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FINAL SITE MANAGEMENT PLAN FOR FISCAL YEAR 2000 NAS CECIL FIELD FL
12/1/1999
TETRA TECH NUS INC

Site Management Plan
for
Fiscal Year 2000

Naval Air Station Cecil Field
Jacksonville, Florida



Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0066

December 1999

**SITE MANAGEMENT PLAN
FOR
FISCAL YEAR 2000
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

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ACRONYMS

APR	Alternate Procedures Request
AS/SVE	Air Sparging/Soil Vapor Extraction
AST	Above-Ground Storage Tank
AVORD	Aviation Ordnance
BCP	BRAC Cleanup Plan
BRA	Baseline Risk Assessment
BRAC	Base Realignment and Closure
CA	Contamination Assessment
CAR	Contamination Assessment Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
FDEP	Florida Department of Environmental Protection
FFA	Federal Facility Agreement
FS	Feasibility Study
FY	Fiscal Year
HSWA	Hazardous and Solid Waste Amendments
IRA	Interim Remedial Action
IRP	Installation Restoration Program
NAS	Naval Air Station
NFA	No Further Action
NFF	North Fuel Farm
PSC	Potential Source Contamination
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SFF	South Fuel Farm
SMP	Site Management Plan
TMP	Tank Management Plan
TRPH	Total Recoverable Petroleum Hydrocarbons
U.S. EPA	United States Environmental Protection Agency
UST	Underground storage tank

1.0 INTRODUCTION

This Site Management Plan (SMP) was prepared in accordance with the requirements of the Federal Facility Agreement (FFA) among the United States Environmental Protection Agency (U.S. EPA), the Florida Department of Environmental Protection (FDEP), and the United States Navy. The FFA is an interagency agreement required by Section 120 (e)(1) of the Superfund Amendments and Reauthorization Act (SARA) of 1986. Each year, or as otherwise agreed to by the FFA parties, the SMP is amended to reflect current information on progress made and future activities. The intent of the SMP is to provide

- The site management strategy
- A schedule of work proposed for the fiscal year
- A projected schedule for sites and operable units beyond the current fiscal year

The SMP for Naval Air Station (NAS) Cecil Field is being amended for fiscal year (FY) 2000 to document changes in scope, schedule, and funding for completing investigations of past waste disposal sites under the Installation Restoration Program (IRP). Information pertaining to the Petroleum [underground storage tank (UST) and above-ground storage tank (AST)] and the Base Realignment and Closure (BRAC) programs is also included to provide an overview of the environmental programs being conducted at NAS Cecil Field.

1.1 SITE MANAGEMENT STRATEGY

The SMP provides a schedule of IR Program activities and is intended to be a dynamic document. The SMP will be amended as warranted and as mutually agreed to by the Navy, U.S. EPA, and FDEP. The principles upon which the SMP is prepared include the utilization of resources, the flexibility to meet changing and unforeseen conditions, and the ability to focus on site cleanup in a scientific and expeditious manner. These principles provide the basis for expedited remedial response at NAS Cecil Field. Guidance and promulgation offered by the U.S. EPA and FDEP are used to prepare the SMP.

The IRP investigations will be conducted following guidance presented in the Navy/Marine Corps Installation Restoration Manual (February 1997). Additional guidance as defined in the U.S. EPA Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (1988) and the National Oil and Hazardous Substance Contingency Plan (March 1990) will be followed for project deliverables.

The long-term goal of the SMP is to complete investigation and remediation of all sites at NAS Cecil Field. To the extent practicable, BRAC issues will be considered during the cleanup process. The Navy has prepared a BRAC Cleanup Plan (BCP) that details ways to accelerate cleanup at IRP, Petroleum, Resource Conservation and Recovery Act/Hazardous and Solid Waste Amendments (RCRA/HSWA), asbestos, and other sites. The BCP discusses and identifies the NAS Cecil Field Partnering Team, their role in the cleanup process, and presents strategies to fast track the investigation and cleanup processes. The partnering team was formed to address the numerous issues surrounding base closure and to enhance environmental decision making processes at BRAC installations where property will be available for transfer to the community. This team approach is intended to foster partnering, accelerate the cleanup process, and expedite timely, cost-effective, and environmentally responsible disposal and reuse decisions.

The partnering team, in cooperation with the City of Jacksonville Reuse Commission, updates the prioritization plan for site clean-up at NAS Cecil Field by assessing candidate sites by base reuse, waste characteristics, potential migration pathways, and potential receptors (human and ecological). The Navy intends to work with the FFA parties based on a continual review process to coordinate prioritization of sites at NAS Cecil Field.

1.2 INSTALLATION RESTORATION PROGRAM

A brief description, with a current investigative status, of several potential sources of contamination (PSCs) or sites identified under the IRP is presented in Table 1-1. The status of these sites will be updated and submitted with the quarterly progress report on IRP activities at NAS Cecil Field. The total number of IRP sites at this time is 20 (PSC 13-Day Tank 1, was transferred to the petroleum program prior to execution of work under the 1991 SMP). PSCs may be added and/or deleted in the future as a result of site assessments and BRAC surveys.

1.3 PETROLEUM PROGRAM

Although petroleum sites are not required by the FFA to be part of this SMP, they have been included to assist the partnering team in planning future activities to expedite petroleum site (UST and AST) cleanup at NAS Cecil Field. A brief description, with a current investigative status, of several petroleum contaminated sites at NAS Cecil Field is presented in Table 1-2. Sites may be added and/or deleted in the future as a result of contamination assessments and BRAC surveys. Currently the North Fuel Farm (NFF) sites, the South Fuel Farm (SFF), the Day Tank 1, the Jet Engine Test Cell, the Tank 199, and miscellaneous BRAC petroleum sites are being investigated under the UST program.

TABLE 1-1

**SITE DESCRIPTION CHART
INSTALLATION RESTORATION PROGRAM
NAS CECIL FIELD, JACKSONVILLE, FLORIDA
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7Site No.	Operable Unit	Site Name/Size	Period of Operation	Waste Type	Sources	Description of Activity
1	OU 1	Old Landfill (9 acres)	1950s-1965	Solid waste, oils, fuels, paints, paint stripper, solvents, municipal solid waste	Municipal solid waste, industrial operations	Trench and fill landfill for commercial and residential wastes (solid and liquid).
	<p><u>Current Investigative Status:</u> Final Remedial Investigation (RI), Baseline Risk Assessment (BRA), and Feasibility Study (FS) reports were submitted in December 1994. Data indicate a potential risk to benthic macroinvertebrates in drainage ditch at Site 1. Final Record of Decision (ROD) was submitted in September 26, 1995. The selected remedial alternative, site closure, included landfill gas, radiological, and unexploded ordnance surveys, surface debris removal, groundwater monitoring, post-closure care, and a 5-year review. Final design was submitted in April 1996. Bechtel and the U.S. Navy conducted an unexploded ordnance survey in 1997 and Bechtel completed a radiological survey in 1998. TtNUS initiated monitoring activities in May 1997. The 1st, 2nd, 3rd, and 4th quarter sampling were completed and reports presenting the analytical results were submitted for each sampling event. Sampling has been reduced to an annual event. The April 1999 annual sampling event was conducted and the report summarizing the results was completed. Monitoring wells CEF-1-4S and CEF-1-5S are scheduled to be resampled in November 1999. The next full sampling event is planned for April 2000.</p>					
2	OU 1	Recent Landfill (5 acres)	1965-1975	Solid waste, oils, fuels, paints, paint stripper, solvents	Industrial operations and shops	Trench and fill landfill for commercial and residential wastes (solid and liquid).
	<p><u>Current Investigative Status:</u> Final RI, BRA, and FS reports were submitted in December 1994. Data indicate a potential risk to benthic macroinvertebrates in drainage ditch at Site 2. Final ROD was submitted in September 1995. The selected remedial alternative included site closure and biomonitoring in the wetland area. Final design was submitted in April 1996. Bechtel and the U.S. Navy conducted an unexploded ordnance survey in 1997 and Bechtel completed a radiological survey in 1998. TtNUS initiated monitoring activities in May 1997. The 1st, 2nd, 3rd, and 4th quarter sampling have been completed and reports presenting the analytical results were submitted for each sampling event. Sampling has been reduced to an annual event. The April 1999 annual sampling event was conducted and the report summarizing the results was completed. Monitoring wells CEF-1-4S and CEF-1-5S are scheduled to be resampled in November 1999. The next full sampling event is planned for April 2000.</p>					
3	OU 8	Oil/Sludge Disposal Pit (50-100 ft in diameter and 3-5 ft deep)	1950s-1975	Waste fuels, oils, paints, paint strippers, solvents	Fuel farm, AIMD, squadrons, public works shops	At least four shallow pits were used to dispose of liquid wastes and sludge. Groundwater was the only medium identified in the baseline risk assessment as having an unacceptable human health risk. No ecological risk identified for any media.
	<p><u>Current Investigative Status:</u> Final RI report was submitted February 1996. The final BRA and FS reports were submitted in September 1997 and October 1997, respectively. The final Proposed Plan was submitted in March 1998. The draft ROD and the draft groundwater remedial design were submitted in May 1998 and June 1998, respectively. The final Proposed Plan was submitted in March 1998. The final ROD was signed in September 1998. The final groundwater remedial design was submitted in October 1998 and identified air sparging of the source, natural attenuation monitoring of the plume, institutional controls to prevent use of groundwater, and 5-year reviews. The Baseline Sampling Event for natural attenuation was conducted in December 1998. Quarterly groundwater monitoring is ongoing. The annual summary report for the Year 1 Quarterly Monitoring Program will be completed in November 1999. The annual report recommended quarterly sampling in the source area and the wells near Rowell Creek and semi-annual sampling of the wells in the plume. The installation of the air sparging system was completed in the third quarter of FY 1999 and the system began operation in late-May 1999. The next groundwater sampling event is scheduled for November 1999.</p>					

TABLE 1-1

**SITE DESCRIPTION CHART
INSTALLATION RESTORATION PROGRAM
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7Site No.	Operable Unit	Site Name/Size	Period of Operation	Waste Type	Sources	Description of Activity
4	--	Grease Pits (9 acres)	1950s-1983	Waste oils, mess greases	Installation dining facilities and facility oil/water separators	Multiple shallow pits were excavated to dispose of liquid wastes (grease from dining facilities and waste oils from oil/water separators) and then covered with fill. Extent of contamination may be larger than anticipated (22 acres).
	<p><u>Current Investigative Status:</u> Field Investigation work plan was submitted March 1995. Field screening activities (includes surface and subsurface soil sampling and monitoring well installation) were completed in June 1997. Groundwater sampling was completed in August 1997. The final Technical Memorandum for No Further Action (NFA) was submitted in September 1998.</p>					
5	OU 2	Oil Disposal Area Northwest (100 ft in diameter)	1950s	Oil, fuel	Fuel farms	Shallow, unlined pit where liquid wastes were disposed (petroleum products present)
	<p><u>Interim Action:</u> Interim ROD was signed in September 1994. Interim remedial action (IRA) was initiated in March 1995 for source removal. IRA included removal and disposal of free petroleum product and removal and treatment of contaminated soil using bioremediation. Per partnering team recommendations, the IRA (bioremediation) activities were discontinued in June 1996.</p> <p><u>Current Investigative Status:</u> Final RI and Remedial Action (RA) were submitted in May 1995 and final FS was submitted in July 1995. Final ROD was submitted in September 1995. The remedial alternative included excavation and treatment of sediment in drainage ditch, on-site treatment of contaminated groundwater, and a restriction of all use of groundwater from the surficial aquifer. Due to discontinuation of the interim action, the Proposed Plan and ROD are being amended. The Proposed Plan was submitted in September 1999. No comments were received. The draft Amended ROD has been prepared and is being reviewed by the partnering team.</p> <p>The remedial actions for soil and sediment were initiated in April 1998. For this effort, approximately 2,100 yd³ of soil were excavated from Site 5 and disposed off site. Approximately 330 yd³ of sediment were excavated from the adjacent drainage and backfilled in the excavated soil area. Previously treated Site 5 soil was used to backfill the remainder of the soil excavation. This effort was completed in July 1998. The final groundwater remedial design for air sparging was submitted in May 1998. Two groundwater sampling events were conducted to assess the potential of natural attenuation as a remedial alternative. Based on data collected during these sampling events, natural attenuation appears to be a viable remedial alternative and will be pursued at Site 5. The annual summary report for the Year 1 Quarterly Monitoring Program was completed in July. Recommendation included reducing monitoring to semi-annual events. The first semi-annual groundwater monitoring event was completed in August 1999. The next sampling event is scheduled for February 2000.</p>					
6	--	Lake Fretwell Rubble Disposal Area (3.5 acres)	1950s-1984	Inert rubble	Concrete/asphalt from demolition of runway, construction debris, lumber, scrap metal, cut foliage	Rubble was disposed along banks of a low-lying marsh area by public works; some of the rubble has been overlain with soil and sod; additional rubble is uncovered.
	<p><u>Current Investigative Status:</u> Field Investigation Plan was submitted March 1995. Field screening activities (geophysical surveys, monitoring well installation, surface and subsurface soil sampling, surface water and sediment sampling) were completed in June 1997. Groundwater sampling was completed in August 1997. The draft Technical Memorandum presenting investigation findings was submitted in May 1998. The Lake Fretwell Disposal Area will be addressed under PSC 6. Three additional soil sampling events were conducted between April and July 1999 to delineate soil contaminated with arsenic, total recoverable petroleum hydrocarbons, and benzo(a)pyrene. A dig and haul package was completed in August 1999. The Navy excavated and disposed of the contaminated soil in August 1999.</p>					

TABLE 1-1

**SITE DESCRIPTION CHART
INSTALLATION RESTORATION PROGRAM
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7Site No.	Operable Unit	Site Name/Size	Period of Operation	Waste Type	Sources	Description of Activity
7	OU 3	Old Fire Fighting Training Area (1/3 acre)	1950s-1975	Waste fuels, oil, solvents, paint, paint strippers	Fuel farm, AIMD, squadrons, public works shops	Burnable liquid wastes were poured onto metal objects (jets) in shallow, unlined pits and ignited for fire fighting training
						<p><u>Current Investigative Status:</u> The RI and FS reports were finalized in August 1997. The Proposed Plan was finalized in January 1998 and the final ROD was submitted in March 1998. A draft soil and groundwater design package was submitted in May 1998. The groundwater portion of the design package was implemented in August 1998 and consists of annual groundwater monitoring. The annual groundwater monitoring reports were issued in October 1998 and October 1999. The next scheduled groundwater sampling event is in August 2000.</p> <p>In September 1998, surface soil sampling in support of the RA was conducted to further delineate TRPH, PAH, and inorganic contamination. The RA for soil was conducted in December 1998.</p>
8	OU 3	Boresite Range/Hazardous Waste Storage Area/Fire Fighting Training (6 acres)	1975-1984	Waste fuels, oil, solvents, paint, paint strippers, lead	Fuel farm, AIMD, squadrons, public works shops	Burnable liquid wastes were poured onto metal objects (jets) in shallow, unlined pits and ignited for fire fighting training. Boresite range was used for machine gun and small arms practice. 55-gallon drums of waste were stored at the site and used as targets for practice.
						<p><u>Current Investigative Status:</u> The final RI and FS reports were submitted in August 1997. The Proposed Plan was finalized in January 1998, and the final ROD was submitted in March 1998. The groundwater remedial design work plan was submitted in June 1998. The Baseline Sampling Event for natural attenuation was conducted in August 1998. The annual summary report for the Year 1 Quarterly Monitoring Program was completed in July 1999. Recommendations included reducing monitoring to semi-annual events. The first semi-annual groundwater monitoring event was completed in August 1999. The next sampling event is scheduled for February 2000.</p> <p>In August 1998, surface soil sampling was conducted to further delineate TRPH contamination. The draft soil Remedial Design, submitted in November 1998, identified removal of the three pits to the groundwater tables, surface soil removal of soil exceeding residential criteria to depth of 1 foot, and collection of confirmation samples. Additional sampling will be conducted in April 1999 to identify a site-specific protection of groundwater value. A Dig and Haul package was submitted and soil excavation and disposal related to the TRPH contamination was completed in August 1999.</p>
9	--	Recent Grease Pits (0.5 acre)	1983-1984	Grease mixed with water	Installation messes	Three shallow pits were used to dispose of kitchen grease; pits were used until full and then a new pit was excavated
						<p><u>Current Investigative Status:</u> Field investigation work plan was submitted in March 1995. Field screening activities, except for groundwater sampling, were completed in June 1997 (includes geophysical survey, hydrological assessment, monitoring well installation, surface and subsurface soil, surface water and sediment sampling). Groundwater sampling was completed in July 1997. A draft Technical Memorandum presenting investigation results and conclusions was submitted in December 1997. The final technical memorandum for NFA was submitted in July 1998.</p>

TABLE 1-1

**SITE DESCRIPTION CHART
INSTALLATION RESTORATION PROGRAM
NAS CECIL FIELD, JACKSONVILLE, FLORIDA
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7Site No.	Operable Unit	Site Name/Size	Period of Operation	Waste Type	Sources	Description of Activity
10	OU 4	Rubble Disposal Area (6.5 acres)	1950s-1960s	Inert Rubble	Building demolition debris, runway debris	Surface disposal area with debris (demolition, roadway, metal); information is limited
						<u>Current Investigative Status:</u> The final RI report was submitted in November 1996. The RI report presented a no further action (NFA) recommendation with a proposal to prepare an NFA ROD. The Proposed Plan was submitted in July 1997. Final ROD was submitted in August 1997. One detection of arsenic was observed above its background criterion, and in December 1998, soil sampling was conducted to delineate this area. A Dig and Haul package was submitted and soil excavation and disposal related to arsenic contamination was completed in August 1999. An Explanation of Significant Difference was prepared in June 1999. Soil excavation and disposal was completed in September 1999.
11	OU 6	Golf Course Pesticide Disposal Area	1970s-1978	Pesticides, fungicides, and herbicide containers, vehicles, metal debris	Golf course maintenance area	Reported, between 200 and 400 empty 5-gallon cans containing pesticides were buried at the site; a limited number of full containers of pesticides were buried in 1978.
						<u>Interim Actions:</u> Final Interim ROD was submitted to the regulatory agencies in August 1994. The IRA was completed in January 1996. The pit was lined with plastic and a fence was placed around the open pit. The remedial action completion report was submitted on October 18, 1996. Revisions to the remedial action report were submitted on May 16, 1997. <u>Current Investigative Status:</u> The final RI report was submitted in August 1997 and the final FS was submitted in January 1998. The final Proposed Plan was submitted in March 1998. The ROD was finalized and signed in September 1998. The draft design for soil treatment was submitted in August 1998. A soil removal in accordance with the final remedial action took place in December 1998. During the removal action, pesticide containers were discovered and disposed accordingly. A geophysical investigation was conducted in February 1999 to assess whether additional buried containers remain on site. Based on the anomalies found during this investigation, test pitting will be conducted in FY 2000. The Remedial Design for groundwater was submitted in November 1998. The baseline groundwater-sampling event was conducted in December 1998. The annual summary report for the Year 1 Quarterly Monitoring Program was completed in November 1999. Recommendations included reducing monitoring to semi-annual events. The next sampling event is scheduled for February 2000.
12	--	Public Works Rubble Disposal Area (0.5 acre)	1970s-1984	Inert rubble, lumber, concrete, wire, cable, scrap metal, drums	Public works	Majority of rubble has been buried approximately 3 feet below land surface, some rubble is above ground.
						<u>Current Investigative Status:</u> Field investigation work plan was submitted March 1995. Field screening activities (geophysical survey, hydrological assessment, monitoring well installation, surface and subsurface soil sampling, groundwater sampling and surface water and sediment sampling) were completed in August 1997. The draft technical memorandum was submitted in March 1998. Review comments for the draft Technical Memorandum were received in June 1998. The Technical Memorandum for NFA was submitted in September 1998 and regulatory concurrence was received in October 1998.
13	--	Day Tank 1-Fuel Spill (1.5 acres)	1981	JP-5 fuel	Day tank	Location of fuel spill in 1981; approximately 500,000 gallons of JP-5 fuel were spilled; approximately 250,000 gallons were recovered.
						<u>Current Investigative Status:</u> Transferred to the petroleum program.

TABLE 1-1

**SITE DESCRIPTION CHART
INSTALLATION RESTORATION PROGRAM
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7Site No.	Operable Unit	Site Name/Size	Period of Operation	Waste Type	Sources	Description of Activity
14	OU 5	Blue 5 Ordnance Disposal Area (4.5 acres)	1967-1977	Fuses, 100-pound bombs, large munitions, lulu fuses, other explosive materials	Installation ordnance disposal operations	Ordnance disposal by open detonation or burning
						<u>Current Investigative Status:</u> The final RI report was submitted in October 1997. The final FS report and the Proposed Plan were submitted in March 1998. The ROD was submitted in July 1998. The ROD selected the NFA remedy.
15	OU 5	Blue 10 Ordnance Disposal Area (10 acres)	1960s-1977	Small arms, parachute/distress flares, Mark IV signal cartridges, rocket igniters, CADS, 5- and 2.75-inch rockets	Installation ordnance disposal operations	Ordnance disposal by combustion in a chamber with ashes being spread over the site.
						<u>Current Investigative Status:</u> The final FS was submitted in March 1998. An ecological study was conducted in September 1998. Additional sampling was conducted in FY 1999 to fill in data gaps for lead and PAH contamination. An Amended FS is currently being prepared for submittal in January 2000. A Proposed Plan, and a ROD will be completed after the FS is finalized.
16	OU 7	AIMD Seepage Pit (40x3x10 ft)	1960-1980	Solvents, heavy metals, acids, blasting grit, paint residue, photo wastes	Building 313, jet engine maintenance shop	Seepage pit used to drain wastewater (containing solvents, paint, grease, metals) generated from Building 313 operations into area soils; RCRA holding tank for wastewater is also located at Site 16; glass bead separator and associated piping also present.
						<p><u>Interim Remedial Action:</u> Focused FS and Remedial Design for the removal of holding tank and impacted soils was issued. Final responsiveness summary and Interim ROD were submitted in March 1994. The removal and closure of the NDI Holding Tank was completed in June 1994. Final NDI Holding Tank Closure Certification and Report was submitted in September 1994.</p> <p><u>Current Investigative Status:</u> Final RI was submitted in July 1995 and FS was submitted in August 1995. Final BRA was submitted in January 1996. Proposed Plan was submitted on March 19, 1996. A public meeting was held on March 21, 1996. The final ROD was submitted in August 1996. The remedial design for Site 16 was re-evaluated and consisted of remedial actions proposed for the source area and storm sewer system as identified below. An Amended Proposed Plan and Amended ROD were submitted in the second quarter of FY 1999.</p> <p><u>Storm Sewer System:</u> A pilot-scale Treatability Study work plan for the Storm Sewer System was submitted in April 1998. The pilot study for the Storm Sewer System was completed in April/May 1998 and a pilot-scale treatability study report was submitted in June 1998. The draft Storm Sewer Remedial Design was submitted in August 1998. A storm sewer investigation was conducted in August 1998 to evaluate the remaining portions of the Storm Sewer System near Site 16. The storm sewer system was repaired in June 1999.</p> <p><u>Source Area:</u> A decision was made based on new information to revise the remedial action to air sparging of the source and natural attenuation of the plume. The pilot-scale Air Sparging/Soil Vapor Extraction (AS/SVE) work plan was finalized and implemented in September 1998. The baseline groundwater sampling event was conducted in September 1998 and quarterly groundwater monitoring is ongoing. The annual summary report for the Year 1 Quarterly Monitoring Program was completed in September 1999. The annual report recommended quarterly sampling in the source area and semi-sampling of the wells in the plume. The AS/SVE system installation was completed in June 1999 and the operation of the system began in late June 1999. The next groundwater sampling event is scheduled for November 1999.</p>

TABLE 1-1

**SITE DESCRIPTION CHART
INSTALLATION RESTORATION PROGRAM
NAS CECIL FIELD, JACKSONVILLE, FLORIDA
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7Site No.	Operable Unit	Site Name/Size	Period of Operation	Waste Type	Sources	Description of Activity
17	OU 2	Oil/Sludge Disposal Pit Southwest (2 acres)	Late 1960s - early 1970s	Waste fuels/oils	Fuel farm	Unlined shallow disposal pit
						<p><u>Interim Remedial Action:</u> Interim ROD was signed in September 1994. IRA was initiated in February 1995 for source removal, which is contaminated soil. IRA included removal and on-site treatment of contaminated soil. A remedial action completion report was submitted in September 1996.</p> <p><u>Current Investigative Status:</u> Final RI and RA were submitted in May 1995 and final FS was submitted in July 1995. Final ROD was submitted September 1995. The remedial alternative is intrinsic bioremediation with an aggressive monitoring program. The final remedial design work plan was submitted in January 1997. Completed the first year (4 quarters) of natural attenuation monitoring in June 1998. An annual report was submitted in June 1998 recommending semi-annual monitoring. Semi-annual monitoring is ongoing and the Year 2 annual report was issued in June 1999. The recommendations from the annual report included discontinuing the analysis of several chemicals of concern and several natural attenuation parameters. The next sampling event is scheduled for February 2000.</p>
18	--	Ammunition Disposal Area (0.1 acre)	1950s	Ammunition crates, miscellaneous ordnance	Magazine area	Waste material from a nearby magazine area was trucked in and dumped over the site during the 1940s until 1950. Reportedly, all munitions were removed. As of July 19, 1993, live munitions were still present at site according to EOD personnel.
						<p><u>Current Investigative Status:</u> Field investigation work plan was submitted in March 1995. Field screening activities (monitoring well installation, surface and subsurface soil, surface water, and sediment, sampling) were completed in August 1997. The draft Technical Memorandum for NFA was submitted in March 1998. The final Technical Memorandum for NFA was submitted in October 1998.</p>
19	--	Rowell Creek Rubble Disposal Area (3 acres)	Section until 1991	Concrete, construction debris, asphalt, wood debris, trash	Construction and operations	Limited information on disposal practices
						<p><u>Current Investigative Status:</u> Field investigation work plan was submitted in March 1995. Field screening activities (records and document search, geophysical surveys, monitoring well installation, surface and subsurface soil, surface water and sediment sampling) were completed in August 1997. The draft Technical Memorandum for NFA was submitted in January 1998. The partnering team has recommended that the report be finalized after completion of the test pitting activities at the site. A letter report identifying test pit locations was submitted in May 1998. The Technical Memorandum for NFA was submitted in November 1998.</p>
36	9	Control Tower TCE Plume		Chlorinated Solvent and BTEX Plume	Groundwater plume located south of Building 82, the control tower.	The plume was discovered during the Day Tank 2 groundwater plume investigation. The plume's major contaminants are trichloroethene, benzene, toluene, ethylbenzene and xylenes.
						<p><u>Current Investigative Status:</u> A RI for Site 36 (performed in conjunction with Site 37) was initiated in November 1998 and concluded in January 1999. The draft RI and FS reports were issued in the third quarter of FY 1999. The final RI Report was completed in August 1999. The remediation of the Day Tank 2 groundwater contamination is included in the Site 36 groundwater remediation. The final FS report will be issued in the first quarter of Fiscal Year 2000.</p>

TABLE 1-1

**SITE DESCRIPTION CHART
 INSTALLATION RESTORATION PROGRAM
 NAS CECIL FIELD, JACKSONVILLE, FLORIDA
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7Site No.	Operable Unit	Site Name/Size	Period of Operation	Waste Type	Sources	Description of Activity
37	9	Hangars 13 and 14 DCE Plume		Chlorinated Solvent and BTEX Plume	Groundwater plume located south of Hangars 13 and 14	The plume was discovered as part of the flightline groundwater investigation. Its major contaminants are dichloroethene, benzene, toluene, ethylbenzene and xylenes.
<p><u>Current Investigative Status:</u> A RI for Site 37 (performed in conjunction with Site 36) was initiated in November 1998 and concluded in January 1999. The draft RI and FS reports were issued in the third quarter of FY 1999. The final RI Report was completed in August 1999. The final FS will be issued in the first quarter of Fiscal Year 2000.</p>						

TABLE 1-2

**SITE DESCRIPTION CHART
PETROLEUM PROGRAM
NAS CECIL FIELD, JACKSONVILLE, FLORIDA
PAGE 1 OF 4**

Site Name	Site Location	Waste Type	Sources	Description of Activity
Jet Engine Test Cell	Adjacent to building 339	JP-5 Jet Fuel	Two 20,000-gallon asphalt-coated, steel tanks with corrosion-resistant metal piping with cathodic protection installed in 1953 (Tanks 339-TC1 and 339-TC2). One 5,000-gallon steel AST (339-TC3) (removed in 1995).	Past releases have occurred due to tank overfilling. In October 1989, efforts to leak test Tanks TC1 and TC2 failed when inadequate seals were discovered between the manway covers and tank walls.
<p><u>Current Investigative Status:</u> Preliminary contamination assessment was initiated in December 1990 by ABB-ES. U.S. COE conducted a soil investigation in January 1991. The contamination assessment was completed in 1993 and a Contamination Assessment Report (CAR) addendum was submitted in March 1994. A CARA II was submitted in November 1994. Subsequently, an Alternate Procedures Request (APR) for free-product recovery was submitted on August 4, 1995. The remedial action plan submitted on November 22, 1996 was approved by FDEP in February 1997. Monitoring wells and piezometers within the soil excavation area were abandoned in June 1997. A letter report identifying a variation in soil treatment from thermal treatment to biopiles was submitted in July 1997. Initial remedial action for soil excavation was completed in September 1997. Soil removal activities took place during the first quarter of Fiscal Year 1999. Quarterly natural attenuation sampling is currently in progress..</p> <p><u>Other Information:</u> Part of Building 339 was demolished and rebuilt in June 1991. About 137.6 tons of soil was sent to Anderson Columbia for incineration. A 200-gallon spill occurred adjacent to Building 339 in July 1995. Soil was excavated and placed in 55-gallon drums.</p>				
Sal Taylor Creek Containment Areas (Dam Sites)	Along Sal Taylor Creek	JP-5 Jet Fuel	JP-5 fuel spill from the North Fuel Farm (NFF) Tank 76E that occurred on February 10, 1991.	The seven dam sites are located along Sal Taylor Creek (STC) and emergency response actions were conducted at these sites after the February 10, 1991 spill. Heavy equipment and vacuum trucks were used to recover the fuel from STC.
<p><u>Current Investigative Status:</u> This site covers a total of seven areas and includes the Aviation Ordnance (AVORD) Dam Site, the North Containment Pond Site, the AVORD Perimeter Road Site, the Gate 10 Dam Site, the Alpha Dam Site, the Possum Dam Site, and the Gate 14 Dam Site. A contamination assessment was conducted in 1991 and 1994. The field investigation included soil borings, surface water and sediment sampling, and monitoring well installation. A CAR was submitted in July 1994. Based on FDEP comments, further investigations were conducted in 1995. The investigations included toxicity assessment and surface water and sediment sampling. A CARA was submitted in March 1996 and approved by FDEP in May 1996. Per partnering team recommendations, sediment samples were collected for toxicity testing in December 1996. Samples were collected from the dam sites where biomonitoring or remediation was recommended in the CARA. Toxicity testing results were submitted in February 1997. A CAR addendum recommending NFA at all dam sites, except Possum dam, was submitted on May 19, 1997. An additional sample was collected at the Possum Dam site in December 1997. A CAR addendum recommending NFA at Possum Dam was submitted in February 1998.</p>				
103 rd Street Pipeline	Intersection of 103rd and Ave. A	Type JP-5 Jet fuel	A "pinhole" leak in the 8 inch pipeline conveying fuel from NAS JAX to NAS Cecil Field was discovered and repaired in the Spring of 1997.	Following discovery of the release, an Initial Remedial Action (IRA) was performed to remove petroleum impacted soils and to repair the pipeline. The pipeline was then taken out of service. In the spring of 1998, a site assessment was initiated.
<p><u>Current Investigative Status:</u> Investigation activities were conducted from September to December 1998 to delineate free product and a Site Assessment Report was submitted in February 1999. A Remedial Action Plan was submitted in August 1999 recommending AS/SVE to address soil and groundwater plumes.</p>				

TABLE 1-2

**SITE DESCRIPTION CHART
PETROLEUM PROGRAM
NAS CECIL FIELD, JACKSONVILLE, FLORIDA
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Site Name	Site Location	Waste Type	Sources	Description of Activity
JP-5 Spill Area	Adjacent to Tank 76-E, northeast corner of NFF	JP-5 Jet Fuel	February 10, 1991 JP-5 fuel spill	On February 10, 1991, the JP-5 fuel overflowed from Tank 76-E. The fuel flowed down the slope on the east side of the earth-mounded tank into a small ditch that discharges into STC.
<p><u>Current Investigative Status:</u> A preliminary CA was conducted in 1991 and a CA was conducted from May 27 through June 5, 1992. The investigation included soil borings and monitoring well installation and the CAR was submitted in July 1994. Based on FDEP comments for the CAR, further investigations were conducted in 1995. A CARA, submitted in March 1996, was approved by FDEP in May 1996. Recommendations for remedial actions were included in the remedial action plan for the NFF site. Supplemental samples were collected in September 1997, and a CAR letter report was submitted in November 1997.</p> <p><u>Other Information:</u> From September 1995 through January 1996, IRA was conducted by Bechtel. The IRA included removal of about 2,750 cubic yards of contaminated soil (>1000 ppm) from the site. Additional soil removal activities are scheduled to take place in October 1999..</p>				
South Fuel Farm	Facility 43, south of intersection of 2nd street and "A" Avenue	JP-5 Jet Fuel	Several tanks that were removed in the 1990s.	Location of several ASTs, USTs, and EMTs. All ASTs were removed in 1995 and all USTs and EMTs (except Tank 342-DT) were removed in July 1994.
<p><u>Current Investigative Status:</u> CA was completed in December 1991 and CAR was submitted in July 1992. Upon review of CAR, FDEP requested additional investigation at this site. Supplemental investigation was completed in July 1995 and CARA was submitted in January 1996. The CARA was approved in April 1996. A remedial action plan addendum submitted on October 28, 1996 was approved by FDEP in February 1997. The remedial system (biosparging) was installed in February 1998, and system start-up activities were completed in March 1998. The remedial system is in operation.</p>				
Truck Stand Site	Loop road south of NFF	JP-5 Jet Fuel	Used as loading station for the flightline refueling tank trucks. The site consists of a control building, a pumping station, asphalt and concrete parking area, and a retention pond.	Probable spills and soil staining
<p><u>Current Investigative Status:</u> A preliminary CA was conducted in 1990. A CA completed in 1991 and CAR was submitted in May 1992. Subsequently, CARA submitted in July 1994. Upon review of CARA, FDEP recommended additional investigation that included monitoring well installation, collection of groundwater samples, and advancement of soil borings. CARA was submitted to FDEP in March 1996. The CARA II was approved by FDEP in April 1996. The monitoring only plan submitted on December 6, 1996, was approved in February 1997. The 1st, 2nd, 3rd and 4th quarter sampling events were completed. A letter report presenting the sampling results for the first, second, and third quarter sampling was submitted. The annual monitoring report was submitted in June 1998. Monitoring activities have been changed to semiannual events. The first semiannual event was conducted and associated report was submitted in October 1998. A monitoring report was submitted in May 1999 summarizing the data collected in the April 1999 sampling event. The next scheduled sampling event will be performed in September 1999.</p> <p><u>Other Information:</u> An IRA to remove soils saturated with free product was completed in May 1996. Approximately 1,000 cubic yards of soil were excavated. A Remedial Action report was submitted in June 1996.</p>				

TABLE 1-2

**SITE DESCRIPTION CHART
PETROLEUM PROGRAM
NAS CECIL FIELD, JACKSONVILLE, FLORIDA
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Site Name	Site Location	Waste Type	Sources	Description of Activity
Sal Taylor Creek Bank Sites	Along Sal Taylor Creek	JP-5 Jet Fuel	February 1991 JP-5 fuel spill	Activities were conducted after the fuel spill.
<p><u>Current Investigative Status:</u> Nine locations along the banks of Sal Taylor Creek were investigated to determine extent of soil and groundwater contamination due to the 1991 fuel spill. Results of the 1992-93 investigation were presented in the July 1994 CAR. Per FDEP recommendations, additional investigations were completed in September 1995. The CARA submitted in March 1996 was approved by FDEP in April 1996. The CARA recommended natural biodegradation for the remedial action these sites. Temporary wells were installed in December 1996 at the two locations recommended by the FDEP. Groundwater samples were collected from these wells in January 1997. A CAR addendum presenting the groundwater sampling results from the temporary wells, along with a recommendation for NFA, was submitted on June 16, 1997. The NFA recommendation was approved by FDEP.</p>				
Day Tank 1	Northeast of Jet Road	JP-5 Jet Fuel	200,000-gallon interior-lined asphalt-coated steel tank containing JP-5. Tank was installed in 1956.	Location of fuel spill in 1981; approximately 497,000 gallons of JP-5 fuel were spilled due to overfill; approximately 250,000 gallons were recovered.
<p><u>Current Investigative Status:</u> Geraghty and Miller conducted a preliminary CA in 1981. CA initiated by ABB-ES in December 1990. The CA was completed in 1993 and a CAR addendum was submitted to FDEP in December 1993. A remedial action plan was submitted to FDEP in May 1994. The remedial action plan was not approved by FDEP. Consequently, an APR was submitted to FDEP in August 1995 to recover free product. The APR was approved in September 1995. Per FDEP recommendation, five additional wells were installed and sampled in September 1995. The remedial action plan was submitted in January 1997. During the June 3, 1997 BCT meeting, the partnering team requested a letter memorandum presenting a phased approach for the remedial action. The letter memorandum was submitted in July 1997. Natural attenuation sampling took place during the second quarter of FY 1999. Natural attenuation sampling will be discontinued. Contaminant monitoring, only, will be conducted.</p>				
North Fuel Farm Area	Northeast corner of A Avenue and Loop road	JP-5 Fuel	Six 595,000-gallon, interior-lined, asphalt-coated, steel, earth-mounded tanks (76, 76A through 76E). Tanks 76 and 76A were installed in 1952 and remaining tanks were installed in 1954. In 1987, all tanks were relined and overfill protection was installed. In addition, tank 76 was equipped with automatic shut-off system. Tank 76E was taken out of service in 1991.	22,772-gallon spill on August 3, 1987; 913,000-gallon spill on February 10, 1991; and 1,800-gallon spill on November 28, 1993
<p><u>Initial Remedial Action:</u> Completed installation of a catalytic oxidizer at the NFF site. Also installed 15 extraction wells. Nine of these extraction wells were connected to the bioslurper unit. Quarterly groundwater sampling was completed during this reporting period. Continued free product recovery activities. The bioslurper system was shut down in April 1998, but the groundwater sumps are being operated.</p> <p><u>Current Investigative Status:</u> CA was completed in 1991. The CAR was submitted in June 1992. Supplemental investigation was completed in 1993/94. Conducted field work in April 1994 to investigate the 1,800-gallon spill. In July 1994, FDEP recommended additional investigation that was completed in 1995. CARA was submitted in April 1996. Subsequently, the CARA was approved by FDEP. Supplemental assessment recommended by the partnering team was completed in November 1996. The remedial action plan and the revised CAR addendum were submitted in January 1997. FDEP comments for the NFF remedial action plan were reviewed at the June 1997 partnering team meeting. Supplemental soil samples were collected in September 1997 and the results were presented in a remedial action plan letter memorandum submitted in November 1997. Additional soil samples for Kerosene Analytical Group analysis were collected in April 1998. Currently, the partnering team has recommended that a pilot study be conducted to evaluate recirculation wells as a viable alternative for groundwater treatment. The 1999 recirculation well pilot-scale study showed difficulties in operation of the system. The technology was eliminated in favor of air sparging. A remedial action plan addendum was submitted in August 1999. This addendum also describes the removal of the tanks and soil beneath the tanks. Natural attenuation sampling took place during the second quarter of FY 1999. Natural attenuation sampling will be discontinued. Contaminant monitoring, only, will be conducted.</p>				

TABLE 1-2

**SITE DESCRIPTION CHART
PETROLEUM PROGRAM
NAS CECIL FIELD, JACKSONVILLE, FLORIDA
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Site Name	Site Location	Waste Type	Sources	Description of Activity
Tank 199	Building 199, Southeast corner of C Avenue and 6th Street	Heating oil	2,000-gallon underground heating oil tank	Leaking UST
<p><u>Current Investigative Status:</u> A CA plan was prepared in August 1996. The CA was initiated in September 1996 and the field program was completed in December 1996. The field program included soils borings, well installation, groundwater sampling, aquifer testing, and elevation survey. The CAR was submitted in March 1997. Additional soil samples were collected in September 1997, and the results were presented in a CAR memorandum and submitted in November 1997. Soil samples for Kerosene Analytical Group analysis were collected in March 1998. Soil removal activities took place during the first quarter of FY 1999. Natural attenuation groundwater sampling is in progress.</p>				
Day Tank 2	Facility 342-DT, south of intersection of 2nd street and "A" Avenue	JP-5 fuel	200,000 gallon earth mounded, interior-lined, asphalt-coated, steel tank.	Several USTs and ASTs were located adjacent to the Day Tank 2 facility. In October 1996, free petroleum product was observed in a piezometer located south of Day Tank 2. The release was believed to have been from the tank or associated piping. Approximately 29,000 gallons of free product were recovered. Day Tank 2 was taken out of operation in October 1996 and removed in 1997.
<p><u>Initial Remedial Action:</u> The Day Tank 2 was decommissioned and was removed in August 1997.</p>				
<p><u>Current Investigative Status:</u> A CA plan was submitted in June 1997. The field investigation at Day Tank 2 that included installation of several monitoring wells, DPT groundwater screening points, soil borings, and soil sampling in March 1998. SAR was completed in July 1998. A source removal plan was submitted in October 1998 and the remedial action was conducted in November 1998. Monitoring wells that were destroyed during the interim remedial action were replaced and sampled in April 1999. A report describing the analytical results was completed in May 1999. Groundwater contamination will be addressed during the Sites 36/37 RI/FS. Day Tank 2 groundwater remediation was incorporated into Operable Unit 9, Site 36 in August 1999.</p>				
Tank 46 (Includes 46R, 46D, 46SUL, and 46UL)	Building 46 across D Avenue from the Bachelor Officers Quarters	Regular and unleaded gasoline and diesel fuel	A total of eight tanks: - four 2,000 gallon tanks - two 10,000 gallon tanks - two 6,000 gallon tanks	Leaking USTs
<p><u>Current Investigative Status:</u> A remedial action plan was submitted in March 1999. This remedial action plan included the design of an AS/SVE System for the remediation of contaminated soil and groundwater.</p>				

A Tank Management Plan (TMP) was submitted in January 1997. The TMP provides a list of all active and inactive storage tanks (AST and UST) at NAS Cecil Field. The TMP also presents investigation protocols for sites being investigated under the Petroleum program. Based on reuse, each tank will be assessed and investigated as funding becomes available. After completion of the Phase I Petroleum program investigation, some sites may require a contamination assessment to be followed by a RA plan and then RA. The partnering team will evaluate recommendations provided by the consultants and then evaluate the need for further investigation and/or other efforts required at these sites.

1.4 BASE REALIGNMENT AND CLOSURE PROGRAM

Over 200 parcels of land are being investigated under the BRAC program. Environmental issues or concerns at the BRAC sites have been identified in the Environmental Baseline Survey. The parcels have been color-coded to identify those available for transfer or that need further investigation and remediation. Environmental investigations and remediation have been conducted at many of the BRAC sites to date. However, due to the large number of sites and relatively short duration of the investigations report preparation, and review, a detailed current status of the BRAC sites will not be included in this SMP.

1.5 SCHEDULE

The SMP schedule presents IRP, Petroleum Program, and BRAC Program deliverables. Submittal dates to the FFA parties for IRP activities are presented in Appendix A, Petroleum Program activities are presented in Appendix B, and BRAC Program activities are presented in Appendix C. These schedules present past and proposed activities for FY 2000. As part of the SMP, the FFA parties will meet regularly to assess the progress. The schedules will be updated as part of the quarterly progress report and will be used as a baseline schedule for FY 2000 activities. Schedule impacts will be noted in the baseline schedule and presented in the text of the quarterly progress reports. Potential schedule delays will be discussed at the monthly partnering team meetings.

APPENDIX A
INSTALLATION RESTORATION PROGRAM
SCHEDULE

APPENDIX B
PETROLEUM PROGRAM
SCHEDULE

APPENDIX C
BASE REALIGNMENT AND CLOSURE PROGRAM
SCHEDULE