



Vessel Wash Wastewater Treatment System Profile

Facility Information

Main One Marina

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Main One Marina is a small, full-service marina that prepares approximately 100 boats annually for winter storage. Boats stored for the winter range from 17'-35' in length with an average length of 24'. Use of the vessel wash wastewater treatment system typically begins in March and ends in December. Approximately 50% of the hulls washed are painted with a soft paint and the remaining 50% are typically painted with a hard paint.

Treatment System Information

Main One Marina uses a closed-loop vessel wash wastewater treatment system that treats the wastewater and then recycles it. A heavy duty poly tarp, approximately 12' x 30', with a filter pad placed underneath to provide protection from the gravel, is utilized to capture the wash wastewater. The gravel is sloped to direct the flow of water into a



Main One's wash wastewater recycling system

depression in the ground located in the corner of the tarp. Pre-treatment begins with a small screen that prevents large solids from entering the sump pump used to transfer the water. The water is pumped into the first of a series of four 55-gallon barrels to allow sufficient time for solids to settle prior to going through a bag filter in the storage tank. A floating dock container is utilized for the storage tank and holds approximately 250 gallons. Located in the storage tank is a bag filter to remove solids.

The water in the storage tank can be diverted to the pressure washer or the evaporator. When the water is diverted to the pressure washer, a

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25-micron stone filter is used to remove fine solids. This filter helps to remove fine solids that can damage the pressure washer. When the water is not being utilized for pressure washing, it is diverted to the evaporator. The evaporator consists of a case made from used sliding glass doors and shingles, and is positioned to maximize the amount of sunlight the unit receives. The pump is programmed to send a stream of water into the evaporator every several minutes during daylight hours on an as-needed basis. All water evaporated is replenished by rain water pumped off the tarp; city water is used when there is a lack of rain. Although the system is not stored in a shed, Main One has not encountered problems with freezing. The evaporator is used to dispose of the water remaining at the end of the season.



Evaporator

Pros and Cons of System

Low cost for installation and materials. Owner used materials on hand and minimized the purchase of new materials. Also, the simple design eliminated the need to deal with freezing. Design provides sufficient pre-treatment to remove solid matter. Water is treated to a sufficient level for recycling, but may not meet requirements for discharge to a sanitary sewer line.

Estimated Cost

Pre-treatment (Pads, filters, screens, tanks, etc.): Approximately \$200 per year for the poly tarp, bag and cartridge filters.

Treatment system: Material cost for the treatment system was approximately \$1,000 (approximately \$500 for the tank and pump set-up and \$500 for the evaporator). These costs were primarily associated with the purchase of materials not on hand and included items such as a holding tank (a floating dock container), various pumps, shingles, used sliding doors, 25 micron stone filter and other miscellaneous materials.

Maintenance (Labor, filters, etc.)

Approximately \$1,000 per year is spent on maintenance of the system. The majority of the costs are associated with commissioning and decommissioning the system.

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