

## Secretary of Defense Environmental Awards (FY 2008)

1. Award category: **Environmental Restoration - Installation**
2. Name of nominated person, team or installation: **Marine Corps Air Station, Cherry Point**
3. Title of nominee(s) (if individual/team award): n/a
4. Telephone numbers (commercial and DSN) for nominee: n/a
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### **Abstract:**

Marine Corps Air Station Cherry Point has embraced innovative and effective partnering, site management, investigation, and cleanup techniques to create a program that protects human health and the environment, supports the installation mission, and promotes efficient and cost effective site closure. In 2007 and 2008, restoration initiatives generated over \$400,000 in savings for the Air Station's operational account and over \$2.75 million in savings for the restoration program while meeting closure requirements at 11 sites.



## Secretary of Defense Environmental Awards Fiscal Year 2008 – 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



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

coast, the Air Station also served as a base for anti-submarine operations throughout the war.

Today, MCAS Cherry Point is home to over 10,600 Marines and sailors and 5,500

civilian employees. MCAS Cherry Point hosts the 2nd Marine Aircraft Wing (2dMAW), including 10 flying squadrons and various ground support elements; the Fleet Readiness Center (FRC), Eastern North Carolina's single largest industrial facility; and Halyburton Naval Health Clinic. 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

#### Overcome Cleanup Challenges

With only 170,000 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 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 industrial practices for the handling and disposal of 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

more than 100 potential contaminant source areas and multiple commingled contaminant plumes. Cherry Point is also assessing a World War II and Korean War era bombing target under the Marine Corps' Military Munitions Response Program (MMRP).

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 supply. 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.

**Work as a Team**

MCAS Cherry Point's Restoration Division (RRD) is staffed with two environmental engineers, one chemist, and two environmental scientists.

Management responsibilities for individual restoration sites are assigned



*Restoration activities in Cherry Point's highly congested industrial area require careful coordination to limit impacts on production and avoid damage to utilities and infrastructure.*



according to the site's primary regulating program: CERCLA, RCRA, or UST. The Air Station's restoration program managers work closely with and enjoy tremendous support from the Naval Facilities Engineering Command's (NAVFAC) North Carolina Integrated Product Team based in Norfolk, Virginia. All work within the framework of the Air Station's environmental management system to ensure continuous improvement in the cleanup processes.

The Air Station's restoration 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 programs.

### Involve 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;
- Maintains an online information

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

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

repository, including full access to the administrative record;

- Provides a work station for accessing the online information repository at the Havelock Public Library; and
- Distributes remedial action documents for petroleum cleanup sites to local community leaders.

During the last two fiscal years, the Air Station also:

- Published a RAB Resource Manual to provide ready reference information for RAB members and the public; and
- Developed and implemented a Public Involvement Plan for the Air Station's Military Munitions Response Program.

### Focus on Results

Cherry Point's restoration team focuses on results. During the award period, we:

- Completed closure requirements for three UST, six RCRA, and one aircraft mishap sites;
- Completed remedial action and discontinued land use controls at one CERCLA site.
- Assessed eight RCRA and four UST sites;
- Developed initial or improved remedies for two CERCLA, two RCRA and four UST sites;
- Completed removal actions at one UST and two CERCLA sites;
- Developed and implemented restoration actions at two aircraft mishap sites;
- Initiated Munitions Response Program (MRP) site assessments at several closed ranges including BT-2/Cat Island, a former bombing range in Bogue Sound.



## 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.

## ACCOMPLISHMENTS

Cherry Point's noteworthy success in meeting its cleanup program objectives is built upon numerous innovative initiatives. Although the benefits of individual initiatives are sometimes difficult to quantify, the cumulative impact is often dramatic.

For example, in implementing the removal action at Sandy Branch, the use of a new sediment toxicity testing technique led to the validation of a novel method of determining appropriate remedial goals (RGs). The team then applied these RGs using a pre-confirmation strategy that reduced uncertainty and prevented multiple mobilizations of field crews. This chain of innovations ultimately led to an 85% cost reduction for the project - a projected savings of \$2.75 million - and, just as importantly, significantly reduced the impact on the Sandy Branch aquatic system.

## RESTORATION TIMELINE

1983	▶ <i>Initial Assessment Study</i>	
1987	▶ <i>RCRA Facility Assessment</i>	
1989	▶ <i>RCRA 3008(h) Administrative Order on</i>	
1992	▶ <i>RCRA Part B Permit</i>	
1994	▶ <i>National Priorities List</i>	
1997	▶ <i>OU1 Interim ROD (Groundwater)</i>	
1998	▶ <i>UST Management Strategy</i>	
1999	▶ <i>Land Use Control Assurance Plan; OU2 ROD</i>	
2000	▶ <i>OU3 ROD</i>	
2001	▶ <i>RCRA SWMU Management Plan</i>	
2002	▶ <i>CA725 - Human Health Exposures Controlled</i>	
2003	▶ <i>OU15 ROD; 5-Year Review</i>	
2004	▶ <i>CA750 - Contaminated Groundwater Controlled</i>	
2005	▶ <i>Federal Facility Agreement; OU4 &amp; OU13 RODs; Community Involvement Plan; Closed 8 Sites</i>	
2006	▶ <i>OU5 &amp; OU6 RODs; Web Site Refreshed; Web Access to Admin Record; Closed 5 Sites</i>	
<b>2007</b>	▶	<ul style="list-style-type: none"> <li>• <b>Published RAB Resource Manual</b></li> </ul>
<b>2008</b>	<ul style="list-style-type: none"> <li>• <b>Assessed 6 RCRA &amp; 4 UST Sites</b></li> <li>• <b>Discontinued Land Use Controls at 1 Site</b></li> <li>• <b>Completed Closure Requirements for 9 Sites</b></li> <li>• <b>Implemented 2 CERCLA Removal Actions</b></li> <li>• <b>Installed or Modified 7 UST Remedial Systems</b></li> <li>• <b>Completed 1 RCRA Corrective Measures Study</b></li> <li>• <b>Planned Assessment of 2 Closed Ranges</b></li> <li>• <b>Developed Military Munitions Response Program Public Involvement Plan</b></li> <li>• <b>Completed 4 UST Corrective Action Plans (CAPs) or CAP Addendums</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Completed 2 Remedial Designs</b></li> <li>• <b>Completed 1 Removal Action</b></li> <li>• <b>Completed 2 RCRA Facility Investigations</b></li> <li>• <b>Completed 1 RCRA Corrective Measures Study</b></li> <li>• <b>Initiated Site Assessments at Closed Ranges</b></li> <li>• <b>Completed Closure Requirements for 2 Sites</b></li> </ul>



*Multiple innovations reduced both the restoration cost of and the environmental impact resulting from the Sandy Branch removal action. To save operational funds, the flood plain re-planting was closely coordinated with a project to remove and replace a pedestrian bridge spanning the project site.*

Readiness Center (FRC). The FRC is experiencing extremely high workloads in their effort to reconstitute equipment returning from the battlefields of Iraq and Afghanistan, making production schedules particularly sensitive to disturbance by restoration activities. The cleanup team routinely schedules restoration work on the less hectic third shift and actively seeks out innovative technologies that will minimize the footprint of the restoration program and reduce the disruption caused by the cleanup work.

**Support the Mission**

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

**Blended Fuel Facility:** In one initiative, the restoration team partnered with the Air Station’s Qualified Recycling Program (QRP) to establish a facility to blend used oil collected by the QRP with petroleum recovered during cleanup projects. As much as 100,000 gallons of blended product is provided to the central heating plant each year, reducing the Air Station’s annual heating bill by \$400,000 at FY 2008 prices. In 2007, NAVFAC produced a five minute video about Cherry Point’s innovative blending capability and promoted it as a model for other Navy facilities at that year’s Navy Restoration Conference.

**Reduced Footprint:** The restoration team takes great care to reduce the impact of cleanup activities on facility operations. This is particularly important within the Fleet

**Mishap Support:** Cherry Point’s restoration team provides assistance to 2d MAW units following aircraft mishaps. The team offers its cleanup expertise to help minimize environmental impacts (and cleanup costs) during the aircraft recovery and mishap investigation phases; then supervises the site restoration activities.



*Naval Facilities Engineering Command featured Cherry Point’s Blended Fuel Facility in a five-minute video promoting Cherry Point’s program as a model for other Navy facilities.*



**Fast Track Cleanup**

*UST Closure and Management Program:*

To efficiently manage our numerous petroleum release sites; effectively track regulatory permitting, monitoring and reporting requirements; and achieve site closure as quickly as possible, Cherry Point implemented a comprehensive UST Closure and Management Program (CAMP). The CAMP proactively monitors and evaluates each site to identify redundant or ineffective sampling strategies and systemic inefficiencies.

The CAMP was instrumental in increasing system efficiency, reducing costs, and accelerating site closure. During fiscal years 2007 and 2008, the CAMP identified two product recovery systems at which pipeline fouling had significantly degraded recovery rates and was instrumental in the accelerated closure of four petroleum sites.

*EHC™ Treatability Study:* The restoration team completed a successful treatability study beneath a heavily congested industrial area within the FRC. Injection of EHC™ into the contaminated zone creates conditions favorable to biological processes that degrade chlorinated volatile organic compounds (cVOCs). Wider use of this technology will accelerate cleanup while

minimizing the impact to Cherry Point's mission and tenants.

*Fast Track Aircraft Mishap Restoration:* In 2008, the restoration team successfully implemented a fast-track project to clean up an off-station mishap site in time to meet the property owner's spring planting schedule. During the aircraft recovery and crash investigation, the team provided guidance to help minimize environmental impacts; then restored the site to regulatory standards for clean closure under an aggressive time-line that accommodated the property owner's spring planting schedule.

**Innovative Technology/Reduced Risk**

*Hydro-Pulse Application:* Cherry Point successfully tested and is proceeding with implementing an innovative petroleum product removal technique. The Hydro-Pulse technology uses air pulses to free petroleum that is trapped beneath the water table. Application of this technique in conjunction with mobile multiphase fluid extraction lead to reclassification and closure of UST Site 1773 as a low risk site under North Carolina's risk based cleanup standards.

*Sediment Toxicity Testing:* The Air Station spearheaded an effort to validate an



*The Cherry Point team restored the Open Ground Farms aircraft mishap site to clean closure standards while meeting an aggressive schedule dictated by the property owner's spring planting schedule.*



alternative toxicity testing method. The 10-day method requires one-half the time, costs less, and reduces the potential for erroneous results by using a true amphibian reference species. The results were presented to the Society of Environmental Toxicology and Chemistry.

**Innovative Remedial Goals:** The Sandy Branch RA project team utilized Apparent Effects Threshold (AET) values in developing preliminary remedial goals during the baseline ecological risk assessment process at Sandy Branch. Using the AET approach, the project team selected optimized, fully protective remedial goals that would minimize damage to the sensitive aquatic system during project execution.

**Pre-confirmation Sampling:** The Sandy Branch RA project team effectively used pre-confirmation sampling to avoid costly delays and multiple mobilizations. The effort revealed deeper than expected contamination and allowed project plans to be adjusted without incurring unnecessary additional costs.

**Military Munitions Response:** MCAS Cherry Point is investigating the safety and environmental impact of munitions left behind by aerial bombardment training at the former Cat Island Bombing Target. In conjunction with the Department of Defense Strategic Environmental Research and Development Program (SERDP), the



*The former Cat Island Bombing Target is an ideal site to implement innovative munitions response technologies.*

project managers are considering several innovative munitions detection technologies to identify and address munitions debris concentrations on the island and in the surrounding waters. Technologies under consideration include: wider area underwater munitions assessment; improvements of detailed underwater munitions surveys; cost-effective recovery and disposal in underwater environments; assessing and predicting munitions location; assessing and predicting munitions mobility; assessing munitions condition; and differentiating between intact munitions and debris, including non-munitions debris.

### Partnerships

**Banded Fuel Facility:** Born of a cross-departmental partnership within Cherry Point's Facilities Directorate, the tradition of cooperation continues with the production of the promotional video featuring Cherry Point's fuel blending capability. Spreading the word about this unique and successful facility required the active participation of Cherry Point, NAVFAC, and the facility designers and operators.

**Cat Island Community Involvement:** The Cat Island MMRP team successfully partnered with officials from the Town of Emerald isle to publicize the upcoming site investigation. Town officials were able to quickly correct false rumors about the project while their support greatly eased public concerns.

### Disadvantaged Business Participation

MCAS Cherry Point is a leader in the movement from "cost plus" to "firm fixed price" contracting. Because firm fixed price contracting is particularly suited to small and disadvantaged business entities (SDBEs), our SDBE participation is impressive. Approximately 70% of Cherry Point's \$6.5 million FY 2008 cleanup execution was awarded to small and disadvantaged businesses.