NOMINATION FOR
SECRETARY OF DEFENSE ENVIRONMENTAL AWARD

Category: **Environmental Restoration – Installation**
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Introduction:

Defense Supply Center Richmond (DSCR), located along the I-95 corridor in southern Chesterfield County, Virginia, has been a consistent, dependable supplier of quality goods and services to those defending freedom around the world since it was activated in 1942.

Designated as the lead center for aviation within the Defense Logistics Agency, the center serves within the Department of Defense (DoD) supply chain as the primary source of supply for the nearly 850,000 repair parts and operating supply items.

While these items and parts have an extremely wide range of applications, our core mission is to supply products with a direct application to aviation. These items include a mix of military-unique items supporting over 1,300 major weapons systems and other items readily available in the commercial market.

With over 600 acres and approximately 120 warehousing, utility and administrative buildings totaling over 6.7 million square feet, DSCR is host for a number of other DoD, Federal and state organizations. The largest of these tenants are the 350-acre Defense Distribution Depot Richmond, Virginia; the Defense Distribution Mapping Activity; the Virginia Army National Guard vehicle maintenance activity; and the Defense Reutilization and Marketing Office.

The center and its tenant activities employ nearly 3,000 civilians, Service members, and contractor personnel, whose mission is to provide critical material support across the DoD and other Federal agencies, including the National Aeronautics and Space Administration.

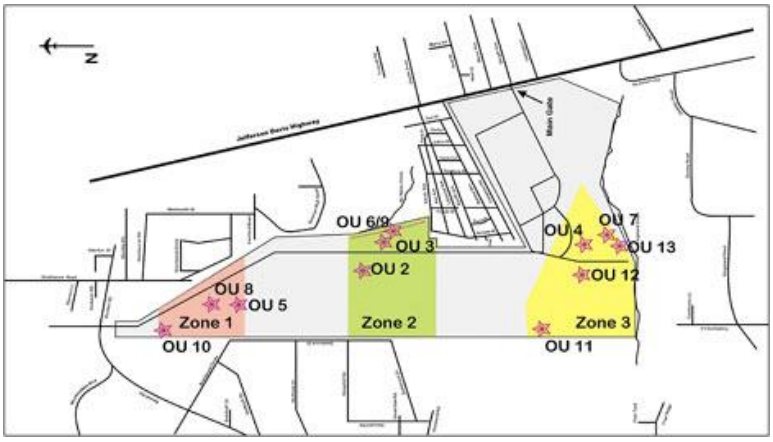
Land use in Chesterfield County in the vicinity of DSCR is primarily single-family residential, with intermixed commercial and light-industrial properties. The majority of the acreage is dedicated to facility operations; however, 37 acres are available for wildlife habitat opportunities.

Background

DSCR faces environmental challenges resulting from past activities onsite. Contaminated soil and groundwater at DSCR are the result of past practices in hazardous material handling and training exercises. Site-wide contamination emanates from past activities at fire training pits, acid neutralization pits, degreasing areas, and hazardous material landfills.

Investigations at DSCR were initiated when contamination was first identified in 1979 and have continued ever since. In 1986 EPA issued a Corrective Action Permit to DSCR pursuant to the Resource Conservation and Recovery Act (RCRA). Based on the conclusions of previous site investigations the site was placed on the National Priorities List (NPL) in 1987 and entered into a Federal Facility Agreement in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act with EPA and the Virginia Department of Environmental Quality (VDEQ) in 1990.

Currently, there are 13 Operable Units (OUs) located within three geographically designated zones at DSCR (Figure 3). OUs 1–5 and 10–13 are source area soils; OUs 6–8 comprise contaminated groundwater and surface water plumes associated with the source OUs, and OU9 is an interim Remedial Action -- a groundwater extraction and treatment system-- for OU6 groundwater in Zone 2.



Each of these OUs is at varying stages of the CERCLA process. The primary chemicals of concern in soil and groundwater are identified as chlorinated aliphatic hydrocarbons (CAHs) and metals. CAHs are constituents of industrial solvents like tetrachloroethene (PCE), and trichloroethene (TCE). Remedial investigations are underway or have been completed for all of the OUs.

Between 1992 and 1998, interim Records of Decision (RODs) were signed for three of the nine source OUs (OUs 1, 3, and 5) and for the OU9 groundwater interim remedial action and a final, no-further-action ROD was signed for OU4 soils. Remedial investigations have been largely completed for the remaining five source OUs and the three groundwater OUs. Supplemental field sampling is planned for 2003 and 2004 to collect the data necessary to complete the feasibility studies for these eight OUs and to support final remedy decisions and records of decision for those OUs for which interim RODs are in place.

Site Specific Geology

Environmental on site conditions present dynamic challenges to DSCR's Installation Restoration Program (IRP). A two-tiered aquifer system separated by a pervasive clay layer presents a scenario where contaminants move along lateral boundaries. Contaminants may be bound-up in saturated clays which are often difficult to remediate.

Restoration Program Staffing:

Within DSCR's Environmental Office two people manage the Installation Restoration Program. With 13 operable units, the managers must manage their time prudently to ensure the successful remediation of individual sites, while focusing on DLA's initiative to develop a facility-wide strategy for the center. Managers split time reviewing documents, devising strategic plans, monitoring quality control and managing stakeholder concerns and priorities. DSCR's Installation Restoration Program relies on DoD service centers, such as the Air Force Center for Environmental Excellence (AFCEE) and the U.S. Army Corps of Engineers, Norfolk District, to provide contractual support and technical management.

Real Estate Issues:

Although very few acres of offsite residential land have been affected, DSCR's Installation Restoration Program must effectively deal with the heightened concern of affected residents just outside the fence line. DSCR works with the U.S. Army Corps of Engineers Norfolk District (CENAO) Real Estate Branch to obtain rights of entry agreements that grant us access to privately owned land offsite. With full access to offsite parcels, DSCR engineers and scientists can effectively study and remediate impacted areas. DSCR coordinates all field level efforts with landowners to be respectful of their right to privacy and to ensure no harm to private property.

Regulatory Interaction:

The IRP program's success is dependent on the supporting efforts of the restoration partnering team. The team consists of representatives from DLA and its service centers, the Virginia Department of Environmental Quality (VDEQ) and the U.S. Environmental Protection Agency (EPA).

The team's objective is to enhance the environmental decision making process by

Results of Productive Partnering Sessions

- Agreements to post the latest technical information and environmental sampling results to a controlled website, so each agency can review information and progress
- Established internal working groups with representatives from each agency in order to communicate regularly
- Instituted a process of holding weekly conference calls as an appropriate course of action during field work to ensure concurrence with the dynamic nature of modern field work
- Shared weekly status reports are developed and distributed to each agency. These reports will form the basis for future meetings.

working together to achieve consensus results. DSCR's IRP uses periodic partnering sessions with regulators to identify ways to work efficiently and effectively, while keeping the restoration process moving forward.

Partnering sessions help establish and clarify each agency's roles and responsibilities in relation to the entire group. This allows for good information transfer both externally and internally. Partnering sessions also formalize internal communication processes so that everyone stays informed and has a means to effectively provide input and respond to direction.

As an innovative approach, DSCR's partnering team uses performance values discussion and consensus to maintain regulator involvement. The theory is that a diverse governmental agency team that shares performance values can more effectively make decisions in reaching final cleanup solutions. The discussion helps determine stakeholders values so that the team can consider and communicate solutions effectively. Shared performance values allow the team to balance difficult choices that may involve conflicting objectives. The ERT has come to realize that not all decisions can be all things to all people. The team discerns expectations that are brought to the table by decision makers and those who are affected by decisions.

The team's input and discussion facilitates partnership between the agencies, speeds up the cleanup process, and facilitates strategic planning for the future. The team works well when communication is effective and prompt, and each agency's input is reflective of its own values and principles.

Community Involvement

In 2001 a groundswell of concern arose from DSCR's neighbors and local news media about the status of the Installation Restoration Program.

DSCR has responded to the community's concerns by enhancing its community involvement program and, through a variety of methods, DSCR has established effective information exchange with stakeholders. Using monthly public meetings, web sites, compact discs containing DSCR's administrative record, newsletters and environmental fairs, the center shares information about the environmental cleanup efforts. Stakeholders are invited to voice their ideas, opinions and concerns. The overall objectives of the community involvement program are to:

- Keep the community informed about the results of environmental investigations and related actions.
- Obtain comments from the public on recommendations on cleanup or other actions.
- Respond to public concerns about the restoration program and operations at DSCR.

The completion of a Community Involvement Plan (CIP) is another highlight of DSCR's community involvement program. Based on interviews representing a cross section of residents and business owners, the plan summarizes community concerns and provides a guide for information exchange between DSCR and the community.

DSCR's Restoration Advisory Board was heavily involved in developing this CIP. Members had the opportunity to review and comment on the document, and their comments have been incorporated. The plan provides an overview of current stakeholder issues and outlines the public involvement opportunities DSCR will provide to interested stakeholders as environmental remediation efforts continue.

Benefits of the Community Involvement Plan

- Identified the concerns the local community may have regarding ongoing environmental remediation efforts at the site
- Determined the best methods for communicating with interested stakeholders
- Established effective and comprehensive mechanisms for involving and educating the community about the environmental remediation efforts
- Set forth a strategy for ongoing, two-way communication between the DSCR and the community.

Additionally, DSCR's administrative record, which contains more than 600 program-related documents, has recently been published online at http://www.adminrec.com/. The administrative record includes technical reports, informational fact sheets, public notices and maps. The Web site can be searched for information by type, name, date, etc. Compact discs with the administrative record are available from the installation's Public Affairs Office.

Program Summary

DSCR's IRP program is dedicated to plan, direct, monitor, and control every phase of the installations cleanup program. During this award period we targeted the development and implementation of an installation-wide supplemental feasibility study work plan as a priority.

This strategic work plan outlines goals and strategies for the DSCR Restoration Program. The plan will be used to develop the elements of an operational plan for each operable unit while maintaining a holistic outlook for site closure. The linkage between the strategic plan and the operational plan enables DSCR to track and report its performance. Only consistent and clear linkage between the program's strategic plan and the operational plans will allow a focused cycle of continuous quality improvement efforts for the organization and components.

Innovative Technology Demonstration/Validation and Implementation

Besides helping DSCR implement closure strategies that are necessary and efficient, the work plan details DSCR's use of the triad approach to streamlined data collection and analysis. Recently developed by the U.S. Environmental Protection Agency, the triad approach involves integrating systematic planning, dynamic work plans, and real-time field analytical technologies to clarify site conditions. DSCR is one of the first DoD installations to utilize this approach.

In the past, environmental site characterizations were hampered by endless rounds of regulatory approved sampling and analysis plans, fixed-based laboratory data generation, and

changing site conditions. The triad site characterization approach allows us to collect and interpret environmental data in real time using state-of-the-art equipment such as cone penetrometers and membrane interface probes. These state-of-the-art tools provide the IRP team with nearly instantaneous screening level data to focus subsequent studies and identify continuing sources of contamination. Armed with high-resolution data, DSCR's scientists and engineers ensure future studies and monitoring well installations are installed to deliver optimal results and that data quality objectives are unquestionably met.

Pre-approved field-based strategic decisions also allow our scientists and engineers to ensure that all necessary data are collected on the first try.

The Supplemental Feasibility Study Work Plan provides us a framework to ascertain that data are gathered quickly and efficiently so that DSCR can make informed decisions to ensure protectiveness across all affected environmental media. The work plan also benefits DSCR by improving response decisions at a reduced lifecycle cost. Lastly, the performance metrics developed in response actions will be used to facilitate the ongoing development of a center-wide Environmental Management System.

With input from DSCR's environmental restoration team, which includes our contractors, the state and federal regulatory agencies, we developed a cutting edge work plan using triad method. This Path Forward Work Plan employs an investigation strategy based on systematic planning, a dynamic work plan, and the use of on-site analytical tools. In short, the structure of the work plan helps us make informed investigative decisions in the field, rather than waiting months, even years, to go through the cyclical administrative requirements of traditional remediation investigations.

Restoration Advisory Board (RAB)

The most active element of DSCR's community involvement program is the Restoration Advisory Board (RAB). The RAB was established in January 2002 to provide a forum for the community to be involved in the decisions impacting the IRP.

RAB members represent the community, Chesterfield County, DSCR, the Virginia Department of Environmental Quality, and Environmental Protection Agency. Eleven Chesterfield County residents volunteer as RAB members, dedicating many hours to learn about cleanup efforts at the facility. The RAB meets monthly at a local community center and the public is welcome to attend and participate.

Members make suggestions, recommendations and comments on issues concerning investigation and cleanup activities. Meetings continually rotate their focus from a technical meeting, followed by an administrative meeting, followed by a training meeting.

RPO Integration

In 2001 DLA authorized a Remedial Process Optimization (RPO) study at DSCR. The RPO report was completed to ensure that each remediation system is effectively making progress towards site cleanup objectives and remains protective of human health and the environment.

DSCR instituted a Remedial Process Optimization (RPO) program to develop innovative approaches to cleanup programs that produce cost avoidance and real-world results. The RPO program uses advanced science and technology to help DSCR complete its environmental response obligations in a timely manner. The RPO program has helped the ERT identify and implement several techniques that provide long-term savings to the restoration program. As a result of the RPO program the ERT has optimized its operation and maintenance program to eliminate repetition in data collection and to gather only data related to the overall remediation strategy of the site. The ERT has also evaluated the potential effectiveness and efficiency of alternative technologies to contain and stabilize sources of dissolved contamination. As a result the ERT is considering revisiting conventional extractive remedial technologies that may be ineffective given the specific site conditions (e.g. presence of dense non-aqueous phase liquids, mobilized metals, and complex hydrogeology).

The Supplemental Feasibility Work Plan applies the recommendations made by the Remedial Process Optimization (RPO) Report completed in 2002.

Reducing Risk to Human Health and the Environment

During the award period DSCR has made great progress in its Restoration Program by incorporating optimization techniques and advancing the remediation process all in the name of reducing risk to human health and the environment.

A good example of progress is adoption of Performance-Based Environmental Restoration Management Assessment, or PERMA. DSCR's Restoration Program was selected to be DoD's pioneer in PERMA.

PERMA is a DLA-authorized management assessment, which provides project cleanup teams with the tools to develop flexible, effective, and efficient closure plans for complex sites with groundwater and surface water impacts. DLA's service center, the Air Force Center For Environmental Excellence (AFCEE), reports PERMA is designed to help facility project teams promote creative problem solving and innovation to achieve measurable results with diminishing resources. PERMA's framework is intended to restore the intended flexibility in the DERP through improved strategic planning for environmental restoration programs by revisiting response actions with the benefit of lessons learned, managing the uncertainty associated with decisions, and using results-based management techniques to improve progress toward response complete at each installation.