EPA
United States
Environmental Protection
Agency

# Partners In Progress

EPA Update on Federal Facility Cleanup and Reuse

3

Federal Facilities Redevelopment Breathes New Life Into Local Economies

7

EPA Proves That Communication + Cooperation = Success + Savings

8

Five Federal Facilities Achieve Construction Completion

11

Two Federal Facilities Deleted from NPL

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## Teamwork Key In Fighting Chicago Ridge Fire

A cooperative spirit among agencies emerged when it came to dealing with the Chicago Ridge Fire at Camp Hale, Colorado, in the midst of numerous summer wildfires. On July 7, 2002, a lightning strike caused a small fire at Camp Hale, located in the White River National Forest between Leadville and Minturn, in west-central Colorado. The Camp Hale Formerly Used Defense Site (FUDS) is now used year-round by the public as a recreation area and is included on the National Register of Historic Places. During World War II, the Army used Camp Hale as a warfare training site and for weapons and equipment testing.

A fire crew prepares for action following reports of a fire in an area contaminated with abandoned munitions at Camp Hale, Colorado.

The July fire in the East Fork Valley at Camp Hale was reported the day after the lightning strike, but responding

<Continued on Page 3>

## Redevelopment Successes Brought into Focus

FromtheDirector

Welcome to the seventh issue of Partners in Progress (PIP). This newsletter highlights some of the diverse federally-owned properties that have been successfully transformed into thriving new places to live and work. Thanks to the innovative ideas, unwavering commitment, and support from various affected parties, these redeveloped facilities avoided becoming unwanted brownfields. Instead, they are well on the way to reaching their full economic and environmental potential.

Businesses are thriving at the new Business Depot Ogden in Ogden, Utah.

EPA defines brownfields as "abandoned, idled, or under-used facilities or sites where expansion or redevelopment is complicated by real or perceived environmental contamination." The Agency started its Brownfields Initiative in 1995 to bring new attention to these areas, helping to mitigate any potential heath risks and restore the economic vitality of these sites. EPA's Federal Facilities Restoration and Reuse Office (FFRRO) is equally dedicated to working

<Continued on Page 2>

## From the Director

<Continued From Page 1>

with federal, state, and local entities to help transition former federal facilities into renewed, contributing parts of a community.

In this issue of PIP, we focus on several remediated federal facilities across the nation that offer new economic promise to their communities. In Charleston, South Carolina, residents feared that decommissioning one of the United States' largest Naval homeports would shipwreck the local economy. The cleanup team and local redevelopment authorities, however, helped keep businesses running, attracted new businesses to the area, and even found new uses for the land that will improve quality of life for years to come. In Miamisburg, Ohio, and Ogden, Utah, innovation and diligence are putting cleanups ahead of schedule and are creating new business districts that will stimulate the local economies. Finally, we cover a former Army base in Alexandria, Virginia, that became a flourishing residential community including parks, a library, and an elementary school.

Effective and timely cleanups are an integral part of redevelopment, and excellent cooperation and communication remain the cornerstones of the cleanup process. This issue of PIP highlights exemplary team efforts to improve cleanups and respond to crises. Our page 1 article focuses on a multi-agency team that consolidated efforts to successfully battle a fire at a site in Camp Hale, Colorado, contaminated with abandoned military munitions. In another article, we spotlight a team of federal, regional, and local government agencies that was recently recognized for outstanding improvements to the remedial investigation and feasibility study at a former federal waste dump in Aiken, South Carolina.

Members of the Camp Hale, Colorado, fire crew stand ready

These successes reinforce the idea that we must continue pushing new boundaries to increase the effectiveness of cleanup technologies, processes, and policies. Only through progressive remediation, redevelopment, and revitalization of brownfields and other potentially contaminated sites can we ensure all our nation's resources are used to their full potential while keeping environmental and human health a top priority.

We welcome your comments, questions, and suggestions. For more information, visit us on the Web at <www.epa.gov/swerffrr>. PIP

*—James Woolford, FFRRO Director*

## Acronyms Explained

| | |
|---|---|
| BRAC | Base Realignment and Closure |
| DoD | U.S. Department of Defense |
| DOE | U.S. Department of Energy |
| EPA | U.S. Environmental Protection Agency |
| FFRRO | Federal Facilities Restoration and Reuse Office |
| FUDS | Formerly Used Defense Sites |
| NPL | National Priorities List |
| PCB | Poly-chlorinated biphenyl |
| PCOR | Preliminary close out report |
| ROD | Record of Decision |
| TCE | Trichoroethylene |
| UXO | Unexploded ordnance |
| VOC | Volatile organic compound |

## *Partners In Progress* Philosophy

Stakeholders involved in federal facility cleanups are diverse, with differing backgrounds, interests, and perspectives. All of these stakeholders, however, share a single common goal—progress. *Partners In Progress* (*PIP*) provides a forum for stakeholders to exchange information, offer solutions, and share stories about what works and what doesn't. We encourage you—our readers—to write to us about your activities that foster teamwork, promote innovation, and strengthen community involvement. Only by working together can we achieve "federal cleanups that put citizens first."

Office of Solid Waste and
Emergency Response
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www.epa.gov/swerffrr/

## Chicago Ridge Fire

<Continued From Page 1>

was complicated by the fact that the fire was located in an area contaminated with unexploded ordnance (UXO). The East Fork Valley area had been closed in 2000 following the discovery of live rifle grenades and a mortar round.

As a result of the UXO contamination at the site, authorities had to work quickly but very carefully to address the fire and the risk that it posed. The United States Forest Service (Forest Service), along with the Omaha District Corps of Engineers (Corps), the Colorado Department of Health and Environment (CDPHE), and an Ordnance Safety Specialist from the St. Louis District of the Corps, worked together to formulate a feasible approach to extinguish the fire.

A lightning strike in the forest caused the fire, which threatened an area contaminated with unexploded ordnance from former defense activities.

Through brainstorming and teamwork, the Forest Service, Corps, and CDPHE decided on a response that took into account the specific site characteristics and contamination. The parties involved focused on what each separate group could best contribute to the effort. The Forest Service fire crews worked with the ordnance specialists from the Corps to ensure that they responded appropriately to the threat of any UXO they might encounter while fighting the fire.

"Both teams sat down to figure out their constraints and put together a response based on those constraints," said Jeff Swanson of CDPHE. "By having people in the field who knew the terrain and had an ordnance background, the team was able to come up with a workable response to the fire."

After a safe, ordnance-free path to the fire was cleared, the fire crew entered the area and had the fire under control within a matter of hours. After extinguishing the fire, crews carefully hiked away from the area. Along the way, they encountered a live rifle projectile, but with the Corps' ordnance knowledge and instructions, they returned safely.

"A little over two days after learning of the fire, the UXO and fire crews worked professionally, cooperatively, and safely to execute the operation in mutual support of each other in a safe and effective manner," said Swanson.

As a result of this particular incident, CDPHE, the Forest Service, and the Corps worked to create a standard protocol for dealing with fires at Camp Hale in the presence of UXO contamination. An interim protocol developed immediately following the incident was finalized in late July. The protocol distinguishes several UXO fire hazard areas in order to immediately identify the appropriate response based on UXO contamination in a particular area. In addition, the protocol clarifies the roles and responsibilities of the parties involved in any response activities. Thanks to this protocol and the cooperation that created it, CDPHE, the Forest Service, and the Corps will be able to more effectively respond to future fires on federal lands. PIP



# Federal Facility Redevelopment Breathes New Life into Local Economies

Celebrating Success

## Army Facility Becomes Home Base for Modern Suburban Community

Cameron Station, a 101-acre complex in Alexandria, Virginia, is the site of a former Army installation that was successfully transformed into a thriving community of single family homes, townhomes, and condominiums. The community includes more than 2,000 housing units and commercial space as well as a community center with recreational and health facilities.

Beginning in the 1950s, Cameron Station provided general support to the Military District of Washington, including a steam plant, a grounds maintenance facility, print shops, and a photo laboratory. Cameron Station also became the headquarters of the Defense Logistics Agency. In 1988, the

<Continued on Page 4>

## Federal Facility Redevelopment

<Continued From Page 3>

Modern town homes now line the streets at Cameron Station, a former defense complex in Alexandria, Virginia.

Army recommended closing the site and relocating its activities. During the closure process, hazardous materials, including poly-chlorinated biphenyls (PCBs), dioxin, lead, pesticides, petroleum hydrocarbons, trichloroethylene (TCE), and chlorinated hydrocarbons, were detected in the site's soil and groundwater.

EPA, the Army, the Virginia Department of Environmental Quality, and the city of Alexandria participated in the site cleanup. To prepare the site for closure, the cleanup team removed leaking underground storage tanks and PCB oils from transformers. In addition, contractors performed soil excavation and treatment, sewer trap cleaning, and asbestos removal. The cleanup team also used soil vapor extraction to treat petroleum contamination at the site of a former gas station.

In 1996, following these cleanup activities, the Army sold 101 acres of the property to Greenvest L.C., with the remaining 63 acres transferred to the city of Alexandria for use as a park. Although early cleanup actions have been completed, the Army, state, and EPA continue to monitor and treat the TCE contamination in the groundwater with an onsite pump and treat system. The team is working to determine the length of time they must continue using the pump and treat system at the site.

### Revitalized Naval Complex Puts Local Economy in Ship-Shape Condition

The former Naval Complex in Charleston, South Carolina, is making waves in the Base Realignment and Closure (BRAC) community by boasting one of the fastest job replacement rates following base closure in 1996. During the past six years, the number of jobs has grown from 500 to more than 4,200. Approximately 1,000 of these jobs are federal, with the remainder spread among more than 70 private sector companies.

In addition, in 2002, the city of North Charleston was awarded part of the land for its ambitious Noisette Project. A major redevelopment plan for a largely blighted area in the southern part of the city, the Noisette Project will transform three-quarters of a mile of former base property into a river-front park along the Cooper River. The park will include a mix of natural preserves and recreational facilities, with the first phase of construction planned for completion in 2003.

Established in 1902, the Charleston Naval Complex quickly became the Navy's third largest home port. The site housed operations for a variety of naval activities, including a 21-pier ship yard, training and supply centers, and a hospital. When the BRAC Commission announced site closure, nearly 30,000 Navy employees were working on the 1,600-acre complex. When the base formally closed, the Navy gave the city the deed to 288 acres and 120 buildings on the property.

Noisette™ NEIGHBOR

*Volume 2 Pages 1 & 2* *September 12, 2002*

**RIVERFRONT PARK PLANS UNVEILED!**

You've probably heard, and may have seen in the newspaper, that the concept plans for the first phase of North Charleston's new 3/4-mile-long Riverfront Park are here. Phase 1 is the southern half of the Park, lying along the Cooper and south of the Noisette Creek, an area of 15-20 acres.

This is a significant first step in returning access to the river's edge to residents. The design comes from conversations we've had with you about what you'd like to see. Residents have input ideas since last year when the Noisette Company began meeting with individual neighborhoods and civic groups.

"We've created the framework for a marvelous community space based on what North Charleston residents said they wanted," said John L. Knott, Jr., CEO of the Noisette Company.

The scope of the Park shown at the right indicates a bridge to be built across the Noisette Creek to the site proposed by the City for the H.L. Hunley Museum and northward to a riverwalk promenade along future development of shopping, restaurants, and entertainment. Noisette Preserve ecosystem restoration will connect to the Riverfront Park.

Phase 1 will accommodate day use by individuals and groups, as well as large City celebrations similar to the North Charleston 30th Anniversary picnic, concert, and fireworks last June. An amphitheater will have concerts and shows in an informal lawn picnic setting. Art will be incorporated in the landscape. Until 70 years ago, there was a marsh island at the mouth of the Noisette. We plan to re-create its boundaries with native vegetation in Phase 1. Kayak and canoe access should be available where the Park touches the Creek.

Much of the Phase 1 Park work will be to remove things. The old Officers' Club and swimming pool will be de-constructed, and a large asphalt parking lot removed. Existing roads will be replaced with pervious surface trails and walkways.

Going forward, we'll refine the design, and present a construction plan to the City before the end of the year. We are working to deliver Phase 1 of the Park with a celebration of July 4, 2003. Importantly, the City is working on two critical aspects of making this schedule and the Park a reality. The first is to get the Park land from the Redevelopment Authority (RDA) by November 1st. The second is to develop the Naval Base Tax Increment Financing District to the point where financing can be secured to begin construction in January. This also means Base land, which Noisette is buying, must transfer by November 1st and go on the tax rolls. If all things go according to plan, this long-time vision of Mayor Summey and the Council "will come to be" and the revitalization of the Noisette Area of the City will "kick into overdrive."

Review of this design will continue through the month of September. If you have comments, call Jim Augustin at 302-2106.

Phase 2 Noisette Riverwalk
Phase 2 Riverwalk Link
Noisette Preserve & Trail Extensions
Art Display
Picnic Shelters & Butterfly Meadow
Rediscovered "Island"
Amphitheater
River Trellis & Gazebo
Bike/Walking Trail
Playground & Children's Garden
Restored Panama Houses, Possibly with a Restaurant
Open-Air Market & Community Building
Redesign Pier B for Fishing and Water Taxi Access
Historic Display & Cultural Center

**NORTH CHARLESTON AND STATE PORTS AUTHORITY AGREE ON DIVISION OF BASE PROPERTY**

On Thursday, July 25, the City of North Charleston and the State Ports Authority agreed to a division of the Navy Base property.

Provided the State Ports Authority (SPA) and the Charleston Naval Complex Redevelopment Authority (RDA) continue to cooperate with the terms of the agreement, all of the land north of Supply Street will transfer to the city without charge. The city will, in turn, sell the land to the Noisette Company for development.

"This is an enormous step forward," City Councilman Kurt Taylor said to the *Post & Courier*. "We can now jump-start the Noisette Project. It means the Riverfront Park is close to being a reality…."

Currently, a memorandum of understanding is being drafted to outline details of the agreement. Significant investments will be made to protect neighborhoods from truck and rail traffic – including a series of overpasses that Mayor Keith Summey says will require the state to invest $200-250 million dollars.

"We can't wait to get started on the Riverfront Park," said John L. Knott, Jr., CEO of the Noisette Company. "We've been working on conceptual designs, and are meeting with the community for feedback. North Charleston's mayor and city council have done a brilliant job in getting the division of property fairly negotiated; what we need now is for the Ports and the RDA to see the deal through, and we're off to the races!"

A local community newsletter announces plans for the Noisette redevelopment project, which uses part of a former naval base in Charleston, South Carolina.

Decades of naval activity left the site contaminated with environmental hazards including heavy metals, asbestos, and petroleum products. To speed up corrective action, the Navy, working with EPA Region 4 and the South Carolina Department of Health and Environmental Control, chose to pilot an innovative contracting approach—a guaranteed fixed-price contract—and contributed $28.8 million to the project. This contracting approach grants almost full management and financial responsibility for the site cleanup to independent contractors. To date, cleanup measures have included asbestos and underground storage tank removal, soil extraction, and groundwater monitoring.

The Navy also supplied initial funding to establish the Charleston Naval Complex Redevelopment Authority, an entity that attracts new companies to occupy former base property. In addition, local government and businesses established a second development entity, the Charleston Regional Development Alliance, to promote economic growth both on the former base and in the surrounding community. These agencies' recruitment efforts have encouraged 99 new companies to settle near the base, adding more jobs and $2.2 billion of direct capital investment to the region's economy.

## Cleanup Transforms Defense Depot into Award-Winning Business District

A former federal facility in Utah has been recognized for its successful redevelopment. The Business Depot Ogden was awarded the prestigious Facility of the Year Award by the National Association of Installation Developers (NAID) in August, 2002. This award recognizes facilities that make outstanding achievements in revitalizing BRAC communities.

Business Depot Ogden currently occupies 6.5 million square feet of warehouse space, or 75 percent of a former Department of Defense (DoD) site. Since the construction began, the business district has created or retained more than 1,000 jobs, and job growth has occurred at a rate of 423 percent during the past four years.

Business Depot Ogden is the result of cleanup and redevelopment activities at the former Defense Depot Ogden. Established in 1941, this former DoD distribution depot stored, maintained, and shipped a variety of defense-related materials. Although it wasn't identified for closure until 1995, EPA and DoD began cleanups in the late 1970s to address the heavy metals, pesticides, and volatile organic compounds that contaminated the site's soil and groundwater.

To date, all aspects of the remediation meet or exceed the goals stated in the formal Reuse Plan created by the redevelopment team. In addition, infrastructure improvements at the site—sewer, power, water, roadways, and landscaping—are eight years ahead of schedule.

"The demand outlook for reuse of Defense Depot Ogden is extremely positive," said Mike Pavitch, director of the redevelopment authority. DoD, U.S. EPA, EPA Region 8, and the Utah Department of Environmental Quality continue to monitor cleanup activities at the site. As parcels of land are remediated, DoD transfers them to the Ogden Local Redevelopment Authority to be incorporated into the business district.

The scenic skyline at the new Business Depot Ogden in Ogden, Utah.

## Innovative Cleanup Paves Way for Advanced Technology at DOE Site

Thanks to a unique process for identifying and remediating contamination, more than 40 percent of the former Mound Plant facility in Ohio has been transferred for redevelopment and is now the home of the growing Mound Advanced Technology Center. Nearly 10 years after redevelopment began, this new business and industrial park hosts 32 businesses employing more than 350 workers.

Beginning in 1948, Mound Plant operated as a major research, development, and production site for the U.S. Department of Energy's (DOE's) weapons and energy defense projects. Early research activities took an environmental toll, however, and EPA placed the site on the Superfund National Priorities List (NPL) in 1989 because of heavy radioactive and volatile organic compound contamination. In 1993, as the need for defense

<Continued on Page 6>

## Federal Facility Redevelopment

<Continued From Page 5>

research decreased, DOE decided to decommission and redevelop the Mound site.

Today, the Miamisburg Mound Community Improvement Corporation (MMCIC) is responsible for the site's redevelopment, while EPA, DOE, and the Ohio Environmental Protection Agency take the lead on environmental cleanups. The federal government has committed $800 to $900 million to the cleanup project, which is scheduled for completion by 2006.

All potential release sites have to be identified as needing no further action before the land is transferred for redevelopment. To speed land transfer, the team is using an innovative approach to the cleanup effort—investigating approximately 400 smaller "potential release sites" rather than the nine larger operable units identified in the Federal Facility Agreement. This approach saves the team time and effort because it allows them to focus on contaminated areas individually and address them appropriately. Otherwise, all of the small problem areas would have to be treated as a larger group and would be subject to a lengthy evaluation process.

The core cleanup team evaluates each potential release site and decides if it needs no further action, a response action, or further assessment. As part of this evaluation, the team considers how MMCIC wants to use the land before deciding on appropriate cleanup and conducts a residual risk assessment as a final check. This assessment involves compiling all final soil and groundwater data and verifying that the risk is acceptable for commercial reuse. Thanks to this new cleanup process, EPA has deleted from the NPL three of the four parcels of land which were then transferred for redevelopment. PIP

An aerial view of the Mound Advanced Technology Center in Miamisburg, Ohio.



# EPA Joins E-Government with EDOCKETS

EPA recently unveiled a new Web service, EPA Dockets (EDOCKET) to update its regulatory process. Formerly the Regulatory Public Access System, EDOCKET is one of EPA's responses to the emerging demands of e-government. This new, user-friendly service will spur public involvement in EPA's rule-making process by providing electronic access to Federal Register notices, support documents, hearing transcripts, and public comments through its Web site. In addition to searching and viewing documents, the public can also submit comments electronically. Documents become available for viewing after processing is complete.

EDOCKET currently contains documents from the following EPA offices and programs:

- Resource Conservation & Recovery Act (RCRA)
- Superfund
- Office of Water (OW)
- Office of Air and Radiation (OAR)
- Oil Spill Program (Oil Pollution Act)
- Office of Pollution Prevention and Toxics (OPPT)
- Office of Pesticides Programs (OPP)
- Office of Environmental Information (OEI)
- Office of Enforcement and Compliance Assurance (OECA)

To access EDOCKET, visit <www.epa.gov/edocket>.

# EPA Proves That Communication + Cooperation = Success + Savings

Finding the formula for effective federal facility cleanups can be a challenge, especially when multiple agencies with different priorities are part of the equation. That is why EPA honored three organizations for improving the cleanup process at a Superfund site in South Carolina. Thanks to their efforts, they accelerated the project schedule by two years and saved approximately $5 million.

In June 2002, EPA's Office of Solid Waste and Emergency Response (OSWER) awarded the OSWER Cost Savings Award to a team consisting of EPA Region 4, the U.S. Department of Energy (DOE), and the South Carolina Department of Health and Environmental Control (SCDHEC). The award recognizes the team's ability to cost-effectively accelerate the remedial investigation and feasibility study (RI/FS) process for the Old Radioactive Waste Burial Ground in Aiken, South Carolina. The burial ground, a 76-acre area used for general disposal of radioactive and mixed waste from 1952 through 1974, is part of the Savannah River Site, a DOE facility that produced nuclear materials for U.S. defense programs until 1988.

Traditionally, developing an RI/FS strategy requires comprehensive data collection and risk assessment, followed by extensive formal documentation that gets reviewed by all involved parties. This process can often be extremely time consuming, as formal documents are exchanged for comments until all constituents reach agreement. EPA, DOE, and SCDHEC—the three agencies that signed a Federal Facility Agreement for the site—set a precedent by completely overhauling this conventional process.

The agencies believed that a central team of decision-makers could more effectively reach consensus through regular discussions than by repeatedly exchanging and reviewing written comments. The agencies formed a core team of representatives who met face-to-face at critical points during the project to discuss "scoping summaries"—informal documents that provide comprehensive but concise snapshots of the project's status. These summaries included all information necessary for making informed decisions quickly.

To maintain focus and to keep meetings productive, a DOE contractor provided professional technical facilitation. The facilitator ensured that all members of the core team reached consensus on all issues, especially those being heavily debated. Ken Feely, the project manager for EPA Region 4, says this new process proved to be invaluable. "These meetings allowed us to turn our efforts towards decision-making instead of reviewing documents," he said.

In addition to improving communication through decreased documentation and facilitated meetings, the team also took advantage of existing data to accelerate project completion. Data from already existing monitoring wells indicated that dangerous levels of contaminants—including volatile organic compounds, tritium, and lead—had migrated through the soil and into the underlying groundwater. The team decided that this information was sufficient to evaluate site conditions and that they did not need additional data to determine action was necessary. This data, and the extremely large volume of waste at the burial ground site (7.125 million cubic feet) allowed the core team to eliminate other possible but more expensive response actions. The team decided that excavation/disposal of the waste in the burial ground was not feasible and instead decided to consolidate highly contaminated soils from three nearby areas into existing space at the burial ground. This approach combined several potentially separate decisions into one final action, saving a substantial amount of time and money.

> **This new process proved to be invaluable. These meetings allowed us to turn our efforts towards decision-making instead of reviewing documents.**
>
> —Ken Feely, EPA Region 4

The reduced documentation included in the overhauled RI/FS process allowed the core team to devote more of its time and energy to discussing project details, which proved to be a valuable learning process for all of those involved in the Savannah River Site project. The time and money saved during this project demonstrate how improved communication and cooperation can translate into success and savings. Feely, affirming the benefits received from this new process, stated, "This new process fosters trust among parties. You can't put a price on that." PIP

# Five Federal Facilities Achieve Construction

Fiscal Year 2002 saw 42 Superfund sites reach construction completion, five of which were federal facilities. A construction completion site is a former toxic waste site where physical construction of all cleanup actions is complete, all immediate threats have been addressed, and all long-term threats are under control. Construction completion of a site is a significant benchmark in the cleanup process because it means contaminants are no longer threatening the health and well-being of the surrounding community or spreading uncontrolled through the soil, air, surface water, or groundwater. It also means that, even though long-term cleanup actions might still be operating, the site is usually ready to be reused for economic, social, or environmental purposes.

## Brunswick Naval Air Station, Maine

The Brunswick Naval Air Station in Brunswick, Maine, occupies 3,094 acres and contains three areas that were used for landfilling the station's household, office, and other wastes. Other areas have been used for fire training purposes and for disposal of various hazardous wastes, including acids, caustics, solvents, and building materials, including asbestos. Nearly 3,000 people live on the base, and an elementary school, a college, and a hospital are located within one mile of the base's western boundary. Area surface water is used for recreation, irrigation, and commercial fishing.

The Navy revitalized the site in three phases: initial removal actions, long-term remedial actions focusing on cleanup of specific areas of contamination, and long-term monitoring, and operation and maintenance. According to the site's preliminary close out report (PCOR) issued in September 2002, all cleanup actions have been completed, and the Navy has begun long-term monitoring to assess the effectiveness of cleanup actions.

Cleanup team members use global positioning technology to record the location of sampling sites at Brunswick Naval Air Station in Brunswick, Maine.

The Navy performed a review in 2000 and found that all remedies implemented protect human health and the environment. The review also recommended several modifications, including optimizing the groundwater pump and treatment remedy, and confirming plume boundaries for soil contaminated by cleaning solvents. As of October 2002, the pump and treatment system remedies were complete, and Phase 1 of the field work to confirm plume boundaries had been performed. Phase 2 fieldwork to install new monitoring wells to completely bracket the plume is planned for fall 2003 or spring 2004. A Record of Decision (ROD) for the old acid caustic pit—the last remaining site—was signed in September 2002, implementing a remedy of monitoring and property restrictions for groundwater.

"Getting the ROD for this last site was a major accomplishment, as it allowed the Brunswick Naval Air Station to qualify for construction completion," said Michael Barry, former regional project manager for the site. A previous removal action at this site had been unsuccessful in clearing low level cadmium contamination from the groundwater.

## Fort Wainwright, Alaska

Fort Wainwright occupies more than 900,000 acres in the Fairbanks North Star borough in interior Alaska. The site consists of a main post area (two miles east of Fairbanks on the Chena and Tanana Rivers), small arms range complex, and close-in range complex. Part of Fort Wainwright lies within the city of Fairbanks, with a population of 35,000. EPA added Fort Wainwright to the National Priorities List in 1990, but the base is still active,

and is used to train infantry soldiers, test equipment, and facilitate the rapid deployment of troops worldwide.

Soil and groundwater contamination at the post resulted from fuels, solvents, and pesticides being disposed of or spilled on the ground. The U.S. Army signed a Federal Facilities Agreement with EPA and the Alaska Department of Environmental Conservation (ADEC), outlining the schedule and process for cleaning up contamination, and identifying five operable units. To date, 15 active soil vapor extraction/air sparging/air injection treatment systems in 11 source areas have been installed as a result of source area remedial investigations. A post-wide ecological risk assessment process identified the Chena River as the area most likely to be affected by multiple source area releases at Fort Wainwright. To evaluate this potential threat, the Chena River Aquatic Assessment Program was initiated to monitor the river's health and measure the effects that cleanup efforts have on the river's ecology over time.

Another unique effort at the site is the use of the Army's geographical information system (GIS) database in tandem with the digging permit process to ensure effective post-wide and site-specific institutional controls. "The GIS database and permitting process help ensure all parties are aware of contamination levels," said Dianne Soderlund, EPA remedial project manager.

In addition to achieving construction completion, the cleanup team has signed RODs for each operable unit. "The success of the cleanup efforts are due in part to the outstanding working relationship between EPA, the Army, and the ADEC," Soderlund said. "Not once have we delayed a significant schedule in our cleanup activities, nor have we had to go to dispute resolution."

## Lone Star Army Ammunition Plant, Texas

EPA added the Lone Star Army Ammunition Plant to the National Priorities List (NPL) on July 22, 1987. This 19-acre site located in rural Bowie County, Texas, began operating as an ammunition plant in 1942. On-site activities included loading, assembling, and packaging munitions components. The Army also used the site as a detonation ground for disposing of explosives. These activities left behind elevated levels of explosives and heavy metals in the soil and groundwater. EPA added the plant to the NPL based on its concern that employees at the site might be exposed to these contaminants through direct contact with the soil. Although no contamination was known to have migrated off site, the agency was also concerned about the close proximity of several domestic water wells.

Because of unexploded ordnance at the site, soil excavation was not a feasible remedy. The cleanup team therefore constructed erosion berms along the perimeter of the property to manage and clean up the contamination. In addition, the Army periodically conducts surface and groundwater monitoring to determine the concentration of contaminants. Finally, institutional controls, such as land use restrictions, access restrictions, and posted signs, have been placed at the site. The implementation of these remedies is scheduled to be evaluated every five years to ensure

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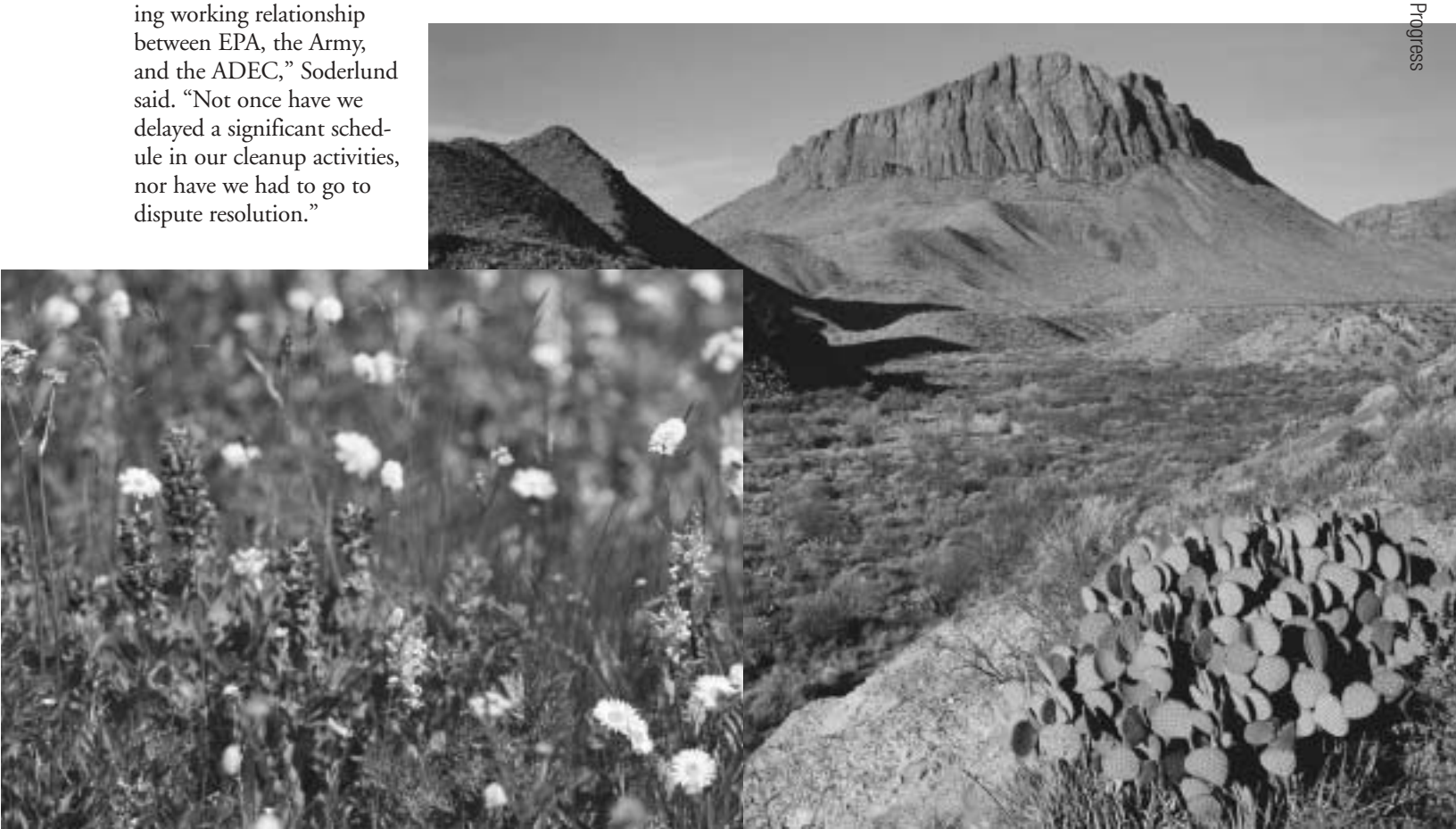

## Completions Achieved

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their effectiveness as long as hazardous wastes continue to be present on the site.

Currently, an infiltration layer has been placed along with the top soil, which has been seeded with rye, native bermuda grass, wildflowers, clover, and a mix of other wild vegetation. The cleanup plan originally included the installation of two monitoring wells as a part of operation and maintenance activities. The cleanup team completed installation of the first well; however, the second well was not installed due to geologic restrictions. The team issued a PCOR for the site on September 24, 2002.

### Old Navy Dump/Manchester Lab, Washington

The U.S. Army transferred ownership of the Old Navy Dump/Manchester Lab near Manchester, Washington, to the U.S. Navy in 1924. The Navy used this 40-acre site along the western shore of Clam Bay in Puget Sound, for the construction, repair, maintenance, and storage of submarine nets and boats until the 1970s. Also the home to the Naval firefighters school, the site was used to dispose of wastes containing PCBs, heavy metals, dioxins, petroleum products, and asbestos. Because of the dump's location, water from the bay eventually eroded the dumping site, releasing contaminants into the water. Individuals at the site were at risk of exposure to contaminants through skin contact and accidental ingestion of contaminated soil or the ingestion of shellfish from intertidal areas. Local reliance on groundwater as a source of drinking water also caused concern as a possible source of human exposure.

Remedial action included enclosing the dump by constructing an underground wall to surround the area to prohibit migration of the contaminants. In addition, the surface of the dump was covered with a protective cap.

As a result of the cleanup efforts, people are now able to walk through the site to gain access to the beach. Prior to the cleanups, the risk of exposure to contamination was too great to allow public access. The cleanup team announced that they completed all remedial construction and the PCOR was signed on September 30, 2002. The site currently houses an EPA analytical lab as well as a National Marine Fisheries Service lab.

### Sacramento Army Depot, California

The Sacramento Army Depot is a 485-acre supply depot that primarily was used for receiving, storing, issuing, maintaining, and disposing of electronics supplies. The wastes resulting from the site's operations were discharged to unlined sewage lagoons, burned, or buried on site—contaminating onsite soils and groundwater and causing pollution to migrate offsite. About 50,000 people live within three miles of the closed base, and the Army is transferring the property to the city of Sacramento.

The Army found that soils contained heavy metals such as lead, cadmium, and chromium, which had also entered the groundwater. To treat the contaminated groundwater, the Army initially used a pump-and-treat system. Eventually, volatile organic compound (VOC) concentrations decreased to levels that met Sacramento County sanitary sewer system discharge requirements. Groundwater monitoring data currently shows that the heavy metals are no longer contaminants of concern, allowing the Army to discharge extracted water directly to Sacramento's sanitary sewer system.

The Army also conducted remedial activities to remove heavy metals from the soil, and performed vapor extraction to remove the VOCs from soil around the Tank 2 site, once occupied by a 1,000-gallon waste solvent storage tank. A later sampling of the soil around the Tank 2 site confirmed that it was remedied. All soils are now considered clean.

For oxidation lagoons, the Army excavated and stabilized contaminated soil with Portland Type II cement and consolidated the soil with several burn pits. The Army decided to take a two-phase approach for burn pits. First, it used soil vapor extraction to remove VOCs from the soil and solidified the contaminated material. Lastly, the Army excavated a well used in 1946 and 1947 for disposing of spent dry cell batteries and other debris, stabilized the soil, and placed it in burn pits.

"Sacramento Army Depot was the first BRAC installation in Region 9 to achieve the construction complete status," said Rich Seraydarian, EPA section chief. "The depot has always been viewed as a major BRAC success story, from both the cleanup and property transfer aspects." The Army issued a PCOR for the site in August 2002. PIP

# Two Federal Facilities Deleted from NPL

## Sudbury Training Annex, Massachusetts

In January 2002, the Sudbury Training Annex in Massachusetts became the first federal facility in New England to be completely deleted from EPA's Superfund National Priorities List (NPL). Today, nearly 2,200 acres of the Annex belong to the U.S. Fish and Wildlife Service for use as the Assabet River National Wildlife Refuge.

"Success of the cleanup is rooted in the cooperative spirit of the technical review committee, EPA, the Army, and the Massachusetts Department of Environmental Protection," said Christine Williams, EPA project manager. "We all wanted a refuge and worked hard to create a reasonable cleanup program." Of the remaining land, the Commonwealth of Massachusetts owns the 24-acre Puffer Pond. The U.S. Air Force will own four acres, and the Federal Emergency Management Agency will own 72 acres.

The Annex was an Army installation covering 2,750 acres. It served as an ammunition depot, ordnance testing station, troop training and research area, and laboratory disposal area. EPA placed the Annex on the NPL in 1990, and it was designated for closure in 1995. To ensure the integrity of the cleanup, the Army will continue to monitor landfill caps and groundwater. Restrictions will remain in place for current and future uses of the land and groundwater.

## Luke Air Force Base, Arizona

Luke Air Force Base (AFB) in Glendale, Arizona, became the first active Air Force installation to be deleted from the Superfund NPL in April 2002. The 4,000-acre base will continue to operate as an advanced fighter pilot training station, a function it has served since 1941.

During the World War II era, plane discharges and waste disposal from aircraft maintenance and light industrial operations released potentially hazardous wastes, including petroleum residues, cleaning solvents, and VOCs. These materials contaminated the base's soil and groundwater, prompting EPA to officially place the site on the NPL in 1990. Since starting cleanup activities, EPA and the Air Force have treated more than 625 cubic yards of contaminated soil, including removing more than 65,000 gallons of jet fuel from soil in storage areas. The cleanup team also set up numerous groundwater monitoring wells around the site.

"The successful cleanup and final deletion of Luke AFB can be attributed to the teamwork among the Air Force, Arizona Department of Health, and EPA Region 9 representatives on the cleanup team," said Rich Seraydarian, a section chief in the Superfund Division at EPA Region 9. The Air Force will continue to monitor groundwater at the site and provide annual reports to the regulatory agencies, in addition to performing five-year reviews, to ensure that the implemented remedies remain protective of human health and the environment. PIP

> "The successful cleanup and final deletion of Luke AFB can be attributed to the teamwork among the Air Force, Arizona Department of Health, and EPA Region 9 representatives on the cleanup team."
>
> —Rich Seraydarian
> EPA Region 9



## Write To Us

We encourage your questions, comments, and contributions. Please send your input to Victor Lyke by mail at U.S. EPA/FFRRO, Mailcode: 5106G, 1200 Pennsylvania Ave., N.W., Washington, DC 20460; e-mail at <lyke.victor@epa.gov>; or fax at 703 603-0043.

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