



Vessel Wash Wastewater Treatment System Profile

Facility Information

Viking Yachting Center

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Viking Yachting Center is a large, full-service marina that prepares approximately 200 boats annually for winter storage. Boats stored for the winter range from 20'-75' in length with an average length of 45'. Use of the vessel wash wastewater treatment system typically begins in March and ends in December. Approximately 90% of the hulls washed are painted with a soft paint and the remaining 10% are typically painted with a hard paint.

Treatment System Information

Viking Yachting Center uses a closed-loop vessel wash wastewater treatment system that treats and then recycles the wastewater. A concrete pad is utilized to capture the wash wastewater and pretreatment begins with a small catch basin located near the bulkhead end of the pad. The small catch basin contains a stainless steel mesh basket that captures large solids and can be easily emptied when it begins to clog. The small catch basin then drains into a 960-gallon holding tank measuring 4' x 4' x 8', providing sufficient holding to allow solids to settle. Inside the basin is a removable stainless box with perforated holes to capture solids. The piping between the catch basin and the holding tank contains a diverter valve that redirects storm water to the surface water when not washing vessels. Wastewater is drawn from this tank via a raised sump pump that transfers the water into the treatment system



The filtration system

Continued on reverse

located in a heated shed. The pump is located approximately 4' from the bottom, and its raised position prevents most of the solids from being pumped into the treatment system. An 8' x 18' shed heated with a portable electric oil-fueled radiator is used to house additional pretreatment and treatment equipment. Inside the shed the water is pumped through reusable canvas bag filters into a 4' x 4' x 4' tank that holds approximately 480 gallons. The water is then stored in an 800-gallon tank until it runs through the treatment system.

RGF Environmental Systems, Inc. is a physical filtration system that treats the wastewater with an ultraviolet light and passes it through 25 micron and 50 micron filters. The treated wastewater is then stored in a 500-gallon effluent collection tank until needed for washing. Located on the outside of the building are a number of faucets to which the pressure washer can be connected. The pressure washer can draw directly from the tank containing the treated wastewater. When water needs to be added to the system, the pressure washer can be connected to a fresh water faucet.

Pros and Cons of System

High initial cost for pre-treatment and treatment system. Requires a large amount of dedicated storage space that must be heated. 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 \$8,000 to cover the cost of piping, screens, holding tank, shed and other miscellaneous items. Approximately \$22,000 for the purchase of a manufactured wash wastewater filtration treatment unit. Cost will vary depending on model and manufacturer. Treatment System: 25 Micron filter 3 at \$52 each every 3 months = \$156, 4 Bag filters at 18.75 = \$75 per year, O-Rings 6 at \$6.75 = \$40.50, Cleaning of primary filters and sediment – 4 hours twice a month

Maintenance (Labor, filters, etc.)

Conducted weekly and takes marina staff approximately 2 hours.

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