base Charleston, a Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) was prepared which divided the Naval Base into zones and identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) within each zone. The RFA evaluated each SWMU and AOC and determined which sites required further investigation. Based on the RFA, a RCRA Facility Investigation (RFI) work plan has been or is being prepared for each zone containing SWMUs and AOCs requiring further investigation. On completion of the RFI for each Zone, a RFI report will be prepared for that zone. The RFI reports will identify SWMUs and AOCs containing wastes requiring remediation. Eventually, Corrective Measures Studies (CMSs) will be prepared to determine the best means of remediating each site.

1.2 SWMU 17 The area around Building FBM 61, located in Zone H of the RFI, has been identified as Solid Waste Management Unit 17 (SWMU 17). A spill took place at the site in 1987. An underground pipeline ruptured which supplied number 2 fuel oil to the boiler in Building FBM 61. Three sumps made from two 55 gallon drums welded together with holes punched randomly in the side walls near the bottom where installed in the ground along the building. The sumps are labeled SA, SB and SD. In addition, Ensafe/Allen & Hoshall installed two ground water monitoring wells near the sumps, NBCH017001 and NBCH017002. Previous sampling of sumps SA and SB by (DET) have found PCBs in the recovered product at levels between 0 and 211 PPM. (See Appendix A Figure 1 and 2 for site maps.)

2. PROJECT EXECUTION

2.1 SWMU 17 GROUND WATER MONITORING INVESTIGATION During the interval between the RFI and the completion of the CMS, it was decided by Southern Division Naval Facilities Engineering Command (SOUTHDIV) that further investigation/monitoring would be performed by Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP), United States Navy (USN), Portsmouth Va. Environmental Detachment Charleston (DET). The objective was to monitor ground water and to remove recovered fuel oil and its constituents from the designated sumps and wells prior to the implementation of final corrective measures. This was accomplished by monitoring the designated sumps and wells on a periodic basis and removing all product encountered. (See Appendix A, Table I and 2 for sample data.) This investigation is consistent with the ultimate cleanup of SWMU 17 and is not intended to circumvent the public participation process inherent within environmental cleanup under RCRA authority.

2.2 ACTIONS REQUIRED BY WORK PLAN The intent of the work plan was to monitor, extract and gauge petroleum impacted sumps SA, SB, SD and ground water monitoring wells, NBCH017001 and NBCH0117002 on a weekly basis for three months. Sump and well monitoring continued on monthly basis for an additional 9 months. Petroleum quantities recovered and sump and well product recharge rates were recorded. (See Appendix A, Table 1 for quantity of product recovered.) Investigation Derived Waste (IDW) recovered from each sump and well was tested for PCBs. The remaining IDW was tested for RCRA 8 metals, volatile organic compounds and semi-volatile organic compounds. Process water used for decontamination of equipment was sampled for pH, PCBs, oil and grease and BTEX.

2.3 INVESTIGATION SUMMARY The investigation consisted of a total of 21 ground water monitoring iterations taken over a one year period beginning with a base line monitoring on March 25 and 26 of 1998 and the last monitoring event on March 2, 1999. An oil/water interface probe was used to record measurements. After the initial monitoring iteration, sumps SA, SB and SD had little to no quantities of product recovered during the course of the year. Attempts to pump down sump SA to increase recharge rates were employed without success as described in paragraph 2.3.2.

2.3.1 Observations Noted During all sampling iterations of well NBCH017002 a light sweet aromatic smell was present and dense non-aqueous phased liquid (DNAPL) was recovered. Well NBCH017001 has a typical heavy petroleum odor and light non-aqueous phased liquid (LNAPL) was recovered.

2.3.2 Plan Modifications and Results During ground monitoring operations of sump SA, permission from Ensafe and SDIV was obtained to pump down the sump to increase the product recovery rate. Product recovery had been minimal at best. Ground water was sampled in the sump and was approved for disposal to the sanitary system by the North Charleston Sewer Department. Two attempts were made using increasing sized diaphragm pumps. The water level in sump SA could only be lowered approximately 1.75 feet before ground water recharge with no product was encountered. Approximately 200 gallons were pumped to the sanitary sewer.

3. INVESTIGATION OUTCOME

3.1 SITE CONDITIONS FOLLOWING COMPLETION OF WORK.

Following completion of all site work on 2 March 1999, the sumps SA, SB, SD, Well NBCH017001 and Well NBCH017002 are in place and functioning. Site photographs are included in Appendix B.

3.2 SAMPLING EVOLUTIONS AND RESULTS

3.2.1 Product Sampling IDW from each sump and well was sampled for RCRA 8 metals, PCB, semi-volatile (SVOC) and volatile organic compounds (VOC) for obtaining data and waste disposal. All the IDW from sumps SB and SD were consumed during PCB analysis and no further testing for SB and SD was possible. PCB contamination was only found in sump SA and wells NBCH017001 and 002. Sump SA IDW oil samples for semi-volatile organic compounds required high dilution factors due to matrix interference, causing the majority of the laboratory results to indicate no detections for the compounds of concern. For quality assurance purposes, a trip blank was prepared for VOC sampling. Laboratory results indicated Carbon Disulfide levels of 1.91 PPB from the sample jars were detected in the trip blank. This result has no effect on the validity of the laboratory results.

3.3 WASTE GENERATED

3.3.1 Hazardous/Potentially Hazardous Waste

A total of 45 gallons of product and ground water was disposed of as oily PCB waste to a permitted Treatment, Storage and Disposal Facility. (See Table 2 of Appendix A for product sample results and Appendix C for sampling documentation.)

3.3.2 Non-Hazardous Waste

In attempts to pump down sump SA, a total of 200 gallons of non-hazardous ground water was disposed of to the sanitary sewer system. An additional 110 gallons of equipment decontamination

water was disposed of to the sanitary sewer system with North Charleston Sewer Department approval (See Appendix C for sampling documentation.)

Figures
And
Sample Results

APPENDIX A

FIGURES AND SAMPLE RESULT

TABLE 1
SWMU-17 GROUND WATER MONITORING & PRODUCT RECOVERY

Sump 55gallon drum	Monitoring & Product Recovery	Date	Product Thickness (LNAPL unless otherwise noted)	Volume Recovered
SA	Initial Baseline	3/24-25/98	0.03ft	136.8 cubic inches
SA	#1 (Weekly)	3/30/98	Sheen, no measurable depth	N/A
SA	#2 "	4/06/98	0.005ft	22.8 cubic inches
SA	#3 "	4/13/98	Sheen, no measurable depth	N/A
SA	#4 "	4/20/98	0.01ft	45.6 cubic inches
SA	#5 "	4/27/98	Sheen, no measurable depth	N/A
SA	#6 "	5/04/98	Sheen, no measurable depth	N/A
SA	#7 "	5/11/98	Sheen, no measurable depth	N/A
SA	#8 "	5/18/98	Sheen, no measurable depth	N/A-attempt to pump down
SA	#9 "	5/26/98	Sheen, no measurable depth	N/A-attempt to pump down
SA	#10 "	6/01/98	Sheen, no measurable depth	N/A
SA	#11 "	6/08/98	Sheen, no measurable depth	N/A
SA	#12 "	6/15/98	Sheen, no measurable depth	N/A
SA	#13 (Monthly)	7/06/98	Sheen, no measurable depth	N/A
SA	#14 "	8/04/98	Sheen, no measurable depth	N/A
SA	#15 "	9/01/98	Sheen, no measurable depth	N/A
SA	#16 "	10/05/98	Sheen, no measurable depth	N/A
SA	#17 "	11/02/98	Sheen, no measurable depth	N/A
SA	#18 "	12/04/98	Sheen, no measurable depth	N/A
SA	#19 "	1/07/99	Sheen, no measurable depth	N/A
SA	#20 "	2/17/99	Sheen, no measurable depth	N/A
SA	#21 "	3/02/99	Sheen, no measurable depth	N/A

TABLE 1 CONTINUED
SWMU-17 GROUND WATER MONITORING & PRODUCT RECOVERY

Sump 55gallon drum	Monitoring & Product Recovery	Date	Product Thickness (LNAPL unless otherwise noted)	Volume Recovered
SB	Initial Baseline	3/24-25/98	0.01ft	45.6 cubic inches
SB	#1 (Weekly)	3/30/98	Sheen, no measurable depth	N/A
SB	#2 "	4/06/98	Sheen, no measurable depth	N/A
SB	#3 "	4/13/98	Sheen, no measurable depth	N/A
SB	#4 "	4/20/98	Sheen, no measurable depth	N/A
SB	#5 "	4/27/98	Sheen, no measurable depth	N/A
SB	#6 "	5/04/98	Sheen, no measurable depth	N/A
SB	#7 "	5/11/98	Sheen, no measurable depth	N/A
SB	#8 "	5/18/98	Sheen, no measurable depth	N/A
SB	#9 "	5/26/98	Sheen, no measurable depth	N/A
SB	#10 "	6/01/98	Sheen, no measurable depth	N/A
SB	#11 "	6/08/98	Sheen, no measurable depth	N/A
SB	#12 "	6/15/98	Sheen, no measurable depth	N/A
SB	#13 (Monthly)	7/06/98	Sheen, no measurable depth	N/A
SB	#14 "	8/04/98	Sheen, no measurable depth	N/A
SB	#15 "	9/01/98	Sheen, no measurable depth	N/A
SB	#16 "	10/05/98	Sheen, no measurable depth	N/A
SB	#17 "	11/02/98	Sheen, no measurable depth	N/A
SB	#18 "	12/04/98	Sheen, no measurable depth	N/A
SB	#19 "	1/07/99	0.02ft	91.2 cubic inches
SB	#20 "	2/17/99	Sheen, no measurable depth	N/A
SB	#21 "	3/02/99	Sheen, no measurable depth	N/A

TABLE 1 CONTINUED
SWMU-17 GROUND WATER MONITORING & PRODUCT RECOVERY

Sump 55gallon drum	Monitoring & Product Recovery	Date	Product Thickness (LNAPL unless otherwise noted)	Volume Recovered
SD	Initial Baseline	3/24-25/98	Sheen, no measurable depth	N/A
SD	#1 (Weekly)	3/30/98	0.01ft	45.6 cubic inches
SD	#2 "	4/06/98	Sheen, no measurable depth	N/A
SD	#3 "	4/13/98	Sheen, no measurable depth	N/A
SD	#4 "	4/20/98	Sheen, no measurable depth	N/A
SD	#5 "	4/27/98	Sheen, no measurable depth	N/A
SD	#6 "	5/04/98	Sheen, no measurable depth	N/A
SD	#7 "	5/11/98	Sheen, no measurable depth	N/A
SD	#8 "	5/18/98	Sheen, no measurable depth	N/A
SD	#9 "	5/26/98	Sheen, no measurable depth	N/A
SD	#10 "	6/01/98	Sheen, no measurable depth	N/A
SD	#11 "	6/08/98	Sheen, no measurable depth	N/A
SD	#12 "	6/15/98	Sheen, no measurable depth	N/A
SD	#13 (Monthly)	7/06/98	Sheen, no measurable depth	N/A
SD	#14 "	8/04/98	Sheen, no measurable depth	N/A
SD	#15 "	9/01/98	Sheen, no measurable depth	N/A
SD	#16 "	10/05/98	Sheen, no measurable depth	N/A
SD	#17 "	11/02/98	Sheen, no measurable depth	N/A
SD	#18 "	12/04/98	Sheen, no measurable depth	N/A
SD	#19 "	1/07/99	Sheen, no measurable depth	N/A
SD	#20 "	2/17/99	Sheen, no measurable depth	N/A
SD	#21 "	3/02/99	Sheen, no measurable depth	N/A

TABLE 1 CONTINUED
SWMU-17 GROUND WATER MONITORING & PRODUCT RECOVERY

Well	Monitoring & Product Recovery	Date	Product Thickness (LNAPL unless otherwise noted)	Volume Recovered
NBCH017001	Initial Baseline	3/24-25/98	0.65ft	24.5 cubic inches
NBCH017001	#1 (Weekly)	3/30/98	0.02ft	0.75 cubic inches
NBCH017001	#2 "	4/06/98	Sheen, no measurable depth	N/A
NBCH017001	#3 "	4/13/98	Sheen, no measurable depth	N/A
NBCH017001	#4 "	4/20/98	0.02ft	0.75 cubic inches
NBCH017001	#5 "	4/27/98	Sheen, no measurable depth	N/A
NBCH017001	#6 "	5/04/98	0.01ft	0.38 cubic inches
NBCH017001	#7 "	5/11/98	0.01ft	0.38 cubic inches
NBCH017001	#8 "	5/18/98	0.01ft	0.38 cubic inches
NBCH017001	#9 "	5/26/98	0.08ft	3.02 cubic inches
NBCH017001	#10 "	6/01/98	0.01ft	0.38 cubic inches
NBCH017001	#11 "	6/08/98	Sheen, no measurable depth	N/A
NBCH017001	#12 "	6/15/98	0.02ft	0.76 cubic inches
NBCH017001	#13 (Monthly)	7/06/98	0.05ft	1.90 cubic inches
NBCH017001	#14 "	8/04/98	0.02ft	0.76 cubic inches
NBCH017001	#15 "	9/01/98	0.05ft	1.90 cubic inches
NBCH017001	#16 "	10/01/98	Sheen, no measurable depth	N/A
NBCH017001	#17 "	11/02/98	0.22ft	8.36 cubic inches
NBCH017001	#18 "	12/04/98	0.02ft	0.75 cubic inches
NBCH017001	#19 "	1/07/99	Sheen, no measurable depth	N/A
NBCH017001	#20 "	2/17/99	Sheen, no measurable depth	N/A
NBCH017001	#21 "	3/02/99	Sheen, no measurable depth	N/A

TABLE 1 CONTINUED
SWMU-17 GROUND WATER MONITORING & PRODUCT RECOVERY

Well	Monitoring & Product Recovery	Date	Product Thickness (LNAPL unless otherwise noted)	Volume Recovered
NBCH017002	Initial Baseline	3/24-25/98	0.31ft DNAPL-solvent odor	11.78 cubic inches
NBCH017002	#1 (Weekly)	3/30/98	0.02ft	0.75 cubic inches
NBCH017002	#2 "	4/06/98	Sheen, no measurable depth	N/A
NBCH017002	#3 "	4/13/98	Sheen, no measurable depth	N/A
NBCH017002	#4 "	4/20/98	Sheen, no measurable depth	N/A
NBCH017002	#5 "	4/27/98	Sheen, no measurable depth	N/A
NBCH017002	#6 "	5/04/98	Sheen, no measurable depth	N/A
NBCH017002	#7 "	5/11/98	Sheen, no measurable depth	N/A
NBCH017002	#8 "	5/18/98	Sheen, no measurable depth	N/A
NBCH017002	#9 "	5/26/98	Sheen, no measurable depth	N/A
NBCH017002	#10 "	6/01/98	Sheen, no measurable depth	N/A
NBCH017002	#11 "	6/08/98	Sheen, no measurable depth	N/A
NBCH017002	#12 "	6/15/98	0.02ft DNAPL-solvent odor	0.76 cubic inches
NBCH017002	#13 (Monthly)	7/06/98	Sheen, no measurable depth	N/A
NBCH017002	#14 "	8/04/98	0.02ft DNAPL-solvent odor	0.76 cubic inches
NBCH017002	#15 "	9/01/98	0.01ft DNAPL-solvent odor	0.38 cubic inches
NBCH017002	#16 "	10/01/98	0.04ft DNAPL-solvent odor	1.52 cubic inches
NBCH017002	#17 "	11/02/98	Sheen, no measurable depth	N/A
NBCH017002	#18 "	12/04/98	Sheen, no measurable depth	N/A
NBCH017002	#19 "	1/07/99	0.07ft DNAPL-solvent odor	2.66 cubic inches
NBCH017002	#20 "	2/17/99	0.02ft DNAPL-solvent odor	0.76 cubic inches
NBCH017002	#21 "	3/02/99	Sheen, no measurable depth	N/A

TABLE 2 IDW ANALYSIS FOR PCB AND RCRA 8 METALS

Sump SA oil layer			
RCRA 8 metals	Levels PPB	PCBs	Levels PPB
Mercury	ND	PCB-1016	ND
Silver	ND	PCB-1221	ND
Arsenic	65.5	PCB-1232	ND
Barium	62.9	PCB-1242	ND
Cadmium	1.92	PCB-1248	ND
Chromium	8.92	PCB-1254	ND
Lead	63.0	PCB-1260	620,000
Selenium	ND		
Sump SB ground water with globules of product			
RCRA 8 metals	Levels PPB	PCBs	Levels PPB
Mercury	NS	PCB-1016	ND
Silver	NS	PCB-1221	ND
Arsenic	NS	PCB-1232	ND
Barium	NS	PCB-1242	ND
Cadmium	NS	PCB-1248	ND
Chromium	NS	PCB-1254	ND
Lead	NS	PCB-1260	ND
Selenium	NS		
Sump SD ground water with sheen			
RCRA 8 metals	Levels PPB	PCBs	Levels PPM
Mercury	NS	PCB-1016	ND
Silver	NS	PCB-1221	ND
Arsenic	NS	PCB-1232	ND
Barium	NS	PCB-1242	ND
Cadmium	NS	PCB-1248	ND
Chromium	NS	PCB-1254	ND
Lead	NS	PCB-1260	ND
Selenium	NS		
Ground Water Well NBCH017001 ground water and product mixture			
RCRA 8 metals	Levels PPB	PCBs	Levels PPB
Mercury	ND	PCB-1016	ND
Silver	ND	PCB-1221	ND
Arsenic	16.2	PCB-1232	ND
Barium	9.94	PCB-1242	ND
Cadmium	ND	PCB-1248	ND
Chromium	ND	PCB-1254	ND
Lead	27.9	PCB-1260	40.1
Selenium	ND		
Ground Water Well NBCH017002 ground water and product mixture			
RCRA 8 metals	Levels PPB	PCBs	Levels PPB
Mercury	ND	PCB-1016	ND
Silver	ND	PCB-1221	ND
Arsenic	ND	PCB-1232	ND
Barium	25.4	PCB-1242	ND
Cadmium	ND	PCB-1248	ND
Chromium	60.6	PCB-1254	ND
Lead	40.9	PCB-1260	78,500
Selenium	ND		

ND- None Detected

NS- Not Enough IDW to Sample

TABLE 2 CONTINUED IDW ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

VOC (PPB)	SUMP SA water layer	SUMP SA oil layer	WELL NBCH017001	WELL NBCH017002
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND
1,1-Dichloroethylene	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND
1,2.4-Trimethylbezene	ND	ND	ND	4,350
1,2,-Dibromo-3-chloropropane	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND
1,2-Dichlorobenzene	0.570	1,360	ND	237
1,2-Dichloroethane	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND
1,2-cis-Dichloroethylene	ND	ND	ND	ND
1,2-trans-Dichloroethylene	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND
2-Butanone	24.9	ND	ND	ND
2-Hexanone	20.5	ND	ND	ND
4-Methyl-2-pentanone	3.87	ND	ND	ND
Acetone	26.7	ND	ND	ND
Acetonitrile	ND	ND	ND	ND
Acrolein	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND
Allyl Chloride	ND	ND	ND	ND
Benzene	1.08	520	ND	ND

TABLE 2 CONTINUED IDW ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

VOC (PPB)	SUMP SA water layer	SUMP SA oil layer	WELL NBCH017001	WELL NBCH017002
Bromoform	ND	ND	ND	ND
Carbon Disulfide	3.03	ND	4.64	96.5
Carbon Tetrachloride	ND	ND	ND	ND
Chlorobenzene	80.1	82,300	ND	1,940
Chlorodibromomethane	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND
Chloroform	ND	520	ND	ND
Chloroprene	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND
Dichlorobromo Methane	ND	ND	ND	ND
Dichlorodifluoro methane	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND
Isobutyl Alcohol	ND	ND	ND	ND
Isopropyl benzene	ND	ND	ND	ND
Methacrylonitrile	ND	ND	ND	ND
Methyl Bromide	ND	ND	ND	ND
Methyl Chloride	ND	ND	ND	ND
Methyl Iodide	ND	ND	ND	ND
Methyl Methacrylate	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND
Propionitrile	ND	ND	ND	ND
Styrene	ND	ND	ND	ND
Tetrachloroethylene	ND	ND	ND	ND
Toluene	ND	ND	ND	ND
Trichloroethylene	ND	ND	ND	ND

TABLE 2 CONTINUED IDW ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

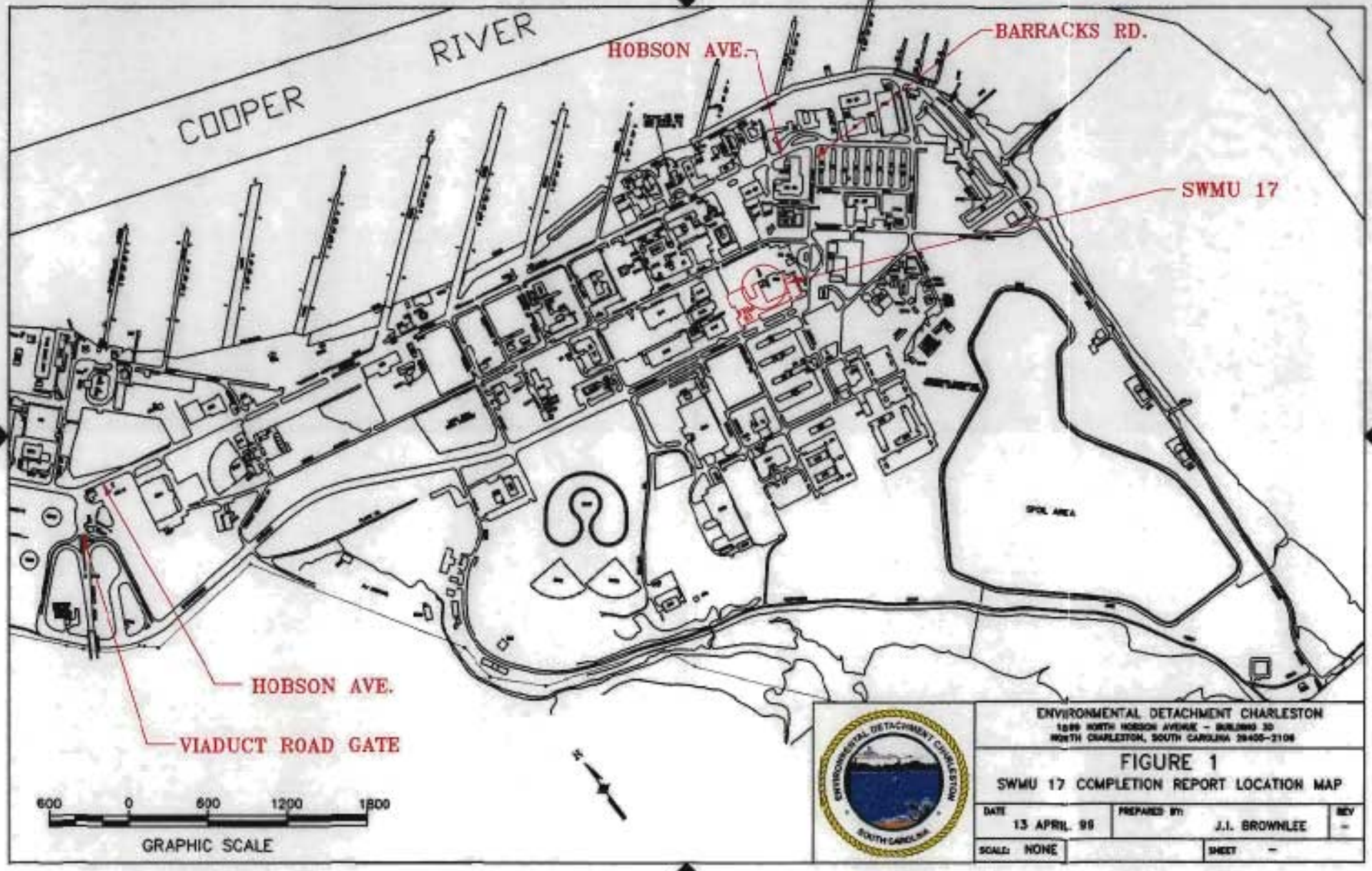
VOC (PPB)	SUMP SA water layer	SUMP SA oil layer	WELL NBCH017001	WELL NBCH017002
Trichlorofluoromethane	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND
Xylenes (TOTAL)	ND	ND	ND	ND
Bis(2-Chloro Methylethyl)ether	ND	ND	ND	ND
Cis-1,3-Dichloropropylene	ND	ND	ND	ND
n-Butylbenzene	0.790	ND	ND	ND
n-propylbenzene	ND	ND	ND	ND
Trans-1,3-Dichloropropylene	ND	ND	ND	ND
Trans-1,4-Dichloro-2-butene	ND	ND	ND	ND

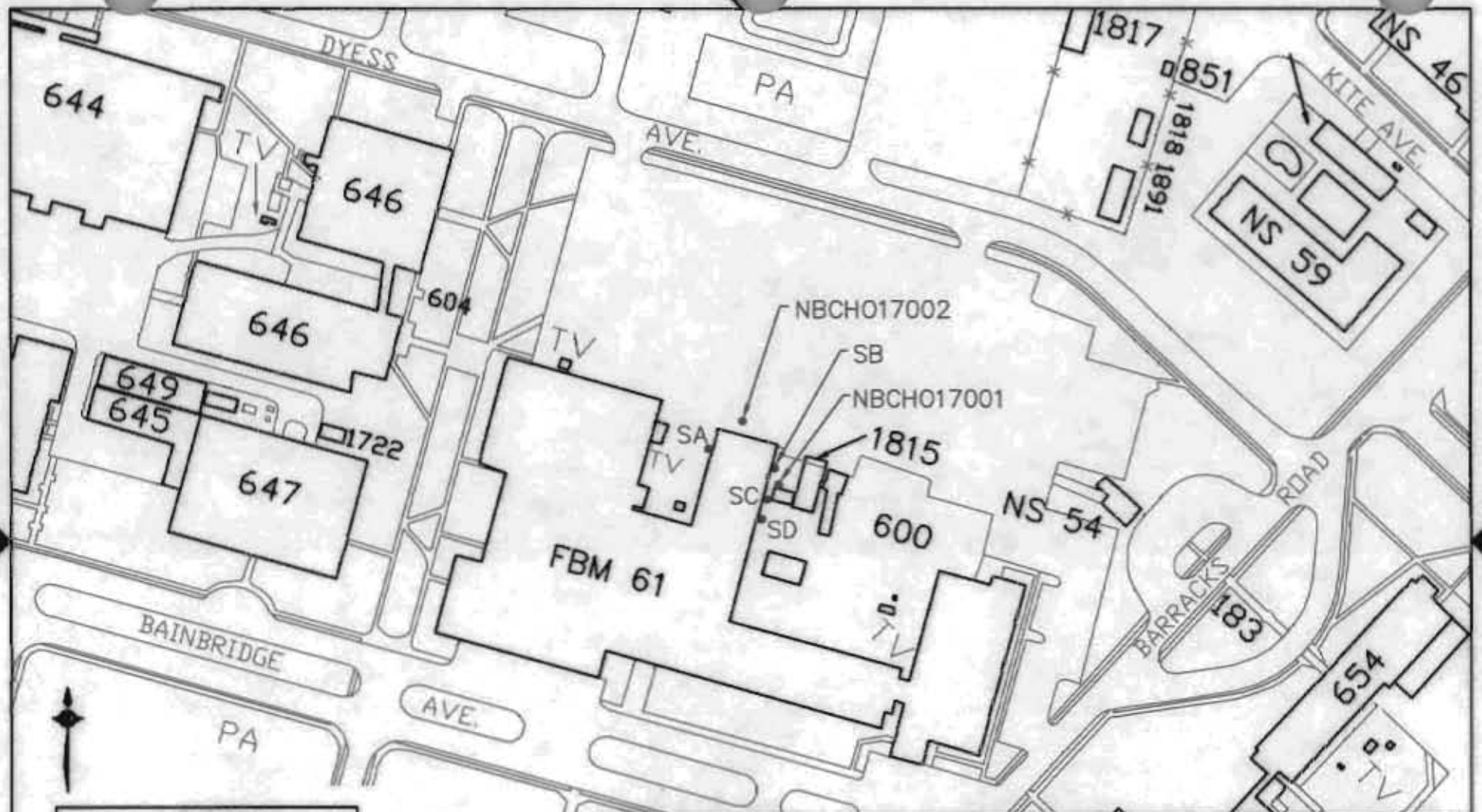
ND- None Detected

TABLE 2 CONTINUED IDW ANALYSIS FOR SEMI-VOLATILE ORGANIC COMPOUNDS

VOC (PPB)	SUMP SA water layer	SUMP SA oil layer	WELL NBCH017001	WELL NBCH017002
1,2,4-Trichlorobenzene	ND	ND	ND	325,000
1,3- Dichlorobenzene	ND	ND	ND	8,760
1,4- Dichlorobenzene	ND	ND	ND	12,400

ND- None Detected


COOPER RIVER
HOBSON AVE.
BARRACKS RD.
SWMU 17
HOBSON AVE.
VIADUCT ROAD GATE
600 0 600 1200 1800
GRAPHIC SCALE
ENVIRONMENTAL DETACHMENT CHARLESTON
FIGURE 1
SWMU 17 COMPLETION REPORT LOCATION MAP
DATE 13 APRIL 99
PREPARED BY: J.I. BROWNLEE
REV -
SCALE: NONE
SHEET -



ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE – BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

FIGURE 2
SWMU 17 COMPLETION REPORT SITE MAP

DATE:	PREPARED BY:	REV
12 APRIL 99	J.I. BROWNLEE	–

SCALE: NONE SHEET: –

APPENDIX B

PHOTOGRAPHS

SUMP SA

SUMP SB

SUMP SD

Well NBCH017001

Well NBCH017002

APPENDIX C

SAMPLING DOCUMENTATION

APPENDIX C CROSS REFERENCE

Site	Volatile organic analysis	Semi-Volatile organic analysis	PCB analysis	RCRA 8 metals analysis
SUMP SA water layer	99SPORT 0142-4	99SPORT 0141-1	SPORT 0652-1	99SPORT 0139-1
SUMP SA oil layer	99SPORT 0142-5	99SPORT 0141-5	99SPORT 0138-3	99SPORT 0139-1
SUMP SA Sludge	SPORT 0652-2	SPORT 0652-2	SPORT 0652-2	SPORT 0652-2
Well NBCH017001	99SPORT 0142-3	99SPORT 0141-2	99SPORT 0138-5	99SPORT 0139-3
Well NBCH017002	99SPORT 0142-2	99SPORT 0141-3	99SPORT 0138-4	99SPORT 0139-2
SUMP SB			99SPORT 0138-1	
SUMP SD			99SPORT 0138-2	

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID	: 99 SPORT0142-1
Lab ID	: 9903920-01
Matrix	: GroundH2O
Date Collected	: 03/25/99
Date Received	: 03/25/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
olatile Organics											
ppendix IX Volatiles Extended List - 60 items											
1,1,1,2-Tetrachloroethane	U	ND	0.300	1.00	ug/l	1.0	JEB	03/26/99	1148	145469	1
1,1,1-Trichloroethane	U	ND	0.200	1.00	ug/l	1.0					
1,1,2,2-Tetrachloroethane	U	ND	0.500	1.00	ug/l	1.0					
1,1,2-Trichloroethane	U	ND	0.400	1.00	ug/l	1.0					
1,1-Dichloroethane	U	ND	0.400	1.00	ug/l	1.0					
1,1-Dichloroethylene	U	ND	0.700	1.00	ug/l	1.0					
1,2,3-Trichloropropane	U	ND	0.500	1.00	ug/l	1.0					
1,2,4-trimethylbenzene	U	ND	0.200	1.00	ug/l	1.0					
1,2-Dibromo-3-chloropropane	U	ND	0.600	1.00	ug/l	1.0					
1,2-Dibromoethane	U	ND	0.400	1.00	ug/l	1.0					
1,2-Dichlorobenzene	U	ND	0.400	1.00	ug/l	1.0					
1,2-Dichloroethane	U	ND	0.200	1.00	ug/l	1.0					
1,2-Dichloropropane	U	ND	0.200	1.00	ug/l	1.0					
1,2-cis-Dichloroethylene	U	ND	0.700	1.00	ug/l	1.0					
1,2-trans-Dichloroethylene	U	ND	0.700	1.00	ug/l	1.0					
1,3,5-trimethylbenzene	U	ND	0.300	1.00	ug/l	1.0					
2-Butanone	U	ND	5.90	10.0	ug/l	1.0					
2-Hexanone	U	ND	3.20	5.00	ug/l	1.0					
4-Methyl-2-pentanone	U	ND	1.60	5.00	ug/l	1.0					
Acetone	U	ND	3.70	5.00	ug/l	1.0					
Acetonitrile	U	ND	15.6	25.0	ug/l	1.0					
Acrolein	U	ND	8.90	10.0	ug/l	1.0					
Acrylonitrile	U	ND	8.20	10.0	ug/l	1.0					
Allyl Chloride	U	ND	2.10	5.00	ug/l	1.0					
enzene	U	ND	0.300	1.00	ug/l	1.0					
Bromoform	U	ND	0.400	1.00	ug/l	1.0					
Carbon Disulfide	J	1.91	1.80	5.00	ug/l	1.0					

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: April 01, 1999

Sample ID : 99 SPORT0142-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Carbon Tetrachloride	U	ND	0.200	1.00	ug/l	1.0					
Chlorobenzene	U	ND	0.300	1.00	ug/l	1.0	JEB	03/26/99	1148	145469	1
Chlorodibromomethane	U	ND	0.300	1.00	ug/l	1.0					
Chloroethane	U	ND	0.300	1.00	ug/l	1.0					
Chloroform	U	ND	0.700	1.00	ug/l	1.0					
Chloroprene	U	ND	0.100	20.0	ug/l	1.0					
Dibromomethane	U	ND	0.200	1.00	ug/l	1.0					
Dichlorobromomethane	U	ND	0.400	1.00	ug/l	1.0					
Dichlorodifluoromethane	U	ND	1.20	5.00	ug/l	1.0					
Ethylbenzene	U	ND	0.300	1.00	ug/l	1.0					
Isobutyl Alcohol	U	ND	36.0	50.0	ug/l	1.0					
Isopropyl benzene	U	ND	0.200	1.00	ug/l	1.0					
Methacrylonitrile	U	ND	3.80	5.00	ug/l	1.0					
Methyl Bromide	U	ND	0.300	1.00	ug/l	1.0					
Methyl Chloride	U	ND	0.200	1.00	ug/l	1.0					
Methyl Iodide	U	ND	5.20	10.0	ug/l	1.0					
Methyl Methacrylate	U	ND	3.90	5.00	ug/l	1.0					
Methylene Chloride	U	ND	1.20	5.00	ug/l	1.0					
Propionitrile	U	ND	2.60	10.0	ug/l	1.0					
Styrene	U	ND	0.200	1.00	ug/l	1.0					
Tetrachloroethylene	U	ND	0.700	1.00	ug/l	1.0					
Toluene	U	ND	0.500	1.00	ug/l	1.0					
Trichloroethylene	U	ND	0.600	1.00	ug/l	1.0					
Trichlorofluoromethane	U	ND	1.70	5.00	ug/l	1.0					
Vinyl Acetate	U	ND	1.80	5.00	ug/l	1.0					
Vinyl chloride	U	ND	0.400	1.00	ug/l	1.0					
Xylenes (TOTAL)	U	ND	1.10	2.00	ug/l	1.0					
bis(2-Chloromethylethyl)ether	U	ND	3.70	10.0	ug/l	1.0					
cis-1,3-Dichloropropylene	U	ND	0.300	1.00	ug/l	1.0					
n-Butylbenzene	U	ND	0.400	1.00	ug/l	1.0					
n-propylbenzene	U	ND	0.600	1.00	ug/l	1.0					
trans-1,3-Dichloropropylene	U	ND	0.300	1.00	ug/l	1.0					
trans-1,4-Dichloro-2-butene	U	ND	2.80	5.00	ug/l	1.0					

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

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903920-01

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: April 01, 1999

Sample ID : 99 SPORT0142-1

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-NPWC	109.	(73.0 - 129.)
Dibromofluoromethane	APP 9 VOA-NPWC	107.	(66.0 - 117.)
Toluene-d8	APP 9 VOA-NPWC	116.	(73.0 - 122.)

M = Method	Method-Description
4 1	EPA 8260B

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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

9903920-01

Printed on recycled paper.

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID	: 99 SPORT0142-2
Lab ID	: 9903920-02
Matrix	: GroundH2O
Date Collected	: 03/25/99
Date Received	: 03/25/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
olatile Organics											
ppendix IX Volatiles Extended List - 60 items											
1,1,1,2-Tetrachloroethane	U	ND	15.0	50.0	ug/l	50.	JEB	03/27/99	1420	145469	1
1,1,1-Trichloroethane	U	ND	10.0	50.0	ug/l	50.					
1,1,2,2-Tetrachloroethane	U	ND	25.0	50.0	ug/l	50.					
1,1,2-Trichloroethane	U	ND	20.0	50.0	ug/l	50.					
1,1-Dichloroethane	U	ND	20.0	50.0	ug/l	50.					
1,1-Dichloroethylene	U	ND	35.0	50.0	ug/l	50.					
1,2,3-Trichloropropane	U	ND	25.0	50.0	ug/l	50.					
1,2,4-trimethylbenzene		4350	10.0	50.0	ug/l	50.					
1,2-Dibromo-3-chloropropane	U	ND	30.0	50.0	ug/l	50.					
1,2-Dibromoethane	U	ND	20.0	50.0	ug/l	50.					
1,2-Dichlorobenzene		237	20.0	50.0	ug/l	50.					
1,2-Dichloroethane	U	ND	10.0	50.0	ug/l	50.					
1,2-Dichloropropane	U	ND	10.0	50.0	ug/l	50.					
1,2-cis-Dichloroethylene	U	ND	35.0	50.0	ug/l	50.					
1,2-trans-Dichloroethylene	U	ND	35.0	50.0	ug/l	50.					
1,3,5-trimethylbenzene	U	ND	15.0	50.0	ug/l	50.					
2-Butanone	U	ND	295	500	ug/l	50.					
2-Hexanone	U	ND	160	250	ug/l	50.					
4-Methyl-2-pentanone	U	ND	80.0	250	ug/l	50.					
Acetone	U	ND	185	250	ug/l	50.					
Acetonitrile	U	ND	780	1250	ug/l	50.					
Acrolein	U	ND	445	500	ug/l	50.					
Acrylonitrile	U	ND	410	500	ug/l	50.					
Allyl Chloride	U	ND	105	250	ug/l	50.					
enzene	U	ND	15.0	50.0	ug/l	50.					
Bromoform	U	ND	20.0	50.0	ug/l	50.					
Carbon Disulfide	J	96.5	90.0	250	ug/l	50.					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99 SPORT0142-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Carbon Tetrachloride	U	ND	10.0	50.0	ug/l	50.					
Chlorobenzene		1940	15.0	50.0	ug/l	50.	JEB	03/27/99	1420	145469	1
Chlorodibromomethane	U	ND	15.0	50.0	ug/l	50.					
Chloroethane	U	ND	15.0	50.0	ug/l	50.					
Chloroform	U	ND	35.0	50.0	ug/l	50.					
Chloroprene	U	ND	5.00	1000	ug/l	50.					
Dibromomethane	U	ND	10.0	50.0	ug/l	50.					
Dichlorobromomethane	U	ND	20.0	50.0	ug/l	50.					
Dichlorodifluoromethane	U	ND	60.0	250	ug/l	50.					
Ethylbenzene	U	ND	15.0	50.0	ug/l	50.					
Isobutyl Alcohol	U	ND	1800	2500	ug/l	50.					
Isopropyl benzene	U	ND	10.0	50.0	ug/l	50.					
Methacrylonitrile	U	ND	190	250	ug/l	50.					
Methyl Bromide	U	ND	15.0	50.0	ug/l	50.					
Methyl Chloride	U	ND	10.0	50.0	ug/l	50.					
Methyl Iodide	U	ND	260	500	ug/l	50.					
Methyl Methacrylate	U	ND	195	250	ug/l	50.					
Methylene Chloride	U	ND	60.0	250	ug/l	50.					
Propionitrile	U	ND	130	500	ug/l	50.					
Styrene	U	ND	10.0	50.0	ug/l	50.					
Tetrachloroethylene	U	ND	35.0	50.0	ug/l	50.					
Toluene	U	ND	25.0	50.0	ug/l	50.					
Trichloroethylene	U	ND	30.0	50.0	ug/l	50.					
Trichlorofluoromethane	U	ND	85.0	250	ug/l	50.					
Vinyl Acetate	U	ND	90.0	250	ug/l	50.					
Vinyl chloride	U	ND	20.0	50.0	ug/l	50.					
Xylenes (TOTAL)	U	ND	55.0	100	ug/l	50.					
bis(2-Chloromethylethyl)ether	U	ND	185	500	ug/l	50.					
cis-1,3-Dichloropropylene	U	ND	15.0	50.0	ug/l	50.					
n-Butylbenzene	U	ND	20.0	50.0	ug/l	50.					
n-propylbenzene	U	ND	30.0	50.0	ug/l	50.					
trans-1,3-Dichloropropylene	U	ND	15.0	50.0	ug/l	50.					
trans-1,4-Dichloro-2-butene	U	ND	140	250	ug/l	50.					

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

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903920-02

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: April 01, 1999

Sample ID : 99 SPORT0142-2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-NPWC	106.	(73.0 - 129.)
Dibromofluoromethane	APP 9 VOA-NPWC	107.	(66.0 - 117.)
Toluene-d8	APP 9 VOA-NPWC	119.	(73.0 - 122.)

M = Method	Method-Description
M 1	EPA 8260B

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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

9903920-02

Printed on recycled paper.

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID	: 99 SPORT0142-3
Lab ID	: 9903920-03
Matrix	: GroundH2O
Date Collected	: 03/25/99
Date Received	: 03/25/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles Extended List - 60 items											
1,1,1,2-Tetrachloroethane	U	ND	0.300	1.00	ug/l	1.0	JEB	03/29/99	2114	145469	1
1,1,1-Trichloroethane	U	ND	0.200	1.00	ug/l	1.0					
1,1,2,2-Tetrachloroethane	U	ND	0.500	1.00	ug/l	1.0					
1,1,2-Trichloroethane	U	ND	0.400	1.00	ug/l	1.0					
1,1-Dichloroethane	U	ND	0.400	1.00	ug/l	1.0					
1,1-Dichloroethylene	U	ND	0.700	1.00	ug/l	1.0					
1,2,3-Trichloropropane	U	ND	0.500	1.00	ug/l	1.0					
1,2,4-trimethylbenzene	U	ND	0.200	1.00	ug/l	1.0					
1,2-Dibromo-3-chloropropane	U	ND	0.600	1.00	ug/l	1.0					
1,2-Dibromoethane	U	ND	0.400	1.00	ug/l	1.0					
1,2-Dichlorobenzene	U	ND	0.400	1.00	ug/l	1.0					
1,2-Dichloroethane	U	ND	0.200	1.00	ug/l	1.0					
1,2-Dichloropropane	U	ND	0.200	1.00	ug/l	1.0					
1,2-cis-Dichloroethylene	U	ND	0.700	1.00	ug/l	1.0					
1,2-trans-Dichloroethylene	U	ND	0.700	1.00	ug/l	1.0					
1,3,5-trimethylbenzene	U	ND	0.300	1.00	ug/l	1.0					
2-Butanone	U	ND	5.90	10.0	ug/l	1.0					
2-Hexanone	U	ND	3.20	5.00	ug/l	1.0					
4-Methyl-2-pentanone	U	ND	1.60	5.00	ug/l	1.0					
Acetone	U	ND	3.70	5.00	ug/l	1.0					
Acetonitrile	U	ND	15.6	25.0	ug/l	1.0					
Acrolein	U	ND	8.90	10.0	ug/l	1.0					
Acrylonitrile	U	ND	8.20	10.0	ug/l	1.0					
Allyl Chloride	U	ND	2.10	5.00	ug/l	1.0					
Benzene	U	ND	0.300	1.00	ug/l	1.0					
Bromoform	U	ND	0.400	1.00	ug/l	1.0					
Carbon Disulfide	J	4.64	1.80	5.00	ug/l	1.0					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99 SPORT0142-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Carbon Tetrachloride	U	ND	0.200	1.00	ug/l	1.0					
Chlorobenzene	U	ND	0.300	1.00	ug/l	1.0	JEB	03/29/99	2114	145469	1
Chlorodibromomethane	U	ND	0.300	1.00	ug/l	1.0					
Chloroethane	U	ND	0.300	1.00	ug/l	1.0					
Chloroform	U	ND	0.700	1.00	ug/l	1.0					
Chloroprene	U	ND	0.100	20.0	ug/l	1.0					
bromomethane	U	ND	0.200	1.00	ug/l	1.0					
ichlorobromomethane	U	ND	0.400	1.00	ug/l	1.0					
Dichlorodifluoromethane	U	ND	1.20	5.00	ug/l	1.0					
Ethylbenzene	U	ND	0.300	1.00	ug/l	1.0					
Isobutyl Alcohol	U	ND	36.0	50.0	ug/l	1.0					
Isopropyl benzene	U	ND	0.200	1.00	ug/l	1.0					
Methacrylonitrile	U	ND	3.80	5.00	ug/l	1.0					
Methyl Bromide	U	ND	0.300	1.00	ug/l	1.0					
Methyl Chloride	U	ND	0.200	1.00	ug/l	1.0					
Methyl Iodide	U	ND	5.20	10.0	ug/l	1.0					
Methyl Methacrylate	U	ND	3.90	5.00	ug/l	1.0					
Methylene Chloride	U	ND	1.20	5.00	ug/l	1.0					
Propionitrile	U	ND	2.60	10.0	ug/l	1.0					
Styrene	U	ND	0.200	1.00	ug/l	1.0					
Tetrachloroethylene	U	ND	0.700	1.00	ug/l	1.0					
Toluene	U	ND	0.500	1.00	ug/l	1.0					
Trichloroethylene	U	ND	0.600	1.00	ug/l	1.0					
Trichlorofluoromethane	U	ND	1.70	5.00	ug/l	1.0					
Vinyl Acetate	U	ND	1.80	5.00	ug/l	1.0					
Vinyl chloride	U	ND	0.400	1.00	ug/l	1.0					
Xylenes (TOTAL)	U	ND	1.10	2.00	ug/l	1.0					
bis(2-Chloromethylethyl)ether	U	ND	3.70	10.0	ug/l	1.0					
cis-1,3-Dichloropropylene	U	ND	0.300	1.00	ug/l	1.0					
n-Butylbenzene	U	ND	0.400	1.00	ug/l	1.0					
n-propylbenzene	U	ND	0.600	1.00	ug/l	1.0					
rans-1,3-Dichloropropylene	U	ND	0.300	1.00	ug/l	1.0					
ns-1,4-Dichloro-2-butene	U	ND	2.80	5.00	ug/l	1.0					

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

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903920-03

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99 SPORT0142-3

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-NPWC	104.	(73.0 - 129.)
Dibromofluoromethane	APP 9 VOA-NPWC	111.	(66.0 - 117.)
Toluene-d8	APP 9 VOA-NPWC	114.	(73.0 - 122.)

M = Method	Method-Description
I 1	EPA 8260B

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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

9903920-03

Printed on recycled paper.

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: April 01, 1999

Sample ID	: 99 SPORT0142-4
Lab ID	: 9903920-04
Matrix	: GroundH2O
Date Collected	: 03/25/99
Date Received	: 03/25/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
olatile Organics											
Appendix IX Volatiles Extended List - 60 items											
1,1,1,2-Tetrachloroethane	U	ND	0.300	1.00	ug/l	1.0	JEB	03/29/99	2145	145469	1
1,1,1-Trichloroethane	U	ND	0.200	1.00	ug/l	1.0					
1,1,2,2-Tetrachloroethane	U	ND	0.500	1.00	ug/l	1.0					
1,1,2-Trichloroethane	U	ND	0.400	1.00	ug/l	1.0					
1,1-Dichloroethane	U	ND	0.400	1.00	ug/l	1.0					
1,1-Dichloroethylene	U	ND	0.700	1.00	ug/l	1.0					
1,2,3-Trichloropropane	U	ND	0.500	1.00	ug/l	1.0					
1,2,4-trimethylbenzene	U	ND	0.200	1.00	ug/l	1.0					
1,2-Dibromo-3-chloropropane	U	ND	0.600	1.00	ug/l	1.0					
1,2-Dibromoethane	U	ND	0.400	1.00	ug/l	1.0					
1,2-Dichlorobenzene	J	0.570	0.400	1.00	ug/l	1.0					
1,2-Dichloroethane	U	ND	0.200	1.00	ug/l	1.0					
1,2-Dichloropropane	U	ND	0.200	1.00	ug/l	1.0					
1,2-cis-Dichloroethylene	U	ND	0.700	1.00	ug/l	1.0					
1,2-trans-Dichloroethylene	U	ND	0.700	1.00	ug/l	1.0					
1,3,5-trimethylbenzene	U	ND	0.300	1.00	ug/l	1.0					
2-Butanone		24.9	5.90	10.0	ug/l	1.0					
2-Hexanone		20.5	3.20	5.00	ug/l	1.0					
4-Methyl-2-pentanone	J	3.87	1.60	5.00	ug/l	1.0					
Acetone		26.7	3.70	5.00	ug/l	1.0					
Acetonitrile	U	ND	15.6	25.0	ug/l	1.0					
Acrolein	U	ND	8.90	10.0	ug/l	1.0					
Acrylonitrile	U	ND	8.20	10.0	ug/l	1.0					
Allyl Chloride	U	ND	2.10	5.00	ug/l	1.0					
Benzene		1.08	0.300	1.00	ug/l	1.0					
Bromoform	U	ND	0.400	1.00	ug/l	1.0					
Carbon Disulfide	J	3.03	1.80	5.00	ug/l	1.0					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99 SPORT0142-4

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Carbon Tetrachloride	U	ND	0.200	1.00	ug/l	1.0					
Chlorobenzene		80.1	0.300	1.00	ug/l	1.0	JEB	03/29/99	2145	145469	1
Chlorodibromomethane	U	ND	0.300	1.00	ug/l	1.0					
Chloroethane	U	ND	0.300	1.00	ug/l	1.0					
Chloroform	U	ND	0.700	1.00	ug/l	1.0					
Chloroprene	U	ND	0.100	20.0	ug/l	1.0					
Dibromomethane	U	ND	0.200	1.00	ug/l	1.0					
Dichlorobromomethane	U	ND	0.400	1.00	ug/l	1.0					
Dichlorodifluoromethane	U	ND	1.20	5.00	ug/l	1.0					
Ethylbenzene	U	ND	0.300	1.00	ug/l	1.0					
Isobutyl Alcohol	U	ND	36.0	50.0	ug/l	1.0					
Isopropyl benzene	U	ND	0.200	1.00	ug/l	1.0					
Methacrylonitrile	U	ND	3.80	5.00	ug/l	1.0					
Methyl Bromide	U	ND	0.300	1.00	ug/l	1.0					
Methyl Chloride	U	ND	0.200	1.00	ug/l	1.0					
Methyl Iodide	U	ND	5.20	10.0	ug/l	1.0					
Methyl Methacrylate	U	ND	3.90	5.00	ug/l	1.0					
Methylene Chloride	U	ND	1.20	5.00	ug/l	1.0					
Propionitrile	U	ND	2.60	10.0	ug/l	1.0					
Styrene	U	ND	0.200	1.00	ug/l	1.0					
Tetrachloroethylene	U	ND	0.700	1.00	ug/l	1.0					
Toluene	U	ND	0.500	1.00	ug/l	1.0					
Trichloroethylene	U	ND	0.600	1.00	ug/l	1.0					
Trichlorofluoromethane	U	ND	1.70	5.00	ug/l	1.0					
Vinyl Acetate	U	ND	1.80	5.00	ug/l	1.0					
Vinyl chloride	U	ND	0.400	1.00	ug/l	1.0					
Xylenes (TOTAL)	U	ND	1.10	2.00	ug/l	1.0					
bis(2-Chloromethylethyl)ether	U	ND	3.70	10.0	ug/l	1.0					
cis-1,3-Dichloropropylene	U	ND	0.300	1.00	ug/l	1.0					
n-Butylbenzene	J	0.790	0.400	1.00	ug/l	1.0					
n-propylbenzene	U	ND	0.600	1.00	ug/l	1.0					
trans-1,3-Dichloropropylene	U	ND	0.300	1.00	ug/l	1.0					
trans-1,4-Dichloro-2-butene	U	ND	2.80	5.00	ug/l	1.0					

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

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903920-04

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: April 01, 1999

Sample ID : 99 SPORT0142-4

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-NPWC	104.	(73.0 - 129.)
Dibromofluoromethane	APP 9 VOA-NPWC	112.	(66.0 - 117.)
Toluene-d8	APP 9 VOA-NPWC	113.	(73.0 - 122.)

M = Method	Method-Description
M 1	EPA 8260B

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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903920-04

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99SPORT0142-4 Oil Layer
Lab ID : 9903920-05
Matrix : Oil
Date Collected : 03/25/99
Date Received : 03/25/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
latile Organics											
ppendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	ND	200	2000	ug/kg	1000	JEB	03/30/99	1249	145469	1
1,1,1-Trichloroethane	U	ND	100	2000	ug/kg	1000					
1,1,2,2-Tetrachloroethane	U	ND	600	2000	ug/kg	1000					
1,1,2-Trichloroethane	U	ND	300	2000	ug/kg	1000					
1,1-Dichloroethane	U	ND	100	2000	ug/kg	1000					
1,1-Dichloroethylene	U	ND	300	2000	ug/kg	1000					
1,2,3-Trichloropropane	U	ND	400	2000	ug/kg	1000					
1,2-Dibromo-3-chloropropane	U	ND	400	2000	ug/kg	1000					
1,2-Dibromoethane	U	ND	200	2000	ug/kg	1000					
1,2-Dichlorobenzene	J	1360	500	2000	ug/kg	1000					
1,2-Dichloroethane	U	ND	200	2000	ug/kg	1000					
1,2-Dichloropropane	U	ND	200	2000	ug/kg	1000					
1,2-cis-Dichloroethylene	U	ND	100	2000	ug/kg	1000					
1,2-trans-Dichloroethylene	U	ND	100	2000	ug/kg	1000					
2-Butanone	U	ND	3200	5000	ug/kg	1000					
2-Hexanone	U	ND	2800	10000	ug/kg	1000					
4-Methyl-2-pentanone	U	ND	3100	10000	ug/kg	1000					
Acetone	U	ND	10300	10300	ug/kg	1000					
Acetonitrile	U	ND	1000	10000	ug/kg	1000					
Acrolein	U	ND	4600	20000	ug/kg	1000					
Acrylonitrile	U	ND	3900	50000	ug/kg	1000					
Allyl Chloride	U	ND	400	10000	ug/kg	1000					
Benzene	J	520	500	2000	ug/kg	1000					
Bromoform	U	ND	300	2000	ug/kg	1000					
arbon Disulfide	U	ND	300	5000	ug/kg	1000					
Carbon Tetrachloride	U	ND	500	2000	ug/kg	1000					
Chlorobenzene		82300	300	2000	ug/kg	1000					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99SPORT0142-4 Oil Layer

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	ND	200	2000	ug/kg	1000					
Chloroethane	U	ND	300	2000	ug/kg	1000	JEB	03/30/99	1249	145469	1
Chloroform	J	520	100	2000	ug/kg	1000					
Chloroprene	U	ND	2000	2000	ug/kg	1000					
Dibromomethane	U	ND	200	2000	ug/kg	1000					
Dichlorobromomethane	U	ND	100	2000	ug/kg	1000					
Dichlorodifluoromethane	U	ND	1200	2000	ug/kg	1000					
Ethylbenzene	U	ND	300	2000	ug/kg	1000					
Isobutyl Alcohol	U	ND	6300	20000	ug/kg	1000					
Methacrylonitrile	U	ND	900	10000	ug/kg	1000					
Methyl Bromide	U	ND	300	2000	ug/kg	1000					
Methyl Chloride	U	ND	200	2000	ug/kg	1000					
Methyl Iodide	U	ND	600	5000	ug/kg	1000					
Methyl Methacrylate	U	ND	400	10000	ug/kg	1000					
Methylene Chloride	U	ND	1400	10000	ug/kg	1000					
Propionitrile	U	ND	3400	20000	ug/kg	1000					
Styrene	U	ND	300	2000	ug/kg	1000					
Tetrachloroethylene	U	ND	400	2000	ug/kg	1000					
Toluene	U	ND	900	2000	ug/kg	1000					
Trichloroethylene	U	ND	300	2000	ug/kg	1000					
Trichlorofluoromethane	U	ND	300	2000	ug/kg	1000					
Vinyl Acetate	U	ND	2100	10000	ug/kg	1000					
Vinyl chloride	U	ND	400	2000	ug/kg	1000					
Xylenes (TOTAL)	U	ND	700	2000	ug/kg	1000					
bis(2-Chloromethylethyl)ether	U	ND	10000	20000	ug/kg	1000					
cis-1,3-Dichloropropylene	U	ND	200	2000	ug/kg	1000					
trans-1,3-Dichloropropylene	U	ND	300	2000	ug/kg	1000					
trans-1,4-Dichloro-2-butene	U	ND	500	2000	ug/kg	1000					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	105.	(73.0 - 129.)
Dibromofluoromethane	APP 9 VOA-8260	111.	(66.0 - 117.)
Toluene-d8	APP 9 VOA-8260	112.	(73.0 - 122.)

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99SPORT0142-4 Oil Layer

Surrogate Recovery	Test	Percent %	Acceptable Limits

M = Method	Method-Description
M 1	SW846 8260A

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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903920-05

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903920% Report Date: April 01, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Volatile Organics													
QC597301	BLANK	145469											
1,1-Dichloroethylene						0.00	ug/l				JEB	03/26/99	0858
Benzene						0.00	ug/l						
Chlorobenzene						0.00	ug/l						
Toluene						0.00	ug/l						
Trichloroethylene						0.00	ug/l						
*Bromofluorobenzene							ug/l		107	(73.0 - 129.)			
*Dibromofluoromethane							ug/l		108	(66.0 - 117.)			
*Toluene-d8							ug/l		116	(73.0 - 122.)			
1,1,1,2-Tetrachloroethane						0.00	ug/l						
1,1,1-Trichloroethane						0.00	ug/l						
1,1,2,2-Tetrachloroethane						0.00	ug/l						
1,1,2-Trichloroethane						0.00	ug/l						
1,1-Dichloroethane						0.00	ug/l						
1,2,3-Trichloropropane						0.00	ug/l						
1,2,4-trimethylbenzene						0.00	ug/l						
1,2-Dibromo-3-chloropropane						0.00	ug/l						
1,2-Dibromoethane						0.00	ug/l						
1,2-Dichlorobenzene						0.00	ug/l						
1,2-Dichloroethane						0.00	ug/l						
1,2-Dichloropropane						0.00	ug/l						
1,2-cis-Dichloroethylene						0.00	ug/l						
1,2-trans-Dichloroethylene						0.00	ug/l						
1,3,5-trimethylbenzene						0.00	ug/l						
2-Butanone						0.750	ug/l						
2-Hexanone						0.910	ug/l						
4-Methyl-2-pentanone						0.610	ug/l						
Acetone						0.00	ug/l						
Acetonitrile						0.00	ug/l						
Acrolein						0.00	ug/l						
Acrylonitrile						1.93	ug/l						
Allyl Chloride						0.00	ug/l						
Bromoform						0.00	ug/l						
Carbon Disulfide						2.90	ug/l						
Carbon Tetrachloride						0.00	ug/l						
Chlorodibromomethane						0.00	ug/l						
Chloroethane						0.00	ug/l						
Chloroform						0.00	ug/l						
Chloroprene						0.00	ug/l						

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903920% Report Date: April 01, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Dibromomethane						0.00	ug/l				JEB	03/26/99	0858
Dichlorobromomethane						0.00	ug/l						
Dichlorodifluoromethane						0.00	ug/l						
Ethylbenzene						0.00	ug/l						
Isobutyl Alcohol						0.00	ug/l						
Isopropyl benzene						0.00	ug/l						
Methacrylonitrile						0.00	ug/l						
Methyl Bromide						0.00	ug/l						
Methyl Chloride						0.530	ug/l						
Methyl Iodide						0.00	ug/l						
Methyl Methacrylate						0.00	ug/l						
Methylene Chloride						0.00	ug/l						
Propionitrile						0.00	ug/l						
Styrene						0.00	ug/l						
Tetrachloroethylene						0.00	ug/l						
Trichlorofluoromethane						0.00	ug/l						
Vinyl Acetate						0.00	ug/l						
Vinyl chloride						0.00	ug/l						
Xylenes (TOTAL)						0.00	ug/l						
bis(2-Chloromethylethyl)ether						0.00	ug/l						
cis-1,3-Dichloropropylene						0.00	ug/l						
n-Butylbenzene						0.00	ug/l						
n-propylbenzene						0.00	ug/l						
trans-1,3-Dichloropropylene						0.00	ug/l						
trans-1,4-Dichloro-2-butene						0.00	ug/l						
QC597302	LCS	145469											
1,1-Dichloroethylene			50			58.7	ug/l		118	(70.0 - 144.)	JEB	03/26/99	0826
Benzene			50			55.0	ug/l		110	(74.0 - 133.)			
Chlorobenzene			50			52.1	ug/l		104	(78.0 - 118.)			
Toluene			50			51.5	ug/l		103	(79.0 - 129.)			
Trichloroethylene			50			54.1	ug/l		108	(69.0 - 127.)			
*Bromofluorobenzene			50			52.5	ug/l		105	(73.0 - 129.)			
*Dibromofluoromethane			50			54.6	ug/l		109	(66.0 - 117.)			
*Toluene-d8			50			57.7	ug/l		115	(73.0 - 122.)			
QC597303	9903883-21PS	145469											
1,1-Dichloroethylene			50	0.00		51.7	ug/l		103	(59.2 - 141.)	JEB	03/26/99	1659
Benzene			50	0.00		50.5	ug/l		101	(63.3 - 134.)			
Chlorobenzene			50	0.00		48.2	ug/l		96.4	(77.8 - 125.)			
Toluene			50	0.00		46.6	ug/l		93.1	(71.6 - 125.)			
Trichloroethylene			50	0.00		48.0	ug/l		96.1	(65.5 - 130.)			

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903920% Report Date: April 01, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
*Bromofluorobenzene			50			50.7	ug/l		101	(73.0 - 129.)	JEB	03/26/99	1659
*Dibromofluoromethane			50			54.2	ug/l		108	(66.0 - 117.)			
*Toluene-d8			50			57.3	ug/l		115	(73.0 - 122.)			
QC597304	9903883-21PSD	145469											
1,1-Dichloroethylene			50	0.00		51.8	ug/l	0.232	104	(0.00 - 25.1)	JEB	03/26/99	1727
Benzene			50	0.00		51.0	ug/l	0.926	102	(0.00 - 31.1)			
Chlorobenzene			50	0.00		48.8	ug/l	1.20	97.6	(0.00 - 22.7)			
Toluene			50	0.00		47.1	ug/l	1.24	94.3	(0.00 - 22.8)			
Trichloroethylene			50	0.00		48.7	ug/l	1.38	97.4	(0.00 - 36.9)			
*Bromofluorobenzene			50			51.2	ug/l		102	(73.0 - 129.)			
*Dibromofluoromethane			50			52.4	ug/l		105	(66.0 - 117.)			
*Toluene-d8			50			57.5	ug/l		115	(73.0 - 122.)			

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

NPWC00197

Page 1 of 1

CHAIN OF CUSTODY RECORD

9903920%

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

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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

39285

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC Specify 8240/8260 Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type			Remarks
01	99SPORT0142-1	3/25/99	1100				X	3						X												TRIP BLANK
02	99SPORT0142-2	3/25/99	1305				X	3						X												Well 002 PRODUCT & GRound WATER
03	99SPORT0142-3	3/25/99	1310				X	3						X												Well 001 PRODUCT & GROUNDWATER
04/05	99SPORT0142-4	3/25/99	1315				X	3						X												SumpSA PRODUCT & GROUNDWATER/oil layer

SWMU-17

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	3/25/99	1410	W.R. Hiers, Jr.	W.R. Hiers, Jr.	3/25/99	1535	Stephanie Berberich

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
Stephanie Berberich	3/25/99	1615	[signature]	3/25/99	1615	

= sample collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID	: 99 SPORT0141-1 water layer
Lab ID	: 9903922-01
Matrix	: GroundH2O
Date Collected	: 03/25/99
Date Received	: 03/25/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
ppendix IX Base/Neutral Compounds - 103 items											
1,2,4,5-Tetrachlorobenzene	U	ND	52.7	488	ug/l	40.	JPA	03/31/99	2222	145439	1
1,2,4-Trichlorobenzene	U	ND	117	488	ug/l	40.					
1,2-Dichlorobenzene	U	ND	132	488	ug/l	40.					
1,3-Dichlorobenzene	U	ND	122	488	ug/l	40.					
1,4-Dichlorobenzene	U	ND	112	488	ug/l	40.					
1,4-Dioxane	U	ND	42.9	488	ug/l	40.					
1,4-Naphthoquinone	U	ND	89.3	488	ug/l	40.					
1-Naphthylamine	U	ND	81.5	488	ug/l	40.					
2,4-Dinitrotoluene	U	ND	68.3	488	ug/l	40.					
2,6-Dinitrotoluene	U	ND	55.6	488	ug/l	40.					
2-Acetylaminofluorene	U	ND	108	488	ug/l	40.					
2-Chloronaphthalene	U	ND	117	488	ug/l	40.					
2-Methylnaphthalene	U	ND	156	488	ug/l	40.					
2-Naphthylamine	U	ND	97.1	488	ug/l	40.					
2-Picoline	U	ND	142	488	ug/l	40.					
3,3'-Dichlorobenzidine	U	ND	205	976	ug/l	40.					
3,3'-Dimethylbenzidine	U	ND	493	976	ug/l	40.					
3-Methylcholanthrene	U	ND	110	488	ug/l	40.					
4-Bromophenyl phenyl ether	U	ND	1.46	488	ug/l	40.					
4-Chloroaniline	U	ND	73.2	488	ug/l	40.					
4-Chlorophenyl phenyl ether	U	ND	137	488	ug/l	40.					
4-aminobiphenyl	U	ND	131	488	ug/l	40.					
5-Nitro-o-toluidine	U	ND	68.8	488	ug/l	40.					
7,12-Dimethylbenz(a)anthracene	U	ND	90.3	488	ug/l	40.					
Acenaphthene	U	ND	107	488	ug/l	40.					
Acenaphthylene	U	ND	63.4	488	ug/l	40.					
Acetophenone	U	ND	97.6	488	ug/l	40.					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-1 water layer

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Aniline	U	ND	83.0	488	ug/l	40.					
Anthracene	U	ND	112	488	ug/l	40.	JPA	03/31/99	2222	145439	1
Aramite	U	ND	91.7	488	ug/l	40.					
Benzo(a)anthracene	U	ND	137	488	ug/l	40.					
Benzo(a)pyrene	U	ND	97.6	488	ug/l	40.					
Benzo(b)fluoranthene	U	ND	229	488	ug/l	40.					
Benzo(ghi)perylene	U	ND	122	488	ug/l	40.					
Benzo(k)fluoranthene	U	ND	127	488	ug/l	40.					
Benzyl Alcohol	U	ND	122	488	ug/l	40.					
Butyl benzyl phthalate	U	ND	181	488	ug/l	40.					
Chlorobenzilate	U	ND	87.4	488	ug/l	40.					
Chrysene	U	ND	107	488	ug/l	40.					
Di-n-butyl phthalate	U	ND	142	488	ug/l	40.					
Di-n-octyl phthalate	U	ND	205	488	ug/l	40.					
Diallate	U	ND	132	488	ug/l	40.					
Dibenzo(a,h)anthracene	U	ND	107	488	ug/l	40.					
Dibenzofuran	U	ND	210	488	ug/l	40.					
Diethyl phthalate	U	ND	102	488	ug/l	40.					
Dimethoate	U	ND	50.8	488	ug/l	40.					
Dimethyl phthalate	U	ND	102	488	ug/l	40.					
Diphenylamine	U	ND	65.4	488	ug/l	40.					
Disulfoton	U	ND	67.8	488	ug/l	40.					
Ethyl Methanesulfonate	U	ND	80.5	488	ug/l	40.					
Ethyl methacrylate	U	ND	122	488	ug/l	40.					
Famphur	U	ND	136	488	ug/l	40.					
Fluoranthene	U	ND	151	488	ug/l	40.					
Fluorene	U	ND	102	488	ug/l	40.					
Hexachlorobenzene	U	ND	142	488	ug/l	40.					
Hexachlorobutadiene	U	ND	185	488	ug/l	40.					
Hexachlorocyclopentadiene	U	ND	215	488	ug/l	40.					
Hexachloroethane	U	ND	166	488	ug/l	40.					
Hexachloropropene	U	ND	66.4	488	ug/l	40.					
Indeno(1,2,3-c,d)pyrene	U	ND	166	488	ug/l	40.					
Isodrin	U	ND	77.6	488	ug/l	40.					
Isophorone	U	ND	127	488	ug/l	40.					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-1 water layer

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Isosafrole	U	ND	120	488	ug/l	40.					
Kepone	U	ND	116	488	ug/l	40.	JPA	03/31/99	2222	145439	1
Methapyrilene	U	ND	227	488	ug/l	40.					
Methyl Methacrylate	U	ND	150	488	ug/l	40.					
Methyl Methanesulfonate	U	ND	68.3	488	ug/l	40.					
N-Nitrosodi-n-butylamine	U	ND	62.0	488	ug/l	40.					
N-Nitrosodiethylamine	U	ND	75.2	488	ug/l	40.					
-Nitrosodimethylamine	U	ND	137	488	ug/l	40.					
N-Nitrosodiphenylamine	U	ND	57.1	488	ug/l	40.					
N-Nitrosodipropylamine	U	ND	151	488	ug/l	40.					
N-Nitrosomethylethylamine	U	ND	142	488	ug/l	40.					
N-Nitrosomorpholine	U	ND	48.8	488	ug/l	40.					
N-Nitrosopiperidine	U	ND	47.3	488	ug/l	40.					
N-Nitrosopyrolidine	U	ND	56.1	488	ug/l	40.					
Naphthalene	U	ND	97.6	488	ug/l	40.					
Nitrobenzene	U	ND	161	488	ug/l	40.					
O,O,O-Triethylphosphorothioate	U	ND	59.5	488	ug/l	40.					
Pentachlorobenzene	U	ND	77.6	488	ug/l	40.					
Pentachloroethane	U	ND	71.7	488	ug/l	40.					
Pentachloronitrobenzene	U	ND	116	488	ug/l	40.					
Phenacetin	U	ND	70.8	488	ug/l	40.					
Phenanthrene	U	ND	87.8	488	ug/l	40.					
Pronamide	U	ND	78.6	488	ug/l	40.					
Pyrene	U	ND	122	488	ug/l	40.					
Pyridine	U	ND	161	488	ug/l	40.					
Safrole	U	ND	87.8	488	ug/l	40.					
Sulfotepp	U	ND	85.9	488	ug/l	40.					
a-,a-Dimethylphenethylamine	U	ND	426	488	ug/l	40.					
bis(2-Chloroethoxy)methane	U	ND	122	488	ug/l	40.					
bis(2-Chloroethyl) ether	U	ND	97.6	488	ug/l	40.					
bis(2-Ethylhexyl)phthalate	U	ND	181	488	ug/l	40.					
m-Dinitrobenzene	U	ND	105	488	ug/l	40.					
-Nitroaniline	U	ND	87.8	488	ug/l	40.					
-Nitroaniline	U	ND	137	488	ug/l	40.					
o-Toluidine	U	ND	63.4	488	ug/l	40.					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-1 water layer

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
p-Dimethylaminoazobenzene	U	ND	83.0	488	ug/l	40.					
p-Nitroaniline	U	ND	49.8	488	ug/l	40.	JPA	03/31/99	2222	145439	1
p-Phenylenediamine	U	ND	740	976	ug/l	40.					
sym-Trinitrobenzene	U	ND	31.2	2440	ug/l	40.					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	ES	03/26/99	1450	145439 2

Comments:
Fails surrogate recovery due to sample dilution.

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	APP 9 B/N-8270	0.00*	(41.2 - 107.)
Nitrobenzene-d5	APP 9 B/N-8270	0.00*	(35.3 - 108.)
p-Terphenyl-d14	APP 9 B/N-8270	0.00*	(36.6 - 110.)

M = Method	Method-Description
M 1	SW846 8270B
M 2	EPA 3510

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903922-01

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-1 water layer

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, Elise Hanson at 843-556-8171.

Reviewed By

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

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903922-01

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID	: 99 SPORT0141-2
Lab ID	: 9903922-02
Matrix	: GroundH2O
Date Collected	: 03/25/99
Date Received	: 03/25/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Appendix IX Base/Neutral Compounds - 103 items											
1,2,4,5-Tetrachlorobenzene	U	ND	42.3	392	ug/l	40.	JPA	03/31/99	2253	145439	1
1,2,4-Trichlorobenzene	U	ND	94.1	392	ug/l	40.					
1,2-Dichlorobenzene	U	ND	106	392	ug/l	40.					
1,3-Dichlorobenzene	U	ND	98.0	392	ug/l	40.					
1,4-Dichlorobenzene	U	ND	90.2	392	ug/l	40.					
1,4-Dioxane	U	ND	34.5	392	ug/l	40.					
1,4-Naphthoquinone	U	ND	71.7	392	ug/l	40.					
1-Naphthylamine	U	ND	65.5	392	ug/l	40.					
2,4-Dinitrotoluene	U	ND	54.9	392	ug/l	40.					
2,6-Dinitrotoluene	U	ND	44.7	392	ug/l	40.					
2-Acetylaminofluorene	U	ND	87.0	392	ug/l	40.					
2-Chloronaphthalene	U	ND	94.1	392	ug/l	40.					
2-Methylnaphthalene	U	ND	125	392	ug/l	40.					
2-Naphthylamine	U	ND	78.0	392	ug/l	40.					
2-Picoline	U	ND	114	392	ug/l	40.					
3,3'-Dichlorobenzidine	U	ND	165	784	ug/l	40.					
3,3'-Dimethylbenzidine	U	ND	396	784	ug/l	40.					
3-Methylcholanthrene	U	ND	88.6	392	ug/l	40.					
4-Bromophenyl phenyl ether	U	ND	1.18	392	ug/l	40.					
4-Chloroaniline	U	ND	58.8	392	ug/l	40.					
4-Chlorophenyl phenyl ether	U	ND	110	392	ug/l	40.					
4-aminobiphenyl	U	ND	105	392	ug/l	40.					
5-Nitro-o-toluidine	U	ND	55.3	392	ug/l	40.					
7,12-Dimethylbenz(a)anthracene	U	ND	72.5	392	ug/l	40.					
Acenaphthene	U	ND	86.2	392	ug/l	40.					
Acenaphthylene	U	ND	51.0	392	ug/l	40.					
Acetophenone	U	ND	78.4	392	ug/l	40.					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Aniline	U	ND	66.6	392	ug/l	40.					
Anthracene	U	ND	90.2	392	ug/l	40.	JPA	03/31/99	2253	145439	1
Aramite	U	ND	73.7	392	ug/l	40.					
Benzo(a)anthracene	U	ND	110	392	ug/l	40.					
Benzo(a)pyrene	U	ND	78.4	392	ug/l	40.					
Benzo(b)fluoranthene	U	ND	184	392	ug/l	40.					
Benzo(ghi)perylene	U	ND	98.0	392	ug/l	40.					
Benzo(k)fluoranthene	U	ND	102	392	ug/l	40.					
Benzyl Alcohol	U	ND	98.0	392	ug/l	40.					
Butyl benzyl phthalate	U	ND	145	392	ug/l	40.					
Chlorobenzilate	U	ND	70.2	392	ug/l	40.					
Chrysene	U	ND	86.2	392	ug/l	40.					
Di-n-butyl phthalate	U	ND	114	392	ug/l	40.					
Di-n-octyl phthalate	U	ND	165	392	ug/l	40.					
Diallate	U	ND	106	392	ug/l	40.					
Dibenzo(a,h)anthracene	U	ND	86.2	392	ug/l	40.					
Dibenzofuran	U	ND	169	392	ug/l	40.					
Diethyl phthalate	U	ND	82.3	392	ug/l	40.					
Dimethoate	U	ND	40.8	392	ug/l	40.					
Dimethyl phthalate	U	ND	82.3	392	ug/l	40.					
Diphenylamine	U	ND	52.5	392	ug/l	40.					
Disulfoton	U	ND	54.5	392	ug/l	40.					
Ethyl Methanesulfonate	U	ND	64.7	392	ug/l	40.					
Ethyl methacrylate	U	ND	98.4	392	ug/l	40.					
Famphur	U	ND	109	392	ug/l	40.					
Fluoranthene	U	ND	122	392	ug/l	40.					
Fluorene	U	ND	82.3	392	ug/l	40.					
Hexachlorobenzene	U	ND	114	392	ug/l	40.					
Hexachlorobutadiene	U	ND	149	392	ug/l	40.					
Hexachlorocyclopentadiene	U	ND	172	392	ug/l	40.					
Hexachloroethane	U	ND	133	392	ug/l	40.					
Hexachloropropene	U	ND	53.3	392	ug/l	40.					
Indeno(1,2,3-c,d)pyrene	U	ND	133	392	ug/l	40.					
Isodrin	U	ND	62.3	392	ug/l	40.					
Isophorone	U	ND	102	392	ug/l	40.					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Isosafrole	U	ND	96.4	392	ug/l	40.					
Kepone	U	ND	92.9	392	ug/l	40.	JPA	03/31/99	2253	145439	1
Methapyrilene	U	ND	183	392	ug/l	40.					
Methyl Methacrylate	U	ND	121	392	ug/l	40.					
Methyl Methanesulfonate	U	ND	54.9	392	ug/l	40.					
N-Nitrosodi-n-butylamine	U	ND	49.8	392	ug/l	40.					
N-Nitrosodiethylamine	U	ND	60.4	392	ug/l	40.					
N-Nitrosodimethylamine	U	ND	110	392	ug/l	40.					
N-Nitrosodiphenylamine	U	ND	45.9	392	ug/l	40.					
N-Nitrosodipropylamine	U	ND	122	392	ug/l	40.					
N-Nitrosomethylethylamine	U	ND	114	392	ug/l	40.					
N-Nitrosomorpholine	U	ND	39.2	392	ug/l	40.					
N-Nitrosopiperidine	U	ND	38.0	392	ug/l	40.					
N-Nitrosopyrolidine	U	ND	45.1	392	ug/l	40.					
Naphthalene	U	ND	78.4	392	ug/l	40.					
Nitrobenzene	U	ND	129	392	ug/l	40.					
O,O,O-Triethylphosphorothioate	U	ND	47.8	392	ug/l	40.					
Pentachlorobenzene	U	ND	62.3	392	ug/l	40.					
Pentachloroethane	U	ND	57.6	392	ug/l	40.					
Pentachloronitrobenzene	U	ND	93.3	392	ug/l	40.					
Phenacetin	U	ND	56.8	392	ug/l	40.					
Phenanthrene	U	ND	70.6	392	ug/l	40.					
Pronamide	U	ND	63.1	392	ug/l	40.					
Pyrene	U	ND	98.0	392	ug/l	40.					
Pyridine	U	ND	129	392	ug/l	40.					
Safrole	U	ND	70.6	392	ug/l	40.					
Sulfotepp	U	ND	69.0	392	ug/l	40.					
a-,a-Dimethylphenethylamine	U	ND	342	392	ug/l	40.					
bis(2-Chloroethoxy)methane	U	ND	98.0	392	ug/l	40.					
bis(2-Chloroethyl) ether	U	ND	78.4	392	ug/l	40.					
bis(2-Ethylhexyl)phthalate	U	ND	145	392	ug/l	40.					
m-Dinitrobenzene	U	ND	84.3	392	ug/l	40.					
m-Nitroaniline	U	ND	70.6	392	ug/l	40.					
o-Nitroaniline	U	ND	110	392	ug/l	40.					
o-Toluidine	U	ND	51.0	392	ug/l	40.					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
p-Dimethylaminoazobenzene	U	ND	66.6	392	ug/l	40.					
p-Nitroaniline	U	ND	40.0	392	ug/l	40.	JPA	03/31/99	2253	145439	1
p-Phenylenediamine	U	ND	595	784	ug/l	40.					
sym-Trinitrobenzene	U	ND	25.1	1960	ug/l	40.					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	ES	03/26/99	1450	145439 2

Comments:
Fails surrogate recovery due to sample dilution.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	APP 9 B/N-8270	0.00*	(41.2 - 107.)
Nitrobenzene-d5	APP 9 B/N-8270	0.00*	(35.3 - 108.)
p-Terphenyl-d14	APP 9 B/N-8270	0.00*	(36.6 - 110.)

M = Method	Method-Description
M 1	SW846 8270B
M 2	EPA 3510

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-2

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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903922-02

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID	: 99 SPORT0141-3
Lab ID	: 9903922-03
Matrix	: GroundH2O
Date Collected	: 03/25/99
Date Received	: 03/25/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Appendix IX Base/Neutral Compounds - 103 items											
1,2,4,5-Tetrachlorobenzene	U	ND	432	4000	ug/l	400	JPA	03/31/99	2325	145439	1
1,2,4-Trichlorobenzene		325000	9600	40000	ug/l	4000	JPA	04/01/99	1418	145439	1
1,2-Dichlorobenzene	U	ND	1080	4000	ug/l	400	JPA	03/31/99	2325	145439	1
1,3-Dichlorobenzene		8760	1000	4000	ug/l	400					
1,4-Dichlorobenzene		12400	920	4000	ug/l	400					
1,4-Dioxane	U	ND	352	4000	ug/l	400					
1,4-Naphthoquinone	U	ND	732	4000	ug/l	400					
1-Naphthylamine	U	ND	668	4000	ug/l	400					
2,4-Dinitrotoluene	U	ND	560	4000	ug/l	400					
2,6-Dinitrotoluene	U	ND	456	4000	ug/l	400					
2-Acetylaminofluorene	U	ND	888	4000	ug/l	400					
2-Chloronaphthalene	U	ND	960	4000	ug/l	400					
2-Methylnaphthalene	U	ND	1280	4000	ug/l	400					
2-Naphthylamine	U	ND	796	4000	ug/l	400					
2-Picoline	U	ND	1170	4000	ug/l	400					
3,3'-Dichlorobenzidine	U	ND	1680	8000	ug/l	400					
3,3'-Dimethylbenzidine	U	ND	4040	8000	ug/l	400					
3-Methylcholanthrene	U	ND	904	4000	ug/l	400					
4-Bromophenyl phenyl ether	U	ND	12.0	4000	ug/l	400					
4-Chloroaniline	U	ND	600	4000	ug/l	400					
4-Chlorophenyl phenyl ether	U	ND	1120	4000	ug/l	400					
4-aminobiphenyl	U	ND	1080	4000	ug/l	400					
5-Nitro-o-toluidine	U	ND	564	4000	ug/l	400					
7,12-Dimethylbenz(a)anthracene	U	ND	740	4000	ug/l	400					
cenaphthene	U	ND	880	4000	ug/l	400					
cenaphthylene	U	ND	520	4000	ug/l	400					
Acetophenone	U	ND	800	4000	ug/l	400					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Aniline	U	ND	680	4000	ug/l	400					
Anthracene	U	ND	920	4000	ug/l	400	JPA	03/31/99	2325	145439	1
Aramite	U	ND	752	4000	ug/l	400					
Benzo(a)anthracene	U	ND	1120	4000	ug/l	400					
Benzo(a)pyrene	U	ND	800	4000	ug/l	400					
Benzo(b)fluoranthene	U	ND	1880	4000	ug/l	400					
Benzo(ghi)perylene	U	ND	1000	4000	ug/l	400					
Benzo(k)fluoranthene	U	ND	1040	4000	ug/l	400					
Benzyl Alcohol	U	ND	1000	4000	ug/l	400					
Butyl benzyl phthalate	U	ND	1480	4000	ug/l	400					
Chlorobenzilate	U	ND	716	4000	ug/l	400					
Chrysene	U	ND	880	4000	ug/l	400					
Di-n-butyl phthalate	U	ND	1160	4000	ug/l	400					
Di-n-octyl phthalate	U	ND	1680	4000	ug/l	400					
Diallate	U	ND	1080	4000	ug/l	400					
Dibenzo(a,h)anthracene	U	ND	880	4000	ug/l	400					
Dibenzofuran	U	ND	1720	4000	ug/l	400					
Diethyl phthalate	U	ND	840	4000	ug/l	400					
Dimethoate	U	ND	416	4000	ug/l	400					
Dimethyl phthalate	U	ND	840	4000	ug/l	400					
Diphenylamine	U	ND	536	4000	ug/l	400					
Disulfoton	U	ND	556	4000	ug/l	400					
Ethyl Methanesulfonate	U	ND	660	4000	ug/l	400					
Ethyl methacrylate	U	ND	1000	4000	ug/l	400					
Famphur	U	ND	1120	4000	ug/l	400					
Fluoranthene	U	ND	1240	4000	ug/l	400					
Fluorene	U	ND	840	4000	ug/l	400					
Hexachlorobenzene	U	ND	1160	4000	ug/l	400					
Hexachlorobutadiene	U	ND	1520	4000	ug/l	400					
Hexachlorocyclopentadiene	U	ND	1760	4000	ug/l	400					
Hexachloroethane	U	ND	1360	4000	ug/l	400					
Hexachloropropene	U	ND	544	4000	ug/l	400					
deno(1,2,3-c,d)pyrene	U	ND	1360	4000	ug/l	400					
Isodrin	U	ND	636	4000	ug/l	400					
Isophorone	U	ND	1040	4000	ug/l	400					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Isosafrole	U	ND	984	4000	ug/l	400					
Kepone	U	ND	948	4000	ug/l	400	JPA	03/31/99	2325	145439	1
Methapyrilene	U	ND	1860	4000	ug/l	400					
Methyl Methacrylate	U	ND	1230	4000	ug/l	400					
Methyl Methanesulfonate	U	ND	560	4000	ug/l	400					
N-Nitrosodi-n-butylamine	U	ND	508	4000	ug/l	400					
Nitrosodiethylamine	U	ND	616	4000	ug/l	400					
N-Nitrosodimethylamine	U	ND	1120	4000	ug/l	400					
N-Nitrosodiphenylamine	U	ND	468	4000	ug/l	400					
N-Nitrosodipropylamine	U	ND	1240	4000	ug/l	400					
N-Nitrosomethylethylamine	U	ND	1160	4000	ug/l	400					
N-Nitrosomorpholine	U	ND	400	4000	ug/l	400					
N-Nitrosopiperidine	U	ND	388	4000	ug/l	400					
N-Nitrosopyrolidine	U	ND	460	4000	ug/l	400					
Naphthalene	U	ND	800	4000	ug/l	400					
Nitrobenzene	U	ND	1320	4000	ug/l	400					
O,O,O-Triethylphosphorothioate	U	ND	488	4000	ug/l	400					
Pentachlorobenzene	U	ND	636	4000	ug/l	400					
Pentachloroethane	U	ND	588	4000	ug/l	400					
Pentachloronitrobenzene	U	ND	952	4000	ug/l	400					
Phenacetin	U	ND	580	4000	ug/l	400					
Phenanthrene	U	ND	720	4000	ug/l	400					
Pronamide	U	ND	644	4000	ug/l	400					
Pyrene	U	ND	1000	4000	ug/l	400					
Pyridine	U	ND	1320	4000	ug/l	400					
Safrole	U	ND	720	4000	ug/l	400					
Sulfotepp	U	ND	704	4000	ug/l	400					
a-,a-Dimethylphenethylamine	U	ND	3490	4000	ug/l	400					
bis(2-Chloroethoxy)methane	U	ND	1000	4000	ug/l	400					
bis(2-Chloroethyl) ether	U	ND	800	4000	ug/l	400					
bis(2-Ethylhexyl)phthalate	U	ND	1480	4000	ug/l	400					
-Dinitrobenzene	U	ND	860	4000	ug/l	400					
Nitroaniline	U	ND	720	4000	ug/l	400					
o-Nitroaniline	U	ND	1120	4000	ug/l	400					
o-Toluidine	U	ND	520	4000	ug/l	400					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
p-Dimethylaminoazobenzene	U	ND	680	4000	ug/l	400					
p-Nitroaniline	U	ND	408	4000	ug/l	400	JPA	03/31/99	2325	145439	1
p-Phenylenediamine	U	ND	6070	8000	ug/l	400					
sym-Trinitrobenzene	U	ND	256	20000	ug/l	400					

e following prep procedures were performed:

C/MS Base/Neutral Compounds	ES	03/26/99	1450	145439	2

Comments:
Fails surrogate recovery due to sample dilution.

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	APP 9 B/N-8270	0.00*	(41.2 - 107.)
Nitrobenzene-d5	APP 9 B/N-8270	0.00*	(35.3 - 108.)
p-Terphenyl-d14	APP 9 B/N-8270	0.00*	(36.6 - 110.)

M = Method	Method-Description
M 1	SW846 8270B
M 2	EPA 3510

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper

9903922-03

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99 SPORT0141-3

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).
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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903922-03

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99SPORT141-1 OIL LAYER
Lab ID : 9903922-04
Matrix : Oil
Date Collected : 03/25/99
Date Received : 03/25/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
xtractable Organics											
- 103 items											
1,2,4,5-Tetrachlorobenzene	U	ND	5600000	10000000	ug/kg	1000	JPA	03/31/99	2357	145439	N
1,2,4-Trichlorobenzene	U	ND	5600000	10000000	ug/kg	1000					
1,2-Dichlorobenzene	U	ND	5100000	10000000	ug/kg	1000					
1,3-Dichlorobenzene	U	ND	3900000	10000000	ug/kg	1000					
1,4-Dichlorobenzene	U	ND	3900000	10000000	ug/kg	1000					
1,4-Dioxane	U	ND	1830000	10000000	ug/kg	1000					
1,4-Naphthoquinone	U	ND	10000000	10000000	ug/kg	1000					
1-Naphthylamine	U	ND	5520000	10000000	ug/kg	1000					
2,4-Dinitrotoluene	U	ND	3500000	10000000	ug/kg	1000					
2,6-Dinitrotoluene	U	ND	4200000	10000000	ug/kg	1000					
2-Acetylaminofluorene	U	ND	10000000	10000000	ug/kg	1000					
2-Chloronaphthalene	U	ND	5200000	10000000	ug/kg	1000					
2-Methylnaphthalene	U	ND	6100000	10000000	ug/kg	1000					
2-Naphthylamine	U	ND	9600000	10000000	ug/kg	1000					
2-Picoline	U	ND	12100000	12100000	ug/kg	1000					
3,3'-Dichlorobenzidine	U	ND	8300000	50000000	ug/kg	1000					
3,3'-Dimethylbenzidine	U	ND	5000000	50000000	ug/kg	1000					
3-Methylcholanthrene	U	ND	10000000	10000000	ug/kg	1000					
4-Bromophenyl phenyl ether	U	ND	3500000	10000000	ug/kg	1000					
4-Chloroaniline	U	ND	4600000	10000000	ug/kg	1000					
4-Chlorophenyl phenyl ether	U	ND	4400000	10000000	ug/kg	1000					
4-aminobiphenyl	U	ND	650000	10000000	ug/kg	1000					
5-Nitro-o-toluidine	U	ND	5900000	10000000	ug/kg	1000					
7,12-Dimethylbenz(a)anthracene	U	ND	9500000	10000000	ug/kg	1000					
Acenaphthene	U	ND	4800000	10000000	ug/kg	1000					
Acenaphthylene	U	ND	4400000	10000000	ug/kg	1000					
Acetophenone	U	ND	3800000	10000000	ug/kg	1000					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99SPORT141-1 OIL LAYER

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Aniline	U	ND	5700000	10000000	ug/kg	1000					
Anthracene	U	ND	2600000	10000000	ug/kg	1000					
Aramite	U	ND	8300000	10000000	ug/kg	1000					
Benzo(a)anthracene	U	ND	2000000	10000000	ug/kg	1000					
Benzo(a)pyrene	U	ND	2200000	10000000	ug/kg	1000					
Benzo(b)fluoranthene	U	ND	4300000	10000000	ug/kg	1000					
enzo(ghi)perylene	U	ND	2400000	10000000	ug/kg	1000					
enzo(k)fluoranthene	U	ND	4000000	10000000	ug/kg	1000					
Benzyl Alcohol	U	ND	5600000	10000000	ug/kg	1000					
Butyl benzyl phthalate	U	ND	2700000	10000000	ug/kg	1000					
Chlorobenzilate	U	ND	1600000	50000000	ug/kg	1000					
Chrysene	U	ND	1600000	10000000	ug/kg	1000					
Di-n-butyl phthalate	U	ND	2200000	10000000	ug/kg	1000					
Di-n-octyl phthalate	U	ND	5200000	10000000	ug/kg	1000					
Diallate	U	ND	6900000	10000000	ug/kg	1000					
Dibenzo(a,h)anthracene	U	ND	2500000	10000000	ug/kg	1000					
Dibenzofuran	U	ND	4000000	10000000	ug/kg	1000					
Diethyl phthalate	U	ND	2300000	10000000	ug/kg	1000					
Dimethoate	U	ND	8000000	50000000	ug/kg	1000					
Dimethyl phthalate	U	ND	3300000	10000000	ug/kg	1000					
Diphenylamine	U	ND	8600000	10000000	ug/kg	1000					
Disulfoton	U	ND	1390000	10000000	ug/kg	1000					
Ethyl Methanesulfonate	U	ND	610000	10000000	ug/kg	1000					
Ethyl methacrylate	U	ND	890000	890000	ug/kg	1000					
Famphur	U	ND	1590000	10000000	ug/kg	1000					
Fluoranthene	U	ND	2000000	10000000	ug/kg	1000					
Fluorene	U	ND	3400000	10000000	ug/kg	1000					
Hexachlorobenzene	U	ND	2100000	10000000	ug/kg	1000					
Hexachlorobutadiene	U	ND	4600000	10000000	ug/kg	1000					
Hexachlorocyclopentadiene	U	ND	5800000	10000000	ug/kg	1000					
Hexachloroethane	U	ND	4000000	10000000	ug/kg	1000					
Hexachloropropene	U	ND	630000	10000000	ug/kg	1000					
leno(1,2,3-c,d)pyrene	U	ND	2400000	10000000	ug/kg	1000					
odrin	U	ND	4400000	10000000	ug/kg	1000					
Isophorone	U	ND	4400000	10000000	ug/kg	1000					

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

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903922-04

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99SPORT141-1 OIL LAYER

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Isosafrole	U	ND	650000	10000000	ug/kg	1000					
Kepone	U	ND	2930000	10000000	ug/kg	1000					
Methapyrilene	U	ND	4800000	50000000	ug/kg	1000					
Methyl Methacrylate	U	ND	2230000	2230000	ug/kg	1000					
Methyl Methanesulfonate	U	ND	9100000	10000000	ug/kg	1000					
N-Nitrosodi-n-butylamine	U	ND	690000	10000000	ug/kg	1000					
N-Nitrosodiethylamine	U	ND	620000	10000000	ug/kg	1000					
N-Nitrosodimethylamine	U	ND	310000	10000000	ug/kg	1000					
N-Nitrosodiphenylamine	U	ND	3500000	10000000	ug/kg	1000					
N-Nitrosodipropylamine	U	ND	3900000	10000000	ug/kg	1000					
N-Nitrosomethylethylamine	U	ND	2190000	10000000	ug/kg	1000					
N-Nitrosomorpholine	U	ND	740000	10000000	ug/kg	1000					
N-Nitrosopiperidine	U	ND	6600000	10000000	ug/kg	1000					
N-Nitrosopyrolidine	U	ND	670000	10000000	ug/kg	1000					
Naphthalene	U	ND	4700000	10000000	ug/kg	1000					
Nitrobenzene	U	ND	4000000	10000000	ug/kg	1000					
O.O.O-Triethylphosphorothioate	U	ND	7000000	7000000	ug/kg	1000					
Pentachlorobenzene	U	ND	800000	10000000	ug/kg	1000					
Pentachloroethane	U	ND	1340000	10000000	ug/kg	1000					
Pentachloronitrobenzene	U	ND	7000000	10000000	ug/kg	1000					
Phenacetin	U	ND	5800000	10000000	ug/kg	1000					
Phenanthrene	U	ND	1800000	10000000	ug/kg	1000					
Pronamide	U	ND	6500000	10000000	ug/kg	1000					
Pyrene	U	ND	2200000	10000000	ug/kg	1000					
Pyridine	U	ND	3900000	10000000	ug/kg	1000					
Safrole	U	ND	530000	10000000	ug/kg	1000					
Sulfotepp	U	ND	1300000	10000000	ug/kg	1000					
a-,a-Dimethylphenethylamine	U	ND	3180000	10000000	ug/kg	1000					
bis(2-Chloroethoxy)methane	U	ND	5100000	10000000	ug/kg	1000					
bis(2-Chloroethyl) ether	U	ND	4500000	10000000	ug/kg	1000					
bis(2-Ethylhexyl)phthalate	U	ND	9000000	10000000	ug/kg	1000					
m-Dinitrobenzene	U	ND	890000	10000000	ug/kg	1000					
m-Nitroaniline	U	ND	2500000	10000000	ug/kg	1000					
o-Nitroaniline	U	ND	2000000	10000000	ug/kg	1000					
o-Toluidine	U	ND	8400000	10000000	ug/kg	1000					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99SPORT141-1 OIL LAYER

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
p-Dimethylaminoazobenzene	U	ND	6300000	10000000	ug/kg	1000					
p-Nitroaniline	U	ND	3100000	10000000	ug/kg	1000					
p-Phenylenediamine	U	ND	15200000	20000000	ug/kg	1000					
sym-Trinitrobenzene	U	ND	700000	50000000	ug/kg	1000					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	ES	03/26/99	1450	145439	1

Comments:
Fails surrogate recovery due to sample dilution.

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	APP 9 B/N-8270	0.00*	(44.7 - 110.)
Nitrobenzene-d5	APP 9 B/N-8270	0.00*	(42.4 - 107.)
p-Terphenyl-d14	APP 9 B/N-8270	0.00*	(45.5 - 104.)

M = Method	Method-Description
M 1	GEL

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903922-04

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: April 02, 1999

Sample ID : 99SPORT141-1 OIL LAYER

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.
I indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
dicates that the analyte was not detected at a concentration greater than the detection limit.
.dicates 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, Elise Hanson at 843-556-8171.

Reviewed By

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

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903922-04

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903922% Report Date: April 02, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Extractable Organics													
QC597185	BLANK	145439											
1,2,4-Trichlorobenzene						0.00	ug/l				JPA	03/31/99	2012
1,4-Dichlorobenzene						0.00	ug/l						
2,4-Dinitrotoluene						0.00	ug/l						
Acenaphthene						0.00	ug/l						
N-Nitrosodipropylamine						0.00	ug/l						
Pyrene						0.00	ug/l						
*2-Fluorobiphenyl							ug/l		67.1	(41.2 - 107.)			
*Nitrobenzene-d5							ug/l		74.4	(35.3 - 108.)			
*p-Terphenyl-d14							ug/l		74.9	(36.6 - 110.)			
4,5-Tetrachlorobenzene						0.00	ug/l						
ichlorobenzene						0.00	ug/l						
-Dichlorobenzene						0.00	ug/l						
1,4-Dioxane						0.00	ug/l						
1,4-Naphthoquinone						0.00	ug/l						
1-Naphthylamine						0.00	ug/l						
2,6-Dinitrotoluene						0.00	ug/l						
2-Acetylaminofluorene						0.00	ug/l						
2-Chloronaphthalene						0.00	ug/l						
2-Methylnaphthalene						0.00	ug/l						
2-Naphthylamine						0.00	ug/l						
2-Picoline						0.00	ug/l						
3,3'-Dichlorobenzidine						0.00	ug/l						
3,3'-Dimethylbenzidine						0.00	ug/l						
3-Methylcholanthrene						0.00	ug/l						
4-Bromophenyl phenyl ether						0.00	ug/l						
4-Chloroaniline						0.00	ug/l						
4-Chlorophenyl phenyl ether						0.00	ug/l						
4-aminobiphenyl						0.00	ug/l						
5-Nitro-o-toluidine						0.00	ug/l						
7,12-Dimethylbenz(a)anthracene						0.00	ug/l						
Acenaphthylene						0.00	ug/l						
Acetophenone						0.00	ug/l						
Aniline						0.00	ug/l						
Anthracene						0.00	ug/l						
Aramite						0.00	ug/l						
(a)anthracene						0.00	ug/l						
(a)pyrene						0.00	ug/l						
Benzo(b)fluoranthene						0.00	ug/l						

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903922% Report Date: April 02, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Benzo(ghi)perylene						0.00	ug/l				JPA	03/31/99	2012
Benzo(k)fluoranthene						0.00	ug/l						
Benzyl Alcohol						0.00	ug/l						
Butyl benzyl phthalate						0.00	ug/l						
Chlorobenzilate						0.00	ug/l						
Chrysene						0.00	ug/l						
Di-n-butyl phthalate						0.00	ug/l						
Di-n-octyl phthalate						0.00	ug/l						
Diallate						0.00	ug/l						
Dibenzo(a,h)anthracene						0.00	ug/l						
Dibenzofuran						0.00	ug/l						
[illegible]hyl phthalate						0.00	ug/l						
[illegible]thoate						0.00	ug/l						
[illegible]methyl phthalate						0.00	ug/l						
Diphenylamine						0.00	ug/l						
Disulfoton						0.00	ug/l						
Ethyl Methanesulfonate						0.00	ug/l						
Ethyl methacrylate						0.00	ug/l						
Famphur						0.00	ug/l						
Fluoranthene						0.00	ug/l						
Fluorene						0.00	ug/l						
Hexachlorobenzene						0.00	ug/l						
Hexachlorobutadiene						0.00	ug/l						
Hexachlorocyclopentadiene						0.00	ug/l						
Hexachloroethane						0.00	ug/l						
Hexachloropropene						0.00	ug/l						
Indeno(1,2,3-c,d)pyrene						0.00	ug/l						
Isodrin						0.00	ug/l						
Isophorone						0.00	ug/l						
Isosafrole						0.00	ug/l						
Kepone						0.00	ug/l						
Methapyrilene						0.00	ug/l						
Methyl Methacrylate						0.00	ug/l						
Methyl Methanesulfonate						0.00	ug/l						
N-Nitrosodi-n-butylamine						0.00	ug/l						
N-Nitrosodiethylamine						0.00	ug/l						
N-Nitrosodimethylamine						0.00	ug/l						
[illegible]osodiphenylamine						0.00	ug/l						
[illegible]osomethylethylamine						0.00	ug/l						
N-Nitrosomorpholine						0.00	ug/l						

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903922% Report Date: April 02, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
N-Nitrosopiperidine						0.00	ug/l				JPA	03/31/99	2012
N-Nitrosopyrolidine						0.00	ug/l						
Naphthalene						0.00	ug/l						
Nitrobenzene						0.00	ug/l						
O,O,O-Triethylphosphorothioate						0.00	ug/l						
Pentachlorobenzene						0.00	ug/l						
Pentachloroethane						0.00	ug/l						
Pentachloronitrobenzene						0.00	ug/l						
Phenacetin						0.00	ug/l						
Phenanthrene						0.00	ug/l						
Pronamide						0.00	ug/l						
vridine						0.00	ug/l						
afrole						0.00	ug/l						
Sulfotepp						0.00	ug/l						
a-,a-Dimethylphenethylamine						0.00	ug/l						
bis(2-Chloroethoxy)methane						0.00	ug/l						
bis(2-Chloroethyl) ether						0.00	ug/l						
bis(2-Ethylhexyl)phthalate						0.00	ug/l						
m-Dinitrobenzene						0.00	ug/l						
m-Nitroaniline						0.00	ug/l						
o-Nitroaniline						0.00	ug/l						
o-Toluidine						0.00	ug/l						
p-Dimethylaminoazobenzene						0.00	ug/l						
p-Nitroaniline						0.00	ug/l						
p-Phenylenediamine						0.00	ug/l						
sym-Trinitrobenzene						0.00	ug/l						
QC597186	LCS	145439											
1,2,4-Trichlorobenzene			50			27.3	ug/l		54.7	(45.7 - 97.7)	JPA	03/31/99	2047
1,4-Dichlorobenzene			50			27.0	ug/l		53.9	(34.6 - 96.9)			
2,4-Dinitrotoluene			50			51.8	ug/l		104	(58.5 - 111.)			
Acenaphthene			50			33.9	ug/l		67.9	(53.0 - 100.)			
N-Nitrosodipropylamine			50			37.2	ug/l		74.4	(52.1 - 104.)			
Pyrene			50			40.6	ug/l		81.2	(45.4 - 109.)			
*2-Fluorobiphenyl			50			34.6	ug/l		69.1	(41.2 - 107.)			
*Nitrobenzene-d5			50			37.0	ug/l		74.0	(35.3 - 108.)			
*p-Terphenyl-d14			50			41.7	ug/l		83.4	(36.6 - 110.)			
QC597187	9903922-02MS	145439											
,4-Trichlorobenzene			50	0.00		0.00	ug/l		0.00**	(54.1 - 99.6)	JPA	03/31/99	2118
,4-Dichlorobenzene			50	0.00		0.00	ug/l		0.00**	(58.5 - 92.1)			
2,4-Dinitrotoluene			50	0.00		0.00	ug/l		0.00**	(54.9 - 109.)			

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903922% Report Date: April 02, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Acenaphthene			50	0.00		87.3	ug/l		0.00**	(56.4 - 106.)	JPA	03/31/99	2118
N-Nitrosodipropylamine			50	0.00		0.00	ug/l		0.00**	(45.3 - 119.)			
Pyrene			50	0.00		107	ug/l		0.00**	(52.6 - 125.)			
*2-Fluorobiphenyl			100			0.00	ug/l		0.00**	(41.2 - 107.)			
*Nitrobenzene-d5			100			0.00	ug/l		0.00**	(35.3 - 108.)			
*p-Terphenyl-d14			100			0.00	ug/l		0.00**	(36.6 - 110.)			
QC597188	9903922-02MSD	145439											
1,2,4-Trichlorobenzene			50	0.00		0.00	ug/l	0.00	0.00	(0.00 - 24.4)	JPA	03/31/99	2150
1,4-Dichlorobenzene			50	0.00		0.00	ug/l	0.00	0.00	(0.00 - 23.6)			
2,4-Dinitrotoluene			50	0.00		0.00	ug/l	0.00	0.00	(0.00 - 18.8)			
Acenaphthene			50	0.00		90.4	ug/l	0.00	0.00	(0.00 - 19.2)			
[illegible]trosodipropylamine			50	0.00		0.00	ug/l	0.00	0.00	(0.00 - 25.8)			
[illegible]e			50	0.00		101	ug/l	0.00	0.00	(0.00 - 21.9)			
*2-Fluorobiphenyl			100			0.00	ug/l		0.00**	(41.2 - 107.)			
*Nitrobenzene-d5			100			0.00	ug/l		0.00**	(35.3 - 108.)			
*p-Terphenyl-d14			100			0.00	ug/l		0.00**	(36.6 - 110.)			

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

NPWC00197

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

9903922%

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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

39284

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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 APP. IX	PCB's	Cyanide	Coliform - specify type			Remarks
-01	99SPORTØ141-1	3/23/99	1Ø15				X	2												X						SUMU-17 SUMP SA PRODUCT & GROUND WATER H2O layer only
02	99SPORTØ141-2	3/25/99	1Ø2Ø				X	2												X						Well 001 PRODUCT & GROUND WATER
03	99SPORTØ141-3	3/25/99	1Ø25				X	2												X						Well 002 PRODUCT & GROUND WATER
-04	99SPORTO141-1	3/25/99	1Ø15				X	1												X						oil layer only

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[illegible]	3/25/99	1440	W.R. Hiers, Jr.	W.R. Hiers, Jr.	3/25/99	1535	Stephanie Bechelter
Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:	
Stephanie Bechelter	3/25/99	1615	[illegible]	3/25/99	1615		

W = sample collector Yellow = file Pink = with report

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: April 01. 1999

Sample ID : 99 SPORT0139-1
Lab ID : 9903878-01
Matrix : GroundH2O
Date Collected : 03/24/99
Date Received : 03/24/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
etals Analysis											
Mercury	U	ND	0.0350	0.200	ug/l	1.0	RMJ	03/26/99	1325	145382	1
Silver	U	ND	1.46	10.0	ug/l	2.0	MBL	03/29/99	1412	145323	1
Arsenic		65.5	9.02	10.0	ug/l	2.0					
Barium		62.9	1.02	10.0	ug/l	2.0					
Cadmium	J	1.92	0.880	10.0	ug/l	2.0					
Chromium	J	8.92	1.12	10.0	ug/l	2.0					
Lead		63.0	3.18	10.0	ug/l	2.0					
Selenium	U	ND	5.42	10.0	ug/l	2.0					

The following prep procedures were performed:

Mercury	RMJ	03/25/99	1745	145382	2
TRACE	AJM	03/25/99	1330	145323	3

M = Method	Method-Description
M 1	EPA 6010A
M 2	EPA 7470A
M 3	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.
ndicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
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.

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178
Printed on recycled paper.

9903878-01

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99 SPORT0139-1

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, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

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

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903878-01

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID	: 99 SPORT0139-2
Lab ID	: 9903878-02
Matrix	: GroundH2O
Date Collected	: 03/24/99
Date Received	: 03/24/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Metals Analysis											
Mercury	U	ND	0.0350	0.200	ug/l	1.0	RMJ	03/26/99	1327	145382	M
Silver	U	ND	1.46	10.0	ug/l	2.0	MBL	03/29/99	1417	145323	1
Arsenic	U	ND	9.02	10.0	ug/l	2.0					
Barium		25.4	1.02	10.0	ug/l	2.0					
Cadmium	U	ND	0.880	10.0	ug/l	2.0					
Chromium		60.6	1.12	10.0	ug/l	2.0					
Lead		40.9	3.18	10.0	ug/l	2.0					
Selenium	U	ND	5.42	10.0	ug/l	2.0					

The following prep procedures were performed:

Mercury	RMJ	03/25/99	1745	145382	2
TRACE	AJM	03/25/99	1330	145323	3

M = Method	Method-Description
M 1	EPA 6010A
M 2	EPA 7470A
M 3	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.
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.

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178
Printed on recycled paper.

9903878-02

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99 SPORT0139-2

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, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

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

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper

9903878-02

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: April 01, 1999

Sample ID	: 99 SPORT0139-3
Lab ID	: 9903878-03
Matrix	: GroundH2O
Date Collected	: 03/24/99
Date Received	: 03/24/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
letals Analysis											
Mercury	U	ND	0.0350	0.200	ug/l	1.0	RMJ	03/26/99	1329	145382	1
Silver	U	ND	1.46	10.0	ug/l	2.0	MBL	03/29/99	1423	145323	1
Arsenic		16.2	9.02	10.0	ug/l	2.0					
Barium	J	9.94	1.02	10.0	ug/l	2.0					
Cadmium	U	ND	0.880	10.0	ug/l	2.0					
Chromium	U	ND	1.12	10.0	ug/l	2.0					
Lead		27.9	3.18	10.0	ug/l	2.0					
Selenium	U	ND	5.42	10.0	ug/l	2.0					

The following prep procedures were performed:

Mercury	RMJ	03/25/99	1745	145382	2
TRACE	AJM	03/25/99	1330	145323	3

M = Method	Method-Description
M 1	EPA 6010A
M 2	EPA 7470A
M 3	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.
indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
J 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.

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(843) 556-8171 • Fax (843) 766-1178
Printed on recycled paper.

9903878-03

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 01, 1999

Sample ID : 99 SPORT0139-3

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, Elise Hanson at 843-556-8171.

Reviewed By

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

(843) 556-8171 • Fax (843) 766-1178

9903878-03

Printed on recycled paper.

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903878% Report Date: April 01, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Metals Analysis													
QC597009	BLANK	145382											
Mercury						-0.0807	ug/l				RMJ	03/26/99	1256
QC597013	9903806-06DUP	145382											
Mercury				-0.0323		-0.105	ug/l	0.00			RMJ	03/26/99	1310
QC597010	LCS	145382											
Mercury			2			2.03	ug/l		102	(81.5 - 124.)	RMJ	03/26/99	1258
QC597011	LCS DUP	145382											
Mercury			2			2.63	ug/l	25.5**	131	(0.00 - 16.3)	RMJ	03/26/99	1303
QC597012	9903806-06MS	145382											
Mercury			2	-0.0323		1.93	ug/l		96.3	(74.3 - 132.)	RMJ	03/26/99	1308
596781	BLANK	145323											
Arsenic						0.555	ug/l				MBL	03/29/99	1:
Barium						0.0789	ug/l						
Cadmium						0.0[illegible]80	ug/l						
Chromium						-0.368	ug/l						
Lead						-0.00751	ug/l						
Selenium						-0.908	ug/l						
Silver						0.121	ug/l						
QC596782	LCS	145323											
Arsenic			1000			934	ug/l		93.4	(89.5 - 112.)	MBL	03/29/99	1241
Barium			1000			929	ug/l		92.9	(90.7 - 111.)			
Cadmium			1000			931	ug/l		93.1	(90.7 - 115.)			
Chromium			1000			930	ug/l		93.0	(90.0 - 112.)			
Lead			1000			930	ug/l		93.0	(89.3 - 114.)			
Selenium			1000			928	ug/l		92.8	(87.2 - 109.)			
Silver			1000			1010	ug/l		101	(90.9 - 116.)			
QC596784	9903764-08MS	145323											
Arsenic			1000	0.489		925	ug/l		92.4	(84.8 - 118.)	MBL	03/29/99	1350
Barium			1000	0.242		927	ug/l		92.7	(90.3 - 113.)			
Cadmium			1000	0.208		922	ug/l		92.2	(89.4 - 116.)			
Chromium			1000	-0.0285		925	ug/l		92.5	(88.3 - 112.)			
Lead			1000	-0.122		925	ug/l		92.5	(84.6 - 118.)			
Selenium			1000	-0.406		921	ug/l		92.1	(84.3 - 112.)			
Silver			1000	0.185		1010	ug/l		101	(89.3 - 120.)			
QC596785	9903764-08MSD	145323											
Arsenic			1000	0.489		908	ug/l	1.86	90.8	(0.00 - 7.20)	MBL	03/29/99	1355
Barium			1000	0.242		903	ug/l	2.62	90.3	(0.00 - 6.40)			
Cadmium			1000	0.208		906	ug/l	1.68	90.6	(0.00 - 6.80)			
Chromium			1000	-0.0285		901	ug/l	2.59	90.1	(0.00 - 7.40)			

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903878% Report Date: April 01, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Lead			1000	-0.122		909	ug/l	1.77	90.9	(0.00 - 7.00)	MBL	03/29/99	1355
Selenium			1000	-0.406		904	ug/l	1.83	90.4	(0.00 - 6.70)			
Silver			1000	0.185		983	ug/l	2.22	98.3	(0.00 - 7.30)			
QC596783 9903764-08	SERIAL	145323											
Arsenic				0.489		2.64	ug/l	0.00			MBL	03/29/99	1344
Barium				0.242		0.174	ug/l	0.00					
Cadmium				0.208		0.0372	ug/l	0.00					
Chromium				-0.0285		-0.277	ug/l	0.00					
Lead				-0.122		2.95	ug/l	0.00					
Selenium				-0.406		-8.74	ug/l	0.00					
Silver				0.185		0.237	ug/l	0.00					

Notes:
The qualifiers in this report are defined as follows.
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

GENERAL ENGINEERING LABORATORIES
PO Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(803) 556-8171 • Fax (803) 766-1178

Printed on recycled paper.

, PW C00197

Page 1 of 1

CHAIN OF CUSTODY RECORD

99038785

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

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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

CCL# 39262

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	RCRA METALS - specify (P)	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type			Remarks
																										SWMU-17
-01	99SPORTΦ139-1	3-24-99	1305				X	1							X											Sump 5A - Product & H_2O
02	99SPORTΦ139-2	3-24-99	1310				X	1							X											~~Sump 5~~ Well 002 product & H_2O
03	99SPORTΦ139-3	3-24-99	1315				X	1							X											Well 001 Product & H_2O

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	3-24-99	1330	W.R. Hiers, Jr.	W.R. Hiers, Jr.	3/24/99	1535	[signature]

Relinquished by:	Date:	Time:	Received by lab by:	Date	Time:	Remarks:
[signature]	3/24/99	1545	[signature]	3/24/99	1545	

) = sample collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID	: 99 SPORT0138-1
Lab ID	: 9903879-01
Matrix	: WasteH2O
Date Collected	: 03/24/99
Date Received	: 03/24/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
PCB analysis - 7 items											
PCB-1016	U	ND	0.0420	0.500	ug/l	1.0	JLW	03/25/99	2134	145344	1
PCB-1221	U	ND	0.0210	0.500	ug/l	1.0					
PCB-1232	U	ND	0.0210	0.500	ug/l	1.0					
PCB-1242	U	ND	0.0525	0.500	ug/l	1.0					
PCB-1248	U	ND	0.0525	0.500	ug/l	1.0					
PCB-1254	U	ND	0.0315	0.500	ug/l	1.0					
PCB-1260	U	ND	0.0630	0.500	ug/l	1.0					

The following prep procedures were performed:

PCB's BMC 03/25/99 1545 145344 2

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PCB	61.9	(31.0 - 126.)

M = Method	Method-Description
M 1	EPA 608
M 2	EPA 3510/608

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-01

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID : 99 SPORT0138-1

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).
'icates that the analyte was not detected at a concentration greater than the detection limit.
ıcates 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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-01

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID	: 99 SPORT0138-2
Lab ID	: 9903879-02
Matrix	: WasteH2O
Date Collected	: 03/24/99
Date Received	: 03/24/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
ıctable Organics											
; analysis - 7 items											
PCB-1016	U	ND	0.0436	0.500	ug/l	1.0	JLW	03/25/99	2158	145344	1
PCB-1221	U	ND	0.0218	0.500	ug/l	1.0					
PCB-1232	U	ND	0.0218	0.500	ug/l	1.0					
PCB-1242	U	ND	0.0545	0.500	ug/l	1.0					
PCB-1248	U	ND	0.0545	0.500	ug/l	1.0					
PCB-1254	U	ND	0.0327	0.500	ug/l	1.0					
PCB-1260	U	ND	0.0654	0.500	ug/l	1.0					

The following prep procedures were performed:

PCB's	BMC	03/25/99	1545	145344	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	59.6	(31.0 - 126.)

M = Method	Method-Description
M 1	EPA 608
M 2	EPA 3510/608

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-02

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID : 99 SPORT0138-2

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.
I indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
ndicates that the analyte was not detected at a concentration greater than the detection limit.
ndicates 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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-02

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID	: 99 SPORT0138-3
Lab ID	: 9903879-03
Matrix	: Oil
Date Collected	: 03/24/99
Date Received	: 03/24/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
xtractable Organics											
PCB analysis - 7 items											
PCB-1016	U	ND	24.3	83.3	mg/kg	200	JC	03/26/99	1005	145347	1
PCB-1221	U	ND	56.3	83.3	mg/kg	200					
PCB-1232	U	ND	32.6	83.3	mg/kg	200					
PCB-1242	U	ND	33.4	83.3	mg/kg	200					
PCB-1248	U	ND	18.1	83.3	mg/kg	200					
PCB-1254	U	ND	23.2	83.3	mg/kg	200					
PCB-1260		620	18.8	83.3	mg/kg	200					

The following prep procedures were performed:

PCB's RDH 03/25/99 1300 145347 2

Comments:

Failed surrogate recovery due to sample dilution.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	0.00*	(25.3 - 110.)
Decachlorobiphenyl	PCB	0.00*	(46.8 - 131.)

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-03

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID : 99 SPORT0138-3

M = Method	Method-Description
M 1	EPA 8080
M 2	GEL

Notes:
The qualifiers in this report are defined as follows:
) indicates that the analyte was not detected at a concentration greater than the detection limit.
.ndicates 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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-03

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID	: 99 SPORT0138-4
Lab ID	: 9903879-04
Matrix	: WasteH2O
Date Collected	: 03/24/99
Date Received	: 03/24/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
ractable Organics											
CB analysis - 7 items											
PCB-1016	U	ND	3330	10400	ug/l	100000	JLW	03/26/99	1527	145344	1
PCB-1221	U	ND	1670	10400	ug/l	100000					
PCB-1232	U	ND	1670	10400	ug/l	100000					
PCB-1242	U	ND	4170	10400	ug/l	100000					
PCB-1248	U	ND	4170	10400	ug/l	100000					
PCB-1254	U	ND	2500	10400	ug/l	100000					
PCB-1260		78500	5000	10400	ug/l	100000					

The following prep procedures were performed:

PCB's BMC 03/25/99 1545 145344 2

Comments:

Failed surrogate recovery due to sample dilution.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PCB	0.00*	(31.0 - 126.)

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-04

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID : 99 SPORT0138-4

M = Method	Method-Description
M 1	EPA 608
M 2	EPA 3510/608

Notes:
The qualifiers in this report are defined as follows:
ndicates that the analyte was not detected at a concentration greater than the detection limit.
ndicates 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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-04

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID	: 99 SPORT0138-5
Lab ID	: 9903879-05
Matrix	: WasteH2O
Date Collected	: 03/24/99
Date Received	: 03/24/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
·actable Organics											
CB analysis - 7 items											
PCB-1016	U	ND	1.90	5.95	ug/l	40.	JLW	03/26/99	1504	145344	1
PCB-1221	U	ND	0.952	5.95	ug/l	40.					
PCB-1232	U	ND	0.952	5.95	ug/l	40.					
PCB-1242	U	ND	2.38	5.95	ug/l	40.					
PCB-1248	U	ND	2.38	5.95	ug/l	40.					
PCB-1254	U	ND	1.43	5.95	ug/l	40.					
PCB-1260		40.1	2.86	5.95	ug/l	40.					

The following prep procedures were performed:

PCB's BMC 03/25/99 1545 145344 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	43.0	(31.0 - 126.)

M = Method	Method-Description
M 1	EPA 608
M 2	EPA 3510/608

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-05

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
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: March 30, 1999

Sample ID : 99 SPORT0138-5

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.
[illegible] indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
[illegible]licates that the analyte was not detected at a concentration greater than the detection limit.
[illegible]dicates 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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903879-05

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903879% Report Date: March 30, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Extractable Organics													
QC596867	BLANK	145344											
PCB-1260						0.00	ug/l				JLW	03/25/99	1937
*4CMX							ug/l		64.0	(31.0 - 126.)			
PCB-1016						0.00	ug/l						
PCB-1221						0.00	ug/l						
PCB-1232						0.00	ug/l						
PCB-1242						0.00	ug/l						
PCB-1248						0.00	ug/l						
PCB-1254						0.00	ug/l						
QC596880	BLANK	145347											
PCB-1260						0.00	mg/kg				JC	03/26/99	0323
MX							mg/kg		102	(25.3 - 110.)			
Decachlorobiphenyl							mg/kg		105	(46.8 - 131.)			
PCB-1016						0.00	mg/kg						
PCB-1221						0.00	mg/kg						
PCB-1232						0.00	mg/kg						
PCB-1242						0.00	mg/kg						
PCB-1248						0.00	mg/kg						
PCB-1254						0.00	mg/kg						
QC596964	9903891-01DUP	145344											
PCB-1260				0.00		3.60	ug/l	200			JLW	03/26/99	1218
*4CMX			0.2			0.102	ug/l		51.0				
PCB 1016				0.00		0.00	ug/l	0.00					
PCB-1221				0.00		0.00	ug/l	0.00					
PCB-1232				0.00		0.00	ug/l	0.00					
PCB-1242				0.00		0.00	ug/l	0.00					
PCB-1248				0.00		0.00	ug/l	0.00					
PCB-1254				0.00		0.00	ug/l	0.00					
QC596868	LCS	145344											
PCB-1260			1			0.930	ug/l		93.0	(54.5 - 126.)	JLW	03/25/99	2001
*4CMX			0.2			0.133	ug/l		66.5	(31.0 - 126.)			
QC596881	LCS	145347											
PCB-1260			1			1.19	mg/kg		119	(53.6 - 137.)	JC	03/26/99	0408
*4CMX			0.2			0.221	mg/kg		111**	(25.3 - 110.)			
*Decachlorobiphenyl			0.2			0.224	mg/kg		112	(46.8 - 131.)			
QC596869	9903879-04MS	145344											
PCB-1260			1	78500		122000	ug/l		4350000**	(50.1 - 138.)	JLW	03/26/99	1551
MX			0.2			0.00	ug/l		0.00**	(31.0 - 126.)			
QC596882	9903816-01MS	145347											

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903879% Report Date: March 30, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
PCB-1260			3.33	13.2		22.2	mg/kg		270**	(31.5 - 159.)	JC	03/26/99	0444
*4CMX			0.667			0.597	mg/kg		89.4	(25.3 - 110.)	JC	03/26/99	0444
*Decachlorobiphenyl			0.667			0.840	mg/kg		126	(46.8 - 131.)			
QC596870	9903879-04MSD	145344											
PCB-1260			1	78500		77700	ug/l	207**	-80000	(0.00 - 24.9)	JLW	03/26/99	1614
*4CMX			0.2			0.00	ug/l		0.00**	(31.0 - 126.)			
QC596883	9903816-01MSD	145347											
PCB-1260			3.33	13.2		20.8	mg/kg	16.9	228	(0.00 - 26.2)	JC	03/26/99	0519
*4CMX			0.667			0.517	mg/kg		77.5	(25.3 - 110.)			
*Decachlorobiphenyl			0.667			0.673	mg/kg		101	(46.8 - 131.)			

es.

The qualifiers in this report are defined as follows:

J indicates presence of analyte < RL (Report Limit)

U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when sample concentration exceeds spike conc by a factor of 4 or more

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper

NPWC00197

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

99038579%

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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

CCL#39261

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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			Remarks
01	99SPORTØ138-1	3-24-99	1000				X	2													X					SUMP SD GROUNDWATER
02	99SPORTØ138-2	3-24-99	1010				X	2													X					SUMP SB GROUNDWATER
03	99SPORTØ138-3	3-24-99	1000				X	2													X					Sump SA ~~GA~~ PRODUCT – Oil layer only
04	99SPORTØ138-4	3-24-99	1030				X	2													X					Well 002 PRODUCT ~~Oil layer only~~
05	99SPORTØ138-5	3-24-99	1040				X	2													X					Well 001 PRODUCT – Oil layer only ~~well 002 PRODUCT~~

1260 ppm high ter 100,000

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	3-24-99	1140	W. R. Hiers, Jr.	W. R. Hiers Jr.	3/24/99	1535	[signature]
[signature]	3/24/99	1545	[signature]	3/24/99	1545	Remarks:	

White = sample collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: March 24, 1999

Sample ID	: 99SPORT0137-1
Lab ID	: 9903792-01
Matrix	: WasteH2O
Date Collected	: 03/22/99
Date Received	: 03/22/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
'olatile Organics											
TEX - 4 items											
Benzene	U	ND	0.300	2.00	ug/l	1.0	JEB	03/23/99	2254	145186	1
Ethylbenzene	U	ND	0.300	2.00	ug/l	1.0					
Toluene	U	ND	0.500	2.00	ug/l	1.0					
Xylenes (TOTAL)	U	ND	1.00	4.00	ug/l	1.0					
Extractable Organics											
PCB analysis - 7 items											
PCB-1016	U	ND	0.355	1.11	ug/l	8.0	JLW	03/23/99	1636	145047	2
PCB-1221	U	ND	0.178	1.11	ug/l	8.0					
PCB-1232	U	ND	0.178	1.11	ug/l	8.0					
PCB-1242	U	ND	0.444	1.11	ug/l	8.0					
PCB-1248	U	ND	0.444	1.11	ug/l	8.0					
PCB-1254	U	ND	0.266	1.11	ug/l	8.0					
PCB-1260		9.99	0.533	1.11	ug/l	8.0					
General Chemistry											
Oil & Grease		23.4	1.22	2.00	mg/l	1.0	AAT	03/23/99	1200	145167	3
pH - 2 items											
pH		7.59	0.0100	0.100	SU	1.0	LAA	03/22/99	1905	145142	4
pH Temperature		20.5	0.100	0.100	C	1.0					

The following prep procedures were performed:

PCB's	GMS	03/22/99	2200	145047	5

Comments:

uls surrogate recovery due to dlution and matrix inteference.

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903792-01

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: March 24, 1999

Sample ID . 99SPORT0137-1

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	7.13*	(31.0 - 126.)
Bromofluorobenzene	BTEX-8260	104.	(73.0 - 129.)
Dibromofluoromethane	BTEX-8260	114.	(66.0 - 117.)
Toluene-d8	BTEX-8260	112.	(73.0 - 122.)

(= Method	Method-Description
.(1	EPA 624
M 2	EPA 608
M 3	EPA 413.1
M 4	EPA 150.1/SW 846 9040
M 5	EPA 3510/608

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, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903792-01

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: March 25, 1999

Sample ID	: 99SPORT0137-2
Lab ID	: 9903792-02
Matrix	: WasteH2O
Date Collected	: 03/22/99
Date Received	: 03/22/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TEX - 4 items											
Benzene	U	ND	0.300	2.00	ug/l	1.0	JEB	03/23/99	2326	145186	1
Ethylbenzene	U	ND	0.300	2.00	ug/l	1.0					
Toluene	U	ND	0.500	2.00	ug/l	1.0					
Xylenes (TOTAL)	U	ND	1.00	4.00	ug/l	1.0					
Extractable Organics											
PCB analysis - 7 items											
PCB-1016	U	ND	0.0444	0.500	ug/l	1.0	JLW	03/23/99	1659	145047	2
PCB-1221	U	ND	0.0222	0.500	ug/l	1.0					
PCB-1232	U	ND	0.0222	0.500	ug/l	1.0					
PCB-1242	U	ND	0.0555	0.500	ug/l	1.0					
PCB-1248	U	ND	0.0555	0.500	ug/l	1.0					
PCB-1254	U	ND	0.0333	0.500	ug/l	1.0					
PCB-1260	J	0.260	0.0666	0.500	ug/l	1.0					
General Chemistry											
Oil & Grease		151	1.22	2.00	mg/l	1.0	AAT	03/23/99	1200	145167	3
pH - 2 items											
pH		5.32	0.0100	0.100	SU	1.0	LAA	03/22/99	1909	145142	4
pH Temperature		20.5	0.100	0.100	C	1.0					

The following prep procedures were performed:

PCB's	GMS	03/22/99	2200	145047	5

Comments:

tract fails. Not enough sample for re-extraction. Extraction of new
nple to be performed and analyzed. However, the results may differ

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: March 25, 1999

Sample ID : 99SPORT0137-2

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

between samples.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	1.45*	(31.0 - 126.)
Bromofluorobenzene	BTEX-8260	106.	(73.0 - 129.)
Dibromofluoromethane	BTEX-8260	114.	(66.0 - 117.)
Toluene-d8	BTEX-8260	114.	(73.0 - 122.)

M = Method	Method-Description
M 1	EPA 624
M 2	EPA 608
M 3	EPA 413.1
M 4	EPA 150.1/SW 846 9040
M 5	EPA 3510/608

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, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

P O Box 30712 • Charleston. SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178
Printed on recycled paper.

9903792-02

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903792% Report Date: March 24, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Volatile Organics													
QC596212	BLANK	145186											
Benzene						0.00	ug/l				JEB	03/23/99	1101
Toluene						0.00	ug/l						
*Bromofluorobenzene							ug/l		104	(73.0 - 129.)			
*Dibromofluoromethane							ug/l		115	(66.0 - 117.)			
*Toluene-d8							ug/l		112	(73.0 - 122.)			
Ethylbenzene						0.00	ug/l						
Xylenes (TOTAL)						0.00	ug/l						
QC596215	9903796-05DUP	145186											
Benzene				0.00		0.00	ug/l	0.00			JEB	03/24/99	0159
Toluene				0.00		0.00	ug/l	0.00					
*Bromofluorobenzene			50			49.9	ug/l		99.8				
*Dibromofluoromethane			50			57.2	ug/l		114				
*Toluene-d8			50			55.2	ug/l		110				
QC596213	LCS	145186											
1,1-Dichloroethylene			50			58.5	ug/l		117	(70.0 - 144.)	JEB	03/23/99	1030
Benzene			50			58.5	ug/l		117	(74.0 - 133.)			
Chlorobenzene			50			50.1	ug/l		100	(78.0 - 118.)			
Toluene			50			49.9	ug/l		99.8	(79.0 - 129.)			
Trichloroethylene			50			57.1	ug/l		114	(69.0 - 127.)			
*Bromofluorobenzene			50			50.4	ug/l		101	(73.0 - 129.)			
*Dibromofluoromethane			50			56.7	ug/l		113	(66.0 - 117.)			
*Toluene-d8			50			55.1	ug/l		110	(73.0 - 122.)			
QC596214	9903796-05PS	145186											
1,1-Dichloroethylene			50	0.00		613	ug/l		123	(35.0 - 159.)	JEB	03/24/99	0230
Benzene			50	0.00		546	ug/l		109	(56.0 - 140.)			
Chlorobenzene			50	0.00		467	ug/l		93.4	(70.0 - 128.)			
Toluene			50	0.00		444	ug/l		88.8	(64.0 - 131.)			
Trichloroethylene			50	662		1140	ug/l		96.0	(71.0 - 139.)			
*Bromofluorobenzene			50			49.5	ug/l		99.0	(73.0 - 129.)			
*Dibromofluoromethane			50			57.6	ug/l		115	(66.0 - 117.)			
*Toluene-d8			50			55.1	ug/l		110	(73.0 - 122.)			

* represent a surrogate.

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903792% Report Date: March 24, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Extractable Organics													
QC595664	BLANK	145047											
PCB-1260						0.00	ug/l				JLW	03/23/99	1503
*4CMX							ug/l		78.5	(31.0 - 126.)			
PCB-1016						0.00	ug/l						
PCB-1221						0.00	ug/l						
PCB-1232						0.00	ug/l						
PCB-1242						0.00	ug/l						
PCB-1248						0.00	ug/l						
PCB-1254						0.00	ug/l						
QC595665	LCS	145047											
PCB-1260			1			0.900	ug/l		90.0	(54.5 - 126.)	JLW	03/23/99	1526
4CMX			0.2			0.148	ug/l		74.0	(31.0 - 126.)			
Decachlorobiphenyl			0.2			0.194	ug/l		97.0	(39.0 - 133.)			
QC595666	9903635-23MS	145047											
PCB-1260			1	0.00		0.620	ug/l		62.0	(54.5 - 126.)	JLW	03/23/99	1809
*4CMX			0.2			0.107	ug/l		53.5	(31.0 - 126.)			
*Decachlorobiphenyl			0.2			0.115	ug/l		57.5	(39.0 - 133.)			
QC595667	9903635-23MSD	145047											
PCB-1260			1	0.00		0.650	ug/l	4.72	65.0	(0.00 - 24.9)	JLW	03/23/99	1833
*4CMX			0.2			0.126	ug/l		63.0	(31.0 - 126.)			
*Decachlorobiphenyl			0.2			0.118	ug/l		59.0	(39.0 - 133.)			

* represent a surrogate.

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903792% Report Date: March 24, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
General Chemistry													
QC596136	BLANK	145167											
Oil & Grease						0.00	mg/l				AAT	03/23/99	1200
QC596137	LCS	145167											
Oil & Grease			201			175	mg/l		87.3	(-)			
QC596138	LCS DUP	145167											
Oil & Grease			217			208	mg/l	9.57	96.0	(-)			
QC596035	9903792-02DUP	145142											
pH				5.32		5.35	SU	0.562			LAA	03/22/99	1910
pH Temperature				20.5		20.4	C	0.489					
QC596036	LCS	145142											
pH			7			6.98	SU		99.7	(-)			

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

GENERAL ENGINEERING LABORATORIES
PO Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(803) 556-8171 • Fax (803) 766-1178
Printed on recycled paper.

PWC00197

990E 32%

CHAIN OF CUSTODY RECORD

3-DAY TURNAROUND

General Engineering Labor[illegible]ies, Inc.
2040 Savage Road
Charleston, South Carolin[illegible]
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Page 1 of 1

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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

CCL# 39195

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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	Oil & Grease	Remarks
01	995PORTϕ137-1	3-22-99	1130				X	8	X												X			X	X	Blue 55 gallon poly Container Decon WATER SWMU-17
02	995PORTϕ137-2	3-22-99	1145				X	8	X												X			X	X	BLACK 55 gal. Poly Container SWMU-17 Decon Water

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	3-22-99	1300	W. R. Hiers, Jr.	W. R. Hiers, Jr.	3/22/99	1535	[signature]
[signature]	3/22/99	1600	P. Vorer		3/22/99	16:00	

Remarks:

White = sample collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: March 26, 1999

Sample ID	: 99SPORT0137-2
Lab ID	: 9903877-01
Matrix	: WasteH2O
Date Collected	: 03/24/99
Date Received	: 03/24/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
tractable Organics											
CB analysis - 7 items											
PCB-1016	U	ND	0.0436	0.500	ug/l	1.0	JLW	03/26/99	1241	145344	1
PCB-1221	U	ND	0.0218	0.500	ug/l	1.0					
PCB-1232	U	ND	0.0218	0.500	ug/l	1.0					
PCB-1242	U	ND	0.0545	0.500	ug/l	1.0					
PCB-1248	U	ND	0.0545	0.500	ug/l	1.0					
PCB-1254	U	ND	0.0327	0.500	ug/l	1.0					
PCB-1260		1.81	0.0654	0.500	ug/l	1.0					

The following prep procedures were performed:

PCB's BMC 03/25/99 1545 145344 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	15.5*	(31.0 - 126.)

M = Method	Method-Description
M 1	EPA 608
M 2	EPA 3510/608

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903877-01

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: March 26, 1999

Sample ID : 99SPORT0137-2

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).
ndicates that the analyte was not detected at a concentration greater than the detection limit.
ndicates 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, Elise Hanson at 843-556-8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

Printed on recycled paper.

9903877-01

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9903877% Report Date: March 26, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Extractable Organics													
QC596867	BLANK	145344											
PCB-1260						0.00	ug/l				JLW	03/25/99	1937
*4CMX							ug/l		64.0	(31.0 - 126.)			
PCB-1016						0.00	ug/l						
PCB-1221						0.00	ug/l						
PCB-1232						0.00	ug/l						
PCB-1242						0.00	ug/l						
PCB-1248						0.00	ug/l						
PCB-1254						0.00	ug/l						
QC596964	9903891-01DUP	145344											
PCB-1260				0.00		3.60	ug/l	200			JLW	03/26/99	1218
*4CMX			0.2			0.102	ug/l		51.0				
PCB-1016				0.00		0.00	ug/l	0.00					
PCB-1221				0.00		0.00	ug/l	0.00					
PCB-1232				0.00		0.00	ug/l	0.00					
PCB-1242				0.00		0.00	ug/l	0.00					
PCB-1248				0.00		0.00	ug/l	0.00					
PCB-1254				0.00		0.00	ug/l	0.00					
QC596866	LCS	145344											
PCB-1260			1			0.930	ug/l		93.0	(54.5 - 126.)	JLW	03/25/99	2001
*4CMX			0.2			0.133	ug/l		66.5	(31.0 - 126.)			

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

GENERAL ENGINEERING LABORATORIES
PO Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(803) 556-8171 • Fax (803) 766-1178
Printed on recycled paper.

PWC00197

General Engineering Labor[illegible]ories, Inc.
2040 Savage Road
Charleston, South Caroli[illegible] 07
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

9903877

Client Name/Facility Name: SPORT ENVDET CHASN

Collected by/Company: SPORTENVDETCHASN

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

Φ-39195

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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			Remarks
1 - 99SPORTΦ137-2	3/24/99	1445				X	2													X					BLACK 55 gallon poly CONTAINER SWMU-17 DECON WATER.
																									NOTE: REPLACEMENT FOR SAMPLES SENT ON 3/22/99 FOR PCBs TEST ONLY.

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[illegible]	3-24-99	1500	W.R. Hiers, Jr.	W.R. Hiers, Jr.	3/24/99	1535	[illegible]
[illegible]	3/24/99	1540	[illegible]				

Received by lab by:	Date:	Time:	Remarks:
[illegible]	3/24/99	1540	

White = sample collector Yellow = file Pink = with report

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: April 24, 1998

Sample ID	: SPORT0652-1
Lab ID	: 9804296-01
Matrix	: Misc.-L
Date Collected	: 04/10/98
Date Received	: 04/13/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/l	1.0	JEB	04/22/98	1209	120337	
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-cis-Dichloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/l	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/l	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/l	1.0					
Acetone	U	1.45	5.00	10.0	ug/l	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/l	1.0					
Acrolein	U	0.00	10.0	20.0	ug/l	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/l	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/l	1.0					
Benzene	U	0.00	1.00	2.00	ug/l	1.0					
Bromoform	U	0.00	1.00	2.00	ug/l	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/l	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/l	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/l	1.0					

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: April 24, 1998

Sample ID : SPORT0652-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/l	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/l	1.0	JEB	04/22/98	1209	120337	1
Chloroform	U	0.00	1.00	2.00	ug/l	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/l	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/l	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/l	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/l	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/l	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/l	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/l	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/l	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/l	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/l	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/l	1.0					
Methylene Chloride	J	1.84	1.00	10.0	ug/l	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/l	1.0					
Styrene	U	0.00	1.00	2.00	ug/l	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
Toluene	U	0.00	1.00	2.00	ug/l	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/l	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/l	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/l	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/l	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/l	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/l	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/l	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/l	1.0					
Extractable Organics											
PCB analysis - 7 items											
PCB-1016	U	0.00	0.00545	0.100	mg/l	50.	JLS	04/16/98	1707	120123	2
PCB-1221	U	0.00	0.00545	0.100	mg/l	50.					
PCB-1232	U	0.00	0.00545	0.100	mg/l	50.					
PCB-1242	U	0.00	0.00545	0.100	mg/l	50.					
PCB-1248	U	0.00	0.00545	0.100	mg/l	50.					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 24, 1998

Sample ID : SPORT0652-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
PCB-1254	U	0.00	0.00545	0.100	mg/l	50.					
PCB-1260	J	0.0136	0.00545	0.100	mg/l	50.	JLS	04/16/98	1707	120123	2
General Chemistry											
Oil & Grease		101	1.67	2.00	mg/l	1.0	AAT	04/14/98	1500	120124	3
pH - 2 items											
pH		6.86	0.0100	0.0100	SU	1.0	LIB	04/13/98	1610	120055	4
pH Temperature		12.3	0.100	0.100	C	1.0					

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	0.00*	(42.0 - 166.)
Bromofluorobenzene	APP 9 VOA-8260	95.4	(80.0 - 128.)
Dibromofluoromethane	APP 9 VOA-8260	90.1	(67.7 - 135.)
Toluene-d8	APP 9 VOA-8260	92.1	(76.8 - 122.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8080
M 3	EPA 9071/413.1
M 4	EPA 9040

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.

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: April 24, 1998

Sample ID : SPORT0652-1

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.

Karen Blakeney

Reviewed By

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

(803) 556-8171 • Fax (803) 766-1178

9804296-01

Printed on recycled paper.

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 24, 1998

Sample ID	: SPORT0652-2
Lab ID	: 9804296-02
Matrix	: Misc.
Date Collected	: 04/13/98
Date Received	: 04/13/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Appendix IX Acid Compounds - 18 items											
2,3,4,6-Tetrachlorophenol	U	0.00	1000000	2000000	ug/kg	100	RLC	04/23/98	1334	120121	
2,4,5-Trichlorophenol	U	0.00	1000000	2000000	ug/kg	100					
2,4,6-Trichlorophenol	U	0.00	1000000	2000000	ug/kg	100					
2,4-Dichlorophenol	U	0.00	1000000	2000000	ug/kg	100					
2,4-Dimethylphenol	U	0.00	1000000	2000000	ug/kg	100					
2,4-Dinitrophenol	U	0.00	2000000	4000000	ug/kg	100					
2,6-Dichlorophenol	U	0.00	1000000	2000000	ug/kg	100					
2-Chlorophenol	U	0.00	1000000	2000000	ug/kg	100					
2-Nitrophenol	U	0.00	1000000	2000000	ug/kg	100					
2-methyl-4,6-dinitrophenol	U	0.00	1000000	2000000	ug/kg	100					
2-sec-Butyl-4,6-Dinitrophenol	U	0.00	1000000	2000000	ug/kg	100					
4-Nitrophenol	U	0.00	2000000	4000000	ug/kg	100					
4-chloro-3-methyl phenol	U	0.00	1000000	2000000	ug/kg	100					
Hexachlorophene	U	0.00	50000000	100000000	ug/kg	100					
Pentachlorophenol	U	0.00	1000000	2000000	ug/kg	100					
Phenol	U	0.00	1000000	2000000	ug/kg	100					
m,p-Cresol	U	0.00	2000000	4000000	ug/kg	100					
o-Cresol	U	0.00	1000000	2000000	ug/kg	100					
Appendix IX Base/Neutral Compounds - 102 items											
1,2,4,5-Tetrachlorobenzene	U	0.00	1000000	2000000	ug/kg	100					
1,2,4-Trichlorobenzene	U	0.00	1000000	2000000	ug/kg	100					
1,2-Dichlorobenzene	U	0.00	1000000	2000000	ug/kg	100					
1,3-Dichlorobenzene	U	0.00	1000000	2000000	ug/kg	100					
1,4-Dichlorobenzene	U	0.00	1000000	2000000	ug/kg	100					
1,4-Dioxane	U	0.00	1000000	2000000	ug/kg	100					
1,4-Naphthoquinone	U	0.00	1000000	2000000	ug/kg	100					
1-Naphthylamine	U	0.00	1000000	2000000	ug/kg	100					

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: April 24, 1998

Sample ID : SPORT0652-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
2,4-Dinitrotoluene	U	0.00	1000000	2000000	ug/kg	100					
2,6-Dinitrotoluene	U	0.00	1000000	2000000	ug/kg	100	RLC	04/23/98	1334	120121	1
2-Acetylaminofluorene	U	0.00	1000000	2000000	ug/kg	100					
2-Chloronaphthalene	U	0.00	1000000	2000000	ug/kg	100					
2-Methylnaphthalene	U	0.00	1000000	2000000	ug/kg	100					
2-Naphthylamine	U	0.00	1000000	2000000	ug/kg	100					
2-Picoline	U	0.00	1000000	2000000	ug/kg	100					
3,3'-Dichlorobenzidine	U	0.00	10000000	10000000	ug/kg	100					
3,3'-Dimethylbenzidine	U	0.00	5000000	10000000	ug/kg	100					
3-Methylcholanthrene	U	0.00	1000000	2000000	ug/kg	100					
4-Bromophenyl phenyl ether	U	0.00	1000000	2000000	ug/kg	100					
4-Chloroaniline	U	0.00	1000000	2000000	ug/kg	100					
4-Chlorophenyl phenyl ether	U	0.00	1000000	2000000	ug/kg	100					
4-Nitroquinoline-1-oxide	U	0.00	1000000	2000000	ug/kg	100					
4-aminobiphenyl	U	0.00	1000000	2000000	ug/kg	100					
5-Nitro-o-toluidine	U	0.00	1000000	2000000	ug/kg	100					
7,12-Dimethylbenz(a)anthracene	U	0.00	1000000	2000000	ug/kg	100					
Acenaphthene	U	0.00	1000000	2000000	ug/kg	100					
Acenaphthylene	U	0.00	1000000	2000000	ug/kg	100					
Acetophenone	U	0.00	1000000	2000000	ug/kg	100					
Aniline	U	0.00	1000000	2000000	ug/kg	100					
Anthracene	U	0.00	1000000	2000000	ug/kg	100					
Aramite	U	0.00	1000000	2000000	ug/kg	100					
Benzo(a)anthracene	U	0.00	1000000	2000000	ug/kg	100					
Benzo(a)pyrene	U	0.00	1000000	2000000	ug/kg	100					
Benzo(b)fluoranthene	U	0.00	1000000	2000000	ug/kg	100					
Benzo(ghi)perylene	U	0.00	1000000	2000000	ug/kg	100					
Benzo(k)fluoranthene	U	0.00	1000000	2000000	ug/kg	100					
Benzyl Alcohol	U	0.00	1000000	2000000	ug/kg	100					
Butyl benzyl phthalate	U	0.00	1000000	2000000	ug/kg	100					
Chlorobenzilate	U	0.00	5000000	10000000	ug/kg	100					
Chrysene	U	0.00	1000000	2000000	ug/kg	100					
Di-n-butyl phthalate	U	0.00	1000000	2000000	ug/kg	100					
Di-n-octyl phthalate	U	0.00	1000000	2000000	ug/kg	100					
Diallate	U	0.00	1000000	2000000	ug/kg	100					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 24, 1998

Sample ID : SPORT0652-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Dibenzo(a,h)anthracene	U	0.00	1000000	2000000	ug/kg	100					
Dibenzofuran	U	0.00	1000000	2000000	ug/kg	100	RLC	04/23/98	1334	120121	1
Diethyl phthalate	U	0.00	1000000	2000000	ug/kg	100					
Dimethoate	U	0.00	5000000	10000000	ug/kg	100					
Dimethyl phthalate	U	0.00	1000000	2000000	ug/kg	100					
Diphenylamine	U	0.00	1000000	2000000	ug/kg	100					
Disulfoton	U	0.00	1000000	2000000	ug/kg	100					
Ethyl Methanesulfonate	U	0.00	1000000	2000000	ug/kg	100					
Ethyl methacrylate	U	0.00	1000000	2000000	ug/kg	100					
Famphur	U	0.00	1000000	2000000	ug/kg	100					
Fluoranthene	U	0.00	1000000	2000000	ug/kg	100					
Fluorene	U	0.00	1000000	2000000	ug/kg	100					
Hexachlorobenzene	U	0.00	1000000	2000000	ug/kg	100					
Hexachlorobutadiene	U	0.00	1000000	2000000	ug/kg	100					
Hexachlorocyclopentadiene	U	0.00	1000000	2000000	ug/kg	100					
Hexachloroethane	U	0.00	1000000	2000000	ug/kg	100					
Hexachloropropene	U	0.00	1000000	2000000	ug/kg	100					
Indeno(1,2,3-c,d)pyrene	U	0.00	1000000	2000000	ug/kg	100					
Isodrin	U	0.00	1000000	2000000	ug/kg	100					
Isophorone	U	0.00	1000000	2000000	ug/kg	100					
Isosafrole	U	0.00	1000000	2000000	ug/kg	100					
Kepone	U	0.00	1000000	2000000	ug/kg	100					
Methapyrilene	U	0.00	5000000	10000000	ug/kg	100					
Methyl Methanesulfonate	U	0.00	1000000	2000000	ug/kg	100					
N-Nitrosodi-n-butylamine	U	0.00	1000000	2000000	ug/kg	100					
N-Nitrosodiethylamine	U	0.00	1000000	2000000	ug/kg	100					
N-Nitrosodimethylamine	U	0.00	1000000	2000000	ug/kg	100					
N-Nitrosodiphenylamine	U	0.00	1000000	2000000	ug/kg	100					
N-Nitrosodipropylamine	U	0.00	1000000	2000000	ug/kg	100					
N-Nitrosomethylethylamine	U	0.00	1000000	2000000	ug/kg	100					
N-Nitrosomorpholine	U	0.00	1000000	2000000	ug/kg	100					
N-Nitrosopiperidine	U	0.00	1000000	2000000	ug/kg	100					
N-Nitrosopyrolidine	U	0.00	1000000	2000000	ug/kg	100					
Naphthalene	U	0.00	1000000	2000000	ug/kg	100					
Nitrobenzene	U	0.00	1000000	2000000	ug/kg	100					

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 24, 1998

Sample ID : SPORT0652-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
O,O,O-Triethylphosphorothioate	U	0.00	1000000	2000000	ug/kg	100					
Pentachlorobenzene	U	0.00	1000000	2000000	ug/kg	100	RLC	04/23/98	1334	120121	1
Pentachloroethane	U	0.00	1000000	2000000	ug/kg	100					
Pentachloronitrobenzene	U	0.00	1000000	2000000	ug/kg	100					
Phenacetin	U	0.00	1000000	2000000	ug/kg	100					
Phenanthrene	U	0.00	1000000	2000000	ug/kg	100					
Pronamide	U	0.00	1000000	2000000	ug/kg	100					
Pyrene	U	0.00	1000000	2000000	ug/kg	100					
Pyridine	U	0.00	1000000	2000000	ug/kg	100					
Safrole	U	0.00	1000000	2000000	ug/kg	100					
Sulfotepp	U	0.00	1000000	2000000	ug/kg	100					
Thionazin	U	0.00	1000000	2000000	ug/kg	100					
a-,a-Dimethylphenethylamine	U	0.00	1200000	2000000	ug/kg	100					
bis(2-Chloroethoxy)methane	U	0.00	1000000	2000000	ug/kg	100					
bis(2-Chloroethyl) ether	U	0.00	1000000	2000000	ug/kg	100					
bis(2-Ethylhexyl)phthalate	U	0.00	1000000	2000000	ug/kg	100					
m-Dinitrobenzene	U	0.00	1000000	2000000	ug/kg	100					
m-Nitroaniline	U	0.00	1200000	2000000	ug/kg	100					
o-Nitroaniline	U	0.00	1000000	2000000	ug/kg	100					
o-Toluidine	U	0.00	1000000	2000000	ug/kg	100					
p-Dimethylaminoazobenzene	U	0.00	1000000	2000000	ug/kg	100					
p-Nitroaniline	U	0.00	1000000	2000000	ug/kg	100					
p-Phenylenediamine	U	0.00	2000000	4000000	ug/kg	100					
sym-Trinitrobenzene	U	0.00	5000000	10000000	ug/kg	100					
PCB analysis - 7 items											
PCB-1016	U	0.00	140000	175000	ug/kg	500	JLW	04/22/98	1729	120285	2
PCB-1221	U	0.00	140000	175000	ug/kg	500					
PCB-1232	U	0.00	140000	175000	ug/kg	500					
PCB-1242	U	0.00	140000	175000	ug/kg	500					
PCB-1248	U	0.00	140000	175000	ug/kg	500					
PCB-1254	U	0.00	140000	175000	ug/kg	500					
PCB-1260	U	737	140000	175000	ug/kg	500					
Metals Analysis											
Mercury	J	4.86	2.25	33.2	ug/kg	1.0	CRB	04/15/98	1550	120118	1
Silver	U	-7.05	487	1960	ug/kg	2.0	MBL	04/15/98	1903	120085	3

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: April 24, 1998

Sample ID : SPORT0652-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Arsenic		10300	364	1960	ug/kg	2.0					
Barium		37500	13.0	1960	ug/kg	2.0	MBL	04/15/98	1903	120085	3
Cadmium		1960	19.0	978	ug/kg	2.0					
Chromium		8100	117	1960	ug/kg	2.0					
Lead		380000	221	978	ug/kg	2.0					
Selenium		1380	280	978	ug/kg	2.0					

The following prep procedures were performed:

GC/MS Acid Compounds	JPB	04/15/98	0800	120121	4
GC/MS Base/Neutral Compounds	JPB	04/15/98	0800	120121	4
PCB's	HDB	04/17/98	1540	120285	4
Mercury	VMM	04/14/98	1700	120118	5
TRACE	FGD	04/14/98	1230	120085	6

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

Surrogate Recovery	Test	Percent%	Acceptable Limits
2,4,6-Tribromophenol	APP 9 ACID	0.00*	(19.0 - 122.)
2-Fluorophenol	APP 9 ACID	0.00*	(44.0 - 102.)
Phenol-d6	APP 9 ACID	0.00*	(45.0 - 111.)
2-Fluorobiphenyl	APP 9 B/N	0.00*	(30.0 - 114.)
Nitrobenzene-d5	APP 9 B/N	0.00*	(23.0 - 120.)
p-Terphenyl-d14	APP 9 B/N	0.00*	(52.0 - 135.)
4CMX	PCB	0.00*	(36.5 - 172.)

M = Method	Method-Description
M 1	EPA 8270

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

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: April 24, 1998

Sample ID : SPORT0652-2

M = Method	Method-Description
M 2	EPA 8080
M 3	EPA 6010A
M 4	EPA 3550
M 5	EPA 7471
M 6	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.

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

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(803) 556-8171 • Fax (803) 766-1178

9804296-02

Printed on recycled paper.

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Volatile Organics													
QC500874	BLANK	120337											
1,1-Dichloroethylene						0.00	ug/l				JEB	04/19/98	0924
Benzene						0.00	ug/l						
Chlorobenzene						0.00	ug/l						
Toluene						0.00	ug/l						
Trichloroethylene						0.00	ug/l						
*Bromofluorobenzene							ug/l		95.6	(60.2 - 139.)			
*Dibromofluoromethane							ug/l		91.8	(70.6 - 152.)			
*Toluene-d8							ug/l		90.9	(68.4 - 135.)			
1,1,1-Trichloroethane						0.00	ug/l						
1,1,2,2-Tetrachloroethane						0.00	ug/l						
1,1,2-Trichloroethane						0.00	ug/l						
1,1-Dichloroethane						0.00	ug/l						
1,2-Dichloroethane						0.00	ug/l						
1,2-Dichloropropane						0.00	ug/l						
Acrolein						0.00	ug/l						
Acrylonitrile						0.00	ug/l						
Bromoform						0.00	ug/l						
Carbon Tetrachloride						0.00	ug/l						
Chlorodibromomethane						0.00	ug/l						
Chloroethane						0.00	ug/l						
Chloroform						0.00	ug/l						
Dichlorobromomethane						0.00	ug/l						
Ethylbenzene						0.00	ug/l						
Methyl Bromide						0.00	ug/l						
Methyl Chloride						0.00	ug/l						
Methylene Chloride						0.800	ug/l						
Tetrachloroethylene						0.00	ug/l						
Vinyl chloride						0.00	ug/l						
Xylenes (TOTAL)						0.00	ug/l						
cis-1,3-Dichloropropylene						0.00	ug/l						
trans-1,3-Dichloropropylene						0.00	ug/l						
QC500877	9804372-04DUP	120337											
1,1-Dichloroethylene				0.00		0.00	ug/l	0.00			JEB	04/19/98	1624
Benzene				0.00		0.00	ug/l	0.00					
Chlorobenzene				0.00		0.00	ug/l	0.00					
Toluene				0.00		0.00	ug/l	0.00					
Trichloroethylene				0.00		0.00	ug/l	0.00					
*Bromofluorobenzene			50			47.5	ug/l		95.0				

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
*Dibromofluoromethane			50			47.6	ug/l		95.2		JEB	04/19/98	1624
*Toluene-d8			50			44.7	ug/l		89.3				
Ethylbenzene				0.00		0.00	ug/l	0.00					
Xylenes (TOTAL)				0.00		0.00	ug/l	0.00					
QC500875	9804372-02PS	120337											
1,1-Dichloroethylene			50	0.00		41.9	ug/l		83.8	(59.2 - 141.)	JEB	04/19/98	1403
Benzene			50	0.00		42.4	ug/l		84.8	(63.3 - 134.)			
Chlorobenzene			50	0.00		41.4	ug/l		82.7	(77.8 - 125.)			
Toluene			50	0.00		42.8	ug/l		85.7	(71.6 - 125.)			
Trichloroethylene			50	0.00		45.4	ug/l		90.9	(65.5 - 130.)			
*Bromofluorobenzene			50			49.0	ug/l		97.9	(60.2 - 139.)			
*Dibromofluoromethane			50			44.3	ug/l		88.5	(70.6 - 152.)			
*Toluene-d8			50			44.9	ug/l		89.9	(68.4 - 135.)			
QC500876	9804372-02PSD	120337											
1,1-Dichloroethylene			50	0.00		43.7	ug/l	4.16	87.3	(0.00 - 25.1)	JEB	04/19/98	1
Benzene			50	0.00		45.0	ug/l	6.06	90.1	(0.00 - 31.1)			
Chlorobenzene			50	0.00		43.8	ug/l	5.78	87.6	(0.00 - 22.7)			
Toluene			50	0.00		45.5	ug/l	6.00	91.0	(0.00 - 22.8)			
Trichloroethylene			50	0.00		48.2	ug/l	5.81	96.3	(0.00 - 36.9)			
*Bromofluorobenzene			50			48.2	ug/l		96.4	(60.2 - 139.)			
*Dibromofluoromethane			50			44.7	ug/l		89.3	(70.6 - 152.)			
*Toluene-d8			50			44.5	ug/l		89.0	(68.4 - 135.)			

* represent a surrogate.

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Extractable Organics													
QC500120	BLANK	120121											
1,2,4-Trichlorobenzene						0.00	ug/kg				RLC	04/23/98	1441
1,4-Dichlorobenzene						0.00	ug/kg						
2,4-Dinitrotoluene						0.00	ug/kg						
2-Chlorophenol						0.00	ug/kg						
4-Nitrophenol						0.00	ug/kg						
4-chloro-3-methyl phenol						0.00	ug/kg						
Acenaphthene						0.00	ug/kg						
N-Nitrosodipropylamine						0.00	ug/kg						
Pentachlorophenol						0.00	ug/kg						
Phenol						0.00	ug/kg						
Pyrene						0.00	ug/kg						
*2,4,6-Tribromophenol							ug/kg		81.8	(40.3 - 122.)	RLC	04/23/98	
*2-Fluorobiphenyl							ug/kg		88.9	(30.0 - 115.)			
*2-Fluorophenol							ug/kg		80.0	(25.0 - 121.)			
*Nitrobenzene-d5							ug/kg		94.6	(23.0 - 120.)			
*Phenol-d6							ug/kg		79.4	(24.0 - 113.)			
*p-Terphenyl-d14							ug/kg		85.1	(37.3 - 128.)			
1,2,4,5-Tetrachlorobenzene						0.00	ug/kg				RLC	04/23/98	1441
1,2-Dichlorobenzene						0.00	ug/kg						
1,3-Dichlorobenzene						0.00	ug/kg						
1,4-Dioxane						0.00	ug/kg						
1,4-Naphthoquinone						0.00	ug/kg						
1-Naphthylamine						0.00	ug/kg						
2,3,4,6-Tetrachlorophenol						0.00	ug/kg						
2,4,5-Trichlorophenol						0.00	ug/kg						
2,4,6-Trichlorophenol						0.00	ug/kg						
2,4-Dichlorophenol						0.00	ug/kg						
2,4-Dimethylphenol						0.00	ug/kg						
2,4-Dinitrophenol						0.00	ug/kg						
2,6-Dichlorophenol						0.00	ug/kg						
2,6-Dinitrotoluene						0.00	ug/kg						
2-Acetylaminofluorene						0.00	ug/kg						
2-Chloronaphthalene						0.00	ug/kg						
2-Methylnaphthalene						0.00	ug/kg						
2-Naphthylamine						0.00	ug/kg						
2-Nitrophenol						0.00	ug/kg						
2-Picoline						0.00	ug/kg						
2-methyl-4,6-dinitrophenol						0.00	ug/kg						

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
2-sec-Butyl-4,6-Dinitrophenol						0.00	ug/kg				RLC	04/23/98	1441
3,3'-Dichlorobenzidine						0.00	ug/kg						
3,3'-Dimethylbenzidine						0.00	ug/kg						
3-Methylcholanthrene						0.00	ug/kg						
4-Bromophenyl phenyl ether						0.00	ug/kg						
4-Chloroaniline						0.00	ug/kg						
4-Chlorophenyl phenyl ether						0.00	ug/kg						
4-Nitroquinoline-1-oxide						0.00	ug/kg						
4-aminobiphenyl						0.00	ug/kg						
5-Nitro-o-toluidine						0.00	ug/kg						
7,12-Dimethylbenz(a)anthracene						0.00	ug/kg						
Acenaphthylene						0.00	ug/kg						
Acetophenone						0.00	ug/kg						
Aniline						0.00	ug/kg						
Anthracene						0.00	ug/kg						
Aramite						0.00	ug/kg						
Benzo(a)anthracene						0.00	ug/kg						
Benzo(a)pyrene						0.00	ug/kg						
Benzo(b)fluoranthene						0.00	ug/kg						
Benzo(ghi)perylene						0.00	ug/kg						
Benzo(k)fluoranthene						0.00	ug/kg						
Benzyl Alcohol						0.00	ug/kg						
Butyl benzyl phthalate						0.00	ug/kg						
Chlorobenzilate						0.00	ug/kg						
Chrysene						0.00	ug/kg						
Di-n-butyl phthalate						0.00	ug/kg						
Di-n-octyl phthalate						0.00	ug/kg						
Diallate						0.00	ug/kg						
Dibenzo(a,h)anthracene						0.00	ug/kg						
Dibenzofuran						0.00	ug/kg						
Diethyl phthalate						0.00	ug/kg						
Dimethoate						0.00	ug/kg						
Dimethyl phthalate						0.00	ug/kg						
Diphenylamine						0.00	ug/kg						
Disulfoton						0.00	ug/kg						
Ethyl Methanesulfonate						0.00	ug/kg						
Ethyl methacrylate						0.00	ug/kg						
Famphur						0.00	ug/kg						
Fluoranthene						0.00	ug/kg						
Fluorene						0.00	ug/kg						

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Hexachlorobenzene						0.00	ug/kg				RLC	04/23/98	1441
Hexachlorobutadiene						0.00	ug/kg						
Hexachlorocyclopentadiene						0.00	ug/kg						
Hexachloroethane						0.00	ug/kg						
Hexachlorophene						0.00	ug/kg						
Hexachloropropene						0.00	ug/kg						
Indeno(1,2,3-c,d)pyrene						0.00	ug/kg						
Isodrin						0.00	ug/kg						
Isophorone						0.00	ug/kg						
Isosafrole						0.00	ug/kg						
Kepone						0.00	ug/kg						
Methapyrilene						0.00	ug/kg						
Methyl Methanesulfonate						0.00	ug/kg						
N-Nitrosodi-n-butylamine						0.00	ug/kg						
N-Nitrosodiethylamine						0.00	ug/kg						
N-Nitrosodimethylamine						0.00	ug/kg						
N-Nitrosodiphenylamine						0.00	ug/kg						
N-Nitrosomethylethylamine						0.00	ug/kg						
N-Nitrosomorpholine						0.00	ug/kg						
N-Nitrosopiperidine						0.00	ug/kg						
N-Nitrosopyrolidine						0.00	ug/kg						
Naphthalene						0.00	ug/kg						
Nitrobenzene						0.00	ug/kg						
O,O,O-Triethylphosphorothioate						0.00	ug/kg						
Pentachlorobenzene						0.00	ug/kg						
Pentachloroethane						0.00	ug/kg						
Pentachloronitrobenzene						0.00	ug/kg						
Phenacetin						0.00	ug/kg						
Phenanthrene						0.00	ug/kg						
Pronamide						0.00	ug/kg						
Pyridine						0.00	ug/kg						
Safrole						0.00	ug/kg						
Sulfotepp						0.00	ug/kg						
Thionazin						0.00	ug/kg						
a-,a-Dimethylphenethylamine						0.00	ug/kg						
bis(2-Chloroethoxy)methane						0.00	ug/kg						
bis(2-Chloroethyl) ether						0.00	ug/kg						
bis(2-Ethylhexyl)phthalate						0.00	ug/kg						
m,p-Cresol						0.00	ug/kg						
m-Dinitrobenzene						0.00	ug/kg						

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
m-Nitroaniline						0.00	ug/kg				RLC	04/23/98	1441
o-Cresol						0.00	ug/kg						
o-Nitroaniline						0.00	ug/kg						
o-Toluidine						0.00	ug/kg						
p-Dimethylaminoazobenzene						0.00	ug/kg						
p-Nitroaniline						0.00	ug/kg						
p-Phenylenediamine						0.00	ug/kg						
sym-Trinitrobenzene						0.00	ug/kg						
QC500121	LCS	120121											
1,2,4-Trichlorobenzene			1630			1510	ug/kg		92.6	(48.6 - 117.)	JCB	04/22/98	1514
1,4-Dichlorobenzene			1630			1270	ug/kg		77.9	(47.8 - 105.)			
2,4-Dinitrotoluene			1630			1490	ug/kg		91.6	(51.1 - 120.)			
-Chlorophenol			3270			2430	ug/kg		74.2	(51.2 - 96.4)			
4-Nitrophenol			3270			3110	ug/kg		95.0	(37.0 - 113.)			
4-chloro-3-methyl phenol			3270			2530	ug/kg		77.4	(56.1 - 109.)			
Acenaphthene			1630			1460	ug/kg		89.6	(55.3 - 116.)			
N-Nitrosodipropylamine			1630			1130	ug/kg		69.2	(38.1 - 134.)			
Pentachlorophenol			3270			3320	ug/kg		101	(37.0 - 134.)			
Phenol			3270			2160	ug/kg		66.1	(29.2 - 103.)			
Pyrene			1630			1360	ug/kg		83.2	(60.6 - 115.)			
*2,4,6-Tribromophenol			3260			2930	ug/kg		89.9	(40.3 - 122.)			
*2-Fluorobiphenyl			1630			1610	ug/kg		98.6	(30.0 - 115.)			
*2-Fluorophenol			3260			2380	ug/kg		73.0	(25.0 - 121.)			
*Nitrobenzene-d5			1630			1360	ug/kg		83.3	(23.0 - 120.)			
*Phenol-d6			3260			2470	ug/kg		75.6	(24.0 - 113.)			
*p-Terphenyl-d14			1630			1290	ug/kg		79.1	(37.3 - 128.)			
QC500122	9804295-02MS	120121											
1,2,4-Trichlorobenzene			1630	0.00		1380	ug/kg		84.6	(29.5 - 133.)	JCB	04/22/98	1546
1,4-Dichlorobenzene			1630	0.00		1200	ug/kg		73.5	(23.3 - 117.)			
2,4-Dinitrotoluene			1630	0.00		1460	ug/kg		89.5	(40.1 - 132.)			
Acenaphthene			1630	25.3		1390	ug/kg		85.0	(47.0 - 139.)			
N-Nitrosodipropylamine			1630	0.00		1260	ug/kg		77.3	(19.8 - 148.)			
Pyrene			1630	106		1430	ug/kg		87.6	(52.0 - 115.)			
*2-Fluorobiphenyl			1630			1500	ug/kg		92.0	(30.0 - 115.)			
*Nitrobenzene-d5			1630			1390	ug/kg		85.2	(23.0 - 120.)			
*p-Terphenyl-d14			1630			1270	ug/kg		77.9	(37.3 - 128.)			
QC500123	9804295-02MSD	120121											
1,2,4-Trichlorobenzene			1630	0.00		993	ug/kg	32.5**	60.9	(0.00 - 30.0)	JCB	04/22/98	
1,4-Dichlorobenzene			1630	0.00		860	ug/kg	32.9**	52.7	(0.00 - 30.0)			
2,4-Dinitrotoluene			1630	0.00		914	ug/kg	45.9**	56.1	(0.00 - 30.0)			

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Acenaphthene			1630	25.3		978	ug/kg	34.4**	60.0	(0.00 - 30.0)	JCB	04/22/98	1619
N-Nitrosodipropylamine			1630	0.00		779	ug/kg	47.2**	47.8	(0.00 - 30.0)			
Pyrene			1630	106		905	ug/kg	44.9**	55.5	(0.00 - 30.0)			
*2-Fluorobiphenyl			1630			1020	ug/kg		62.8	(30.0 - 115.)			
*Nitrobenzene-d5			1630			908	ug/kg		55.7	(23.0 - 120.)			
*p-Terphenyl-d14			1630			808	ug/kg		49.5	(37.3 - 128.)			
QC500129	BLANK	120123											
PCB-1260						0.00	mg/l				JLS	04/16/98	1333
*4CMX							mg/l		56.0	(-)			
PCB-1016						0.00	mg/l						
PCB-1221						0.00	mg/l						
PCB-1232						0.00	mg/l						
PCB-1242						0.00	mg/l						
PCB-1248						0.00	mg/l						
PCB-1254						0.00	mg/l						
QC500669	BLANK	120285											
PCB-1260						0.00	ug/kg				JLW	04/21/98	1510
*4CMX							ug/kg		68.6	(36.5 - 172.)			
PCB-1016						0.00	ug/kg						
PCB-1221						0.00	ug/kg						
PCB-1232						0.00	ug/kg						
PCB-1242						0.00	ug/kg						
PCB-1248						0.00	ug/kg						
PCB-1254						0.00	ug/kg						
QC500130	LCS	120123											
PCB-1260			0.001			0.000770	mg/l		77.0	(-)	JLS	04/16/98	1409
*4CMX			0.0002			0.000110	mg/l		55.0	(-)			
QC500670	LCS	120285											
PCB-1260			32.8			34.8	ug/kg		106	(51.2 - 137.)	JLW	04/21/98	1546
*4CMX			6.56			4.80	ug/kg		73.2	(36.5 - 172.)			
QC500131	LCS DUP	120123											
PCB-1260			0.001			0.000846	mg/l	9.40	84.6	(-)	JLS	04/16/98	1445
*4CMX			0.0002			0.000115	mg/l		57.5	(-)			

* represent a surrogate.

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Metals Analysis													
QC500104	BLANK	120118											
Mercury						0.00833	mg/kg				CRB	04/15/98	1539
QC500105	LCS	120118											
Mercury			5			5.24	mg/kg		105	(67.9 - 130.)	CRB	04/15/98	1542
QC500106	LCS DUP	120118											
Mercury			5			5.60	mg/kg	6.53	112	(0.00 - 20.0)	CRB	04/15/98	1545
QC500107	9804086-01MS	120118											
Mercury			0.293	0.590		1.49	mg/kg		98.5	(63.3 - 139.)	CRB	04/15/98	1620
QC500109	9804319-05MS	120118											
Mercury			0.324	0.00655		0.365	mg/kg		111	(63.3 - 139.)	CRB	04/15/98	1625
QC500108	9804086-01MSD	120118											
Mercury			0.292	0.590		1.88	mg/kg	36.0**	142	(0.00 - 32.0)	CRB	04/15/98	1[illegible]
QC499977	BLANK	120085											
Arsenic						-1370	ug/kg				MBL	04/15/98	1[illegible]
Barium						235	ug/kg						
Cadmium						140	ug/kg						
Chromium						173	ug/kg						
Lead						337	ug/kg						
Selenium						-729	ug/kg						
Silver						876	ug/kg						
QC499978	LCS	120085											
Arsenic			47600			25800	ug/kg		54.2**	(83.3 - 124.)	MBL	04/15/98	1824
Barium			20300			15900	ug/kg		78.1**	(88.7 - 159.)			
Cadmium			219000			112000	ug/kg		51.1**	(76.6 - 119.)			
Chromium			95900			68400	ug/kg		71.3	(70.7 - 159.)			
Lead			266000			134000	ug/kg		50.4**	(77.1 - 116.)			
Selenium			101000			49400	ug/kg		48.9**	(79.7 - 121.)			
Silver			48600			28800	ug/kg		59.2**	(89.4 - 135.)			
QC499979	LCS	120085											
Arsenic			500000			488000	ug/kg		97.5	(83.3 - 124.)	MBL	04/15/98	1831
Barium			500000			531000	ug/kg		106	(88.7 - 159.)			
Cadmium			500000			535000	ug/kg		107	(76.6 - 119.)			
Chromium			500000			516000	ug/kg		103	(70.7 - 159.)			
Lead			500000			511000	ug/kg		102	(77.1 - 116.)			
Selenium			500000			449000	ug/kg		89.9	(79.7 - 121.)			
Silver			500000			515000	ug/kg		103	(89.4 - 135.)			
QC499981	9804275-01MS	120085											
Arsenic			98200	1670		319000	ug/kg		90.5	(62.4 - 125.)	MBL	04/15/98	
Cadmium			98200	664		338000	ug/kg		96.2	(68.6 - 125.)			

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Chromium			98200	6600		340000	ug/kg		95.1	(61.4 - 136.)	MBL	04/15/98	1850
Lead			98200	14700		339000	ug/kg		92.6	(56.3 - 135.)			
Selenium			98200	2600		305000	ug/kg		86.1	(63.9 - 120.)			
QC499982	9804275-01MSD	120085											
Arsenic			98400	1670		331000	ug/kg	3.50	93.7	(0.00 - 28.1)	MBL	04/15/98	1856
Cadmium			98400	664		351000	ug/kg	3.53	99.7	(0.00 - 24.3)			
Chromium			98400	6600		355000	ug/kg	4.13	99.1	(0.00 - 26.8)			
Lead			98400	14700		350000	ug/kg	3.01	95.4	(0.00 - 34.0)			
Selenium			98400	2600		320000	ug/kg	4.63	90.2	(0.00 - 21.7)			
QC499980	9804275-01SERIAL	120085											
Arsenic				1670		-743	ug/kg	200			MBL	04/15/98	1844
Cadmium				664		930	ug/kg	36.0					
Chromium				6600		9130	ug/kg	37.2					
Lead				14700		13500	ug/kg	74.3					
Selenium				2600		2560	ug/kg	200					

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Lab. Sample ID: 9804296% Report Date: April 24, 1998

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
General Chemistry													
QC500132	BLANK	120124											
Oil & Grease						0.00	mg/l				AAT	04/14/98	1500
QC500140	9804253-02DUP	120124											
Oil & Grease				11.4		1.93	mg/l	142					
QC500133	LCS	120124											
Oil & Grease			512			475	mg/l		92.7	(68.3 - 116.)			
QC500139	LCS	120124											
Oil & Grease			23.7			21.6	mg/l		91.0	(68.3 - 116.)			
QC500134	LCS DUP	120124											
Oil & Grease			508			421	mg/l	11.2	82.8	(0.00 - 30.0)			
QC500141	9804289-07MS	120124											
Oil & Grease			547	44.7		502	mg/l		83.6	(-)			
QC499861	9804296-01DUP	120055											
pH				6.86		6.91	mg/l	0.726			LIB	04/13/98	
pH Temperature				12.3		13.1	mg/l	6.30					
QC499862	LCS	120055											
pH			(nom_conc = 0)			7.04	mg/l				LIB	04/13/98	1624

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

NPUA 00197

General Engineering La[illegible] [illegible]c.
2040 Savage Road
Charleston, South Caroli[illegible] [illegible]407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

9804296

Page 1 of 1

Client Name/Facility Name: SPORTENV DETCHMSN

Collected by/Company: SPORTENV DETCHMSN

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

CCL 32204

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	RCRA METALS specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	APP IX VOA	oil/GAS/ME	Remarks	
01	SPORT0652-1	4/13/98	1050				X	6	X												X			X	X	NBCH/SUMP SA SUMU-17 3/25/78	.1
02	SPORT0652-2	4/13/98	1000				X	1							X				X	X	X					NBCH/SUMP SA waste oil 4/6/78	.2

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[illegible]	4/13/98	1130	[illegible]	[illegible]	4/13/98	1200	Stephanie Bedenton

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
Stephanie Bedenton	4-13-98	12:30	Karen Blakeney	4/13/98	12:30	

White = sample collector Yellow = file Pink = with report