



**2023 SECDEF ENVIRONMENTAL AWARD
NOMINATION NARRATIVE
ENVIRONMENTAL QUALITY – INDUSTRIAL
INSTALLATION
MARINE CORPS SUPPORT FACILITY BLOUNT
ISLAND, JACKSONVILLE, FLORIDA**



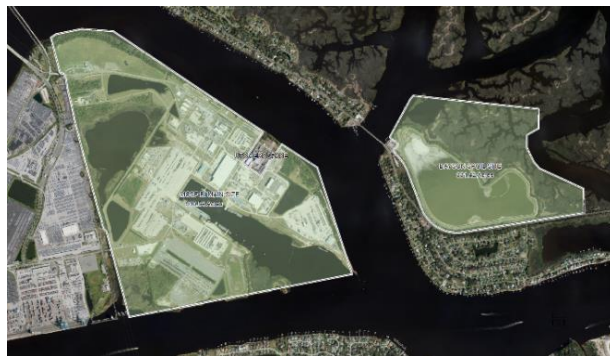
INTRODUCTION

Mission. Marine Corps Support Facility Blount Island (MCSF-BI) plans, coordinates, and implements facility maintenance, construction, environmental management, safety, communications and network services, and physical security efforts in support of Blount Island Command's (BICmd) logistics mission of managing and executing the Marine Corps Prepositioning Programs. As the primary tenant, BICmd provides prepositioning and operational logistics support to United States Marine Corps (USMC) and Department of Defense (DoD) forces to enable them to rapidly and successfully conduct and quickly recover from assigned missions across the full spectrum of expeditionary warfare. BICmd, working with its industry partners and Norwegian allies, ensures the high state of readiness of Marine Corps Strategic Prepositioning Programs and provides planning and operational expertise to Marine Forces in order to enable the rapid deployment of Marine Air Ground Task Forces (MAGTF).



Ships, part of the Marine Corps Prepositioning Programs, are docked at MCSF-BI waiting to refuel and resupply. MCSF-BI is by design a lean, economy of force installation organization that largely contracts with commercial services contractors to provide installation services in support of its tenants.

Population. MCSF-BI has a population of approximately 93 Marines and Sailors, plus 174 DoD civilian employees, that oversee nearly 1000 contractor personnel at the installation. The installation houses several tenant organizations, including the Military Sealift Command, and Naval Cargo Handling Battalion 11 (Naval Reserve), Aviation Ground Support Equipment, Marine Corps Prepositioning Program (MCP), and Mayport Base Operating Support (MBOS).



Aerial view of MCSF-BI, with the Main Base on the west side of Saint Johns River and the 326-acre Dredge Disposal Area to the east. Land use at MCSF-BI consists of 686 acres of developed industrial land, 225 acres of undeveloped land, and open water.

Environmental/Geographical Setting. MCSF-BI lies in the middle of the St. Johns River in Jacksonville, Florida, on an island that was created by placing dredge material from the Dames Point-Fulton Cut shipping channel onto four smaller islands and adjacent marshes after World War II. The main installation covers 911 acres on the eastern half of Blount Island, with the western half occupied by a commercial cargo handling facility operated by the Port of Jacksonville. A separate Dredge Disposal Area (DDA), consisting primarily of undeveloped land, is located on the east bank of the St. Johns River. Both areas together include approximately 3 miles of coastline.

BACKGROUND

MCSF-BI is *committed to environmental excellence* and continues to *protect the ecosystems* under its stewardship, *reduce* the use of *non-renewable natural resources*, and support responsible and *sustainable development* through the operation of a robust environmental management program. Common sense adherence to our environmental policies is helping to create long-term environmental benefits and preserve the natural resources necessary to support the future operation of the installation.

MCSF-BI operates an extensive industrial area, which contains the majority of its maintenance and storage facilities. The physical plant at MCSF-BI consists of a full range of facilities, roadways, and utility infrastructure that directly support daily mission operations, including maintaining, rebuilding, repairing, and storing ground combat and combat support equipment, fuel storage equipment, and motor transport equipment. MCSF-BI is an *ISO 14001:2015 certified* facility; *two self-audits and two external audits* (conducted by an ISO 14001 registrar) each year ensure continued conformance of the base environmental management system (EMS) to the ISO 14001 standard. MCSF-BI also maintains a *Title V air permit program*, operates under an NPDES *Multi-Sector Generic Permit (MSGP)*, manages several *petroleum storage tanks*, and is a *large-quantity generator* of hazardous waste.



MCSF-BI regularly conducts outreach events for the local community, such as this catch-and-release day held in April 2022. Events like this allow MCSF-BI's neighbors to enjoy the natural resources entrusted to the installation's stewardship.

MCSF-BI maintains close ties to the local community through a *local school district stewardship program*. The installation participates in the local emergency preparedness organizations and is a member of *Jacksonville Spillage Control, Inc.*, a group of industrial facilities that pool their resources to effectively respond to and protect the environment in the event of a major release.

During the reporting period, the Environmental office was comprised of three staff members that are primarily responsible for waste management, environmental planning, training, and environmental compliance. Additional support was provided by service contractors.

The following environmental achievements highlight MCSF-BI's dynamic environmental quality efforts during the reporting period. These impressive accomplishments were made possible by the support of every organization and employee who worked to protect the environment at MCSF-BI and in the surrounding area, while meeting critical mission requirements.

SUMMARY OF ACCOMPLISHMENTS

MCSF-BI's approach to its environmental management system reflects the principles consistent with DoD and Marine Corps policy and procedures. MCSF-BI's approach is to develop, promote, and refine a comprehensive program for achieving environmental quality that provides maximum support to the military mission and infrastructure, while achieving environmental sustainability and compliance with all applicable laws and regulations.

Pollution Prevention and Improved Recycling of Hazardous Materials. MCSF-BI operates a fuel filtration unit (FFU) and an antifreeze recycler for on-site reuse of off-spec JP-5 fuel and antifreeze. Reusing these materials *reduces procurement costs* of virgin JP-5 and antifreeze and *minimizes the environmental impacts and costs* associated with waste disposal. In FY21 and FY22, MCSF-BI made significant improvements in operational procedures and technological upgrades that allowed increased volumes of off-spec JP-5 fuel and antifreeze to be reused.

Process Improvements in JP-5 Reuse. The Marine Corps Prepositioning Program (MCP) Contractor operates a Gulf Coast Filters FFU to filter off-spec JP-5. Off-spec JP-5 is collected in totes from various MCP operations and shops, and filtered JP-5 is provided in exchange for reuse. Through the 2nd quarter of FY21, the procedure for handling off-spec JP-5 required MCP personnel to turn it in as waste fuel to the Mayport Base Operating Support (MBOS) contractor, who would stage the fuel at MCSF-BI’s 90-day hazardous waste storage area before transporting it to the FFU for processing.



The Fuel Filtration Unit at MCSF-BI, with several off-spec JP-5 totes visible in the background. The FFU can process most off-spec fuel generated at MCSF-BI. However, contaminated fuel cannot be processed through FFU, and is turned in to the MBOS contractor for management as waste.

The additional step of staging off-spec JP-5 at the 90-day area led to inefficiencies, increased the risk of accidental spills, and added to the workload for MBOS staff. In February 2021, due to the accumulation of excessive quantities of off-spec JP-5 that could not be processed in time, approximately 4,000 gallons of off-spec JP-5 had to be shipped offsite for recycling. If this off-spec JP-5 had been processed on-site by the FFU, it would have resulted in a cost savings of nearly \$10,000!

In Q3 FY21, MCSF-BI Environmental coordinated with MBOS and MCP contractor personnel to change the process for collecting, storing, and processing off-spec JP-5. Since the JP-5 is recycled and reused onsite, it was determined that it does not need to be managed as waste, including storage in the 90-day hazardous waste storage area. Therefore, the MBOS contractor no longer collects, handles, or stores off-spec JP-5. Off-spec fuel is collected by the shops in IBC totes labeled “Off-Spec JP-5 Fuel for Recycling.” When totes are 75% full, FFU personnel are notified and the off-spec fuel is taken directly to the FFU. Shop personnel receive an empty tote from FFU’s secondary containment in a 1-for-1 swap. Additionally, some heavy vehicles are driven directly to the FFU where fuel is filtered and returned to the vehicle.

Table 1 details the amounts of JP-5 recycled and reused onsite in FY 2021 and FY 2022, with estimated cost savings assuming an average purchase cost of \$4 per gallon of JP-5. Due to the more efficient process for managing off-spec JP-5, the installation was able to save more than *\$117,000 in FY 2022.*

Table 1. Off-spec JP-5 Recycled and Cost Savings Realized

Year	Volume of Off spec JP 5 Recycled Onsite (gal)	Cost Savings (\$) *
FY 2021	18,025	\$72,100
FY 2022	29,403	\$117,612
Change	11,378	\$45,512

The process of recycling off-spec JP-5 has been a very successful initiative for MCSF-BI. The installation is investigating options to bring a second FFU online to increase its ability to reuse JP-5 onsite and build on its past fuel recycling success. The FFU manufacturer estimates that the initial cost of purchasing and installing the system would range from approximately \$50,000 to \$65,000 depending on the size and configuration, plus annual O&M costs of \$3,000 for replacing the fuel filters twice per year. Therefore, the *return on investment* for this type of system can be as little as *one year*, not accounting for labor or waste disposal costs.

Improving the Antifreeze Recycling Program. The MCPP Contractor also operates a KFM, LLC coolant purification system (CPS) to filter used antifreeze and reuse it onsite. Although the CPS greatly reduced the need to buy virgin materials, antifreeze contamination with oil remained a challenge leading to frequent system maintenance, higher system O&M costs, and slowdowns in work. In FY 2021, the entire used antifreeze system had to be shut down and drained because of contamination, leading to a disruption in operations.

In early FY 2021, MCSF-BI Environmental conducted a site visit to Building 350 and noted opportunities to improve the used antifreeze collection and recycling process. Although carts for used oil and used antifreeze were clearly labeled, they were visually very similar, leading to the materials being collected in the wrong carts. Following this site visit, *MCSF Environmental and MCPP contractor personnel coordinated to implement the following improvements* to minimize oil contamination and maximize product recycling and reuse onsite:

- In addition to ensuring that all used oil and used antifreeze collection equipment was clearly labeled, used antifreeze collection containers were painted green to reduce the risk of cross-contamination with used oil, which is collected in black containers.
- Personnel training emphasized the importance of ensuring that only the approved materials are collected in used antifreeze and used oil collection equipment.
- The contractor has increased monitoring of shop operations through more frequent site visits and inspections, to ensure adherence to proper operating and storage procedures.
- An oil skimmer was purchased and added to the used antifreeze storage tank to reduce the amount of used oil passing through the CPS.

As a result of these changes, *contamination of used antifreeze has decreased significantly*. **Table 2** details the amounts of antifreeze recycled and reused onsite in FY 2021 and FY 2022 along with estimated cost savings, assuming an average purchase cost of \$15 per gallon of antifreeze. The installation was able to realize *over \$31,000 in cost savings* in FY 2022.

Table 2. Used Antifreeze Recycled and Cost Savings Realized

Year	Volume of Used Antifreeze Recycled Onsite (gal)	Cost Savings (\$) *
FY 2021	1,151	\$17,265
FY 2022	2,068	\$31,020
Change	917	\$13,755

The initial cost for the CPS was approximately \$24,000. Annual O&M cost is about \$5,500 for replacing the antifreeze filters and ionization tanks 2-3 times per year. Not including labor or waste disposal costs, the *return on investment* for this system is approximately *one to two years*.



KFM, LLC coolant purification system used to recycle used antifreeze at MCSF-BI. Used antifreeze is collected by shop personnel and transferred into a used antifreeze tank at Building 350. Once a sufficient volume of has been collected, it is processed through the CPS and transferred into a purified antifreeze tank for dispensing to shops.

Stormwater Program Improvements. MCSF-BI operates under an NPDES Multi-Sector Generic Permit for stormwater discharge from industrial activities, which requires the development of a Stormwater Pollution Prevention Plan (SWPPP). In FY 2021 and FY 2022, the installation made several improvements to its facilities and operating procedures to reduce and eliminate potential stormwater pollution discharges:

- MCSF-BI upgraded the woodchipper area by constructing a berm around the compound, adding a pusher wall, and adding a grate at the bottom of the gate to catch any chips. New operational procedures were implemented that require operators to clean the area and conduct a best management practice (BMP) inspection to be completed and documented after each use. These physical improvements and operational changes were documented in the MCSF-BI SWPPP and greatly *reduced the quantity of woodchips leaving the area.*
- The installation *procured covered hoppers to collect scrap metal.* The new hoppers were placed at multiple locations across the installation. The installation also required open top roll-off trash dumpsters at Berths 1 and 2, the only remaining open dumpsters to be covered by tarps. These dumpsters are located adjacent to the water; covering them minimizes the likelihood of trash floating to the river during inclement weather, thereby contributing to improved water quality.
- MCSF-BI dredged stormwater pond B to its original depth to restore stormwater retention and on-site treatment capacity. The pond's depth had reduced over time due to sediment deposition. The installation also repaired a stormwater ditch bank to prevent erosion and discharge of soil and dirt into the stormwater system.
- In the past, stormwater would enter Building 351 Tire Shop and accumulate in a trench under the rollup doors. Because the shop regularly handles petroleum products, the water was presumed to be contaminated and needed to be pumped and disposed of as oily wastewater at a cost to the installation. To remedy this situation, MCSF-BI sealed the trench and fixed the rollup door so that water no longer enters the building, thereby eliminating the generation of contaminated water and avoiding the associated disposal cost.
- Finally, to improve ongoing operations and maintenance of the stormwater system, MCSF-BI cleaned out all stormwater outfalls and added signage to each outfall to help locate and identify them during future inspections.



Covered hoppers for scrap metal were procured using QRP funds. The new hoppers reduce the potential for stormwater pollution.

Energy Savings Initiatives. The installation continues to implement a range of energy savings measures, including the following achievements over the reporting period:

- Continued replacing T8 and high-pressure sodium lights with LEDs at 5 buildings, to reduce energy consumption, maintenance cost, and improve light quality.
- Awarded two solar street light projects for the installation of 25 solar streetlights around the installation perimeter.
- Performed an energy audit in 25% of the total installation square footage in FY 2022. As a result, the installation Resource Efficiency Manager (REM) was able to identify operating

issues at Bldg. 361 boilers. Correcting these issues saved the installation about *21% on its annual gas bill (652 MMBTU in energy savings or \$15,126 in cost savings)*.

- Completed the installation of Facility Related Control Systems (FRCS) at buildings 200 and 361. The FRCS allows visibility and control of critical building systems to help improve energy efficiency and performance.

Solid Waste Recycling Updates. The installation continues to divert solid waste from the landfill by implementing a successful *Qualified Recycling Program (QRP)*. MCSF-BI Environmental Section, implements and oversees the QRP. MCSF-BI, tenant, and contract personnel participate in the QRP and follow recycling procedures and guidelines. **Table 3** lists QRP performance, including the use of QRP funds for various initiatives in addition to self-funding the program.

Table 3. Qualified Recycling Program (QRP) Metrics

Year	QRP Revenue	Notes on Utilization of QRP Funds
	\$43,276	\$20,700 used to make installation-wide Safety improvements; \$10,000 donated to MWR
FY 2022	\$103,136	\$10,000 used to purchase hoppers for scrap metal collection \$30,000 donated to installation Morale, Welfare, and Recreation (MWR) program

Developed a Facility Response Plan (FRP) and Improved Spill Response Preparedness. In FY22, the installation developed a *Facility Response Plan (FRP)* to plan and prepare for responding to potentially significant oil spill scenarios. The FRP replaces the installation’s Integrated Contingency Plan (ICP), and complements the existing Spill Prevention, Control, and Countermeasure (SPCC) Plan. While the SPCC meets the requirements of the Clean Water Act for petroleum storage, it is not meant to address over-water fueling of boats, which requires an FRP. As a result, before the FRP was in place, the installation had to send its small boats and watercraft to offsite locations for fueling, leading to additional time and expense. Finalizing the FRP allows the installation to fuel boats on-site via tanker truck, which has streamlined operations, improved mission readiness and resulted in cost savings for the installation.

MCSF-BI also *improved its spill response capabilities* by staging additional boom reel with 1,500 feet of floating boom and a storage container full of spill response material and equipment along St. Johns River for rapid deployment. In addition, the installation completed construction of a boat ramp along St. Johns River, which will improve spill response capabilities by providing the ability to launch and recover small boats to aid in response efforts.

ISO 14001:2015 Certification. MCSF-BI renewed its certification for *ISO 14001:2015* on March 3, 2021, verifying that the environmental management system is effective in planning, coordination, and execution of environmental compliance efforts in support of the MCSF-BI mission. MCSF-BI maintains a third-party registered ISO 14001 EMS. The installation underwent *multiple third-party surveillance audits* in FY 2021 and FY 2022, which ensured MCSF-BI continually improves the EMS and the overall environmental program.

The MCSF-BI staff has established a cross functional EMS team with representatives from all the major tenants on the installation. In addition, Environmental Coordinators from each of the three major onsite contractors participate in *monthly EMS meetings* with staff from the MCSF-BI Environmental section. These meetings provide a key forum to coordinate ongoing initiatives, identify emerging challenges, and develop solutions. Examples of initiatives that emerged from

these meetings include procuring covers for roll-off waste containers, purchasing an aerosol can puncture unit and a drum crusher to reduce waste generation, obtaining a meter to track fuel recycling at the FFU, and various base newsletter topics to improve environmental awareness.

Ongoing Environmental Compliance and Management. MCSF-BI is a Title V major facility for volatile organic compounds (VOC) and a synthetic minor source for hazardous air pollutants (HAP) and maintains a Title V permit program. Florida Department of Environmental Protection (FDEP) personnel conducted a *compliance inspection* of the installation in July 2022 and *did not identify any discrepancies*.

As discussed earlier, the installation also developed a new Facility Response Plan (FRP), which replaced the prior Integrated Contingency Plan (ICP). Additionally, the following key environmental plans were updated within the reporting period:

- Comprehensive Environmental Training and Education Program (CETEP) Plan,
- Stormwater Pollution Prevention Plan (SWPPP),
- Hazardous Waste Contingency Plan (HWCP), and
- Integrated Solid Waste Management Plan (ISWMP).

Environmental Planning. To support MCSF-BI's current and future mission, a Finding of No Significant Impact (FONSI) and Finding of No Practicable Alternative (FONPA) was completed for MCSF-BI's Master Plan Implementation, in compliance with the National Environmental Policy Act (NEPA). The Master Plan included 19 projects ranging from the construction of new facilities, renovations, and repair of existing facilities, to address existing deficiencies and meet mission requirements safely and effectively.

Through its environmental accomplishments, MCSF-BI strives to encourage an environmental compliance and conservation ethic that will extend far beyond the small installations borders.