



## Secretary of Defense Environmental Awards Fiscal Year 2005 – Environmental Restoration, Installation

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### INTRODUCTION

Commissioned in May 1942, Marine Corps Air Station (MCAS) Cherry Point initially served as a training base for Marines bound for the Pacific theater during World War II. Because of its strategic location midway along the North Carolina coast, the Air Station also served as a base for anti-submarine operations throughout the war.

Today, MCAS Cherry Point is home to over 9,000 Marines and sailors and 5,600 civilian employees. MCAS Cherry Point hosts the 2nd Marine Aircraft Wing (2dMAW), including 10 flying squadrons and various ground support elements; the Naval Air Depot, Eastern North Carolina’s single largest industrial facility; and Halyburton Naval Hospital. Cherry Point operates the BT-9 and BT-11 air-to-ground target range complexes and the Mid-Atlantic Electronic Warfare Range, all of which are vitally important to the training missions of each of the military service

branches. The Air Station also operates a squadron of search and rescue (SAR) helicopters that, in addition to supporting the military training mission, provide fire fighting, medical evacuation, and SAR support to the regional community.

Cherry Point covers 13,164 acres with an additional 15,980 acres in outlying support areas. The uplands consist generally of pine flatwoods along with various habitats that support numerous species of plants and animals, including white-tailed deer, wild turkey, and endangered species such as the American alligator, spring goldenrod and bald eagle. MCAS Cherry Point is surrounded on three sides by the environmentally sensitive waters of the Neuse River watershed. In addition to offering recreational opportunities for Air Station residents and the local community, this estuarine environment serves as habitat for many species of migratory birds and as a nursery for coastal shore birds and marine life.

### BACKGROUND

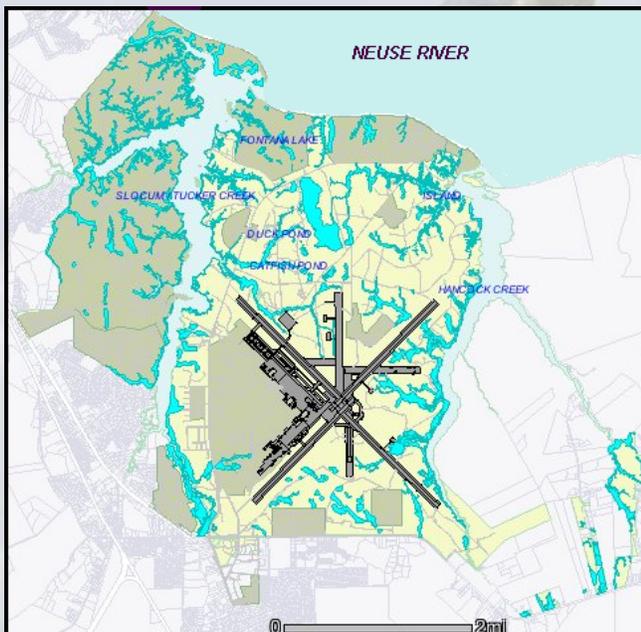
#### Overcoming Cleanup Challenges

With only 165,000 people living in the three nearest counties, the area surrounding MCAS Cherry Point retains a rural character. However, encroachment and demographic changes from significant population growth - particularly along the Atlantic Ocean beaches of Carteret County – bring increasing challenges for both environmental and operations staff and highlight the need for innovative thinking and active communication with the surrounding communities.

Cherry Point’s Installation Restoration (IR) team faces significant cleanup challenges stemming primarily from historical activities in the industrial heart of the Air Station. Standard handling and disposal practices

for industrial chemicals, wastes, and fuels resulted in several extensive contaminant plumes and numerous smaller waste disposal units.

Several of the Air Station's cleanup sites are extremely large and complex. The central industrial area alone includes a large grouping of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites designated as Operable Unit 1 (OU1), numerous underground storage tank (UST) release sites, and several Resource Conservation and Recovery Act (RCRA) Solid Waste Management Units (SWMUs). OU1 alone encompasses over 500 acres and contains



*MCAS Cherry Point is surrounded on three sides by the environmentally sensitive Neuse River estuary system.*

more than 100 potential contaminant source areas and multiple commingled contaminant plumes.

MCAS Cherry Point's hydrogeological, industrial, and ecological settings create unique resource protection and human health concerns. The Air Station and several nearby municipalities rely on the

groundwater underlying the facility for their drinking water supplies. Numerous construction and maintenance projects are implemented each year in the central industrial area alone. Each of these projects must be closely tracked to ensure that contractors are advised of the presence of contamination and that worker exposure is minimized. In addition, MCAS Cherry Point and its outlying fields are located in the environmentally sensitive coastal plain of North Carolina. The surrounding estuarine environment is vitally important to the local commercial fishing industry. Effective implementation of remedial projects is critical to ensure protection of wetlands, surface water bodies, groundwater aquifers, drinking water supplies, and other sensitive receptors.

### Working as a Team

EAD's Restoration Division (RRD) is staffed with two environmental engineers, one chemist, and two environmental scientists. Management responsibilities for individual restoration sites are assigned according to the site's primary regulating program: CERCLA, RCRA, or UST.

The Air Station's cleanup team strives for an open and trusting relationship with the various regulatory agencies and with the public. Managers are empowered to pursue open dialogue with State and federal regulatory agencies to solve technical, political, and regulatory issues.

Internally, RRD has adopted a team approach in order to effectively integrate the various regulatory programs. All staff members work closely together to share ideas and prioritize sites based on regulatory requirements and funding availability. Major cross program issues (such as management of contaminated media during civil construction projects) are assigned to a single program manager to

ensure that consistent policies and standards are applied across all program areas.

### Involving Our Neighbors

MCAS Cherry Point enthusiastically seeks community involvement in the IR decision-making process. To improve community participation and foster an atmosphere of openness and trust, the Air Station:

- Holds public meetings of the Cherry Point Restoration Advisory Board (RAB) to discuss restoration progress and direction;
- Actively recruits community members for the RAB;
- Provides RAB sponsored technical site tours to the public;
- Publishes a newsletter to inform the public of events and developments;
- Publishes a sophisticated, community-centered section on the Air Station's IR web site; and
- Maintains electronic information repositories at two local libraries.



*Dr. Patricia McClellan-Green, Co-Chair, MCAS Cherry Point Restoration Advisory Board, accompanies her Duke University Marine Lab students during a February 2004 technical tour of the air sparge system at Operable Unit 1, Site 16.*

Visit MCAS Cherry Point's Installation Restoration web site at:

<http://public.lantops-ir.org/sites/public/cherrypoint>

During fiscal year 2005, the Air Station also revamped its Community Involvement Plan and organized a major event to recognize the RAB members for 10 years of commitment and service to both the Air Station and the community.

### Focusing on Results

Cherry Point's restoration team strives for a goal-oriented focus. As a result, the pace of cleanup is accelerating and the Air Station is well positioned to have records of decision in place at all of its CERCLA operable units by the close of fiscal year 2007. Specific achievements during fiscal years 2004 and 2005 include:

- Achieving a "Yes" on the Government Performance Results Act RCRA Environmental Indicator (EI) CA 750 by demonstrating that migration of contamination via groundwater was controlled;
- Attaining "no further action" status at 9 RCRA/voluntary CERCLA sites, 17 UST sites, and one CERCLA site;
- Executing two records of decision; and
- Finalizing the Air Station's Federal Facility Agreement - culminating over seven years of negotiations between the Marine Corps, Navy, State of North Carolina, and U.S. Environmental Protection Agency.

### PROGRAM SUMMARY

MCAS Cherry Point's restoration objectives are aligned with the statutory Defense Environmental Restoration Program goals of "correcting environmental damage that creates an imminent and substantial endangerment to the public



health or welfare or to the environment.” The Cherry Point team seeks to achieve these goals in a technically sound, timely, and cost-effective manner. To this end, the Cherry Point restoration team has the following objectives:

- Prevent unacceptable risks to human health and the environment.
- Meet all regulatory requirements and deadlines.
- Use teamwork to share successful cleanup strategies that can be applied across regulatory programs.
- Maximize the use of innovative technologies and management approaches to support the installation

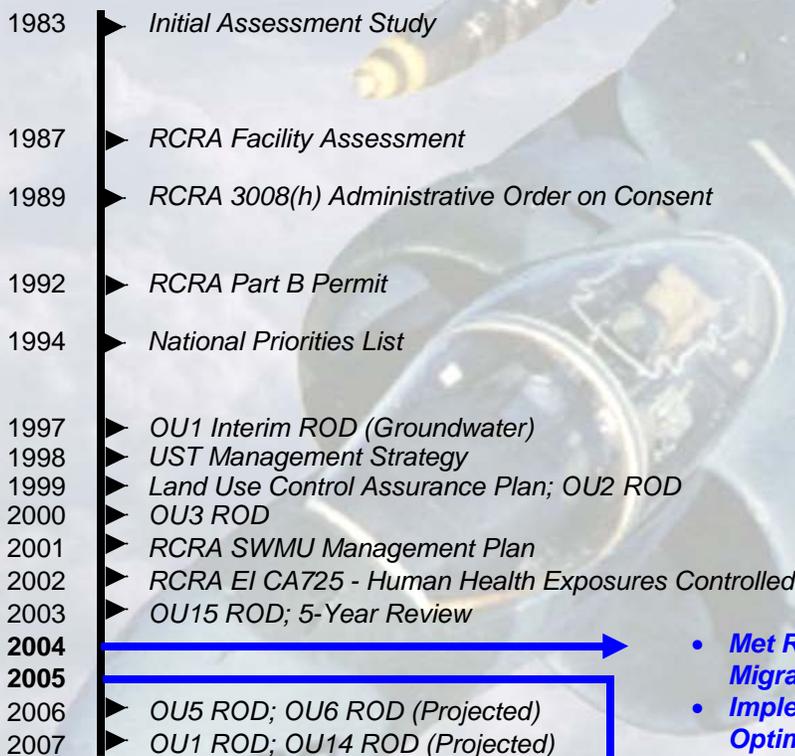
missions and unit readiness, reduce costs, increase small business participation, and close sites.

- Improve relations with the community and the regulators by fostering an atmosphere of openness and trust.

The remarkable progress achieved by the Cherry Point restoration team during fiscal years 2004 and 2005 demonstrates that the Air Station enjoys noteworthy success in meeting each of these objectives. This success can be attributed to the numerous initiatives the team has implemented over the last few years.

### INITIATIVES AND ACCOMPLISHMENTS

MCAS Cherry Point’s approach to cleanup activities creates an environment that encourages innovation, demands honesty and openness with both the community and the regulatory agencies, and fosters the sharing of successful technologies and management techniques across program and site boundaries. The following success stories provide a sampling of the significant accomplishments that have risen from this successful management system.



- **Met RCRA Environmental Indicator CA 750 - Migration of Contaminated Groundwater Controlled**
- **Implemented Corrective Action or System Optimization at 4 Sites**
- **Closed 9 RCRA/Voluntary CERCLA Sites**
- **Closed 11 UST Sites**
- **Closed 1 CERCLA Site**

**MCAS Cherry Point’s restoration timeline demonstrates that the pace of cleanup is accelerating – the Air Station is on track to have Records of Decision in place at all Operable Units by the close of 2007.**

- **Executed Federal Facility Agreement**
- **Implemented Corrective Action or System Optimization at 6 Sites**
- **Executed OU4 Record of Decision**
- **Executed OU13 Record of Decision**
- **Updated Community Involvement Plan**
- **Closed 6 UST Sites**

## Controlling Human Health Risks and Contaminant Migration

Protecting human health, protecting the environment, and meeting all regulatory requirements are MCAS Cherry Point's principal IR program objectives.

In 2004, ongoing initiatives focused on identifying and eliminating areas of contaminant migration via groundwater resulted in the USEPA and NCDENR determining that RCRA Environmental Indicator (EI) CA750, *Migration of Contaminated Groundwater Under Control*, had been met. This milestone follows the 2002 determination that unacceptable human health risks were eliminated (EI 725).

### Supporting the Mission!

The Air Station's cleanup team continuously seeks ways to better support the facility mission while accomplishing restoration tasks.

Because of high workloads resulting partly from the reconstitution of equipment returning from the battlefields of Iraq and Afghanistan, production schedules within the NADEP are particularly sensitive to disturbance by restoration activities. The cleanup team routinely schedules restoration work on the less active third shift and actively seeks out innovative



Using in-situ chemical and biological reduction technologies minimizes operational disturbance.

technologies that will minimize the footprint of the IR program within the NADEP.

One such innovative technology is enhanced in-situ bioremediation. Several contaminated areas within the NADEP are crowded with active work centers that are served by a spider web of utilities and other subsurface obstructions. In this crowded, bustling environment, applying conventional treatment technologies such as multiphase extraction or air sparging are not only very risky and very costly, but also extremely disturbing to the day-to-day operations of the facility. Rather than allow these problems to slow the cleanup effort, the Cherry Point project team instead chose to examine innovative source reduction technologies; ultimately selecting enhanced in-situ bioremediation for testing in one source area. The initial round of treatment reduced contaminant levels by 90%, thereby proving the technology to be both effective and less costly. The team is now conducting a second round of treatment using a similar technology that incorporates both chemical reduction and bioremediation components, and is evaluating other source areas for applicability of this technology.

The restoration team also took the lead in developing the Air Station's capacity to blend fuels recovered by the IR program with the used oil generated by other activities aboard the Air Station. The recovered fuel's low sulfur and ash content is used to offset the high sulfur and ash content that might otherwise prohibit the use of the used oil as fuel at the station steam plant. At the same time, the used oil's high flash point offsets the relatively low flashpoint that sometimes makes the recovered fuel unusable.

In 2004, the first year of blending operations, the facility processed approximately 54,400 gallons of recovered fuel and 90,000 gallons of used oil. For 2004 and 2005, the blending operation

reduced the Air Station's steam plant fuel bill by an average of \$85,000 per year.



In 2004/2005, operation of the blending facility reduced boiler fuel purchases by \$170,000.

### **Saving \$\$\$ with Innovative Technologies**

In addition to applying innovated treatment technologies, the cleanup team supports Navy-wide efforts to develop new, cost effective approaches to site assessment. In 2004, the team implemented a program to evaluate a newly developed 10-day sediment toxicity test against the standard 20-plus-day test. The effort validated the new, more cost-effective method. The results were presented at the 2004 Society of Environmental Toxicology and Chemistry Conference.

### **Saving \$\$\$ and Supporting Small Businesses with Optimization and Fixed Price Contracting**

The Air Station's management approach facilitates the transfer of successful methods between programs. In 1998, the UST program implemented the UST Management Strategy. The Strategy continues to produce results by combining remedial action optimization – designed to reduce operation and maintenance (O&M) costs - with a regulatory optimization strategy - designed to ensure that each site travels the most efficient path to closure.

In 2003 and 2004, transferable aspects of the Strategy were applied to the Air Station's RCRA and CERCLA programs.

As a result, nine RCRA sites were closed under North Carolina's voluntary CERCLA program while remedial action optimization at three CERCLA sites resulted in O&M cost reductions of nearly \$500,000 per year between 2002 and 2005. Overall, the Strategy has resulted in cost reductions exceeding 10 percent of the Air Station's overall cleanup budget.

MCAS Cherry Point is also a leader in the movement from "cost plus" to "firm fixed price" contracting. In addition to realizing a cost reduction of approximately 11 percent, firm fixed price contracting is particularly suited to small and disadvantaged business entities (SDBEs). The results for 2004 and 2005 are impressive: over two thirds of Cherry Point's \$4.6M in cleanup work is performed by small and disadvantaged businesses.

### **Fostering Respect and Trust**

Interviews with community members and group assessments made by RAB members from across the country have demonstrated the success of MCAS Cherry Point's community outreach efforts.

In 1995, the community members viewed MCAS Cherry Point's efforts as good and getting better, but still in need of improvement. In 2003, all of the individuals interviewed believed that the Air Station and regulatory agencies are responsive to the environmental issues at Cherry Point, and most supported and trusted the Air Station's ability to clean up its IR sites.

At the 2004 Department of the Navy RAB Training Workshop, RAB members from across the country consistently rated Cherry Point's RAB/facility relationship as one of the top five based on cooperation between parties, mutual respect between members, and working together to find environmentally friendly solutions that are acceptable to all members.