

## **MCASY FY2008**

### **Secretary of Defense and Secretary of the Navy Environmental Award Narrative**

#### **Introduction**

Marine Corps Air Station (MCAS) Yuma sits in the southwest corner of Arizona on the California and Mexico borders. MCAS Yuma provides aviation ranges, facilities and services that support the operating forces, tenant commands and activities. The installation is comprised of highly skilled and motivated organization of Marines, Sailors, and Civilians providing a premier aviation-training complex that meets Marine Corps and national defense requirements.

MCAS Yuma provides fleet squadrons access to 10,000 square miles of special-use airspace designated for military aviation training and almost 2,000 square miles of underlying land reserved as aerial bombing and gunnery ranges. Collectively, this complex is the largest tactical aviation training range utilized by the Marine Corps. Most Marine Corps and many other service component aviation units deployed here to train as well as North Atlantic Treaty Organization (NATO) units and other foreign services. These deployments, ranging from a few days to weeks, brought approximately 9,600 personnel and 452 aircraft to Yuma annually.



#### **Pollution Prevention Program**

MCAS Yuma is committed to environmental excellence, sustainability of operations, community stewardship, and ensuring our warfighters have the ability to train as they fight. This realized through proactive Pollution Prevention (P2) efforts necessary to enhance mission readiness and to achieve environmental compliance requirements across all media. We continue to be good stewards of the facilities and training areas that have been entrusted to us. To accomplish these objectives senior leadership is committed to implement programs for reducing or eliminating generation of waste through source reduction and other innovative methodologies. This is reflected in the Installation Commanders Environmental Policy Statement, our P2 Plan goals, the EMS P2 working group team charter as well as conformance to the roadmap that EO 13423 has set before us.

MCAS Yuma is also a voluntary charter member of the Arizona Sustainability and P2 Military Partnership. The partnership was developed to ensure environmental excellence through a P2 partnership between Arizona Department of Environmental Quality (ADEQ) and the Department of Defense installations in order to continue as leaders in sustaining and improving quality while enhancing mission readiness by conserving resources within Arizona. The partnership has developed a working group to promote mission readiness, sustainability, and facilitate P2 innovations and information exchange. Goals that manage the partnership include:

- Collaborate to identify opportunities and exchange techniques to conserve resources and achieve common goals.
- Promote P2 as the preferred method of doing business by exploring and identifying opportunities that provide solutions to environmental issues.
- Foster a spirit of cooperation through site visits, open dialogue, and information exchange among participants.
- Promote sustainability and innovation for continuous improvement.
- Compliance through P2
- Support Environmental Management Systems objectives.



Benefits of participating in the partnership include lessons learned and project ideas brought in from ADEQ, not only from other DoD organizations, but from private industry and Arizona's two major state university's academia.

MCAS Yuma is proactive when it comes to reaching out to the public, both on and off the Air Station. Senior leadership recognizes that education is a key factor in changing behaviors concerning environmental issues. We have partnered with the Energy Manager and distributed educational brochures during special events such as

welcome aboards, Earth Day, Energy fair and our annual Air Show. This helps to provide the public with the tools they need to make a difference. To celebrate Earth Day an environmental fair is held where displays are set up to raise the awareness of residents regarding a wide range of environmental issues. Topics include water and energy conservation, recycling, storm water runoff, lead and asbestos issues and air quality. Part of the Earth Day activities focus on the children at the Child Development Center on base. School classes of children are brought to the earth day booth where they received educational materials that they can share with their families.

### **Environmental Management System (EMS)**

The installation's Environmental Management Systems implementation started in November 2002 when Headquarters Marine Corps (HQMC) first introduced the requirements for agency implementation of an EMS following requirements of a Presidential Executive Order and the framework of ISO 14001. MCAS Yuma was selected by HQMC to be the west coast Marine Corps Air Station pilot EMS facility.

As a pilot facility MCAS Yuma has assisted other Navy and Marine Corps Installations and contributed to the Marine Corps requirement to have 100% conformance with EOs 13148/13423 and subsequent DoD EMS Policy by implementing the basic USMC EMS framework two months before the Executive Order's mandated dead line. MCAS Yuma achieved full EMS conformance in October 2007, two months ahead of the requirement. HQMC has fully validated the installation's EMS self-declaration in January 2008.

MCAS Yuma's EMS embraces a systematic approach to integrating environmental considerations into mission decisions and operations, and promotes continual improvement. To mitigate risk to mission and ensure long term sustainability, MCAS Yuma applies the Marine Corps EMS framework to local conditions, mission requirements, staffing, organization, and existing environmental programs. EMS functional teams provide installation-wide oversight and support of the EMS; ensures appropriate participation of all departments, commands and tenants; ensures sustained conformance with the EMS goals; contributes to mission supporting environmental management programs; and provides the necessary management structure to fulfill requirements of EO 13423.

### **Improved Material Management/ Pollution Prevention**

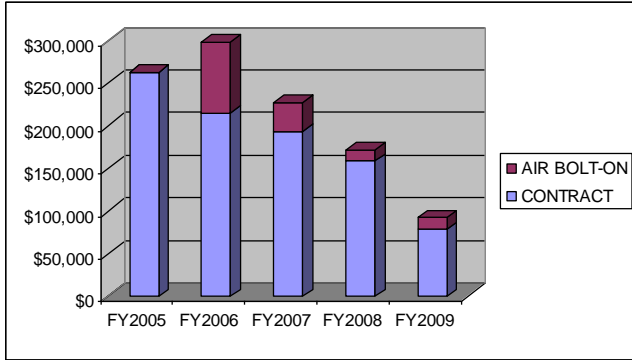
The MCAS Yuma Hazardous Material Consolidation Program (HCP) is a significant Environmental Management program under the EMS and is aligned with one of the systems cornerstones of P2. The HCP has incorporated the Hazardous Material Management System (HMMS) as the chosen hazmat data management tool and environmental reporting system. This program, alone with an EMS working group has successfully reduced the amount of hazardous material used and hazardous waste generated through life-cycle control, electronic data management, and enforcing an authorized users list. The installation has seen a 32% reduction of received (barcoded and tracked) hazmat items from implementation in FY2004 thru FY2008. To further leverage technology, MCAS Yuma has acquired a bolt-on air module for HMMS. Equipment and processes are entered into the air module along with operating times, fuel usage, and emission formulas. The air module then calculates emissions from hazardous materials, equipment and processes on demand. The HMMS air bolt-on will accommodate an additional module designed to monitor greenhouse gas emissions. This is planned for FY2009/2010. MCAS Yuma has implemented the HMMS Waste Module. Waste is tracked from generation to disposal and provides an automated interface to the Defense Logistics Agency's waste management system. This has given us the ability further quantify hazardous material usage and mandated waste reduction goals by tracking the disposition of material transferred to waste. The combination of automating the tracking of all hazardous materials and waste transactions allows the installation reduced waste disposal costs, effective manifest tracking and required environmental reporting. Since implementation of the HMMS Waste module in FY2007 the installation has seen a reduction of 19% of waste generated through FY2008.

### **Improved Air & Emergency Planning and Community Right-To-Know Act (EPCRA) Reporting Improved Emissions Reporting**

Capturing usage data is much more accurate and complete and it has reduced the impact of manual reporting requirements on the warfighter. The combination of HMMS, air bolt-on module, and EMS, also prepares the installation for

the Title V permit that will come with Yuma's future mission requirements. It also provides a means for air program self-sufficiency, minimizing the need for contract support while maintaining compliance with air permits and avoiding an adverse impact on the mission.

HMMS automatically tracks the storage and usage of miscellaneous materials tied to up-to-date Material Safety Data Sheet (MSDS). We no longer rely on a few hundred MSDSs to provide the needed information of several thousand materials. Excessive amounts of time are no longer needed for manual usage reports.



In FY2005, before the implementation of the air bolt-on module, the cost for Air Program support for permit maintenance, EPCRA and Emission Inventory reporting was \$262,274. In FY2009, air support costs were down to \$92,173. This number includes the cost of the air bolt-on module maintenance fee. This has been a 35% reduction in total air support costs. Contract support is still utilized for engineering and permitting expertise. However, the cost associated with gathering information, preparing and submitting reports has dropped.

### Wash Rack Treatment Systems

MCAS Yuma is the busiest airfield in the Marine Corps. MCAS Yuma hosts the Weapons Tactics Instructors Courses (WTI), the Desert Talon Exercises annually as well as numerous Navy and Marine Corps detachments training. MCAS Yuma has demonstrated a commitment to the long term sustainability of the Marine Corps mission while striving to enhance community relations and to maintain the water quality of the Colorado River. MCAS Yuma has achieved these goals through the construction and maintenance of state of the art wastewater treatments systems on the stations wash racks for the aircraft and mission support facilities. Each of these treatment systems utilize dirt traps, an oily water separator, sand filters, a flocculation chamber, pH control and carbon filters to yield a wastewater discharge that is substantially lower than the permitted discharge limits. The systems use high pressure low volume spray guns that allow for a minimal use cleaning agents while reducing the amount of water required to accomplish the mission. The wash rack wastewater treatment systems assist in sustaining a safe drinking water supply for the City of Yuma (COY) by reducing the pollutant load on the Publicly Owned Treatment Works (POTW) operated by the COY, which discharges into the primary source of drinking water for the COY and MCAS Yuma, the Colorado River. These wash racks handle a high volume of activity from almost all fixed wing and rotary wing airframes in the Marine Corps arsenal, helping maintain a mission ready status. The wash rack wastewater treatment systems will help ensure that MCAS Yuma can sustain the Marine Corps mission well into the future while preserving our natural resources.



### Water Conservation-Preserving the Deserts Precious Resource

MCAS Yuma is located in the Sonoran Desert and the senior leadership is very much aware of the importance of water as a precious commodity in this arid climate. With top-down support MCAS Yuma has implemented water conservation best management practices to conform with EO 13423 requirements and developed water efficiency projects that have reduced our water consumption. The installation previously used approximately 67% of the potable water produced for irrigation purposes. Our Installation & Logistics Department has partnered with the ground maintenance contractor and proactively developed several xeriscape projects. These landscape projects removed over 89,000 square feet of high water usage turf to beautiful low water use xeriscape saving over 37 million gallons per year. Other water conservation measures include containment and reuse of fire hydrant and backflow preventer flushes on areas requiring irrigation.



## Range Clearance Program



The Policy, Goals and Planning phases for this significant environmental management program began in October 2007. The EMS continuum is applied to achieve program goals and foster the valuable training assets within the Bob Stump Training Range Complex. The program is managed within the guidelines of a comprehensive range clearance plan that was developed during the initial planning phase. This facilitates mission readiness by meeting requirements supporting Yuma's mission, vision and strategic plans to ensure these training ranges are sustained and remain available to our warfighters. The plan provides a documented analysis of the P2 technologies and recycling efforts the Air Station continues to employ during our challenging daily

operational commitments. The plan presents the operational goals and priorities for sustaining our ranges; provisions for checking and corrective action; and management review; provides procedures to document the programs accomplishments, lessons learned; and a way to foster future efficiencies through continual process evaluation and improvement.

The implementation phase of this Program started FY2008 with the clearance of Blue Mountain Close Air Support (CAS) Range Targets located on Chocolate Mountain Aerial Gunnery Range (CMAGR). Targets provide aviators with an urban target area and a simulated airfield. Both targets are considered primary target areas traditionally identified as the "Bread & Butter" for major training evolutions within the CMAGR.

Prior to implementation of the Program these conditions degraded the aviator's ability to train as they will fight. This became the primary driver in focusing our priorities for the project as MCAS Yuma's EMS adapts the program to the mission not the mission to the program.



Since initial implementation, the Program team has been able to exceed milestones that were established in the EMS objective and target POA&M and accomplish the Air Stations requirements beyond everyone's expectations. A total of 230 acres cleared and approximately 405 tons of munitions and range related debris processed, demilitarized

and recycled. This was an overwhelming challenge accomplished by skillful program management using the EMS framework in 21 business days due to accommodating MCAS Yuma's mission commitments. The next phase of effort in these target areas will the remaining 470 acres and expect to process, demilitarize and recycle additional estimated 700 tons of munitions debris and range related



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The Program has received accolades levels of the Marine Corps, neighboring Army Yuma Proving and MCAS Yuma organic and tenant command senior leadership. Marine Aviation Weapons and Tactics Squadron 1 (MAWTS-1) have developed procedures for non-intrusive bombing of the airfield proper. MAWTS-1 has implemented a revised weapons policy in order to preserve the visual value while maintaining effective training and mission accomplishment. This paradigm shift depicts a 180 degrees turn.

## Improved Energy Efficiency in Pollution Prevention

In FY2008 MCAS Yuma has taken a proactive approach for compliance with both the Energy Policy Act of 2005 and Executive Order 13423 of Jan 24, 2007. During the Policy/Goals and Planning phases design, logistics, funding, and NEPA is in place. The installation is ready to move to Implementation of several renewable energy generation projects. The projects will install sunshades with Photovoltaic (PV) devices for selected vehicle parking areas and at the fast fill "Buffer" CNG dispensing location. Several rooftop locations will also be configured with PVs. This will allow MCAS Yuma to capitalize on the many days of available sunshine. When constructed, these new sunshades and rooftop locations will

provide renewable energy sources as well as increasing “Quality of Life” for occupants of the buildings. This approach does not utilize valuable land space rather it makes efficient use of current areas. The energy from this grid-connected PV system, estimated at 200,000 kwh/yr, will offset electrical demand requirements of 85 kw. The benefits of the PV system are: enhanced reliability, a 20-25 year lifetime with low maintenance, no operating costs, and no noise or environmental impacts. On-site generation will reduce peak demand on the utility grid, freeing up power for other parts of the Air Station.

Another project is in the implementation phase of converting the irrigation system to maintain recreation areas from costly treated water to untreated. The project will reduce average daily energy demand needed to treat the irrigation volume of water prior to use, as well as reduce the amount of water treatment chemicals required.

### **Taking P2 Outside the Fence line**



MCAS Yuma Environmental Department has been a proud member of the City of Yuma’s Adopt-A-Street Program since 2004 and continues to be a part of the community’s P2 efforts. Throughout the years, other MCAS Yuma organizations and units have followed in our footsteps and embrace a commitment to the community, P2 and environmental stewardship by joining the Adopt-A-Street Program. Various units and departments on the Air Station also participate in Earth Day activities both on base and in the surrounding community. MCAS Yuma not only talks the talk, we walk the walk.