

SUBMITTAL FOR
2005 SECRETARY OF NAVY - DEFENSE
POLLUTION PREVENTION - INDUSTRIAL INSTALLATION AWARD
MARINE CORPS AIR STATION CHERRY POINT

INTRODUCTION

a. **Mission:** Marine Corps Air Station (MCAS) Cherry Point maintains and operates facilities and provides services and material to meet the operational requirements of the assigned tenants and commands. The missions of the major tenants that the Air Station hosts are as follows:

(1) The Second Marine Aircraft Wing (2d MAW). The supporting air component of Marine Forces, Atlantic, the mission of the aircraft wing is to conduct air operations to include offensive air support, antiair warfare, assault support, aerial reconnaissance including active and passive electronic countermeasures (EMC), and control of aircraft and missiles. As a collateral function, the wing may participate as an integral component of Naval aviation in the execution of such other Navy functions as the fleet commander may direct.

(2) The Naval Aviation Depot (NAVAVNDEPOT). Performs a complete range of depot level rework operations on designated weapons systems, accessories, and equipment. It manufactures parts and assemblies as required, provides engineering services in the development of changes in hardware design, and furnishes technical and other professional services on aircraft maintenance and logistics problems. This is the largest single-sited industry in eastern North Carolina, employing over 4,100 personnel.

(3) The Naval Hospital (NAVHOSP). Provides general clinical and hospitalization services to all armed services active duty and dependents, and other authorized persons. The hospital cooperates with military and civilian authorities in matters pertaining to health, sanitation, local disasters, and other emergencies.

b. **Environmental and Geographical Setting:** MCAS Cherry Point encompasses 11,485 acres and is located in the Coastal Plains area of eastern North Carolina, Craven County, approximately midway between New Bern and Morehead City. U.S. Highway 70 and NC Highway 101 provide highway access. The Air Station proper is located on a peninsula bounded on the north by the Neuse River, on the east by Hancock Creek, and on the west by Slocum Creek. The southern boundary borders on NC Highway 101. The Croatan National Forest is located adjacent to the Air Station boundary. In addition, the Air Station maintains three outlying airfields and two target complexes totaling 15,732 acres. The Air Station, 2d MAW, and its industrial tenant command, the NAVAVNDEPOT, have continued for more than a half-century to carve their places in history as service/industrial organizations that support the training and maintenance of our nation's sophisticated national defense machine. One might think of MCAS Cherry Point as being comparable to a small city with a large industry and an international airport (120,000 operations per year) populated by 10,000 marines and sailors, their 13,500 dependents, and more than 6,500 civilian employees for a total population of approximately 30,000.

BACKGROUND

a. **Environmental Challenges at MCAS Cherry Point:** Enactment of the Resource Conservation and Recovery Act (RCRA) in 1976, followed by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or "Superfund" of 1980, and the Hazardous and Solid Waste Amendments (HSWA) of 1984 provided impetus to clean up federal facilities, preserve the natural environment, and improve quality of life. Prior to passing RCRA, CERCLA, and HSWA Congress had passed the Clean Air Act, the Clean Water Act, and the National Environmental Policy Act (NEPA). Those laws and their amendments, together with additional state and federal environmental laws and Executive Orders, resulted in a mammoth undertaking by the Air Station to properly manage environmental resources and properly respect the environment in the planning and execution of new projects. Headquarters Marine Corps (HQMC)

incorporated the environmental management requirements set forth in current law in the USMC Environmental Compliance and Protection Manual, Marine Corps Order (MCO) P5090.2A dated 10 Jul 98. This Order and other environmental directives required U. S. Marine Corps commands to comply with federal, state, and local environmental and natural resource laws and regulations. Guidelines were thus established for a Marine Corps-wide policy to address environmental concerns.

(1) The three Marine Air Groups of the 2d MAW, located aboard MCAS Cherry Point, operate facilities and maintain aircraft in support of the wing mission. Aircraft currently based at MCAS Cherry Point, in squadron strength, include the AV-8B Harrier II, EA-6B Prowler, and C-130 Hercules. Marine Aircraft Group-14 operates maintenance and repair facilities for 145 aircraft currently assigned. Marine Wing Support Group-27 operates engineering support and construction equipment. Marine Air Control Group-28 operates electronic support equipment, air defense operations, and facilities in support of the 2d MAW. These groups operate maintenance and repair facilities for the wide variety of equipment assigned to each unit.

(2) The Air Station maintains support and maintenance facilities for two C-9B aircraft, two C-12 aircraft, and three CH-46 search and rescue helicopters. More than 1,000 items of garrison mobile equipment are in use by the Air Station in support of the 2d MAW and tenant commands. The Air Station operates two equipment maintenance facilities for mobile garrison equipment.

b. **Organization, Staffing and Management Approach:** The Environmental Affairs Department (EAD) of the Air Station Facilities Directorate manages all environmental matters for MCAS Cherry Point; Marine Corps Auxiliary Landing Field (MCALF), Bogue; Marine Corps Outlying Landing Field (MCOLF), Atlantic; Marine Corps Outlying Field, Oak Grove; and tenant commands. The department has oversight for and advises the Commander, Marine Corps Air Bases, Eastern Area on environmental matters for MCAS Beaufort; MCAS New River; and Marine Corps Air Field, Quantico. An environmental staff of thirty-two professional and technical personnel, distributed within the Environmental Compliance Division, Restoration & Recycling Division, and Natural Resources Division, carries out these tasks.

PROGRAM SUMMARY

a. **Objectives of the Pollution Prevention Program:** Accomplishments of the pollution prevention programs have largely resulted from following the management objectives set forth in the Air Station Environmental Strategic Plan adopted in 1993 and updated annually. The objectives and significant overall achievements relative to each are detailed below:

(1) Awareness: Awareness is provided through effective interaction with appropriate national, state, regional, and local agencies; education of ourselves, our customers, and our suppliers on the proper care of the environment and natural resources and through training of our team to meet and surpass established environmental performance standards.

(2) Planning: In concert with existing regulations and in anticipation of projected changes, we work closely with responsible agencies to plan for our development and that of our surrounding communities and region. Furthermore, established cooperative agreements and plans with surrounding county governments have positioned the Air Station as a leader in addressing regional environmental issues.

(3) Prevention: We implement changes to our processes to prevent pollution. We comply with existing regulations; monitor all processes to ensure compliance; and seek ways to improve. During the past two years, as documented by our Environmental Compliance Evaluation (ECE), the Air Station is shifting the environmental management emphasis to issues dealing with prevention rather than compliance.

(4) Reduction: We are actively working to reduce the amount of waste generated, both hazardous and otherwise, by careful selection of material and using closed loop systems and recycling. As indicated by our achievements in pollution prevention, it is possible to achieve significant waste reduction through changing the status quo relative to process modification and solid waste management.

(5) Remediation: We actively seek and identify hazardous waste sites. We remediate sites by cutting edge and proactive cleanup procedures in keeping with regulatory standards. All historic hazardous waste chemical release sites aboard the Air Station have been identified and programmed for remediation.

b. Overview of Outstanding Program Features and Accomplishments: Recognition of past achievements in environmental stewardship is evidenced through receipt of the following awards during 2004 and 2005. This record is evidence of our commitment to environmental excellence and demonstrates our innovative management approach.

Date Received

Award

2004	2003 Secretary of the Navy Pollution Prevention Award - Industrial Installation
2004	2003 Secretary of the Navy Environmental Cleanup Award - Installation
2004	2003 Secretary of the Navy Environmental Cleanup Award - Installation, Team
2005	2004 Secretary of the Navy Environmental Quality Award - Industrial Installation

MCAS Cherry Point has excelled among DoD facilities by winning the Commander in Chief's Installation Excellence Award on seven occasions over the past 17 years since the award has been given, 1988, 1994, 1996, 1997, 1999, 2000 and 2003. This award is unique in that it provides a monetary award of \$200,000 which has been used for quality of life programs for the Marine and civilian work force. The \$1,400,000 received from this source has been utilized to improve the working and living environment aboard the Air Station. This prestigious award designation was the result of Cherry Point's sustained commitments in innovative recycling, pollution prevention, and hazardous waste (HW) management programs.



Furthermore, the EAD staff has received seven prestigious Commander in Chief's Awards for outstanding achievements by individuals. This record of previous achievement sets the stage for continuing efforts toward environmental quality.

ACCOMPLISHMENTS

a. Waste Management and Resource Recovery:

(1) **Resource Recovery** - A Recycling Program was initiated at MCAS, Cherry Point in 1988, with the development of an infrastructure for an Industrial Qualified Recycling Program (QRP) to recycle commodities on a value priority basis. The Air Station has developed a recycling program for items such as steel, white and yellow metals, fired brass, high temperature alloys, waste oil, JP-4/JP-5 fuel, tires, batteries, and HM. By recycling more than 40.32 million pounds through the Defense Reutilization and Marketing Office, the QRP has generated over \$1.9 million in revenue for the Air Station since the program's inception. In FY04/05, over 7.3 million pounds were recovered and recycled, producing over \$486,588 in income for the Air Station. From March 1994 to August 1998, over \$845,000 has been provided to the MCCA Directorate for quality of life projects. The following projects are among some of what the QRP proceeds were used for: the purchase of a large tour bus, a recreational addition to Hancock Boating Marina, an outdoor entertainment stage, the purchase of carpet cleaners with cleaning fluids, locks, medicine cabinets for the troops in their new barracks, and picnic shelters.

The following is a summary of the more outstanding recycling savings and income achieved in the past 2 years:

Qualified Recycling Program. The recycling of steel, white and yellow metals, fired brass, high temperature alloys, tires, batteries, and miscellaneous items.

Pounds	Income	Cost avoidance
7,344,843	\$486,588.09	N/A

Waste Oil Wealth Program. The sale/donation of waste oil as a result of adoption of a program to source segregate chlorinated solvents from waste oil and resource recovery by burning waste oil in the central heating plant.

Gallons	Income	Cost avoidance
356,353	\$68,046.62	\$668,161.88

Used Fuel. The recycling of jet fuels and supplying fuels for burning at the Air Station main heating plant and training for Crash Crew.

Gallons	Income	Cost avoidance
237,460	N/A	\$773,793.34

Used Solvent Elimination (USE). The removal and recycling of spent solvent from parts cleaning machines.

Gallons	Income	Cost avoidance
17,182	N/A	\$103,092.00

Household Recycling Program. The recycling of aluminum and steel beverage cans, glass and plastic containers, and newsprint; initially utilizing a drop-off type program and then adopting a curbside collection for 2840 base housing units.

Pounds	Income	Cost avoidance
1,053,300	N/A	\$78,997.50

Wood Waste Recycling. Selling wood wastes from the construction debris landfill.

Pounds	Income	Cost avoidance
7,110,340	N/A	\$120,875.78

Total Income: \$554,635 Total Cost Avoided Savings: \$1,744,921

(2) **Improved Material Management** - Pollution prevention is dependent on waste stream management. The Air Station has made significant progress in improved material management by creating and maintaining a hazardous material control center (HMCC), which provides hazardous material (HM) management at all levels. The Supply Directorate consolidates all HM aboard the Air Station into one central warehouse. This has allowed the Supply Directorate HMCC to have complete control over procurement, issue, delivery, stocking, and reclamation of unused material. Services provided by the HMCC include shelf-life management, just-in-time procurement, and delivery and pickup of HM. Operation costs are limited to manpower, with no direct implementation or maintenance costs. The organizations taking advantage of this program include not only Cherry Point, but other military installations, so that excess material collected at MCAS, Cherry Point is advertised for reuse at MCAS Beaufort, SC and MCAS New River, NC. Actual cost savings for FY 2004 and FY 2005, for the reuse program are:

HM reissued by HMCC.....	\$161,698.
HM disposal cost avoidance.....	\$155,875.
Total cost avoidance.....	\$317,573.

This program not only fosters reduced material procurement costs, but also wide-scale education and participation in pollution prevention. Short and long term goals of the HM Reuse Program are: formation of a management team dedicated to customer satisfaction, improved management of materials to further reduce waste disposal costs, reduction of manpower and financial burdens on the customer, more effective utilization of HM through education programs, and continued reductions of waste stream generations.

(3) **Recharging Non-facility Fire Extinguishers:** The Air Station disposes of a large number of non-facility fire extinguishers. These fire extinguishers must meet the DRMO regulations for cylinder disposal (emptied of contents, valves removed and the container damaged to prevent reuse). This process is labor intensive, costly, may pose a health problem with exposure to dust when damaging the containers to prevent reuse. The Environmental Affairs Department and the Hazardous Minimization Control Center teamed together to sponsor the first Fire Extinguisher clean up week and has implemented a program to recharge, service and reissue fire extinguishers. The clean up initiative collected 400 fire extinguishers from the Air Station during this week. The Air Station will avoid the disposal of used extinguishers and the need to purchase new replacements. The projected savings are approximately \$35,000 (Cost of recharging and servicing versus purchasing and disposal).



b. Process Modification:

(1) **Installing drop inlet spill protection devices:** By installing drop inlet spill protection devices in the fuel pits along the flightline and providing spill response kits at each of the pits, MCAS Cherry Point has reduced the potential impact to the environment from spills and has improved the Marine's response time for spill cleanup. Fuel spills in the AV-8B Harrier pits, pits #'s 6-8, were getting into the storm sewer system because the storm sewer drop inlets are located directly beneath the fueling aircraft. In other pits, spills were running off the pavement edge into the grass/soil (no drains) due to a slow response by the Marines (spill response supplies located at their shops). In the Harrier pits, we closed off the storm sewer drop inlets to prevent spills from entering the system. The drop inlet at pit # 7 was closed with a metal plate welded/sealed to the drain cover, which prevents drainage. This initiative creates standing water in pit #7 following rain events. Realizing the problem of standing water that we would be creating if we permanently closed the drop inlets in all of these pits (#6-8), additional alternatives were evaluated. We selected and installed a commercially available product that is valved to allow for both spill protection and rainwater drainage. Safe Drain Inc. manufactures a device that seals to and mounts inside a drop inlet to regulate materials that would normally flow through. The Safe Drain™ device has a valve that can be closed to prevent drainage. For actuation, a "key" is inserted between the openings in the drain grate to open/close the valve. Our Safe Drain™ drop inlet spill protection devices are maintained in the closed position and hold back any rainwater/spills for collection in the pits. Collected rainwater is released following inspection for spills. The spill response kits located at each of the fuel pits have greatly improved the Marine's response time and are preventing spills from entering the environment.

(2) **Blending Facility:** The annual demand for oil-based fuel at the Central Heating Plant (CHP) is approximately 1.4 million gallons. Since the recyclable petroleum can be made suitable for use at the central heating plant and the production rate is less than the demand, a viable alternative for the recycling of the blended recyclable petroleum is to use it as a fuel at the central heating plant.

The construction phase of the blending facility began in FY 2001 and was completed and a contract for the operation of the blending facility was awarded in FY 2003. By blending the recovered fuels, used oil, and used fuels, which amounts to 270,000 gallons per year, will save the Air Station



\$237,600 per year. At this savings level, the investment for construction of the blending facility will have a payback period of less than 23 months. The first shipments of recycled used oil to the Blending Facility began in January 2004. A total of 90,000 gallons were delivered to the CHP for burning. Thus saving \$78,300 in purchasing heating oil for the Air Station's CHP. There has been an increase from \$.87 per gallon cost for #2 heating oil in FY 2004 to \$1.15 per gallon in FY 2005. A total of 170,095 gallons were delivered to the CHP for burning during FY 2004 - 2005. Thus saving \$170,409 in purchasing virgin heating oil for the Air Station's CHP. This blending facility is the only one of its kind in the Marine Corps and is also unique in that the operation and burning includes recovered remediated JP-5 jet fuels.

(3) **The Minimizer® Reduces Waste Solvents by Over 95%:** DynCorp International is using a solvent reclamation unit to reclaim solvents in their waste paint sludge aboard the Air Station. The Safety-Kleen Minimizers provide customers a proven approach to reducing paint waste and recycling thinner. This approach allows the user to save money on both product and compliance costs. Using a patented distillation process, the 18-Gallon Minimizer is ideal for commercial paint related markets such as automotive body shops as well as a variety of industrial solvent waste generators. It recycles lacquer thinner and paint waste as well as a variety of solvent that have a boiling point of less than 350 F, including Acetone, Xylene MEK, Toluene, Alcohol and many more. The waste removed in the process is reduced to a solid (referred to as a hockey puck) that is collected and picked up as part of the Safety-Kleen service. The Minimizer® Reduces Waste Solvents by Over 95%. Used paint thinner is automatically transferred to the Minimizer® and recycled from the paint. The fresh, clean thinner is transferred back to the Safety-Kleen Paint Gun Cleaner to be used again. The residue, consisting of paint solids, is a fraction of the original waste thinner volume which saves on thinner costs, waste costs, and significant waste minimization is achieved. At the current waste paint sludge generation rate by DnyCorp, the Air Station will save approximately \$26,920 per year in sludge disposal and virgin solvent purchases.



c. **Affirmative Procurement:** The Air Station has been buying re-refined motor oil through the Defense Supply Center – Richmond (DSCR) since 1996. This was before the mandate from the Commandant of the Marine Corps in a September 11, 1997 letter requiring the use of re-refined oil in all cases. When it became available, the Air Station started purchasing its motor oil under the Closed Loop Program. This allowed for the pickup of used oil aboard the air station in as little as a 55-gallon capacity anywhere that generated used at Cherry Point by Safety-Kleen, Corp. This has benefited the Air Station greatly when holding capacity became an issue. Under this Closed Loop Program, Safety-Kleen would pick up and remove up to 120% of the ordered quantity without charge to the Air Station. The Air Station's Motor Transport Department services approximately 950 vehicles including gas cars, carts, diesel trucks and aircraft handling equipment utilizing re-refined motor oil.



During 2004-2005, environmental innovations, pollution prevention and recycling initiatives have produced a grand total of **\$2,849,455** in income and cost avoidance. These programs have proven to be effective pollution prevention resources and waste reduction mechanisms for Marine Corps Air Station, Cherry Point.