

# BEAUFORT MARINE CORPS AIR STATION

## BEAUFORT, SOUTH CAROLINA



Engineering Field Division/Activity: SOUTHDIV  
 Major Claimant: CMC  
 Size: 6,676 Acres  
 Funding to Date: \$2,585,000  
 Estimated Funding to Complete: \$17,302,000  
 Base Mission: Provides operations, logistics and administrative support to the Fleet Marine Forces tenant units  
 Contaminants: Jet fuel waste oils, hydraulic fluids, antifreeze, solvents, pesticides/herbicides, paint, paint thinners and strippers, mercury amalgam, asbestos, sludge

Number of Sites: 22  
 CERCLA: 14  
 RCRA Corrective Action: 5  
 RCRA UST: 41  
 Total Sites: 41

Relative Risk Ranking of Sites:  
 High: 2 Not Evaluated: 0  
 Medium: 9 Response Complete: 16  
 Low: 14 Total Sites: 41

### PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	21							
SI	4							
RI/FS								6
RD								5
RA								5
IRA								
RC	16							6
Cumulative Response Complete	73%							100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	12							
RFI	9							1
CMS								13
DES								9
CMI								9
IRA								
RC								14
Cumulative Response Complete								100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	5							
INV								
CAP	1		4					
DES		1						
IMP					3	1		1
IRA	1(2)				2(3)			
RC					2	2		1
Cumulative Response Complete					40%	80%		100%

# CHARLESTON NAVAL COMPLEX

## CHARLESTON, SOUTH CAROLINA



<b>Engineering Field Division/Activity:</b>	SOUTHDIV		
<b>Major Claimant:</b>	COMNAVSUPSYSCOM/COMNAVSEASYSYSCOM/CNET/ COMNAVRESFOR/CINCLANTFLT		
<b>Size:</b>	2,879 Acres		
<b>Funding to Date:</b>	\$33,198,000		
<b>Estimated Funding to Complete:</b>	\$106,729,000		
<b>Base Mission:</b>	Provided support and supplies for assigned ships, drydocking, research and test work, and training		
<b>Contaminants:</b>	Asbestos, organic compounds, cyanide, decontaminating agents, paint, PCBs, POLs, solvents, heavy metals, pesticides, chemical agents		
<b>Number of Sites:</b>	<b>Relative Risk Ranking of Sites:</b>		
<b>CERCLA:</b>	0	<b>High:</b>	31
<b>RCRA Corrective Action:</b>	109	<b>Medium:</b>	57
<b>RCRA UST:</b>	7	<b>Low:</b>	19
<b>Total Sites:</b>	116	<b>Not Evaluated:</b>	7
		<b>Response Complete:</b>	2
		<b>Total Sites:</b>	116



### EXECUTIVE SUMMARY

The Charleston Naval Complex is located on the west bank of the Cooper River about 5 miles north of Charleston, South Carolina. There are multiple Naval commands located on the complex: Naval Shipyard (NSY), Naval Station (NS), Naval Fleet and Industrial Supply Center (FISC), Fleet and Mine Warfare Training Center (FMWTC), and the Naval Reserve Center (NRC) (which is not a closing facility) and several other small organizations. The property and the majority of the commands were slated for closure by the Base Realignment and Closure (BRAC) commission in 1993, except for the FISC, which was closed by the BRAC commission in 1995. In support of the various missions of the multiple commands, typical operations on the complex which contributed to contaminated sites included welding shops, machining shops, metal shops, electrical and electronics shops, painting and sandblasting shops, chemical treatment shops, public works shops, photographic and printing shops, firefighting training areas, medical and dental clinics, storage of supplies, materials and fuels, and treatment and disposal of wastewaters and solid wastes. In the early 1980's, the Navy changed its operational processes to prevent further contamination. The primary sites of concern are areas that were used as landfills or disposal pits without controls for runoff and leachate. The area, originally a tidal marsh, drains to groundwater and nearby wetlands areas, therefore providing a pathway through which contaminants could migrate. The wetlands, high water table, known surface soil contamination and potential for personnel exposure were the primary cause for the high-ranked sites in the Relative Risk Site Evaluation. The facility is under a RCRA Permit which includes environmental cleanup as a legal requirement.

The complex is surrounded by commercial, industrial and residential areas. Due to its location on the river's edge, it is also surrounded by diverse ecosystems. There are many wetlands and tidal marsh areas with a great variety of aquatic life as well as plants, birds and animals. The nearby waterways are sources for fishing and recreational use. The water table is within 3 to 7 feet of the ground surface which increases the possibilities for contaminant migration. The shallow aquifers are not useable due to the high levels of dissolved solids and chlorides. The deeper aquifers are protected by

a thick layer of impermeable clay. Drinking water supplies for this area are from surface water sources some distance from the base.

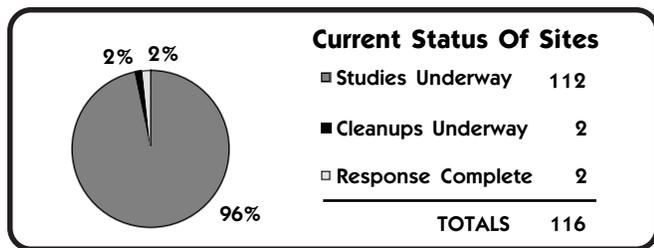
A Restoration Advisory Board (RAB) was formed in March 1994 and has 22 members from the local community and the Navy. The RAB provides community advice on the cleanup program. A Community Relations Plan (CRP) has been written. A committee composed of local residents has been formed to look at reuse options for the property after closure. An Information Repository has been established.

A RCRA Facility Investigation (RFI) study is underway at 112 sites. The NS has 51 sites, the NSY has 39 sites, and the FISC has 22 sites under study. The remaining four sites are Underground Storage Tanks (USTs); one is on FMWTC, two are on FISC, and the other is on NRC. The UST sites are being remediated under the RCRA UST program. The NRC site and one FISC UST site have completed the cleanup and two sites, UST 7 at FISC and UST 1 on FMWTC have a cleanup underway.

Future, plans include completing the RFI phase and moving into the next phase, the Corrective Measures Study (CMS), for these sites in FY97 and FY98. Two UST sites will begin the cleanup process, one in FY96 and one in FY97.

A recent success in the management of the remediation projects on the Charleston Naval Complex involves a reorganization of the sites into groups. This strategy is outlined in the RFI and differs substantially from the normal site by site approach in the RCRA Corrective Action process, but with the large number of sites on the complex, it was essential. The sites were grouped by geographic zones and work plans are written for the zone with certain sections in common for all sites in the zone. For example, the RFI work plan was structured to contain a comprehensive section that included elements applicable to more than one site such as the Project Management Plan, Health and Safety Plan, Sampling and Analysis Plan, CRP and others. Site specific information was then added for those elements not in common. This process, done with the concurrence of the regulatory agencies, has speeded up the document writing and reviewing time to allow the sites to progress through the program faster. With the pressure to get this BRAC property ready for reuse by the public quickly, this zone strategy has been very successful.

For BRAC requirements, the BRAC Cleanup Plan has been published and an Environmental Baseline Survey has been conducted and a draft report is under review. The Reuse Plan has as a short term goal to pursue short term leases of parcels while the environmental cleanup is proceeding and when complete, transferring the property.



## CHARLESTON NAVAL COMPLEX RELEVANT ISSUES

### ENVIRONMENTAL RISK



**HYDROGEOLOGY** - The base is located on the west side of the Cooper River which flows on the east side of the town of Charleston, South Carolina. The eastern bank is undeveloped and contains extensive wetlands along Clouter Creek and Thomas Island. The Naval facilities that comprise the base are located on the western bank of the Cooper River. Much of the base is situated on dredge spoils that were used as fill in the low-lying tidal marsh areas by several small creeks. All surface drainage is directly into Cooper River. The Cooper River flows into the Charleston Harbor which eventually flows to the Atlantic Ocean. Most potable water in the Charleston area comes from surface water sources. There are two aquifers underlying the area, one of which is used as an industrial water source. All shallow groundwater aquifers under the base (water table at 3 to 7 feet) drain to the Cooper River. Pathways exist for contaminants to migrate via surface water runoff and via infiltration into the shallow aquifer to sensitive ecosystems downstream. Dredging in the navigable waterways and the Naval Base docking berths dumps potentially contaminated dredge spoils into nearby wetlands and wildlife habitats. From the 1930's to the early 1970's, these dredge spoils were used to fill in swampy areas on the base, so several large areas of the base are built on dredge spoils.



**NATURAL RESOURCES** - The wildlife of this area is diverse and includes terrestrial, aquatic, and marine mammals, numerous resident and migratory inland and coastal birds, and a great variety of reptiles and amphibians. Finfish and shellfish are abundant in the estuarine water of the Cooper River, Wando River, and Charleston Harbor. A survey of both Federal and State protected species included twelve animal and one plant species listed as endangered or threatened in the area. The bodies of water in the area are resources used for recreational fishing and collection of shellfish. The area has numerous salt marshes and wetlands. There are also numerous archaeological sites and other cultural resources on the base. A survey was done and the draft report is under review.



**RISK** - A Baseline Risk Assessment for Human Health and an Ecological Risk assessment will be done by zone in accordance with EPA guidance when the appropriate data has been collected. A major difficulty was encountered in trying to determine background levels of metals for comparison to site data due to the many historical layers of dredge spoils underlying the base. With the cooperation of the EPA, a statistical methodology was developed to establish background levels, a supporting sampling plan designed, and sampling is underway. An Ecological Risk Assessment is being done in phases. A preliminary assessment has been done including habitat evaluation, biological inventory, migration route and exposure route determinations. As site sampling data becomes available, the risk assessment will go on to the next phase. For the DOD Relative Risk Ranking System, 31 sites were ranked as high relative risk. The high rankings are primarily due to known contamination on the sites and the migration potential to the nearby wetlands or exposure of on-site personnel through direct contact with both the soil and the near surface groundwater table.

### REGULATORY ISSUES



**NATIONAL PRIORITIES LIST** - The Hazard Ranking System (HRS) score of 52 for the complex would normally place the base on the National Priorities List (NPL). Since there was no advantage to be gained under CERCLA compared to the Corrective Action program already underway under RCRA, the BRAC Cleanup Team (BCT), including the regulatory agencies, agreed there was no reason to pursue the CERCLA NPL listing. A Compliance Order was issued in 1992 to close Solid Waste Management Unit (SWMU) 25, a plating facility. The tanks and waste were removed and the facility closed in 1993.



**LEGAL AGREEMENTS** - The sites are under a RCRA Part B Permit rather than a Federal Facility Agreement (FFA). The permit was signed on 5 June 1990. As a condition of the permit, Installation Restoration (IR) program cleanups are done as RCRA Corrective Action under the Hazardous and Solid Waste Amendments (HSWA) portion of the permit. A Corrective Action Management Plan (CAMP) was prepared to provide a compliance schedule including start and completion dates for various phases and submittal dates for documents. Efforts to renegotiate the CAMP schedules are currently underway due to limited funds for FY96 work.



**PARTNERING** - The EPA and the South Carolina Department of Health and Environmental Control (SCDHEC) have participated in the partnering efforts sponsored by the Navy. Discussions are underway to identify problem areas and ideas for improvement. This partnering effort includes the regulatory agencies, the BRAC Cleanup Team and outside agencies and organizations involved in cleanup decisions.

### COMMUNITY INVOLVEMENT



**RESTORATION ADVISORY BOARD** - A Technical Review Committee (TRC) was formed in the late 1980's and met quarterly. The TRC was converted to a Restoration Advisory Board (RAB) in March 1994. The RAB has 22 members who represent the Navy, EPA, SCDHEC, natural resource trustees, community members and academia. A charter for the RAB has been finalized. The RAB meets monthly, and has had presentations on the environmental restoration process and soil sampling demonstrations from local experts. Two site visits have been conducted and several public meetings held to further inform the public. A major concern of the public is how clean the Navy is going to leave the property after it closes.



**COMMUNITY RELATIONS PLAN** - A Community Relations Plan (CRP) was first published in the late 1980's. The CRP was updated in February 1993 to include the recently added Solid Waste Management Units (SWMUs). The CRP is again being revised to incorporate the establishment of the RAB. The RAB participated in creating four Fact Sheets that have been distributed.



**INFORMATION REPOSITORY** - The investigation is being conducted under the requirements of RCRA, therefore an Administrative Record (official file) is not required. An Information Repository (public information source) has been created and is being updated with the latest documents that are relevant to the cleanup and transfer of any property on the complex.

### BASE REALIGNMENT AND CLOSURE



**BRAC** - There are multiple Navy activities on the complex. Four of the largest activities were listed for closure by the 1993 Base Realignment and Closure (BRAC) Commission: The Shipyard, Naval Station, Fleet and Industrial Supply Center, and the Fleet and Mine Warfare Training Center. Operations on the complex will cease in April 1996 and the complex will be transferred sometime after that, depending on the cleanup schedule. Southern Division of the Naval Facilities Engineering Command will be the cognizant caretaker after closure.

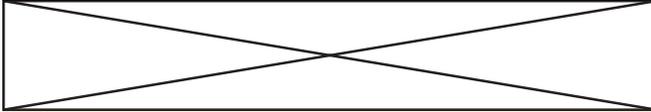


**BRAC CLEANUP TEAM** - A BRAC Cleanup Team (BCT) was formed in November 1993. The team members are representatives from the Navy, State of South Carolina and EPA Region IV. The BCT has been instrumental in accelerating the cleanup program by providing a decision-making group on site. The team holds regular meetings to discuss documents, resolve problems and review status of the cleanup efforts.

**CHARLESTON NAVAL COMPLEX**



**DOCUMENTS** - A BRAC Cleanup Plan (BCP) was prepared in February 1995. The BCP is currently under revision to include new sites and information on property transfers and leases. An Environmental Baseline Survey (EBS) was finalized in March 1995. In the EBS, the Environmental Condition of Property was assessed according to DOD and American Society for Testing and Materials (ASTM) guidelines. The results are shown in the chart below.



**LEASE/TRANSFER** - So far, no formal Findings Of Suitability to Lease (FOSL) or Transfer (FOST) have been done. However, two acres have been leased to a local marina and 15 acres have been transferred to the National Oceanic and Atmospheric Administration (NOAA) and the State Department.



**REUSE** - A local reuse committee has been formed and called "BEST" which stands for Building Economic Solutions Together. This committee was established by the governor and includes local residents, government agencies, schools and businesses to identify potential reuse options. A second reuse group, the Re-Development Authority (RDA) is a state agency. Reuse plans must be approved by both groups. The Community Reuse Plan was approved in June 1994 and an Environmental Impact Statement (EIS) survey is underway. Initial reuse plans include a privately-owned commercial shipyard, public recreational facilities and other community and commercial uses.



**FAST-TRACK INITIATIVES** - One of the primary fast-track efforts is to shorten document review time. By working closely with the regulatory agencies and the public, and through the partnering agreement being established, the cleanup process is expected to proceed as quickly as possible. A Rotasonic drilling process for monitoring well installation has contributed to a fast-track investigation of sites.

**HISTORICAL PROGRESS**

**FY83**

**Sites 1-8** The Initial Assessment Study, equivalent to a Preliminary Assessment (PA) was completed which identified 8 potential CERCLA sites (Sites 1-8). This study recommended all eight sites for a Confirmation Study, equivalent to an Site Inspection (SI).

**FY88**

**UST 7 (FISC)** - The Initial Site Characterization (ISC) was completed.

**FY90**

**UST 7(FISC)** - The Corrective Action Plan (CAP) was completed.

**FY92**

**UST 1 and 2 (NS)** - Five tanks were removed from the two Underground Storage Tank (UST) sites and the Initial Site Characterization was completed.

**FY93**

**UST 3 (NS)** - The ISC phase was completed  
**UST 1(FISC)** - The ISC was completed.

**FY94**

**ALL SITES and SWMUs** - The RCRA Facility Assessment (RFA) started in January for all sites on the Naval complex.  
**Sites 1 and 5, and SWMUs 13-17, 19, 20, 44, 47, 121, 136, 138, 159, 177, 178, 503, 516, 653, 655, 656, 662, 667, 670, 677, 681, 684, 689, 690 and 700 (NS)** - The RCRA Facility Investigation (RFI) phase began.  
**Sites 3 and 8 (FISC)** - The RFI phase began.  
**SWMU 44 (NS)** - The Corrective Measures Study (CMS) started in September.  
**UST 1 (NS)** - The CAP was completed.  
**UST 1 (FISC)** - The Implementation of Corrective Action (groundwater monitoring) was completed. The site is considered to be Response

**PROGRESS DURING FISCAL YEAR 1995**

**FY95**

**ALL SWMUs** - The RFA was completed in June for all sites on the Naval Complex.  
**SWMUs (NSY)** - The RFI started for the SWMUs.  
**SWMUs (FISC)** - The RFI began for all SWMUs (except for Sites 3 and 8 which began in FY94).

**SWMUs 4, 36, 37, 109, 504, 556, 607, 609, 613, 620, 621, 691, 692 and 699 (NS)** - The RFI phase was started.  
**UST 2 (NS)** - The Contamination Assessment was nearing completion.  
**UST 7 (FISC)** - The Implementation of Corrective Action is underway. Bioremediation was the corrective action used.  
**UST 1 (NS)** - A free product recovery system was installed.

**PLANS FOR FISCAL YEARS 1996 AND 1997**

**FY96**

**Sites 3 and 11, and SWMUs 2, 38, 39, 42, 43 and 505 (FISC)** - The RFI is expected to be completed.  
**UST 1 (NS)** - The Implementation of the Corrective Measures will begin and will include removal of contaminated soil, groundwater treatment and bioremediation.

**FY97**

**SWMUs** - The RFI is expected to be completed and the CMS is planned to begin for all the sites on the NSY portion of the complex and also for the remaining SWMUs on the FISC and NS.  
**UST 2 (NS)** - The design of the Corrective Measures will be completed and implementation will begin.

## CHARLESTON NAVAL COMPLEX PROGRESS AND PLANS

<b>RCRA CA</b>	<b>FY94 and before</b>	<b>FY95</b>	<b>FY96</b>	<b>FY97</b>	<b>FY98</b>	<b>FY99</b>	<b>FY00</b>	<b>FY01 and after</b>
<b>RFA</b>		109						
<b>RFI</b>			39	70				
<b>CMS</b>			1	35	69			
<b>DES</b>				35	70			
<b>CMI</b>						35	70	
<b>IRA</b>								
<b>RC</b>			3	1		16	39	50
<b>Cumulative Response Complete</b>			3%	4%		18%	54%	100%
<b>UST</b>	<b>FY94 and before</b>	<b>FY95</b>	<b>FY96</b>	<b>FY97</b>	<b>FY98</b>	<b>FY99</b>	<b>FY00</b>	<b>FY01 and after</b>
<b>ISC</b>	7							
<b>INV</b>								
<b>CAP</b>	4		2					
<b>DES</b>				1				
<b>IMP</b>			2		2	1		
<b>IRA</b>								
<b>RC</b>	2		2		1	1	1	
<b>Cumulative Response Complete</b>	28%		57%		71%	86%	100%	

# CHARLESTON NAVAL WEAPONS STATION

## CHARLESTON, SOUTH CAROLINA



Engineering Field Division/Activity: SOUTHDIV  
 Major Claimant: COMNAVSEASYSKOM  
 Size: 16,668 Acres  
 Funding to Date: \$6,001,000  
 Estimated Funding to Complete: \$70,167,000

**Base Mission:** Provides assigned weapons and weapon systems; supports fleet and shore activities with guided missiles, conventional ammunition, torpedoes and other underwater weapons

**Contaminants:** Waste oils, solvents, unexploded ordnance, TNT, black powder, primer materials, pesticides, sludges, paint residues, laboratory chemicals, PCBs, metals, POLs

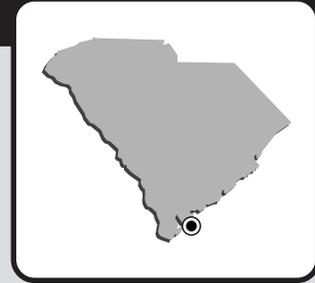
<b>Number of Sites:</b>		<b>Relative Risk Ranking of Sites:</b>			
CERCLA:	4	High:	3	Not Evaluated:	0
RCRA Corrective Action:	31	Medium:	10	Response Complete:	14
RCRA UST:	5	Low:	13	Total Sites:	40
Total Sites:	40				

### PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	4							
SI								
RI/FS								1
RD								
RA								
IRA								
RC	3							1
Cumulative Response Complete	75%							100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	21	3	2	1				
RFI	4				2	1		3
CMS			5					12
DES	1			1				13
CMI	1		2	2	1			12
IRA			2(2)					
RC	10		1	1	1	3		15
Cumulative Response Complete	32%		35%	39%	42%	52%		100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	3							
INV								
CAP		3						2
DES								2
IMP								4
IRA								
RC		1						4
Cumulative Response Complete		20%						100%

# PARRIS ISLAND MARINE CORPS RECRUIT DEPOT

## PARRIS ISLAND, SOUTH CAROLINA



<b>Engineering Field Division/Activity:</b>	SOUTHDIV
<b>Major Claimant:</b>	CMC
<b>Size:</b>	8,043 Acres
<b>Funding to Date:</b>	\$1,778,000
<b>Estimated Funding to Complete:</b>	\$20,236,000
<b>Base Mission:</b>	Provides basic and combat training of enlisted personnel upon their first entry into the Marine Corps
<b>Contaminants:</b>	Industrial wastes, pesticides, paint, POLs, PCBs, solvents, ordnance compounds, metals, acids, electrolyte

<b>Number of Sites:</b>		<b>Relative Risk Ranking of Sites:</b>			
<b>CERCLA:</b>	17	<b>High:</b>	7	<b>Not Evaluated:</b>	0
<b>RCRA Corrective Action:</b>	0	<b>Medium:</b>	0	<b>Response Complete:</b>	4
<b>RCRA UST:</b>	8	<b>Low:</b>	14	<b>Total Sites:</b>	25
<b>Total Sites:</b>	25				



### EXECUTIVE SUMMARY

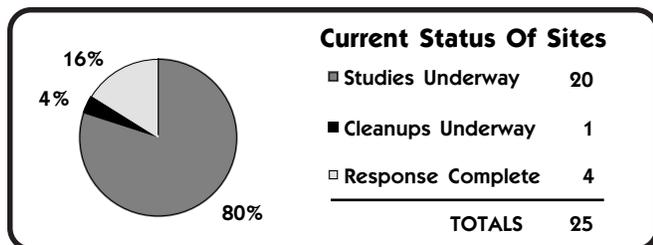
Parris Island Marine Corps Recruit Depot (MCRD) is located on an island that lies along the southeastern coast of South Carolina, approximately one mile south of the city of Port Royal and 30 miles northeast of Savannah, Georgia. Hilton Head, South Carolina, a major recreational area and the closest point of the mainland, is located approximately three miles southwest of the Marine depot. Parris Island has been operated as a US Marine Corps recruit training facility since 1915. The installation consists of administrative buildings, training facilities, family and troop housing, maintenance, training and community facilities. Typical operations at the depot that contributed to contaminated sites include recruit training, maintenance of boats and ground vehicles, and storage and maintenance of ordnance. Most of the sites at the installation are landfills or spill areas where groundwater and sediment are contaminated with solid waste, paint waste, construction debris, incinerator ash, solvents and petroleum products. Current operations include pollution prevention technologies to prevent further contamination. The contaminants in the landfill sites (Sites 1-3) and the placement of landfills in tidal marshes were the primary drivers for the installation being added to the National Priorities List (NPL). The influences of the tidal waters on the marshes has allowed the contaminants to migrate out of the confines of the landfills. To date, a Federal Facility Agreement (FFA) is not in place at the Marine depot, but it is currently under negotiation.

Parris Island is one of several barrier islands used by the MCRD. There are 3,274 acres of dry land at the depot, 4,344 acres of salt marshes and 429 acres of tidal ponds and streams. Buildings were built on the "high" areas, no more than 20 feet high, and over the years wastes were thrown into the landfills which were built in the marshes. As the waters, marine, groundwater and surface water, flowed in and out of the tidal marshes, the contaminants in the marshes were carried with water and formed contaminated sediments in the surrounding marine environment. Commercial and recreational fishing activities are conducted in the

vicinity of the base. The surrounding area is the home for several endangered wildlife species.

A Restoration Advisory Board (RAB) is being established for the installation. The Community Relations Plan (CRP) is currently under development. It is being developed in partnership with the Navy Environmental Health Center (NEHC).

Of the 25 sites on the Marine depot, 16 were identified in an Initial Assessment Study (IAS) in FY86. Since the IAS, two RCRA Underground Storage Tank (UST) sites were added in FY88 and another five sites were added in FY90. Two other sites were added during the Site Inspection (SI) phase, one in FY89, the other in FY94. Ten sites which were listed as Response Complete (RC) following the IAS in FY86 and three additional sites listed RC after the SI phase in FY90, were re-opened after Parris Island MCRD was added to the NPL list in FY95. Twelve of the re-opened sites will continue with an SI in FY02, the other two sites will start a Remedial Investigation/Feasibility Study (RI/FS) in FY02. Four of the sites to be listed as RC will remain closed, Site 6 was completed in FY93, Site 17 was completed in FY92 and Sites 28 and 38 were completed in FY90. The two RCRA UST sites on the base are scheduled for Corrective Action Plan (CAP) and Implementation (IMP) phases prior to completion. The scheduled completion dates are UST 1 in FY98 and UST 2 in FY00.



## PARRIS ISLAND MCRD RELEVANT ISSUES

### ENVIRONMENTAL RISK



**HYDROGEOLOGY** - Parris Island MCRD is located on a system of islands, marshes and interconnecting man-made causeways that form a peninsula. The islands are made up of barrier-island sand, silt and clay deposits that contain a surficial aquifer. While there is potential for contamination of this aquifer, its shallow depth and geographic isolation from other land masses prevent contamination from migrating off-base to areas that use the aquifer as a water source. Salt water intrusion and a high sulfur content make the water in the surficial aquifer unfit for consumption. The facility is bordered by marsh areas and tidal creeks which drain into the Beaufort River and Broad River to form the Port Royal Sound. Surface runoff from most of the base flows into storm sewers that discharge into the marshes. Any contamination in the water of the surficial aquifer or surface runoff is transferred to the surface waters of the marshes and creeks and then into the rivers, the Sound and out to the Atlantic Ocean. Beneath the surficial aquifer lies the Tertiary Limestone Aquifer. It is a relatively large aquifer, extending from South Carolina to Florida and supplies groundwater to hundreds of wells. There is little or no risk of surficial aquifer contamination penetrating into the water of the deeper Tertiary Limestone Aquifer. The aquifer is artesian and hydrologically separate from the overlying surficial aquifer. The surface of the aquifer lies 40 to 90 feet below the surface of the land with more than 20 feet of the low permeable Hawthorn formation and a layer of clay under the marshes separating the two aquifers. Use of the water from the Tertiary Limestone Aquifer on base is not used due to high saltwater contamination.



**NATURAL RESOURCES** - The installation has several past disposal sites adjacent to or in direct contact with salt water marshes, and previous studies have documented contaminant releases from some of these sites. The potential exists for contaminants to impact fish, shrimp, crabs, and mollusks that inhabit the marshes and are harvested commercially and by recreational fishermen. Surface waters of the area are used for recreational and commercial fishing and shellfish harvesting. Therefore, contamination of the water could have an adverse impact on human health and the environment. These surface waters also provide habitats for migratory threatened and endangered species of wildlife (including the southern bald eagle, the wood stork, the Eskimo curlew and the short-nosed sturgeon), as well as their food sources.



**RISK** - A Department of Defense (DOD) Relative Risk Ranking was completed for the installation in FY95. Seven of the 25 sites at Parris Island received a "High" ranking. Most of the contamination problems are due to the location of the installation; several small islands nestled between salt marshes and the surrounding ocean. The three landfill sites (Sites 1-3) were ranked "High" because of contaminated sediment found in the marine environment which surrounds the sites. The three landfill sites were located in salt marshes. Over the years as solid waste, paint waste, fill material and construction debris were placed in landfills, contamination was being forced into the surrounding marine areas by the flow of the tidal creeks through the marshes. At Site 45 (Dry Cleaning Facility Spill Area), the organic solvent PCE and petroleum based solvents were detected during an investigation of an accidental spill. The groundwater in the area was impacted and it discharges directly into the surrounding water bodies. The two Under-ground Storage Tank (UST) sites (USTs 1 and 2) had a high ranking for groundwater contamination with a potential for migration to human water supplies.

Following the installation's placement on the National Priorities List (NPL), the Agency for Toxic Substances and Diseases Register (ATSDR) performed the initial public health assessment in June 1995 and results are expected in FY96.

### REGULATORY ISSUES



**NATIONAL PRIORITIES LIST** - The installation was proposed for the National Priorities List (NPL) in August 1994 and listed on 16 December 1994. Contamination at two landfill sites were the main drivers for placement on the NPL. As a result of being placed on the NPL, 13 of the 17 CERCLA sites, listed last year as Response Complete (RC), were reopened by regulators and rescheduled for investigation, with a completion date in FY03.



**LEGAL AGREEMENTS** - EPA conducted a RCRA Facility Assessment (RFA) as part of a RCRA permit application in FY90. The RFA identified 44 Solid Waste Management Units (SWMUs) and four Areas of Concern (AOCs). Twenty SWMUs and one AOC were recommended for no further action. The application for the installation's RCRA permit has since been withdrawn, and any further study of the SWMUs will most likely be conducted under CERCLA.

In September 1995, Federal Facility Agreement (FFA) negotiations were initiated between the Navy, EPA, and South Carolina Department of Environmental Control. The target date for completion of the FFA is FY96. A Site Management Plan (SMP) is expected to be issued in conjunction with the FFA, and then be reissued on an annual basis.



**PARTNERING** - A formal partnering arrangement between the Navy, Marine Corps, EPA Region IV and South Carolina state regulators has been initiated. The team participated in a workshop, kicking off the formal partnering arrangement in November 1995.

### COMMUNITY INVOLVEMENT



**RESTORATION ADVISORY BOARD** - A Restoration Advisory Board (RAB) is in the process of being established for the installation.



**COMMUNITY RELATIONS PLAN** - The Community Relations Plan (CRP) is currently under development. It is being developed in partnership with the Navy Environmental Health Center (NEHC).



**INFORMATION REPOSITORY** - The Information Repository and Administrative Record are not yet in place.

## PARRIS ISLAND MCRD HISTORICAL PROGRESS

### FY86

**Sites 1-16** - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA) was completed in September 1986 and identified 16 potential sites.

**Sites 5, 8, 9 and 12-15** - Seven sites were listed as Response Complete (RC) following the IAS, but they all reopened in FY95 following the installations placement on the National Priorities List (NPL).

### FY87

**Sites 1-4, 6, 7 and 16** - Site Inspections (SIs) started at seven sites.

### FY88

**USTs 1 and 2** - An Initial Site Characterization (ISC), equivalent to a PA for RCRA Underground Storage Tank (UST) program, established two UST sites. ISC for UST 1 completed in FY88, and UST 2 will continue through FY97.

### FY89

**Site 17** - An SI was started without a previous PA.

### FY90

**All Sites** - EPA prepared a RCRA Facility Assessment (RFA) as part of a RCRA permit application.

**Sites 1, 2, 4, 6, 7 and 16** - An SI was completed at six sites.

**Sites 21, 27, 28, 35 and 38** - Additional PA identified five additional sites. Following the PA all five sites were listed as RC, but three sites (Sites 21, 27 and 35) were reopened in FY95 with placement of installation on the NPL.

### FY92

**Site 17** - An SI and Remedial Action (RA) phase and an Interim Remedial Action (IRA) were completed. Following the tank removal it was listed as RC.

### FY93

**Site 3** - An Expanded Site Inspection (ESI) was completed. The ESI, which consisted of an ecological study of aquatic biota surrounding the site, is currently being reviewed by regulatory agencies.

**Site 6** - Following the RA phase and Final Remedial Action (FRA) for a tank removal action was listed as RC.

### FY94

**Site 45** - An SI was completed for this new site.

## PROGRESS DURING FISCAL YEAR 1995

### FY95

**All Sites** - The Navy performed a Relative Risk Ranking of all sites.

**All Sites** - Initiated process for Remedial Investigation/Feasibility Study (RI/FS) scoping of milestones plan.

**All Sites** - Agency for Toxic Substances and Diseases Register (ATSDR) performed the initial public health assessment in June 1995.

**Site 2** - In an effort to reduce risk to human health this site was fenced.

**Sites 5, 8-15, 21, 27 and 35** - Due to installation placement on the NPL,

twelve previously closed sites were reopened in the SI phase. Further investigation of these sites will be continued in the future, depending on funding, it is now scheduled to start in FY02.

**Sites 4 and 7** - Due to installation placement on the NPL these sites were reopened in the RI/FS phase which is scheduled to start in FY02.

**UST 1** - Corrective Action Plan (CAP) phase was completed. Implementation (IMP) phase and FRA for removal of four tanks, soil removal, free product recovery and soil vapor extraction were started, with completion scheduled for FY98.

## PLANS FOR FISCAL YEARS 1996 AND 1997

### FY96

**Sites 1-3 and 45** - RI/FS activities will start for four CERCLA landfill and disposal sites.

### FY97

**UST 2** - A CAP will be started.

**PARRIS ISLAND MCRD  
PROGRESS AND PLANS**

<b>CERCLA</b>	<b>FY94 and before</b>	<b>FY95</b>	<b>FY96</b>	<b>FY97</b>	<b>FY98</b>	<b>FY99</b>	<b>FY00</b>	<b>FY01 and after</b>
PA	16							
SI	7							10
RI/FS					3	1		3
RD						1	1	3
RA								5
IRA								
RC								17
<b>Cumulative Response Complete</b>								100%
<b>UST</b>	<b>FY94 and before</b>	<b>FY95</b>	<b>FY96</b>	<b>FY97</b>	<b>FY98</b>	<b>FY99</b>	<b>FY00</b>	<b>FY01 and after</b>
ISC	6			1				
INV	2							2
CAP	1				1			
DES								
IMP	2				1		1	
IRA	1(1)							
RC	4				1		1	2
<b>Cumulative Response Complete</b>	50%				62%		75%	100%