

2016 SECRETARY OF DEFENSE ENVIRONMENTAL NARRATIVE ENVIRONMENTAL QUALITY-NON-INDUSTRIAL

Introduction:

Marine Corps Air Ground Combat Center (MCAGCC) is located in the Southern-California Mojave Desert. It is the Marine Corps' largest installation, occupying approximately 704,000 acres (1,100 square miles). MCAGCC is home to the Marine Air Ground Task Force Training Command (MAGTFC), whose primary mission is to train military personnel under live-fire conditions in a manner that enables commanders and Marines to practice essential skills for combat brigade- and battalion-sized exercises. The Combat Center trains over 45,000 Marines annually and relies upon a civilian/military population of 21,461 individuals and infrastructure assets of over 1,000 buildings and structures. The southern boundary of the installation is adjacent to the city of Twentynine Palms, California. Other communities within the vicinity of MCAGCC include Joshua Tree, Yucca Valley, and Landers, California.

For MCAGCC to successfully meet its training mission, a robust Environmental Management Program is in place. This program oversees Base utilization of its finite desert-resource training environment, while enabling the Marine Corps units, and tenant commands to achieve and maintain environmental compliance and protection while sustaining resources essential to combat readiness.

Background:

MCAGCC's Environmental Management Program (EMP) is a collaborative effort between the Natural Resources and Environmental Affairs (NREA) Division, installation Directorates, units, tenant commands, Base residents, and the adjacent Twentynine Palms community. All of these stakeholders are routinely included in environmental management decisions and outreach activities, and collectively play a critical role in Base daily operations, expansion issues, and compliance with regulatory requirements.

NREA implements and manages multi-media programs for the installation. The programs include: Pollution Prevention; Range Sustainment; Qualified Recycling Program (QRP), National Environmental Policy Act (NEPA) planning, analysis, and implementation; and a Comprehensive Environmental Training and Education Program (CETEP). An Environmental Management System (EMS) is in place to track and improve the overall operational performance and efficiency of these programs, as well as generate cost savings and improve relations with regulatory agencies. Various programs maintain a proactive approach to meet and exceed regulatory requirements, while working with tenant commands and visiting Marine units training at the Combat Center. This working relationship also extends to the local regulatory entities such as the Regional Water Quality Control Board, Mojave Desert Air Quality Management District, and the San Bernardino Certified Unified Program Agency.

Summary of Accomplishments:

The Environmental Management Program at MCAGCC is not only mature, but also dynamic. It is continually updated to reflect changes that better help meet the training mission while minimizing environmental impacts and the consumption of natural resources.

The technical merit of selected MCAGCC practices and policies are presented to demonstrate key components of the Environmental Management Program.

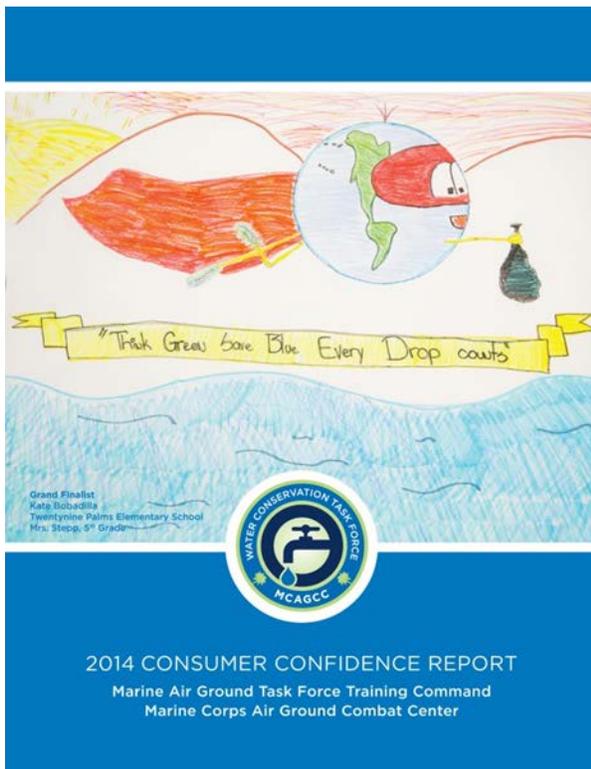
Water Conservation

The Combat Center relies exclusively on underground aquifers for all of our water requirements. On a daily basis, the Combat Center consumes over two million gallons of water while living in a state facing unprecedented drought, with imposed mandatory water restrictions and stringent conservation strategies. The Combat Center leadership is committed to the conservation and sustainability of water resources. Water conservation, using water efficiently, and avoiding waste are all fundamental to ensure water availability for the Combat Center's future.

NREA and the Water Conservation Task force are leading the efforts to ensure the conservation and sustainability of water resources. This has resulted in the reduction of potable water use from FY14 – FY15 by over 130 million gallons, down to a per capita of 69 gal/person/day, the lowest in the Colorado River Basin -- compared to the California per capita of 181 gal/person/day. MCAGCC has achieved the 54% water reduction intensity, compared to the FY07 baseline, through the following:

- Establishing a Water Conservation Task Force in FY15 to focus on enhancing water conservation in the future;
- In conjunction with the WCTF, developed the Commanding General's Water Conservation Policy, Drought Response Plan, and new base bulletin, which includes some of the following measures:
 - Low-flow standards for fixtures in new or remodeled structures
 - No wet cleaning on hard surface areas unless authorized
 - Develop and implement plans to reduce irrigation to include guidelines for time of use, frequency, and duration of application
 - Limit the washing of government non-tactical vehicles to the extent possible and use a closed-loop system
 - Equipping hoses with a positive shut off nozzle that prevents water from running when the hose is not in use
- Conversion of green space to desert landscaping and the installation of synthetic turf;
- Utilization of recycled and/or non-potable water supplies, where possible, in place of potable water;
- Replacing water usage for dust control at construction sites and on military vehicle roadways with commercially available agents that offer a tested, persistent mitigation solution (e.g. SoilTac);

- Conducting studies of the water distribution system to identify any deficiencies that result in water loss and to better understand potable water usage through improved metering;
- Investigating utilization of storm water runoff to supplement irrigation needs;
- Ensuring all regulatory requirements are met for plans and programs associated with monitoring and regulating the potable and non-potable water resources and the treatment of wastewater;
- Using recycled water to support irrigation needs at the Combat Center’s Golf Course;



Due to the importance of water conservation at MCAGCC and the necessary involvement of both military and civilian consumers, outreach efforts continue to be advanced by NREA. An example of this effort was demonstrated during the 2015 Earth Week “Water Conservation” poster contest. The Morongo Unified schools Condor Elementary, Twentynine Palms Elementary, and home school students were asked to create a water conservation themed poster. Nine finalist posters were selected and displayed during our Earth Day Extravaganza. Following public judging, three finalists were selected and those posters were not only recognized at their respective schools, but were also featured in MCAGCC’s annual Consumer Confidence Report (CCR), which presents potable water quality information to all users of Combat Center water.

Waste Management

The reduction of waste generation and the reutilization and/or recycling of waste are also important components of the MCAGCC EMP.

MCAGCC’s processing and recycling of range residues is well documented and considered to be one of the premier operations within the military. The Range Sustainment Branch recycles concertina-wire, Hesco Barriers, various plastics, spent ammo casings (various sizes), copper, brass, zinc, aluminum, ammo cans, and other types of recovered range materials. In FY14, over 5.6 million pounds of range residue and training-related ordnance debris were collected, inspected, and demilitarized. Of that amount, 5.5 million pounds were recycled, with the generation of \$1.2M in revenues. The dynamic nature of the processing facility is evident by the installation of new equipment. The range residue recycling program is mature, innovative, and one that could be adopted in-part or entirely by other DoD Installations.

An aluminum processing system is in the process of being upgraded to handle materials in a more efficient manner in terms of energy efficiency, cleaner emissions, and producing a higher quality recycled content product to be utilized under the Qualified Recycling Program (QRP). A shredding system was also identified for the demilitarization of spent 20 mm ordnance casings, which until this time could not be processed. Additionally, range residue from other DoD facilities are being processed at MCAGCC's facility, on a limited basis.

During FY14 through FY15, the Industrial Recycling Operation Section and Residential Commercial Recycling Section worked diligently to keep the installation on track to meet its FY15 solid waste diversion goal of 50%, as mandated by DoD regulations. These sections collected solid waste from over 1,705 family housing units, approximately 632 industrial and office buildings, and Camp Wilson, the expeditionary training facility aboard the installation

These efforts resulted in 12.6 million pounds of solid waste recyclable materials being collected, sorted, and diverted from landfill disposal. Approximately 3.4 million pounds of cardboard, 2.68 million pounds of mixed paper, and 114 thousand pounds of California Redemption Value products were processed. These materials, and other captured recyclable materials, were sold to off-site recycling vendors and the revenue generated was used to offset operating expenses, maintenance costs, and continual improvements to the Qualified Recycling Program.

These pollution prevention initiatives and recycling efforts generated \$2.76 million in revenue for the installation Qualified Recycling Program over the last two years.

Additional diversion efforts are demonstrated at MCAGCC through a donation program implemented at the Armed Services Young Men's Christian Association (ASYMCA) via the Base Thrift Store. The primary objective of the donation program is to help military personnel and their families by providing reasonably-priced, donated items for purchase. Donated civilian-procured clothing, furniture, and household items are reused and diverted from disposal in the Base landfill. Reusable military-issued items are also provided at no cost to active duty military personnel. In CY14, a total of 5,986 military-issued items were reused by 2,507 military personnel. Items that are not sellable (used bedding, towels) are donated to the local animal shelter, along with other animal/pet-related items (cages, old fish tanks). Donated cell phones are directed to the local battered women's shelter; leftover clothing is provided to local, civilian thrift stores; and unsellable tennis shoes are collected and held for the local high school to recycle through their own program.

Another example of solid waste management process improvement is demonstrated by MCAGCC's implementation of an Organic Refuse Conversion Alternative (ORCA) for processing food waste at the installation garrison and expeditionary mess halls. This commercially available system was procured and evaluated as an alternative to the thermal composting of food waste. The composters were demonstrating some difficulties with processing the amount of daily food waste being generated at the mess halls. Otherwise, they also had an energy demand component associated with the thermal process, which contributed to the energy footprint at MCAGCC. The ORCA system utilizes a microbial process, along with abrasion, to break down the food waste so that it can be delivered to the wastewater treatment

facility. The ORCA is smaller than the thermal composters, but since it is a continuous-processing system (instead of a batch processor) it can accommodate greater daily food-waste loading. An Environmental Compliance Evaluation (ECE) conducted by Headquarters Marine Corps in February 2014 resulted in a positive finding for the manner in which NREA managed disposal of non-hazardous solid waste (i.e. food waste).



The ORCA food-waste processor is easily loaded.

Additional recycling/waste reduction initiatives are implemented through the Hazardous Waste Branch to include: oil and fuel filters; 55-gallon drums; batteries (and charging systems); aerosol cans; white goods, monitors, and televisions; copper wiring from electronics cords; hazardous material reutilization and household turn-in/re-use; Freon recovery; a red-rag program; antifreeze recovery and distillation; and QSOL parts washers.

“The Natural Resources and Environmental Affairs Division excelled in environmental stewardship with proactive programs in natural resources, pollution prevention, and environmental management. The Combat Center’s installation excellence in environmental management ensured mission accomplishment and protection of human health through implementation of environmental management systems in areas of environmental planning, waste management, safe drinking water, and conservation”.

**Secretary of Defense,
Special Recognition Certificate**

While MCAGCC’s Qualified Recycling Program attained many significant achievements, additional efforts are underway to further expand solid waste diversion. Perhaps most significantly, MCAGCC is evaluating the addition of a Material Recycling Facility (MRF) to more efficiently segregate, recycle, and reutilize components of the solid waste stream. A detailed waste characterization study was conducted in FY 2014 that showed at least 10% of the waste stream going to the Base landfill consists of recyclable materials. The MRF would ensure that this material is diverted and recycled. MCAGCC’s “extensive sustainability and pollution prevention efforts” were also recognized during our latest ECE.

National Environmental Policy Act (NEPA) Planning, Analysis, and Implementation

MCAGCC’s NEPA program is one of the major pillars of environmental quality control for overseeing MCAGCC’s EMP. MCAGCC has taken the Environmental Management System’s

“Plan, Do, Check, and Act” approach to implementing its NEPA program. From the beginning stages of proposed action development, NREA has embedded itself into the planning process. NREA advises Action Sponsors on the best course of action to ensure success of their proposed project. Decision makers have been trained to consider all environmental consequences before making the decision to act. NREA provides environmental planning assistance and regulatory consultation developed throughout the NEPA process.

NREA has established policies where Action Sponsors submit a Request for Environmental Impact Review (REIR) concerning all facilities repair, construction, maintenance, real estate licenses, and training events that occur within the installation boundary. This method ensures that all proposed actions receive the required environmental attention prior to Action Sponsors deciding to act. Using a streamlined approach; NREA has reduced the average processing time of REIRs from 45 to 20 days.

To ensure adequate controls are in place, NREA uses a spreadsheet that captures all NEPA document submissions, tracking the status since 1999. The spreadsheet assigns each proposed action a document control number. Using a share drive, Action Sponsors are able to see the status of all NEPA documentation. The NEPA Document Control Inventory spreadsheet has enabled the installation’s Public Works Department to ensure that all proposed actions have an assigned NEPA document control number prior to execution. The spreadsheet provides for easy supervisory oversight to ensure all proposed actions are seen to completion.

Ensuring compliance with the NEPA application process during the execution phase, Action Sponsors ensure that contract award packages address specific actions required to comply with environmental laws and regulations. The installation’s Facilities Engineering Acquisition Division only awards contracts that have completed NEPA documentation. Upon completion of proposed actions and to ensure that these safeguards have been implemented, Action Sponsors complete the installation’s NEPA Execution Form. This form is completed by the project execution agent, certifying that the NEPA requirements were followed during the execution of the project. This form is signed and returned to NREA and becomes part of that project’s NEPA administrative file.

Education and Community Outreach

A key component of meeting environmental quality goals is personnel awareness and training. NREA accomplishes this effort through a proactive Comprehensive Environmental Training and Education Program (CETEP). The program provides general environmental awareness and practice-based training at the operational level to ensure that all Combat Center personnel perform their duties in a manner that minimizes impact to the environment. The core curriculum utilizes installation specific Environmental Standard Operating Procedures that are developed and maintained by the NREA media-managers, classroom-sponsored training such as HAZWOPER and DOT, and on-site presentations. Awareness is re-enforced/validated via unit-level compliance inspections. The program is aimed at identifying and providing all explicit and implicit levels of training to ensure staff maintain the highest level of compliance.

The installation pursues various avenues for outreach and community awareness. This includes NREA active participation in community symposiums such as Drought Awareness sponsored by the Colorado River Basin Regional Water Quality Control Board. Another effort is our planning

and hosting of Earth Day events in FY15. We expanded our Earth Day observance activities by attending local community Earth Day fairs, base-wide beautification that included hazardous material and e-waste collections, school poster contests with an Earth Day theme, promoting outdoor activities in the form of two bike rides and one fun run event, and our Earth Day Extravaganza community fair in partnership of the installation's PPV, Lincoln Military Housing. Information and technology booths were present at the Extravaganza, as well as presenters promoting environmental topics and earth-conscious behaviors. The local theme was "Think Green, Save Blue" to promote and highlight conservation and environmental quality goals with a focus on water conservation for the health and welfare of our Marines, families, and civilians.



Annual Earth Day events that included an Extravaganza outreach fair and family fun run.

Installations have the responsibility of overseeing environmental programs to ensure they comply with all applicable environmental requirements. Key elements of a successful environmental quality program include a commitment to environmental compliance by the installation command and all installation personnel; knowledge of the environmental component of installation operations; knowledge of environmental regulatory requirements; up-to-date management procedures; well trained staff; effective working relationship with regulators; outreach with the local community; and commitment to sound environmental stewardship as an aspect of federal leadership. The NREA Environmental Management Program has successfully demonstrated that they embrace their assigned environmental responsibilities and have proactively managed programs to continually meet and exceed compliance goals and requirements. These efforts will ensure the enhancement and protection of environmental assets and sustain the installation's ability to effectively train and maintain mission readiness.