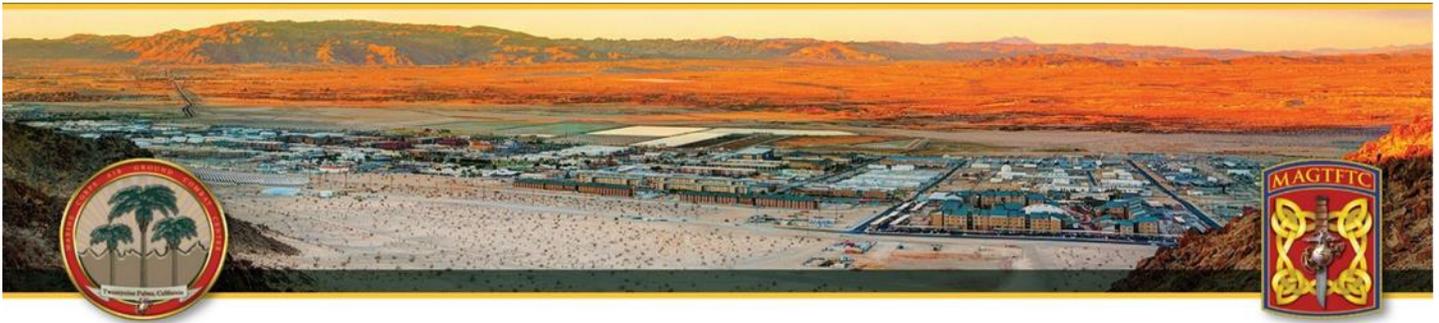


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**Introduction:**

Marine Air Ground Task Force Training Command (MAGTFTC), is home to the Marine Air Ground Combat Center (MCAGCC). The primary mission of MAGTFTC is to manage the Marine Air Ground Task Force Training Program and conduct service-level combined arms training to enhance the combat readiness of the operating forces and support the Marine Corps' responsibilities to national security. To accomplish the mission, significant infrastructure and resources are required to operate and maintain an installation that encompasses over 1,100 square miles, 11,300 active duty military, 8,600 family members, 2,500 civilian personnel, and over 1,000 buildings and structures, including the expeditionary training camp.

**Background:**

MCAGCC's Total Waste Management (TWM) Program, is comprised of the Qualified Recycling Program (QRP), The Hazardous Waste Management Branch and Range Sustainment Branch. These programs integrates sound management and leadership, and works in partnership with tenant commands, contracted vendors and visiting Marine units, while fully supporting joint, coalition and service-level training, to include Integrated Training Exercise (ITX) aboard the installation. Staff personnel provide operational controls, guidance, coordination and regulatory oversight for all matters pertaining to the installation's hazardous waste, hazardous material, solid waste, and recycling programs.

Enhancements in environmental program management have allowed the installation to achieve its training objectives with little to no interference from external environmental agencies with regulatory oversight. MCAGCC is the sole Marine Corps installation of its size that provides hazardous waste collection at the point of waste generation. Marines and civilians no longer transport waste streams to the installation's 90 day, hazardous waste accumulation area, thereby, drastically reducing the requisite training and logistics support normally required to conduct this practice. A significant benefit of this method of waste management is the reduction of costs normally associated with providing annual regulatory training to the Marines and Department of Defense employees who would normally be tasked with the transportation of hazardous waste to the installation's hazardous waste accumulation area or its 90 day facility.

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**SUMMARY OF ACCOMPLISHMENTS**

**Program Management**

The Hazardous Waste Management Branch, (HWMB) through its numerous pollution prevention (P2) initiatives, successfully reduced the installation's Resource Conservation and Recovery Act (RCRA), and Non-Resource Conservation and Recovery Act (Non-RCRA), hazardous waste footprint by over 298 metric tons during the preceding two fiscal years. A cornerstone of our pollution prevention initiatives is the hazardous material re-utilization program.



**Hazardous Material Re-utilization**



**Tactical Equipment Ground Battery  
Reconditioning**

The hazardous material re-utilization program is operated by the hazardous waste management branch. This program is typically resident within the USMC consolidated material supply center. New, unused, excess, and unwanted hazardous material is collected, and or receipted for by the HWMB, where staff members inspect, catalog, properly store and subsequently reissue to units with a bonafide need for these materials. During the preceding two fiscal years, over \$2.1M of hazardous material was reissued, resulting in approximately \$238K in hazardous waste disposal cost avoidance fees.

The Tactical Equipment Battery Reconditioning Program, receipts for used tactical equipment lead acid (PB) and absorbed glass Material (AGM) batteries. Upon receipt the batteries are inspected and tested. If the batteries meet the acceptance criteria for reconditioning; minimum of 5 volts, they are inducted into the reconditioning program. During the preceding two fiscal years, approximately \$1.7M in cost avoidance and cost savings was generated by this initiative. The HWMB has also hosted several informational tours for two major USMC installation that are interested in starting their own battery reconditioning and antifreeze recycling programs.

The Range Sustainment Branch (RSB) performed its mission in an admirable fashion, ensuring that all post training munitions waste and range residue was properly inspected, sorted, segregated, and safely disposed of or demilitarized through unit turn-ins. All materials behind the firing line are transported to the RSB for inspection and processing. This guarantees their removal from the range training areas and or solid waste streams. Materials beyond the firing line are collected by a certified unexploded ordinance (UXO) contractor, classified Material Deemed as Safe (MDAS), and turned in for final processing. All

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materials are thoroughly inspected by qualified UXO trained staff personnel and processed for sale through the QRP. With multiple live fire training areas and ranges aboard the installation, and training throughout the year, the RSB safely handled a continuous influx of munitions materials waste.

A total of 9.9M lbs. of range residue was turned in by units engaged in live fire training during FY 17 and FY 18. Of the 9.9 M lbs. receipted for, 8.6M lbs. was safely processed and sold to American recycling companies.



**Aluminum Sweat Furnace**

The Residential, Commercial Recycling Section (RCRS) and Industrial Recycling Operations Section (IROS), are a combined entity under the Qualified Recycling Program (QRP). The RCRS provides weekly solid waste (trash and recycling) collection service for approximately 1,700 family housing units. Additionally, the RCRS also provides solid waste (trash, cardboard, mixed recycling), to include office recycling collection, on a weekly basis to over 600 offices and industrial facilities aboard the installation. Approximately 720 trash and cardboard dumpsters are serviced at least three times each week, while some areas receive daily service due to the high volume of solid waste generation.

Furthermore, MCAGCC is the only Marine Corps installation of its size that owns, maintains and performs the collection of solid waste from its residential (on-base family housing areas), and the expeditionary training camp (Camp Wilson). All recyclable materials are segregated and sorted by staff personnel to ensure prohibited materials are removed and properly disposed of and diverted from the installation's landfill. In development with AT&T, the combat center is working towards and innovated sustainable city solution for waste and recycling collection. This initiative will increase the efficiency of our solid waste management program while reducing the vehicle miles traveled and greenhouse gas emissions.



**Cardboard Sorting, Processing, and Baling**

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**Al-Jon Logger Baler.  
Portable Scrap Metal Baling  
Machine**

The Industrial Recycling Operations Services (IROS) receipts for and processes a wide assortment of scrap material, including ferrous and non-ferrous such as; steel, tin, iron aluminum, brass, copper, fabric, scrap wood, magnesium, and other material not mandated to be disposed of via the Defense Logistics Agency. A reutilization program is also available for tenant commands and visiting units. Said program is designed to assist in providing materials to units such as; desks, chairs, and office products. This offering helps with the diversion of solid waste from landfill internment and provides a cost free alternative from GSA purchases.

The combined efforts of the RCRS and the IROS resulted in over 17.6M lbs. of recyclable materials being diverted from landfill disposal. These materials includes cardboard, glass, plastic, metal, office paper, fabric and numerous other assorted scrap material.

These recyclable materials are sold to North American recycling vendors. The revenue generated from the sales of recyclable materials are used to offset operating expenses, maintenance costs continual improvements of the Qualified Recycling Program, P2, energy conservation initiatives,



**Reverse Osmosis, Used Antifreeze  
Filtration Machine**

and quality of life programs aboard the installation. During the preceding two fiscal years, the Qualified Recycling Program generated approximately \$2.2M in revenue. Since 2006, the MCAGCC QRP has disbursed more than \$1.3M to Marine Corps Community Services (MCCS) for quality of life improvements for Marines, sailors and their families.

**Other Noteworthy Programs:**

Notable accomplishments in sustainability include the continued use of System One, aqueous parts cleaners with onboard solvent distillation and recycling technology, coupled with the use of Mil-Spec, aqueous, glycerin base parts cleaning fluid, these machines have eliminated the use and subsequent generation of used petroleum, hydro carbon base solvent waste by approximately 17 tons annually. These machines save the installation over \$70K annually in used solvent disposal cost and the cost associated with procuring new solvent.

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MCAGCC's Shop Towel Program is unique to the Marine Corps. The Hazardous Waste Management Branch, provides shop towels at no cost to tenant commands and units visiting the installation for training. Once the towels are used, they are collected and laundered onsite, and packaged for re-issue. This program drastically reduces the practice of one time use rags. This program has almost eliminated costly shop towel contracts aboard the installation. Additionally, it has also reduced the generation and offsite disposal of petroleum oil and lubricant contaminated debris.



**Antifreeze Recycling**

The Used Antifreeze Recycling Program created in 2007, collects used Ethylene Glycol Antifreeze from generation sites aboard the installation. The antifreeze is recycled using two Department of Defense approved machines; filtration or distillation methods. The recycled material is reconstituted to Mil-Spec standards, and issued to tenant commands and units visiting the installation to conduct training. Since the inception of the program, it has saved the installation over \$1.3M in cost avoidance from new antifreeze procurement. Furthermore, over that 10 year timeframe, the installation has saved over \$350K in used antifreeze disposal fees.