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RCRA PERMIT RENEWAL APPLICATION CNC CHARLESTON SC
9/29/1997
NAVFAC SOUTHERN

**RCRA Permit Renewal
Application
Charleston Naval Complex
SC 0170022560**



29 September 1997

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Charleston Naval Complex
Revision No.
Section A
Date 12 5 81 1997

SECTION A

PART A APPLICATION

A - 1 RCRA Permit Application

Charleston Naval Complex is a federal property resulting from the dis-establishment of the Charleston Naval Shipyard and Charleston Naval Base on April 1, 1996. Reuse of the property is accomplished through property transfers and use agreements with other federal agencies and through leases and licenses issued to the Charleston Naval Complex Redevelopment Authority (CNCRA) for use by private interests. Remediation of Solid Waste Management Units (SWMUs) is expected to generate waste in addition to waste generated from process closures. Hazardous waste storage facilities in Building 1640 (DRMO) and Building 246 (Mixed Waste Storage) have been closed in accordance with requirements of the Part B permit effective June 4, 1990.

For EPA Regional Use Only	 United States Environmental Protection Agency Washington, DC 20460 <h2 style="margin: 0;">Hazardous Waste Permit Application</h2> <h3 style="margin: 0;">Part A</h3> <p style="font-size: small; margin: 5px 0;">(Read the instructions before starting)</p>
Date Received Month Day Year	

I. Installation's EPA ID Number (Mark 'X' in the appropriate box):

<input type="checkbox"/> A. First Part A Submission	<input checked="" type="checkbox"/> B. Part A Amendments
---	--

C. Installation's EPA ID Number S C 0 1 7 0 0 2 2 5 6 0	D. Secondary ID Number (if applicable)
---	---

II. Name of Facility:
 C H A R L E S T O N N A V A L C O M P L E X

III. Facility Location (Physical address not P.O. Box or Route Number):

A. Street:
 1 6 9 0 T U R N B U L L A V E S U I T E N H - 5 1

Street (Continued)

City or Town: C H A R L E S T O N	State: S C	Zip Code: 2 9 4 0 5 -
County Code: C H A R L E S T O N	County Name:	

E. Land Type: F	C. Geographic Location: LATITUDE (Degrees, minutes, & seconds): 3 2 5 1 5 1 LONGITUDE (Degrees, minutes & seconds): 7 8 5 8 1 5	D. Facility Existence Date: Months: 0 6 0 4 1 9 9 0
---------------------------	--	---

IV. Facility Mailing Address:

Street or P.O. Box:
 C S O P O B O X 1 9 0 0 1 0

City or Town: N O R T H C H A R L E S T O N	State: S C	Zip Code: 2 9 4 1 9 - 9 0 1 0
---	----------------------	---

V. Facility Contact (Person to be contacted regarding waste activities at facility):

Name (Last): D R A W D Y	(First): W I L L I A M
Job Title: S U P V E N V E N G R	Phone Number (Area Code and Number): 8 0 3 - 7 4 3 - 9 9 8 5

VI. Facility Contact Address (See instructions):

A. Contact Address Location: Mailing: Other:	B. Street or P.O. Box:
<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	City or Town: State: Zip Code:

EPA I.D. Number (Enter from page 1)	Secondary ID Number (Enter from page 1)
S C 0 1 7 0 0 2 2 5 6 0	

VII. Operator Information (See instructions)

Name of Operator
N A V A L F A C I L I T I E S E N G C O M M A N D

Street or P.O. Box
P O B O X 1 9 0 0 1 0

City or Town:	State:	ZIP Code:
N O R T H C H A R L E S T O N	S C	2 9 4 1 9 - 9 0 1 0

Phone Number (Area Code and Number)	B. Operator Type:	C. Change of Operator Indicator:	Date Changed:		
8 0 3 - 7 4 3 - 9 9 8 5	F	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Month: 0 4	Day: 0 1	Year: 9 6

VIII. Facility Owner (See instructions)

A. Name of Facility's Legal Owner
N A V A L F A C I L I T I E S E N G C O M M A N D

Street or P.O. Box
P O B O X 1 9 0 0 1 0

City or Town:	State:	ZIP Code:
N O R T H C H A R L E S T O N	S C	2 9 4 1 9 - 9 0 1 0

Phone Number (Area Code and Number)	B. Owner Type:	C. Change of Owner Indicator:	Date Changed:		
8 0 3 - 7 4 3 - 9 9 8 5	F	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Month: 0 4	Day: 0 1	Year: 9 6

DC SIC Codes (4-digit in order of significance)

Primary:	Secondary:
9 7 1 1 (Description) National Security	(Description)
Secondary:	Secondary:
(Description)	(Description)

X. Other Environmental Permits (See instructions)

	A. Permit Type (Enter code)	B. Permit Number	C. Description
N		S C 0 0 0 3 8 1 6	SC DHEC Wastewater Permit, NPDES
E		2 0 0 8	N. Chas Sewer, Wastewater Permit
E		1 0 1 0 5 0 2	SC DHEC Potable Water
R	E P A	1 7 0 0 2 2 5 6 0	Federal Hazardous Waste Permit
R	S C 0	1 7 0 0 2 2 5 6 0	SC DHEC Hazardous Waste Permit
R	S C 0	1 7 0 0 2 2 5 6 0	SC DHEC Hazardous Waste Transporter Permit
N		S C 0 0 0 3 8 1 6	Group NPDES Stormwater Permit (ERA)

EPA I.D. Number (Enter from page 1)

Secondary ID Number (Enter from page 1)

S C 0 1 7 0 0 2 2 5 6 0

XI. Nature of Business (Provide a brief description)

The Charleston Naval Complex was established after closure of the Charleston Naval Base on 1 April 1996. The Navy is performing corrective action processes throughout the facility in order to convey property to private industry for reuse.

XII. Process Codes and Design Capacities.

- A. PROCESS CODE** - Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in Item XIII.
- B. PROCESS-DESIGN CAPACITY** - For each code entered in column A, enter the capacity of the process.
 - 1. **AMOUNT** - Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action), enter the total amount of waste for that process.
 - 2. **UNIT OF MEASURE** - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.
- C. PROCESS-TOTAL NUMBER OF UNITS** - Enter the total number of units used with the corresponding process code.

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	
<i>Disposal:</i>			T87	Smelting, Melting, Or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Day; Metric Tons Per Hour; or Btu's Per Hour	
D79	Underground Injection	Gallons; Liters; Gallons Per Day; or Liters Per Day	T88	Titanium Dioxide Chloride Process Oxidation Reactor		
D80	Landfill	Acre-feet or Hectare-meter	T89	Methane Reforming Furnace		
D81	Land Treatment	Acres or Hectares	T90	Pulping Liquor Recovery Furnace		
D82	Ocean Disposal	Gallons Per Day or Liters Per Day	T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid		
D83	Surface Impoundment	Gallons or Liters	T92	Halogen Acid Furnaces		
D99	Other Storage	Any Unit of Measure Listed Below	T93	Other Industrial Furnaces Listed in 40 CFR §260.10		
<i>Storage:</i>			T94	Containment Building		Cubic Yards or Cubic Meters
S01	Container (Barrel, Drum, Etc.)	Gallons or Liters	<i>Miscellaneous (Subpart XI):</i>			
S02	Tank	Gallons or Liters	X01	Open Burning/Open Detonation		Any Unit of Measure Listed Below
S03	Waste Pile	Cubic Yards or Cubic Meters	X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; or Kilograms Per Hour	
S04	Surface Impoundment	Gallons or Liters	X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour	
S05	Drip Pad	Gallons or Liters	X04	Geologic Repository	Cubic Yards or Cubic Meters	
S06	Containment Building	Cubic Yards or Cubic Meters	X99	Other Subpart X	Any Unit of Measure Listed Below	
S99	Other Disposal	Any Unit of Measure Listed Below				
<i>Treatment:</i>						
T01	Tank	Gallons Per Day or Liters Per Day				
T02	Surface Impoundment	Gallons Per Day or Liters Per Day				
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; or Btu's Per Hour				
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour				
T80	Boiler	Gallons or Liters				
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour				
T82	Lime Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour				
T83	Aggregate Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour				
T84	Phosphate Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour				
T85	Coke Oven	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour				
T86	Blast Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour				

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G	Short Tons Per Hour	D	Cubic Yards	Y
Gallons Per Hour	E	Metric Tons Per Hour	W	Cubic Meters	C
Gallons Per Day	U	Short Tons Per Day	N	Acres	B
Liters	L	Metric Tons Per Day	S	Acre-foot	A
Liters Per Hour	H	Pounds Per Hour	J	Hectares	Q
Liters Per Day	V	Kilograms Per Hour	R	Hectare-meter	F
				Btu's Per Hour	I

EPA I.D. Number (Enter from page 1)	Secondary ID Number (Enter from page 1)
S C 0 1 7 0 0 2 2 5 6 0	

XII. Process Codes and Design Capabilities (Continued)

EXAMPLE FOR COMPLETING ITEM XII (shown in line number X-1 below): A facility has a storage tank, which can hold 533,788 gallons.

Line Number	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY		C. Process Total Number Of Units	For Official Use Only
		1. Amount (Specify)	2. Unit Of Measure (Enter code)		
X 1	S 0 2	5 3 3 7 8 8	G	0 0 1	
2					
3		*See Section B for past wastes managed at the TSDF.			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in item XIII.

XIII Other Processes (Follow instructions from item XII for D99, S99, T04 and X99 process codes)

Line Number (Enter as in reg. 201)	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY		C. Process Total Number Of Units	D. Description Of Process
		1. Amount (Specify)	2. Unit Of Measure (Enter code)		
X 1	T 0 4				In-situ Vitrification
2					
3					
4					

EPA I.D. Number (Enter from page 1)

Secondary ID Number (Enter from page 1)

S C 0 1 7 0 0 2 2 5 6 0

XIV. Description of Hazardous Wastes.

A. EPA HAZARDOUS WASTE NUMBER - Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES:

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A, on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A, on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous waste that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

- Enter the first two as described above.
- Enter "000" in the extreme right box of Item XIV-D(1).
- Enter in the space provided on page 7, Item XIV-E, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form (D(2)).

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

- Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "Included with above" and make no other entries on that line.
- Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARD WASTE NO. (Enter code)				B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS								
	1	2	3	4			(1) PROCESS CODES (Enter)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))					
1	K	0	5	4	900	P	T	0	3	D	8	0			
2	D	0	0	2	400	P	T	0	3	D	8	0			
X-3	D	0	0	1	100	P	T	0	3	D	8	0			
X-4	D	0	0	2											Included With Above

EPA I.D. Number (Enter from page 1)	Secondary ID Number (Enter from page 1)
S C 0 1 7 0 0 2 2 5 6 0	

(IV. Description of Hazardous Wastes (Continued))

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES			
				(1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1							
2							
3							
4							
5				* See Section B for past wastes managed at the TSDF.			
6							
7							
8							
9							
1 0							
1 1							
1 2							
1 3							
1 4							
1 5							
1 6							
1 7							
1 8							
1 9							
2 0							
2 1							
2 2							
2 3							
2 4							
2 5							
2 6							
2 7							
2 8							
2 9							
3 0							
3 1							
3 2							
3 3							

EPA I.D. Number (Enter from page 1) S C 0 1 7 0 0 2 2 5 6 0	Secondary ID Number (Enter from page 1) _____
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XV. Map

Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (See instructions for more detail).

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

XVIII. Certification(s)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature  Date Signed 9/25/97

Name and Official Title (Type or print)
PAUL M. ROSE, LCDR, CEC, U. S. Navy, Caretaker Site Officer

Owner Signature _____ Date Signed _____

Name and Official Title (Type or print)

Operator Signature  Date Signed 9/25/97

Name and Official Title (Type or print)
PAUL M. ROSE, LCDR, CEC, U. S. Navy, Caretaker Site Officer

Operator Signature _____ Date Signed _____

Name and Official Title (Type or print)

XIX. Comments:

Note: Mail completed form to the appropriate EPA Regional or State Office. (Refer to instructions for more information)

HAZARDOUS WASTE PERMIT APPLICATION PART A

ITEM XV - MAP

A topographic map of the Charleston Naval Complex is provided in Appendix F-5 of the Part B Permit Application.

ITEM XVI - FACILITY DRAWING

A scale drawing of the Charleston Naval Complex facilities is provided in Appendix F-1 of the Part B Permit Application.

SECTION B

FACILITY DESCRIPTION

The information in this section is submitted in accordance with the requirements of 40 CFR 270.14(b). This description is intended to acquaint the permit application reviewer/permit writer with an overview of the facilities. Specific information required by 40 CFR 270.14(b) (10), (11), and (19) is also included in this section.

LOCATION AND SITE DESCRIPTION

Naval Base Charleston

Naval Base Charleston closed on April 1, 1996. After closure, the facility was renamed the Charleston Naval Complex. The Charleston Naval Complex consists of 1,588 acres and is located on the banks of the Cooper River in Charleston County, South Carolina, approximately five miles north of the City of Charleston. Much of the area north and south of the Charleston Naval Complex along the Cooper River are well-established industrial areas and are currently occupied by several large industrial facilities. Low-income residential and commercial properties are located immediately west of the Charleston Naval Complex along Spruill and Rivers Avenues. Facility maps of the base are included in Appendix F-1. An index of structures corresponding to the facility maps is located in Appendix F-4. Facility maps that provide legal boundaries are in Appendix F-1. The Charleston Naval Complex contains a fence around the legal boundary of the complex. The only gate open in which to enter or exit the facility is on McMillan Avenue. This gate is manned by the North Charleston Police Department 24 hours a day.

Naval Station Annex

The Naval Station Annex consists of 42 acres located to the south of Remount Road between I-26 and Airport Boulevard. The boundaries of the Naval Station Annex are shown in Appendix F-2. The Naval Station Annex borders its property with a fence. There are several gates that are locked with a deadbolt in which **only authorized personnel possess a key**. The Marine Corps Reserve Center and an Army Reserve Center occupy portions of the Naval Station Annex. The area surrounding the Naval Station Annex is primarily industrial and commercial. The Charleston Air Force Base/Charleston International Airport and other industrial facilities are adjacent to the property to the west. The areas north, south and east of the Annex are primarily commercial and light industrial

properties. Residential areas are within one-mile east, southeast and northeast of the Naval Station Annex.

Clouter Island

Clouter Island lies across the Cooper River from the Naval Base. Only the southern tip of the island is being investigated which the Navy used previously for ordnance storage.

Short Stay

Short Stay is a small peninsula located approximately six miles north of Monck's Corner, South Carolina on Lake Moultrie. The legal boundaries of Short Stay are shown in Appendix F-3.

Corrective Action Processes

As owners of the Charleston Naval Complex, the Navy is in the processes of conveying their property for redevelopment. The only remaining Navy activities that generate hazardous waste are from the corrective action processes. Corrective action processes are taking place throughout the facility. As described in Section 2.0 of Volume I (Project Management Plan) of the Comprehensive RFI Work Plan, dated June 25, 1997, the technical approach used for conducting the RCRA corrective action included subdividing the base into discrete zones for RFI investigation. Subdividing the zones allowed the development of zone-specific workplans and reports, which are shown in Section L of this permit application. There are a total of 12 zones, labeled alphabetically from A to K. Eleven of the zones are associated with the Naval Base and one zone, Zone K, addresses non-contiguous properties. The boundaries of each zone are described in the respective Zone RFI work plan and includes a complete description and location of the sites contained within that zone. A general description of the individual zones located on the Naval Base is provided below:

Zone A is at the extreme northern portion of the Naval Base and includes all base areas north of Noisette Creek. The Defense Reutilization and Marketing Office (DRMO), printing operations and warehouse storage were the primary activities in this zone. The zone contains eight Solid Waste Management Units (SWMUs) and two Areas of Concern (AOC's).

Zone B is the area that includes the Naval Base golf course and the senior military officer's housing. The zone contains no SWMUs and one AOC.

Zone C consists of administrative buildings, residential areas, warehouses, hazardous material storage and an area where coal was stored. The zone contains six SWMUs and seventeen AOC's.

Zone D is the area that encompasses the parking lot and facilities between Reynolds Avenue and McMillan Avenue. The zone contains three SWMUs and one AOC, all of which require No Further Investigation. This zone was investigated primarily to determine the environmental condition of the property in order to facilitate property transfer.

Zone E encompasses the area that was formerly known as the Controlled Industrial Area (CIA) and is located in the central portion of the base bordering the Cooper River. The zone is highly industrialized and includes the shipyard and dry docks. The zone contains 101 SWMUs and 83 AOC's.

Zone F is located in the central portion of the base and includes the former public works facilities, ball fields, laundering, dry cleaning and training facilities. The zone contains 14 SWMUs and 16 AOC's.

Zone G is also in the central portion of the base and includes the Fleet Industrial Supply Center (FISC), fuel and petroleum distribution and storage facilities, a portion of the waterfront, and the Chicora Tank Farm. The zone contains 16 SWMUs and 26 AOC's.

Zone H is in the southern portion of the peninsula formed by Shipyard Creek and the Cooper River. The area was originally salt marsh but has since been developed into landmass by dredging operations along the Cooper and Shipyard Creeks. The area contains a landfill that was active from the 1930s until 1973. The landfill contained domestic, construction and industrial wastes. The zone contains 26 SWMUs and 23 AOC's.

Zone I is comprised of the remainder of the southern end of the base primarily the area bordering the Cooper River. This area was used for activities associated with administrative and maintenance functions supporting ships moored at adjacent piers. The zone contains 8 SWMUs and 20 AOC's.

Zone J boundaries are not strictly defined but include those areas within the nearby water bodies such as creeks, wetlands and rivers that have been impacted by runoff or discharge of contaminants from the Naval Base. The zone contains no SWMUs and five AOC's.

Zone L consists of sites identified as a result of releases from the basewide sanitary sewer system (excluding domestic distribution lines), the basewide storm water sewer system and areas adjacent to the railroad system where the potential for a release was possible from hazardous material transfers. This zone extends across the physical boundaries of Zones A through J and therefore does not have defined boundaries. This zone was created to evaluate each system in it's entirety at one time rather than conducting a piecemeal investigation of each as the individual zones were identified.

Zone K makes up the non-contiguous properties, which include the Naval Station Annex, portions of Clouter Island and Short Stay. The zone contains nine SWMUs and six AOCs.

SITE TOPOGRAPHY

Naval Base

The Naval Base is located in the lower South Carolina Coastal Plain Physiographic Province on the Cooper River side of the Charleston Peninsula. The Charleston Peninsula was formed by the confluence of the Cooper and Ashley Rivers. Topography in the area is typical of South Carolina's coastal plain. South Carolina's coastal plain typically has low relief plains broken only by the meandering courses of sluggish streams and rivers that flow toward the coast past occasional marine terrace escarpments. (See Appendix F-5.) Topography at the Naval Base is best described as flat with low relief with elevations ranging from just over 20 feet above mean sea level (msl) in the northwest part of the base to sea level at the Cooper River. Most of the original topography at the Naval Base has been modified by anthropogenic activities. The southern end of the base was originally tidal marsh drained by Shipyard Creek and its tributaries, and originally the other portions of the facility were only slightly higher in elevation. The land surface at the Naval Base has been filled with both solid wastes and dredged material (primarily the latter) in increments over the last 77 years. Most of the Naval Base remains within the 100-year flood zone that is less than ten feet msl.

There are two withdrawal wells located within the boundaries of the Charleston Naval Complex. The production wells adjacent to the west side of Building 32 on the Naval Base is screened in the Santee Limestone. (See Appendix F-8.) The production well located in Building 716 (see Appendix F-8) is 2,136 feet in total boring depth and is steel cased to a depth of 2,016 feet which places the screen within the Middendorf formation. Neither production well is in use or has been used since the early 1950's.

Naval Station Annex

The Naval Station Annex is also within the coastal plain and is located approximately five miles from the Naval Base. The Naval Station Annex is topographically similar in terms of low relief plains however the site is unimpacted by anthropogenic cover. (See Appendix F-6.) Surface water runoff in the area drains primarily to the storm sewer. To a lesser extent, Filbin Creek meanders slowly to the east and eventually discharges to the Cooper River. The general elevation at the Naval Annex is between 40 and 45 feet above msl. There are no production wells located on the Naval Station Annex.

Short Stay

Short Stay is located on a peninsula at the southernmost end of Lake Moultrie near the Pinopolis dam approximately 3.9 miles from Bonneau, South Carolina. This area is also within the Coastal Plain Physiographic Province although it is considerably further inland than the Naval Base. Topographically the area has mild relief that is disrupted by anthropogenic features such as the dike that provides flood control for water level changes in the lake. (See Appendix F-7.) There are withdrawal wells at Short Stay, which are used for potable water. The approximate locations of these wells are shown in Appendix F-8.

SITE AND OWNERSHIP HISTORY

NAVAL BASE

Naval Base Charleston was in existence from August 31, 1901 until closure on April 1, 1996. Before the Navy took possession of the land, plantation agricultural activities took place on the property followed by the establishment of a City Park.

During the Navy's possession of the property, the Naval Base consisted of approximately 3,035 acres owned by the two Naval Commands, Commander Naval Base and Commanding Officer, Charleston Naval Shipyard. The major commands that occupied the areas of Naval Base Charleston included Fleet Ballistic Missile Submarine Training Center (FBMSTC), Fleet and Industrial Supply Center (FISC), Fleet and Mine Warfare Training Center (FMWTC), Naval Hospital Charleston, and Charleston Naval Station (CNS).

The primary function of the Shipyard was to provide logistic support, materials and services, and to perform work in conversion, overhaul, repair, alteration, drydocking, and outfitting for assigned ships and service crafts. Near the waterfront, land uses were predominately industrial; landward of the Naval Base, residential and commercial land uses prevailed. (Land uses on the Naval Base are shown on the facility maps in Appendix F-1.) Hazardous wastes generated at the Shipyard included primarily paint wastes, waste solvents, boiler cleaning solutions, acids, sludge from the plating ship pretreatment facility, and potentially small quantities of radiological contaminated hazardous waste, known as mixed waste (MW).

NAVAL STATION ANNEX

The Air Force occupied the Naval Station Annex from the time of construction until 1981. The Navy obtained the property for the Naval Station Annex on 6 June 1981. The Naval Station Annex consisted of housing, small maintenance activities, training, administration, and storage. Industrial operations were limited to mine assembly activities and maintenance functions related to equipment and vehicles.

SHORT STAY

Santee Cooper owns Short Stay. Santee Cooper developed Short Stay as a recreational area and the Navy leased the property from Santee Cooper to be used as such. The Navy no longer maintains a lease with Santee Cooper and no corrective action is necessary at this property.

PRODUCT AND MANUFACTURING PROCESSES

The primary processes that took place at the Naval Base was providing logistic support, materials and services, and performing work in conversion, overhaul, repair, alteration, drydocking, and outfitting for assigned ships and service crafts. In particular, the Naval Shipyard operated 18 major industrial shops. These industrial shops included the Foundry, Shipfitter Shop, Sheetmetal Shop, Boiler Shop, Welding Shop, Electrical Shop, Electronics Shop, Machine Shop 31, Machine Shop 38, Pipe Shop, Pickling Shop, Central Tool Shop, Paint Shop, Woodwork Shop, Supervisor of Shipbuilding Conversion and Repair (SUPSHIP), Temporary Services Shop, Public Works Naval Shipyard, and Atlantic Fleet Audio Visual, Inc. (AFAV). A brief description of the processes performed in these shops is provided below.

Foundry

Metal parts used in refitting ships were cast at this shop. There were no hazardous materials used or hazardous wastes generated at the Foundry.

Shipfitter Shop

The industrial operations performed at this shop consisted of cutting and machining large metal plates used in the initial steps of building or major repair work of ships. No hazardous wastes were generated at the Shipfitter Shop.

Sheetmetal Shop

The Sheetmetal Shop performed light-gauge sheetmetal fabrication and a limited amount of degreasing. A minimal amount of cutting oil was used in cutting sheetmetal, and most of it adhered to the sheetmetal and metal shavings. All sheetmetal waste went to DRMO.

Boiler Shop

This shop repaired boilers for ships. During the shop's existence, asbestos was generated, as well as kerosene contaminated with Cosmoline.

Welding Shop

This shop performed welding operations on ships. The Welding Shop did not use hazardous materials or generate hazardous waste.

Electrical Shop

Electrical Shop operations included the manufacture and repair of industrial electrical equipment used in naval vessels. Electrical Shop operations which generated waste included: insulation of wire for motor armatures by coating it with varnish; cleaning metal components with a solvent cleaner; salvage of spent electrical batteries from naval vessels; and battery restoration and recharge.

Electronics Shop

This shop's operations consisted of the repair and modification of electronic equipment. This shop generated industrial waste from the water curtain spray paint booth.

Machine Shop 31

Industrial operations performed at this shop consisted of machining, anodizing, and metal electroplating using cadmium, copper, chromium, lead, nickel, and silver. The industrial wastes generated by this shop consisted of metal waste, waste oil, and rinsewater containing fugitive toxic metals and cyanide.

Machine Shop 38

The primary function of this shop was light machine work, including the repair of machinery such as turbines and engines. Industrial wastes generated by Machine Shop 38 included waste oil, solvents (primarily 1,1,1-trichloroethane and freon), potassium hydroxide solution, and hydraulic fluid.

Pipe Shop

Operations at this shop included bending, cutting, and connection of pipes. There were no hazardous wastes generated by Pipe Shop operations.

Pickling Shop

Operations at this shop included degreasing with a "dry cleaning fluid" (Stoddard solvent), hydrochloric acid bath, iridite bath, nitric acid bath, paint stripper bath, bright dip (sodium dichromate), sulfuric acid bath, trisodium phosphate bath, and deoxyisoprep bath. The wastes generated by the Pickling Shop were spent pickling acids and other corrosives, bright dip, and trisodium phosphate.

Central Tool Shop

This shop was primarily responsible for procurement and storage of lubricants and hydraulic fluids, lubrication and maintenance of shipyard machinery, and operation and maintenance of barges and railcars used to store and transport oily waste/waste oil to the waste oil reclamation facility. The only industrial wastes generated by the Central Tool Shop were waste oils, solvents, and hydraulic fluids.

Paint Shop

Sandblasting and painting of ships and ship components were performed at this shop. Paint wastes, solvents, and waste sandblasting materials were generated at the Paint Shop.

Woodwork Shop

This shop performs all woodcutting, planing, finishing, and fabrication required to maintain, modify, and/or manufacture equipment and furniture for shipyard operations and naval vessels.

Supervisor of Shipbuilding Conversion and Repair (SUPSHIP)

The procurement and monitoring of contracted services for shipbuilding conversion and repairs was the sole function of SUPSHIP.

Temporary Services Shop

The duties of Temporary Services included draining and cleaning of shipboard tanks, draining of chemical tankage and wet layup of boilers on NAVBASE Charleston. The Temporary Services Shop generated flushing solutions, boiler layup water, and waste oils.

Public Works Naval Shipyard

Public Works provided the following services: utilities, large equipment maintenance, pest control, and environmental management. Hazardous wastes generated by this shop included cleaning solvents, waste oils, and paint waste.

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Atlantic Fleet Audio Visual, Inc. (FAV)

FAV provided photographic and audiovisual services. Wastes generated by this shop included waste hypo-solution, which contained silver, black fixer, and developer solution.

HAZARDOUS WASTE

Hazardous wastes generated at the Shipyard included primarily paint wastes, waste solvents, boiler cleaning solutions, acids, sludge from the plating shop pretreatment facility, and potentially small quantities of radiological contaminated hazardous waste, known as mixed waste (MW). The following table lists mixed waste that may have been generated and stored at the Charleston Naval Shipyard Mixed Waste Facility, their waste codes, and respective hazards, such as ignitability (I), reactivity (R), corrosivity (C), toxicity (T), or EPA listing.

**POTENTIAL MIXED WASTES
(Bldg. 246)**

WASTE	WASTE CODE	HAZARD TYPE
1,1,1 Trichloroethane	U226	T
Acetone	F003/U002	I
Ammonium hydroxide	D002	C
Ammonium persulfate	D001	I
Battery, electrolyte	D002	C
Battery, lead acid	D002/D008	C, T
Battery, lithium	D003	R
Thiourea	U219	T
Toluene	U220	I, T
Battery, magnesium	D001	I
Battery, depleted, nonrechargeable [zinc, mercury (mercurous chloride) electrolyte (approx. 40% aqueous solution of potassium hydroxide), potassium zincate, calcium hydroxide, calcium zincate, zinc oxide, modified acrylic type MKP-20 (casing) carbon cathode]	D002	C
Cadmium waste	D006	T
Chromium waste	D007	T
Ethyl alcohol	D001	I
Ethylenediamine	D001	I
Hydrazine	U133	I, T
Hydrazine (aqueous solution)	D002	C
Isopropyl alcohol	D001	I
Lead	D008	T
Lead contaminated waste	D008	T

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POTENTIAL MIXED WASTE CONT'D
(Bldg. 246)

WASTE	WASTE CODE	HAZARD TYPE
Mercuric nitrate, liquid	D009	T
Mercuric nitrate, solid	D001/D009	I, T
Mercury	U151	T
Mercury fluorescent bulbs	D009	T
Methyl alcohol	U154	I, T
Methyl Ethyl Ketone	U 139	I, T
Methylene chloride	U080	T
Paint, waste (may be contaminated with oil, lead, strippers, thinners, solvents)	D001/D002/D008/ F003/F005/D007	I, T
Petroleum Oil	D001	I
Potassium chromate, liquid	D007	T
Potassium chromate, solid	D001/D007	I, T
Silver	D011	T
Silver nitrate	D001/D011	I, T
Solvent, dry cleaning (contaminated with hydrocarbon, grease, dirt, water)	D001	I
Solvent, cleaning (contaminated w/ Stoddard solvents, dichloromethane, tetrachloromethane)	D001	I
Solvents, halogenated	F002	I, T
Solvents, nonhalogenated	F003	I, T
Sulfuric acid	D002	C

The following table lists hazardous wastes that may have been stored at Charleston Naval Shipyard DRMO Storage Facility, their waste codes, and respective hazards, such as ignitability (I), reactivity (R), corrosivity (C), toxicity (T), and EPA listing.

HAZARDOUS WASTE DRMO-CHARLESTON (Bldg. 1640)

WASTE	WASTE CODE	HAZARD TYPE
Acetic acid	D002	C
Acetone	U002	I
Acrylco stripper	D002	C
Alcohol waste	D001	I
Alkaline cleaner	D002	C
Alodine	D002/D007	C, T
Aluminum phosphate	D002	C
Aluminum phosphide	D003/P006	R, T
4-Aminopyridine	P008	T
Ammonium bisulfate (scale remover)	D002	C
Ammonium hydrogen fluoride	D002	C
Ammonium hydroxide	D002	C
Ammonium nitrate	D001	I
Ammonium persulfate	D001	I
Anhydrous ammonia	D002	C
Asbestos	6666	T
Barium chloride	D005	T
Barium hydroxide	D005	T
Battery, electrolyte	D002	C
Battery, lead acid	D002/D008	C, T
Battery, lithium-sulfur dioxide	D003	R
Battery, magnesium	D001	I
Battery, depleted, nonrechargeable, [zinc, mercury (mercurous chloride) electrolyte (approx. 40% aqueous solution of potassium hydroxide), potassium zincate, zinc oxide, modified acrylic type MDP-20 (casing) carbon cathode]	D002/D009	C, T
Battery, silver and zinc with KOH electrolyte	D002/D011	C, T
Benzene contaminated material	D018	T
Beryllium dust	P015	T
Beryllium wastes	P015	T

HAZARDOUS WASTES DRMO-CHARLESTON CONT'D

WASTE	WASTE CODE	HAZARD TYPE
Brass cleaner, luminox	D001	I
Bromine	D002	C
2-Butanone	U160	R, T
Cadmium fluoroborate	D006	T
Cadmium waste	D006	T
Calcium cyanide, solid	P021	T
Calcium hypochlorite	D001	I
Carbon remover	D002	C
Carbon tetrachloride	U211/D019	T
Catalyst carbon monoxide	D001	I
Catalyst (manganese dioxide, cupric oxide, lithium hydroxide-oxidizers)	D001	I
Chloroform	U044/D022	T
Chlorine	D001	I
Chlorine cylinders, empty	6666	-
Chromic acid	D002/D007	C, T
Chromic hydroxide solution	D002/D007	C, T
Chromium trioxide	D002/D007	C, T
Chromium waste	D007	T
Cleaning compound	D001	I
Cleaning compound (amine)	D002	C
Copper cyanide	P029	T
Corrosion inhibitor and Anti-Foulant	D001	I
Cyclohexylamine	D001	I
Diazinon	6666	T
Dichlorodifluoromethane	U075	T
Diethyl ether	U117	I, T
Diethylenetriamine	D002	C
Dioctyl phthalate	U017	T
DS-2 decontaminating agent	D002	C
Ethylenediamine	D001	I
Ethylenedichloride	U077	I, T
Electroplating sludge (chromium hydroxide)	F006	T
Ethyl alcohol	D001	I
Ethyl butanol	D001	I
Ethylene glycol diethyl ether	D001	I
Ethylene glycol monoethyl ether	D001	I

HAZARDOUS WASTE DRMO-CHARLESTON CONT'D

WASTE	WASTE CODE	HAZARD TYPE
Ethylene glycol monoethyl ether acetate	D001	I
Ethylene glycol waste	6666	T
Extract quebracho	D001	I
Ferric chloride	D002	C
Fluorescent penetrant	D001	I
Formaldehyde	U122	T
Fuel waste	D001	I
Glycerol waste	6666	-
Hardness solution	D001	I
Hydraulic fluid waste	6666	I
Hydrazine	U133	I, T
Hydrazine (aqueous solution)	D002	C
Hydrochloric acid	D002	C
Hydrofluoric acid	D002	C
Hydrogen peroxide	D001/D003	I
Hydrogen sulfide	U135	T
Insecticides (chlordane and panothrin)	U036/6666	T
Isocyanate	D003	R
Isopropyl alcohol	D001	I
Kepone	U142	T
Kerosene waste	D001	I
Lacquer/thinner	D001	I
Lead	D008	T
Lead acid from batteries	D002/D008	C, T
Lead compounds (lead oxide, red-lead, lead tetraoxide)	D008	T
Lead dross	D008	T
Lead contaminated waste	D008	T
Lead flouoroborate	D008	T
Lithium bromide	D002	C
Lithium chloride	D002	C
Lithium hydroxide	D002	C
Lubricating oil waste	6666	I
Magnesium chloride	D002	C
Malathion	6666	I
Marine insectrol (contains NA-2902 poison)	6666	T
Medicines	D001	I
Mercuric bromide	D009	T

HAZARDOUS WASTE DRMO-CHARLESTON CONT'D

WASTE	WASTE CODE	HAZARD TYPE
Mercuric nitrate waste	D003/D009	T
Mercuric nitrate, solid	D001/D009	I, T
Mercuric sulfate	D009	T
Mercury	U151	T
Mercury fluorescent bulbs	D009	T
Mercury wastes	D009	T
Methyl alcohol	U154	I, T
Methylene chloride	U080	T
Methyl ethyl Ketone	U159	I, T
Methyl ethyl Ketone and PD-680	D001/U159	T
Methyl ethyl Ketone peroxide	U160	R, T
Methyl isobutyl Ketone	U161	I
Methylene chloride	U080	T
Mineral spirits (cleaning compound)	D001	I
Molybdenum	D001	I
Monoethanolamine	D002	C
Morpholine	D001	I
Morpholine (aqueous solution)	D002	C
Naptha	D001	I
Nickel chloride/hydrochloric acid mixture	D002	C
Nickel sulfamate	D002	C
Nitric acid	D002	C
Oxygen breathing apparatus canisters	D001/D003/D005	R, I
Oil wastes	6666	I
Paint, waste (may be contaminated with oil, lead, strippers, thinners, solvents)	D001/D002/D007/ D008/F003/F005	I, C, T
Paint, stripper (may be contaminated with methylene chloride, phenol approx. 15%, sodium chromate, rust)	D001/D002/D007/ D008	I, C, T
Paint thinner	D001	I
PD-680 (may be contaminated with freon, hydraulic fluid, solvents, water)	D001	I
Pentachlorophenol	U242	T
Pesticides (chlordane, diazinon, malathion, pyrethrum, baygon)	6666	T
Petroleum ether	D001	I
Petroleum naptha	D001	I
Petroleum oil	D001	I
Petroleum tar	D001	I

HAZARDOUS WASTES DRMO-CHARLESTON CONT'D

WASTE	WASTE CODE	HAZARD TYPE
Phosphoric acid	D002	C
Plating, stripping, cleaning solution spent (may be contaminated with cadmium, cadmium oxide)	F009	T
Plating wastes (contaminated with various metals)	F008	R, T
Potassium chromate, liquid	D007	T
Potassium chromate, solid	D001/D007	I, T
Potassium dichromate, solid	D001/D007	I, T
Potassium cyanide	P098	T
Potassium hydroxide	D002	C
Potassium nitrate	D001	I
Propane	D001	I
Pyridine	U196	T
Pyrogallol	D001	I
Rosin gum	D001	I
Salts (K-15, K-60, K-17)	D002	C
Scale control compound treatment for cooling tower	D002	C
Selenious acid	U204	T
Silver contaminated material	D011	T
Silver cyanide	P104	T
Silver nitrate	D001/D011	I, T
Sodium bifluoride	D002	C
Sodium bisulfate	D002	C
Sodium carbonate	D002	C
Sodium chromate	D001/D007	I, T
Sodium chlorate	D001	I
Sodium cyanide	P106	T
Sodium dichromate, liquid	D007	T
Sodium dichromate, solid	D001/D007	I, T
Sodium hydroxide	D002	C
Sodium nitrate	D001/D003	I, R
Solvent, dry cleaning (contaminated with hydrocarbon, grease, dirt, water)	D001	I
Solvent, cleaning (contaminated with Stoddard solvents, dichloromethane, tetrachloroethane)	D001	I
Solvents, halogenated	F002	I, T

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HAZARDOUS WASTES DRMO-CHARLESTON CONT'D

WASTE	WASTE CODE	HAZARD TYPE
Solvents, nonhalogenated	F003	I, T
Sulfamic acid	D002	C
Sulfuric acid	D002	C
Sulfuric acid (4%)/Sodium dichromate (2%) solution, spent	D002/D007	C, T
T-butyl perbenzoate	D001	I
Tert-Butyl peroxy-benzoate	D001	I
Tetrachloroethylene	U210	T
Thiourea contaminated waste	U219	T
Thiourea	U219	T
Thioureamatera poison	6666	T
Toluene	U220	I, T
1,1,1 Trichloroethane	U226	T
Trichloroethylene	U228	T
Trichlorotriflouroethane	F002	T
Trichlorofluoromethane	U121/F002	T
Tricresyl phosphate	D001	I
Turco acid	D002	C
Turpentine	D001	I
Varnish	D001	I
Xylene	U239	I

The following table identifies the test methods to be employed in the analysis plan for the Charleston Naval Complex.

**TEST METHODS
CHARLESTON NAVAL COMPLEX**

PARAMETER	PROCEDURE	REFERENCE (from SW-846)
pH	Electrometric	Method 9040A
Flashpoint	Pensky-Martens closed cup tests	ASTM D-93-79
Toxicity	Toxicity Characteristics Leaching Procedure (TCLP)	Method 1311 Method 3010 Method 6010
Cadmium	Inductive Couple Plasma (ICP), Atomic Emission Spectroscopy (AES)	Method 6010
Chromium	ICP, AES	Method 6010
Lead	ICP, AES	Method 6010
Silver	ICP, AES	Method 6010
Mercury	Cold Vapor Atomic Absorption	Method 7470
Cyanide	Titration	Method 9010 Method 9012
Trichlorofluoromethane	GC/HSD	Method 8010
Trichlorotrifluoroethane	GC/HSD	Method 8010
Xylene	GC/FID	Method 8020
Physical Characteristics	Physical State, Color, Odor	
Specific Gravity		
PCBs	Gas Liquid Chromatography, Mass Spectrometry or Equivalent	EPA SW-846 Method 8080
Reactivity	Water Reactivity Cyanides Sulfides	Method 1090 Method 9030

**HISTORICAL AND CURRENT STATUS OF HAZARDOUS WASTE
MANAGEMENT UNITS**

SCDHEC and US EPA Region IV issued the RCRA Part B Permit for the Naval Base to the Commander of the Charleston Naval Shipyard on 4 May 1990. The RCRA Part B Permit became effective on 4 June 1990. Since the issuance of the permit, the Charleston Naval Shipyard has submitted the following modifications or revision requests pertaining to the TSD's and DRMO:

On 3 June 1994, the Department approved a request made by the Charleston Naval Shipyard to modify the hazardous waste storage permit to allow for the capability to store mixed waste at Bldg. 246. The modification also requested a combination of all wastes that were currently being stored in Bldg. 246 with wastes stored in Bldg. 1640. The permit modification was effective immediately and remained in effect until 4 June 1995.

On 5 December 1994, a RCRA Permit Application and Hazardous and Solid Waste Amendments (HSWA) Permit Revision renewal was submitted. The renewal was submitted 180 days prior to permit expiration as required by permit condition I.E.3. Additionally, the renewal included a request for modification of the HSWA portion of the RCRA permit to eliminate administrative steps between the RFI and the CMS. This modification was similar to what was proposed in the EPA "model" permit, in an effort to expedite the RCRA Corrective Action Process. The Department has not responded in writing to this request, however, representatives from the Department have indicated that the Department's performance was to initiate administrative actions for permit renewal and the permit modification (necessary as a result of TSD closures) concurrently.

On 16 June 1995, the Charleston Naval Shipyard provided information regarding the tentative closure schedule of the mixed waste and hazardous waste permitted storage facilities. On 10 August 1995, the facility submitted a letter informing the Department of the intent to close Bldg. 1640 as required by Section II.k of the permit and Closure Plan. An extension of the removal/disposal of the final waste inventory was requested on 10 October 1995, to allow for proper waste characterization and transition from a disposal facility to a less than 90-day storage facility. The Department concurred with this modification in a letter dated 18 October 1995. The facility requested a minor modification to the estimated amount of solvent wash. The Charleston Naval Shipyard's RCRA Closure Activities Report and Certification for Bldg. 1640 was submitted to the Department in February 1996 and was approved by the Department in a letter dated 21 March 1996.

On 7 March 1996, the facility submitted a modification request for the closure of Bldg. 246. The minor modification requested the use of proposed background levels for metals derived from Zone H for use in comparing results of soil samples taken around Bldg. 246. The Department approved this minor modification in a letter dated 18 March 1996. On 12 March 1996, the facility submitted a letter clarifying a previous letter (7 March 1996) concerning the Bldg. 246 closure with respect to PCB's found in soil samples taken around the perimeter of the building. The facility proposed that investigation of this PCB soil contamination was not an issue associated with Bldg. 246 closure and referenced a letter of notification of AOC 706 made on 11 March 1996. The Department concurred with this proposal as a minor modification to Section I of the Part B Permit application in a letter dated 18 March 1996. The Charleston Naval Shipyard's RCRA Closure Activities Report and Certification for Bldg. 246 was submitted to the Department in March 1996, and approved by the Department in a letter dated 29 July 1996.

On 19 April 1996, the facility submitted a letter containing appropriate changes to the Part A RCRA application. The changes were necessary due to closing operations at the base and the deletion of waste streams as a result. The Department approved the changes to Part A of the RCRA permit application (both 19 April and corrected sheets dated 1 May 1996) as a minor modification in a letter dated 13 May 1996.

SWMU 10 (Bldg. 246) and SWMU 40 (Bldg. 1640) are regulated units which were used for storage of hazardous waste containers in accordance with the conditions of the RCRA Part B permit. Both units have been closed in accordance with the requirements of R. 61-79.264 and the approved closure plans for each facility. Certification of closure for both units was submitted to SCDHEC and the State's concurrence has been received. No additional corrective action was determined necessary as a result of the closure.

GENERAL SITE HYDROGEOLOGY AND GROUNDWATER MONITORING

The Naval Base and non-contiguous properties are located in Charleston, and Berkeley counties on South Carolina's central coast. The Naval Base is located on both banks of the Cooper River, approximately five miles north of downtown Charleston. The Naval Base covers approximately 1,958 acres.

Geology

The geology of the Charleston area is typical of the southern Atlantic Coastal Plain. Cretaceous and younger sediments thicken seaward and are underlain by older igneous and metamorphic basement rock. Surface exposures at the Naval Base and at the Naval Station Annex, in the limited areas which remain undisturbed, consist of recent and/or Pleistocene sands, silts, and clays of a high organic content. The Naval Base is underlain by plastic calcareous clay known as the Cooper Marl. The Cooper Marl is in turn underlain by the Santee limestone and sequentially older rocks.

Short Stay, which is near the Monks Corner area, is also in the outer Atlantic Coastal Plain midway between the Cape Fear arch to the northeast and the Southeast Georgia Embankment to the southwest. Marine, marginal marine, and fluvial-estuarine sediments, ranging in age from middle Eocene to Holocene, crop out or are present just below land surface. Nine discrete depositional assemblages are present in the shallow subsurface which record high stands of sea level during the past 44 million years. The Penholoway Formation most likely directly underlies the Short Stay area. It is the oldest and most extensive Pleistocene age formation in the area. The unit consists of a near shore complex of barrier sand (mapped as Qps) and back barrier clay to clayey sand (Qps) which underlies the Penholoway terrace. A coral from the Summerville area found in the Penholoway Formation yielded a U/Th age date of over 700,000 years.

Surface Hydrology

Parts of the southern portion of the Naval Base are drained by Shipyard Creek while some northern areas are drained by Noisette Creek. Both creeks are tributaries to the Cooper River. Surface drainage over the remainder of the base flows directly into the Cooper River. The Cooper River discharges into Charleston Harbor.

Shipyard Creek is a small tidal tributary, about two miles in length, which flows out the southeast along the southwestern boundary of the base to its confluence

with the Cooper River, opposite the southern tip of Daniel Island. Various industries are located along the western shore of the lower mile of the channel while the entire length of the eastern shore is bounded by tidal marshland.

Noisette Creek, which transects the northern portion of the base, is a tidal tributary approximately 2.5 miles long. The creek flows nearly due east from its headwaters in the City of North Charleston and empties into the Cooper River.

Information concerning the drainage from the Naval Station Annex is not readily available. However, from the Ladson Quadrangle map, it is evident that a portion of the surface water runoff at the Annex and adjacent areas drains to the south and eventually reaches Filbin Creek and the remainder is most probably captured by storm sewer inlets. Filbin Creek is also a small tributary of the Cooper River that is approximately 3.5 miles in length and discharges to the Cooper River near the Mark Clark Expressway (I-526). Rainfall at Short Stay drains directly to Lake Moultrie. Lake Moultrie was created as a result of the construction of the Pinopolis Dam on the upper reaches of the Cooper River.

Hydrogeology

Two distinct aquifers exist beneath the Naval Base, a deep confined aquifer located within the Santee Limestone, and a shallow water table aquifer located within the near surface sediments. Both the shallow aquifer and the Santee Limestone function as potable aquifers in other locations. The shallow aquifer is not significantly developed in the Naval Base area. The quality of water from the Santee Limestone in the vicinity of the base is not suitable for potable supply because of elevated total dissolved solids ranging from 1000 to 1500 ppm.

The Cooper Marl is a well-documented confining layer for the Santee Limestone. The top of the Santee Limestone occurs at about -250 feet msl in the base area and has a groundwater potentiometric elevation of approximately 15 feet msl, with a hydraulic gradient generally towards the southeast.

Monitoring Wells

The RCRA Facility Investigation is underway and has been completed in several **zones at the Naval Base** and as a result, there are approximately 535 permanent monitoring wells in place. All of these monitoring wells are screened in the surficial aquifer above the Cooper Marl. The installation procedures, construction details, well logs and surveyed locations are contained in the individual zone reports as well as in correspondence with the Department as required by S.C. Groundwater well regulations.

SECTION J

OTHER FEDERAL LAWS

Information will be provided in accordance with the requirements of 40 CFR Part 270.14 (b) (20) at the request of SCDHEC. At this time, however, we believe this facility is in compliance with the following Federal laws: Wild and Scenic Rivers Act, National Historic Preservation Act of 1966, Endangered Species Act, Coastal Zone Management Act, and the Fish and Wildlife Coordination Act.

SECTION K

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Caretaker Site Officer
Charleston Naval Complex

9/25/97

Date

SECTION L

INFORMATION REQUIREMENTS FOR SOLID WASTE MANAGEMENT UNITS

The identification of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) at the Charleston Naval Complex has evolved over a period of eight years. The regulatory history dates back to sites that had been identified by the facility prior to permit request through base closure as a result of the Base Realignment and Closure of 1993 (BRAC III). The information relating to this history and the sites listed in Tables A.1 through A.6 is provided in the following paragraphs.

L-1 HISTORICAL AND CURRENT STATUS OF THE CORRECTIVE ACTION PROCESS

L-1.1 RCRA Facility Assessment

In response to a Charleston Naval Shipyard request for a Hazardous Waste Storage Permit, an Interim RCRA Facility Assessment was prepared by EBASCO Services Inc. for the U.S. Environmental Protection Agency (USEPA) in August 1987. The Navy had submitted two studies to the South Carolina Department of Health and Environmental Control (SCDHEC) and the USEPA which were part of the Naval Base Charleston Initial Assessment Study (IAS) and the Naval Shipyard Confirmation Study (CS). These studies were done under the Navy Assessment and Control of Installation Pollutant (NACIP) program. The NACIP program was part of the Department of Defense (DOD) Installation Restoration Program, which was established to satisfy the requirements of CERCLA. As a result of the IAS and CS, six sites were identified as requiring remedial action. On July 22 - 24, 1987, a site visit was conducted with personnel from the facility, SCDHEC, and the USEPA contractor. A review of the Environmental Protection Program, IAS, CS, and the RCRA Part B Permit was conducted. The RFA was then prepared based on this site visit and documentation reviews. The recommendations of this RFA are contained in Table L.1. Also included in Table L.1 are the actions that were being taken by the facility at the time of the RFA recommendations.

SCDHEC and US EPA Region IV issued the RCRA Part B Permit for the Naval Base to the Commander of the Charleston Naval Shipyard on 4 May 1990 and effective 4 June 1990. The RCRA permit incorporated the SWMUs identified in the August, 1987 RFA report and required a RCRA Facility Investigation (RFI) for those units shown in Table L.1 which required additional action.

On 20 - 22 August 1990, the US EPA and the SCDHEC performed an unannounced inspection at the Charleston Naval Base. Ten additional potential SWMUs were identified. Notification of the sites was made on 29 August 1990.

A visual site inspection was conducted of the ten units on 13 November 1990 by Southern Division, Naval Facilities Engineering Command (SOUTHDIV), who also prepared the RFA of these sites on behalf of the Charleston Naval Shipyard. The RFA was submitted on 26 November 1990 and later revised and resubmitted on March 1, 1991. The RFA was approved by USEPA Region IV on March 28, 1991. A Final Draft RFI Workplan was submitted to USEPA Region IV and SCDHEC on 4 March 1991 which included these sites as well as the previous twenty four.

Table L.1 Recommendations
for Further Action,
Charleston Naval Shipyard
(EBASCO, 1987)

SWMU	ACTION	COMMENTS
1. DRMO Staging Area	No Action	This unit is being closed out
2. Lead Contamination Area	Continue with the NACIP program	This unit has been documented to be a potential health risk.
3. Pesticide Mixing Area	Continue with the NACIP program	Pesticides and PCBs were detected in the soils
4. Pesticide Storage Building	None	
5. Battery Electrolyte Treatment Area	Continue with RFI/ICM	NSY is in the process of phasing out this unit
6. Public Works Storage Yard (Old Corral)	None	NSY is in the process of closing this unit
7. PCB Transformer Storage Area	Continue with the NACIP program	This unit is currently being studied under the NACIP program
8. Oil Sludge Pit Area	Continue with the NACIP program	This unit is currently being studied under the NACIP program
9. Closed Landfill	Continue with the NACIP program	
10. Hazardous Waste Storage Facility	None	
11. Caustic Pond	Continue with the NACIP program	
12. Old Fire Fighting Training Area	None	
13. Current Fire Fighting Training Area	None	
14. Chemical Disposal Area	Continue with the	This unit is currently being

	NACIP program	studied under the NACIP program
15. Incinerator	None	
16. Paint Storage Bunker	None	This unit has apparently been cleaned up
17. Oil Spill Area	Implement RFI/ICM	Conduct a soil boring and sampling program
18. PCB Spill Area	None	
19. Solid Waste Transfer Station	None	
20. Waste Disposal Area	None	
21. Old Paint Storage Area	Continue with closure activities	
22. Old Plating Shop WWTS	Continue with closure activities	
23. New Plating Shop WWTS	None	
24. Waste Oil Reclamation Facility	None	

SWMU 25, the old electroplating shop, was added as a site in the revised Final Draft RFI Workplan that was submitted on 4 March 1991. A RFA was not conducted presumably because of the visual presence of contamination at the site and the need for conducting an RFI was evident. SWMU 36, Battery Shop in Building 68, was notified as a SWMU on 1 May 1991, by CNSY. A RFA was prepared by SOUTHDIV and submitted on 25 July 1991.

On 10 August 1993, SOUTHDIV provided notification of 118 potential sites and 3 areas to be considered as SWMUs. A request for extension of submittal of the RFA was submitted due to lack of BRAC funding and was subsequently approved by EPA. Volume I of the RFA was prepared and submitted on 18 February 1994.

On August 23, 1993, EPA (Brittain) provided a list of 28 sites that required further investigation. On September 2, 1993, EPA (Brittain) provided a list of 17 sites that were based on a literature review (Dynamac report) which require an RFA. These lists and the sites identified to date were then "scrubbed" during discussions with EPA and SCDHEC to remove: duplicate sites, non-RCRA sites (UST), storage areas where no releases were known, latrines, sites that were on non-contiguous property, and to add sites identified during the Environmental Baseline Survey preparation. A complete list of sites was provided on May 5, 1994, which included the current SWMU and AOC numbering. At this time, Volume II of the RFA was initiated to address these additional (178) sites and was submitted on 16 March 1994.

The remaining site notification dates, transmittal letters, and site number are provided in Table L.2. Tables A.1 through A.6 identify the RFA volume for each site.

Table L.2. SWMU/AOC Notification

Date of Notification	Transmittal Letter	SWMUs	AOCs
8 June 1994	106.2/0170	143 - 160	None
6 July 1994	106.2/0214	161 - 167	696, 697
6 July 1994	106.2/0215	168 - 178	None
18 August 1994	106.2/0256	179, 180	None
8 September 1994	106.2/0301	None	698
26 October 1994	106.2/0344	181 - 190	699, 700
21 November 1994	106.2/0416	191	None
2 December 1994	106.2/0450	192, 193	701
5 January 1995	106.2/0008	None	702
6 February 1995	106.2/0066	194, 195	703, 704
28 June 1995	106.2/0530	None	705
11 March 1996	106.2/0142	None	706
16 April 1996	SDIV ltr	None	707, 708

L-1.2 RCRA Facility Investigation

A Draft RFI Workplan was submitted on 3 January 1990, for the original 24 sites identified in the Part B permit. The workplan was prepared by Kemron (formerly WAPORA) Environmental Services for the Navy.

Comments were received on the Final Draft RFI Workplan and responses resubmitted on 1 October 1991. Included in the responses was a Corrective Action Management Plan (CAMP), and addendum to the Final RFI Workplan dated 9 September 1991. An additional addendum to the workplan was submitted for SWMU 36 on 18 October 1991.

On 13 March 1992, USEPA approved the 24 February 1992, Navy request to conduct geophysical surveys at SWMUs 9 and 14 and a soil gas survey at SWMU 9. USEPA agreed that the data from the surveys and soil gas analysis would assist in determining placement of monitoring wells and test pits under the proposed RFI Workplan. The RFI report for this activity was submitted for review on 1 April 1993 (this report has subsequently been added to the RFI report for Zone H).

On 11 June 1992, the Navy received a Notice of Technical Inadequacy on the Final Draft RFI Workplan. Responses were prepared and submitted on 21 July 1992 by Ensafe/Allen & Hoshall (E/A&H) on the behalf of the Navy.

Comments generated from the review of the Interim Final RCRA Facility Investigation were received from SCDHEC and EPA on 4 April 1994. A Notice of Technical Inadequacy was included in the transmittal letter. Discussions between the Navy, SCDHEC, EPA, and the Navy contractor Ensafe/Allen & Hoshall began with the purpose to determine a manageable approach to conducting the RCRA Corrective Action given the numerous sites. The strategy that was developed involved dividing the base into geographic zones. These zones would be investigated individually, concurrently wherever possible. This would serve as a means to reduce the amount of documentation needed to meet the requirements of the RCRA permit. On 6 July 1994, the Navy submitted the Comprehensive RFI Workplan. This document contained the Project Management Plan, Health and Safety Plan, Sampling and Analysis Plan, Laboratory QAPs, and Baseline Risk Assessment Plan. On August 9, 1994, the EPA approved the Comprehensive RFI Workplan. Subsequent submittals of Zone RFI Workplans, both Draft and Final versions, are provided in Table L.3. To date, the RFI workplans for all zones have been approved. Currently, the RFI is complete and the RFI report has been submitted for five zones, Zones H, C, I, A & B. Zone B RFI report was approved on 2 January 1997. The RFI is in progress or has been completed for all zones with the exception of Zones J and L, which are expected to begin in April 1997.

Table L-3 Charleston Naval Complex RFI Document Submittal History

TASK Date Submitted/Approved

Preliminary RCRA Facility Investigation (36 sites)

Draft Final RFI Workplan - 8/18/92
Interim Final RFI Workplan - 10/14/93

RCRA Facility Assessment (RFA)

RFA Volume I (120 sites) - 2/18/94
Revised RFA Volume I - 11/22/94
Revised RFA Volume I - 2/9/95
Final RFA Volume I - 6/6/95

RFA Volume II (178 sites) - 6/13/94
Revised RFA Volume II - 11/22/94
Revised RFA Volume II - 2/9/95
Final RFA Volume II - 6/6/95
Regulatory Approval - 6/21/95

RFA Volume III (18 sites) - 9/7/94
Revised RFA Volume III - 11/22/94
Revised RFA Volume III - 2/9/95
Final RFA Volume III - 6/6/95
Regulatory Approval - 6/21/95

RFA Volume IV (23 sites) - 11/3/94
Final RFA IV - 6/6/95
Regulatory Approval - 6/21/95

RFA Volume V (20 sites) - 2/28/95
Final RFA Volume V - 6/7/95
Regulatory Approval - 6/21/95
RFA Volume V Addendum I (1 site) - 7/13/95
Final RFA Volume V Addendum
RFA Volume V Addendum II (1 site) - 4/26/96
Regulatory Approval - 6/17/96
Final RFA Volume V Addendum II - 10/21/96
RFA Volume V Addendum III (2 sites) - 5/28/96
Regulatory Approval - 6/17/96
Final RFA Volume V Addendum III - 10/21/96

Table L-3 Charleston Naval Complex RFI Document Submittal History (continued)

RCRA Facility Investigation (RFI)

Comprehensive RFI Workplan

Draft Comprehensive RFI Workplan - 5/18/94
Final Comprehensive RFI Workplan - 8/30/94
Comprehensive RFI Workplan, Rev. 01 - 5/19/95
Resubmit Revision 01 - 12/1/95
Resubmit Revision 01 - 4/16/96

Additional Revision 01 Submittal - 5/13/96
Resubmit Revision 01 - 6/18/96
Comprehensive RFI Workplan, Revision 02 - 2/16/96
Submit Combined Revision 01 and 02 - 8/6/96
Regulatory Approval - 9/5/96
Final Revision 01 and 02 - 10/15/96

Zone A

Draft Zones A & B RFI Workplan - 5/4/95
Final Zones A & B RFI Workplan - 7/21/95
Regulatory Approval - 8/10/95
Draft Zone A RFI Report - 9/16/96

Zone B

Draft Zones A & B RFI Workplan - 5/4/95
Final Zones A & B RFI Workplan - 7/21/95
Regulatory Approval - 8/10/95
Draft Zone B RFI Report - 3/5/96
Final Zone B RFI Report - Approved 1/15/97

Zone C

Draft Zone C RFI Workplan - 11/21/94
Final Zone C RFI Workplan - 2/28/95
Regulatory Approval - 3/27/95
Draft Zone C RFI Report - 1/26/96

Zone D

Draft Zones D, F, & G RFI Workplan - 12/14/95
Final Zones D, F, & G RFI Workplan - 6/17/96
Regulatory Approval - 8/15/96
Draft Zone D RFI report - 2/26/97
Final Zone D RFI report - 7/17/97

Table L.3 Charleston Naval Complex RFI Document Submittal History (continued)

Zone E

Draft Zone E RFI Workplan - 2/14/95
Final Zone E RFI Workplan - 6/2/95
Workplan Approval - 8/9/95

Zone F

Draft Zones D, F, and G RFI Workplan - 12/14/95
Final Zones D, F, and G RFI Workplan - 6/17/96
Workplan Approval - 8/15/96

Zone G

Draft Zones D, F, and G RFI Workplan - 12/14/95
Final Zones D, F, and G RFI Workplan - 6/17/96
Workplan Approval - 8/17/96

Zone H

Draft Zone H RFI Workplan - 7/8/94
Final Zone H RFI Workplan - 12/29/94
Regulatory Approval - 12/29/94
Draft Zone H RFI Report - 7/31/95
Resubmit Draft Report - 12/27/95
Resubmit Draft Report - 7/8/96
Regulatory Approval - 8/28/97

Zone I

Draft Zone I RFI Workplan - 11/16/94
Final Zone I RFI Workplan - 2/28/95
Regulatory Approval - 3/27/95
Draft Zone I RFI Report - 1/26/96

Zone J

Draft Zone J RFI Workplan - 6/8/95
Resubmit Draft Workplan - 11/18/95
Revise Workplan - 9/9/96
Regulatory Approval - 12/13/96

Zone K

Draft Zone K RFI Workplan - 4/1/96
Final Zone K RFI Workplan - 9/13/96

Table L-3 Charleston Naval Complex RFI Document Submittal History (continued)

Zone K

Regulatory Approval - 10/16/96

Zone L

Draft Zone L RFI Workplan - 5/26/95

Resubmit Draft Workplan - 10/18/95

Regulatory Approval - 12/13/96

Table L-4 Charleston Naval Complex CMS Document Submittal History

Comprehensive CMS Workplan

Final Comprehensive CMS Workplan - 6/25/97

Zone H

Draft Zone H CMS Workplan - 8/22/97

L-1.2.1 Historical Release to Groundwater

Sites that have groundwater contamination are identified in the individual zone RFI reports. Releases to groundwater were confirmed at several sites because of sampling activities either prior to the current RFI or during the RFI fieldwork. Groundwater contamination has been defined by the Department as the presence of any hazardous constituent in a concentration which exceeds the naturally occurring concentration of that constituent in the immediate vicinity of the facility (in areas not affected by the facility), or residential risk based concentrations or above maximum contaminant levels (MCLs). The RFI workplans and reports have identified these contaminants as Contaminants of Concern (COCs). Site-specific human health risk and ecological risk are calculated which identify the COCs at each site for purposes of determining what corrective action is necessary.

L-1.2.2 Investigation of Other SWMUs and Additional Data Requirements

As indicated in Table A.2, a number of sites were identified for Confirmation Sampling Investigation (CSI). These sites were identified as SWMUs or AOCs based on historical data that indicated a potential for hazardous materials or waste to have been released, stored, or disposed at the site. In many cases, the only historical information describing site activities was the facility name. The intent of the CSI was to determine if a release occurred, what contaminants and in what media remained at the site, and if further corrective action was necessary.

L-2.0 Compliance Schedule

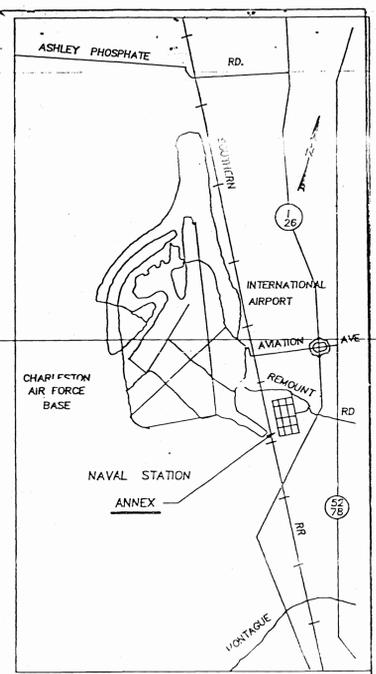
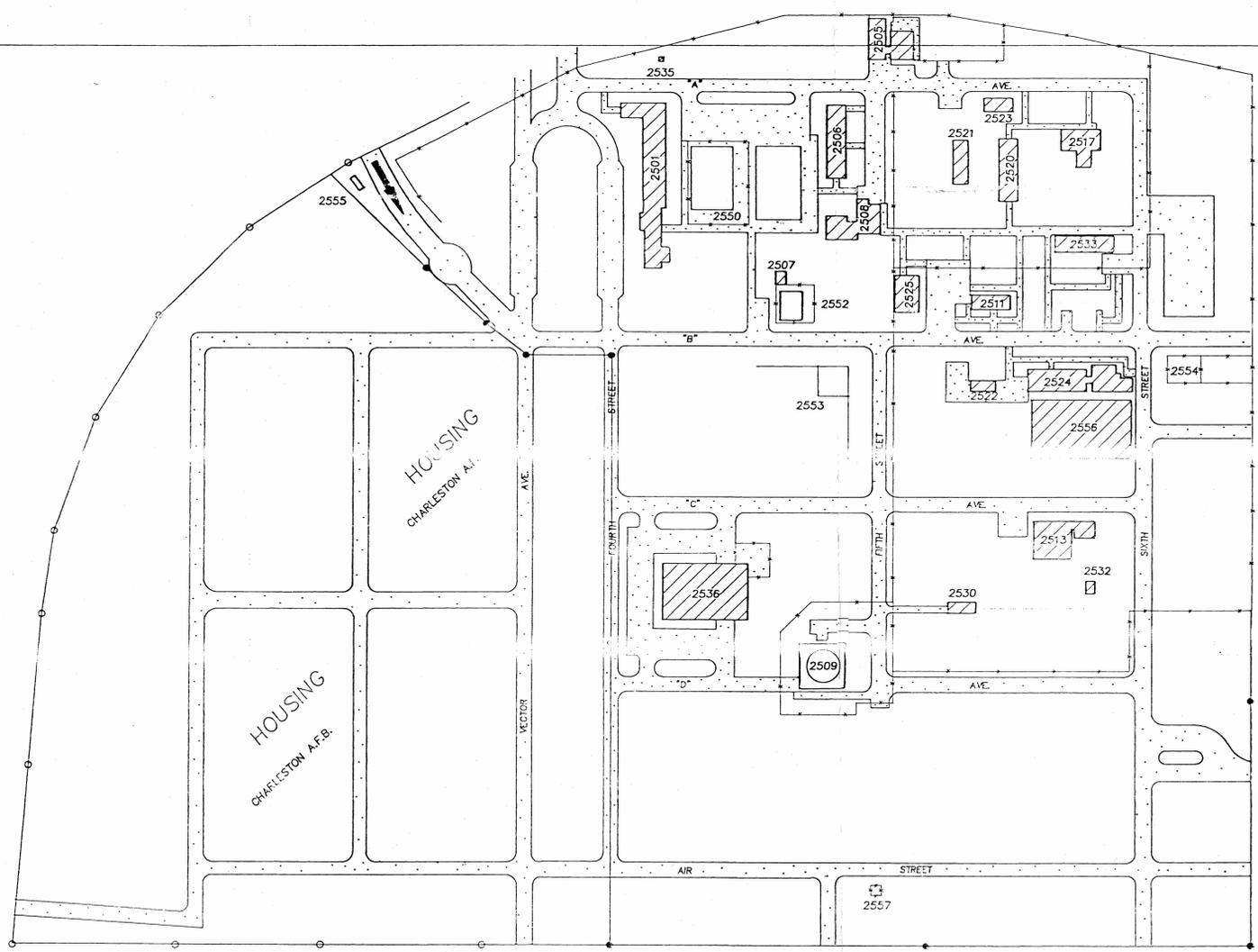
The following compliance schedule is proposed to suit the investigative strategy taken at Naval Base Charleston. The durations are greater than those provided in the previous permit because those are generally designed for one site whereas the zone investigations at the Naval Base contain from one to 30 sites.

Facility Submission	Date
RFA Information	Within 90 days of notification
RFI Work Plan for SWMUs/AOCs	120 days after notification
RFI Progress Reports	Quarterly, beginning 90 days from the Implementation of the RFI Work Plan.
Draft RFI Report	150 days after completion of RFI fieldwork.
Final RFI Report	45 days after receipt of Department comments on Draft RFI Report
Interim Measures Progress Reports	Semi-annually, beginning 180 days from implementation of Interim Measures*
Interim Measure Report	Within 120 days of completion.
Imminent Hazard Report	Oral within 24 hours; written within 15 days.
Corrective Measures Study Work Plan	Within 120 days of the approval of the associated zone RFI report.
Zone Draft CMS Report	150 days after Department approval of the Zone CMS Work Plan.
Zone Final CMS Report	45 days after receipt of Department comments on the Zone Draft CMS report.
Progress Reports Draft CMS Report	Quarterly with the Quarterly report after the approval of the associated Zone CMS Work Plan.
Corrective Measures Implementation, Conceptual Design (15% Design Point)	120 days after Department approval of Zone Final CMS Report.

Draft Operation and Maintenance Plan	Concurrent with Conceptual Design
Final Plans and Specifications (100% Design Point)	120 days after receipt of comments on the Conceptual Design
Final Operation and Maintenance Plan	Concurrent with Final Plans and Specifications
Construction Completion Report	120 days after construction completion
CMI Progress Reports	Quarterly with the Quarterly report after Department approval of the Final Plans and Specifications

The above reports must be signed and certified in accordance with R.61-79.270.11.
* This applies to Plan execution that requires more than 180 days.

A
B
C
D



LOCATION MAP
N.T.S.

INDEX OF EXISTING STRUCTURES

BLDG NO	LOCATION	DESCRIPTIVE TITLE (CURRENT USE)	QUANTITY	UNIT OF MEASURE
2501	B-2	NCO OPEN MESS	9,799	SF
2505	A-2	VEHICLE MAINTENANCE FAC.	4,620	SF
2506	B-3	ERKS - (VACANT)	3,125	SF
2507	B-2	BATH HOUSE	300	SF
2508	B-3	MAINTENANCE SHOP (CNSYD)	3,872	SF
2509	D-2	TOWER - INERT STORAGE	9,891	SF
2511	B-3	ADMIN BLDG	1,750	SF
2513	C-4	STORAGE	3,222	SF
2517	B-4	ADMIN - MCRC	4,850	SF
2520	B-3	CLASSROOM - MCRC	3,672	SF
2521	B-3	ARMORY - MCRC	2,667	SF
2522	C-3	GARAGE	1,008	SY
2523	B-3	ADMIN - MCRC	2,020	SF
2524	C-4	MINE ASSY PLANT	9,636	SF
2525	B-3	BUNKROOM	1,091	SF
2530	D-3	STORAGE	1,008	SY
2532	D-4	PAINT LOCKER	302	SF
2533	B-4	GALLEY	2,610	SF
2535	A-2	WATER TREATMENT FAC	35	SF
2536	D-2	COMOMAG FAC	19,136	SF
2550	B-2	TENNIS COURTS (2EA)	7,200	SF
2552	S-2	SWIMMING POOL	1	EA
2553	C-2	SOFTBALL FIELD	1	EA
2554	C-4	SUBSTA	311	SF
2555	B-1	ENTRANCE SIGN	1	EA
2556	C-4	MINE TRAINING CENTER	16,800	SF
2557	E-3	SEWAGE PUMPING STATION	224	SF

GRAPHIC SCALE:

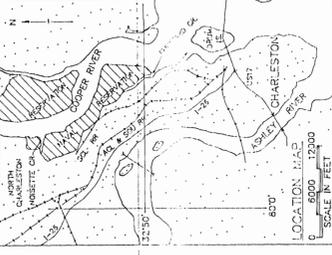
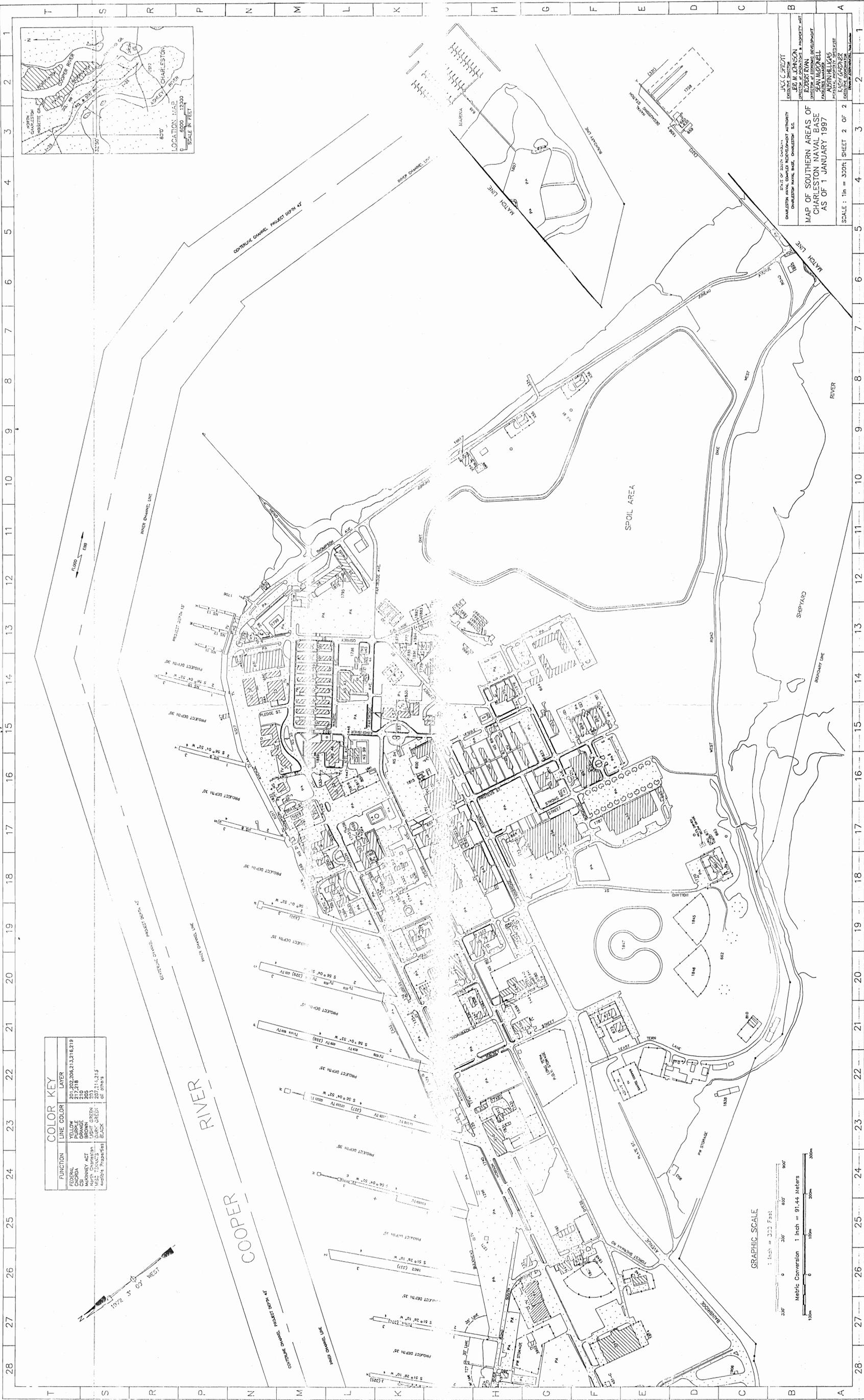


LEGEND:

- BLDG OR STRUCTURE
- ROADS, WALKS OR PAVED AREAS
- PROPERTY BOUNDARY
- PROPERTY BOUNDARY (BY OTHERS)
- SECURITY FENCE



SYMBOL	DESCRIPTION	DATE	APPROVAL
REVISIONS			
P. W. DWG. NO. 25713-48		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND	
DESIGNED: NAVAL STATION	CHARLESTON NAVAL SHIPYARD, CHARLESTON, S.C.		
DRAWN: SIMMS	NAVAL STATION ANNEX CHARLESTON, S.C.		
SECT. NO.: SVENDSEN			
BR. MGR.:	GENERAL DEVELOPMENT MAP		
APPROVED:	EXISTING CONDITIONS AS OF 6-11-92		
DIRECTOR ENGR. DIVISION	DATE: 6-11-92	REQUEST NO. 2-3171	NAV. FAC. DRAWING NO.
APPROVED:	DATE: 6-11-92	SCALE: NOTED	CONSTR. CONTR. NO.
OFFICER IN CHARGE	DATE:	SCALE:	SPEC.
		DATE:	SHEET 1 OF 1

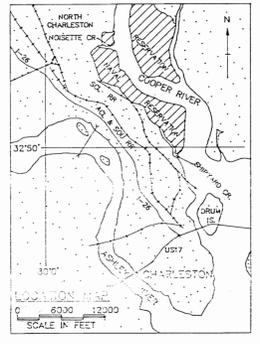
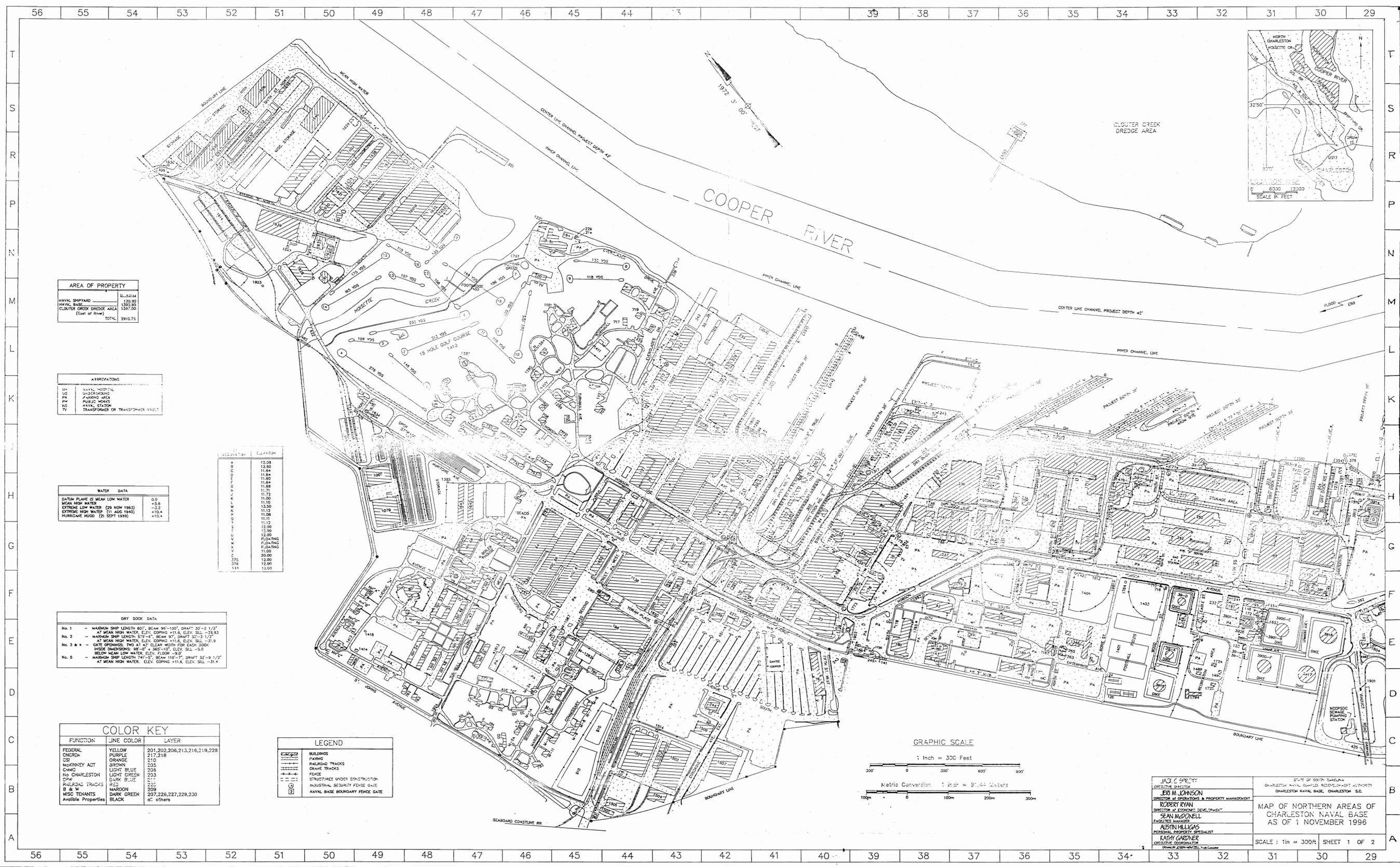


FUNCTION	LINE COLOR	LAYER
FEDERAL	YELLOW	201, 202, 206, 213, 216, 219
GAZONIA	PURPLE	211, 218
MCKINNEY ACT	BROWN	203
NIGHT CHARACTER	LIGHT GREEN	202
WATER'S PROPOSED	BLACK	11, 12, 13, 14, 15



STATE OF SOUTH CAROLINA CHARLESTON NAVAL COMPLEX REDEVELOPMENT AUTHORITY CONVENTOR WALTER SUGS, CHAIRMAN, S.C.	LAS C. FROST EXECUTIVE DIRECTOR
LEWIS M. JOHNSON PRESIDENT, S.C. REDEVELOPMENT AUTHORITY	ROBERT RYAN PRESIDENT, S.C. REDEVELOPMENT AUTHORITY
ALVIN HILLIARD PRESIDENT, S.C. REDEVELOPMENT AUTHORITY	ALVIN HILLIARD PRESIDENT, S.C. REDEVELOPMENT AUTHORITY
ALVIN HILLIARD PRESIDENT, S.C. REDEVELOPMENT AUTHORITY	ALVIN HILLIARD PRESIDENT, S.C. REDEVELOPMENT AUTHORITY

Appendix F-1
Charleston Naval
Complex Map
(Sheet 2 of 2)



AREA OF PROPERTY	
NAVAL SHIPYARD	130.80
NAVAL BASE	137.00
CLOUTER CREEK DREDGE AREA	137.00
TOTAL	294.80

ABBREVIATIONS	
UN	NAVAL SHIPYARD
UB	UNDEVELOPED
PA	PARKING AREA
PP	PUBLIC WORKS
NS	NAVAL STATION
TV	TRANSFORMER OR TRANSFORMER VAULT

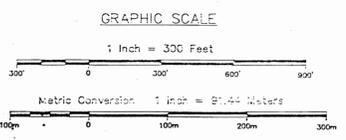
WATER DATA	
DATUM PLANE IS MEAN LOW WATER	0.0
MEAN HIGH WATER	+5.4
EXTREME LOW WATER (29 NOV 1963)	-3.2
EXTREME HIGH WATER (11 AUG 1940)	+10.4
HURRICANE HUGO (21 SEPT 1989)	+10.4

PROPERTY NO.	ELEVATION
1238	12.38
1239	12.39
1240	12.40
1241	12.41
1242	12.42
1243	12.43
1244	12.44
1245	12.45
1246	12.46
1247	12.47
1248	12.48
1249	12.49
1250	12.50
1251	12.51
1252	12.52
1253	12.53
1254	12.54
1255	12.55
1256	12.56
1257	12.57
1258	12.58
1259	12.59
1260	12.60
1261	12.61
1262	12.62
1263	12.63
1264	12.64
1265	12.65
1266	12.66
1267	12.67
1268	12.68
1269	12.69
1270	12.70
1271	12.71
1272	12.72
1273	12.73
1274	12.74
1275	12.75
1276	12.76
1277	12.77
1278	12.78
1279	12.79
1280	12.80
1281	12.81
1282	12.82
1283	12.83
1284	12.84
1285	12.85
1286	12.86
1287	12.87
1288	12.88
1289	12.89
1290	12.90
1291	12.91
1292	12.92
1293	12.93
1294	12.94
1295	12.95
1296	12.96
1297	12.97
1298	12.98
1299	12.99
1300	13.00

DRY DOCK DATA	
No. 1	MAXIMUM SHIP LENGTH 607', BEAM 95'-10", DRAFT 32'-2 1/2" AT MEAN HIGH WATER, ELEV. COPING +11.6, ELEV. SILL -25.83
No. 2	MAXIMUM SHIP LENGTH 575'-4", BEAM 97', DRAFT 30'-3 1/2" AT MEAN HIGH WATER, ELEV. COPING +11.6, ELEV. SILL -27.9
No. 3 & 4	GATE OPENINGS: TWO AT 47' CLEAR WIDTH FOR EACH DOCK INSIDE DIMENSIONS: 88'-0" x 345'-10", ELEV. SILL -5.0 BELOW MEAN LOW WATER, ELEV. FLOOR -9.57
No. 5	MAXIMUM SHIP LENGTH 747'-5", BEAM 110'-7", DRAFT 32'-9 1/2" AT MEAN HIGH WATER, ELEV. COPING +11.6, ELEV. SILL -31.4

COLOR KEY		
FUNCTION	LINE COLOR	LAYER
FEDERAL	YELLOW	201,202,206,213,216,219,228
CHURCH	PURPLE	217,218
CS	ORANGE	210
MCKINNEY ACT	BROWN	205
CHMC	LIGHT BLUE	208
NO CHARLESTON	LIGHT GREEN	203
CPW	DARK BLUE	211
RAILROAD TRACKS	RED	212
B & W	MAROON	209
MISC TENANTS	DARK GREEN	207,226,227,229,230
Available Properties	BLACK	0; others

LEGEND	
	BUILDING
	PAVING
	RAILROAD TRACKS
	CRANE TRACKS
	FENCE
	STRUCTURES UNDER CONSTRUCTION
	INDUSTRIAL SECURITY FENCE GATE
	NAVAL BASE BOUNDARY FENCE GATE



JACK SPRATT DESIGNER	STATE OF SOUTH CAROLINA CHARLESTON NAVAL SHIPYARD DEVELOPMENT AUTHORITY CHARLESTON NAVAL BASE, CHARLESTON, S.C.
ERM JOHNSON DIRECTOR OF OPERATIONS & PROPERTY MANAGEMENT	
ROBERT RYAN DIRECTOR OF ECONOMIC DEVELOPMENT	
SEAN McDONELL PROPERTY MANAGER	
AUSTIN HILLIGAS PERSONAL PROPERTY SPECIALIST	
KATHY GARDNER COASTLINE DEVELOPMENT	
MAP OF NORTHERN AREAS OF CHARLESTON NAVAL BASE AS OF 1 NOVEMBER 1996	
SCALE: 1 in = 300 ft SHEET 1 OF 2	

Appendix F-1
Charleston Naval
Complex Map
(Sheet 1 of 2)

Appendix F-4

Index of Structures

INDEX OF STRUCTURES

EXISTING STRUCTURES

CHARLESTON NAVAL SHIPYARD

(AS OF 1/1/94)

NO.	LOCATION	DEPT.	USE
2	J-43	P	SHIPFITTER SHOP, STRUCTURAL & PIPING GROUP OFFICES
2A	K-43	P	SHIPFITTER SHOP AND SAIL LOFT
NS2	M-16	PW	BOILER HOUSE AND SUBSTATION
3	J-42	OPS	INSIDE MACHINE SHOP
NS3	M-17	PW	PUMP HOUSE (AIRCRAFT TRUCK FUELING FACILITY)
4	G-43	VARIOUS	ADMIN. OFFICES, ENGINEERING, N. ENGINEERING AND IRM
NS4	M-16	PW	FUEL OIL STORAGE
5	H-42	P	WOODWORKING SHOP
NS5	L-17	PW	500,000 GAL FRESH WATER STORAGE
6	H-43	P	FORGE SHOP AND PROPELLER REPAIR SHOP
NS6	L-17	PW	PUMPHOUSE (FRESH WATER)
7	H-44	VARIOUS	COMPTROLLER DEPT. AND IRM
8, 8A	G-43	VARIOUS	ADMIN. OFFICES, NAVSTA TELEPHONE OFFICE, ENGINEERING, AND NAVY AUDIT OFFICE
	G-39	P	TEMPORARY SERVICE SHOP
	G-39	NE	N. ENGINEERING DEPT.
11	J-37	P	MISC. SHOPS & TEST EQUIP. STORAGE
12-A	D-34	PW	TRAINING BLDG. (TEMPORARY)
12-B	D-34	PW	TRAINING BLDG. (TEMPORARY)
13	G-38	QA & S	QUALITY ASSURANCE OFFICE & SUPPLY ADMIN.
21	H-36	P	STORAGE (SHOP 99)
25	E-40	PW	MAINTENANCE SHOP (07)
26	K-38	P	FIELD OFFICE
30	F-41	PW	PW BUILDING TRADES AND ADMIN. OFFICES
XS0A	L-19	PW	TRANSFORMER VAULT
31	F-41	PW	STORAGE FOR POWER PLANT
32	F-41	PW	CENTRAL POWER PLANT
XS3A	L-16	PW	TRANSFORMER VAULT
35	H-43	P & QA	WELDING SCHOOL AND WELDING ENGINEERING
ISC29	J-32	PW	DIESEL OIL PUMPHOUSE (ABANDONDED)
2	E-32	PW	FLEET MOTOR POOL
3	H-41	P	CENTRAL TOOL SHOP & SERVICE GROUP OFFICES
4	G-42	S	SUPPLY & SHOP STORES
XS44	L-14	PW	HEATING PLANT
XS45	L-13	PW	FUEL STORAGE
6	J-41	PW	COMPRESSOR AND SALT WATER PUMPHOUSE
3	F-43	PW	FRESH WATER STORAGE UNDERGROUND TANK
4	F-43	PW	FRESH WATER PUMPHOUSE
5	M-42	P	COLLIMATION FACILITY
6	G-42	P	OUTSIDE MACHINE SHOP
	G-42	P	RIGGER SHOP
	F-43	NRMC & RADCON	DISPENSARY, INDUSTRIAL MEDICINE AND RADIATION HEALTH

EXISTING STRUCTURES
CHARLESTON NAVAL SHIPYARD

NO.	LOCATION	DEPT.	USE
58A	J-42	P	WC-49 PWD
59	J-43	P	SHEETMETAL SHOP AND BOILER SHOP
62	L-41	OPS	OPERATIONS PROJECT OFFICES & ENGINEERING
63	H-42	CSO	YARD CAFETERIA NO. 1
68	G-30	P	BATTERY SHOP (ELECTRIC SHOP)
69	G-31	S	STOREHOUSE, RECEIVING AND SHIPPING
NS69	H-15	PW	BOILER HOUSE
NH72	E-48	PW	HEATING PLANT BUILDING
74	K-42	S	STOREHOUSE
75	K-38	PW	SUBSTATION
76	D-40	CSO/OSH	HUMAN RESOURCE & SAFETY/ENVIROMENTAL OFFICES
77	H-41	PW	SUBSTATION, RESTROOM, SHIP SUPT OFFICE
78	F-47	PW	WATER TANK (ELEVATED)
79	J-35	QA	REPAIR SHOP AND QUALITY ASSURANCE OFFICE
80	H-39	P	REFUELING SUPPORT FACILITY
84	H-40	PW	SUBSTATION, DRYDOCK NO. 2
85	J-35	PW	SUBSTATION, PIERS 317D TO 317E
88	J-39	PW	SALT WATER PUMPHOUSE No. 2
91	J-33	PW	SUBSTATION
93	J-39	PW	RESTROOM
94	G-33	PW	SUBSTATION
	H-31	PW	SUBSTATION & STORAGE
	H-30	PW	SUBSTATION & STORAGE
	G-37	PW	AIR COMPRESSOR HOUSE
99	J-41	PW	SALT WATER PUMPHOUSE
101	H-34	S&P	MATERIAL AND TOOL STOREHOUSE
122	F-32	PW	GROUNDS MAINTENANCE (WC-49)
123	J-23	PW	BOILER HOUSE
124	H-28	PW	SUBSTATION
125	H-23	PW	SUBSTATION
126	K-20	PW	SUBSTATION
127	J-28	PW	SALT WATER PUMPHOUSE
136	G-42	PW	CONDENSATE STORAGE AND PUMPHOUSE
137	K-44	P	OXYGEN CHARGING STATION
143	L-37	PW	AUTOMATIC TIDE GAUGE HOUSE (ABANDONED)
145	G-37	P	TEST STAND (RIGGER SHOP) (ABANDONED)
147	H-42	P	STORAGE (SHOP 06)
168	J-33	IMA	STOREHOUSE
174	F-36	PW	SWITCH HOUSE (ELEC.)
177	F-40	P	ELECTRIC AND ELECTRONICS SHOPS
178	E-39	PW	STEAM FLOW METER HOUSE
185	H-29	PW	DREDGE BOOSTER PUMPHOUSE
187	G-37	OPS	MODULE MAINTENANCE FACILITY
188	G-37	OPS	MECHANICAL EQUIPMENT BUILDING FOR BLDG. 187
189	G-37	OPS	MECHANICAL & ELECTRIC EQUIP BLDG FOR BLDG 187
190	J-34	RADCON	RADCON TRAINING & OFFICES
194	J-39	P	PAINT SHOP STORAGE (SHOP 71)
5	J-38	P&ENG	RIGGER SHOP SERVICE BUILDING, NRRO & BRMO FIELD OFFICE
5	K-19	PW	250,000 GAL FRESH WATER ELEVATED TANK

EXISTING STRUCTURES
CHARLESTON NAVAL SHIPYARD

NO.	LOCATION	DEPT.	USE
197	J-37	PW	PUMPWELL, DRYDOCK NO. 5
199	F-36	CSO	TRAINING BLDG. (COCHRANE HALL)
209	E-42	CSO	EMPLOYEE OUTPLACEMENT CENTER
210	A-45	PW	CHLORINATOR BUILDING, FRESH WATER
211	E-50	PW	CHLORINATOR BUILDING, FRESH WATER
212	K-43	P	ABRASIVE BLASTING FACILITY
216	G-37	S	ELECTRICAL SHOP CABLE WAREHOUSE
217	G-38	P	NEUTRON GENERATOR HOUSE
218	H-35	P	MISSILE ORDNANCE SYSTEMS SHOP (SHOP 67)
221	K-42	P	PIPE SHOP CLEANING PLANT
222	G-41	P	DRYDOCK SUPPORT REPAIR FACILITY
223	L-43	P	PAINT SHOP
226	J-42	P	PLATING PLANT AND PUMP, VALVE & HYDRAULICS
227	E-42	CSO	EMPLOYEE SERVICES ASSOCIATION
228	L-42	P	PIPE INSULATION FACILITY
230	H-39	CSO	CANTEEN NO. 2
231	J-36	CSO	CANTEEN NO. 3
232	F-32	EDU/TRG AID DET	TRAINING AIDS STORAGE & ADMINISTRATION
234	H-44	VARIOUS	ENGINEERING MANAGEMENT BUILDING
235	G-35	P	MAPP GAS - CO2 FACILITY
	H-37	P	OPERATIONS CENTER & PIPEFITTING SHOP
	G-37	P & N. ENG	SHIPS STORAGE & ENGINEERING TEST FACILITY
236	H-36	P	REPAIR EQUIPMENT BUILDING
239	L-42	P	RESPIRATOR CARE FACILITY
240	G-32	PW	CARWASH FACILITY
241	G-34	PW	CRANE MAINTENANCE BUILDING
242	G-33	PW	AUTOMOBILE MAINTENANCE BUILDING
244	D-42	CSO	FED. CREDIT UNION (OWNED BY CFCU)
246	E-26	OSH	HAZARDOUS WASTE STORAGE AND TRANSIT FACILITY
247	J-38	OPS	WATERFRONT SERVICE SUPPORT BUILDING
248	G-35	S	SUPPLY ADMINISTRATIVE BUILDING
249	E-33	PW	PUBLIC WORKS MAINTENANCE
250	J-40	OPS	WATERFRONT SERVICE SUPPORT BUILDING
252	H-34	RADCON	TRAINING FACILITY
254	H-35	S	COMPONENT INSPECTION FACILITY
255	G-32	S	INDUSTRIAL LOGISTICS FACILITY
256	H-36	P	SHIPWORK STAGING/STORAGE BLDG.
261	H-41	P	DRYDOCK NO. 1
261B	H-40	PW	PUMPHOUSE AND PUMPWELL (DD-1)
262	G-40	P	DRYDOCK NO. 2
262B	H-40	PW	PUMPWELL (UNDERGROUND) (DD-2)
263	H-31	P	DRYDOCK NO. 3
263B	H-30	PW	PUMPWELL (DD-3 & 4)
264	H-30	P	DRYDOCK NO. 4
265	J-37	P	DRYDOCK NO. 5
264	K-40	P	INDUSTRIAL PIER (D)
264	K-38	P	MARGINAL WHARF
263	J-39	P	REPAIR WHARF (F)
267C	L-38	P	INDUSTRIAL PIER (F)

EXISTING STRUCTURES
CHARLESTON NAVAL SHIPYARD

NO.	LOCATION	DEPT.	USE
317D	K-36	P	INDUSTRIAL PIER (G)
317E	K-34	P	INDUSTRIAL PIER (H)
317F	J-32	P	INDUSTRIAL PIER (J)
333	L-40	P	INDUSTRIAL PIER (C) (END OF 352)
342	L-42	PW	SUBSTATION
343	L-43	P	SHIP BUILDINGWAYS (CONCRETE) (ABANDONED)
351	H-40	P	QUAY WALL (E)
352	K-41	P	REPAIR WHARF
353	L-41	P	BULKHEAD, BUILDINGWAYS
354	J-30	P	BULKHEAD, DRYDOCK NO. 4
355	J-41	P	BULKHEAD, PIERS 352 TO 314
356	J-31	P	BULKHEAD, DRYDOCKS 3 TO 4
374	H-29	PW	DREDGE BOAT HOUSE
375	J-29	PW	DREDGE MOORING PIER
376	R-36	PW	PIER AT CLOUTER CREEK DISPOSAL AREA
377	S-36	PW	BOOSTER PUMPHOUSE AT CLOUTER CREEK
378	J-29	PW	TIDE GAUGE HOUSE
380	H-28	PW	HOSE HOUSE FOR SHIP TO SHORE SEWAGE
381	F-30	PW	STORAGE/ADMIN. FACILITY (PEST CONTROL)
384	E-43	PW	STORM WATER PUMPING STATION
391	F-42	PW	STORAGE BUILDING
	G-43	PW	PUBLIC WORKS FACILITY
	J-41	PW	FIRE PROTECTION PUMPING STATION
	N-15	PW	SALT WATER PUMPHOUSE
425	F-41	PW	UTILITY SHOP 03 AND SHOP STORES
445A	H-41	P	GAS BOTTLE SHED
445B	H-39	P	GAS BOTTLE SHED
445C	G-35	P	GAS BOTTLE SHED
445D	K-42	P	GAS BOTTLE SHED
451A	E-42	--	SUBSTATION (PROPERTY SCE&G CO.)
451B	F-41	PW	SUBSTATION
451C	F-29	PW	SUBSTATION
451D	F-41	PW	SWITCHING STATION
451H	J-37	PW	SUBSTATION
451K	J-22	PW	SWITCHING STATION
451L	F-36	PW	SWITCHING STATION
451M	G-45	PW	SWITCHING STATION
451X	H-19	PW	SWITCHING STATION
451Y	E-22	PW	SWITCHING STATION
454	H-38	PW	SUBSTATION
455	H-38	PW	SUBSTATION
456	J-39	PW	SUBSTATION
457	J-41	PW	SWITCHGEAR, SUBSTATIONS & PRODUCTION OFFICES
458	L-39	PW	SWITCHGEAR AND SUBSTATION
459	H-43	PW	SWITCHING SUBSTATION
460	K-42	PW	SWITCHING SUBSTATION
466	G-30	PW	SWITCHING SUBSTATION
	L-50	PW	RAILROAD BRIDGE TRESTLE
	E-43	PW	RAILROAD TRACK SCALES
		P	FLAG POLE

EXISTING STRUCTURES
CHARLESTON NAVAL SHIPYARD

NO.	LOCATION	DEPT.	USE
560	J-49	PW	COAL STORAGE YARD
590A	H-34	RADCON	RADIOLOGICAL CONTROL OFFICE
622	L-50	PW	HIGHWAY BRIDGE
715	F-33	PW	DEEP WELL PUMPHOUSE
716	F-33	PW	DEEP WELL
808	K-43	PW	STORAGE BUILDING
809	H-31	OPS	SHIPWORK SUPPORT BLDG.
903	D-24	PW	STORAGE BUILDING
904	E-41	CSO	CANTEEN NO. 6 (TRAILER)
910	B-45	PW	DETENTION POND
1024	H-37	P	PIPE SHOP STAGING/STORAGE
1035	F-39	P	PAINT SHOP
1119	J-41	OPS	OPEATIONS SUPPORT OFFICES (WATERFRONT)
1141	F-42	CSO	SHIPYARD SECURITY OFFICE
1171	G-35	P	MATERIAL & EQUIPMENT STORAGE
1173	G-35	S	STORAGE AND OFFICE
1174	H-32	IMA	TRAINING AND ADMIN. OFFICES
1175	F-32	PW&S	SHOP STORES & GROUNDS MAINTENANCE BLDG.
1178	F-39	S	STORAGE
1190	H-30	PW	COMPRESSOR HOUSE
1193	F-32	NAVSEA- CENTLANT	OFFICE
1229C	J-36	CSO	LUNCH SHELTER
1241	F-32	NAVSEA- CENTLANT	STORAGE
1245	J-37	P	WOODWORKING SHOP (FIELD)
1248	F-41	PW	STORAGE (SHOP 03)
1267	G-31	S	RECEIVING AND SHIPPING TRANSIT SHED
1269	F-41	PW	STORAGE (SHOP 03)
1271	H-25	PW	GARBAGE HANDLING (CONTAINER CLEANING)
1275	L-42	P	ABRASIVE BLAST SLAB
1277	H-33	S	STOREHOUSE
1278	H-30	P	BATTERY PROCESSING SLAB
1292	J-42	PW	STORAGE PWD WC-49
1295	G-42	PW	STEAM CONDENSATE STORAGE TANK
1297	G-39	P	STORAGE SAND BINS (SHOP 81)
1298	G-40	P	BRICK STORAGE (SHOP 41)
1299	G-40	P	SHOP STORES (SHOP 41)
1314	G-39	P	MATERIAL STORAGE (SHOP 81)
1316	F-30	PW	TOOL STORAGE (SHOP 07)
1317	H-39	P	CRANE OPERATIONS BLDG.
1358	F-40	PW	COOLING TOWER FOR BUILDING 177
1363	F-42	PW	COOLING TOWER FOR BUILDING 32
1364	G-36	P	SAND HOPPER
1365	G-36	P	SAND HOPPER
1374	J-41	PW	STORAGE BLDG.
1378	G-42	PW	PURE WATER TANK STORAGE SLAB
1382	G-43	PW	F. W. VALVE HOUSE
1393	G-36	P	SAND HOPPER
1394	F-42	PW	PURE WATER FACILITY - TANKS (2)

EXISTING STRUCTURES
CHARLESTON NAVAL SHIPYARD

NO.	LOCATION	DEPT.	USE
1400	F-35	PW	RESTROOM AND PRESS BOX
1405	F-35	PW	BASEBALL FIELD (FLETCHER FIELD)
1421	G-36	PW	COOLING TOWER FOR BUILDING 97
1423	VAR LOC	P	PORTABLE SERVICE SOUND HUT
1426	H-34	S	CONTAMINATED WASTE STORAGE
1433	VAR LOC	P	PORTABLE FIELD OFFICE
1434	VAR LOC	P	PORTABLE FIELD OFFICE
1435	H-29	PW	DREDGE OPERATION OFFICE
1436	VAR LOC	P	PORTABLE FIELD OFFICE
1443	E-41	COMP	TIME CLOCK STATION NO. 8
1450	L-42	P	SAND HOPPERS
1453	J-44	P	CLEANING AND PRESERVATIVE PLANT
1454	G-39	P	EQUIPMENT STORAGE
1700	J-43	CSO	SENTRY HOUSE
1711	H-35	P	INCINERATOR
1712	H-40	S	STORAGE
1713	VAR LOC	P	PORTABLE FIELD OFFICE
1717	G-41	P	FLUSHING EQUIPMENT STORAGE
1723	K-44	P	BOILER TUBE AND FIREBRICK STORAGE SHED
1734	D-23	PW	SHOP 07 RIGGER STORAGE
1736	H-37	PW	RESTROOM
1737	J-34	PW	RESTROOM
1738	F-41	COMP	TIME CLOCK STATION NO. 9
1739	H-38	QA	STORAGE BLDG.
1747	VAR LOC	P	PORTABLE SERVICE SOUND HUT
1760	H-35	P	CONTAMINATED STORAGE
1761	J-19	PW	SEWER PUMPING STATION NO. 1
1762	M-18	PW	SEWER PUMPING STATION NO. 2
1763	H-20	PW	SEWER PUMPING STATION NO. 3
1764	F-34	PW	SEWER PUMPING STATION NO. 4
1765	E-38	PW	SEWER PUMPING STATION NO. 5
1766	F-39	PW	SEWER PUMPING STATION NO. 6
1767	F-41	PW	SEWER PUMPING STATION NO. 7
1768	N-46	PW	SEWER PUMPING STATION NO. 8
1769	R-49	PW	SEWER PUMPING STATION NO. 9
1770	D-18	PW	SEWER PUMPING STATION (BLDG. 661)
1771	F-32	A	SENTRY HOUSE
1772	H-34	A	SENTRY HOUSE
1773	F-39	CSO	SENTRY HOUSE
1774	H-33	CSO	SENTRY HOUSE
1775	G-38	CSO	SENTRY HOUSE
1782	H-39	CSO	LUNCH SHELTER
1783	J-41	PW	SEWAGE PUMPING STATION
1784	H-42	P&PW	INDUSTRIAL WASTE TREATMENT FACILITY
1787	F-17	PW	SEWAGE PUMPING STATION
1793	J-23	PW	SUBSTATION BUILDING
1797	H-29	P&PW	ACID WASTE TREATMENT FACILITY
1803	H-45	A	FLAG POLE AT BUILDING NO. 234
1804	H-42	P	PIERMASTER BUILDING
1805	J-39	P	PIERMASTER BUILDING

EXISTING STRUCTURES
CHARLESTON NAVAL SHIPYARD

NO.	LOCATION	DEPT.	USE
1803	M-51	PW	CHLORINATION STATION
1804	E-29	PW	CHLORINATION STATION
1805	R-49	PW	ANALYZER STATION
1806	H-29	PW	SEWAGE PUMPING STATION
1807	M-16	PW	SEWAGE PUMPING STATION
1808	J-22	PW	SEWAGE PUMPING STATION
1809	J-39	PW	SEWAGE PUMPING STATION
1811	H-29	PW	SEWAGE SURGE TANK
1812	F-35	PW	SEWAGE PUMPING STATION
1824	F-30	SUPPLY	HAZARDOUS/FLAMMABLE STORAGE FACILITY
1826	G-42	COMP	TIME CLOCK STATION
1827	G-42	COMP	TIME CLOCK STATION
1828	H-39	COMP	TIME CLOCK STATION
1829	G-31	S	STORAGE SHELTER
1836	F-31	PW	STORAGE (SHOP 07)
1838	C-22	PW	GENERAL STORAGE
1855	G-38	CSO	CANTEEN NO. 4
1950	G-42	CSO	SENTRY HOUSE
3900J	H-32	PW	STORAGE
3902	G-27	PW	PAINT AND OIL STOREHOUSE
3909	J-22	PW	200,000 GAL. FUEL OIL TANK
3910	SUL. ISL.	ENG	SHIPBOARD ELECTRONICS SYS. EVALUATION FAC.
3901	SUL. ISL.	ENG	FLAGPOLE
ARDM 3	J-33	P	5500 TON FLOATING DRY DOCK

EXISTING STRUCTURES
NAVAL SUPPLY CENTER

NO.	LOCATION	USE
14	K-17	SMALL CRAFT READY FUEL STORAGE (NOT IN USE)
M17	D-45	ADMINISTRATION BUILDING
39A	E-33	BALLAST/SLUDGE STORAGE TANK, 741,000 GAL.
39D	F-33	BALLAST/SLUDGE STORAGE TANK, 741,000 GAL.
39L	E-32	DIESEL TANK, 6,500 GAL.
39M	E-32	DIESEL PUMPHOUSE
39N	E-32	MOTOR GAS TANK, 825 GAL. UNDERGROUND (ABANDONED)
NSC45	G-43	WAREHOUSE
64	G-46	WAREHOUSE
NSC66	G-45	WAREHOUSE
NSC67	F-45	WAREHOUSE
83	A-45	BUSINESS OPPORTUNITY CENTER
98	F-31	FUEL OIL BOOSTER PUMPHOUSE
133	E-32	OPERATIONAL STORAGE
135	P-50	OPERATIONAL STORAGE
148	F-31	STRIPPER CONCRETE TANK
172	E-31	OPERATIONAL STORAGE
173	J-49	OPERATIONAL STORAGE
191	M-50	CONTROLLED HUMIDITY WAREHOUSE (CNSY, MMF)
193	G-26	COLD STORAGE WAREHOUSE/LABORATORY
198	E-44	SUPPLY RECEIVING, SHIPPING & ADMIN. AND ADP BLDG.
9	E-44	BATTERY CHARGING STATION
	E-27	SERVMART
290	F-46	BATTERY CHARGING FACILITY
290	F-44	UNINTERRUPTABLE POWER SOURCE BLDG.
321	R-47	SUPPLY PIER (ALPHA)
325	K-28	FUELING PIER (K)
547	H-48	OPEN STORAGE (STEEL PLATE)
M766	D-44	ADMINISTRATION BLDG.
1001	H-49	CYLINDER/POL STORAGE SHED
1079	G-49	HAZARDOUS FLAMMABLE STORAGE
1127	H-44	PRESERVATION SHOP AND BULK STORAGE
M1136	D-44	ADMINISTRATIVE BUILDING
1138	F-44	BIN ISSUE WAREHOUSE
1172	G-34	SHIPS OUTFITTING, CLOTHING STORAGE, AND FLEET PURCHASING
1226	K-49	SHOP REPAIR STORAGE
M1263	E-45	PINIC AREA
1385	H-48	FIELD OFFICE
1419	F-44	MISSILE DISPLAY
1420	E-45	FLAG POLE
1449	R-52	PORTABLE FIELD OFFICE
1501	A-44	WAREHOUSE
1502	B-44	WAREHOUSE
1503	B-43	WAREHOUSE
1504	B-43	WAREHOUSE
1505	A-44	WAREHOUSE (NWS HOUSING STORAGE)
1507	B-42	WAREHOUSE
1508	B-43	STORAGE BLDG. (RUBB)
1509	C-43	1500 GPM PUMPING STATION

EXISTING STRUCTURES
NAVAL SUPPLY CENTER

NO.	LOCATION	USE
1571	D-44	FLAMMABLE STORAGE SHELTER
1601B	P-48	WAREHOUSE
1602C	P-49	WAREHOUSE
1603	R-50	MTIS WAREHOUSE
1604	R-53	WAREHOUSE
1605	R-52	WAREHOUSE (REPAIRABLES PROCESSING)
1606	S-51	WARE HOUSE (DRMO)
1607	P-52	WAREHOUSE (DRMO)
1612	R-51	OPEN STORAGE (DRMO)
1613	S-51	OPEN STORAGE (DRMO)
1614	N-52	OPEN STORAGE
1620	P-50	WAREHOUSE, OPERATIONAL STORAGE
1621	P-50	WAREHOUSE
1622	N-50	WAREHOUSE (PMO)
1623	N-50	WAREHOUSE (PMO)
1624	P-49	BATTERY CHARGING FACILITY
1627	S-52	SALES FACILITY (DRMO)
1628	M-51	PUBLICATIONS AND PRINTING PLANT (NPPSO)
1629	R-50	FLAMMABLE STORAGE SHELTER
1631	F-46	VEHICLE STORAGE SHED
1632	P-48	GENERAL STORAGE SHED
1633	R-48	VALVE HOUSE
1634	K-49	SHELTER FOR BAND SAW
1635	K-49	FIELD OFFICE
1636	P-49	STORAGE BLDG. (RUBB)
1637	R-49	STORAGE BLDG. (RUBB)
1638	R-49	STORAGE BLDG. (RUBB)
1639	N-51	CONTROLLED HUMIDITY WAREHOUSE
1640	S-50	CONFORMING STORAGE FACILITY (DRMO)
1647	N-51	PUMP HOUSE
1648	P-51	GENERAL STORAGE BLDG.
1649	S-51	STORAGE SHED (DRMO)
1650	F-44	SECURITY HOUSE
1651	G-49	2500 GPM PUMPING STATION
1652	R-48	SENTRY HOUSE
1653	E-31	FUEL TESTING LAB
1654	E-31	ACCOUNTING BUILDING
1655	F-45	GENERAL WAREHOUSE
1800	H-29	WARMING/ADMIN. BLDG.
1810	H-29	AIR COMPRESSOR BLDG.
1814	E-27	FLAMMABLE STORAGE SHELTER
3900E	E-31	DIESEL OIL TANK, 2,350,000 GAL
3900F	D-31	DIESEL OIL TANK, 2,350,000 GAL.
3900I	E-31	DIESEL OIL PUMPHOUSE/LABORATORY
3901A	E-31	BALLAST/SLUDGE STORAGE TANK, 103,194 GAL.
3901B	E-31	SLUDGE PUMPHOUSE
3911	H-29	LUBRICANT STORAGE TANK (50,000 GAL.)
912	G-29	LUBRICANT STORAGE TANK (50,000 GAL.)
913	H-29	TANK TRUCK/CAR LOADING/UNLOADING FACILITY AND ATTENDANT WEATHER SHELTER

EXISTING STRUCTURES
NAVAL SUPPLY CENTER

NO.	LOCATION	USE
3914	H-29	POL OPN/SAMPLING/TEST BLDG
3915	D-33	LUBRICANT STORAGE TANK 1,008,000 GAL.
3916	E-30	DIESEL OIL TANK 4,200,000 GAL.
3917	D-30	DIESEL OIL TANK 4,200,000 GAL.
3926	E-32	BALLAST WATER TREATMENT FACILITY

EXISTING STRUCTURES
NAVAL SUPPLY CENTER
CHICORA TANK FARM

NO.	USE
3906K	DIESEL FUEL OIL TANK 2,130,000 GAL.
3906L	DIESEL FUEL OIL TANK 2,128,000 GAL.
3906M	SHIP FUEL OIL TANK 2,132,000 GAL.
3906N	SHIP FUEL OIL TANK 2,126,000 GAL.
3906O	BALLAST/SLUDGE STORAGE TANK 1,153,000 GAL.
3906P	DIESEL FUEL OIL TANK 2,128,000 GAL.
3906Q	OPERATIONAL STORAGE
3906R	TRANSFORMER VAULT
3906S	TRANSFORMER VAULT
3920	RUNOFF OIL/WATER SEPARATOR

EXISTING STRUCTURES NAVAL STATION

NO.	LOCATION	USE
NS1	M-15	ADMIN BUILDING (COMINWARCOM/COMCRUDESGRU TWO)
2	CHASN	DEGAUSSING FACILITY AND BOAT PIER (533)
X2N	E-38	GENERAL WAREHOUSE
3	CHASN	MEDIUM RANGE (533)
4	CHASN	SHALLOW RANGE (533)
5	CHASN	STRAY MAGNETIC FIELD GARDEN (533)
NS7	N-13	ADMINISTRATIVE BUILDING (MINE DIVISION 125)
NS8	N-17	BERTHING PIER (S)
NS9	P-16	BERTHING PIER (T)
NS10	P-14	BERTHING PIER (U)
X10	H-23	GENERAL WAREHOUSE
NS11	P-13	FLOATING PIER (V)
X11	H-23	PUBLIC WORKS MAINTENANCE SHOPS
NS12	P-13	FLOATING PIER (W)
X12	H-23	MAINTENANCE SHOP
NS13	P-13	FLOATING PIER (X)
NS16	L-17	ADMINISTRATIVE OFFICE (DESRON 4/6)
17	N-15	QUAY WALL
NS19	M-17	COVERED STORAGE (MOTU 10)
20	M-17	ADMIN/TRAINING BLDG. (MOTU 10)
21	D-49	GENERAL PURPOSE LABORATORY
1	M-17	CABLE REEL BLDG. (SIMA)
	M-14	MACHINE SHOP (SIMA)
X25	J-20	FLEET LAUNDRYMAT (TEMPORARY)
NS26	N-14	ADMINISTRATIVE OFFICE (SIMA)
27	N-14	ADMINISTRATIVE OFFICE (COOP 22)
28	N-13	BACHELOR OFFICERS' QUARTERS
NS31	M-13	DISCIPLINARY & TRANSIENT PERSONNEL BARRACKS
NS32	M-14	TRANSIENT PERSONNEL BARRACKS
33	M-14	ENLISTED MEN'S BARRACKS
34	M-14	ENLISTED MEN'S BARRACKS
NS35	M-14	ENLISTED MEN'S BARRACKS
36	M-14	ENLISTED MEN'S BARRACKS
37	M-15	ENLISTED MEN'S BARRACKS
NS38	M-15	ENLISTED MEN'S BARRACKS (PARTIALLY DEMOLISHED)
NS43	L-14	ENLISTED DINING HALL
JH45	E-47	ADMINISTRATIVE OFFICE (COMNAVBASE HQ)
JH46	E-48	ADMINISTRATIVE OFFICE
IS46	L-15	NAVSTA HQ, LIBRARY, GYM, AND ARMORY
JH47	E-47	ADMINISTRATIVE OFFICE (NSGA MAINTENANCE SHOP)
JH48	D-48	ADMINISTRATIVE OFFICE
IS48	K-14	TENNIS COURTS (3)
JH49	E-47	ADMINISTRATIVE OFFICE
H50	D-48	ADMINISTRATIVE OFFICE
H51	F-47	ADMINISTRATIVE OFFICE
H52	E-48	RESIDENT OFFICER IN CHARGE OF CONSTRUCTION
H53	F-48	ADMIN. OFFICE (NAVAL INVESTIGATIVE SERVICE)
33	L-16	BARBER SHOP/MAINTENANCE SHOP
34	E-48	ADMIN. OFFICE (NSGA OPERATIONS/COMMUNICATIONS)
SS4	K-15	ADP STORAGE

EXISTING STRUCTURES
NAVAL STATION

NO.	LOCATION	USE
X54	J-10	IDF TRAINING BUILDING
NH55	E-47	LEGAL SERVICE OFFICE
NS55	M-15	FLAG POLE (FOR BLDG. NS 1)
X55	G-9	AMMUNITION STORAGE
X56	F-8	AMMUNITION STORAGE
NS59	L-15	OUTDOOR SWIMMING POOL
NH61	F-47	FAMILY SERVICE CENTER
NH62	F-47	NSC HOUSEHOLD GOODS, WPNSTA HOUSING, AND NAVSTA STORAGE
65	H-16	EM BARRACKS (A)
NS66	H-16	EM BARRACKS (B)
NS67	H-15	EM BARRACKS (C)
NS71	G-16	MINI-MART/PACKAGE STORE
NS79	H-19	DISPENSARY
NS80	H-20	DISPENSARY SUPPLY STORAGE
81	H-46	FIRE STATION NO. 2
M82	E-46	NAVSTA SECURITY
NS84	J-19	NAVAL SECURITY GROUP ACTIVITY
86	N-45	COOPER RIVER CENTER
89	E-37	EXCHANGE MAINTENANCE SHOP
NS91	F-9	ANTENNA SYSTEM (ABANDONED)
	F-38	INDOOR SWIMMING POOL
	G-26	SHOP 03 SHOP
142	E-39	UNION OFFICE AND POLICE DEPT. STORAGE
161	F-25	INERT STORAGE, SUPSHIPS
169	K-20	FLAMMABLE STOREHOUSE
180	E-38	RECREATION BUILDING
183	K-15	FLAG POLE (FOR BLDG. 654)
184	N-45	OUTDOOR SWIMMING POOL (COOPER RIVER CENTER)
186	E-39	FIRE STATION NO. 1
M192	E-46	SECURITY TRAINING BUILDING
200	L-18	PORT SERVICES WITH TOWER & NAVSTA QUARTERDECK
214	N-45	FILTER HOUSE FOR STRUCTURE NO. 184 (CRC)
220	M-46	GOLF PRO SHOP/SNACK BAR
225	D-36	NAVY LODGE
229	N-45	BATHHOUSE FOR STRUC. 184 (CRC)
243	D-40	ATT OFFICE
245	E-39	FIRE STATION SUPPORT BLDG.
326	K-27	BERTHING PIER (L)
327	L-23	BERTHING PIER (N)
328	L-21	BERTHING PIER (P)
329	M-20	BERTHING PIER (Q)
330	L-19	BERTHING PIER (R)
331	E-2	BULKHEAD (PIER Y)
332	D-3	WHARF, CATWALK & FINGER PIERS (Y), DEGAUSSING STATION
334	G-9	CONCRETE RAMP
335	K-21	BULKHEAD
	K-24	BERTHING PIER (M)
336	M-43	PIER (B)

**EXISTING STRUCTURES
NAVAL STATION**

NO.	LOCATION	USE
337	K-26	BERTHING PIER (Z)
373	E-39	RADIO TOWER
382	F-29	WEAPONS DISPLAY (VIADUCT GATE)
401	H-15	COOLING TOWER
419	E-33	RECREATIONAL STORAGE
425	C-29	VEHICULAR BRIDGE - VIADUCT ROAD
520B	E-47	FLAG POLE (FOR BLDG. NH45)
601	H-15	12,000 GAL. FUEL OIL TANK
602	F-16	8,000 GAL. FUEL OIL TANK
604	J-17	FLAG POLE (FOR BLDG. 646)
623	G-17	VISUAL MERCHANDISING (NEX)
635	D-3	DEGAUSSING GENERATOR BLDG. (PIER Y)
636	H-21	AUTO HOBBY SHOP
637	J-23	STORAGE BUILDING
638	J-20	BATH HOUSE FOR STRUC. 639
639	J-20	OUTDOOR SWIMMING POOL (CPO)
640	J-20	STEAMERS (CPO CLUB)
641	F-26	WAREHOUSE/ADMINISTRATIVE (SUBRON 4)
642	G-19	MCDONALDS (OWNED BY MCDONALDS)
644	J-18	BOWLING CENTER
646	J-17	ADMINISTRATIVE AND TRAINING BLDG. (COMSUBGRU 6)
648	G-20	SPECIAL SERVICES CENTER
650	G-21	POST OFFICE
652	G-15	BEQ
653	G-15	BEQ (FEMALE)
654	K-15	PERSONNEL SUPPORT DETACHMENT/NAVSTA BILLETING
655	E-17	COMMISSARY
656	G-17	NAVY EXCHANGE, RETAIL AND WAREHOUSE AND SERVICE OUTLETS
657	F-16	AMERICA'S ORIGINAL SPORTS BAR/JAMES E. WILLIAMS COMPLEX
658	E-36	EM BARRACKS, MARINE SECURITY DETACHMENT
659	D-3	BOAT HOUSE (PIER Y)
660	D-3	INSTRUMENT BUILDING (PIER Y)
661	C-18	COMMUNICATIONS CENTER
662	C-19	ANTENNA FIELD (ABANDONED)
663	C-17	ANTENNA FIELD (ABANDONED)
664	G-14	SUBGRU 6 STORAGE
665	E-16	BASE CLOSURE STORAGE
666	G-17	FEDERAL CREDIT UNION (OWNED BY THE CHASN FEDERAL CREDIT UNION)
668	F-15	BEQ (CPO)
669	F-15	BEQ (CPO)
670	J-14	RACQUET & FITNESS CENTER
671	D-17	DOG KENNEL
672	F-21	CSTG FACILITY
673	F-21	NCTSI FACILITY
674	F-26	SMMS PMT FACILITY
675	H-14	DENTAL CLINIC
676	G-13	ENLISTED MEN'S BARRACKS

EXISTING STRUCTURES
NAVAL STATION

NO.	LOCATION	USE
677	G-13	ENLISTED MEN'S BARRACKS
678	N-13	ADMINISTRATIVE BLDG
680	M-14	FLEET MAINTENANCE BUILDING (SIMA)
681	M-14	SHOP AND ADMIN BUILDING (SIMA)
682	M-12	SAILING CENTER (OFFICE)
683	N-12	FLOATING PIER FOR NS MARINA
684	N-14	SHOP BUILDING (SIMA)
685	L-18	SHIP RADAR CAL FACILITY W/ TOWER
688	H-3	FLOATING PIER FOR NS MARINA
807	F-48	CHILD DEVELOPMENT CENTER
810	C-21	MWR RECYCLE CENTER
823	F-47	RADIO REPEATER SHELTER
824	J-20	STORAGE SHED (CNSY SHOP 03 PIER UTILITIES)
850	E-46	VOLLEYBALL/BASKETBALL COURT
851	L-16	GAS/DIESEL PUMPING STATION
M1067	E-45	STOREHOUSE
M1116	E-45	GENERAL WAREHOUSE
M1123	E-45	STOREHOUSE AND BOILER ROOM
NH1137	G-46	ADMIN OFFICE (SEMMSS PMT)
1143	E-38	VACANT
1150	E-46	COUNSELING AND ASSISTANCE CENTER
1167	E-35	EXCHANGE WAREHOUSE
1177	E-29	FIRE STATION NO. 3
1179	F-37	CHAPEL
1189	E-36	FIRE PREVENTION & INSPECTION DIVISION AND MWR LAUNDRY
1197	E-29	SATO OFFICE
1221	N-46	RECREATIONAL BUILDING
1254	K-21	BUS SHELTER
M1257	E-46	GENERAL WAREHOUSE
M1262	E-45	TENNIS COURT
1263	E-35	NEX STORAGE
M1264	E-45	RACQUET BALL COURT
1265	E-35	SECURITY DETECTIVE OFFICE
1296	H-24	OPEN STORAGE (MOTORCYCLE SHED)
1345	F-36	RESTROOMS (COCHRAN FIELD)
1346	E-35	SERVICE STATION/MINIMART
1347	H-21	AUTO HOBBY SHOP
1401	E-34	THREE FOOTBALL FIELDS
1403	F-33	SOFTBALL FIELD (WINKEL FIELD)
1410	L-48	GOLF COURSE
1412	F-36	SOFTBALL FIELD (COCHRAN FIELD)
1431	H-23	SMALL EQUIPMENT STORAGE SHED
1447	L-16	BATH HOUSE FOR STRUCTURE NO. NS59
1448	L-15	FILTER HOUSE FOR STRUCTURE NO. NS59
1455	M-47	FOOT BRIDGE
1489	D-33	PICNIC SHELTER
1490	D-32	RESTROOM
491	H-21	AUTOMOTIVE HOBBY SHOP (GARAGE)
1494	G-20	TOOL STORAGE (BRIG)

EXISTING STRUCTURES NAVAL STATION

NO.	LOCATION	USE
1508	H-20	CAR WASH AND HOBBY SHOP
1509	C-42	STORAGE
1512	H-19	FLAG POLE (FOR BLDG NS 79)
1630	R-53	BUS SHELTER
1642	H-47	AUTOMOBILE STORAGE
1643	H-47	AUTOMOBILE STORAGE
1646	K-49	GOLF COURSE WAREHOUSE
1706	N-12	SMALL BOAT RAMP
1708	H-10	GENERATOR BLDG.
1718	C-18	SEPTIC TANK AND DRAIN FIELD (ABANDONED)
1719	D-38	SPECIAL SERVICE EQUIPMENT STORAGE BLDG.
1720	E-39	POLICE LOCKER ROOM
1721	L-14	REFRIGERATION EQUIPMENT BLDG.
1724	D-32	PICNIC SHELTER
1725	D-32	PICNIC SHELTER
1738	E-40	BUS SHELTER
1740	H-24	BUS SHELTER
1741	H-23	BUS SHELTER
1743	M-17	BUS SHELTER
1749	H-22	MAINTENANCE EQUIPMENT STORAGE SHED
756	E-1	SSBN DEEP RANGE
57	E-1	SSBN MEDIUM RANGE
758	D-2	STRAY MAGNETIC FIELD GARDEN
1776	J-13	SHOP (CBU 412)
1777	K-13	ADMINISTRATION (CBU 412)
1778	K-13	TOOL AND SHOP STORAGE (CBU 412)
1779	D-36	PLAYGROUND
1785	G-20	BASKETBALL COURT
1786	L-14	AIR CONDITIONER EQUIPMENT BUILDING
1790	K-13	TENNIS COURTS
1791	M-17	STORAGE SHED (MOTU 10)
1792	M-17	COLLIMATION EQUIPMENT BUILDING
1794	D-33	PICNIC SHELTER
1795	L-12	GENERAL STORAGE
1799	M-13	PLAYING COURT
1813	E-47	FLAMMABLE STORAGE FOR NLSO
1816	L-16	STORAGE
1817	L-16	STORAGE
1820	J-22	BUS SHELTER
1823	G-16	BUS SHELTER
1830	K-15	PICNIC SHELTER
1831	H-23	HAZARDOUS/FLAMMABLE STORAGE
1837	F-26	BALL FIELD
1839	H-20	SENTRY HOUSE (BRIG)
1840	G-20	BUTLER BLDG. (NAVAL DENTAL CLINIC STORAGE)
1841	G-20	BUTLER BLDG. (NAVAL DENTAL CLINIC STORAGE)
1845	D-19	BALL FIELD
846	D-20	BALL FIELD
847	E-19/20	RUNNING TRACK
1848	F-26	PUBLIC TOILET AND PRESSBOX

EXISTING STRUCTURES
NAVAL STATION

NO.	LOCATION	USE
1869	H-10	OBSTACLE COURSE
1873	M-15	FLAG POLE (FOR BLDG. NS 46)
1874	L-18	PORT SERVICES STORAGE
1875	L-12	BEQ STORAGE
1876	G-14	FLAG POLE (FOR BLDG. 675)
1877	K-14	WASH RACK (CBU 412)
1878	K-13	FLAG POLE (CBU 412)
1879	J-13	EQUIPMENT BUILDING (CBU 412)
1880	J-13	PAINT LOCKER (CBU 412)
1881	J-13	STORAGE (CBU 412)
1882	J-13	STORAGE (CBU 412)
1883	J-13	STORAGE (CBU 412)
1885	K-13	ADMIN OFFICE (CBU 412)
1886	K-14	GENERAL STORAGE (CBU 412)
1887	H-13	GENERAL STORAGE (BEQ)
1888	J-12	INDOOR PISTOL RANGE
1889	M-16	SUPPLY STORAGE (NAVSTA)
1891	L-16	BEQ MAINTENANCE
1892	J-13	SUPPLY STORAGE (CBU 412)
1893	J-13	BEQ WAREHOUSE
1894	K-13	COLLATERAL STORAGE (CBU 412)
95	B-6	CABLE REEL STORAGE
6	H-13	BEQ STORAGE
1897	H-13	BEQ STORAGE
1898	J-13	BEQ STORAGE
1899	J-13	HAZARDOUS MATERIAL STORAGE (CBR 412)
1901	D-29	SENTRY HOUSE - GATE 1
1902	E-39	SENTRY HOUSE - GATE 2
1903	F-43	SENTRY HOUSE - GATE 3
1904	C-48	SENTRY HOUSE - GATE 4
1905	P-53	SENTRY HOUSE - GATE 5
1906	C-28	SENTRY HOUSE-TRUCK INSPECTION
1980	D-39	VISITOR INFO SIGN REYNOLDS GATE
1981	F-34	SERVICE STATION SIGN
1982	F-38	INFO SIGN STERETT HALL
1983	E-29	ENTRANCE SIGN VIADUCT GATE
1984	H-13	PISTOL RANGE CLASSROOM

EXISTING STRUCTURES
NAVAL STATION ANNEX RADAR SITE

NO.	USE
2501	AIR FORCE PROPERTY (RADAR CLUB)
2505	VEHICLE MAINTENANCE FOR MCRTC
2506	VACANT
2507	VACANT
2508	CNSY PROPERTY (MAINTENANCE SHOP)
2509	STORAGE FOR MUI1
2511	ADMIN FOR MUI1
2513	STORAGE FOR MUI1
2517	ADMIN FOR MCRTC
2520	CLASSROOMS FOR MCRTC
2521	ARMORY/SUPPLY, MCRTC
2522	STORAGE FOR MUI1
2523	ADMIN, NMCR
2524	ADMIN, MUI1
2525	SUPPLY OFFICE, MUI1
2530	STORAGE, MUI1
2532	STORAGE, MUI1
2533	STORAGE, MCRTC
2535	WATER TREATMENT
2536	ADMIN, CO MOMAG
2550	TENNIS COURTS, AIR FORCE
2552	SWIMMING POOL, NOT USED
2553	SOFTBALL FIELD
2554	CNSY PROPERTY (TV)
2555	ENTRANCE SIGN
2556	MINE TRAINING CENTER MUI1
2557	SEWAGE PUMPING STATION

EXISTING STRUCTURES
NAVAL STATION - SHORT STAY

NO.	USE
6	FLAG POLE
25	HOSE HYDRANT HOUSE
30	SEWAGE TREATMENT PLANT
44	WELL, WEST
45	WELL, NORTH
46	BATH HOUSE
47	SNACK BAR
48	STORAGE
49	FIRE FIGHTING PUMP STATION
50	WATER STORAGE TANK
51	HOSE HYDRANT HOUSE
52	HOSE HYDRANT HOUSE
53	HOSE HYDRANT HOUSE
54	HOSE HYDRANT HOUSE
55	HOSE HYDRANT HOUSE
56	HOSE HYDRANT HOUSE
82	RECREATION PAVILION NO. 2
85	BATH HOUSE/LAUNDRY
86	DRAIN FIELD
87	HOSE HYDRANT HOUSE
90	RECREATION PAVILION NO. 1
	GUEST HOUSE TRAILER
	GUEST HOUSE TRAILER
135	FLAMMABLE STORAGE
136	SERVICE STATION (GAS PUMP)
140	FISHING PIER NO. 1
150	SMALL BOAT RAMP/CONCRETE NO. 2
151	MARINA BOAT BASIN
159	FISHING PIER NO. 2
160	SEAWALL (4012 FT)
175	GUEST HOUSE TRAILER
179	SENTRY HOUSE
192	DOCK/GAS PUMP
193	BOAT RAMP/CONCRETE NO. 1
194	SEWAGE LIFT/RV DUMP STATION
195	STORE/RENTAL OFFICE
196	BOAT REPAIR SOP
197	PAINT STOWAGE
198	LAKEVIEW CLUB HOUSE
200	BATH HOUSE
201	SECURITY BUILDING
202	WELL, SOUTH
203	UEPH (10 MAN)
204	ROUNDETTE
205	ROUNDETTE
206	ROUNDETTE
208	BOAT MAINTENANCE RAMP
	ROUNDETTE
	ROUNDETTE
211	ROUNDETTE

EXISTING STRUCTURES
NAVAL STATION - SHORT STAY

NO.	USE
212	LIFEGUARD STATION
213	SEAWALL (1070 FT)
214	RECREATION PAVILLON
215	RECREATION PAVILLON
216	DUPLEX QUARTERS
217	DUPLEX QUARTERS
218	DUPLEX QUARTERS
219	DUPLEX QUARTERS
220	DUPLEX QUARTERS
221	DUPLEX QUARTERS
222	DUPLEX QUARTERS
223	DUPLEX QUARTERS
224	DUPLEX QUARTERS
225	DUPLEX QUARTERS
226	DUPLEX QUARTERS
227	DUPLEX QUARTERS
228	DUPLEX QUARTERS
229	DUPLEX QUARTERS
230	DUPLEX QUARTERS
231	DUPLEX QUARTERS
232	DUPLEX QUARTERS
233	DUPLEX QUARTERS
234	DUPLEX QUARTERS
235	RECREATION BUILDING
236	MINI GOLF COURSE
237	DIESEL STORAGE

EXISTING STRUCTURES
NAVAL WEAPONS STATION HOUSING

NO.	LOCATION	USE
M1A	C-46	GARAGE
M2A	C-46	GARAGE
M3A	D-46	MARINE MAINTENANCE SHOP
M5	C-45	NCO QUARTERS
M6	D-45	OFFICERS' QUARTERS
M7	C-45	OFFICERS' QUARTERS
M8	C-45	OFFICERS' QUARTERS
M9	C-45	OFFICERS' QUARTERS
M10	C-45	OFFICERS' QUARTERS
M11	C-45	OFFICERS' QUARTERS
520C	L-45	FLAG POLE (QTRS "A")
700	J-45	OFFICERS' QUARTERS
701	J-45	OFFICERS' QUARTERS
705	K-44	OFFICERS' QUARTERS
706	K-46	OFFICERS' QUARTERS
708	J-46	OFFICERS' QUARTERS
712	J-45	OFFICERS' QUARTERS
717	L-44	OFFICERS' QUARTERS
718	L-43	OFFICERS' QUARTERS
719	M-44	OFFICERS' QUARTERS
743	H-46	OFFICERS' QUARTERS
	J-46	OFFICERS' QUARTERS
	H-46	OFFICERS' QUARTERS
	J-46	OFFICERS' QUARTERS
747	J-46	OFFICERS' QUARTERS
748	J-46	OFFICERS' QUARTERS
749	J-47	OFFICERS' QUARTERS
750	J-47	OFFICERS' QUARTERS
751	J-47	OFFICERS' QUARTERS
758NHA	F-49	OFFICERS' QUARTERS
759NHB	E-49	QUARTERS, CO, NH
760NHD	E-49	OFFICERS' QUARTERS
761NHC	E-50	OFFICERS' QUARTERS
762NHI	D-48	OFFICERS' QUARTERS
763NHH	D-48	OFFICERS' QUARTERS
765	D-45	MARINE NCO QUARTERS
769	C-47	OFFICERS' QUARTERS
777	D-47	OFFICERS' QUARTERS
780	C-46	OFFICERS' QUARTERS
781	B-46	OFFICERS' QUARTERS
782	B-46	OFFICERS' QUARTERS
1101	M-45	GARAGE FOR QUARTERS "A"
1284	L-46	GARAGE, QUARTERS "B"
1285	K-46	GARAGE, QUARTERS "C"
1287	L-47	GARAGE, QUARTERS "C"
1289	K-45	GARAGE, QUARTERS "J" AND STORAGE
1411	L-44	TENNIS COURTS (QTRS. AREA)
3	E-49	HEATING PLANT (QTRS. 760)
	E-49	GARAGE FOR QUARTERS 761
	E-49	DETACHED GARAGE FOR QTRS. 760

EXISTING STRUCTURES
NAVAL WEAPONS STATION HOUSING

NO.	LOCATION	USE
1427	K-44	GARAGE, QUARTERS "F"
1428	L-44	GARAGE, QUARTERS "H", AND "I"
A	L-45	QUARTERS, COMSIX/COMNAVBASE (FLAG)
B	L-46	QUARTERS, COMINFLANT (FLAG)
C	K-46	QUARTERS, COMSUBFLOTSIX (FLAG)
D	K-48	OFFICERS' QUARTERS
E	K-45	QUARTERS, CO, NSC
G	K-47	QUARTERS (FLAG) COMDESGRU 2
H	L-44	OFFICERS' QUARTERS
I	L-44	OFFICERS' QUARTERS
J	K-45	OFFICERS' QUARTERS
K	M-44	QUARTERS, CO, NS
L	M-44	OFFICERS' QUARTERS, CNSY
M	M-43	OFFICERS' QUARTERS
N	L-43	OFFICERS' QUARTERS
O	K-48	OFFICERS' QUARTERS
P	J-47	OFFICERS' QUARTERS
Q	J-46	OFFICERS' QUARTERS
R	J-46	OFFICERS' QUARTERS
S	J-47	OFFICERS' QUARTERS
T	K-47	OFFICERS' QUARTERS
U	J-46	OFFICERS' QUARTERS
V	J-46	OFFICERS' QUARTERS
W	K-46	OFFICERS' QUARTERS
X	K-46	OFFICERS' QUARTERS
YA	D-47	OFFICERS' QUARTERS
BB	D-47	OFFICERS' QUARTERS
CC	D-46	OFFICERS' QUARTERS
DD	C-46	OFFICERS' QUARTERS
EE	C-46	OFFICERS' QUARTERS
FF	C-46	OFFICERS' QUARTERS
GG	C-46	OFFICERS' QUARTERS
HH	C-47	OFFICERS' QUARTERS
II	C-47	OFFICERS' QUARTERS
JJ	C-47	OFFICERS' QUARTERS
KK	C-47	OFFICERS' QUARTERS
LL	D-47	OFFICERS' QUARTERS

These quarters are under the management and maintenance program of the Naval Weapons Station as per COMNAVSHIPYD CHASN ltr Ser 440-623 of 4 March 1980.

EXISTING STRUCTURES
NAVAL REGIONAL MEDICAL CENTER

NO.	LOCATION	USE
NH-1	CORNER OF RIVERS AVE. & MCMILLAN AVE.	NAVAL HOSPITAL
NH-2	CORNER OF SPRUILL AVE. & MCMILLAN AVE.	BACHELOR ENLISTED QUARTERS
NH-3	CORNER OF SPRUILL AVE. & MCMILLAN AVE.	TENNIS COURT
NH-4	CORNER OF RIVERS AVE. & DORCHESTER RD.	PATHOLOGICAL INCINERATOR
NH-68	G-47	MEDICAL STOREHOUSE

EXISTING STRUCTURES
FLEET & MINE WARFARE TRAINING CENTER

NO.	LOCATION	USE
202	L-18	INSTRUCTION BUILDING
203	K-18	GAS STORAGE
204	K-18	FRESH WATER BOOSTER PUMPHOUSE
208	K-17	5000 GAL UNDERGROUND FUEL OIL TANK
643	H-18	TRAINING BUILDING
645	J-17	ENGINE OVERHAUL FACILITY
647	J-17	TRAINING BUILDING
649	J-17	WAREHOUSE
1281	K-18	COOLING TOWER
1282	K-18	ANTENNA POLES AND WIRE
1302	K-18	HELICOPTER MOCK-UP PAD
1303	K-18	DAMAGE CONTROL MOCK-UP
1306	K-18	5000 GAL FUEL OIL TANK
1308	K-18	WATER/OIL SEPARATOR
1309	K-18	ENGINE ROOM MOCK-UP
1310	K-18	CARRIER COMPARTMENT MOCK-UP
1313	K-18	HOSE STORAGE
1351	L-17	STORAGE SHED (METAL) (PAINT LOCKER)
1352	K-17	AIR COMPRESSOR SHED
1424	K-18	10,200 GAL FRESH WATER STORAGE TANK
1715	L-17	MAINTENANCE SHOP
44	K-18	FIELD MEDICAL LOCKER
19	L-17	MECHANICAL EQUIPMENT STORAGE
1834	K-18	OBA STORAGE AND LAUNDRY ROOM

EXISTING STRUCTURES
RESERVE READINESS CENTER

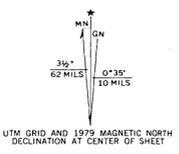
NO.	LOCATION	USE
RTC1	L-18	ACADEMIC GENERAL INSTRUCTION BLDG. (HX-30)
RTC4	L-19	PAINT STORAGE
1656	P-48	TRANSIT CARGO HANDLING WAREHOUSE

EXISTING STRUCTURES
SUBMARINE TRAINING FACILITY

NO.	LOCATION	USE
FBM61	J-16	FBM SUBMARINE TRAINING CENTER
600	J-16	30,000 GAL FUEL OIL TANK
686	J-15	OPERATIONAL TRAINER FACILITY
1815	J-16	STORAGE BUILDING



Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Culture and drainage in part compiled from
aerial photographs taken 1938 and 1941
Topography by plane-table methods 1948
Polyconic projection, 1927 North American datum
10,000-foot grid based on South Carolina coordinate system,
south zone
1000-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue
There may be private inholdings within the boundaries of
the National or State reservations shown on this map
Revisions shown in purple compiled from aerial
photographs taken 1977 and other source data. This
information not field checked. Map edited 1979



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

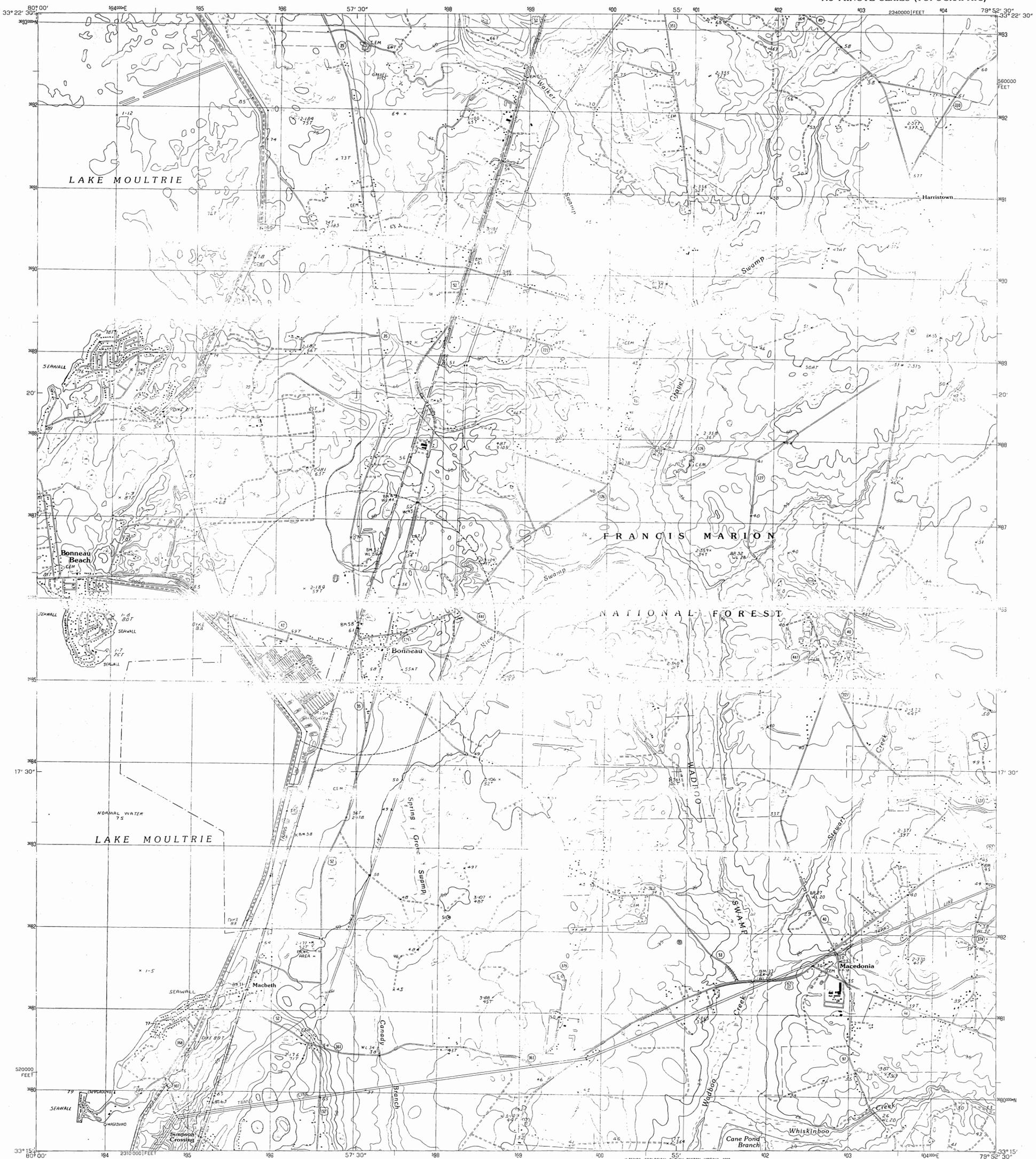
HARD SURFACE ALL WEATHER ROADS	DRY WEATHER ROADS
Heavy-duty LANE 16 LANE	Improved dirt
Medium-duty LANE 12 LANE	Unimproved dirt
Loose-surface, graded, or narrow hard-surface	
U. S. Route	State Route

QUADRANGLE LOCATION
Boundary lines shown in purple compiled from latest
information available from the controlling authority

CORDESVILLE, S. C.
N3307.5-W7952.5/7.5
1948
PHOTOREVISED 1979

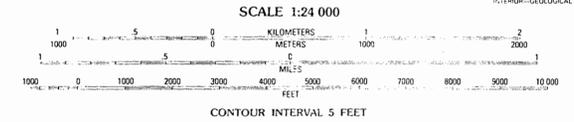
Appendix F-7
Short Stay
Topographic Map
(Sheet 2 of 2)

131A

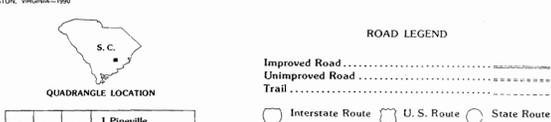


PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY
CONTROL BY THE UNITED STATES GEOLOGICAL SURVEY
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN.....1980-81
FIELD CHECKED.....1982. MAP EDITED.....1990
PROJECTION.....LAMBERT CONFORMAL CONIC
GRID: 1000-METER UNIVERSAL TRANSVERSE MERCATOR.....ZONE 17
18,000-FOOT STATE GRID TICKS, SOUTH CAROLINA, SOUTH ZONE
UTM GRID DECLINATION.....0°35' EAST
1990 MAGNETIC NORTH DECLINATION.....6°00' WEST
VERTICAL DATUM.....NATIONAL GEODETIC VERTICAL DATUM OF 1929
HORIZONTAL DATUM.....1927 NORTH AMERICAN DATUM
To place on the predicted North American Datum of 1983,
move the projection lines as shown by dashed corner ticks
(14 meters south and 19 meters west).
There may be private inholdings within the boundaries of any
Federal or State reservations shown on this map.
No distinction made between houses, barns, and other buildings.

PROVISIONAL MAP
Produced from original
manuscript drawings. Infor-
mation shown as of date of
photography.



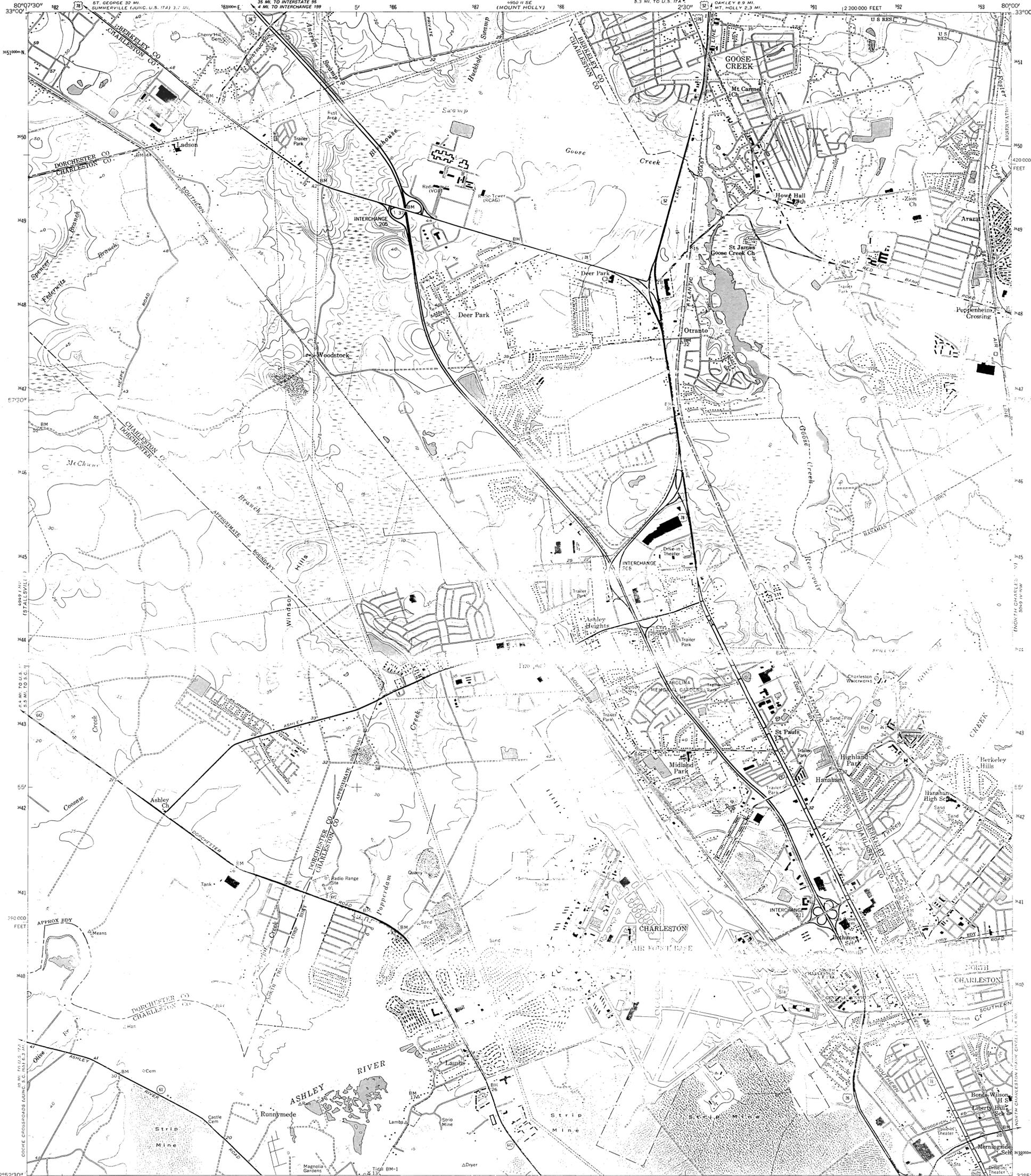
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092



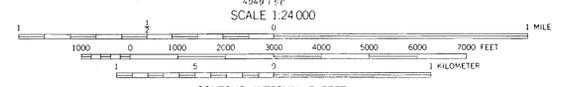
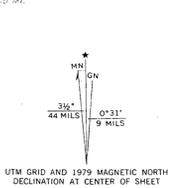
BONNEAU, SOUTH CAROLINA
PROVISIONAL EDITION 1990
33079-C8-TF-024

Appendix F-7
Short Stay
Topographic
Map
(Sheet 1 of 2)

119c



Mapped, edited, and published by the Geological Survey
Control by USGS, USC&GS, and South Carolina Geodetic Survey
Culture and drainage in part compiled from aerial photographs
taken 1957. Topography by planimeter surveys 1958
Hydrography compiled from USC&GS chart 1239 (1958)
Polyconic projection. 1927 North American datum
10,000-foot grid based on South Carolina coordinate system,
south zone
1000-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue
To place on the predicted North American Datum 1983
move the projection lines 15 meters south and
15 meters west as shown by dashed corner ticks
Red tint indicates areas in which only
landmark buildings are shown
There may be private inholdings within the boundaries
of the National or State reservations shown on this map



CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 5.6 FEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
U.S. Route ——— State Route ———
LADSON, S. C.
N3252.5—W8000/7.5
1958
PHOTOREVISED 1979
DMA 4949 1 NE—SERIES V846

140 B



Mapped, edited, and published by the Geological Survey
Control by USGS, USCGS, and South Carolina Geodetic Survey
Culture and drainage in part compiled from aerial photographs
taken 1957. Topography by plane-table survey, 1959
Hydrography compiled from USCGS charts 470 (1957) and
680 (1958)
Polyconic projection. 1927 North American datum
10,000-foot grid based on South Carolina coordinate system,
south zone
1000-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue
To place on the predicted North American Datum 1983
move the projection lines 15 meters south and
19 meters west as shown by dashed corner ticks
There may be private inholdings within the boundaries of
the National or State reservations shown on this map

UTM GRID AND 1979 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET
Faint red dashed lines indicate selected fence and field lines where
generally visible on aerial photographs. This information is unchecked
Red tint indicates areas in which only landmark buildings are shown



CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE AVERAGE RANGE OF TIDE IS APPROXIMATELY 3.2 FEET

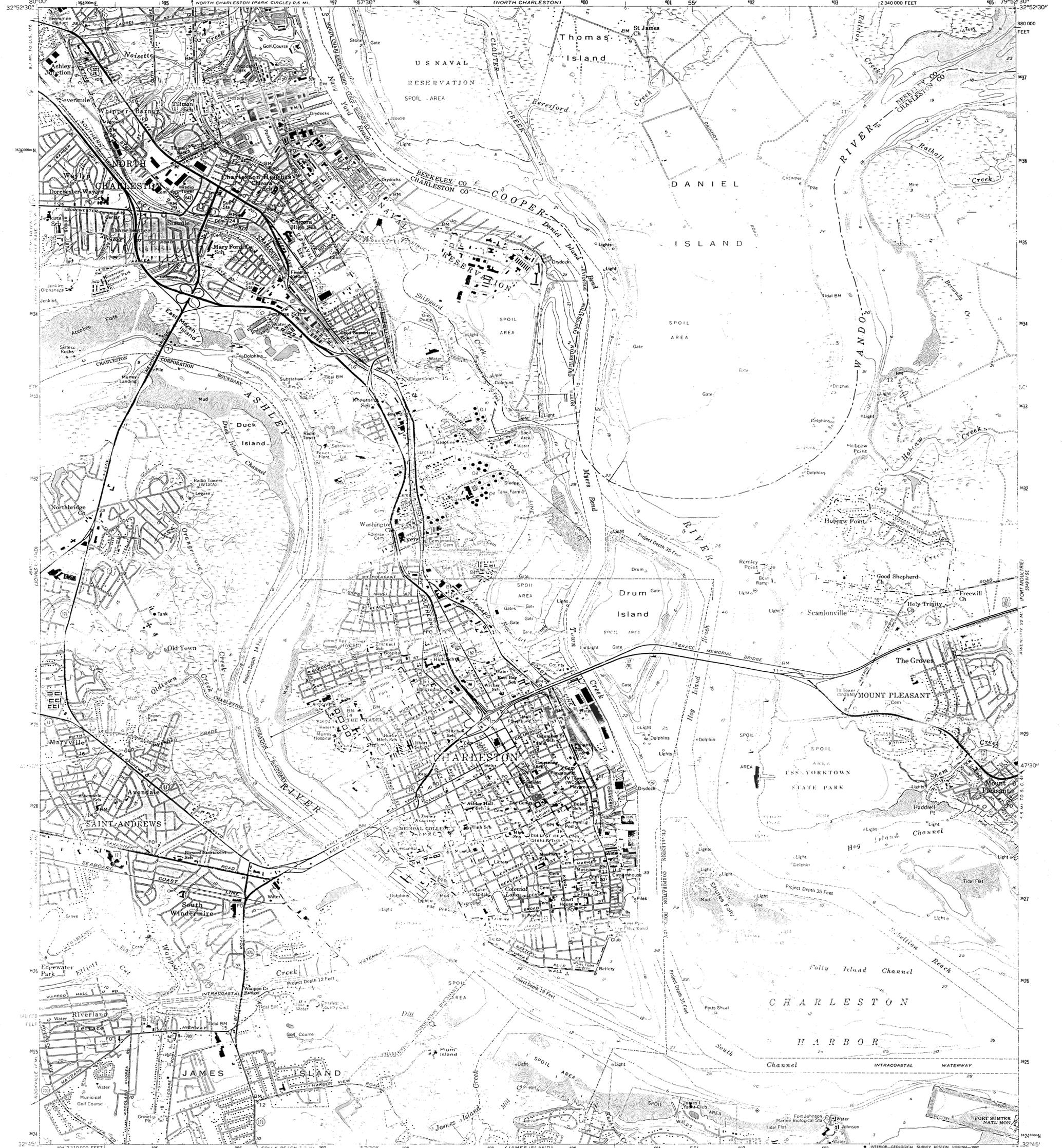
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Medium-duty ——— Light-duty ———
Unimproved dirt ———
QUADRANGLE LOCATION
Revisions shown in purple compiled from aerial
photographs taken 1977 and other source data
This information not field checked. Map edited 1979
Boundary lines shown in purple compiled from latest
information available from the controlling authority

NORTH CHARLESTON, S. C.
N3252.5—W7952.5/7.5
1958
PHOTOREVISED 1979
AMS 5049 IV NW—SERIES V846

141A

Appendix F-5
Charleston Naval
Complex
Topographic Map
(Sheet 2 of 2)



Produced by the United States Geological Survey
Control by USGS, USC&GS, USCE, and South Carolina
Geodetic Survey
Culture and drainage in part compiled from aerial photographs
taken 1957. Topography by planetable surveys 1958
Hydrography compiled from USC&GS chart 470 (1958)
Polyconic projection. 1927 North American datum
10,000-foot grid based on South Carolina coordinate system,
south zone
1000-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue
The difference between 1927 North American Datum and North
American Datum of 1983 INAD 831 for 7.5-minute intersections
is given in USGS Bulletin 1675. The NAD 83 is shown by
dashed corner ticks
There may be private inholdings within the boundaries of
the National or State reservations shown on this map

UTM GRID AND 1979 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET
Map photorevised 1983
No major culture or drainage changes observed
Red tint indicates areas in which only landmark buildings are shown

SCALE 1:24 000
1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
5 10 15 20 25 30 35 40 45 50 KILOMETER
CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE AVERAGE RANGE OF TIDE IS APPROXIMATELY 5.2 FEET
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
U.S. Route —○— State Route —○—
Interstate Route —○—
CHARLESTON, S. C.
32079-G8-TF-024
PHOTOINSPECTED 1983
1958
PHOTOREVISED 1979
DMA 5049 IV SW-SERIES V846
141C

Appendix F-8
Production Wells

Appendix F-8 Table of Contents

SCWRC Well # 18CC-q1 (Located approximately 150' east of Building 32)	
SCWRC Well Report Form.....	F-8-1
USGS Gamma Log.....	F-8-1A
SCWRC Well # 18CC-r1 (Located in Building 716)	
USGS water analysis.....	F-8-3
SCWRC Water Well Report Form.....	F-8-6
Deep Well Cross Section and Log.....	F-8-8
Well location map.....	F-8-13
Short Stay Wells	
Short Stay Withdrawal Wells.....	Figure F-8-1

1. County CHAS. 476

2. SCWRC Well # 18 CC-91

South Carolina Water Resources Commission
WELL REPORT FORM (Form GW-1)

3. Field # _____ 6. Map CHAS. 9. Date _____

4. USGS # _____ 7. Lat. 32 51 43 10. By _____

5. Owner's # _____ 8. Long. 79 58 11 11. Alt. LSD 20' sst.

12. Owner CHARLESTON NAVAL SHIPYARD Phone # _____

Address _____

13. Source Data _____ Phone # _____

Address _____

14. Engineer _____ Phone # _____

Address _____

15. Driller _____ Phone # _____

Address _____

16. Date drilled _____ 17. Depth Total Test
18. Hole _____ ft. 19. Completion _____ ft.

20. Source 21. Date _____ 22. Method drilled _____

23. Method devel. _____

Well Construction: 24. Type Finish _____

25. Casing record: Diam., type, depths _____

26. Screen record: Diam., type, depths, slot size _____

27. Grouting, collars, etc. _____

28. Well location sketch:

29. Remarks:

Pump record:

30. Type _____ 31. H.P. _____ 32. Make _____ 33. Serial # _____
34. Intake depth _____ 35. Installed by _____ 36. Date _____
37. Desc. M.P. _____ 38. Alt. LSD _____
39. Source _____

Water level data:

40. SWL _____ 41. Source _____ 42. Date _____ 43. Meth. Meas. _____
44. PWL _____ 45. at _____ gpm 46. after _____ hrs. 47. Q/S= _____
48. P-test _____ 49. Date _____ 50. By _____
51. Aq. test _____ 52. Date _____ 53. By _____

Production data:

54. Q _____ 55. Source _____ 56. Meth. Meas. _____ 57. Date _____
58. Production level _____ 59. Source _____

Technical data:

60. Driller's log _____ 61. Geol. samples _____ 62. Lith. log _____ 63. Sieve analy. _____
64. Geophysical logs: single point elec. _____ standard elec. _____ gamma _____
neutron _____ gamma gamma _____ induction _____ caliper _____ micro-contact _____ sonic _____
televiwer _____ fluid cond. _____ lateral _____ temp. _____ fluid vel. _____ other _____
65. Chemical analy. _____ 66. Type _____ 67. By _____ 68. Date _____
69. Spec. cond. _____ 70. Temp. _____ 71. pH _____ 72. Calcium _____
73. Magnesium _____ 74. Hardness _____ 75. Iron _____ 76. Fluoride _____
77. Chloride _____ 78. TDS _____ 79. Turbidity _____ 80. Total alk. _____
81. Taste _____ 82. Color _____ 83. Other _____
84. Water Use _____ 85. Meter # _____
_____ 86. Meter # _____
87. Topo. well site _____ 88. Aquifer(s) _____
89. Remarks _____

18CC-01
 CHAR-2

DEPARTMENT OF THE INTERIOR
 GEOLOGICAL SURVEY
 WATER RESOURCES DIVISION
 WATER ANALYSIS

Monday, June 26
 10:00 AM

Shipyard

W. R. Lab. No. _____

Location <u>Navv Yard, Charleston, South Carolina</u>			
<u>743-4981 Mr. DUNCAN</u>			
Source	<u>Drilled well 28-1</u>	Flow	<u>500 gallons per minute</u>
Depth	<u>2,136 feet</u>	Diam.	<u>18 inches</u>
Date of collection	<u>June 23 1951</u>	Well drilled	<u>Yes</u>
Stage height (ft.)		Discharge (sec. ft.)	
(Parts per million)			
Silica (SiO ₂)	<u>17</u>	Carbonate (CO ₃)	<u>30</u>
Iron (Fe)	<u>.03</u>	Bicarbonate (HCO ₃)	<u>518</u>
Manganese (Mn)	<u>.01</u>	Sulfate (SO ₄)	<u>1.4</u>
Calcium (Ca)	<u>2.0</u>	Chloride (Cl)	<u>11 77</u>
Magnesium (Mg)	<u>.4</u>	Fluoride (F)	<u>3.0</u>
Sodium (Na)	<u>390</u>	Nitrate (NO ₃)	<u>.5</u>
Potassium (K)	<u>7.0</u>	Aluminum (Al)	<u>.0</u>
(Parts per million)			
Dissolved solids:		Color	
Total	<u>860 suit</u>		
Residue upon evaporation @ 180°C.	<u>JK</u>	Oxygen consumed:	
Hardness as CaCl ₂	<u>6 1/2</u>	Unfiltered	
Noncarbonate	<u>0</u>	Filtered	
Specific conductance	<u>8.6</u>	Specific conductance (microhms at 25°C.)	<u>1,000</u>

Calc. CO₂ 4
 All. as CaCO₃ 720

Clear when collected.
 Clear when analyzed.

① Includes hardness of all polyvalent cations reported.

U.S. GEOLOGICAL SURVEY / WATER RESOURCES DIVISION

GAMMA, SINGLE POINT

DATE: SEPTEMBER 20, 1991
 LOCATION: U. S. NAVY SHIPYARD, NORTH CHARLESTON
 LATITUDE: 32 51 21 LONGITUDE: 79 57 41

LOGGING INFORMATION

Operator(s): ANDREW WACHOB
 Equipment Address: SCWRC, 1201 MAIN ST., COLUMBIA SC 29201
 Logger Type: MOUNT SOPRIS No. SERIES III
 Tool Length: Cable head to gamma: 5.2 ft.
 Cable head to single point: 6.5 ft.
 Logging speed: 20 ft./minute. Logged up: X down:
 Vertical log scale: 20 ft./inch.

MODULE INFORMATION

GAMMA
 Scale switch: 20 cps/div. Displacement: 0 cps.
 Time constant: 0.5 sec. Channel: 2 Pen: D
 Full scale: 200 cps.

SINGLE POINT RESISTANCE

Scale switch: ohm/div. Channel: 3 Pen: C
 Full scale: ohms. Displacement: ohms.

Log depth referenced to GAMMA sensor.

Well No. USGS: CHN-0002
 SCWRC: 18CC-101
 Digital: CHN0002.DWI
 Other:
 Well Type: UNUSED

WELL INFORMATION

Agency or Owner: U. S. NAVY (NAVAL SHIPYARD)
 Address: NORTH CHARLESTON, SC
 Altitude: L.S.: 12 ft. M.P.: ft.
 Measuring Point: LAND SURFACE
 Well Total Depth: 2016 ft.

Casing:
 I.D. 18 in., from 0 to 1495 ft., type STEEL
 I.D. 8 in., from 1495 to 2016 ft., type STEEL
 Screen:
 I.D. in., from to ft., type
 I.D. in., from to ft., type
 Open-hole diameter: in., from to
 Cement: from to , type
 Fluid Level: ft. below land surface. Temp:
 Fluid Resist: ohm-m Filtrate Resist: ohm

Driller: LAYNE-ATLANTIC
 Address:

Aquifer information:

Other data and logs available for this well:
TEMP, FLR

Remarks: WELL DRILLED 1943; GAMMA PROBE STOPPED BY
OBSTRUCTION AT 1667 FEET.

NOTE: This log is not to be used to fulfill private contractual obligations.

F-8-4

U.S. GEOLOGICAL SURVEY/S.C. WATER RESOURCES FORENILE GEOPHYSICS

TEMPERATURE & FLUID RESISTIVITY LOGS

Well No. USGS: CHN-0002
SCWRC: 18CC-101
Digital: CHN0002.DAT
Other:
Well Type: UNUSED

DATE: SEPTEMBER 20, 1991
LOCATION: U. S. NAVY SHIPYARD, NORTH CHARLESTON
LATITUDE: 32 51 21 LONGITUDE: 79 57 41

LOGGING INFORMATION

WELL INFORMATION

Operator(s): ANDREW WACHOB
Equipment Address: SCWRC, 1201 MATH ST., COLUMBIA SC 29201
Logger Type: MOUNT SOPRIS No. SERIES III

Agency or Owner: U. S. NAVY (NAVAL SHIPYARD)
Address: NORTH CHARLESTON, SC

Altitude: L.S.: 12 ft. M.P.:
Measuring Point: LAND SURFACE
Well Total Depth: 2016 ft.

Logging speed: 12 ft./minute. Logged up: down: X
Vertical log scale: 20 ft./inch.

Casing:
I.D. 18 in., from 0 to 1495 ft., type STEEL
I.D. 8 in., from 1495 to 2016 ft., type STEEL

MODULE INFORMATION

Screen:
I.D. in., from to ft., type
I.D. in., from to ft., type

TEMPERATURE
Scale switch: 1.0 degrees celsius/div.
Baseline displacement: 27 degrees celsius.
Full scale: 10.0 degrees celsius.
Channel: 2 Pen: B

Open-hole diameter: in., from to
Cement: from to , type
Fluid Level: ft. below land surface. Temp:
Fluid Resist: ohm-m Filtrate Resist: oh

FLUID RESISTIVITY

Driller: LAYNE-ATLANTIC
Address:

Resistivity: X Conductivity:
Scale switch: 2 ohm-m. Full scale: 20 ohm-m.
Channel: 4 Pen: C

Aquifer information:

Log depths referenced to F R sensor.

Other data and logs available for this well:
GAMMA

Remarks: WELL DRILLED 1943; TEMP-FLR PROBE STOPPED AT ABOUT 1495 FT (PROBABLY COULDN'T GET INTO 8" CASING). DISREGARD LOGS BETWEEN 1495' AND BOTTOM OF LOGS.

NOTE: This log is not to be used to fulfill private contractual obligations.

F-8-5

Naval Shipyard Well



State of South Carolina Water Resources Commission

P.O. Box 4515 / 3830 Forest Drive / Columbia, S.C. 29240 / (803) 758-2514



WATER WELL REPORT

OWNER'S NO. COUNTY NO. Chn. 2 SCWRC NO. 18CC-1

A. GENERAL 32 51 21 / 79 57 41 00

1. Lat-Long: 325121 795741 00 2. Map: Charleston 3. Location:

4. Well use: ps () ind () irr () stk () fire () dom () rec () obs () pab () abn () des () unu () stb ()

Remarks:

5. Drainage Basin: 6. Topography: draw () hilltop () hillside () valley () flat () depression ()

7. Owner: U.S. Navy (Naval Shipyard) Phone:

Address: North Charleston, South Carolina

8. Engineer: Phone:

Address:

9. Source of Data: Field, owner, driller, log Phone:

B. WELL CONSTRUCTION DATA

1. Contractor: Layne-Atlantic Co. Phone:

Address:

2. Driller: 3. Date started: Nov. 1942 Completed: March, 1943 4. Const. Diag.: Yes () No ()

5. Method Drilled: Mud rotary () Cable tool () Augered () Other ()

6. Hole Size: Dia (in.): from to Type bit: Time:

7. Well Depth (ft.): Repl. Test hole: 2,136' Completed: 2,016' Measured:

8. Method Developed: Pump () Horiz. jet () Air surge () Other () Time:

9. Drift Mud Type/Brand: Total weight used:

10. Grout Type: Method: Vol: Thick (in.): Depth (ft.): to

11. Casing Dia (in.): 18" Depth: 0' to 1,695' Nght./ft.: Type: Steel Meth. install.:

8" 1,495' 2,016' Wall Thick

12. Screen Record: open hole () Remarks: Aq.

Dia. (in.)	Depth (ft.)	Type	Mat.	Slot (in.)	Aq.
8"	1,736"	1,746"	1946-1956	Bronze	
8"	1,766"	1,776"	1996-2026	Bronze	
8"	1,796"	1,816"		Bronze	
8"	1,836"	1,846"		Bronze	
8"	1,866"	1,876"		Bronze	
Type 8"	1,896"	1,906"		Bronze	

Thick (in.): Depth (ft.): to

7-8-7

C. PUMP DATA

- 1. Type pump: _____ 2. Make: _____ 3. H.P.: _____ 4. Dia.: _____ 5. Model no.: _____
- 6. Intake Depth (ft.): _____ 7. Intake Dia. (in.): _____ 8. Installed by: _____ 9. Date _____
- 10. GPM rate: _____ at oper. pres. 11. Remarks: _____

D. WATER USE DATA

- 1. Water use (gpd): _____ 2. Metered () 3. Records () 4. Estimated () How: _____
- 5. Flow meter () 6. Type-mfg.: _____ 7. Serial no.: _____ 8. Date installed: _____
- 9. Well used: daily (X) weekly () monthly () Other _____
- 10. Remarks: Flows continuously

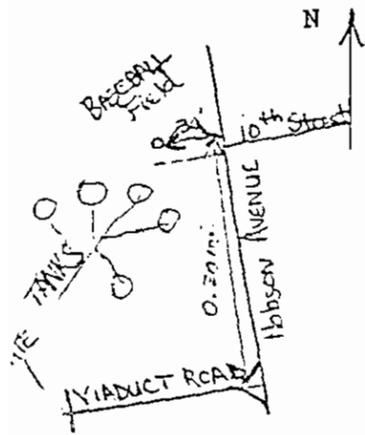
E. HYDROLOGIC DATA

- 1. Geophysical logs: Sgl. Pt. E () Std E () G () Cal () Sp. Cond. () Temp () GG () N () Other () _____
- 2. Pumping Test: hr. _____ gpm. _____ date _____ 3. Aquifer Test: hr. _____ gpm. _____ date _____
- 4. Chem. Analysis: single () partial () complete (X) 5. Sieve analysis () 6. Driller's log (X) 7. Geologist log () _____
- 8. Geologic samples () Collected by: _____ Method: _____
- 9. Water level monitored () 10. Water quality monitored () 11. Remarks: _____
Water analysis- June 23, 1962- U.S.G.S.

F. WATER LEVEL DATA

- 1. Elevation (LSD): 12' Method: Topo. Elev. meas. Pt. _____
Description of Meas. Pt.: _____ Method Meas.: _____
- 2. Static Level (ft.): _____ below mp _____ above Mean Sea Level by: _____ date: _____
- 3. Pumping Level (ft.): _____ below mp _____ above Mean Sea Level by: _____ date: _____
- 4. Remarks: _____

G. WELL LOCATION / REMARKS



Well is in building #716

Also, see map in file

Show well location to nearest foot from prominent landmarks

Louis J. Nexsen
Name

G.T.
Title

Louis J. Nexsen
Signature

Sept. 1968
Date

Screen 20x60

- 1695' - 1708' - Hard rock with spots of soft sandstone, shell and fine sand.
- 1708' - 1732' - Sandstone, blue clay and shell, hard and soft spots.
- 1732' - 1735' - Sandstone and shell.
- 1735' - 1755' - Coarse sand and hard rock in thin layers.
- 1755' - 1760' - Shellrock and sand, hard and rough.
- 1760' - 1775' - Sand and shell, medium drilling.
- 1775' - 1792' - Sand, shell, medium drilling - 1775' good waterbearing.
- 1792' - 1794' - Sand, shell, rock, very hard and slow.
- 1794' - 1802' - Sand, shell and hard rock, hard and rough, slow.
- 1802' - 1820' - Soft blue clay with some shell, soft and easy going.
- 1820' - 1835' - Soft blue clay with some shell.
- 1835' - 1863' - Sand with some clay and shell.
- 1863' - 1870' - Sand, shell and rock.
- 1870' - 1873' - Slow drilling like clay. Don't know what it is.
- 1873' - 1906' - Soft rock, dark sand and shell.
- 1906' - 1909' - Rock, rough drilling.
- 1909' - 1924' - Blue clay and shell.
- 1924' - 1955' - Sand and shell with very little clay.
- 1955' - 2005' - Coarse sand. Seems to be thin layers of clay.
- 2005' - 2016' - Coarse sand.
- 2016' - 2022' - Red and white clay. Slow smooth drilling.
- 2022' - 2027' - Clay and sand. Little faster drilling.
- 2027' - 2038' - Apparently red and white clay.
- 2038' - 2053' - Coarse sand mixed with red, white and blue clay.
- 2053' - 2136' - Water bearing sand, seems to have layers of clay.

DRILL PROCESS

1. 8" hole drilled to entire depth of well to determine depth of desired strata.
2. 24" hole drilled to top of waterbearing strata with mud pumped well.
3. 18" casing placed and gravel pumped in and mud forced out.
4. 17 1/2" hole drilled to bottom of desired strata and original 8" hole grouted.
5. Waterbearing strata underreamed by water jetting.
6. 8" tubing and strainer (welded together) lowered into place.
7. Mud well displaced by gravel.

NOTES

1. Well drilled by Layne Atlantic Co. from Nov. 1942 to March 1943.
2. Rotary drill process used, with mud pocking well.
3. Information on this sheet obtained from contractor.

3.		
1.		
2.		
REVISION	DATE	DESCRIPTION
APPROVED	DATE	SIGNATURE
DRAWN BY <u>LEV</u> CHECKED BY <u>...</u> DESIGNED BY <u>...</u> SUPERVISOR <u>S.L.C.</u> IN CHARGE <u>M.E.H.</u>	NAVY YARD <h2 style="margin: 0;">DEEP WELL</h2> CROSS-SECTION B LOG	CHARLESTON, S.C. APPROVED <u>Mar. 9, 1943</u> <u>[Signature]</u> PUBLIC WORKS OFFICER
DESIGN SUPT. DRAWING NO. <u>H 715-2</u> <u>PW 1306</u>		

4. 17 1/2"
 5. 24"
 6. 18"
 7. 8"

8. 17 1/2"
 9. 24"
 10. 18"
 11. 8"

REC-1
 Ch. 2

Distance
 From Top
 of
 Casing.

LOG OF WELL

9' - 14' - Brown coarse sand.
 14' - 20' - Red and white clay and sand.
 20' - 32' - Blue clay.
 32' - 128' - Blue clay and sand.
 128' - 135' - Blue clay with few spots of hard black rock.
 135' - 158' - Chalky blue clay. Hard spots of rock.
 158' - 214' - Same formation but rough in spots.
 214' - 215' - Hard rough spots, very slow drilling in rock.
 215' - 217' - Fast drilling smooth.
 217' - 220' - Slow for about 3 inches, then fast again. Hard spots about every 2 feet. Samples show clay and black rock.
 220' - 247' - Hard blue clay.
 247' - 270' - Soft blue clay.
 270' - 289' - Medium hard clay.
 289' - 303' - Clay with hard streaks.
 303' - 307' - Soft blue clay.
 307' - 315' - Hard sandstone and shell.
 315' - 329' - Sandstone and shell, soft drill.
 329' - 350' - Sandstone and shell with little clay, hard and soft spots.
 350' - 370' - Sandstone, shell and blue clay.
 370' - 376' - Rock shell, little clay.
 376' - 390' - Rock shell, very hard and rough in spots.
 390' - 400' - Rock shell, blue clay, slow and rough in spots.
 400' - 429' - Dark blue clay, hard in spots.
 429' - 431' - Rough drilling (rock).
 431' - 447' - Dark clay, medium hard.
 447' - 469' - Dark blue clay, soft.
 469' - 471' - Rough drilling, hard clay.
 471' - 489' - Soft blue clay, rough spots.
 489' - 501' - Soft blue clay.
 501' - 582' - Soft blue clay, hard spots.
 582' - 674' - Blue clay, hard rough spots.
 674' - 695' - Blue clay, little harder and rougher in spots.
 695' - 720' - Soft blue clay.
 720' - 786' - Soft blue clay.
 786' - 847' - Soft blue clay with hard spots.
 847' - 882' - Soft blue clay and a little shell rock.
 882' - 1025' - Blue-black muck with some rough streaks.
 1025' - 1100' - Blue clay, rough streaks.
 1100' - 1130' - Blue clay, dark fine sand.
 1130' - 1135' - Blue clay and shell.
 1135' - 1144' - Shell rock, hard and rough.
 1144' - 1157' - Soft blue clay and shell.
 1157' - 1159' - Hard rock.
 1159' - 1206' - Soft sand rock, a little rough in spots.
 1206' - 1247' - Sandstone and shell.
 1247' - 1260' - Sandstone and shell.
 1260' - 1280' - Sandstone and shell, with pieces of black hard rock.
 1280' - 1328' - Sandstone and shell, soft and hard spots.
 1328' - 1344' - Sandstone and shell, soft.
 1344' - 1348' - Sandstone and shell, hard.
 1348' - 1373' - Sand, shell and rock, medium.
 1373' - 1378' - Rock and shell, hard.
 1378' - 1390' - Shell rock, little sand.
 1390' - 1420' - Shell rock, little sand.
 1420' - 1450' - Shell rock, little sand.
 1450' - 1462' - Clay, slow drilling.
 1462' - 1477' - Hard clay, slow.
 1477' - 1493' - Hard clay and a little shell, slow drilling.
 1493' - 1511' - Hard clay and a little shell.
 1511' - 1520' - Shell, blue clay and a little sand, slow.
 1520' - 1527' - Shell, blue clay and a little sand, slow.
 1527' - 1565' - Shell, blue clay and a little sand, slow.
 1565' - 1588' - Shell, blue clay, slow drilling.
 1588' - 1596' - Sandstone, shell and blue clay, rough slow drilling.
 1596' - 1621' - Sandstone, shell and blue clay, medium drilling.
 1621' - 1626' - Same formation but slow and hard.
 1626' - 1652' - Blue clay, sandstone, shell, slow in spots.
 1652' - 1658' - Sandstone, shell, blue clay, slow drilling.
 1658' - 1666' - Sandstone, shell, fine sand, mucky blue clay, hard and rough drilling in spots.
 1666' - 1672' - Hard spots of sandstone with some shell and clay.
 1672' - 1676' - Hard rock and shell.
 1676' - 1685' - Sandstone, shell, very hard and slow.
 1685' - 1695' - Hard rock, shell and sand.

1,695'
 41'
 1,736' — ~~10' BRONZE SCREEN~~
 1,776'
 20' casing

1,766' — ~~10' BRONZE SCREEN~~
 1,776'
 20' casing

1,796' — ~~10' BRONZE SCREEN~~
 1,816'
 20' casing

1,836' — ~~10' BRONZE SCREEN~~
 1,846'
 20' casing

1,866' — ~~10' BRONZE SCREEN~~
 1,876'
 20' casing

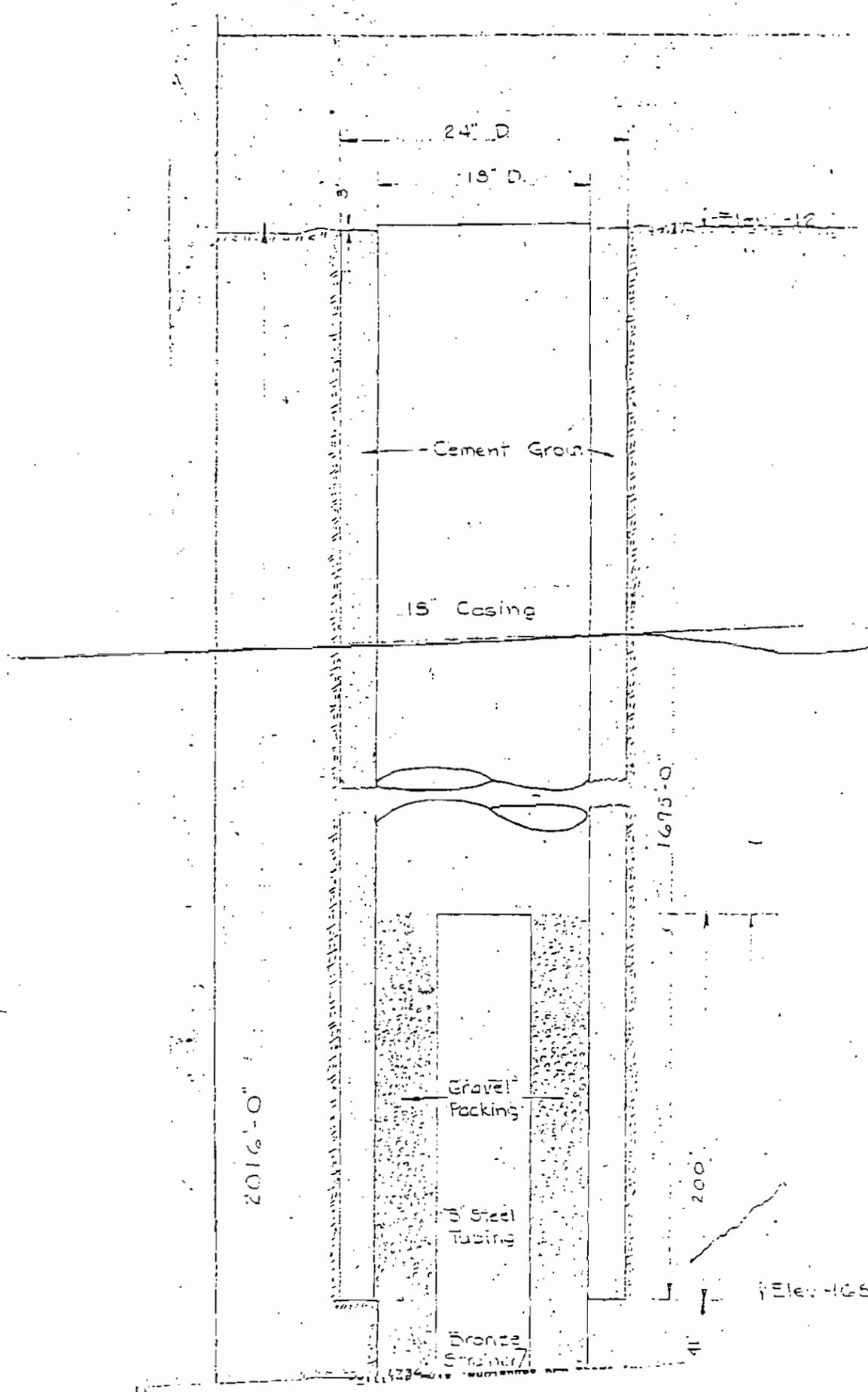
1,896' — ~~10' BRONZE SCREEN~~
 1,906'
 40' casing

1,946' — ~~10' BRONZE SCREEN~~
 1,956'
 40 casing

1,996' — ~~BRONZE SCREEN~~
 30
 2,026' — ~~BRONZE SCREEN~~

100(?) Total

Don't Agree with Depth in Log



2016'-0"

24" D

18" D

Cement Grout

15" Casing

Gravel Packing

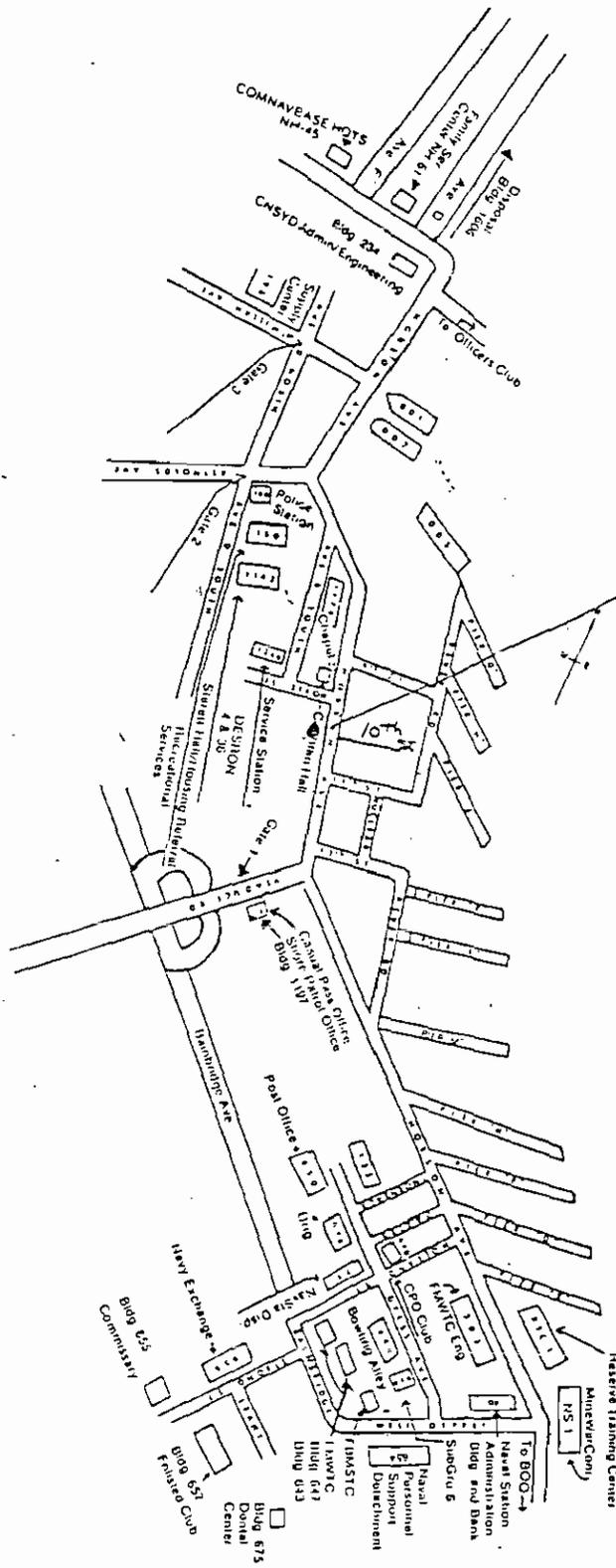
10" Steel Tubing

Bronze Packer

1695'-0"

200'

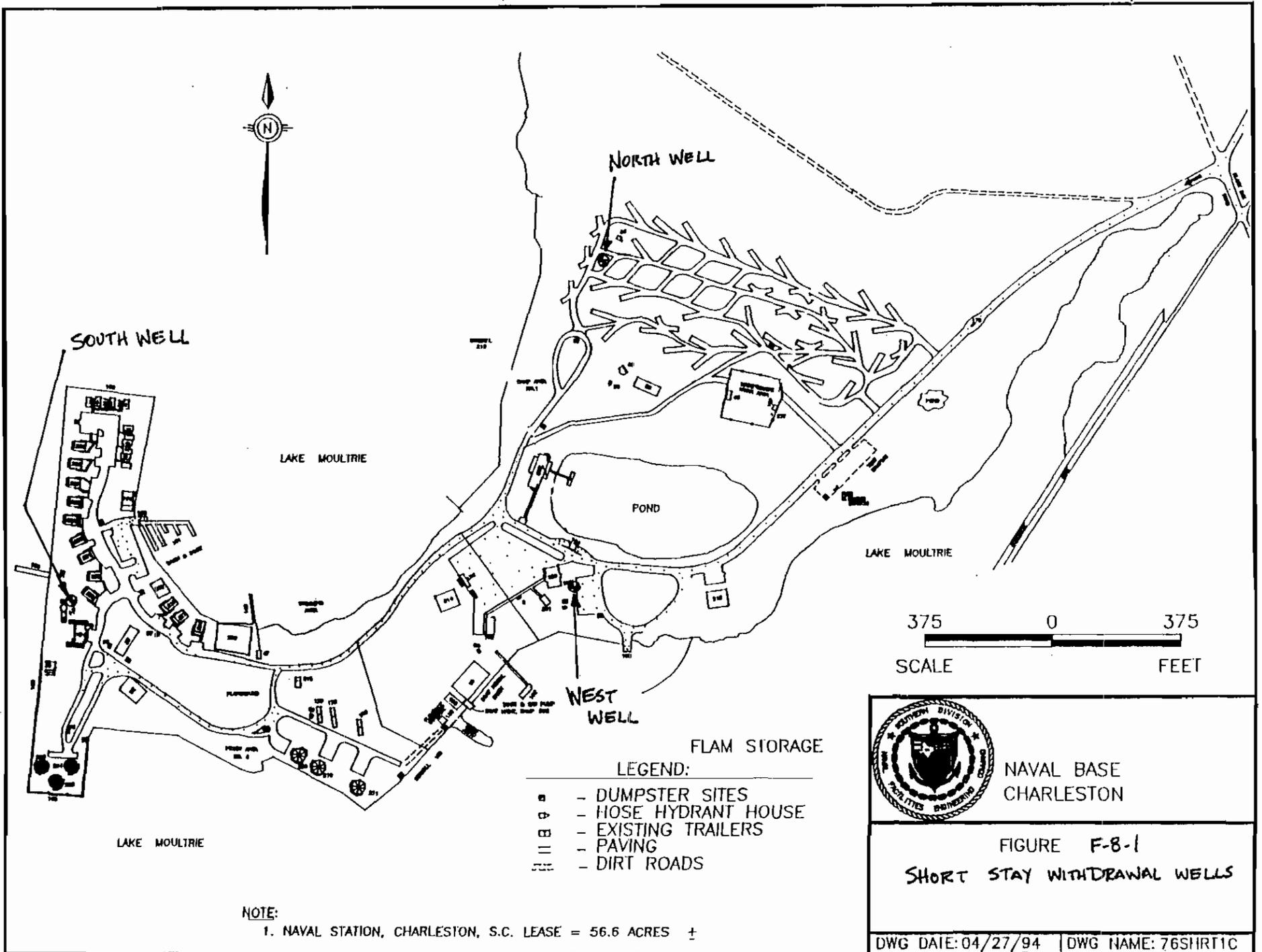
Elev: 4053



18CC(-r)
 Chn-2
 Bldg # 716
 161

COOPER RIVER

SLYEV



NAVAL BASE
 CHARLESTON

FIGURE F-8-1
 SHORT STAY WITHDRAWAL WELLS

Appendix F-9

List of SWMU's and AOC's Requiring RFI

Appendix F - 9
Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring RCRA Facility Investigation (RFI)

SWMU/AOC Number	RFA Sector	Site Number	SWMU/AOC Name	Materials Released, Stored, or Disposed	Location	Study Zone
SWMU 1	1991 RFA		DRMO Storage Area	Hazardous Waste, Lead	DRMO	A
SWMU 2	1991 RFA		Lead Contaminated Area	Lead	DRMO	A
SWMU 3	1991 RFA		Pesticide Mixing Area	Pesticides	Building 249	G
SWMU 4	1991 RFA		Pesticide Storage Building	Pesticides	Building 381	F
SWMU 5	1991 RFA		Battery Electrolyte Treatment Area	Acids	Building 1797 Area	E
SWMU 6	1991 RFA		Public Works Storage Yard (Old Corral)	Hazardous Waste, Lead	Old CorralSW of Bldg.380	G
SWMU 7	1991 RFA		PCB TransformStorage Yard	PCBs	Old CorralSW of Bldg.380	G
SWMU 8	1991 RFA		Oil Sludge Pit	Oil Sludges	Parking AreaSW of Bldg. 16	G
SWMU 9	1991 RFA		Closed Landfill	Miscellaneous Wastes	eaBetweenBainbridgeand W	H
SWMU 11	1991 RFA		Caustic Pond	Calcium Hydroxide	SE of Bldg. 190	G
SWMU 12	1991 RFA		Old Fire Fighter Training Area	Petroleum	Southern Tip of Base	I
SWMU 14	1991 RFA		Chemical Disposal Area	Miscellaneous Wastes	South of Building 1897	H
SWMU 15	1991 RFA		Incinerator	Miscellaneous Wastes, Paper	South of Building 1843	H
SWMU 16	1991 RFA		Paint Storage Bunker	Paint	West of BuildingX-55	I
SWMU 17	1991 RFA		Oil Spill Area	Oil	North Side of Building 61	H
SWMU 18	1991 RFA		PCB Spill Area	PCBs	Building 1278	E
SWMU 19	1991 RFA		Solid Waste Transfer Station	Miscellaneous Wastes	West of Least Tern Lane	H
SWMU 20	1991 RFA		Waste Disposal Area	Miscellaneous Wastes	NE of Building 903	H
SWMU 21	1991 RFA		Waste Paint Storage Pad	Paint	Facility 1275Area	E
SWMU 22	1991 RFA		ld Plating Shop Wastewater Treatment Syste	Cadmium, Chromium	lley Between Bldgs. 5 and 4	E
SWMU 23	1991 RFA		ew Plating Shop Wastewater Treatment Syste	Miscellaneous	Building226	E
SWMU 24	1991 RFA		Waste Oil Reclamation Facility	Waste Oil	Fuel FarmArea	G
SWMU 25	1991 RFA		Building 44, Old Plating Operation	Miscellaneous Wastes, Cyanide, Metals	Building 44	E
SWMU 36	1991 RFA		Building 68, Battery Shop	Sulfuric Acid, Lead	Building 68	F
SWMU 37	I - 4.1		Sanitary Sewer System	Miscellaneous Wastes	Basewide	L
SWMU 39	I - 4.2		PCL Drum Storage	Petroleum Products	North of Bldg. 1604	A
SWMU 44	I - 4.4		Coal Storage Yard	Coal, Coal Byproducts	South Side of NoisetteCreek	C
SWMU 47	II - 4.5		Burning Dump	Products of Incomplete Combustion	Building NSC 66 Area	C
SWMU 53	I - 4.11		Building 212 SAA	Paint, Miscellaneous Waste	Building 212	E
SWMU 54	I - 4.12		Former Abrasive Blast Area	Blast Residue	Building 1275 Area	E
SWMU 65	I - 4.22		Lead Storage Area	Lead	Building 221	E
SWMU 70	II - 4.9		Dip Tank Area	Copper Chromium Arsenate	Building 5	E
SWMU 83	I - 4.36		Foundary	Lead, Solvents, PCBs	Building 9	E
SWMU 84	I - 4.37		Lead Storage	Lead	Building 9	E
SWMU 100	I - 4.53		Building 218 SAA	Petroleum Products, Miscellaneous Wastes	Building 218	E
SWMU 106	I - 4.57		Blast Area Dry Dock #3	Blast Residue	Dry Dock #3	E
SWMU 120	I - 4.69		Pier M Laydown	Marine Paint, Thinner, Lead	Pier M	G

Appendix F - 9

Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring RCRA Facility Investigation (RFI)

SWMU/AOC Number	RFA Section	Area Name	Materials Released, Stored or Discarded	Location	Status
SWMU 121	I - 4.70	Building 801 SAA	VOCs, Metals, Miscellaneous Wastes	Building 801	H
SWMU 159	III - 4.17	SAA, Building 665, SAA	Aerosol Cans	Building 665	H
SWMU 175	IV - 4.15	Crane Painting Area	Metals, VOCs, Paint Wastes	South of Building 1277	F
SWMU 188	V - 4.7	SAA, Paint Waste	Lead, Petroleum Products, Solvents	South side of DD#5, midway	E
AOC 504	II - 5.1	Railroad System	Petroleum Products, Lead Acids, Coal	Basewide	L
AOC 505	II - 5.2	Creosote Cross Tie/Ballast Storage Area	Creosote and Degradation Products	Building 1803 Area	A
AOC 516	I - 5.5	Building 233 Wash Area	Acid, Petroleum Products	Building 233	C
AOC 525	I - 5.6	Paint Shop, Building 223	Paint	Building 223	E
AOC 526	I - 5.7	Building 212 Paint Area	Paint	Building 212	E
AOC 538	I - 5.9	Building 6 Forge Shop	Lead	Building 6	E
AOC 539	II - 5.31	Propeller Shop	Zyglol, Dye Penetrant	Building 6	E
AOC 544	I - 5.10	Building 221 Pickling Plant	Lead, Miscellaneous Waste	Building 221	E
AOC 549	II - 5.39	Scrap Yard 1054	Metals	Building 5 Area	E
AOC 556	I - 5.12	Dry Dock Discharges	Miscellaneous Wastes	Drydocks discharge areas	E
AOC 559	II - 5.48	Central Power Station	Petroleum Products, Combustion Products	Building 32	E
AOC 561	II - 5.50	Substation, Building 451B	PCBs, Petroleum Products	Building 451B	E
AOC 569	II - 5.58	Gasoline Station and Oil Storage	Petroleum Products	SW Corner of Building 30	E
AOC 570	II - 5.59	Former Coal Storage Area	Coal Degradation Products	Building 1199 Area	E
AOC 571	I - 5.13	Building 177 Paint Booths	Paint	Building 177	E
AOC 572	I - 5.14	Building 177 Motor Area	Petroleum Products, Miscellaneous Wastes	Building 177	E
AOC 574	I - 5.15	Building 9 Fuel Tank	Petroleum	Building 9	E
AOC 578	II - 5.63	Transportation Shop and Garage	Petroleum Products, Lead, Solvents	Building 25	E
AOC 583	II - 5.68	Northeast Corner of Building 236	Freon, Petroleum Products	Building 236	E
AOC 598	II - 5.82	Sonar Dome Area	Blast Residue, Paint	End of Pier J	E
AOC 605	II - 5.88	Waste Paint Storage Pad	Paint, Petroleum Products, Lead	Drydock #4 Area	E
AOC 607	I - 5.20	Building 1189 Dry Cleaning	Miscellaneous Wastes	Building 1189	F
AOC 609	I - 5.21	Building 1346 Gas Station	Ethylene Glycol, Petroleum Products	Building 1346	F
AOC 613	II - 5.92	Old Locomotive Repair Shop	Petroleum Products, Solvents	Building 242 Area	F
AOC 620	II - 5.98	Battery Shop	Paint, Solvents, Petroleum Products	Building 68	F
AOC 621	II - 5.99	Battery Cracking Area	Lead, Acids	Building 68 Area	F
AOC 624	II - 5.102	Fuel Oil Booster Pumphouse	Petroleum Products	Building 98	G
AOC 626	I - 5.24	NSC Fuel Farm	Petroleum Products, Waste Oil	Fuel Farm Area	G
AOC 627	II - 5.104	Oil Spill Area	Petroleum Products	Hobson and Viaduct Roads	G
AOC 631	II - 5.108	Fueling pier Kilo	Petroleum Products	Pier Kilo	G
AOC 635	II - 5.112	Paint and Oil Storehouse	PCBs, Paint, Petroleum Products	Building 3902	G
AOC 653	I - 5.26	Hobby Shop	Petroleum Products, Miscellaneous Wastes	Building 1508	H
AOC 655	II - 5.130	Oil Spill Area	Petroleum Products	Building 656	H

Appendix F - 9

Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring RCRA Facility Investigation (RFI)

SWMU/AOC Number	RFA Title Number	SWMU/AOC Name	Materials Released, Stored, or Disposed	Location	Study Zone
AOC 656	II - 5.131	Petroleum Spill	Petroleum Products	etween Bldgs 602 and Ns-7	H
AOC 670	II - 5.143	Former Skeet Range	Lead, Miscellaneous Wastes	Field South of Bldg. 1897	H
AOC 672	II - 5.146	Paint and Oil Storehouse	Paint, Petroleum Products	Building 169	I
AOC 677	I - 5.29	Building NS-2 Grounds	Petroleum Products	Building NS-2	I
AOC 681	I - 5.30	Blast Booth Building 681	Blast Residue	Building 681	I
AOC 684	II - 5.154	Former Outdoor Pistol Range	Lead	Building 1888	I
AOC 689	II - 5.159	Southern Tip of Base (Marina Parking Area)	Dioxins	Southern Tip of Base	I
AOC 691	II - 5.161	Waterfront	Petroleum Products	Waterfront	J
AOC 692	II - 5.162	Free Product Along Cooper River	Petroleum Products	Waterfront	J
AOC 698	IV - 5.3	Boiler House, Naval Annex	Lead	Building 2508, Naval Annex	K
AOC 699	V - 5.1	Storm Sewer System	Industrial Wastes	Basewide	L
AOC 700	V - 5.2	Golf Maintenance Building	Pesticides, Petroleum Products	Building 1646	C
AOC 706	Vol V, Add II	Area behind Building 246	PCBs	Building 246 Area	G

Appendix F-10

List of SWMU's and AOC's Requiring CSI

Appendix F - 10

Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring Confirmation Sampling Investigation (CSI)

SWMU/AOC Number	RFA Vol. Section No.	SWMU/AOC Name	Materials Released, Stored, or Discarded	Location	Study Zone
SWMU 38	II - 4.1	Miscellaneous Storage	Petroleum Products, Miscellaneous Wastes	North of Bldg. 1605	A
SWMU 42	II - 4.3	Former Asphalt Plant and Tanks	Asphalt Products, Solvents, Degreasers	NW of Bldg. 1803	A
SWMU 43	II - 4.4	Publications and Printing Plant	Chromium, Lead	Building 1628	A
SWMU 63	II - 4.7	Battery Charging Station	Lead, Acids	Building 226 Area	E
SWMU 67	II - 4.8	Mercury Gauge Room	Mercury	Building 3	E
SWMU 80	II - 4.11	Paint Shop Storage	Lead, Paint, Miscellaneous Wastes	Building 194	E
SWMU 81	I - 4.34	Less than 90 Day Accumulation Area	Paint, Trichloroethane	Building 1245	E
SWMU 87	I - 4.40	Less than 90 Day Accumulation Area	Paint, Petroleum Products, Chelating Agents	Building 80	E
SWMU 97	I - 4.50	Less than 90 Day Accumulation Area	Petroleum Products, Solvents	Building 236	E
SWMU 102	II - 4.12	Mercury Spill Area	Mercury	Building 79	E
SWMU 109	I - 4.60	Abrasive Blast Media Storage Area	Blast Media	Structures 1364, 1365	F
SWMU 136	I - 4.85	Building NS-53 SAA	VOCs, Metals, Petroleum Products	Building NS-53	H
SWMU 145	III - 4.3	Mercury Spill Area	Mercury	Under Building 13A	E
SWMU 161	IV - 4.1	Vehicle Maintenance Shop	Petroleum Products	Building 2505	K
SWMU 162	IV - 4.2	Sludge Drying Field	Heavy Metals	South of Building 2509	K
SWMU 163	IV - 4.3	Concrete Pit	Paint, Solvents, Methane, Metals	North of Building 2513	K
SWMU 164	IV - 4.4	Blasting Operation	Lead, Cadmium	Building 2556	K
SWMU 166	IV - 4.6	Sewer System	Metals, Petroleum Products, Paint, Solvents	Basewide, Naval Annex	K
SWMU 170	IV - 4.10	Drydock #1, PCB removal area	PCBs	Drydock #1 area	E
SWMU 171	IV - 4.11	Drydock #2, PCB removal area	PCBs	Drydock #2 area	E
SWMU 172	IV - 4.12	Building 80, Steam Cleaning Operations	Petroleum Products	Building 80	E
SWMU 173	IV - 4.13	Building 1297 Storage Area	Lead, Zinc	Building 1297	E
SWMU 177	IV - 4.17	RTC-4 Oil Spill	Petroleum Products	Building RTC-4	I
SWMU 179	IV - 4.19	SAA, Building 222	Flammable Wastes, Metals	Building 222	E
SWMU 181	V - 4.1	SAA, Metal Trades	Lead, Petroleum Products	Pier C	E
AOC 500	I - 5.1	UXO Site Between Piers S and T	2 Mark 47 TORPEX Loaded Depth Bombs	Between Piers S and T	J
AOC 501	I - 5.2	UXO Site East of X-54	2 Mark 47 TORPEX Loaded Depth Bombs	In Cooper River, East of X-54	J
AOC 502	I - 5.3	UXO Site Between Piers G and H	Three 5-inch Unexploded Shells	Between Piers G and H	J
AOC 503	I - 5.4	UXO Site South of Building 665	2 Mark 17 Depth Bombs	South of Bldg. 665	H
AOC 506	II - 5.3	Flammable Storage Shelter	Flammable Materials	North of Bldg. 1603	A
AOC 507	II - 5.4	Oil Storehouse	Petroleum Products	Golf Course Area (1410)	B
AOC 508	II - 5.5	Former Incinerator	Petroleum Products, Metals	North of Avenue D	C
AOC 510	II - 5.7	Laboratory	VOCs, Solvents	Avenue H	C
AOC 511	II - 5.8	Oil House	Petroleum Products	North of Bldg. 672	C
AOC 512	II - 5.9	Former Incinerator	Petroleum Products, Combustion Products	Building 1079	C
AOC 513	II - 5.10	Former Morgue	Formaldehyde, Miscellaneous Waste	SE of Bldg. NH-45	C
AOC 515	II - 5.12	Former Incinerator and Paint Shop	Paints, Solvents	Area West of Bldg. 233	C

Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring Confirmation Sampling Investigation (CSI)

SWMU/AOC Number	RFA Code Section 117	SWMU/AOC Name	Materials Received, Stored, or Discarded	Location	Study Zone
AOC 517	II - 5.13	Indoor Firing Range	Lead, Metals	Building M-192	C
AOC 518	II - 5.14	Coal Storage Bins	Coal and Coal Byproducts	Bldg. M-1257 Area	C
AOC 519	II - 5.15	Former Boilerhouse	Petroleum Products	East of Bldg NH-55	C
AOC 520	II - 5.16	Former Garbage House	Solid Wastes	Building M-17 Area	C
AOC 522	II - 5.18	Grease and Wash Building	Petroleum Products	SW of Bldg. 198	C
AOC 523	II - 5.19	Gas Station Storage	Petroleum Products	Building 198	C
AOC 528	II - 5.22	Steam Cleaning Shop	Grease, Waste Oil	Building 59	E
AOC 530	II - 5.23	Paint and Oil Storage	Paints, Solvents, Petroleum Products	Building 35	E
AOC 531	II - 5.24	Substation and Storage	PCBs, Petroleum Products	Building 459	E
AOC 537	II - 5.30	Substation	PCBs, Petroleum Products	Building 342	E
AOC 540	II - 5.32	Plating Plant, Building 226	Heavy Metals, Cyanides	NE corner of Building 3	E
AOC 541	II - 5.33	Oil Storage Shops	Petroleum Products	Between Bldgs 6 and 226	E
AOC 542	II - 5.34	Old OxyAcetylene Plant and Paint Shop	Acetylene, Paints, Solvents	Building 226 Area	E
AOC 543	II - 5.35	Former Building 1026	Zinc, Inorganic Acids	Building 3 Area	E
AOC 546	II - 5.36	Galvanizing Shop	Zinc, Inorganic Acids	Between Bldgs 56 and 74	E
AOC 548	II - 5.38	Building 5 Elevator	Hydraulic Oil	Building 5	E
AOC 550	II - 5.40	Boilerhouse	Petroleum Products	SW of Building 62	E
AOC 551	II - 5.41	Boilerhouse	Petroleum Products	Pier 314	E
AOC 552	II - 5.42	Former Galvanizing Shop	Zinc, Inorganic Acids	NE corner of Dry Dock #1	E
AOC 554	II - 5.44	Former Paint Shop	Heavy Metals, VOCs	Between Bldgs 5 and 44	E
AOC 555	II - 5.45	Former Latrine and Substation	Heavy Metals, PCBs	SE side of Bldg 1119	E
AOC 557	II - 5.46	Former Latrine	Heavy Metals	South of Drydock #1	E
AOC 558	II - 5.47	Substation	PCBs, Petroleum Products	Building 77	E
AOC 560	II - 5.49	Disinfectant	Infectious Wastes	South of Bldg. 32	E
AOC 562	II - 5.51	Substation	PCBs, Petroleum Products	Building 84	E
AOC 563	II - 5.52	Former Locomotive House	Solvents and Degreasers	Building 177 Area	E
AOC 564	II - 5.53	Oil/Water Separator	Waste Oils, Miscellaneous Wastes	North Side Building 80	E
AOC 566	II - 5.55	Paint Shop Storage	Paint	Building 194	E
AOC 567	II - 5.56	Substation	PCBs, Petroleum Products	East of Building 195	E
AOC 573	II - 5.60	Anodizing Process Area	Metals, Acids, Degreasers	Building 177	E
AOC 576	II - 5.61	Oil and Paint Storehouse/Print Office	Metals, Paints, Solvents	Building 80 Area	E
AOC 579	II - 5.64	Former Paint Shop	Paints, Metals	Building 1035	E
AOC 580	II - 5.65	Former Pattern and Electric Shop	Lead, Zinc, Solvents, Degreasers	South of Building 10	E
AOC 586	II - 5.71	Temporary Powerhouse	PCBs	SE of Building 11	E
AOC 590	II - 5.74	Alley Between Bldgs.79 and 1760	Acetone, Petroleum Products	Between Bldgs 79 & 1760	E
AOC 592	II - 5.76	Former Asbestos Shredding Shelter	Asbestos Waste	South of Building 1760	E
AOC 596	II - 5.80	Former Torpedo Storage	Explosives, Propellants	Building 101 Area	E

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Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring Confirmation Sampling Investigation (CSI)

SWMU/AOC Number	RFA Code	SWMU/AOC Name	Materials Released, Stored, or Transported	Location	Priority
AOC 597	II - 5.81	Substation	PCBs, Petroleum Products	Building 91	E
AOC 599	I - 5.18	Pier J Pump House	Diesel Fuel	Pier J	E
AOC 602	II - 5.85	Substation and Storage	PCBs, Petroleum Products	Building 95	E
AOC 603	II - 5.86	Burning Dump	Solid Wastes, Incomplete Combustion Products	Drydock #3 Area	E
AOC 604	II - 5.87	Substation and Storage	PCBs, Petroleum Products	Building 96	E
AOC 611	II - 5.90	Grease Rack and Hobby Shop	Petroleum Products, Solvents, Degreasers	9th St and Enterprise Ave	F
AOC 615	II - 5.93	Old Chain Locker	Epoxies and Resins	Building 255 Area	F
AOC 616	II - 5.94	Paint Shop	Paints, Metals	Building 69 Parking Lot	F
AOC 617	II - 5.95	Galvanizing Plant	Zinc, Inorganic acids	Building 69A Area	F
AOC 619	II - 5.97	Oil Storage Yard	Petroleum Products	Bldgs. 1824 Area	F
AOC 622	II - 5.100	Ballast Water Treatment Facility	Petroleum Oils, Metals	NSC Fuel Farm	G
AOC 623	II - 5.101	Stripper Concrete Tank	Petroleum Products	Building 96	G
AOC 625	II - 5.103	Sludge Pumphouse	Petroleum Products	Building 3901B	G
AOC 628	II - 5.105	Sandblasting Area	Paint, Blast Residue	SE of Building 68	G
AOC 629	II - 5.106	Unloading Facility	Waste Oil	Building 3913	G
AOC 633	II - 5.110	Substation	PCBs, Petroleum Products	Building 451C	G
AOC 634	II - 5.111	Flammable Material Storage	Paint, Flammable Material	SW of Building 224	G
AOC 636	II - 5.113	Torpedo Magazine	Explosives, Propellants	Building 161	G
AOC 637	II - 5.114	Dump Area	Solid and Hazardous Wastes	Building 161 Area	G
AOC 638	II - 5.115	Torpedo Workshop	Explosives, Propellants	Building 132	G
AOC 641	II - 5.118	Stripper Pumphouse	Acetone, Methylene Chloride	Base of Building 336	G
AOC 642	II - 5.119	Former Pistol Range	Lead, Explosives	Parking Lot, Building X-10	G
AOC 643	II - 5.120	Substation	PCBs, Petroleum Products	Building 125	G
AOC 646	II - 5.123	Operational Storage	Petroleum Products	Building 3906Q, Chicora	G
AOC 649	II - 5.126	Braswell Shipyards Storage Area	Blast Media, Welding Supplies	East of Building 672	H
AOC 650	II - 5.127	Metal Trades Storage Area	Miscellaneous Wastes	East of Building 672	H
AOC 651	II - 5.128	Sandblasters Storage Area	Miscellaneous Wastes	East of Building 672	H
AOC 654	II - 5.129	Septic Tank and Drain Field	Solvents, Petroleum Products	Building 661 Area	H
AOC 660	II - 5.135	Mosquito Control Facility	Pesticides	NW of Building NS-6	H
AOC 661	II - 5.136	Former Explosives Storage	Explosives	South of Building 601	H
AOC 662	I - 5.27	Former Gasoline Station	Petroleum Products	Building NS-54	H
AOC 663	II - 5.137	Gas/Diesel Pumping Station	Petroleum Products	Building 851	H
AOC 665	II - 5.139	Pyrotechnic Storage	Pyrotechnic Explosives	Building 1889 and NS-46 Area	H
AOC 666	II - 5.140	Fuel Storage	Petroleum Products	Building NS-45	H
AOC 671	II - 5.144	Metering House	Petroleum Products	Hobson and Holland St	I
AOC 673	II - 5.146	Paint and Oil Storehouse	Paint, Petroleum Products	Building 169	I
AOC 675	II - 5.148	Fuel Oil Storage	Petroleum Products	Building NS-4	I

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Soil Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring Confirmation Sampling Investigation (CSI)

SWMU/AOC Number	RFA/RAI Section No.	SWMU/AOC Name	Materials Released or Stored or Disposed	Location	Study Zone
AOC 676	II - 5.149	Former Incinerator	Products of Incomplete Combustion	Building NS-2 Area	I
AOC 678	II - 5.150	Fire Fighting School	Petroleum/Incomplete Combustion Products	Building NS-1 Area	I
AOC 679	II - 5.151	Former Wash Rack	Paint, Petroleum Products	Building NS-1 Area	I
AOC 680	II - 5.152	Brake Repair and Welding Area	Asbestos Waste	Building NS-26 Area	I
AOC 685	II - 5.155	Former Smoke Drum	Products of Incomplete Combustion	West of Juneau Ave	I
AOC 687	II - 5.157	Ammunition Storage	Explosives	Building X-55	I
AOC 688	II - 5.158	Ammunition Storage	Explosives	Building X-56	I
AOC 690	II - 5.160	Dredge Materials Area	Solid Wastes	South End of Base	I
AOC 693	II - 5.163	Fuse and Primer House	Petroleum Products, Reactives	Clouter Island	K
AOC 694	II - 5.164	Former Naval Ammunition Depot	Explosives, Metals	Clouter Island	K
AOC 695	II - 5.165	Electric Locomotive Shed	Solvents, Degreasers	Clouter Island	K
AOC 696	IV - 5.1	Transformer Area	PCBs	Building 2509, Naval Annex	K
AOC 701	V - 5.3	Former Gas Station	Petroleum Products	Building 1141	E
AOC 702	V - 5.4	Paint Accumulation Area	Paint Waste	Pier D	E
AOC 703	V - 5.5	Paint Accumulation Area	Paint Waste	Pier F	E
AOC 704	V - 5.6	Paint Accumulation Area	Paint Waste	West of Building 301B	E
AOC 709	None	Other Impacted Area G07			H
AOC 710	None	Other Impacted Area G38			H
AOC 711	None	Other Impacted Area G80			H

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List of SWMU's and AOC's Requiring NFA

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Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring No Further Action (NFA)

SWMU/AOC Number	RFI Number	Area Name	Materials Released	Storage or Disposal	Location	Status
SWMU 26	1991 RFA	Waste Storage Area	Paint, Thinner		Building 64-40, Pier C	E
SWMU 27	1991 RFA	Waste Storage Area	Paint, Thinner		East End Pier C	E
SWMU 28	1991 RFA	Waste Storage Area	Paint, Thinner		West End Pier C	E
SWMU 29	1991 RFA	Building X-10	Hazardous Wastes		Building X-10	G
SWMU 30	1991 RFA	Building 13 SAA	Hazardous Wastes		Building 13	E
SWMU 31	1991 RFA	Waste Paint Storage Area	Paint, Thinner		Drydock #5	E
SWMU 32	1991 RFA	Waste Paint Storage Area	Paint, Thinner		Building 195	E
SWMU 33	1991 RFA	Waste Paint Storage Area	Paint, Thinner		Drydock #2	E
SWMU 34	1991 RFA	Morale, Welfare and Recreation Area	Refrigerant, Waste Oil		SE of Building X-10	G
SWMU 35	1991 RFA	Building X-12	Hazardous Wastes		Building X-12	G
SWMU 41	II - 4.2	Battery Charging Station	Lead, Sulfuric Acid		Building 1624	A
SWMU 45	I - 4.5	Building NH-51 SAA	Photograph Fixer/Developer		Building NH-51	C
SWMU 46	I - 4.6	NH-21 SAA	Miscellaneous Wastes		Building NH-21	C
SWMU 48	I - 4.7	Building 234 SAA	Photo Chemicals Ammonia EDTA Containers		Building 234	C
SWMU 49	II - 4.6	Forklift Battery Charging Station	Lead, Sulfuric Acid		Building 219	C
SWMU 50	I - 4.8	Building NH-1 SAA	Miscellaneous Wastes		Building NH-1	D
SWMU 51	I - 4.9	Building NH-1 SAA	Miscellaneous Wastes		Building NH-1	D
SWMU 52	I - 4.10	Building NH-1 SAA	Miscellaneous Wastes		Building NH-1	D
SWMU 55	I - 4.13	Building 59 SAA	Paint, Glue, Miscellaneous Wastes		Building 59	E
SWMU 56	I - 4.14	Building 2A, SAA	Adhesives		Building 2A	E
SWMU 57	I - 4.15	Building 35 SAA	Petroleum, Miscellaneous Wastes		Building 35	E
SWMU 58	I - 4.16	Building 35 SAA	Acids, Metals, Alcohol		Building 35	E
SWMU 59	I - 4.17	Building 35 SAA	Miscellaneous Wastes		Building 35	E
SWMU 60	I - 4.18	Less than 90 Day Accumulation Area	Petroleum Products, Solvents, Paint		Building 2	E
SWMU 61	I - 4.19	Less than 90 Day Accumulation Area	Adhesives, Miscellaneous Wastes		Building 228	E
SWMU 62	I - 4.20	Building 226 SAA	Plating Wastes, Metal Hydroxide		Building 226	E
SWMU 64	I - 4.21	Building 56 SAA	Paint, Miscellaneous Wastes		Building 56	E
SWMU 66	I - 4.23	Pier C SAA	Miscellaneous Wastes		Pier C	E
SWMU 68	I - 4.24	Building 5 SAA	Adhesives, Paints, Miscellaneous Wastes		Building 5	E
SWMU 69	I - 4.25	Building 5 SAA	Paint, Adhesives		Building 5	E
SWMU 71	I - 4.26	Building 44 SAA	Petroleum Products, Metal Shavings		Building 44	E
SWMU 72	II - 4.10	Building 44, SAA	Metal Debris		Building 44	E
SWMU 73	I - 4.27	Building 43 SAA	Petroleum Products, Used Coolants, Solvent		Building 43	E
SWMU 74	I - 4.28	Building 57 SAA	Tetrachloroethylene		Building 57	E
SWMU 75	I - 4.29	Drydock #1 SAA	Miscellaneous Wastes		Drydock #1	E
SWMU 76	I - 4.30	Building 32 SAA	Miscellaneous Wastes		Building 32	E
SWMU 77	I - 4.31	Drydock #2 SAA	Miscellaneous Wastes		Drydock #2	E

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Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring No Further Action (NFA)

SWMU/AOC Number	NFA Code	Area	Materials Released/Stored or Disposed	Location	Status
SWMU 78	I-4.32	Drydock #2 SAA	Paint, Miscellaneous Wastes	Drydock #2	E
SWMU 79	I-4.33	Building 250, SAA	Hazardous Wastes	Building 250	E
SWMU 82	I-4.35	Building 177 SAA	Solvents, Adhesives, Preservatives	Building 177	E
SWMU 85	I-4.38	Building 9 SAA	Paint, Petroleum Products	Building 9	E
SWMU 86	I-4.39	Less than 90 Day Accumulation Area	Paint, Petroleum Products	Building 9	E
SWMU 88	I-4.41	Building 25 SAA	Miscellaneous Wastes	Building 25	E
SWMU 89	I-4.42	Building 13 SAA	Acids, Metals, Lab Samples	Building 13	E
SWMU 90	I-4.43	Building 13, SAA	Petroleum Products	Building 13	E
SWMU 91	I-4.44	Building 13, SAA	Petroleum Products	Building 13	E
SWMU 92	I-4.45	Building 13 SAA	Acids, Metals, ICP Waste	Building 13	E
SWMU 93	I-4.46	Building 13 SAA	Miscellaneous Waste	Building 13	E
SWMU 94	I-4.47	Building 13 SAA	Acids, Metals, Alcohol	Building 13	E
SWMU 95	I-4.48	Building 13 SAA	Used Analytical Reagents	Building 13	E
SWMU 96	I-4.49	Less than 90 Day Accumulation Area	Petroleum Products Paint	Building 236	E
SWMU 98	I-4.51	Pier G SAA	Paint, Miscellaneous Waste	Pier G	E
SWMU 99	I-4.52	Pier G SAA	Miscellaneous Waste	Pier G	E
SWMU 101	I-4.54	Building 1173, SAA	Hazardous Waste Accumulation	Building 1173	E
SWMU 103	I-4.55	Pier H SAA	Miscellaneous Waste	Pier H	E
SWMU 105	I-4.56	Building 1518 SAA	Petroleum Products, Paint	Building 1518	E
SWMU 107	I-4.58	Chapel CBU-412 SAA	Miscellaneous Waste	Chapel CBU-412	F
SWMU 108	I-4.59	Building 187 SAA	Miscellaneous Waste	Building 187	F
SWMU 110	I-4.61	Building 1346 SAA	Paint, Grease	Building 1346	F
SWMU 111	I-4.62	Building 241 SAA	Miscellaneous Waste	Building 241	F
SWMU 112	I-4.63	Building 241 SAA	Miscellaneous Waste	Building 241	F
SWMU 113	I-4.64	Building 241 SAA	Paint, Petroleum Products	Building 241	F
SWMU 114	I-4.65	Building 241 SAA	Petroleum Products	Building 241	F
SWMU 115	I-4.66	Building 242 SAA	Petroleum Products	Building 242	F
SWMU 116	I-4.67	Building 1175 SAA	Petroleum Products	Building 1175	F
SWMU 117	I-4.68	Building 249, SAA	Marine Anti-foulant paint, Thinner	Building 249	G
SWMU 118	II-4.14	Pier Z SAA	Miscellaneous Waste	Pier Z	G
SWMU 119	II-4.15	Garbage Handling, Facility 1271	Solid Wastes	End of Building 336	G
SWMU 122	I-4.71	Building 636 SAA	Paint, Grease	Building 636	H
SWMU 123	I-4.72	Building 636 SAA	Paint, Grease	Building 636	H
SWMU 124	I-4.73	Building 1508, SAA	Marine Anti-foulant paint, Petroleum Products	Building 1508	H
SWMU 125	I-4.74	Building 202 SAA	Mercuric Nitrate Waste	Building 202	H
SWMU 126	I-4.75	Building 202 SAA	Mercuric Nitrate Waste	Building 202	H
SWMU 127	I-4.76	Building 202 SAA	Mercuric Nitrate Waste	Building 202	H

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Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring No Further Action (NFA)

SWMU/AOC Number	RFA Volume	Area	SWMU/AOC Name	Materials Released, Stored, or Disposed	Location	Study Zone
SWMU 128	I - 4.77		Building 202 SAA	Mercuric Nitrate Waste	Building 202	H
SWMU 129	I - 4.78		Building 202 SAA	Spent OBA Canisters	Building 202	H
SWMU 130	I - 4.79		Building 202 SAA	Petroleum Products	Building 202	H
SWMU 131	I - 4.80		Building NS-67 SAA	Miscellaneous Wastes	Building NS-67	H
SWMU 132	I - 4.81		Building 61 SAA	Mercuric Nitrate	Building 61	H
SWMU 133	I - 4.82		Building 61 SAA	Borate, Cupric Sulfate, Petroleum Products	Building 61	H
SWMU 134	I - 4.83		Building 61 SAA	Miscellaneous Wastes	Building 61	H
SWMU 135	I - 4.84		Building 61 SAA	Miscellaneous Wastes	Building 61	H
SWMU 137	I - 4.86		Building 675 SAA	Miscellaneous Wastes	Building 657	H
SWMU 139	II - 4.16		Pier P SAA	Miscellaneous Wastes	Pier P	I
SWMU 140	II - 4.17		Pier P SAA	Miscellaneous Wastes	Pier P	I
SWMU 141	I - 4.88		Pier Q SAA	Paint, Miscellaneous Wastes	Pier Q	I
SWMU 142	I - 4.89		Building 681 SAA	Paint, Miscellaneous Wastes	Building 681	I
SWMU 143	III - 4.1		Building 222	Mercuric Nitrate, Silver, Nitrate, Chromium	Building 222	E
SWMU 144	III - 4.2		Building 222, SAA	Flammable Wastes, Metals	Building 222	E
SWMU 146	III - 4.4		Building 13A, SAA	Lead	Building 13A	E
SWMU 147	III - 4.5		Pier C, SAA	Waste Oil, Aerosol Cans	Pier C	E
SWMU 148	III - 4.6		Building 194, SAA	Marine Anti-foulant paint, Waste, Thinner	Building 194	E
SWMU 149	III - 4.7		Drydock #5, SAA	Marine Anti-foulant paint, Waste, Thinner	Drydock #5 Area	E
SWMU 150	III - 4.8		Pier Z, SAA	Paint Wastes, Thinner	Pier Z	G
SWMU 151	III - 4.9		Building 79A	Flammable Wastes, Metals	Building 79A	E
SWMU 152	III - 4.10		Building 79A, SAA	Flammable Wastes, Lead, Brass, Bronze	Building 79A	E
SWMU 153	III - 4.11		Pier H, SAA	Marine Anti-foulant paint, waste, Thinner	Pier H	E
SWMU 154	III - 4.12		Pier H, SAA	Waste Oil, Aerosol Cans	Pier H	E
SWMU 155	III - 4.13		Building 101	Chromium, Lead, Flammable Wastes, Paint	Building 101	E
SWMU 156	III - 4.14		Drydock #4	Lead, PPE	Drydock #4 Area	E
SWMU 157	III - 4.15		Building 1278	Investigation Derived Waste	Building 1278	E
SWMU 158	III - 4.16		Pier M Quaywall, SAA	Paint Wastes	Pier M Quaywall	G
SWMU 160	III - 4.18		Port Services, SAA	Waste Oil	Pier S Quaywall	I
SWMU 165	IV - 4.5		Painting Operation, MOMAG 11	Paint, Lead	Building 2556, Naval Annex	K
SWMU 167	IV - 4.7		MOMAG 11	Miscellaneous Wastes	South of Building 2522, Naval Annex	K
SWMU 168	IV - 4.8		Building 2A Metal Storage Area	Zinc, Metals	Building 2A, Between Buildings 2 and 59	E
SWMU 169	IV - 4.9		Building 57, Painting Operations	Waste Paint, Paint Thinner, Metals	Building 57	E
SWMU 174	IV - 4.14		Oil Blowdown Area, Building 97	Petroleum Lubricating Oils	Building 97	F
SWMU 176	IV - 4.16		Transformer Oil Leak, Near Building 657	PCBs	Building 657	H
SWMU 179	IV - 4.19		Building 222, SAA	Flammable Wastes, Metals	Building 222	E
SWMU 180	IV - 4.20		Building 222, SAA	Flammable Wastes, Metals	Building 222	E

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Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring No Further Action (NFA)

SWMU/AOC Number	NFA Code	SWMU/AOC Name	Materials Released, Stored or Disposed	Location	Study Zone
SWMU 182	V - 4.2	Pier C, SAA	Lead, Petroleum Products, Solvents	Pier C	E
SWMU 183	V - 4.3	Building 79A, SAA	Metals, Alcohol	Building 79A High Bay	E
SWMU 184	V - 4.4	Building 79A, SAA	Brass, Bronze	Building 79A High Bay	E
SWMU 186	V - 4.5	Building 58, SAA	Lead, Chromium	Building 58, Outside	C
SWMU 187	V - 4.6	Paint Waste, SAA	Lead, Petroleum Products, Solvents	Head of Drydock#5, North Side	E
SWMU 189	V - 4.8	Building 222 Fenced in Area, SAA	Brass, Bronze, Cadmium	Building 222, Outside West End	E
SWMU 190	V - 4.9	Pier J, SAA	Brass, Cadmium, Lead	Pier J	E
SWMU 191	V - 4.10	Pier G, SAA	Paint and Oil Waste	Pier G	E
SWMU 192	V - 4.11	Building 222, SAA	Brass, Cadmium, Lead, Bronze, Chromium	Building 222	E
SWMU 193	V - 4.12	Building 79A, SAA	Brass, Bronze	Building 79A, Fenced in Area	E
SWMU 194	V - 4.13	Building 197, Paint Storage	Paint Waste	Building 197, Short Stay	K
SWMU 195	V - 4.14	Building 207, Flammable Storage	Petroleum Products, Solvents	Building 207, Short Stay	K
AOC 509	II - 5.6	Hazardous/Flammable Storage	Flammable Materials	Building 1079	C
AOC 514	II - 5.11	Flammable Storage	Flammable Materials	South of NH-55	C
AOC 521	II - 5.17	Former Oil Storehouse	Petroleum Products	Building M-1262 Area	C
AOC 524	II - 5.20	Substation, Building 415A	PCBs	Building 198	C
AOC 525	I - 5.6	Building 223 Paint Shop	Paint	Building 223	E
AOC 527	II - 5.21	Transformer House	PCBs, Petroleum Products	Building 2 Area	E
AOC 529	I - 5.8	Building 2A Coating and Spray Systems	Aluminum, Miscellaneous Waste	Building 2A	E
AOC 532	II - 5.25	Sump Collection Vats	Wood Preservatives	Building 2	E
AOC 533	II - 5.26	Switching Substation	PCBs, Petroleum Products	SE corner of Building 2	E
AOC 534	II - 5.27	Latrine	Organic Wastes, Metals	East of Building 2	E
AOC 535	II - 5.28	Latrine	Organic Wastes, Metals	East of Building 2	E
AOC 536	II - 5.29	Switching Substation	PCBs, Petroleum Products	North of Building 74	E
AOC 545	I - 5.11	Building 3 Surface Coating	Epoxy, Miscellaneous	Building 3	E
AOC 547	II - 5.37	Fiberglass Shop	Resins, Miscellaneous Wastes	Building 5	E
AOC 549	II - 5.39	Scrap Yard	Metals, Miscellaneous	Building 5 Area	E
AOC 555	II - 5.45	Latrine and Substation, Pier 314	Organic Wastes, Metals, PCBs	SE side of Building 1119	E
AOC 557	II - 5.46	Latrine	Organic Wastes, Metals	South of Dry Dock #1	E
AOC 565	II - 5.54	Temporary Coal Bin	Coal and Coal Byproducts	End of Dry Dock #5	E
AOC 568	II - 5.57	Latrine, Pier 317	Organic Wastes, Metals	Beside Building 75	E
AOC 577	I - 5.16	Building 25 Paint Booth	Paint	Building 25	E
AOC 581	II - 5.66	Waterfront Substation and Radio Lab	PCBs	Building 236 Area	E
AOC 582	II - 5.67	Substation	PCBs, Petroleum Products	North of Building 236	E
AOC 584	II - 5.69	Substation	PCBs, Petroleum Products	South of Dry Dock #5	E
AOC 585	II - 5.70	Latrine	Organic Wastes, Metals	End of 5th Street and end of Pier 317-D	E
AOC 587	II - 5.72	Former Aviation Gas Storage	Petroleum Products, Lead	Building 21	E

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Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring No Further Action (NFA)

SWMU/AOC Number	RFA Code	SWMU/AOC Name	Materials Released/Stored or Disposed	Location	Study Zone
AOC 588	I - 5.17	Building 218 Paint Booth	Paint	Building 218	E
AOC 589	II - 5.73	Substation	PCBs, Petroleum Products	By River Road	E
AOC 594	II - 5.78	Radcon Training & Offices	Miscellaneous Wastes	South of 317-E	E
AOC 595	II - 5.79	Oil & Paint Storehouse	Petroleum Products, Paints, Metals	SW of Building 101	E
AOC 600	II - 5.83	Coal and Oil Pier	Petroleum and Coal	North of DD#3	E
AOC 601	II - 5.84	Oil Pier (319)	Petroleum Products	End of 317-F	E
AOC 602	II - 5.85	Substation	PCBs, Petroleum Products	SW of Dry Dock#3	E
AOC 604	II - 5.87	Substation	PCBs, Petroleum Products	SW of Dry Dock#4	E
AOC 606	I - 5.19	Building 187 Paint Booth	Paint	Building 187	F
AOC 608	II - 5.89	Naval Exchange Storage Shed	Paints, Metals	Building 1263	F
AOC 610	I - 5.22	Building 241 Paint Booth	Paint	Building 241	F
AOC 612	II - 5.91	Substation	PCBs, Petroleum Products	SE on Building 1172	F
AOC 614	I - 5.23	Building 242 Paint Booth	Paint	Building 242	F
AOC 618	II - 5.96	Switching Substation	PCBs, Petroleum Products	Building 466	F
AOC 630	II - 5.107	POL Sampling/Test Building	Petroleum Products	Building 3913	G
AOC 632	II - 5.109	Substation	PCBs, Petroleum Products	Building 124	G
AOC 639	II - 5.116	Alcohol Storage	Alcohol	South of Building 132	G
AOC 640	II - 5.117	Fuel Oil Pier, Former Pier 322	Petroleum Products	Pier 336	G
AOC 644	II - 5.121	Substation	PCBs, Petroleum Products, Lead	Building 1793	G
AOC 645	II - 5.122	Transformer Vault	PCBs	Building 3906S	G
AOC 647	II - 5.124	Transformer Vault	PCBs	Building 3906R	G
AOC 648	II - 5.125	Transformer Vault	PCBs, Oils	West of Building 672	H
AOC 652	I - 5.25	Paint Booth,	Marine Anti-Foulant Paint Thinner	Building 636	H
AOC 657	II - 5.132	Engine Overhaul Facility	Miscellaneous Wastes	Building 645	H
AOC 658	II - 5.133	Gas Storage	Petroleum Products, Flammable Gases	East of Bldg 1303	H
AOC 664	II - 5.138	Transformer Vault (X 33A)	PCBs, Petroleum Products	Building X 33A	H
AOC 668	II - 5.141	Hazardous Material Storage	Oxygen, Acetylene, Welding Supplies	Building 1899	H
AOC 669	II - 5.142	Indoor Pistol Range	Lead	Building 1888	H
AOC 674	II - 5.147	Paint Storage	Paint, Petroleum Products, Metals Solvents	Building RTC-4	I
AOC 682	I - 5.31	Spray Booth	Paint Wastes, Thinner	Building 681	I
AOC 683	II - 5.153	Transformer Vault	PCBs	Building 678 Area	I
AOC 686	II - 5.156	High Explosive Storage	Explosives, Lead, Petroleum Products	Building X-54	I
AOC 697	IV - 5.2	Transformer Area, MOMAG-11	PCBs	Near Bldg 2554	K
AOC 705	V - Add I	Building 58 Spills	Mercury, X-ray development chemicals	Building 58	C

Appendix F-12

List of SWMU's Closed as Regulated Units

Appendix F - 12
 Solid Waste Management Units (SWMUs) closed as Regulated Units (RU)

SWMU/ACC Number	RFA Section Number	SWMU/ACC Name	Closure Approval	Location	Sitey Refs
SWMU 10	1991 RFA	Hazardous Waste Storage	SCDHEC letter, Litton to Dalby, dated 29 July 1996	Building 246	A
SWMU 40	I-4.3	Hazardous Waste Storage	SCDHEC letter, Litton to Laney, dated 21 March 1996	Building 1640	A

Appendix F-13

List of SWMU's and AOC's Requiring Investigation Under Subtitle I

Appendix F - 13

List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) which require investigation and will be regulated under the Department's RCRA Subtitle I Authority

SWMU/AOC Number	RFA Code	SWMU/AOC Name	Subtitle C or Subtitle I Transfer Approval	Location	Study Zone
SWMU 13	1991 RFA	Current Fire Fighter Training Area	SCDHEC letter, Tapia to Rose, dated 14 April 1997	Building 1303 Area	H
SWMU 178	IV - 4.18	Site of Apparent Transformer Fire	SCDHEC letter, Tapia to Rose, dated 4 September 1996	Building NS-53 Area	H
AOC 626	I - 5.24	Fuel Farm	Request for transfer submitted August 1997		
AOC 656	II - 5.131	Petroleum Spill	SCDHEC letter, Tapia to Rose, dated 4 September 1996	Between Bldgs 602 and NS-71	H
AOC 659	II - 5.134	Diesel Storage	Request for transfer submitted 16 September 1997	Building 14	H
AOC 662	I - 5.27	Former Gasoline Station	Request for transfer submitted 16 September 1997	Building NS-54	H

Appendix F-14

List of SWMU's and AOC's Requiring CMS

Appendix F - 14

Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) requiring Corrective Measures Study (CMS)

SWMU/AOC Number	Associated Sites	SWMU/AOC Name	Contaminated Soil	Under Ground Storage Tanks	Ecological Sensitive	Spill Zone
SWMU 9	SWMUs 19, 20, 121, AOCs 649, 650, 651	Closed Landfill	Y	Y	Y	H
SWMU 14	SWMU 15, AOC 670, 684	Chemical Disposal Area	Y	Y	N	H
SWMU 17	None	Oil Spill Area	Y	Y	N	H
SWMU 159	None	SAA	Y	N	Y	H
AOC 653	None	Hobby Shop	N	Y	N	H
AOC 655	None	Oil Spill Area	N	Y	N	H
AOC 663	SWMU 136	Gas/Diesel Pump Station	Y	Y	N	H
AOC 666	None	Fuel Storage	Y	Y	N	H
AOC 503	None	Unexploded Ordnance Site	N	N	N	H

Appendix F-15

Corrective Action Management Plan (CAMP)

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998							
						J	F	M	A	M	J	J	A	M	J	J	A	M	J	J	A	M	J	J	A	M	J	J	A
RFA and Comprehensive Work Plan						Focus Field Investigation and Technical Memo																							
28JAN94	31JUL95	28JAN94	31JUL95	541	100	Regulatory Review																							
31JUL95	27NOV95	31JUL95	27NOV95	117	100	Final Technical Memo																							
28NOV95	8JAN96	27NOV95	8JAN96	40	100	Report Approval by EPA and SCDHEC																							
9JAN96	14FEB96	8JAN96		20	0	RFA Volume I																							
28JAN94	18FEB94	28JAN94	18FEB94	22	100	Regulatory Review																							
21SEP94	8JAN95	21SEP94	8JAN95	106	100	RFI Volume I Final																							
11JAN95	9FEB95	11JAN95	9FEB95	30	100	Comprehensive RFI WP																							
18FEB94	18MAY94	18FEB94	18MAY94	90	100	Regulatory Review/Work Plan Approval																							
30JUL94	28AUG94	30JUL94	28AUG94	30	100	Comprehensive RFI WP Rev 01																							
1DEC94	10MAY95	1DEC94	10MAY95	30	100	Regulatory Review																							
10MAY95	21SEP95	10MAY95	21SEP95	132	100	Comments Received Final Revision																							
21SEP95	1DEC95	21SEP95	1DEC95	70	100	Revision 01 Review and Approval																							
1DEC95	11DEC95	1DEC95	11DEC95	10	100	Notification of Additional Sites																							
2MAR94	16MAR94	2MAR94	16MAR94	15	100	RFA Volume II																							
16MAR94	13JUN94	16MAR94	13JUN94	89	100	Regulatory Review																							
21SEP94	8JAN95	21SEP94	8JAN95	106	100	RFA Volume II Final																							
11JAN95	9FEB95	11JAN95	9FEB95	30	100	Notification of Additional Sites																							
24MAY94	8JUN94	24MAY94	8JUN94	15	100	RFA Volume III																							
8JUN94	7SEP94	8JUN94	7SEP94	90	100	Regulatory Review																							
21SEP94	8JAN95	21SEP94	8JAN95	106	100	RFA Volume III Final																							
11JAN95	9FEB95	11JAN95	9FEB95	30	100	Notification of Additional Sites																							
22JUN94	6JUL94	22JUN94	6JUL94	14	100																								

Plot Date 22SEP97
 Data Date 15SEP97
 Project Start 11JAN94
 Project Finish 5SEP98

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Type Activity

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Sheet 1 of 15

Naval Base Charleston
 Corrective Action Management Plan

NAVY CLEAN NS1467-89-D-0118			
Date	Revision	Checked	Approved
23 Sep 97	Rev. 0	GTH	MAR

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998													
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
RFA and Comprehensive Work Plan																																			
RFA & Comprehensive Work Plan																																			
6JUL94	4OCT94	6JUL94	4OCT94	90	100	RFA Volume IV =====																													
4OCT94	2NOV94	4OCT94	2NOV94	30	100	RFA Volume IV Extension □																													
7NOV94	8JAN95	7NOV94	8JAN95	59	100	Regulatory Review =====																													
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11OCT94	26OCT94	11OCT94	26OCT94	16	100	Notification of Additional Sites □																													
26OCT94	24JAN95	26OCT94	24JAN95	87	100	RFA Volume V =====																													
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10APR95	10MAY95	10APR95	10MAY95	31	100	RFA Volume V Final □																													
12JUL95	28JUL95	12JUL95	28JUL95	31	100	Notification of Additional Site □																													
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28SEP95	30OCT95	28SEP95	30OCT95	33	100	Regulatory Review □																													
30OCT95	30NOV95	30OCT95	30NOV95	30	100	RFA Volume V Addendum 1 Final □																													
1APR96	15APR96	1APR96	15APR96	31	100	Notification of Additional Site □																													
16APR96	26APR96	16APR96	26APR96	62	100	RFA Volume V Addendum 2 □																													
27APR96	27MAY96	27APR96	17JUN96	33	100	Regulatory Review =====																													
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1APR96	15APR96	1APR96	15APR96	31	100	Notification of Additional Site □																													
16APR96	16JUL96	16APR96	28MAY96	62	100	RFA Volume V Addendum 3 □																													
29MAY96	29JUN96	29MAY96	17JUN96	33	100	Regulatory Review □																													
17JUN96	17JUL96	17JUN96	21OCT96	30	100	RFA Volume V Addendum 3 Final =====																													
1FEB94	4DEC94	1FEB94	4DEC94	302	100	Permit Renewal =====																													

Plot Date 22SEP97
 Data Date 15SEP97
 Project Start 11JAN94
 Project Finish 5SEP98

Activity Bar/Tag Dates
 Critical Activity
 Progress Bar
 Milestone/Tag Activity

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NAVY CLEAN N62467-89-D-0318

Date	Revision	Checked	Approved

Naval Base Charleston
 Corrective Action Management Plan

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994												1995												1996												1997												1998																							
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D												
RFA and Comprehensive Work Plan						<div style="text-align: center;">Regulatory Review</div>																																																												Draft Comprehensive RFI Report <input type="checkbox"/> Regulatory Review <input type="checkbox"/> Final Comprehensive RFI Report <input type="checkbox"/>											
4DEC94	1APR96	4DEC94		998	95																																																																								
7MAR98	7JUN98			92	0																																																																								
8JUN98	8AUG98			59	0																																																																								
9AUG98	9SEP98			31	0																																																																								

Plot Date 22SEP97
Data Date 15SEP97
Project Start 1JAN94
Project Finish 5SEP98

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

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Sheet 3 of 15

Naval Base Charleston
Corrective Action Management Plan

NAVY CLEAN N62467-89-D-0318

Date	Revision	Checked	Approved

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998											
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Zone Code A																																	
RFI Work Plan/Investigation																																	
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	10AUG95		10AUG95	0	100																												
11AUG95	29APR96	11AUG95	2JUL96	409	100																												
RFI Report																																	
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14NOV97	29NOV97			14	0																												

Draft Zone A RFI Work Plan

Regulatory Review

Comments Received/Final Work Plan

Work Plan Approval by DHEC and EPA

Field Investigation

Draft Zone A RFI Report

EPA/SCDHEC Regulatory Review

Comments Received/Additional Field Work

SCDHEC Review

Comments Received/Document Approval

Final RFI Report Dist.

CMS Begins

SWMU 1 and 2 Field Investigation

SWMU 1 and 2 Report Addendum

Regulatory Review

Comments Received/Document Approved

Addendum Distributed

Plot Date 22SEP97
Data Date 15SEP97
Project Start 1JAN94
Project Finish 5SEP98

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestones/Flag Activity

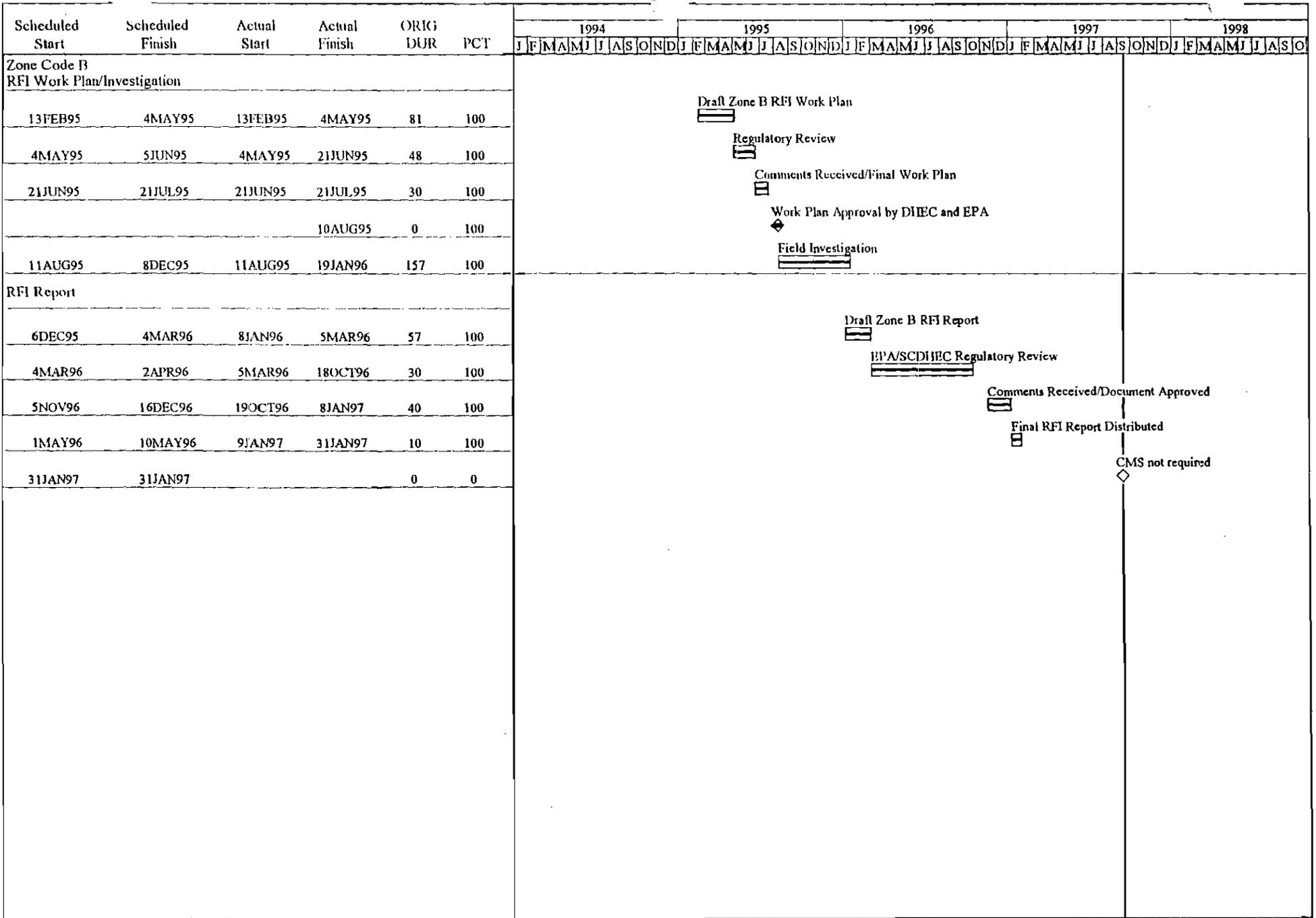
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NAVY CLEAN N62467-89-D-0318

Date	Revision	Checked	Approved

Naval Base Charleston
Corrective Action Management Plan



Plot Date 21SEP97
 Data Date 15SEP97
 Project Start 17AN94
 Project Finish 5SEP98



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NAVY CLEAN N62467-89-D-0118

Date	Revision	Checked	Approved

Naval Base Charleston
 Corrective Action Management Plan

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998													
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Zone Code C																																			
RFI Work Plan/Investigation																																			
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RFI Report																																			
13JUL95	18DEC95	25SEP95	26JAN96	120	100	<u>Draft Zone C RFI Report</u> <u>BPA/SC/DHEC Regulatory Review</u> Comments Received/Additional Field Work Final RFI Report Distributed																													
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10SEP97	14NOV97	10SEP97		66	35																														
CMS Work Plan																																			
15NOV97	15NOV97			0	0	CMS Begins																													

Plot Date 22SEP97
Data Date 15SEP97
Project Start 1JAN94
Project Finish 5SEP98

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

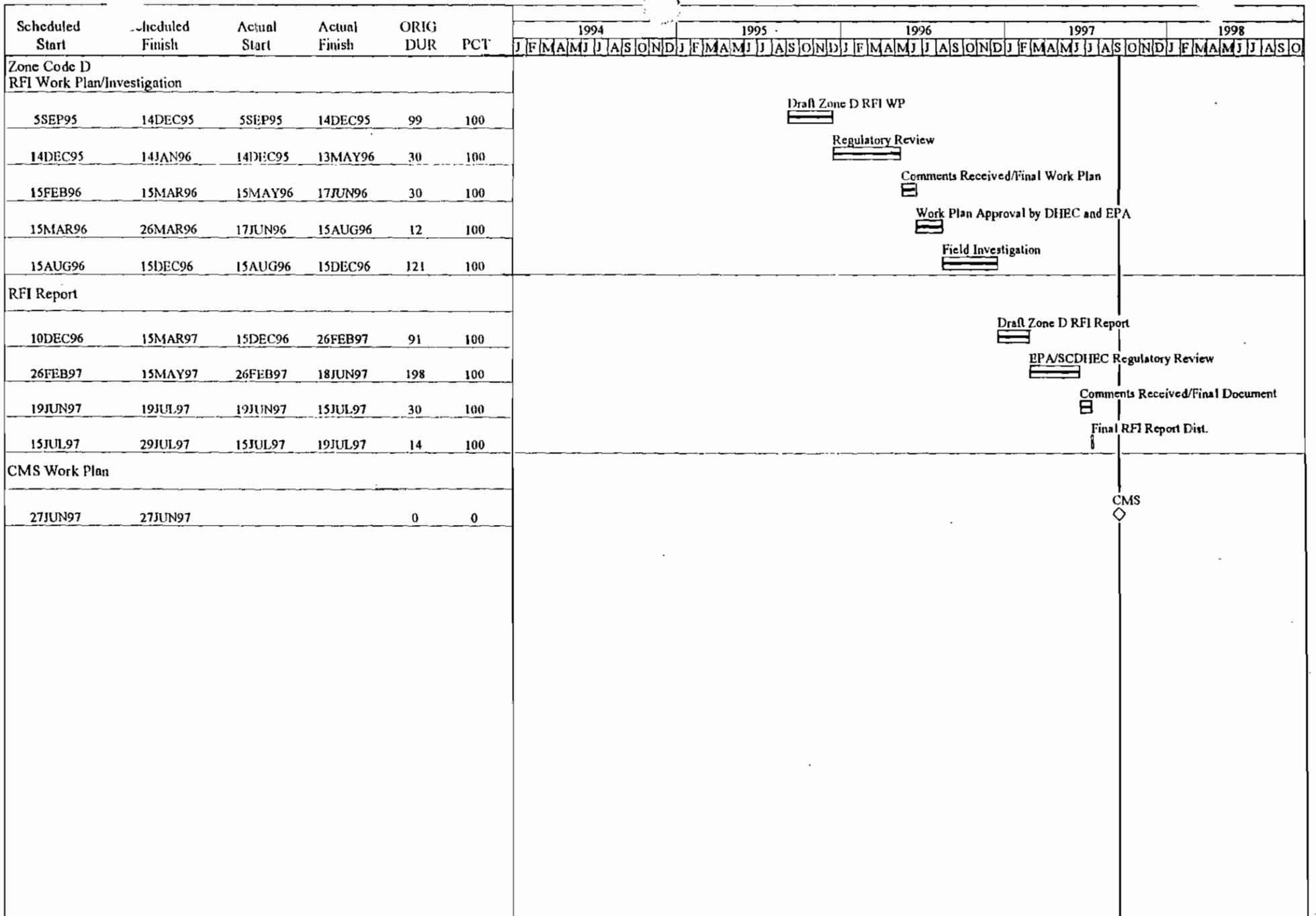
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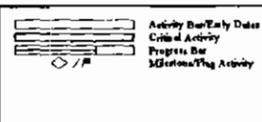
NAVY CLEAN N62467-89-D-0318

Date	Revision	Checked	Approved

Naval Base Charleston
Corrective Action Management Plan



Plot Date 22SEP97
 Data Date 15SEP97
 Project Start 11JAN94
 Project Finish 5SEP98



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Naval Base Charleston
 Corrective Action Management Plan

Date	Revision	Checked	Approved

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998													
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Zone Code E																																			
RFI Work Plan/Investigation																																			
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14FEB95	15MAR95	14FEB95	1MAY95	30	100	Regulatory Review																													
1MAY95	31MAY95	1MAY95	2JUN95	30	100	Comments Received/Final Work Plan																													
			9AUG95	0	100	Zone E Work Plan Approval by DIIEC and EPA																													
9AUG95	24FEB97	9AUG95	11JUN97	555	100	Field Investigation																													
RFI Report																																			
11JUN97	7NOV97	11JUN97		148	60	Draft Zone E RFI Report																													
8NOV97	7MAR98			116	0	EPA/SCDIIEC Regulatory Review																													
8MAR98	12MAY98			67	0	Comments Received/Document Approved																													
13MAY98	12JUN98			30	0	Final RFI Report Dist.																													
CMS Work Plan																																			
13JUN98	13JUN98			0	0	CMS Begins																													

Plot Date 21SEP97
 Data Date 15SEP97
 Project Start 1JAN94
 Project Finish 5SEP98

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

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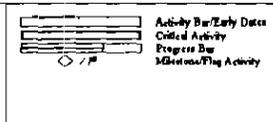
NAVY CLEAN N62467-89-D-0318

Date	Revision	Checked	Approved

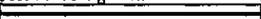
Naval Base Charleston
 Corrective Action Management Plan

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998													
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Zone Code F RFI Work Plan/Investigation																																			
5SEP95	14DEC95	5SEP95	14DEC95	99	100	<div style="text-align: center;"> <u>Draft Zone F RFI Work Plan</u> <u>Regulatory Review</u> Comments Received/Final Work Plan <u>Work Plan Approval by DHEC and EPA</u> <u>Field Investigation</u> </div>																													
14DEC95	14JAN96	14DEC95	13MAY96	30	100																														
15FEB96	15MAR96	15MAY96	17JUN96	30	100																														
15MAR96	24MAR96	17JUN96	15AUG96	10	100																														
24MAR96	15MAR97	15AUG96	15MAY97	211	100																														
RFI Report																																			
15MAY97	15DEC97	12SEP97		93	5	<div style="text-align: center;"> Draft Zone F RFI Report EPA/SCDHEC Regulatory Review Comments Received/Document Approved Final RFI Report Dist. </div>																													
16DEC97	15FEB98			60	0																														
16FEB98	15APR98			59	0																														
16APR98	1MAY98			17	0																														
CMS Work Plan																																			
2MAY98	2MAY98			0	0	<div style="text-align: center;"> CMS Begins </div>																													

Plot Date 22SEP97
Data Date 15SEP97
Project Start 1JAN94
Project Finish 5SEP98



NAVY CLEAN N62467-89-D-0318			
Date	Revision	Checked	Approved

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998													
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Zone Code G																																			
RFI Work Plan/Investigation																																			
5SEP95	14DEC95	5SEP95	14DEC95	99	100	<p style="text-align: center;">Draft Zone G RFI Work Plan </p>																													
14DEC95	14JAN96	14DEC95	15MAY96	30	100	<p style="text-align: center;">Regulatory Review </p>																													
15FEB96	15MAR96	15MAY96	17JUN96	30	100	<p style="text-align: center;">Comments Received/Final Work Plan </p>																													
15MAR96	24MAR96	17JUN96	15AUG96	10	100	<p style="text-align: center;">Work Plan Approval by DHEC and EPA </p>																													
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RFI Report																																			
12JUN97	15JAN98	12JUN97		212	10	<p style="text-align: center;">Draft Zone G RFI Report </p>																													
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14MAY98	27MAY98			13	0	<p style="text-align: center;">Final RFI Rpt Dist. </p>																													
CMS Work Plan																																			
28MAY98	28MAY98			0	0	<p style="text-align: center;">CMS Begins </p>																													

Plot Date 22SEP97
 Data Date 15SEP97
 Project Start 1JAN94
 Project Finish 5SEP98



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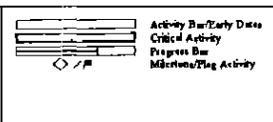
NAVY CLEAN N62467-89-D-0318

Date	Revision	Checked	Approved

Naval Base Charleston
 Corrective Action Management Plan

Scheduled Start	cheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998											
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
Zone Code II RFI Work Plan/Investigation						<p>Draft Zone II RFI Work Plan</p> <p>Regulatory Review</p> <p>Comments Received/Final Work Plan</p> <p>Work Plan Approval by DIII:C and EPA</p> <p>Field Investigation</p>																											
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8AUG94	8SEP94	28SEP94	29DEC94	90	100																												
		29DEC94	29DEC94	1	100																												
8AUG94	4MAR95	8AUG94	1MAY95	262	100																												
RFI Report						<p>Draft Zone II RFI Report</p> <p>Presubmittal Review</p> <p>Regulatory Review</p> <p>Comments Received/Resubmit Report</p> <p>Regulatory Review</p> <p>Comments Received/Resubmit Report</p> <p>Regulatory Review</p> <p>Comments Rec'd/Document Approved</p> <p>Final RFI Report Dist.</p>																											
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31JUL95	31AUG95	31JUL95	27NOV95	117	100																												
27NOV95	27DEC95	27NOV95	27DEC95	30	100																												
28DEC95	27JAN96	27NOV95	6MAY96	60	100																												
8MAY96	8JUL96	8MAY96	8JUL96	60	100																												
27JAN96	25APR96	8JUL96	13JAN97	60	100																												
13JAN97	24MAR97	13JAN97	28AUG97	242	100																												
28DEC95	27JAN96	6AUG97	21AUG97	14	100																												
CMS Work Plan						<p>CMS Begins/Permit Mod.</p> <p>Draft Zone II CMS Work Plan</p> <p>Regulatory Review</p>																											
24FEB97	24FEB97			0	0																												
28AUG97	28NOV97	10JUN97		169	90																												
29NOV97	29JAN98			60	0																												

Plot Date 22SEP97
 DMA Date 15SEP97
 Project Start 11JAN94
 Project Finish 5SEP98



2009

Naval Base Charleston
 Corrective Action Management Plan

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Date	Revision	Checked	Approved

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998													
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Zone Code I																																			
RFI Work Plan/Investigation																																			
11AUG94	16NOV94	11AUG94	16NOV94	97	100	<u>Draft Zone I RFI Work Plan</u> <u>Regulatory Review</u> Comments Received/Final Work Plan Work Plan Approval by DHEC and EPA <u>Field Investigation</u>																													
16NOV94	16DEC94	16NOV94	30JAN95	72	100																														
16DEC94	16JAN95	30JAN95	28FEB95	30	100																														
		28FEB95	27MAR95	0	100																														
30JAN95	25SEP95	30JAN95	25SEP95	236	100																														
RFI Report																																			
13JUL95	11DEC95	13JUL95	26JAN96	174	100	<u>Draft Zone I RFI Report</u> <u>Regulatory Review</u>																													
26JAN96	24FEB96	26JAN96		618	90	Comments Received/Document Approved Final RFI Report Dist.																													
14OCT97	14DEC97			60	0																														
15DEC97	15JAN98			30	0																														
CMS Work Plan																																			
16JAN98	16JAN98			0	0	CMS Begins																													

Plot Date 22SEP97
Data Date 11SEP97
Project Start 11JAN94
Project Finish 5SEP98

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestones/Flag Activity

2909

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Date	Revision	Checked	Approved

Naval Base Charleston
Corrective Action Management Plan

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994				1995				1996				1997				1998													
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Zone Code K RFI Work Plan/Investigation																																			
8JAN96	1APR96	8JAN96	1APR96	264	100	Draft Zone K RFI Work Plan																													
2APR96	25JUL96	2APR96	25JUL96	30	100	Regulatory Review																													
29JUL96	16SEP96	29JUL96	16SEP96	30	100	Comments Received/Final Work Plan																													
17SEP96	15OCT96	17SEP96	15OCT96	29	100	Work Plan Approval by DHEC and EPA																													
16OCT96	16MAR97	16OCT96	11JUN97	327	100	Field Investigation																													
RFI Report																																			
12JUN97	9DEC97	12JUN97		177	60	Draft Zone K RFI Report																													
10DEC97	9FEB98			60	0	EPA/SCDHEC Review																													
10FEB98	14APR98			64	0	Comments Received/Document Approval																													
15APR98	28APR98			14	0	Final RFI Report Dist																													
CMS Work Plan																																			
29APR98	29APR98			0	0	CMS Begins																													
SWMU 166 Field Investigation																																			
16OCT96	26NOV97	16OCT96		280	90	SWMU 166 Field Investigation																													
29AUG97	30DEC97	29AUG97		90	20	Draft SWMU 166 RFI Report																													
31DEC97	25MAR98			60	0	EPA/SCDHEC Review																													
26MAR98	6MAY98			30	0	Comments Received/Document Approved																													
7MAY98	27MAY98			14	0	Final Report Distribution																													

Plot Date 22SEP97
 Data Date 15SEP97
 Project Start 11JAN94
 Project Finish 5SEP98

Activity Bar/Early Date
 Critical Activity
 Program Bar
 Milestone/Flag Activity

3PC9

Naval Base Charleston
 Corrective Action Management Plan

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Date	Revision	Checked	Approved

Scheduled Start	Scheduled Finish	Actual Start	Actual Finish	ORIG DUR	PCT	1994												1995												1996												1997												1998											
						J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Zone Code L RFI Work Plan/Investigation																																																																	
6JAN95	26MAY95	6JAN95	26MAY95	141	100	<div style="text-align: center;"> <u>Draft Zone L RFI Work Plan</u> Regulatory Review Comments Received/Final Work Plan Work Plan Review by SCDHEC and EPA Comments Rec'd/Document Approved Field Investigation </div>																																																											
26MAY95	18AUG95	26MAY95	18AUG95	83	100																																																												
18AUG95	18SEP95	18AUG95	18OCT95	61	100																																																												
18SEP95	27SEP95	18OCT95	22NOV96	10	100																																																												
23NOV96	13DEC96	23NOV96	13DEC96	20	100																																																												
2JAN97	24NOV97	28APR97		208	75																																																												
RFI Report																																																																	
25NOV97	24FEB98			88	0	<div style="text-align: center;"> Draft Zone L RFI Report EPA/SCDHEC Regulatory Review Comments Received/Document Approved Final RFI Report Distributed </div>																																																											
25FEB98	24APR98			59	0																																																												
25APR98	12JUN98			48	0																																																												
13JUN98	26JUN98			14	0																																																												
CMS Work Plan																																																																	
27JUN98	27JUN98			0	0	<div style="text-align: right;"> CMS Begins ◇ </div>																																																											
				1	0																																																												

Plot Date 22SEP97
 Data Date 15SEP97
 Project Start 11JAN94
 Project Finish 3SEP98



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