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FINAL ANNUAL SITE MANAGEMENT PLAN FOR CALENDAR YEAR 2014 NAS CECIL FIELD  
FL  
11/13/2013  
RESOLUTION CONSULTANTS

**FINAL SITE MANAGEMENT PLAN  
FOR CALENDAR YEAR 2014**

**FORMER NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

Prepared For:



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## List of Acronyms

AIMD	Aircraft Intermediate Maintenance Division
APR	Alternate Procedures Request
ARAR	Applicable or relevant and appropriate requirements
AS	Air sparging
AST	Above ground storage tank
BaPEqs	benzo(a)pyrene equivalents
BCT	BRAC Cleanup Team
BRAC	Base Realignment and Closure
BS	Biosparging
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CA	Contamination Assessment
CAR	Contamination Assessment Report
CARA	Contamination Assessment Report Addendum
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminants of concern
CY	Calendar year
DPT	Direct-push technology
EE/CA	Engineering Evaluation/Cost Analysis
EMT	Earth-Mounded Tank
ESD	Explanation of Significant Difference
FDEP	Florida Department of Environmental Protection
FFA	Federal Facility Agreement
FOST	Finding of Suitability Transfer
FS	Feasibility Study
FY	Fiscal year
GCTL	Groundwater Cleanup Target Level
GWMR	Groundwater Monitoring Report
IAW	In accordance with
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LTM	Long-term monitoring
LUC	Land use control
MCL	Maximum contaminant level
MEC	Munitions and explosives of concern
MNA	Monitored natural attenuation
MOA	Memorandum of Agreement
MONA	Monitoring only natural attenuation
MRA	Munitions response area

MRP	Munitions Response Program
NA	Not applicable
NAMP	Natural Attenuation Monitoring Plan
NAMPAO	Natural Attenuation Monitoring Plan Approval Order
NAS	Naval Air Station
Navy	United States Navy
NFA	No further action
NFF	North fuel farm
OGC	Old golf course
OPS	Operating properly and successfully
ORC	Oxygen release compound
OU	Operable unit
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PP	Proposed Plan
ppb	Parts per billion
PSC	Potential source of contamination
RA	Remedial Action
RACR	Remedial Action Completion Report
RAP	Remedial Action Plan
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SAR	Sampling and Analysis Report/Site Assessment Report
SARA	SAR Addendum
SCTL	Soil Cleanup Target Level
SMP	Site Management Plan
SVE	Soil vapor extraction
SVOC	Semi-volatile organic compound
TRPH	Total recoverable petroleum hydrocarbons
U.S. EPA	United States Environmental Protection Agency
UFP	Uniform Federal Policy
UST	Underground storage tank
UXO	Unexploded ordnance
VOC	Volatile organic compound
WWTP	Wastewater Treatment Plant

## **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 (Navy). The FFA is an interagency agreement required by Section 120(e)(1) of the Superfund Amendments and Reauthorization Act of 1986. Enforceable milestone (primary) documents can only be changed when good cause exists and in accordance with FFA provisions. 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. In accordance with the SMP requirements in the FFA, the intent of the SMP is to provide:

- The site management strategy
- A list of actions needed to mitigate any immediate threat to human health or the environment, if a threat exists
- A list of operable units (OUs) subject to the FFA
- A presentation of prioritization and rationale for the OUs at the site
- A schedule of work and activities proposed for the upcoming calendar year (CY)
- A work projection for sites and OUs beyond the current CY

The SMP for Former Naval Air Station (NAS) Cecil Field is being amended for CY 2014 to document changes in scope, schedule, and funding for completing investigations of past waste disposal sites under the Installation Restoration Program (IRP), and munitions sites under the Munitions Response Program (MRP). Information pertaining to the Petroleum [underground storage tank (UST) and above-ground storage tank (AST)] Program is also included to provide an overview of the environmental programs being conducted at Former NAS Cecil Field. NAS Cecil Field was closed in September 1999.

### **1.1 Site Management Strategy**

The SMP provides a schedule of IRP 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 used in preparing the SMP include: maximizing the utilization of resources, having

the flexibility to meet changing and unforeseen conditions, and cleaning up the site in a scientific and expeditious manner. These principles provide the basis for expedited remedial response at Former NAS Cecil Field. This SMP was prepared using guidance from the FFA, and discussion with U.S. EPA, FDEP, and NAS Cecil Field Base Realignment and Closure (BRAC) Cleanup Team (BCT) members.

The IRP investigations have been 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 the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (1988) and the National Oil and Hazardous Substances Pollution Contingency Plan (1990) is followed for project deliverables.

The long-term goal of the SMP is to guide the completion of the investigation and remediation of all sites at Former NAS Cecil Field. To the extent practicable, BRAC issues will be considered during the cleanup process. The Navy has prepared a BRAC Cleanup Plan that details ways to accelerate cleanup at the following classifications of sites: IRP, MRP, petroleum, Resource Conservation and Recovery Act/Hazardous and Solid Waste Amendments, asbestos, and other types of sites. The BRAC Cleanup Plan discusses and identifies the Former NAS Cecil Field Partnering Team and their role in the cleanup process, and presents strategies to expedite 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 Former NAS Cecil Field, where property has been or 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 and Jacksonville Aviation Authority, assesses candidate sites and updates the prioritization plan for site cleanup at Former NAS Cecil Field by considering planned reuse, waste characteristics, potential migration pathways, and potential receptors (human and ecological). The Navy intends to work with the FFA parties utilizing a continual review process to coordinate prioritization of cleanup sites at Former NAS Cecil Field.

### **1.1.1 Actions Necessary to Mitigate Any Immediate Threat to Human Health or the Environment**

Currently, there are no immediate threats to human health or the environment at the former NAS Cecil Field; thus, no actions are necessary at this time to address such threats. All sites identified at former NAS Cecil Field have been addressed under CERCLA and remedial actions have been taken for sites that posed unacceptable risks to human health and the environment, including implementation of Land Use Controls (LUCs) that will remain in place until each site are acceptable for unrestricted use and unlimited exposure. Sites that were found not to pose an unacceptable risk to human health and the environment were specified for no further action (NFA).

### **1.1.2 OUs Subject to the FFA**

The OUs and sites that are subject to the FFA and under investigation or have undergone CERCLA response actions at former NAS Cecil Field include the following:

- OU 1, Sites 1 and 2 — Currently in long-term monitoring (LTM).
- OU 2, Sites 5 and 17 — Currently in LTM. Site 5 has been investigated further and new wells are being added to the LTM program, but there is an issue of dredged soil from the Lake Fretwell expansion slumping onto the site.
- OU 5, Site 15 — Environmental threats have been addressed and require NFA, and a Finding of Suitability to Transfer has been submitted to the Department of Interior.
- OU 7, Site 16 — Currently in LTM.
- OU 8, Site 3 — Currently in LTM with a pilot study in place to address potential impacts to Rowell Creek.
- OU 9, Sites 36, 37, 57, 58, and 59 — All sites are currently in LTM. Sites 37 and 59 also have remedial groundwater treatment systems in place that are currently shut-down based on decisions by the BCT Team to discontinue operations to monitor long-term trends in groundwater contaminant concentrations.
- OU 10, Site 21 — Currently in LTM.

- OU 11, Site 45 — Currently in LTM.
- OU 12, Site 32 — Currently in LTM.

There are several additional OUs at former NAS Cecil Field that were subject to the FFA at the time of the agreement; however, all sites within these OUs have since been closed out, either by NFA Record of Decisions (RODs) or by Remedial Action (RA) Completion Reports (RACR) specifying that all remedial action objectives (RAOs) and cleanup goals have been achieved, and require NFA. These OUs include the following:

- OU 3 — remedial action objectives and clean up goals have been achieved.
- OU 4 — No further action ROD (September 1997). An explanation of significant differences (ESD) was prepared in June 1999 and RAOs and cleanup goals were achieved by June 2000.
- OU 6 — RAOs and clean up goals have been achieved.

Brief descriptions and the current investigative status of the IRP sites and potential sources of contamination (PSCs) identified under the IRP are presented in Table 1-1. The status of these sites will be updated and submitted with the quarterly progress reports on IRP activities at Former NAS Cecil Field. PSCs may be added or removed in the future as a result of site assessments and BRAC surveys.

### **1.1.3 Prioritization and Rationale for the OUs at the Site**

The Third Five-Year Review was accepted as Final in September 2011, and it included recommendations for several of the IRP sites at Former NAS Cecil Field. The recommendations represent the priorities at the facility. The recommendations that have not yet been addressed are listed below, and are also included in Table 1-1 as appropriate.

- Clearly define site contaminants of concern (COC) and RAOs, by completion of an ESD or other decision document for OU 2 Sites 5 and 17, OU 7 Site 16, and OU 8 Site 3.

The recommendations from the Third Five-Year Review that have been addressed during CY 2013 are listed below. Table 1-1 includes further information about the implementation of these priority activities.



- Addressed munitions and explosives of concern (MEC) issues at OU 5 Site 15, to enable property transfer.
- Expand monitoring well network at OU 11 Site 45, and evaluated actions necessary to address plume migration.
- Review the sampling program for OU 1 Sites 1 and 2 to determine if it could be curtailed due to no signs of any releases for three or more years.

**1.1.4 Activities and Schedules for Work Planned for the 2014 Calendar Year**

The scheduled primary documents, secondary documents, and field activities for CY 2014 are presented in the tables below.

**Primary Documents Required in CY14**

Primary Document	Operable Unit and Site	Due Date
Site Management Plan — CY15	All OUs	Monday, 01 September 2014

**Secondary Documents Required in CY14**

Document Name	OU, Site	Due Date
CY 2014, 1st Quarterly Site Management Plan Update	Site wide	Friday, 10 January 2014
Final Groundwater Monitoring Report (GWMR) — Year 16, Annual	OU 2, Site 5	Friday, 21 February 2014
Final GWMR — Year 13, 2nd Semi-Annual	OU 10, Site 21	Monday, 24 February 2014
Final GWMR - Year 15, Annual	OU 7, Site 16	Friday, 27 February 2014
Draft GWMR – Year 6, 1st Semi-Annual	OU9, Site 59	Monday, 28 February 2014
Final GWMR — Year 17, Annual	OU 2, Site 17	Friday, 28 February 2014
Final GWMR — Year 13, Annual	OU 9, Sites 36 and 37	Friday, 07 March 2014
LUC Inspections in accordance with (IAW) Finding of Suitability Transfer (FOSTs)	Site wide	Friday, 28 March 2014
LUC Inspections IAW Memorandum of Agreement (MOA)	Site wide	Friday, 28 March 2014



<b>Document Name</b>	<b>OU, Site</b>	<b>Due Date</b>
Final GWMR — Year 15, Annual	OU 8, Site 3	Monday, 31 March 2014
Remedial Action Report	OU 9, Site 59	Monday, 31 March 2014
CY 2014, 2nd Quarterly Site Management Plan Update	Site wide	Friday, 18 April 2014
Final GWMR -Year 6, 1 <sup>st</sup> Semi-Annual	OU 9, Site 59	Tuesday, 29 April 2014
Draft GWMR — Year 11, Annual	OU 9, Site 57	Monday, 09 June 2014
Draft GWMR — Year 11, Annual	OU 9, Site 58	Tuesday, 10 June 2014
Draft GWMR — Year 14, 1 <sup>st</sup> Semi-Annual	OU 10, Site 21	Tuesday, 17 June 2014
Draft Semi-Annual GWMR — Year 14, 1st Semi-Annual	OU 9, Sites 36 and 37	Wednesday, 09 July 2014
Quarterly Site Management Plan Update	Site wide	Friday, 11 July 2014
Draft LTM Report (LTMR) — Year 17, Annual	OU 1, Sites 1 and 2	Wednesday, 23 July 2014
Draft GWMR — Year 6, Annual	OU 9, Site 59	Friday, 22 August 2014
Final GWMR — Year 11, Annual	OU 9, Site 57	Monday, 25 August 2014
Final GWMR — Year 11, Annual	OU 9, Site 58	Friday, 29 August 2014
Final GWMR — Year 14, 1st Semi-Annual	OU 9, Sites 36 and 37	Tuesday, 09 September 2014
CY 2014, 3rd Quarterly Site Management Plan Update	Site wide	Monday, 06 October 2014
Final LTMR — Year 17, Annual	OU 1, Sites 1 and 2	Tuesday, 07 October 2014
Draft GWMR — Year 13, Annual	OU 11, Site 45	Monday, 20 October 2014
Final GWMR — Year 6, Annual	OU 9, Site 59	Tuesday, 18 November 2014
Draft GWMR — Year 14, 2nd Semi-Annual	OU 9, Sites 36 and 37	Friday, 05 December 2014
Draft GWMR — Year 17, Annual	OU 2, Site 5	Monday, 08 December 2014
Draft GWMR — Year 16, Annual	OU 7, Site 16	Friday, 12 December 2014
Draft GWMR — Year 14, 2 <sup>nd</sup> Semi-Annual	OU 10, Site 21	Tuesday, 16 December 2014



**Field Work Planned for CY14**

Field Work	OU and Site	Date
Year 11 annual sampling	OU 9, Site 57	Monday, 10 March 2014
Year 11 annual sampling	OU 9, Site 58	Wednesday, 12 March 2014
Year 14, 1st semi-annual sampling	OU 9, Sites 36 & 37	Wednesday, 19, March 2014
Year 14, 1st semi-annual sampling	OU 10, Site 21	Monday, 17 March 2014
Year 17 sampling/Five Year sampling event	OU 1, Sites 1 and 2	Monday, 21 April 2014
Year 11 (3rd event)/Five Year Sampling event	OU 12, Site 32	Friday, 9 May 2014
Year 6, 2nd semi-annual sampling	OU9, Site 59	Friday, 23 May 2014
Year 13 sampling/Five Year sampling event	OU 11, Site 45	Monday, 14 July 2013
Year 14, 2nd semi-annual sampling	OU 10, Site 21	Friday, 12 September 2014
Year 17 annual sampling	OU 2, Site 5	Thursday, 18 September 2014
Year 18 annual sampling	OU 2, Site 17	Tuesday, 9 September 2014
Year 16 annual sampling	OU 7, Site 16	Wednesday, 17 September 2014
Year 16 annual sampling	OU 8, Site 3	Tuesday, 16 September 2014
Year 14, 2 <sup>nd</sup> semi-annual sampling	OU 9, Site 36 & 37	Monday, 15 September 2014
Year 7, 1 <sup>st</sup> semi-annual sampling	OU 9, Site 59	Tuesday, 11 November 2014

**1.1.5 Work Projections for Subsequent Calendar Years**

The tables below include planned and proposed activities for CYs 2014 through 2016. As part of the SMP, the FFA parties will meet regularly to assess progress. Schedule impacts will be noted and presented in the text of the quarterly progress reports. Potential schedule delays will be discussed at Partnering Team meetings. The primary documents planned to be submitted in CY14 through CY16, including the next five-year review, are shown below. The secondary documents planned to be submitted are presented in Table 1-2.



### Primary Documents Planned for CY14 through CY16

Primary Document	Operable Unit and Site	Due Date
Site Management Plan – CY 15	All OUs	Monday, 1 September 2014
Draft Fourth Five-Year Review	All OUs	Tuesday, 1 September 2015
Site Management Plan – CY 16	All OUs	Tuesday, 1 September 2015
ESDs for Sites 3, 5, 16, and 17	OUs 2, 7, and 8	Friday, 31 July 2015
Final Fourth Five-Year Review	All OUs	Thursday, 1 September 2016

### 1.2 Munitions Response Program

There are three sites at Former NAS Cecil Field under the MRP, coordinated through Naval Ordnance Safety and Security Activity and the Department of Defense Explosives Safety Board. These MRP sites are being investigated to expedite removal of all unexploded ordnance (UXO), MEC, and material documented as safe at Former NAS Cecil Field. Brief descriptions and the current investigative status of these sites where MRP concerns have been identified are presented in Tables 1-1 and 1-2, as applicable. Currently, the following sites are being investigated under the MRP: IRP Site 15 (Table 1-1); and Building 365 Munitions Response Area (MRA) and Hangar 860 MRA (Table 1-2).

### 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 Former NAS Cecil Field. Brief descriptions and the current investigative status of the identified petroleum-contaminated sites at Former NAS Cecil Field are presented in Table 1-3. Sites may be added or removed in the future as a result of contamination assessments and BRAC surveys. Currently, the following sites are being investigated and/or monitored under the Petroleum Program:

- North Fuel Farm (NFF)
- South Fuel Farm
- Day Tank 1
- Jet Engine Test Cell
- BP Wells Site

- North-South Apron Plume
- Ocala Crash Site
- Building 46/Tank 46
- Building 82/Tank G-82
- Building 81/Tanks 81 A, B, and C
- Building 271 Tanks
- Hangar 815 Wash Rack

Petroleum sites that have been received the determination of “NFA” were previously included and have been omitted from Table 1-2.

The Petroleum Program at the Former NAS Cecil Field is being conducted in accordance with the Florida Petroleum Contamination Agreement, which requires the Navy to submit annually a Petroleum Site Management Plan that provides a schedule for investigation and remediating sites pursuant to Chapter 62-780, Florida Administrative Code. Also, a Tank Management Plan was submitted in January 1997, which provides a plan for bringing regulated USTs and ASTs into compliance with the provisions of Chapters 62-761 and 62-762, Florida Administrative Code. The Tank Management Plan provides a list of all active and inactive storage tanks (ASTs and USTs) at Former NAS Cecil Field, and also presents investigation protocols for sites being investigated under the Petroleum Program. After completion of the Phase I Petroleum Program investigation, some sites required a Contamination Assessment (CA) followed by a RA Plan (RAP), and then RA. The Partnering Team evaluates recommendations provided by the consultants and then evaluates the need for further investigation and/or other efforts required at these sites.

#### **1.4 Schedule and Delays**

The requirements and time schedules set out in the FFA and approved work plans are being met, and are periodically discussed and reviewed with the NAS Cecil Field Partnering Team. Deviations from the schedule are communicated with the Partnering Team when applicable. Delays in meeting time schedules discussed in the FFA and Annual CY SMP will be mentioned in the following sections as required, along with reasons for any delays. Schedule adherence is also discussed.

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
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).	Complete closure of the landfills in accordance with state and federal applicable or relevant and appropriate requirements (ARARs) for landfill closure; Remove and prevent transport and accumulation of the orange-red flocculant material from the Site 2 tributary if biomonitoring shows the materials to be harmful to the benthic macroinvertebrate community of Rowell Creek; Reduce unacceptable exposure of ecological receptors to metals (cyanide, nickel, cadmium, mercury, selenium, silver and vanadium) in sediments; Reduce unacceptable aquatic receptor responses to iron, lead, and aluminum in the Site 2 tributary surface water.
						<ul style="list-style-type: none"> <li>The ROD was signed in September 1995. The selected remedial alternative, site closure, included landfill gas, radiological and UXO surveys, surface debris removal, groundwater monitoring, post-closure care, and a Five Year review.</li> <li>The final design was submitted in April 1996. Bechtel and the Navy conducted an UXO survey in 1997, and Bechtel completed a radiological survey in 1998.</li> <li>An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>A Final LUC Remedial Design (RD) was submitted on March 29, 2005, and approved by the United States Environmental Protection Agency (U.S. EPA) on April 15, 2005.</li> <li>A Final Operating Properly and Successfully (OPS) Demonstration Report was submitted on April 21, 2005, and approved by U.S. EPA on June 16, 2005, and by FDEP on May 20, 2005</li> <li>On May 5, 2011, MK-76 practice bombs were identified in the creek within Sites 1 and 2. The Mayport Explosives Ordnance Disposal responded and removed the MEC items. A site walk by UXO personnel to verify that no more MEC is identified was conducted the week of August 15 through August 19, 2011. A Technical Memorandum was prepared and submitted on December 28, 2011, presenting the findings of the site walk.</li> <li>The Year 16 annual sampling event was conducted in April 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Annual monitoring is ongoing. The third Five Year Review recommended reviewing the sampling program to determine if it could be curtailed due to no signs of any releases for three or more years. A reduction in the sampling program was recommended after the April 2013 sampling event. The BCT will be revisiting the data quality objectives in November 2013 to apply to the Year 17 sampling event, which is the Five Year comprehensive sampling event that is scheduled for April 2014.</li> <li>Site 1 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
	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).	Complete closure of the landfills in accordance with state and federal ARARs for landfill closure; Remove and prevent transport and accumulation of the orange-red flocculant material from the Site 2 tributary if biomonitoring shows the materials to be harmful to the benthic macroinvertebrate community of Rowell Creek; Reduce unacceptable exposure of ecological receptors to metals (cyanide, nickel, cadmium, mercury, selenium, silver, and vanadium) in sediments; Reduce unacceptable aquatic receptor responses to iron, lead, and aluminum in the Site 2 tributary surface water.
2						<ul style="list-style-type: none"> <li>The ROD was signed in September 1995. The selected remedial alternative included site closure and biomonitoring in the wetland area.</li> <li>The Final design was submitted in April 1996. Bechtel and the Navy conducted an UXO survey in 1997 and Bechtel completed a radiological survey in 1998.</li> <li>An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>A Final OPS Demonstration Report was submitted on April 21, 2005, and approved by U.S. EPA on June 16, 2005, and FDEP on May 20, 2005.</li> <li>On May 5, 2011, MK-76 practice bombs were identified in the creek within Sites 1 and 2. The Mayport Explosives Ordnance Disposal responded and removed the MEC items. A site walk by UXO personnel to verify that no more MEC is identified was conducted the week of August 15 through August 19, 2011. A Technical Memorandum was prepared and submitted on December 28, 2011, presenting the findings of the site walk.</li> <li>The Year 16 annual sampling event was conducted in April 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Annual monitoring is ongoing. The Third Five Year Review recommended reviewing the sampling program to determine if it could be curtailed due to no signs of any releases for three or more years. A reduction in the sampling program was recommended after the April 2013 sampling event. The BCT will be revisiting the data quality objectives in November 2013 to apply to the Year 17 sampling event, which is the Five Year comprehensive sampling event that is scheduled for April 2014.</li> <li>Site 2 will be included in the 4th Five Year Review, due September 1, 2016.</li> </ul>



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
3	OU 8	Oil/Sludge Disposal Pit (50-100 feet in diameter and 3-5 feet deep)	1950s-1975	Waste fuels, oils, paints, paint strippers, solvents	Fuel farm, Aircraft Intermediate Maintenance Division (AIMD), squadrons, public works shops; waste was placed in at least four shallow pits. Groundwater was the only medium identified in the baseline risk assessment as having an unacceptable human health risk. No ecological risk was identified for any medium.	Prevent exposure to groundwater that contains volatile organic compounds (VOCs) at concentrations that are greater than the State of Florida guidance criteria and that cause unacceptable risk to human health.
	<ul style="list-style-type: none"> <li>• The ROD was signed in September 1998.</li> <li>• The Final Groundwater RD was submitted in October 1998 and identified air sparging (AS) of the source, natural attenuation monitoring of the plume, LUCs to prevent use of groundwater, and Five Year reviews.</li> <li>• AS system began operation in late May 1999, and the system was shut down in May 2000. The AS system was restarted in December 22, 2000, and then shut down in February 2001.</li> <li>• An Interim Remedial Action (IRA) Report was submitted in June 2001.</li> <li>• An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>• A Final LUC RD was submitted on April 21, 2005, and approved by U.S. EPA on June 1, 2005, and FDEP on May 18, 2005. A Final OPS Demonstration Report was submitted on April 22, 2005, and approved by U.S. EPA on June 16, 2005, and FDEP on April 14, 2005.</li> <li>• The solar-powered AS system was started up in November 2012, and sampling was conducted in December 2012 for analysis after one month of operation.</li> <li>• Quarterly sampling is continuing in the creek area only and was conducted in June 2013</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• The Third Five Year review recommended that an ESD or other appropriate decision document be prepared to clearly define COC and RAOs. A pre-draft ESD is being prepared. Due date is September 20, 2016.</li> <li>• Also, it recommended that due to increasing concentrations in CEF-003-31S and CEF-003-WP should be closely monitored during upcoming events and further action should be considered if exceedances continue. The increasing concentration in CEF-003-31S and CEF-003-WP are being addressed by the solar-powered AS system.</li> <li>• Site 3 will be included in the 4th Five-Year Review, due September 1, 2016.</li> <li>• Because of migration of the groundwater plume in the Source Area, further assessment is being conducted as well as a solar AS treatability study.</li> <li>• Annual sampling is continuing, with the next event planned for September 2013. Final quarterly sampling will occur in December 2013.</li> </ul>					
4	--	Grease Pits (9 acres)	1950s - 1983	Waste oils, mess greases	Multiple shallow pits, which received liquid wastes from installation dining facilities and facility oil/water separators.	No RAOs
<ul style="list-style-type: none"> <li>• Field investigation work plan was submitted in March 1995. Field screening activities (including surface and subsurface soil sampling and monitoring well installation) were completed in June 1997. Groundwater sampling was completed in August 1997.</li> <li>• The Final Technical Memorandum for NFA was submitted in September 1998.</li> </ul>						



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
5	OU 2	Oil Disposal Area Northwest (100 feet in diameter)	1950s	Oil, fuel	Shallow, unlined pit that received liquid wastes from the fuel farms.	Protect humans from exposure from potable water use of groundwater at Site 5 that contains concentrations of VOCs, semi-volatile organic compounds (SVOCs), pesticides, and inorganics above drinking-water-based ARARs or risk assessment remedial goal options; protect ecological receptors from exposure to sediment that contains concentrations of Polychlorinated biphenyls (PCBs) above guidance concentrations and Total recoverable petroleum hydrocarbons (TRPH) that are demonstrated to pose a toxic effect at Site 5.
<p><b>Interim Action:</b> An Interim ROD was signed in September 1994 with RAOs: Clean up contamination in the unsaturated soil above the water table to reduce the source of contaminants to groundwater; remove free product to reduce the source of contamination to groundwater; and clean up contaminated surface soil to reduce health risks from direct contact exposure. An IRA was initiated in March 1995 for source removal. The IRA included removal and disposal of free petroleum product and removal and treatment of contaminated soil using bioremediation. Per BCT recommendation, the IRA (bioremediation) activities were discontinued in June 1996. RA reports were submitted in May 1995.</p> <ul style="list-style-type: none"> <li>• Final ROD was signed September 1995. Due to discontinuation of the IRA, the ROD was amended and issued in January 2000.</li> <li>• The RAs for soil and sediment were initiated in April 1998. The Final Groundwater RD for AS was submitted in May 1998.</li> <li>• The Final IRA and Year 3 Groundwater Report were submitted in March 2002</li> <li>• An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>• A Final LUC RD was submitted on May 5, 2006, and approved by U.S. EPA on May 9, 2006, and FDEP on May 12, 2006.</li> <li>• A Final OPS Demonstration Report was submitted on July 28, 2006.</li> <li>• Monitoring frequency was reduced to annual at the November 2007 BCT meeting.</li> <li>• Thirteen new well locations were selected to be installed and added to the LTM program based on the direct-push technology (DPT) sampling results. One well was installed in August 2012 (CEF-005-31S). The BCT decided at the August 2012 BCT meeting to wait to install the other two wells in the eastern portion of the site, pending a decision on the spoils pile from the Lake Fretwell expansion that is slumping onto Site 5.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• The Third 5-Year report recommended that an ESD or other appropriate decision document clearly define the site COCs and RAOs. A pre-draft ESD is being prepared. Due date September 20, 2016.</li> <li>• It also recommended that due to increasing concentrations at CEF-005-LTM01, the well should be closely monitored, and further actions considered if exceedances continue.</li> <li>• Site 5 will be included in the 4th Five-Year Review, due September 1, 2016.</li> <li>• The expansion of Lake Fretwell was conducted near the site, and the dredged material was piled next to the site and in other areas. The spoils are currently slumping on to the site. The city of Jacksonville will be releasing a Request for Proposal to remove the spoils from the site.</li> <li>• Annual sampling is continuing, and the next event is scheduled for September 2013.</li> </ul>						

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
6		Lake Fretwell Rubble Disposal Area (3.5 acres)	1950s - 1984	Inert rubble	Concrete/asphalt from demolition of runway, construction debris, lumber, scrap metal, and 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.	NA
		<ul style="list-style-type: none"> <li>A Field Investigation Plan was submitted in March 1995. Field screening activities (geophysical surveys, monitoring well installation, surface and subsurface soil sampling, surface water and sediment sampling) were conducted in June 1997. Groundwater sampling was completed in August 1997.</li> <li>The Draft Technical Memorandum presenting investigation findings was submitted in May 1998. However, the BCT decided that additional sampling was required. Three additional soil sampling events were conducted between April and July 1999 to delineate soil contaminated with arsenic, TRPH, and benzo(a)pyrene.</li> <li>A dig and haul package was completed in August 1999. The Navy excavated and disposed of the contaminated soil in August 1999.</li> <li>The Final Technical Memorandum for NFA was issued in July 2000.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				
7	OU 3	Old Fire Fighting Training Area (1/3 acre)	1950s - 1975	Waste fuels, oil, solvents, paint, paint strippers	Burnable liquid wastes were poured onto metal objects (jets) in shallow, unlined pits and ignited for firefighting training. Wastes received from fuel farms, AIMD, squadrons, and public works shops.	Prevent exposure to contaminants that pose an unacceptable human health risk and are present at concentrations exceeding the Florida soil cleanup goal for industrial sites. Prevent exposure to groundwater that contains benzene at concentrations greater than the FDEP Groundwater Cleanup Target Level (GCTL).
		<ul style="list-style-type: none"> <li>The ROD was signed in February 1999.</li> <li>A Draft Soil and Groundwater Design Package was submitted in May 1998. In September 1998, surface soil sampling in support of the RA was conducted to further delineate TRPH, polynuclear aromatic hydrocarbons (PAHs), and inorganic contamination. The RA for soil was conducted in December 1998 and the Construction Completion Report indicated NFA for the soil.</li> <li>The groundwater portion of the design package was implemented in August 1998 and consists of annual groundwater monitoring.</li> <li>An AS pilot test was conducted at Well 8S in April 2001 after the quarterly sampling event.</li> <li>Final RACR recommending NFA was submitted on September 15, 2003, and was approved by the BCT.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
8	OU 3	Boresite Range/ Hazardous Waste Storage Area/Fire Fighting Training (6 acres)	1975 - 1984	Waste fuels, oil, solvents, paint, paint strippers, lead	Burnable liquid wastes were poured onto metal objects (jets) in shallow, unlined pits, and ignited for firefighting 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. Wastes received from fuel farms, AIMD, squadrons, and public works shops.	Prevent exposure to groundwater at Site 8 that contains VOC and SVOCs at concentrations greater than the State of Florida GTLS and that causes unacceptable risk to human health.
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; each pit was used until full and then a new pit was excavated.	NA



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
10	OU 4	Rubble Disposal Area (6.5 acres)	1950s - 1960s	Inert Rubble	Surface disposal area received building demolition debris, runway debris, and metal.	NA
	<ul style="list-style-type: none"> <li>• The Final Remedial Investigation (RI) Report was submitted in November 1996. The RI Report presented an NFA recommendation with a proposal to prepare an NFA ROD. The Proposed Plan (PP) was submitted in July 1997. Final ROD was signed in September 1997.</li> <li>• One detection of arsenic was observed greater than 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 were completed in August 1999.</li> <li>• An ESD was prepared in June 1999. The RA Report was issued in April 2000 and recommended NFA for the soil. The RA Report and the NFA recommendation were approved by U.S. EPA on June 05, 2000, and FDEP on May 15, 2000.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
11	OU 6	Golf Course Pesticide Disposal Area	1970s - 1978	Pesticide, fungicide, and herbicide containers, vehicles, metal debris	Golf course maintenance area, which was used as a burial area for between 200 and 400 empty 5-gallon cans that had contained pesticides. A limited number of full containers of pesticides were buried in 1978.	Reduce human health risk associated with exposure to surface soil containing arsenic concentrations in excess of the site-specific background concentration (referred to as Hi-Cut value) of 2.1 milligrams per kilogram. Reduce human health risk associated with exposure to subsurface soil containing arsenic in excess of the FDEP brownfield site cleanup criterion of 29 milligrams per kilogram and Dicromo Chloropropane in excess of its practical detection limit of 0.2 micrograms per kilogram. Reduce human health risk associated with exposure to groundwater containing Dicromo Chloropropane and phenol in excess of their respective risk-based cleanup goals of 0.2 and 10 micrograms per liter.
	<p><b>Interim Actions:</b></p> <ul style="list-style-type: none"> <li>An Interim ROD was signed in August 1994. The IRA was completed in January 1996. The RACR was submitted on October 18, 1996.</li> <li>The Final ROD was signed in September 1998. The Draft Design for Soil Treatment was submitted in August 1998. A soil removal in accordance with the Final RA occurred 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 remained on site. Based on the anomalies found during this investigation, test pitting was conducted in the second quarter of Fiscal Year (FY) 2000 (January to March 2000). A Soil RA Report Addendum was issued in August 2000 and indicated NFA for soil.</li> <li>The RD for groundwater was submitted in November 1998.</li> <li>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.</li> <li>A Final IRA report was completed in August 2002. A site close-out sampling event was conducted in October 2002, and the results of that sampling indicated that target cleanup levels were being met.</li> <li>A Final RA and Year 4 Annual Groundwater Monitoring Report recommending NFA at this site was submitted in June 2003 and approved by the BCT.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					
12		Public Works Rubble Disposal Area (0.5 acre)	1970s - 1984	Inert rubble, lumber, concrete, wire, cable, scrap metal, drums	Public works rubble was disposed onsite. Majority of rubble was buried approximately 3 feet below land surface, some rubble is above ground.	NA
	<p>Field investigation work plan was submitted March 1995.</p> <ul style="list-style-type: none"> <li>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.</li> <li>The Technical Memorandum for NFA was submitted in September 1998, and regulatory concurrence was received in October 1998.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
13		Day Tank 1- Fuel Spill (1.5 acres)	1981	JP-5 fuel	Day tank containing JP-5 fuel spilled in 1981. Approximately 500,000 gallons of JP-5 fuel were spilled; approximately 250,000 gallons were recovered.	NA
	Transferred to the petroleum program.					
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 by open detonation or burning.	NA
	<ul style="list-style-type: none"> <li>• The Final RI Report was submitted in October 1997.</li> <li>• The Final Feasibility Study (FS) Report and the PP were submitted in March 1998.</li> <li>• The ROD, which selected the NFA remedy, was signed in July 1998.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
	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 by combustion in a chamber, with ashes being spread over the site.	Prevent unacceptable human health risk associated with exposure to Site 15 surface soil containing benzo(a)pyrene equivalents (BaPEqs), arsenic, lead, and TRPH at concentrations greater than the established site-specific Soil Cleanup Target Level (SCTLs). Reduce ecological risk associated with exposure to Site 15 surface soil containing BaPEqs, arsenic, and lead at concentrations greater than the established site-specific ecological target levels.
15						<ul style="list-style-type: none"> <li>The Final FS was submitted in March 1998. An ecological study was conducted in September 1998. Additional sampling was conducted in 1999 to fill in data gaps for lead and PAH contamination.</li> <li>A Final Technical Memorandum for NFA for groundwater (no additional monitoring) at Site 15 was submitted in August 2001 and monitoring wells were abandoned. However, an FDEP rule change lowered the GCTL for arsenic from 50 parts per billion (ppb) to 10 ppb; therefore, the previous arsenic detection of 13.7 ppb exceeded the revised GCTL and Maximum Contaminant Level (MCL). Various rounds of groundwater sampling were conducted to evaluate arsenic exceedances and associated high turbidities.</li> <li>A Final FS was submitted in December 2006 and presented alternatives for remediation of soil and groundwater.</li> <li>A revised Final FS was submitted in April 2007, indicating that groundwater was not a medium of concern. The revised Draft ROD was submitted in June 2007.</li> <li>Preliminary pre-excavation sampling in August 2007 resulted in significant revisions to the amount of lead-contaminated soil that would require disposal as hazardous waste and to the associated costs. Changes necessitated preparation of an Amended FS and revised ROD. A Final Amended FS was submitted on April 30, 2008. The ROD was signed in June 2008.</li> <li>The Final LUC RD was submitted in August 2008, and the Final RD was submitted in June 2008.</li> <li>Excavation activities were conducted from July 7 to December 31, 2008, and a Construction Completion Report documenting the excavation activities was submitted in August 2009. Munitions concerns were identified during the excavation activities, and a cleaning was conducted in areas to be excavated.</li> <li>The Final RACR was submitted October 7, 2011, documenting the completion of all events required by the ROD.</li> </ul> <p><b>Munitions Response Program Activities:</b></p> <ul style="list-style-type: none"> <li>A Uniform Federal Policy (UFP) Sampling and Analysis Plan (SAP) was prepared to address the MRP MEC RI, and submitted as a Final document April 16, 2010. The FDEP and U.S. EPA approved the Uniform Federal Policy-Sampling and Analysis Plan (UFP-SAP).</li> <li>A Draft RI Report for Munitions Response was submitted August 4, 2010, and presented at the August 2010 BCT meeting based on the sampling described in the UFP-SAP. No regulatory comments were received and the Final version of this report was submitted on January 12, 2011.</li> <li>A Final UFP-SAP was submitted on April 29, 2011, for the MRP MEC Supplemental RI. Field activities related to the MEC Supplemental RI were conducted in May and June 2011. The results of the Supplemental RI were presented at the August 2011 BCT meeting, and the Final Supplemental RI Report was prepared and submitted on December 2, 2011.</li> <li>A Final FS for Munitions Removal was submitted in July 31, 2012.</li> <li>A Non-Time-Critical Removal Action Memorandum was prepared to detail the field activities required to address the MEC present at Site 15. The Action Memorandum was submitted as Final on August 1, 2012.</li> <li>Field activities were completed by USA Environmental in March 2013.</li> <li>A Final Interim Remedial Action Completion Report was submitted by USA Environmental on August 30, 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>The Final Finding of Suitability to Transfer allowing the property to be transferred and used as a low-intensity recreational area was submitted on August 27, 2013.</li> <li>Site 15 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
16	OU 7	AIMD Seepage Pit (40 by 3 by 10 feet)	1960 - 1980	Solvents, heavy metals, acids, blasting grit, paint residue, photo wastes	Building 313, jet engine maintenance shop, utilized a seepage pit to drain wastewater (containing solvents, paint, grease, metals) into area soils. Holding tank for wastewater is also located at Site 16; glass bead separator and associated piping also present.	Prevent exposure to groundwater that contains chlorinated VOCs at concentrations that are greater than the State of Florida GCTLs, which includes the state and federal drinking water standards and that cause unacceptable risk to human health.
<p><b>Interim Remedial Action:</b></p> <ul style="list-style-type: none"> <li>• Focused FS and RD for the removal of holding tank and impacted soils were issued. Final responsiveness summary and Interim ROD were submitted in March 1994. The removal and closure of the Non-Destructive Inspection Holding Tank were completed in June 1994. Final Non-Destructive Inspection Holding Tank Closure Certification and Report was submitted in September 1994.</li> <li>• The ROD was signed and submitted in August 1996. The RD for Site 16 was revised and consisted of RAs proposed for the source area and storm sewer system as identified below. An Amended ROD was signed in April 1999.</li> </ul> <p><b>Storm Sewer System:</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The Draft Storm Sewer RD 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.</li> </ul> <p><b>Source Area:</b></p> <ul style="list-style-type: none"> <li>• A decision was made based on new information to revise the RA to AS of the source and natural attenuation of the plume in the Amended ROD.</li> <li>• The AS/Soil vapor extraction (SVE) system installation was completed in June 1999, the operation of the system began in late June 1999, and the system was shut down in May 2000.</li> <li>• The AS/SVE system was restarted on December 22, 2000, and shut down in February 2001.</li> <li>• An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>• A Final LUC RD was submitted on April 21, 2005, and was approved by U.S. EPA on June 1, 2005, and FDEP on May 18, 2005.</li> <li>• A Final OPS Demonstration Report was submitted on April 22, 2005, and was approved by U.S. EPA on June 16, 2005, and FDEP on May 18, 2005.</li> <li>• The AS/SVE system was restarted on April 16, 2009, after a DPT investigation was completed to verify that the hot spot area continued to be within the AS/SVE system limits. The AS/SVE system operated prior to the September 2009 event, and was then shut down.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• The third Five Year review recommended that an ESD or other appropriate decision document be prepared to clearly define COCs and RAOs. A pre-draft ESD is being prepared. Due Date is September 1, 2016.</li> <li>• Annual sampling is continuing, and the next sampling event is scheduled for September 2013.</li> <li>• Site 16 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>						

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
17	OU 2	Oil/Sludge Disposal Pit Southwest (2 acres)	Late 1960s - early 1970s	Waste fuels/oils	Unlined shallow disposal pit received wastes from fuel farms.	Protect human health from potable water use of groundwater at Sites 5 and 17 that contains concentrations of VOCs, SVOCs, pesticides, and inorganics above drinking water-based ARARs or risk assessment RAOs.
	<p><b>Interim Remedial Action:</b></p> <ul style="list-style-type: none"> <li>An Interim ROD was signed in September 1994. An IRA was initiated in February 1995 for source removal and onsite treatment of contaminated soil. A RACR was submitted in September 1996.</li> <li>The Final ROD was signed in September 1995. The remedial alternative is intrinsic bioremediation with an aggressive monitoring program. The Final RD work plan was submitted in January 1997.</li> <li>An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>A Final LUC RD was submitted on April 21, 2005, and was approved by U.S. EPA on June 1, 2005, and FDEP on May 18, 2005.</li> <li>A Final OPS Demonstration Report was submitted on April 22, 2005, and was approved by U.S. EPA on June 16, 2005, and FDEP on May 18, 2005.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>The third five-year review recommended that an ESD or other appropriate decision document be prepared to clearly define COCs and RAOs. A pre-draft ESD is being prepared. Due Date is September 1, 2016.</li> <li>Annual monitoring is ongoing, and the next event is scheduled for September 2013.</li> <li>Site 17 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					
18		Ammunition Disposal Area (0.1 acre)	1940s – 1950	Ammunition crates, miscellaneous ordnance	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.	NA
	<p>A 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.</p> <p>The Draft Technical Memorandum for NFA was submitted in March 1998. The Final Technical Memorandum for NFA was submitted in October 1998 and approved by U.S. EPA on November 30, 1998, and approved by FDEP on December 2, 1998.</p> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					
19		Rowell Creek Rubble Disposal Area (3 acres)	Section until 1991	Concrete, construction debris, asphalt, wood debris, trash	Construction and operations disposal; there is limited information on disposal practices	NA
	<p>A 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.</p> <p>The Technical Memorandum for NFA was submitted in November 1998, and approved on December 10, 1998, by U.S. EPA and on January 15, 1999, by FDEP.</p> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
21	OU 10	Golf Course Pesticide Mixing Area	1950s to present	Pesticides, TRPH, and arsenic	Site activities included the storage and maintenance of golf course maintenance equipment, cleaning and rinsing of chemical-dispensing equipment, and preparation of chemical solutions. Empty containers at one time were disposed in a pile on the northwest side of the site. Rinsing took place at one of two places: on the east side of Building 238, and on a concrete pad on the north side of the site. At both locations, rinse water discharged into the ditch along the east side of the site.	Prevent unacceptable risk from exposure to soil with concentrations of arsenic greater than the background value. Prevent unacceptable risk from ingestion of groundwater with concentrations of chlordane greater than the FDEP GCTL and the federal MCL. Reduce concentrations of chlordane in groundwater to less than the FDEP GCTL and federal MCL.
<ul style="list-style-type: none"> <li>• Soil contamination was delineated and a Final Action Memorandum for soil removal to meet industrial criteria was issued in April 2001. The soil RA was completed in June 2001.</li> <li>• A Draft Action Memorandum Addendum for removal of soil to risk levels was submitted in May 2002, and the RA was completed in September 2002. The RI was submitted in October 2001, and the Final FS was submitted in September 2002. A revised Final FS reflecting industrial land use was submitted in October 2003, and a revised Final PP was submitted in early July 2005. A revised Final ROD reflecting finalized LUC language was signed in September 2005.</li> <li>• A Work Plan for long-term groundwater monitoring was submitted in June 2002, and monitoring began in July 2002.</li> <li>• A Final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 8, 2006, and FDEP on May 15, 2006.</li> <li>• A Final OPS Demonstration Report was submitted on July 28, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on July 31, 2006.</li> <li>• A Final Interim RA Report was submitted on October 13, 2006, and was approved by U.S. EPA on October 31, 2006, and FDEP on January 3, 2007.</li> <li>• Soil and groundwater sampling was conducted in April 2012. The results showed no exceedances of total chlordane in the soil or groundwater. The newly installed replacement well was used in the September 2012 annual event.</li> <li>• The replacement wells were resampled in October 2012 per FDEP recommendation.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Site 21 will be included in the 4th Five-Year Review, due September 1, 2016.</li> <li>• Annual monitoring is ongoing. The next event is scheduled for September 2013.</li> </ul>						

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
25	OU 10	Former Transformer Storage Yard	1953 to 1999	PCBs and benzo(a)pyrene	Limited information on practices. Site activities included the storage of pesticides and old transformers, operation of the wash rack, and service of equipment.	Prevent ingestion of groundwater with alpha- and beta-BHC concentrations greater than their respective cleanup goals of 0.006 microgram per liter and 0.02 microgram per liter, which are the FDEP GCTLs. Reduce concentrations of alpha- and beta-BHC in groundwater to less than FDEP GCTLs.
	<ul style="list-style-type: none"> <li>The soil contamination was delineated and a Final Action Memorandum for soil removal was issued in April 2001. A soil RA was completed during May 2001.</li> <li>The RI and FS Reports were submitted in October 2001.</li> <li>A Work Plan for long-term groundwater monitoring was submitted in June 2002, and sampling began in July 2002. The Final ROD was signed in September 2004.</li> <li>A Final Interim RA Report was issued on September 14, 2005, and was approved by U.S. EPA on November 3, 2005, and FDEP on October 14, 2005.</li> <li>A Final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006, and FDEP on May 15, 2006.</li> <li>A Final OPS Demonstration Report was submitted on July 28, 2006, and was approved by U.S. EPA on September 13, 2006, and FDEP on July 31, 2006.</li> <li>Groundwater concentrations were less than cleanup goals for two consecutive sampling events, and the Draft RACR was submitted on May 15, 2008. Regulatory comments were received, and the Final RACR was approved by U.S. EPA February 3, 2009 and by FDEP on December 16, 2008. NFA is required at Site 25.</li> <li>Site 25 was included in the 3rd Five-Year Review and documented as requiring NFA. Therefore, it is not required to be included in the 4th Five-Year Review.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					
32	OU 12	Defense Reutilization and Marketing Office Asphalt Storage Yard		PAHs and metals	Site was used for unpermitted storage of hazardous materials in drums.	Prevent unacceptable risk from exposure to soil with concentrations of PAHs greater than FDEP residential SCTLs and concentrations of inorganics greater than FDEP residential SCTLs and/or Inorganic Background Data Study values. Address the potential risk of migration of organic and inorganic contamination from soil to groundwater from soils with concentrations that exceed FDEP SCTLs for leachability.
	<ul style="list-style-type: none"> <li>A Sampling and Analysis Report (SAR), issued in 1996, indicated that metals detected in surface soil at the site may represent a hazard. Field investigations were conducted between May 1999 and April 2000 to delineate soil contamination.</li> <li>A Final Action Memorandum for soil removal was prepared in May 2000, and 140 tons of soil were excavated and disposed in August 2000. Because contaminated soil remains at the site beneath a paved storage area, an Engineering Evaluation/Cost Analysis (EE/CA) was prepared and submitted in August 2002. The EE/CA recommended groundwater monitoring with LUCs as the preferred RA alternative at the site.</li> <li>The Final ROD was signed in October 2004.</li> <li>A Final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006, and FDEP on May 15, 2006.</li> <li>A Final OPS Demonstration Report was submitted on July 28, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on July 31, 2006.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Groundwater sampling to verify that contaminants are not leaching from soil is to be conducted every five years per the ROD.</li> <li>The next sampling event will take place in May 2014.</li> <li>Site 32 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
36	OU 9	Control Tower Trichloroethene Plume		Chlorinated solvent, benzene, toluene, ethylbenzene, and xylene (BTEX) plume.	The plume was discovered during the Day Tank 2 groundwater plume investigation. The plume's major contaminants are Trichloroethene and BTEX. The groundwater plume is located south of Building 82, the control tower.	Prevent unacceptable risks from human exposure to contaminated groundwater at Sites 36 and 37; Prevent contaminant migration from groundwater to surface water at Site 36; Restore surficial aquifer quality at Sites 36 and 37 to meet Preliminary Remediation Goals.
	<ul style="list-style-type: none"> <li>• The RI Report was completed in August 1999.</li> <li>• The remediation of Day Tank 2 groundwater contamination is included in the Site 36 groundwater remediation. The FS and PP were issued in September 2000.</li> <li>• The ROD was signed in June 2001.</li> <li>• The Final RD for the AS system was submitted in September 2001, and the RA construction began in December 2001. The AS system began operation at one hot spot in March 2002. The construction for the entire system was completed in July 2002. Also, a LTM Plan for groundwater was submitted in January 2001, and monitoring began in the same month.</li> <li>• An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>• The Final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006, and FDEP on June 29, 2006.</li> <li>• A Final OPS Demonstration Report was submitted on August 1, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on October 10, 2006. The Year 5 Final Annual Monitoring Report was submitted on June 1, 2007, and recommended that the AS system at Hot Spot 2 be shut down.</li> <li>• The Year 13, 1st Semi-annual event was conducted in March 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Semi-annual sampling is continuing. The next sampling event is scheduled for September 2013.</li> <li>• Site 36 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
37	OU 9	Hangars 13 and 14 Dichloroethene Plume		Chlorinated solvent and BTEX plume	Groundwater plume located southeast of Hangars 13 and 14. The plume was discovered as part of the flightline groundwater investigation. Its major contaminants are dichloroethene and BTEX.	Prevent unacceptable risks from human exposure to contaminated groundwater at Sites 36 and 37; Prevent contaminant migration from groundwater to surface water at Site 36; Restore surficial aquifer quality at Sites 36 and 37 to meet Preliminary Remediation Goals.
	<ul style="list-style-type: none"> <li>The RI Report was completed in August 1999. The FS and PP were issued in September 2000. The ROD was signed in June 2001.</li> <li>The Final RD for the AS system was submitted in September 2001, and the RA construction began in December 2001. The AS system began operation at one hot spot in March 2002. The construction for the entire system was completed in July 2002. Also, a LTM Plan for groundwater was submitted in January 2001, and monitoring began the same month.</li> <li>An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>The Final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006, and FDEP on June 29, 2006.</li> <li>A Final OPS Demonstration Report was submitted on August 1, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on October 10, 2006.</li> <li>The AS System at Hot Spot 3 was deepened from 15 feet below ground surface to 45 feet below ground surface in 2008. The adjusted system operated between August 2009 and March 2011. Quarterly monitoring was required in the source area until there were four quarterly events post-shut-down with no exceedances. The fourth quarterly event was conducted in December 2011 and no exceedances were detected; therefore, the sampling frequency was adjusted to semi-annual across the site.</li> <li>The Year 13, 1st Semi-annual event occurred in March 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Semi-annual monitoring of the full site is ongoing and the next semi-annual event is scheduled for September 2013.</li> <li>Site 37 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					
42	OU 12	Former Boiler House/Steam Plant and General Storehouse	1940s to 1960s	PAHs, TRPH, and metals	Steam generation from buildings. Limited information on practices since the buildings were all demolished in the late 1950s and early 1960s.	NA
	<ul style="list-style-type: none"> <li>Initial investigation began in 1994. In 1999, a Sampling and Analysis Outline Report for the Yellow Water Weapons Area indicated that arsenic, barium, and benzo(a)pyrene at Site 42 exceeded FDEP SCTLs. Further field investigations were conducted between April 1999 and April 2000 to delineate soil contamination.</li> <li>A Final Action Memorandum for soil removal was submitted in January 2001, and 2,420 tons of soil were excavated and disposed in February and March 2001.</li> <li>A Technical Memorandum for NFA was submitted in March 2002. An NFA PP was issued in June 2002, and an NFA ROD was signed in October 2002.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
44	OU 12	Ditch from Defense Reutilization and Marketing Office to Wastewater Treatment Plant (WWTP)	1942 to 1999	PAHs, PCBs, TRPH, pesticides, and metals	USTs were present in the area of the WWTP. Sewage discharges from WWTP occurred. Wash water containing solvents accidentally discharged to ditch at least once.	NA
	<ul style="list-style-type: none"> <li>Initial investigation began in 1993. Field investigations were conducted between June 1999 and April 2000 to delineate soil contamination and evaluate ecological risks from sediment and surface water pathways. An Action Memorandum for soil removal was submitted in June 2000, and 290 tons of soil were excavated and disposed in September 2000.</li> <li>A Technical Memorandum for NFA was submitted in January 2002. It was determined that post-excavation ecological risks at the site are negligible. An NFA PP was issued in June 2002, and an NFA ROD was signed in October 2002.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					
45	OU 11	Facility 11, Steam Generating Plant	1941 to 1999	Benzo(a)pyrene, arsenic, and vanadium	Activities related to steam generation for the base. Limited information on practices at the site.	Prevent unacceptable risk from exposure to soil with concentrations of BaPEq and TRPH greater than the FDEP residential SCTLs and concentrations of arsenic greater than the background value. Prevent unacceptable risk from ingestion of groundwater with concentrations of vanadium greater than the FDEP GCTL. Reduce concentrations of vanadium in groundwater to less than the FDEP GCTL.
	<ul style="list-style-type: none"> <li>Beginning in 1998, field investigations were conducted to delineate soil and groundwater contamination. The soil contamination was delineated, and a Final Action Memorandum for soil removal was issued in May 2000. A soil RA was conducted in August 2000.</li> <li>The RI was submitted in June 2001, the FS was submitted in August 2001, the PP was submitted in July 2003, and the Final ROD was signed in October 2003.</li> <li>A Final LUC RD was submitted in April 2004 and was approved by U.S. EPA on May 11, 2004, and FDEP on June 12, 2004. A Final Interim RA Report was submitted on December 28, 2004, and was approved by U.S. EPA on February 8, 2005, and FDEP on January 7, 2005.</li> <li>A Final OPS Demonstration Report was submitted on November 10, 2005, and was approved by U.S. EPA on August 30, 2006, and FDEP on April 7, 2006.</li> <li>Soil sampling was to be conducted every Five Years per the ROD was conducted in July 2009, and results were evaluated as part of the Third Five-Year Review Report, which states that soil sampling will be discontinued upon the acceptance of the document. The Five-Year Review was accepted on September 8, 2011.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Discussions regarding the current LUC boundaries, groundwater flow in the surrounding area and monitoring well results are ongoing. The monitoring well network was expanded during the July 2013 sampling event. During the August 2013 BCT meeting, it was decided that CEF-045-06S would be replaced and an additional downgradient well would be installed. These two new monitoring wells will be included in the next sampling event.</li> <li>Annual groundwater monitoring is ongoing. The next monitoring event is scheduled for July 2014, and is the comprehensive Five Year event.</li> <li>Site 45 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
49	OU 5	Skeet Range	1965 to 1998	PAHs and metals	Recreational skeet shooting generated clay pigeons and lead shots.	Prevent unacceptable risk from exposure to soil with concentrations of PAHs and lead in excess of FDEP residential SCTLs. Address the potential risk of transfer of organic and inorganic contamination from soil to groundwater from soil with concentrations that exceed FDEP SCTLs for leachability.
	<ul style="list-style-type: none"> <li>Initial investigation began in 1999. Soil sampling indicated PAH and lead soil contamination. Additional soil sampling from 1999 to 2001 was conducted to delineate the extent of contamination.</li> <li>A Draft EE/CA was prepared in August 2001 to evaluate alternatives for site remediation. The Final EE/CA was submitted in February 2002.</li> <li>An Action Memorandum for soil removal was submitted in May 2002, and the remedial excavation, which began in August 2002, was completed at the end of December 2003. The delay was because of flooding over parts of the site.</li> <li>A NFA ROD was signed in September 2006.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					
57	OU 9	Flight Line Building 824A & Day Tank 1 Area	1957 to 1999	BTEX and chlorinated solvents	Aircraft ground support, specifically, BTEX from Day Tank 1 Area	Prevent unacceptable risk from exposure to Site 57 groundwater with concentrations of chlorinated VOCs, BTEX, PAHs, and TRPH greater than the cleanup goals that are the federal MCLs and FDEP GCTLs. Restore contaminated groundwater concentrations to less than cleanup goals, which are the federal MCLs and FDEP GCTLs.
	<ul style="list-style-type: none"> <li>Initial investigation began in 1997. In 1999, as part of the MB-18 Sampling and Analysis Outline Report, contamination of groundwater with PAHs and chlorinated compounds was reported. Additional well installation and groundwater sampling activities to delineate the extent of contamination were conducted in 2000. Because of the proximity to existing Day Tank 1 wells (Petroleum Program), and because of the presence of some common groundwater contaminants (petroleum-related components), it was decided in April 2001 that a comprehensive evaluation of groundwater in the entire area was required under the IRP. The RI Work Plan for this investigation was submitted in August 2001, and the RI field investigation occurred from September to December 2001.</li> <li>The Final RI Report was submitted in August 2002, the Final FS Report was submitted in October 2002, and the Final PP recommending LTM with LUCs as the RA for this site was submitted in July 2003.</li> <li>A Final ROD was signed in September 2005. A Final RD Work Plan for LTM was submitted in April 2003, and the Year 1 quarterly groundwater monitoring events occurred in May 2003, July 2003, October 2003, and January 2004.</li> <li>A Final Interim RA Report was submitted in May 2007.</li> <li>A Final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006. A Final OPS Demonstration Report was submitted on August 1, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on October 10, 2006.</li> <li>The Year 10 annual sampling event was completed in March 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Annual monitoring is continuing. The Year 11 annual sampling event is scheduled for March 2014.</li> <li>Site 57 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
58	OU 9	Flight Line Building 312	1957 to 1999	BTEX and chlorinated solvents	UST, oil/water separator, wash rack, and paint booth received waste from aircraft maintenance activities.	Prevent unacceptable risk from exposure to Site 58 groundwater with concentrations of naphthalene and TRPH greater than the cleanup goals that are the federal MCLs and FDEP GCTLs. Restore contaminated groundwater concentrations to less than cleanup goals, which are the federal MCLs and FDEP GCTLs.
	<ul style="list-style-type: none"> <li>• The RI Work Plan for this investigation was submitted in August 2001, and the RI field investigation occurred in September 2001. The Final RI Report was submitted in August 2002, the Final FS Report was submitted in October 2002, and the Final PP recommending LTM with LUCs as the RA was submitted in July 2003.</li> <li>• A Final ROD was signed in September 2005.</li> <li>• A Final RD Work Plan for LTM was submitted in April 2003, and groundwater monitoring began in May 2003.</li> <li>• A Final Interim RA Report was submitted on October 13, 2006, and was approved by U.S. EPA on October 31, 2006, and FDEP on March 12, 2007.</li> <li>• A Final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006, and FDEP on May 12, 2006.</li> <li>• A Final OPS Demonstration Report was submitted on August 1, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on October 10, 2006.</li> <li>• The Year 10 annual sampling event occurred in March 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Annual monitoring is continuing. The Year 11 annual sampling event is scheduled for March 2014.</li> <li>• Site 58 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
59	OU 9	Buildings 324/1845 Areas	1989 to present	Chlorinated solvents in groundwater	No source determined. Engine Maintenance Shack used primarily by a Naval subcontractor.	Prevent unacceptable risk from exposure to groundwater with concentrations of chlorinated VOCs in excess of their respective FDEP GCTLs. Restore groundwater quality at Site 59 to meet drinking water standards based on FDEP classification of the aquifer as a potential source of drinking water (Class G-11).
	<ul style="list-style-type: none"> <li>A RI Work Plan was submitted in August 2004. The RI field investigation was initiated in September 2004 and completed in September 2005.</li> <li>A Final Pilot Study Work Plan for bioremediation was submitted on January 11, 2006, and the pilot study was initiated the following month. The pilot study was completed in April 2007.</li> <li>The Final RI Report and Final FS Report were submitted on November 9, 2006, and April 6, 2007, respectively.</li> <li>The Final LUC RD was submitted as Draft Final on May 29, 2009, and was accepted as Final on July 1, 2009, by U.S. EPA and on July 29, 2009, by FDEP.</li> <li>The Final RD was submitted on March 24, 2008, and the ROD was signed in April 2008.</li> <li>The full-scale bioremediation system was installed and turned on in November 2008. Two of the hot spot bioremediation systems were shut down in November 2009, and the Hot Spot 2A system was expanded and operated from December 02, 2009, to July 29, 2010. The bioremediation system was taken offline on July 29, 2010.</li> <li>The Hot Spot 2A expansion system was fully restarted after the May 23, 2011, event and shutdown prior to the May 2012 event. Quarterly sampling in the treatment system area will continue for four quarters after system shut-down.</li> <li>Sampling will continue quarterly in the area of the expansion system for four quarters after May 2012 (through May 2013), and semi-annually across the full site. One semi-annual event will include analysis for natural attenuation parameters along with the VOCs analyzed during all rounds.</li> <li>Three additional monitoring wells downgradient of CEF-059-030-053 were installed and sampled in May 2013. The semi-annual event analyzing the VOCs across the site occurred in May 2013. This event was the final quarterly event post system shut-down.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Next semi-annual sampling event to occur in November 2013. Site 59 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					
PSC 51	--	Golf Course	1950s to present	Pesticides and metals	Golf course. Limited information on practices. Site activities are an active golf course.	NA
	<ul style="list-style-type: none"> <li>Initial field investigations were conducted to delineate soil contamination and began in April 1999.</li> <li>The groundwater, surface water, and sediment in the streams and ponds were investigated and a Technical Memorandum for NFA was submitted in November 1999. A revised Technical Memorandum recommending NFA at this site was submitted in September 2003 and approved by the BCT.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					



<b>Table 1-1 Installation Restoration Program</b>						
Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
OGC	OU 12	Old Golf Course (OGC)	1940s to 1950s	Pesticides and arsenic	Golf course. Limited information on practices. Site activities were an active golf course until the 1950s.	NA
	<ul style="list-style-type: none"> <li>• Initial investigation began in 1993. Field investigations were conducted between November 1999 and May 2000 to delineate soil contamination at the former tee boxes and greens.</li> <li>• A Final Action Memorandum for soil removal was submitted in July 2000, and 480 tons of soil were excavated and disposed in August 2000.</li> <li>• A Technical Memorandum for NFA was submitted in August 2001. An NFA PP was issued in June 2002, and a NFA ROD was signed in October 2002.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					

<b>Table 1-2 Secondary Documents, Installation Restoration Program</b>		
Document Name	OU, Site	Due Date
Draft Annual LTMR — Year 17	OU 1, Sites 1 and 2	Friday, 18 July 2014
Final Annual LTMR — Year 17	OU 1, Sites 1 and 2	Monday, 6 October 2014
Draft Annual LTMR — Year 18	OU 1, Sites 1 and 2	Monday, 20 July 2015
Final Annual LTMR — Year 19	OU 1, Sites 1 and 2	Tuesday, 6 October 2015
Draft Annual LTMR — Year 20	OU 1, Sites 1 and 2	Friday, 22 July 2016
Final Annual LTMR — Year 20	OU 1, Sites 1 and 2	Friday, 14 October 2016
Final Annual GWMR — Year 17	OU 2, Site 17	Friday, 28 February 2014
Draft Annual GWMR — Year 18	OU 2, Site 17	Tuesday, 16 December 2014
Final Annual GWMR — Year 18	OU 2, Site 17	Tuesday, 3 March 2015
Draft Annual GWMR — Year 19	OU 2, Site 17	Wednesday, 16 December 2015
Final Annual GWMR — Year 19	OU 2, Site 17	Thursday, 10 March 2016
Draft Annual GWMR — Year 20	OU 2, Site 17	Thursday, 15 December 2016
Final Annual GWMR — Year 16	OU 2, Site 5	Tuesday, 25 February 2014
Draft Annual GWMR — Year 17	OU 2, Site 5	Wednesday, 10 December 2014
Final Annual GWMR — Year 17	OU 2, Site 5	Wednesday, 25 February 2015
Draft Annual GWMR — Year 18	OU 2, Site 5	Thursday, 10 December 2015
Final Annual GWMR — Year 18	OU 2, Site 5	Wednesday, 24 February 2016
Draft Annual GWMR — Year 19	OU 2, Site 5	Friday, 16 December 2016
Final Annual GWMR — Year 15	OU 7, Site 16	Friday, 21 February 2014
Draft Annual GWMR — Year 16	OU 7, Site 16	Wednesday, 10 December 2014



**Table 1-2  
Secondary Documents, Installation Restoration Program**

<b>Document Name</b>	<b>OU, Site</b>	<b>Due Date</b>
Final Annual GWMR — Year 16	OU 7, Site 16	Friday, 20 February 2015
Draft Annual GWMR — Year 17	OU 7, Site 16	Wednesday, 9 December 2015
Final Annual GWMR — Year 17	OU 7, Site 16	Monday, 22 February 2016
Draft Annual GWMR — Year 18	OU 7, Site 16	Monday, 12 December 2016
Final Annual GWMR — Year 15	OU 8, Site 3	Monday, 3 March 2014
Draft Annual GWMR — Year 16	OU 8, Site 3	Friday, 12 December 2014
Final Annual GWMR — Year 16	OU 8, Site 3	Tuesday, 3 March 2015
Draft Annual GWMR — Year 17	OU 8, Site 3	Friday, 11 December 2015
Final Annual GWMR — Year 17	OU 8, Site 3	Thursday, 3 March 2016
Draft Annual GWMR — Year 18	OU 8, Site 3	Monday, 12 December 2016
Draft Annual GWMR — Year 11	OU 9, Site 57	Tuesday, 10 June 2014
Final Annual GWMR — Year 11	OU 9, Site 57	Tuesday, 26 August 2014
Draft Annual GWMR — Year 12	OU 9, Site 57	Monday, 15 June 2015
Final Annual GWMR — Year 12	OU 9, Site 57	Friday, 28 August 2015
Draft Annual GWMR — Year 13	OU 9, Site 57	Wednesday, 15 June 2016
Final Annual GWMR — Year 13	OU 9, Site 57	Friday, 26 August 2016
Draft Annual GWMR — Year 11	OU 9, Site 58	Wednesday, 11 June 2014
Final Annual GWMR — Year 11	OU 9, Site 58	Friday, 29 August 2014
Draft Annual GWMR — Year 12	OU 9, Site 58	Thursday, 11 June 2015
Final Annual GWMR — Year 12	OU 9, Site 58	Friday, 28 August 2015
Draft Annual GWMR — Year 13	OU 9, Site 58	Friday, 10 June 2016
Final Annual GWMR — Year 13	OU 9, Site 58	Friday, 26 August 2016
Draft Semi-Annual GWMR — Year 6	OU 9, Site 59	Tuesday, 28 January 2014
Final Semi-Annual GWMR — Year 6	OU 9, Site 59	Friday, 28 March 2014
Draft Annual GWMR — Year 6	OU 9, Site 59	Friday, 22 August 2014
Final Annual GWMR — Year 6	OU 9, Site 59	Thursday, 13 November 2014
Draft Semi-Annual GWMR — Year 7	OU 9, Site 59	Tuesday, 27 January 2015
Final Semi-Annual GWMR — Year 7	OU 9, Site 59	Friday, 27 March 2015
Draft Annual GWMR — Year 7	OU 9, Site 59	Friday, 21 August 2015
Final Annual GWMR — Year 7	OU 9, Site 59	Friday, 13 November 2015
Draft Semi-Annual GWMR — Year 8	OU 9, Site 59	Friday, 29 January 2016
Final Semi-Annual GWMR — Year 8	OU 9, Site 59	Monday, 28 March 2016
Draft Annual GWMR — Year 8	OU 9, Site 59	Thursday, 25 August 2016
Final Annual GWMR — Year 8	OU 9, Site 59	Tuesday, 15 November 2016
Final Annual GWMR — Year 13	OU 9, Sites 36 and 37	Saturday, 8 March 2014
Draft Annual GWMR — 1st SA Year 14 (Site Wide)	OU 9, Sites 36 and 37	Thursday, 8 May 2014
Final Annual GWMR — 1st SA Year 14 (Site Wide)	OU 9, Sites 36 and 37	Thursday, 10 July 2014



**Table 1-2  
Secondary Documents, Installation Restoration Program**

<b>Document Name</b>	<b>OU, Site</b>	<b>Due Date</b>
Draft Annual GWMR — 2nd SA Year 14	OU 9, Sites 36 and 37	Wednesday, 17 December 2014
Final Annual GWMR — Year 14	OU 9, Sites 36 and 37	Tuesday, 10 March 2015
Draft Annual GWMR — 1st SA Year 15 (Site Wide)	OU 9, Sites 36 and 37	Friday, 8 May 2015
Final Annual GWMR — 1st SA Year 15 (Site Wide)	OU 9, Sites 36 and 37	Friday, 10 July 2015
Draft Annual GWMR — 2nd SA Year 15	OU 9, Sites 36 and 37	Thursday, 17 December 2015
Final Annual GWMR — Year 15	OU 9, Sites 36 and 37	Thursday, 10 March 2016
Draft Annual GWMR — 1st SA Year 16 (Site Wide)	OU 9, Sites 36 and 37	Tuesday, 10 May 2016
Final Annual GWMR — 1st SA Year 16 (Site Wide)	OU 9, Sites 36 and 37	Friday, 15 July 2016
Draft Annual GWMR — 2nd SA Year 16	OU 9, Sites 36 and 37	Thursday, 15 December 2016
Final Annual GWMR — Year 13	OU 10, Site 21	Thursday, 27 February 2014
Draft Semi-Annual GWMR — 1st SA Year 14	OU 10, Site 21	Friday, 20 June 2014
Final Semi-Annual GWMR — 1st SA Year 14	OU 10, Site 21	Wednesday, 20 August 2014
Draft Annual GWMR — Year 14	OU 10, Site 21	Friday, 12 December 2014
Final Annual GWMR — Year 14	OU 10, Site 21	Thursday, 26 February 2015
Draft Semi-Annual GWMR — 1st SA Year 15	OU 10, Site 21	Thursday, 18 June 2015
Final Semi-Annual GWMR — 1st SA Year 15	OU 10, Site 21	Thursday, 20 August 2015
Draft Annual GWMR — Year 15	OU 10, Site 21	Friday, 11 December 2015
Draft Semi-Annual GWMR — 1st SA Year 16	OU 10, Site 21	Monday, 20 June 2016
Final Semi-Annual GWMR — 1st SA Year 16	OU 10, Site 21	Friday, 19 August 2016
Draft Annual GWMR — Year 16	OU 10, Site 21	Thursday, 15 December 2016
Draft Annual GWMR — Year 13	OU 11, Site 45	Thursday, 16 October 2014
Final Annual GWMR — Year 13	OU 11, Site 45	Tuesday, 30 December 2014
Draft Annual GWMR — Year 14	OU 11, Site 45	Friday, 16 October 2015
Final Annual GWMR — Year 14	OU 11, Site 45	Tuesday, 29 December 2015
Draft Annual GWMR — Year 14	OU 11, Site 45	Monday, 17 October 2016
Final Annual GWMR — Year 14	OU 11, Site 45	Thursday, 15 December 2016
Draft GWMR — Year 11 (Five Year event)	OU 12, Site 32	Wednesday, 10 September 2014
Draft GWMR — Year 11 (Five Year event)	OU 12, Site 32	Monday, 10 November 2014
LUC Inspections IAW (FOSTs)	Site wide	Friday, 29 March 2013
LUC Inspections IAW (MOA)	Site wide	Friday, 29 March 2013
LUC Inspections IAW (FOSTs)	Site wide	Friday, 28 March 2014
LUC Inspections IAW (MOA)	Site wide	Friday, 28 March 2014
LUC Inspections IAW (FOSTs)	Site wide	Monday, 30 March 2015
LUC Inspections IAW (MOA)	Site wide	Friday, 28 March 2014
LUC Inspections IAW (FOSTs)	Site wide	Monday, 28 March 2016
LUC Inspections IAW (MOA)	Site wide	Wednesday, 30 March 2016

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Jet engine test cell Building 334	Adjacent to Building 339	JP-5 Jet Fuel	<p>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).</p> <p>One 5,000-gallon steel AST (339-TC3) (removed in 1995).</p> <p>Past releases occurred because of tank overfilling. In October 1989, efforts to perform leak tests on Tanks TC1 and TC2 failed when inadequate seals were discovered between the manway covers and tank walls.</p>	Reduce contaminant concentrations in the petroleum-impacted soil at the site. Retard plume migration at the site. Protect human health and the environment by reducing the concentrations of hydrocarbons detected at the site to target cleanup levels.

**Current Investigative Status:**

- A Preliminary CA was initiated in December 1990 by ABB Environmental Services, Inc. United States Corps of Engineers conducted a soil investigation in January 1991. The CA was completed in 1993 and a Contamination Assessment Report (CAR) Addendum (CARA) 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 RAP was submitted on November 22, 1996. A letter report identifying a variation in soil treatment from thermal treatment to biopiles was submitted in July 1997.
- An IRA for soil excavation was completed in September 1997. Soil removal activities took place during the first quarter of FY 1999. Additional assessment activities were conducted in May and June 2001 using DPT/mobile laboratory followed by installation of permanent monitoring wells to further delineate the plume.
- The SAR Addendum (SARA) was prepared and concluded that two plumes exist on site and that additional soil removal was required on the southern side of Building 334. Two other areas where contaminated soil could not be excavated were recommended for institutional controls to prevent exposure.
- A RAP was recommended to address the contaminated (accessible) soil and groundwater on the site. The RAP was submitted on September 27, 2002. FDEP issued a response on November 30, 2002, requesting additional information and clarification. A RAP Addendum was submitted on January 20, 2003.
- The sparge system was started on November 17, 2003. The Operation and Maintenance Report covering August 1 to October 31, 2006, indicated that concentrations in monitored wells were less than GCTLs. Based on these results, the system was turned off on April 15, 2007.
- Quarterly sampling continued through March 2012, and FDEP approved reducing the sampling frequency to semi-annual.

**Other Information:**

- Part of Building 339 was demolished and rebuilt in June 1991. Approximately 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 and properly disposed offsite.

**Upcoming and Ongoing Activities:**

- Semi-annual groundwater monitoring is ongoing. The 2nd Semi-annual 2013 event is scheduled for September 2013.

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
South Fuel Farm	Facility 43, south of intersection of 2nd Street and "A" Avenue	JP-5 Jet Fuel	Location of several ASTs, USTs, and Earth-Mounded Tanks (EMTs). All ASTs were removed in 1995 and all USTs and EMTs (except Tank 342-DT) were removed in July 1994.	Achieve cleanup of contaminated areas to levels prescribed in Chapter 62-780 FAC.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>A RAP Addendum submitted on October 28, 1996, was approved by FDEP in February 1997.</li> <li>The remedial system (biosparging [BS]) was installed in February 1998 and system start-up activities were completed in March 1998. The remedial system was operating, but not to the satisfaction of the Navy. Supplemental site investigations and system evaluation were completed in November 2002, May 2003, and October 2003.</li> <li>A RAP Addendum documenting the results of the supplemental assessment and recommending modifications to improve the performance of the system was submitted on July 1, 2004.</li> <li>A Final Technical Memorandum submitted on June 6, 2006, recommended shutting down the BS system and adding bioventing wells to address soil contamination.</li> <li>A Post-Active Remediation Monitoring Work Plan was submitted in January 2008. The Post-Active Remediation Monitoring Report, which covered the events from February 2008 through March 2009, was submitted August 17, 2009, recommending further monitoring at select wells.</li> <li>It was decided by the BCT that a Site Assessment Report (SAR) would be appropriate. The SAR was prepared and submitted August 5, 2011. And additional round of sampling event was conducted the week of August 22, 2011, to supplement the SAR, based on FDEP comments. A Draft Final version of the SAR was submitted on December 21, 2011. FDEP review of the SAR is pending.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>The 1st semi-annual 2014 groundwater monitoring event is scheduled for February 2014. An evaluation of the existing system and other options will be conducted.</li> </ul>				
Truck Stand Site	Loop Road south of NFF	JP-5 Jet Fuel	Used as a loading station for the flightline refueling tank trucks resulting in probable spills and soil staining. The site consists of a control building, a pumping station, asphalt and concrete parking area, and a retention pond.	See NFF
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A preliminary CA was conducted in 1990. A CA was completed in 1991 and CAR was submitted in May 1992. Subsequently, CARA was 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.</li> <li>The Monitoring Only Plan, submitted on December 6, 1996, was approved in February 1997.</li> <li>Additional contaminated soil was removed in August 2000 and a sampling event was performed in March 2000. The September 2000 semi-annual groundwater sampling event was postponed because several monitoring wells were destroyed during the source removal activities. The monitoring wells were replaced and the sampling resumed in February 2001, and a report was submitted in April 2001.</li> <li>The April 2001 Sampling Report recommended that a RAP be prepared. A supplemental assessment to better delineate the groundwater plume began in the fourth quarter of FY 2002, and it was completed in January 2003. A Letter Report describing the results was submitted in June 2003. A remedial strategy and remedial system design were prepared for the site as part of the RAP prepared for the NFF Site. The RAP, which recommended AS and SVE, was submitted to FDEP in late March 2004.</li> <li>The Truck Stand has been incorporated into the NFF site.</li> </ul> <p><b>Other Information:</b></p> <ul style="list-style-type: none"> <li>An IRA to remove soils saturated with free product was completed in May 1996. Approximately 1,000 cubic yards of soil were excavated and properly disposed offsite. An RA report was submitted in June 1996.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
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 because of overfill; approximately 250,000 gallons were recovered.	Containment and physical removal of free product.

**Current Investigative Status:**

- The CA was completed in 1993 and a CARA was submitted to FDEP in December 1993.
- 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. A revised RAP was submitted in January 1997, recommending excavation and the installation of a BS/SVE system.
- Day Tank 1 was removed in December 1999 and the excavation of the soil mound occurred in December 1999 and January 2000. The BS/SVE system has been in place since 2000.
- Semi-annual groundwater monitoring was conducted in July 2000 and January 2001. Shortly afterward, it was determined that the petroleum plume from Day Tank 1 was co-mingling with a chlorinated solvent plume under investigation near Building 824A. The BCT decided to postpone further groundwater monitoring at Day Tank 1 and expand the scope of the Building 824A (Site 57) to include the Day Tank 1 plume area. The Site 57 investigation also included some free product delineation.
- At the June 2002 BCT meeting, it was agreed to conduct additional soil delineation outside the original source removal area to address soil contamination encountered by the Remedial Action Contractor. In August 2002, a flame ionization detector was used to delineate soil contamination based on headspace measurements. In October and November 2002, soil samples were collected from approximately 80 locations to delineate the extent of contamination. Additional temporary monitoring wells were installed to confirm the extent of free product. Additional delineation of soil contamination was completed in early September 2003, and excavation of the remaining contaminated soil and the free product was completed during the 1st quarter of FY 2004.
- A SARA was submitted in November 2003, resulting in a removal action being performed during the 1st quarter of FY 2004. An additional soil investigation began in April 2004 resulting in an additional excavation of soil, which was completed in September 2004. The Final SARA No. 2 for Day Tank 1, recommending NFA for soil, was submitted on January 30, 2006. FDEP issued a Natural Attenuation Monitoring Plan Approval Order (NAMP AO) on October 19, 2006.
- A Disassembly and Removal of the BS/SVE system report was submitted October 14, 2009. The 2010 semi-annual events were conducted in March and September 2010, and the associated report was submitted as Final on February 16, 2011. The latest sampling event was conducted on March 16, 2011.
- A UFP-SAP was submitted on March 25, 2011.

**Other information:**

- A BS/SVE system was installed by JA Jones/CH2M Hill in 2000. The system is shut down. In February 2002, JA Jones began work to locate and close the pipeline that exists between Day Tank 1 and the North-South High Speed Refuelers.

**Upcoming and Ongoing Activities:**

- Sampling is continuing annually. The Annual 2014 event is scheduled for March 2014.

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
NFF Area	Northeast corner of A Avenue and Loop Road	JP-5 Fuel	Six 595,000-gallon, interior-lined, asphalt-coated, steel, EMTs (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. However, the following spills occurred: 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.	Achieve cleanup of contaminated areas to levels prescribed in Chapter 62-780 FAC.

**Initial Remedial Action:**

- 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.

**Current Investigative Status:**

- CA was completed in 1991. The CAR was submitted in June 1992. Supplemental investigation was completed in 1993/94. Field work was conducted in April 1994 to investigate the 1,800-gallon spill. In July 1994, FDEP recommended additional investigation that was completed in 1995. A CARA was submitted in April 1996. Supplemental assessment recommended by the BCT was completed in November 1996. The RAP and the revised CARA were submitted in January 1997. Supplemental soil samples were collected in September 1997 and the results were presented in a RAP letter memorandum submitted in November 1997. Additional soil samples for Kerosene Analytical Group parameters were collected in April 1998.
- The BCT 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 AS.
- A RAP Addendum was submitted in August 1999. This addendum also described the removal of the tanks, earth mound, and soil beneath the tanks. The source removal action began in the 3rd quarter of FY 2000 and was completed in mid-February 2001. Supplemental assessment activities were initiated in July 2001. These activities included the use of DPT/membrane interface probes followed by installation of permanent monitoring wells to evaluate the current conditions and the impact of the source removal activities recently conducted at the site. Monitoring well installation and sampling were completed in February 2003, and the results indicated the need for additional wells. The additional well installation was completed in July 2003.
- The Supplemental SAR was submitted to the FDEP in October 2003. A RAP Addendum recommending AS/SVE was submitted to the FDEP in late March 2004. FDEP issued a directive to discontinue AS/SVE system operation on October 24, 2005.
- A site-wide groundwater sampling event conducted in May 2007 indicated a significant reduction in the size of the groundwater plume. An Optimization Study was conducted to evaluate the path forward, and the Optimization Report was submitted in June 2008. The recommendations were approved by FDEP on August 20, 2008. The AS system was restarted in November 2008 with a reduced number of wells operating.
- The UFP-SAP was submitted on March 25, 2011.
- The AS system was restarted in December 2011, because concentrations rebounded after the system was shut down. It operated with minor down time until it was shut off in August 2012. Between the May 2012 and August 2012 BCT meetings, the system ran for one week and was shut off for one week, as the system was effective with the pulsing of the unit and the cost of electricity to run the system is very high.
- Based on discussions with FDEP and U.S. EPA in July 2012, it was determined that a new downgradient well was required based on GCTL exceedances in the downgradient area. The new well, CEF-076-118D, was installed on October 1, 2012.

**Other information:**

- The soil source removal, conducted by JA Jones/CH2M Hill involved the excavation 140,957.03 tons of petroleum-contaminated soil and the recycling of 19,550 gallons of free product and petroleum contact water. The Source Removal Report was approved on February 22, 2002.

**Upcoming and Ongoing Activities:**

- Quarterly sampling is to continue for four quarters after the system shut down. The next quarterly sampling event is scheduled for September 2013.
- FDEP identified that sulfate needs to be considered a COC at the site and addressed in future events.

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Day Tank 2	Facility 342-DT, south of intersection of 2nd Street and "A" Avenue	JP-5 fuel	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 200,000-gallon earth mounded, interior-lined, asphalt-coated, steel 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.	Achieve cleanup of contaminated areas to levels prescribed in Chapter 62-780 FAC.
<p><b>Initial Remedial Action:</b></p> <ul style="list-style-type: none"> <li>Day Tank 2 was decommissioned in 1996 and was removed in August 1997.</li> </ul> <p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A CA Plan was submitted in June 1997. The field investigation at Day Tank 2 included installation of several monitoring wells, DPT groundwater screening points, soil borings, and soil sampling in March 1998.</li> <li>SAR was completed in July 1998.</li> <li>A Source Removal Plan was submitted in October 1998, and the removal action was conducted in November 1998. Monitoring wells that were destroyed during the IRA were replaced and sampled in April 1999. A report describing the analytical results was completed in May 1999.</li> <li>Groundwater contamination will be addressed as part of OU 9, Sites 36/37.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				



**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
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 leaking tanks: — Four 2,000-gallon tanks — Two 10,000-gallon tanks — Two 6,000-gallon tanks	Soil remedial action goals for Building 46 site-specific COCs are listed in Table 2 of the University of Florida SCTLs Development Web Site. Groundwater remedial actions goals are listed in Table 1 of the University of Florida SCTLs Web Site.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A RAP was submitted in March 1999. This RAP included the design of an AS/SVE System for the remediation of contaminated soil and groundwater. The RAP was revised to use a nutrient-enhanced BS system to remediate the source area and plume in June 2000. Installation of the remediation system was completed in January 2001. The Remedial Action Contractor reported contaminated groundwater exceeding GCTLs in a perimeter well.</li> <li>A supplemental assessment to delineate this contamination began during the fourth quarter of FY 2002 and was completed in January 2003. A Letter Report describing the results of the investigation was submitted on May 28, 2003.</li> <li>A RAP modification was issued in March 2004 to extend the current system to adequately remediate that part of the groundwater plume that was not currently being affected. The two PHOSter systems (east and west) were removed and were replaced by one BS system in the eastern portion of the site.</li> <li>A Remedial Action Optimization Report was submitted in May 2007 to address path forward for two small hot spots with exceedances of FDEP Natural Attenuation Default Concentrations for naphthalene and methyl tertiary butyl ether. The Optimization Report recommended redirecting flows to these two hotspots and bringing the west side BS system offline. In January 2008, FDEP approved discontinuing use of the west system.</li> <li>Both systems were removed from the site on January 31, 2008. A new AS system was installed on the eastern side of the site on September 17, 2008. The AS system was shut down in December 2009.</li> <li>A Final USP-SAP was submitted on March 25, 2011.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Semi-annual monitoring is ongoing, and the 2nd semi-annual event is scheduled for September 2013.</li> </ul>				

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
North-South Apron Plume	East of Building 815 on eastern edge of north-south flightline apron	Unknown	Possible leakage from storm sewers or downward migration of an upgradient plume from an unknown site.	Achieve cleanup of contaminated areas to levels prescribed in Chapter 62-780 FAC.

**Current Investigative Status:**

- Earlier investigations indicated that VOCs were present in the groundwater at concentrations that exceeded FDEP GCTLs. Additional assessment activities conducted between November 1999 and November 2000 confirmed that VOCs were present in the groundwater at concentrations that exceeded GCTLs. A SAR was submitted recommending implementation of natural attenuation monitoring.
- FDEP issued a NAMPAO in March 2001. The first three quarterly events indicated that groundwater VOC concentrations continued to exceed GCTLs, and the plume appeared to be static, and a supplemental assessment was recommended.
- The additional assessment began during the fourth quarter of FY 2002. A Letter Report was submitted on January 14, 2003, recommending natural attenuation monitoring. An FDEP response, issued on May 2, 2003, requested additional assessment to delineate the vertical extent of contamination. The installation and sampling of additional wells was completed in July 2003, and a second Supplemental Assessment Letter Report was submitted to FDEP in December 2003. FDEP issued a response on January 30, 2004, requesting additional sampling.
- The Navy issued a Scope of Work for the additional sampling on July 20, 2004, and the sampling was completed on March 24, 2005. A Supplemental Assessment Letter Report was issued in August 2005 and approved by FDEP in September 2005. A new groundwater monitoring program began on July 7, 2006.
- A Final USP-SAP was prepared for the site, and submitted on April 12, 2010, and monitoring is ongoing.
- Monitoring frequency was changed to annual after the January 2012 event.
- Year 8 annual sampling was conducted in January 2013, and a confirmatory sampling event was recommended to be performed in July 2013 to confirm that levels of benzene were detected less than its GCTL and FDEP approved the recommendation.

**Upcoming and Ongoing Activities:**

- The most recent sampling event was conducted in July 2013. Results showed no exceedances at any of the wells for a second consecutive sampling event, so a Site Rehabilitation Completion Report will be submitted to the FDEP to get a Site Rehabilitation Completion Order.

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Building 82/ Tank G-82	Eastern side of Building 82 on western edge of north-south flight line apron		Remaining contaminated soil next to Building 82 removed in 2000.	Achieve cleanup of contaminated areas to levels prescribed in Chapter 62-780 FAC.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A site investigation was conducted from October 1999 to July 2000. Petroleum contaminants were detected in the soil and groundwater. A total of 148.1 tons of contaminated soil were removed and approximately 49 yards of contaminated soil were left in place because of physical obstructions.</li> <li>A groundwater Monitoring Only Natural Attenuation (MONA) proposal was recommended to begin after the excavation was completed. On April 18, 2002, additional subsurface soil samples were collected for TRPH Subclassification Evaluation to determine if the contaminated soil left in place required excavation. All results were less than FDEP Industrial SCTLs; therefore, the soil was left in place and LUCs were put in place.</li> <li>A Monitored Natural Attenuation (MNA) Work Plan was submitted in May 2008; MNA monitoring began in July 2008, and sampling was performed quarterly. Sampling was changed to semi-annual frequency after the Year 1 Fourth Quarter Report.</li> <li>A Final USP-SAP was prepared for the site, and submitted on April 12, 2010.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Semi-Annual sampling is continuing. The Year 6, 1st semi-annual event is scheduled for October 2013.</li> </ul>				
BP Wells	Southeast of Building 880 on western edge of the north-south flightline apron		ASTs in secondary containment and an associated Oil-Water Separator.	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A groundwater investigation was conducted in 1999. The results from the 1999 investigation indicated that COCs in groundwater exceeded GCTLs in two monitoring wells. Additional assessment activities were conducted in February 2000. The SAR submitted in August 2000 indicated that groundwater had been impacted by VOCs. In response to the SAR, FDEP issued a NAMPAO.</li> <li>The Navy gave approval to conduct a treatability study at this site using In-Situ Submerged Oxygen Curtain technology. The In-Situ Submerged Oxygen Curtain system was installed and began operation in October 2002 after a baseline groundwater sampling event was conducted. The Fourth Quarter Monitoring and Annual Treatability Study Evaluation Report, recommending that the treatability study be discontinued, were approved June 2004.</li> <li>Natural Attenuation Monitoring Plan (NAMP) and an MNA Work Plan were submitted in May 2008, MNA monitoring began in July 2008.</li> <li>A Final USP-SAP was prepared for the site, and submitted on April 12, 2010.</li> <li>It was decided by the BCT that a chemical injection (Oxygen Release Compound [ORC] Advanced) event would take place at BP Wells to address the Natural Attenuation Default Concentrations exceedances.</li> <li>Semi-annual monitoring is on hold. The ORC Advanced injection was conducted in November 2011, and the 1st Post construction/ORC injection sampling event was conducted in May 2012. The 2nd Post construction/ORC injection sampling event was conducted in December 2012.</li> <li>The 3rd Post construction/ORC injection sampling event was conducted in June 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>The 4th Post construction/ORC injection sampling event is scheduled for December 2013.</li> </ul>				

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Ocala F-18 Crash Site	In Ocala National Forest approx. 82 miles south of Cecil Field and approx. 22 miles southeast of Ocala, Florida	Jet Fuel	Past releases due to crashed F-18 Jet	Achieve cleanup of contaminated areas to levels prescribed in Chapter 62-780 FAC.

**Current Investigative Status:**

- In June 1994, a Navy F-18 jet crashed in the Ocala National Forest.
- A site assessment and initial RA were conducted. A MONA Plan was submitted in April 1998 requiring quarterly monitoring.
- Based on the new sampling data, a revised MONA was proposed with new milestone objectives for different COCs and different wells, and the MONA was approved in October 2005.
- A supplemental soil sampling event was to be conducted in the area around the source well because February 2008 concentrations of benzene, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene exceeded end of Year 3 action levels specified in the NAMP AO. The Year 4 event was conducted in March 2009 and the supplemental soil sampling was conducted concurrently.
- It was decided by the BCT that semi-annual sampling would be appropriate for this site to monitor for seasonal fluctuations. The first semi-annual, Year 7 sampling event was conducted August 22, 2011, and the associated report was submitted on November 30, 2011.

**Upcoming and Ongoing Activities:**

- Semi-annual sampling is ongoing. The Year 9, 1st semi-annual event is scheduled for February 2014.

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Building 81, Tanks 81 A, B, and C	Next to former locations of Building 81, near PCA 25	Gasoline	Tanks 81 A, B, and C	Achieve cleanup of contaminated areas to levels prescribed in Chapter 62-780 FAC.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>The 2002 SAR identified shallow groundwater contamination and concluded that soil contamination was adequately addressed by previous source removals in the area. The SAR recommended implementation of a groundwater monitoring program and groundwater use restrictions. A NAMP was signed by FDEP on October 1, 2002.</li> <li>The Supplemental Site Assessment Letter Report recommended that additional wells be installed to delineate shallow and intermediate groundwater contamination. Based on sampling results, preparation of a revised NAMP and continuation of the quarterly monitoring program was recommended. The revised NAMP was submitted on November 21, 2007.</li> <li>A UFP-SAP was prepared for the site and submitted in July 2010 and monitoring is ongoing based on the SAP.</li> <li>A Work Plan to install a downgradient well from CEF-081-261 was submitted in April 2013 and is pending approval. Year 3, 2nd Semi-annual sampling occurred in April 2013.</li> <li>A Supplement Site Assessment Report is in progress for this site.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>LTM is continuing, with the sampling frequency being semi-annual. The Year 3, 2nd semi-annual event is scheduled for October 2013.</li> </ul>				
Building 271	To the west and east of Building 271.	Gasoline	Four USTs and 2 Oil Water Separatorss	No further remedial action is planned for soil. For groundwater: retarding plume migration at the site. Protecting human health and the environment by reducing the concentrations of hydrocarbons detected at the site to target cleanup levels.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A RAP was submitted in September 2002 to the FDEP and a RAP Addendum was submitted to the FDEP in January 2003. AS was selected as the remedial alternative. The AS system was installed from September to November 2003, and commenced operation on November 17, 2003.</li> <li>The system was put back online, and quarterly sampling is ongoing. The system was taken offline in September 2008.</li> <li>A Draft USP-SAP was submitted to the BCT in August 2010.</li> <li>In June 2012, based on the Final 2011 Groundwater Monitoring Report for Building 271, FDEP recommended additional evaluation of the site. The results of the additional assessment may be used in support of a future RAP for the site.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Quarterly sampling is ongoing. The second quarter 2013 event is scheduled for September 2013.</li> </ul>				

**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Hangar 815 Wash Rack	North of Building 815, south of Building 1845	Wash water, petroleum products	Wash Rack	Achieve cleanup of contaminated areas to levels prescribed in Chapter 62-780 FAC.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>• A SAR for the site, now designated Building 815 Wash Rack Area, was submitted in August 2000 and identified TRPH and naphthalene groundwater contamination at the site. MONA was recommended based on the results of the SAR. Semi-annual monitoring began in January 2001.</li> <li>• The site was transferred to the IRP to be addressed with Site 59, but was transferred back to the Petroleum Program based on discussions at the September 2007 BCT Meeting.</li> <li>• A SAR Addendum was recommended during the September 2007 BCT meeting and was submitted to FDEP on May 20, 2008.</li> <li>• A NAMPAO was issued on November 16, 2008, and a Final USP-SAP was submitted on April 12, 2010.</li> <li>• Sampling frequency was changed from semi-annual to annual as agreed upon at the November 15, 2011, BCT meeting and with FDEO approval of the Second Semi-Annual, Year 3 Groundwater Monitoring Report.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Annual sampling is ongoing. The Year 6 annual event is scheduled for January 2014.</li> </ul>				
Building 365 MRA	On the northwestern edge of the north-south flightline	UXO	Munitions discarded by unknown persons.	No RAOs
<ul style="list-style-type: none"> <li>• Munitions were first identified at the Site in September 2004. A Munitions Response Team visited the site and talked with one of the responding Florida Air National Guard Explosives Ordnance Disposal Technicians. An Explosives Safety Submission was submitted in October 2004 and approved by the Department of Defense Explosives Safety Board in November 2004. The initial mag and dig operation was conducted in December 2004, and it was determined that the area needed to be expanded. The area was expanded according to a Work Plan submitted in February 2005 and MRP investigations continued.</li> <li>• Munitions response on 28.5 acres completed to date.</li> <li>• Munitions response fieldwork started in November 2011 and completed on December 5, 2011. No MEC items were found in periphery grids. The MEC items that were recovered during fieldwork activities are currently stored in a magazine at Hanger 860 and are scheduled to be disposed of by demolition in April 2012. The After Action Report was submitted in June 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>				



**Table 1-3  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Hangar 860 MRA	On the northwestern edge of the east-west flightline	UXO	Munitions discarded by unknown persons.	No RAOs
<ul style="list-style-type: none"> <li>• Temporary storage of munitions is reported to have taken place at the Building 865 facility.</li> <li>• A possible MEC item was first identified in the MRA in February 2005 during a visual site survey for an upcoming construction project. Munitions response has continued since in various investigations.</li> <li>• Munitions response on 44.5 acres completed to date.</li> <li>• Fieldwork started in November 2011. MEC was found in periphery grids; therefore, additional munitions response is required to the west and south of current MRA. The MEC items that were recovered during fieldwork activities are currently stored in a magazine onsite and are scheduled to be disposed of by demolition in April 2012.</li> <li>• A Work Plan was submitted in July 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities</b></p> <ul style="list-style-type: none"> <li>• Supplemental Field Work is scheduled for February 2014.</li> </ul>				