



CHAPTER 1

The Navy Mission

For centuries, the United States has been dependent on the sea. As a vast country with thousands of miles of coastline, our nation requires the ocean's resources, commerce routes, and defense opportunities in order to survive and flourish.

A Dual Purpose

The U.S. Navy provides the maritime presence that enables the United States to protect and project vital American interests around the world. These measures include strategic deterrence, crisis response, and humanitarian efforts in support of national security objectives and global interests—both military and environmental. To ensure military readiness, the Department of Navy (DON) constantly seeks solutions that will enable our forces to perform missions, training, weapons maintenance, and other necessary defense activities while preserving human health and the environment.

The Environmental Restoration Program

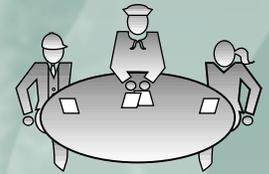
In order to ensure military readiness and environmental quality, the DON established the Environmental Restoration Program. The program combines aggressive cleanup policies with modern technology to restore and preserve property under Navy/Marine Corps stewardship. Environmental cleanup initiatives are engineered to work effectively without impairing the ability to defend our nation.

The SMART Cleanup Strategy

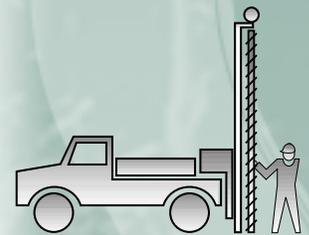
The Navy/Marine Corps cleanup program ensures that, in years to come, the DON will provide a healthy environment for those who work and train on bases or live in nearby communities. An important part of this effort is the preservation and improvement of local ecosystems, including regional plants and wildlife near Navy and Marine Corps bases.

What Does S.M.A.R.T. Stand For?

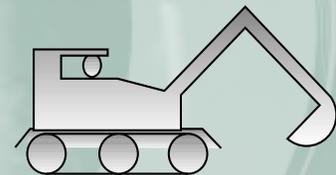
S.M.A.R.T. cleanup Saves Money and Alleviates Risk in a Timely manner. The SMART cleanup strategy provides guidelines for accomplishing DON Environmental Restoration Program goals, focusing on the three main objectives of reducing risk, saving money and time.



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What Does SMART Do?

The SMART program identifies, studies and cleans up past hazardous waste disposal sites on Navy and Marine Corps installations in the United States. Our policy for responsible cleanup is based on eight main principles:

- Fully comply with the law
- Act immediately to eliminate human exposure that poses an immediate threat
- Clean up the worst problems first
- Partner with regulators
- Involve local communities
- Focus on action—not study
- Consider planned land use
- Embrace new technology

SMART Cleanup For Future Generations

The DON's target is to have cleanup work completed at all 4500+ sites by the end of fiscal year 2014. Through the Environmental Restoration Program, the DON is performing SMART Cleanup that will make the world a safe and beautiful place for generations to come.

History of the IR Program

DON's Proactive Stance

The Department of the Navy started the Environmental Restoration Program in response to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) legislation of 1980, even though the legislation did not specifically apply to federal facilities. The DON requested information about the activities conducted on Navy and Marine Corps bases. After evaluating the data, the DON recommended further study of 79 bases. The cleanup program had begun.

Superfund Legislation (CERCLA)

Congress passed the Superfund Amendments and Reauthorization Act (SARA) in 1986, bringing all federal facilities under the CERCLA umbrella. The Defense Environmental Restoration Program (DERP) was established and used along with funding from the Defense Environmental Restoration Account (DERA) to clean up sites contaminated with hazardous materials in the past. The law required the DON to follow Environmental Protection Agency (EPA) guidelines and to have a program equivalent to the Superfund.

Current Funding

To promote flexibility and improve performance, Congress divided the Defense Environmental Restoration Account among the individual services in 1997. The new DON account was designated Environmental Restoration, Navy (ER,N). Funds appropriated by Congress are placed in this account and pay for the Department of Navy's Environmental Restoration Program. The program plan, which is updated annually, documents site cleanups and projects future cleanup goals.



SMART Community Involvement

Through the years, the Navy has reached out to our communities to provide civilian workforce, housing for employees, education for our children and other recreational and cultural opportunities. The successful operation of many Navy/Marine Corps installations depends on interaction with our neighbors. Many new partnerships with these communities have blossomed into bountiful relationships that have been beneficial for all involved.

Restoration Advisory Boards (RABs)

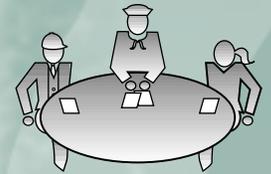
The Restoration Advisory Boards (RABs) were formed in 1994. The purpose of RABs is to pursue more community involvement through the Environmental Restoration Program. RABs are citizen advisory panels that provide ideas and suggestions for the success of the environmental restoration program at individual bases. Each panel is made of representatives from the community, DoD, EPA, local, tribal and state governmental agencies. Citizens from the community volunteer their time and effort to serve as RAB members. Within the RAB, every member has equal rank. Each RAB is structured to meet community needs, as well as the requirements of the individual base cleanup program. RAB meetings are open to the general public. During the meetings, RAB members receive updates on site cleanup progress, and also review and provide comments on remediation plans and documents. RAB members then share this information with constituent groups that are not present at the meeting.

How Can I Get Involved in a RAB?

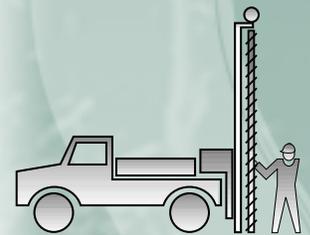
Most installations that have cleanup programs also have established RABs. Closing installations are very likely to have RABs. For more information about forming or participating in a RAB, please contact the Public Affairs Office at your local installation.



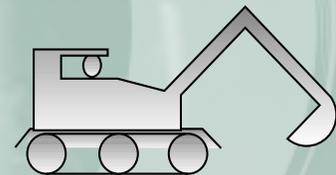
The strength of RABs as advisory bodies is their diversity and their ability to apply common sense to issues that contain technical data, language and procedures.



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Naval Weapons Station Seal Beach RAB

The Restoration Advisory Board (RAB) for the Naval Weapons Station Seal Beach (NAVWPNSTA Seal Beach) has been a very successful forum for identifying and resolving local community issues. The RAB has worked very closely with the Navy and regulatory agencies on various Installation Restoration (IR) activities at the station. Recently, the RAB provided some very valuable insight into the concerns of the local communities for the removal action at Site 1, the Former Wastewater Settling Pond. At the completion of the clean-up work, Mr. Lee Whittenberg, a current RAB member and Director of Development Services for the City of Seal Beach wrote to the Commanding Officer of the station expressing his appreciation. Mr. Whittenberg writes on behalf of the RAB and the City that, "The City is particularly pleased to see that our concerns were addressed in the Work Plan and in the actual removal action regarding wind transport of contaminated soils during a high-wind time period, particularly during a Santa-Ana condition, when the material would be transported towards residential areas and a public elementary school. The City appreciates the setting forth and implementation of adequate mitigation measures to address these concerns."

The Site 1 removal action was conducted from July to October 1999 and a total of 21,200 tons of contaminated soil was excavated and removed from the station. The site was used from 1945 to 1971 for the discharge of liquid wastes from metal cleaning activities in an adjacent building. An estimated total of 52,000 gallons of alkali solution and 12,000 gallons of chromic acid were discharged to the pond. The Navy investigated the site and determined the soils contained elevated levels of metals, polychlorinated biphenyls, and pesticides, which required a removal action to protect human health and the environment. Mr. Whittenberg goes on to say, "...the City appreciates the cooperation of the Navy in conducting the



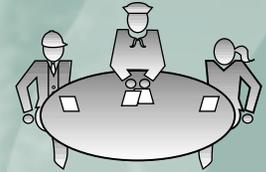
Application of emulsion/surfactant to loaded railcars for erosion and dust control



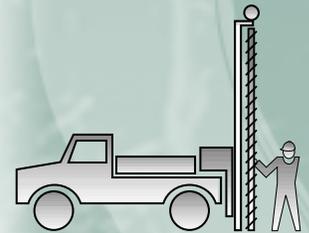
RAB members watching a presentation during a monthly meeting

majority of the off-site contaminated soil removal activity by rail, thereby substantially reducing air quality impacts to the local community and preventing additional roadway deterioration due to the increased number of heavy-duty truck operations that would have been required. The utilization of rail transport went very smoothly, and the City received no negative comments regarding that removal activity. ... The City of Seal Beach extends its sincere appreciation to the NAVWPNSTA Seal Beach and the Department of the Navy in undertaking this activity in a manner to provide the highest level of protection to the employees of the Weapons Station and to the residents of the City of Seal Beach.”

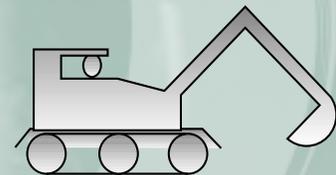
The RAB for NAVWPNSTA Seal Beach was formed in February 1995 to discuss current and planned Installation Restoration (IR) Program activities and advise the Navy on restoration issues at the station. The RAB community volunteers have been very active in supporting these meetings, with over twenty board members participating continuously since its inception. The board meets on the second Wednesday of each month in the evenings and the members have dedicated a considerable amount of their personal time assisting the Navy in this community outreach effort. The RAB has effectively identified the major concerns of the local communities, including the environmental protection of the Seal Beach National Wildlife Refuge (NWR), minimizing traffic, noise, dust, and other airborne contaminants impacts during the removal action activities. They have also identified a strong community interest in the protection of archaeological resources, groundwater aquifers, and surface waters in the NWR and the ocean. The Navy and RAB looks forward to continuing this strong relationship to make sure that the community issues are effectively addressed as we work to clean up the past contaminated sites at NAVWPNSTA Seal Beach.



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Technical Assistance for Public Participation (TAPP)

Recognizing the importance of citizen participation in the environmental restoration process, Congress authorized the provision for Technical Assistance to aid Public Participation (TAPP) through the 1995 and 1996 National Defense Authorization Acts. The TAPP program became effective February 2, 1998.

Clarifying the Issues

The TAPP program allows community members of a RAB or a Technical Review Committee (TRC) to apply for up to \$25,000 per year for technical support to understand the scientific and engineering issues that apply to an installation's environmental restoration activities. TAPP enables community members to obtain objective, independent technical support from the private sector through the use of Government purchase orders. The Navy is committed to providing RAB members with the necessary tools to understand our highly technical program. Our project teams and the TAPP program have been developed as resources to help local communities.

TAPP Awards in FY99

During FY99 five TAPPs were awarded, one to each of the following installations: Naval Shipyard Mare Island, CA; Naval Air Facility Adak, Anchorage, AK; Naval Station Treasure Island, CA. Two TAPPs were awarded to Naval Air Station Alameda, CA.

Naval Shipyard Mare Island, CA

At Mare Island Naval Shipyard, RAB community members were faced with difficulties in accessing and understanding the massive amounts of environmental data generated within the Installation Restoration process. Therefore, the RAB members requested and received a TAPP for training on how to review and interpret data on the Arc-View on-site workstation.

Naval Air Facility Adak, Anchorage, AK

The Adak, Naval Air Facility RAB members needed expertise to fully understand technical documents and proposed remedies. These topics included the sampling program for PCBs and its proposed remediation, design and implementation of the long-term monitoring program for Adak, and evaluation of UXO remediation and remedies.

Naval Station Treasure Island, CA

The Treasure Island Naval Station RAB requested a TAPP for technical review and evaluation of the Draft Final for Site 12 Operable Unit Remedial Investigation (Draft Final Site 12 OU RI) Report. RAB members felt they needed interpretation of the document, especially in the areas of geology and hydrogeology. The Navy granted their request and awarded the TAPP. The contractor completed the review of the Draft Final Site 12 OU RI report on 13 July 1999.

Naval Air Station Alameda, CA

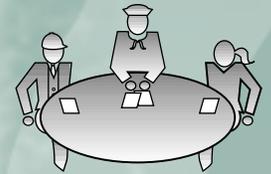
There were two TAPP awards to Naval Air Station Alameda this fiscal year. The first award was to review and evaluate the Human Health Risk Assessment of the Draft Operable Unit-2 Remedial Investigation Report, and the second was to review and evaluate the Ecological Risk Assessment of the same document. These TAPP grants were awarded to different contractors, one specializing in human health risk assessment and the other in ecological risk assessment. The contractors were required to review and evaluate the document, answer technical questions, and make an informative presentation to the RAB members. Both of the contractors completed their task on 7 July 1999.

Smart Cleanup Awards

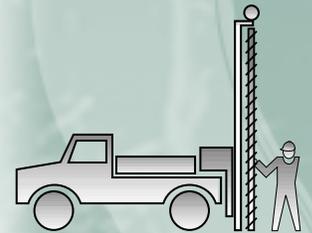
Lakehurst Wins DoD Environmental Cleanup Award

The Naval Air Engineering Station, which is the Shore Station Management component of the Naval Air Warfare Center Aircraft Division Lakehurst, NJ, won the Department of Defense Environmental Cleanup Award in FY98 for its aggressive, cutting-edge cleanup efforts.

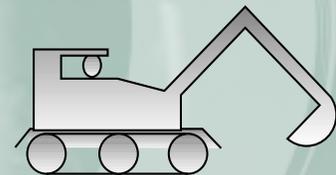
Lakehurst's mission focuses on the safe, effective operation of aircraft for all aviation platforms. A staff of 1900 civilian employees and approximately 230 military personnel work in the 7,430 acre facility, which is complete with two 5,000 foot operational runways, a 12,000 foot runway equipped with catapults and arresting gear, and five test tracks. The station and surrounding area are located in Lakehurst, NJ within the Pinelands National Reserve, the most extensive undeveloped land tract along the Middle Atlantic Seaboard. The Pinelands is a delicately balanced ecosystem that covers the largest drinking water aquifer in the Northeast. As a result, the station's groundwater is subject to the strictest cleanup levels in the region.



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Lakehurst award cont.

NPL Site

The station was named to the National Priority List (NPL) in 1987 with 45 individual sites, and the station's goal has been swift removal from this list. As of September 1999, Lakehurst completed final or interim Records of Decision (ROD) for all sites. EPA Region II has allowed Lakehurst to expedite the delisting process.

Background

The high water table and sandy soils at Lakehurst allow contaminants to infiltrate to groundwater easily and move swiftly. In order to prevent the flow of contamination off base and eliminate or reduce sources of contamination, Lakehurst implemented the following measures:

- Installed pump and treat systems at four known contamination areas
- Excavated soil from known "hot spots" and recycled the majority into road base material
- Used in-house groundwater modeling to improve pump and treat efficiency
- Conducted three-year study at a VOC plume to determine effectiveness of natural attenuation
- Installed pilot scale solar powered remediation and irrigation systems
- Built sparge wall to supplement pump and treat system and act as barrier
- Addressed remaining groundwater hot spot with vapor extraction/sparge system
- Worked with New Jersey Department of Environmental Protection to install capture trench

Additional Cleanup Efforts

Lakehurst used small and disadvantaged businesses for 65% of their Installation Restoration contracting work in FY98. Lakehurst continues to participate in RAB meetings as an open forum to educate the public. GIS systems are now used to collect monthly groundwater data for Lakehurst's pump and treat systems, eliminating the costs and potential errors associated with manual data interpretation as well as making it easier to submit accurate, timely monthly reports to regulators. Finally, Lakehurst worked with the U.S. Army Corps of Engineers, Waterways Experiment Station to convert their existing groundwater modeling system into the DoD Groundwater Modeling System (GMS), making many more comparative and analytical tools available to the station.

"We take pride in our role as a good neighbor to the local community," said Lucy Bottomley, supervisory environmental engineer for the Naval Air Engineering Station. "Our goal has always been to protect human health and the environment while providing the best value for the public's money."



SECNAV Environmental Cleanup Award Individual Award: Patricia Kelly

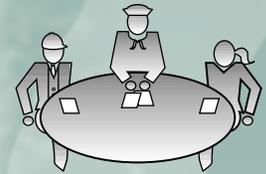
Patricia L. Kelly is the Installation Restoration Program Manager for Naval Submarine Base (SUBASE) Bangor, Washington, and is the FY98 recipient of the Secretary of the Navy Environmental Cleanup Individual Award. Ms. Kelly has worked tirelessly to develop a successful environmental cleanup program and strengthen communication among the various stakeholders.

Ms. Kelly is the point of contact for base environmental cleanup issues. She wrote the base's community relations plan in February 1991, and updates it to reflect community concerns and changing site conditions. She writes, publishes and disseminates a quarterly newsletter, Progress, to keep stakeholders involved and up to date on Navy activities.

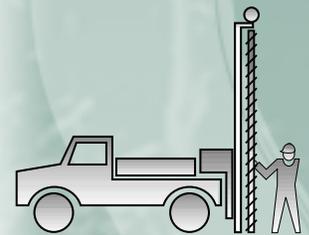
Ms. Kelly's efforts include the following:

- Coordinated use of biological treatment for explosive contaminated soil, saving approximately \$1 million in cleanup costs.
- Developed system to ensure that clean investigative derived waste is not disposed of at off-base landfills, but reused on-site, saving approximately \$1 million in disposal fees.
- Provided support to EPA Region X and the Naval Research Laboratory for a field demonstration of on-site analysis methods for explosives in groundwater. The effort led to the development of a biosensing unit that will significantly reduce monitoring costs.
- Was instrumental in developing a team leadership concept for her base's Environmental Resources Division that pools the talents of the entire office instead of an immediate supervisor. She actively participates on the team as an Environmental Resources Division Team Leader, providing technical support and advising team members on regulatory issues and changing policies. This team approach is consistent with SUBASE Bangor's Total Quality Leadership (TQL) philosophy.
- Conducts community tours of restoration sites for visiting officials, students, foreign visitors and local groups.

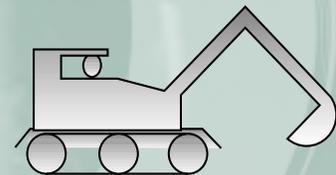
Ms. Kelly displays professionalism and dedication to the environment that reflect well on SUBASE Bangor, the Navy, and the Department of Defense.



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Drum-E Awards

These exceptional individuals are the recipients of the 1999 “DRUM-E” award for outstanding service in the Installation Restoration program. From left: Katherine H. Landman, Atlantic Division, Cliff Casey, P.E., Southern Division, Ryan Mayer, Engineering Field Activity Chesapeake, Terence R. Martin, P.E., Southwestern Division, Lou Ocampo, P.E., Engineering Field Activity West, Cindy O’ Hare, P.E., Engineering Field Activity Northwest, Ruth Owens, Naval Facilities Engineering Service Center, Philip S. Otis, P.E., Northern Division. Not pictured: Peter Nakamura, P.E., Pacific Division.

SMART Partnerships

To efficiently resolve the complex issues surrounding environmental cleanup sites, the DON forms partnerships with many groups. These groups include the communities surrounding its bases, other government agencies, regulators, and private industry. Restoration Advisory Boards (RABs) are a prime example of solid partnering in action. By establishing open lines of communication with those who have a vested interest in the cleanup process, it is often possible to resolve issues early, complete restorations ahead of schedule, and help to ensure long-term performance of the cleanup effort. In turn, these efforts save money for the Navy, make sites available for reuse more quickly, and minimize the risks to human health and the environment.

Cooperative decision-making between all parties has proven to be an important tool for success in our environmental program. The following installation restoration stories are good examples of successful partnerships in action.



Partnering Team Expedites Landfill Cap NAB Norfolk, LANTDIV

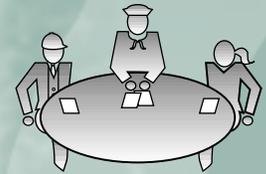
Naval Amphibious Base (NAB) Norfolk, Virginia bought a 22 acre site in 1974 and began using the eastern half of the site for disposal of demolition debris, inert solid waste, fly ash, and incinerator residue. The Navy received a solid waste permit in 1979 to use the western portion for disposal of demolition debris and other non-putrescible wastes. Some sandblasting grit was deposited into the landfill until 1981, when the grit was found to exceed the Environmental Protection Agency limit for cadmium. All landfill operations ceased in 1987.

Following several studies of the site, including a Remedial Investigation (RI) study for the entire site in 1993, it became apparent that a decision on closure requirements would not be easy. The RI study found that the landfill had low risk and would require a minimal cap, if any. The regulatory agencies maintained that a cap—possibly a hazardous waste cap—was required because a portion of the site was permitted. There was also disagreement on whether the permitted and non-permitted portions of the site should be treated differently. Although the field work, RI report, and risk assessments were nearing completion in the summer of 1997, a Proposed Remedial Action Plan (PRAP) could not be established due to these unresolved issues.

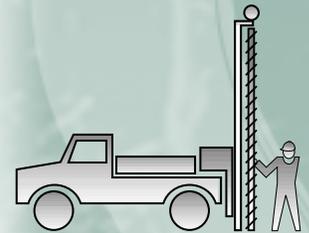
By fall of 1997, NAB Norfolk had established the Naval Base Partnering Team. The team included Navy, Environmental Protection Agency (EPA), Virginia Department of Environmental Quality (VDEQ), and Navy contractors. The team agreed to resolve the issues with the following strategy:

- Determine the cap requirements based on the findings of the study
- Treat the landfill as one entity
- Take additional samples to determine whether a hazardous waste cap was warranted
- Excavate test pits to determine the edges of the cap

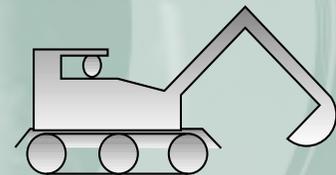
After reviewing the sampling data results, the regulatory agencies agreed that a nonhazardous cap would be appropriate. The test pits were used to establish the boundaries of the cap. As a cost-saving measure, fill material was obtained from a Navy-owned borrow pit. The cap was awarded in the spring of 1999 for \$1.8 million. This partnering process was instrumental in achieving resolution of the various issues at the site. The cap was designed based on scientific findings, and is being constructed many years earlier than was thought possible before the partnering process.



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Navy and University Track Natural Attenuation at Groundwater Plume NAB Little Creek, LANTDIV

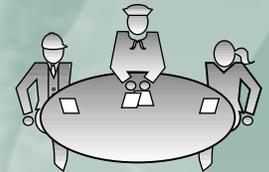
A former Navy Exchange Laundry/Dry Cleaning Facility was located on the eastern portion of Naval Amphibious Base Little Creek, Virginia Beach, Virginia. The facility ceased operations and was torn down in 1987 to make way for a new commissary, which opened in 1993. An Initial Assessment Study of the site reported that from 1973 to 1978, perchloroethylene (PCE) sludge, soap, sizing and dyes were dumped into a storm sewer catch basin draining into Little Creek Cove. The waste material leaked from the storm sewer system into the shallow groundwater, creating a contaminant plume.

A Remedial Investigation/Feasibility Study (RI/FS) and Phase I of a Supplemental RI (SRI) were conducted at the site, the results of which showed PCE in the groundwater as the primary contaminant. The Navy, Environmental Protection Agency (EPA); Virginia Department of Environmental Quality; and LANTDIV's Clean contractor wanted to keep the plume from reaching a large drainage ditch located downhill from the site, where it could pose a health risk. Based on Environmental Protection Agency policy issued in 1996, as well as low success rates with "pump and treat" systems for this type of remediation, NAB Little Creek decided to study the site further as a candidate for Natural Attenuation (NA).

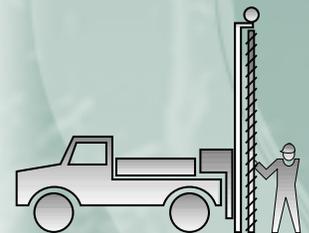
Working through the contractor, LANTDIV formed a partnership with Virginia Polytechnic Institute and State University to assist in evaluating the plume. Virginia Tech built and installed nine multilevel samplers to obtain samples from various depths, developed flow and transport models that take into account site-specific data, and conducted tests to determine biodecay rates of volatile organic compounds (VOCs) at the site.

The information will be used to develop a refined fate and transport model that will help stakeholders to make accurate predictions about the plume over the next 30 years. The final groundwater model will also assist in satisfying regulatory concerns, addressing risk and impact on the water tables. Once validated, the model will be placed into public domain for use at other Department of Defense (DoD) and public sites.

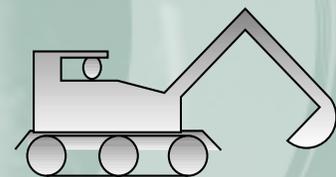
Since this site has no current receptors and poses no human health risk, Little Creek has provided a unique opportunity to investigate natural attenuation. Once the research is complete, the contractor will incorporate the data into a Feasibility Study (FS) and recommend an appropriate remediation technology. Effective partnering between local residents, VDEQ, EPA, Virginia Tech, the contractor and LANTDIV has made the effort worthwhile.



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