

**FY09 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD
ENVIRONMENTAL QUALITY
NON-INDUSTRIAL INSTALLATION**

INTRODUCTION

Our mission is to provide facilities and services that support combat readiness and promote the well-being, morale, and safety of military and civilian personnel that live and work aboard Marine Corps Base Hawaii (MCBH). MCBH manages installations on 4,500 acres on Oahu, including Camp Smith, Kaneohe Bay, Marine Corps Training Area Bellows, Manana Family Housing Area, Pearl City Warehouse Annex, and Pu'uoloa Range Complex. We support over 25,000 Marines, Sailors, civilian employees and family members working or living aboard MCBH.

Hawaii is home to sensitive natural resources with over 25 percent of all endangered species in the United States found here. MCBH cultural resources significant to native Hawaiians are greatly valued by outspoken advocacy groups. MCBH Kaneohe Bay is the most environmentally sensitive of all MCBH properties and includes Nu'upia Ponds (a protected Wildlife Management Area (WMA) and eligible National Historic Property) and Ulupa'u Crater WMA). MCBH is surrounded by pristine waters that are of tremendous importance to the lives and livelihoods of many Hawaii residents; consequently, state water quality standards are more stringent than federal ones. Living coral reefs and threatened green sea turtles inhabit these waters, along with endangered humpback whales and Hawaiian monk seals. We face many environmental constraints, such as endangered species habitat, historic sites, digging restrictions and erosion-prone coastlines. Aircraft flight paths are governed by noise impacts and accident risks to adjacent communities totaling 120,000 residents.



BACKGROUND

MCBH has uncommon beauty and biological/cultural diversity. In a remote island state with 25% of the nation's endangered species, we face high waste disposal costs, small recycling markets, strict environmental standards, stiff land/water access competition, and strong environmental advocates. Through partnerships, we cut costs, support training, reduce risks, enhance endangered species habitats, and gain regulator approval and community trust. Our skilled Environmental staff of 41 civilians, Marines and contractors manages Compliance, Conservation and Pollution Prevention programs and update and implement plans and permits. This is essential for sustaining base operations and providing responsive

ENVIRONMENTAL PROGRAM PLANS AND PERMITS	
NPDES Storm Water Permit/Plan – Mar 10	Pollution Prevention Plan – Sep 09
NPDES Water Reclamation Permit – Feb 07	HW/Chemical Mgmt Plan – Dec 05
Noncovered Source Air Permit - May 07	Spill Prevention (SPCC) Plan – May 09
Landfill Permit / Operations Plan – Oct 09	Integrated Contingency Plan – Sep 09
Solid Waste Management Plan – Mar 09	Pest Management Plan – Jan 07

support to our operating forces to enhance combat readiness, global power projection and quality of life. Per the Base Commanding Officer (CO), environmental

protection is not only the responsibility of the Environmental Department, but of all MCBH subordinate commands, tenants and personnel. The CO's Environmental Policy statement is displayed prominently throughout the base to emphasize senior leadership's commitment to environmental excellence and stewardship. In July 2008, Headquarters Marine Corps certified that we met their December 2007 Environmental Management System conformance deadline.

PROGRAM SUMMARY – “Basewide Environmental Management System Integration and Sustainability” Our environmental achievements are worthwhile only if we can sustain these efforts through a successful, base-wide Environmental Management System (EMS) and Sustainability Program. We are well on our way to achieving goals specified in Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, October 5, 2009, and have commenced efforts to develop a Base Sustainability Plan.

We began our base-wide Sustainability efforts with our Commanding Officer holding Town Hall meetings to inform base personnel of his sustainability goals. The Environmental Department initiated a Sustainability Baseline Assessment to evaluate all existing plans, processes and procedures, with input from the Business Performance Office, Facilities, Operations and Training, Public Affairs, Supply, Regional Contracts, Comptroller, Housing and Marine Corps Community Services. We formed three Base Sustainability Teams (Facilities and Utilities, Logistics and Procurement, and Operations and Training) to identify long-term goals that cover the “triple bottom line” of sustainability --- Sound Financial Stewardship, Environmental Quality, and Community Well-Being.

* Self-Sustaining Energy Generation*	* Reduced Energy and Potable Water Consumption*
* Net Zero Waste*	* Increased Use of Alternative Fuels and Vehicles*
* Efficient Use of Training Lands*	* New Property Acquisition* * Expansion of Training Opportunities*

Through our base EMS, we identified and prioritized environmental aspects and set targets and objectives to mitigate impacts and sustain long-term mission goals. Several of our many successes are described below:

- **Objective:** Reduce erosion impacts while also enhancing mission critical training, sustaining base operations, and improving quality of life.
 - **Achievements:** Completed a \$800K Install Erosion Best Management Practices (BMPs) Project at Ulupa’u Crater to reduce severe erosion along the weapons range access road and FBI range, thus sustaining training operations. Awarded a \$1.66M erosion control project to prevent pollutant discharges into Kailua Bay and to mitigate erosion impacts on housing areas. Completed a \$2.1M project to install landfill erosion controls and improve drainage. Continued landfill operation saves \$1M each year in transportation and tipping fees.

- **Objective:** Maintain and improve hazardous materials (HM) inventory, ordering and delivery for base, tenant and visiting commands
 - **Achievements:** Provided individualized training to CLB-3 and 3rd Marine Regiment for pre- and post-deployment activities to reduce HM ordered and hazardous waste (HW) generated. HM support to an Army aviation unit resulted in completing painting and putting planes back in service ahead of schedule. Provided support to USS Ronald Reagan at Pearl Harbor, after-hours support to visiting squadrons and tenant commands in preparation for deployments to Iraq and Afghanistan, and 24-hour support of RIMPAC operations.

Our annual self-audits and management reviews identify areas of improvement, set goals to increase performance, and monitor progress. We launched the CO’s Environmental/Energy Executive Steering Committee (EE ESC). The EE ESC is headed by the Chief of Staff, facilitated by the Environmental Department Director, and staffed with command, directorate, and department level members, and will serve as the new EMS Management Review Team. The executive staff has been educated on their roles and responsibilities in assisting and supporting EMS implementation. Through the EE ESC, we continue to highlight the importance of integrating environmental stewardship and base operations. We effectively increase EMS awareness through quarterly SOP training and monthly New Arrivals Orientation and distribution of EMS Awareness brochures base-wide.

Through our EMS and Sustainability efforts, we work as cross-functional teams with the common goal of sustaining base operations and enhancing military readiness while protecting our environment and conserving our natural resources. We have had many successes and expect that the **best is yet to come**.

- ***3rd Marines Conduct Essential Training While Promoting Wildlife Habitat.*** The Environmental Department and 3rd Marines' Combat Assault Company (CAC) perform annual "Mud Ops" to promote training capability and enhance wildlife habitat. The CAC gains valuable experience operating their Amphibious Assault Vehicles (AAVs) while also removing invasive pickleweed from the mudflats for the endangered Hawaiian Stilt breeding season. Annual increases in stilt population have led to positive regulatory agency feedback and are a positive example of collaborative conservation and combat readiness.
- ***Use of Innovative Technology Protects Cultural Resources and Improves Training.*** Our Cultural Resources Team worked with our Operations and Training (O&T) Directorate to effectively use Ground Penetrating Radar (GPR) at Marine Corps Training Area Bellows (MCTAB) to accurately and quickly plot buried cultural deposits. MCTAB is the only Marine Corps training area on Oahu that can support reinforced company-sized maneuver elements and is thus used for training nearly 365 days a year. This project allowed ground disturbing training exercises (e.g. moving war fighting vehicles, transporting heavy equipment, digging fighting positions, fencing in training sites, etc.) in areas that have a low potential to impact subsurface sites. By having archaeologists on site, immediate changes to proposed AAV routes could be made, resulting in fewer interruptions to military training at MCTAB while protecting our cultural resources.
- ***MCBH and the Community Seek Solutions for Joint Military and Public Use of Military Lands.*** We are near completion of a MCTAB Outdoor Recreation Study intended to ensure compatibility with sustainable training, promote personal and area security, and provide for the protection and restoration of the natural resources, while allowing controlled public beach and camping access. This is a collaborative effort with the Environmental Department, O&T, the local community, and city, state and federal agencies.

Pollution Prevention and Waste Reduction Efforts

Environmental Compliance In Support of Mission Readiness. Complying with regulations governing wastewater generation, storm water discharges, solid waste disposal, and air emissions is essential if we are to maintain our full operational capability, maximize training opportunities and enhance community support. We meet Department of Health (DOH) requirements for our storm water, Water Reclamation Facility (WRF), air and landfill permits by performing field surveys, promoting best management practices (BMPs), conducting methane and groundwater monitoring, tracking paint usage, and inspecting dumpsters, satellite accumulation areas, and P2 equipment. As a result, we had no significant findings in 2008-2009 during EPA and DOH enforcement inspections for storm water, wastewater, air, landfill, HW and underground storage tanks (USTs). We also obtained 5-year DOH permit renewals for the Kaneohe Bay landfill and non-covered source air permits.

Operating Plant and Facility Improvements - MCBH continues to develop, plan and execute environmental projects to improve and maintain aging and inadequate facilities to support the readiness of our operating forces. We awarded, completed or are near completion on \$13.4M worth of design/construction projects.

- COMPLETED: \$2M Bellows Landfill LF-24 Cleanup – Removed 8600 tons of waste/debris and restored the site to full, unrestricted land use for military training on weekdays and public recreation on weekends/holidays, greatly improving both military readiness and community relations.
- COMPLETED: \$1.3M Watershed Repair/Restore Mokapu Central Drainage Channel Project - Replaced three acres of weed-covered "fill" with a wider, terraced, native plant-lined stream corridor following U.S. EPA's BMPs. End result is reduced flood risk, better retention/ filtering of storm water runoff, and improved scenery for enjoyment of base residents, workers, and visitors.

- COMPLETED: \$866K Repair Wastewater Treatment Plant Sludge-Drying Beds - Lined the drying beds and repaired the drainage system to improve dewatering efficiency and groundwater protection.
- COMPLETED: \$800K Install Erosion BMPs Project at Ulupa'u Crater - Reduced severe erosion along the weapons range access road and FBI range, thus sustaining training operations. Also reduced sediment runoff and potential adverse effects on coral reef ecosystem resources inventoried by U.S. Fish and Wildlife Service.
- AWARDED: \$1.66M erosion control project - To address erosion along Ulupa'u Crater's southeast shoreline below the Crater catchment/landfill area and along the north-facing Crater slopes above housing areas.

Process Changes and Source Reduction Yield Significant Cost and Labor Savings.

Weapons Cleaning – We clean over 3,000 weapons per week at base armories using weapons cleaning system tanks that use non-toxic solvent that is reused through circulation and filtration. Cleaning time is reduced by 50% over the old way of cleaning with Q-tips, rags and toxic solvent. This saves 360,000 Marine hours per year to be redirected towards mission essential duties. The equivalent labor savings is over \$4M.

Lead Acid Battery Recovery - We purchased a battery recovery system to reduce waste batteries and decrease the purchase of new batteries. This system can clean and charge multiple batteries of different makes and is able to process and recharge batteries that have expired or are unserviceable, bringing them back into serviceable, usable condition. MCBH provides this service to all units and tenant commands. Annual cost savings is \$30K in procurement and disposal avoidance.

Anti-Freeze Distillation – We purchased an anti-freeze distillation system designed to recycle used ethylene or propylene glycol-based engine coolants utilizing vacuum distillation technology (the same process used in the manufacture of new anti-freeze). The recycled product meets or exceeds original equipment specifications. The process is completely automated, requiring minimal operator involvement. Annual savings is \$30K by avoiding disposal and purchase of over 17,000 pounds of anti-freeze each year.

Alternative Landfill Cover - Since receiving State DOH approval in March 2007 to use mulch (chipped wood and green waste) at our base landfill, we have used over 1000 tons of mulch as alternative daily landfill cover resulting in \$30K annual savings from purchasing soil for daily cover.

Protection of Human Health and the Environment

Spill Response - Transport and storage of fuel is critical to continued base operations and military readiness because catastrophic oil or hazardous substance spills could result in health and ecological impacts, reduced base operations or even base closure. Through annual Facility Response Team Training and weekly spill equipment deployment drills, we train our on-water response team to effectively protect the highly sensitive areas surrounding MCBH. We conduct annual large-scale Spill Management Team Training exercises with city, state, federal and Coast Guard agencies, and the community to enhance our spill response readiness. Our spill team is recognized as **one of the best in DoD** and the primary spill response team on the windward side of Oahu.

Soil and Ground Water Sampling - MCBH currently has six former UST sites undergoing soil/groundwater investigation. Two of the sites have completed soil/groundwater monitoring and Exposure Prevention Management Plans are being prepared. One site has completed soil/groundwater monitoring and a request for "No Further Action" was submitted to the DOH. Semi-annual groundwater monitoring is being conducted at the remaining sites.

Air Emissions Reduction – We use paint gun washers, steel grit blasters, high volume low pressure paint guns, antifreeze recyclers, plastic blast media, heated strip tanks, aqueous parts washers, and dry filter paint booths to reduce or eliminate emissions during painting, corrosion control, fluid change out, degreasing and surface cleaning.

Drinking Water Protection - We maintain an excellent record of compliance with Safe Drinking Water Act Regulations with no Tier I and Tier II violations. We purchase our water from the Honolulu Board of Water Supply, chlorinate and fluoridate it once it enters the base water system, and conduct weekly fecal coliform counts, test for tri-halomethanes and submit reports to DOH. Our results confirm that our water is safe to drink. Results of DoD-mandated drinking water testing also confirmed that perchlorates are not present in our drinking water supply.

Recycling Efforts and Accomplishments. We continued our successful DOD partnership to use our brass deformer to process military shells, market the brass for sale, and keep 25% of the revenues. Other DOD agencies avoid investing in expensive equipment, providing deforming facilities, and training personnel. We processed and sold over 450,000 lbs of brass earning over \$880,000. We also collected over 1000 tons of cardboard, appliances, aluminum cans, plastic and glass bottles, wood, white paper, newspaper and steel generating over \$250,000.

Furniture and Material Donations – We strive to divert waste and benefit others in need. We donated beds to Hawaii Youth Leadership Alliances and other worthy non-profit organizations. We became the first Hawaii DOD installation to recycle mattresses, awarding two \$10,000 contracts to recycle 2,000 mattresses.

Food Recycling – MCBH diverted over 800 tons of food from the base landfill by recycling Commissary, Enlisted Mess Hall, Officers' Club, Staff NCO Club, Enlisted Club, and Food Court vendor waste for use as pig feedstock.

New Recycling Initiatives – We installed a \$120K industrial plastics shredder to increase plastic diversion from our landfill. Projected annual diversion of 80-100 tons will save over \$20K in disposal fees each year if the base landfill were closed. The pieces generated by the shredder will either be sent to H-Power to generate electricity or sold to generate revenues and can also serve as feedstock for our plastics-to-fuel converter energy initiative. We implemented curbside recycling at all Base Housing and re-established the Camp Smith recycling program.

Munitions – Our Recycling Center serves as a one-stop drop-off for munitions debris which is inspected by highly trained staff to ensure unfired rounds and down range projectiles are identified and removed prior to disposal processing and that key components are properly demilitarized. We reduce the time war fighters spend on disposal, increase their ability to train, and ensure the safe and compliant movement of munitions material.

Environmental Compliance Assessment and Management Program

We programmed funding to address minor deficiencies identified during annual self audits and the July 2009 headquarters Environmental Compliance Evaluation. In 2008 and 2009, DOH and EPA conducted Storm water, Wastewater, UST, Air, Landfill, Recycling and Hazardous Waste Compliance Inspections yielding no significant findings. Our annual budget averages \$10 million including operational expenses, training, maintenance, service contracts and compliance projects funded through our operating budget, centrally managed environmental program (CMEP) and interservice support agreements. We obligate funds promptly, carefully monitor execution and evaluate our budget needs periodically and request operating budget supplements and CMEP funding as necessary. We identified our budget requirements through 2017 in POM12.

Water Resource Management. Overall water consumption is 13.6% below the FY2007 baseline which puts us on target to meeting our 2015 16% reduction goal. In 2008 and 2009, over 195 million gallons of recycled effluent from the wastewater treatment facility was used for golf course irrigation saving \$585,000. The Energy Savings Performance Contract replaced high-flow showerheads and aerators with low-flow compensating units and other new construction and facility renovation projects have installed water saving plumbing fixtures. Replacement of the Base's water mains and old housing water lines are greatly reducing the potential for future water leaks. MCBH partnered with the Honolulu Board of Water Supply (BOWS) in our annual Earth Day and Energy Awareness Month events to provide informational displays and promote water conservation. The BOWS also reviewed water conservation initiatives and monitored Base waterlines for leaks resulting in one minor leak detected and repaired.

Sustainable Operations and Programs. MCBH strives to sustain and enhance military readiness for base and tenant activities while ensuring compliance with environmental regulations. This is the primary goal of our base EMS. We utilize upfront planning to ensure that resident and transient unit **training activities remain environmentally compatible while fulfilling mission requirements.** We conducted environmental assessments of new training requirements, developed Geographic Information System training map overlays of sensitive areas, worked closely with state regulators and natural/ cultural resource trustees, advised training units on environmental “do’s and don’ts”, and followed up with periodic inspections. This enabled base, tenant and visiting commands to conduct realistic training with minimal environmental impacts, including the following training exercises:

- III MEF exercises at Pohakaloa Training Area / Weekly training at Ulupa’u Weapons Range
- Small unit exercises and vehicle obstacle course at MCTAB / Small arms training at Pu’uloa Range Facility
- Small SOC Sustainment Training for 11th, 13th, and 15th MEU elements / RIMPAC Exercises
- SOCPAC and PACOM exercises for 1st Battalion, 1st Special Forces group, 353rd Special Operations Squadron, Naval Special Warfare Unit-1, and III MEF, SOTG forces
- Enhanced MOUT training environment with role players and interactive immersive training environment
- Marine Forces Pacific military research and technology initiatives and testing

Training and Outreach Programs. MCBH provides military and civilian personnel with a solid foundation of basic and specialized environmental knowledge and skills through the Comprehensive Environmental Training and Education Program (CETEP) to ensure compliance with regulations and safety of personnel and natural resources. Over 5000 Marines, Sailors, Civilians, on-site Contractors, and family members aboard MCBH facilities received environmental awareness training. Topics covered included the MCBH Environmental Management System, the Commanding Officer’s Environmental Policy, Natural and Cultural Resources, Recycling and Solid Waste, Pollution Prevention, Hazardous Material and Waste, Spill Response, and National Environmental Policy Act. We also host Civil Engineer Corps Officers School (CECOS) classes and other training. Unit commanders receive overview briefs at our Senior Leaders Course and shop level coordinators receive in-depth training at our SOP Training Classes. We publicize HAZMIN, Recycling and Reuse Center efforts through base newspaper and local television. We have an active outreach program at our base school to enlist a new generation of diligent recyclers.

Effective Use of Funds

MCBH staff saved over \$50K by preparing annual EPCRA reports in-house versus by contract. Through the NFESC Oil Spill Program, we received two three-day Facility Response Team Training courses, and \$207K of oil spill response equipment at no cost. We received \$20K from DESC to pay for annual membership fees to the Clean Island Council spill cooperative that provides specialized personnel, the state’s best equipment, and spill drill assistance. We continue to implement new P2 initiatives and sustain successful ones.

Energy and Water Conservation – We received the Secretary of the Navy Gold Level of Achievement Award for outstanding energy and water management and a Department of Energy, Federal Energy Management Program Award for implementing the base’s first Building Integrated Photovoltaic roofing project. We awarded a multi-year \$12.8M Energy Savings and Performance Contract, which resulted in \$1.7M annual cost savings. We were the first Marine Corps installation to integrate state-of-the-art automated metering infrastructure and smart electric meters with geographic information system mapping to improve energy management and reduce energy usage.

Hazardous Material (HM) Inventory Management – We consolidate HM base-wide, improve inventory control, reduce operating costs and minimize HM use and waste generation. Rapid HM order/delivery supports our Marines and Sailors in combat-ready, operational conditions. We maintained 100% base-wide participation from our base and tenant commands and **saved \$2.55M by diverting over 60,000 lbs of HM from disposal**, redistributing the excess at no cost to units, and reducing the amount of effort (50,000 hours) expended by personnel managing HM.

Community Relations

MCBH has long-standing partnerships and regular meetings with state and federal regulators, DoD agencies, Department of Homeland Security, community members, Native Hawaiian Organizations, and base tenants to reduce encroachment constraints and provide uncompromising support to MCBH war fighters. We established a community involvement program within our installation restoration and munitions response programs and run a Restoration Advisory Board (RAB) to facilitate the meaningful exchange of information and ideas between the community and MCBH during cleanup of the 187-acre former Waikane Valley Impact Area. We held five Waikane RAB meetings to discuss and address public concerns about the impact of cleanup work on cultural resources and artifacts in the area once inhabited and farmed by Native Hawaiian families.

Dedicated Efforts to Support and Educate Our Community. We repair local public school buildings and playgrounds, read to school students, and actively coordinate and participate in beach clean-ups, waterbird surveys, invasive plant species eradication, and community enhancement projects. Our annual “Mud Ops” training receives extensive positive press coverage. We coordinated with the National Marine Fisheries Service and volunteers to rehabilitate a wild-born, captive-reared endangered monk seal orphan and successfully released the pup into the wild. We hosted over 700 visitors including community organizations, State regulators, NOAA, DoD VIPs, scientists, and university students at outreach events showcasing our sustainability efforts. As hosts of Earth Day 2009, we provided displays and brochures to promote environmental conservation and were supported by DOH regulators, Federal Fire Department, and local community businesses in this well-attended community event. We hosted a High School Hikers Ecology Camp for students to enjoy nightly programs, assist with invasive plant removal, and tour MCBH’s abundant natural resources. We published our waste and energy reduction, recycling, and environmental protection efforts in the *Hawaii Marine*, which is distributed island-wide.

Partnering Efforts Benefit All. MCBH serves on the Local Emergency Planning, State Emergency Response, and U.S. Coast Guard Committees for spill response planning, drills and exercises. We hold quarterly Hawaii Pollution Prevention Partnership meetings with State, Army, Navy, and Air Force personnel to develop economical and innovative solutions to compliance issues. We joined a unique interagency/industry spill response “Clean Islands Council” cooperative, enabling access to a response center, specialized personnel, the state’s best equipment, and spill drill assistance. We host secure facilities for a non-profit marine mammal program to rehabilitate or humanely destroy stranded whales and dolphins. We partnered with state agencies and university to protect endangered plants, conduct population genetics research, and preserve and harvest seeds.

National Environmental Policy Act (NEPA)

Proposed actions vital to base operation, combat readiness and quality of life were reviewed with the majority (258) being approved at the categorical exclusion level. Environmental Department program managers reviewed environmental assessments (EAs) and Environmental Impact Statements (EISs) prepared by other departments and outside agencies. Subject matter experts facilitated, and in some cases were able to expedite the interagency consultation process because of credibility and amicable working relationships developed with regulatory agencies. We finalized or reviewed EAs and EISs in support of the following military training and quality of life projects:

- Development and Use of Military Training Facilities on Pohakuloa Training Area
- MILCON Project P-749 & P-750 Bachelor Enlisted Quarters
- Construction and Use of a Stream Ford at Marine Corps Training Area Bellows (MCTAB)
- MILCON P-816 Waterfront Operations Facility
- MCTAB Military Operations on Urban Terrain (MOUT) Enhancement Project
- Range Fire Management Plan, Ulupa’u Range Training Facility Redesign, and Explosives Training Range
- 202K Grow the Force
- MV-22 / HMLA Homeporting (Aviation Plan).