

BOAT WASHING



STANDARD

All antifouling paint contaminated wash water must be collected, held for recycling or disposal, treated and discharged with permission to a publicly owned treatment plant, or treated and discharged to the surface water in accordance with a waste discharge permit.

Wash water not contaminated with antifouling paint may be discharged to the ground or surface water if the wash water does not produce an oily sheen or contain significant amounts of other pollutants.

BOTTOM WASHING BMPS

Wash water from pressure washing, hosing down, or scrubbing boat bottoms coated with antifouling paint has the potential to generate contaminated wash water. This contaminated wash water is classified as a process wastewater and must be managed accordingly separate from storm water.

In General

- Evaluate whether it is a necessity to wash boat bottoms and generate contaminated wash water, avoid if practical.
- Use the minimum amount of water necessary to complete the job.
- Spray from the top down and direct spray downward to reduce overspray.
- Encourage the use of less toxic but appropriate antifouling paints, reducing the amount of fouling and the contaminants that will come off during cleaning.
- Check the bilge prior to cleaning, if there is oil, turn off the bilge pump and clean out the bilge with oil absorbent pads prior to using cleaners.
- Prohibit in-the-water bottom cleaning at your facility.

Typical boat bottom wash water contains:

Copper 20-170 ppm

Lead 0.2- 3.7 ppm

Zinc 5.4 -15 ppm

Settleable solids 24 ppm

Suspended solids 790 ppm

ppm = parts per million or mg/L



STEP 1: COLLECTION

Conduct all boat washing in an impervious boat wash down area that is designed to collect all the wash water and as much overspray as practicable, exclude storm water or other runoff, and divert it to the next step in disposal process.

Collection System Options

Option A - Permanent concrete or asphalt wash pad with a berm or integral drain design (Figure 1).

The concrete or asphalt pad must:

- Be of sufficient thickness and appropriate reinforcement to support the weight of the vehicles that may drive over it without deformation.
- Be sited in an area where storm water can be diverted away from the pad to the greatest extent possible.
- Have a raised lip of sufficient height to exclude storm water but low enough to be easily driven over with yard equipment.
- Have a slope of approximately $\frac{1}{4}$ " per foot to an internal or peripheral sump or trench to reduce the amount of solids that will collect in the sump but allow wash water to flow freely and not pool on the pad (see diagram 1).
- Have a sump or trench that allows vehicles to drive over and enable the wash water to be pumped to a treatment, holding or disposal system.

Pros and Cons	
☑	Durable
☑	Easy to use
☑	Easy to maintain
☑	Initial expense
☑	Dedicated space
☑	Not location flexible
☑	Stormwater management



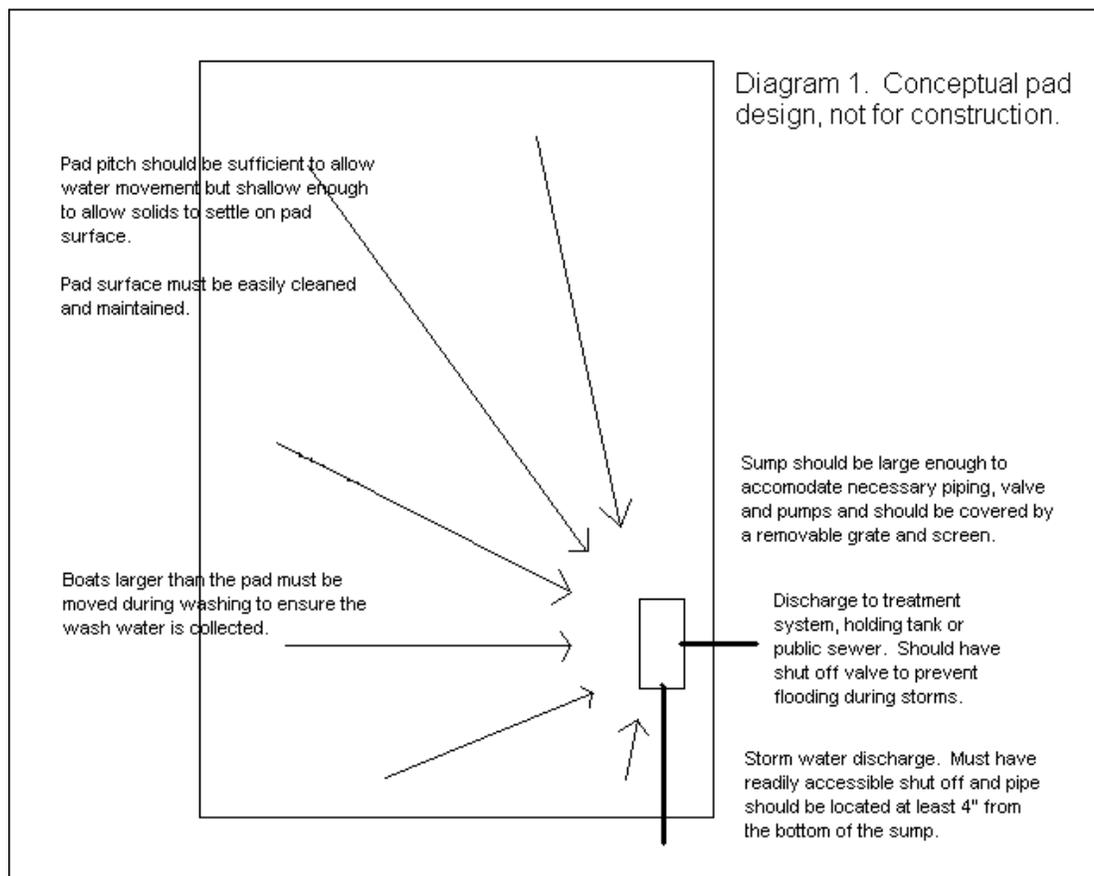
Figure 1. Permanent concrete pad with central sump. MEDEP photo

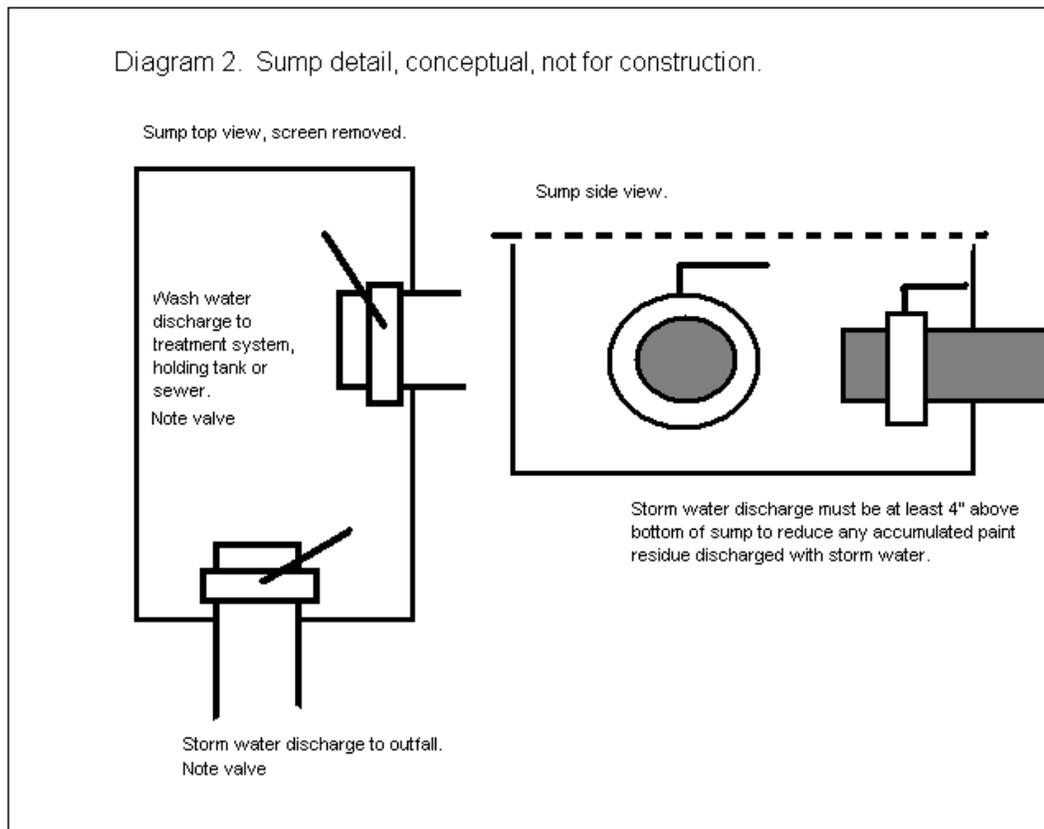


The sump or trench must:

- Be covered by a durable, removable grate capable of supporting any vehicle that may drive over it and potentially a finer screen to exclude organic debris.
- Be able to be opened, inspected, cleaned and maintained routinely. Be configured in such a way to minimize the amount of contact between any paint residue and storm water that gets onto the pad.
- Be of sufficient capacity to allow an efficient pump configuration and have an easily accessible diverter assembly enabling clean storm water that accumulates on the pad to be discharged to an outfall separate from the holding tank or treatment system (see diagram 2).

Evaluate whether existing paved or concrete covered areas can be modified to become a collection system with the addition of a sump and pad lip.





Once the wash water enters the sump it can flow by gravity or be pumped to a holding tank, sewer system, or treatment system. There are several pump configuration options from a sump pump in the sump to self priming centrifugal pumps located up gradient of the collection sump.

Option B - An impermeable, temporary, durable, portable “drive-over” containment system.

Temporary or portable collection (PC) systems are less expensive than permanent pads and can be cleaned, rolled up and stored out of the way once the washing season is completed. These systems can be as simple as a “blue tarp special” using an impermeable tarp, 4X4 lumber for the berm under the tarp, a sump pump and plastic agricultural tank. Systems like this are appropriate for operations serving mainly small boats.

There are commercially available systems meeting the following specifications that will provide much longer service and for larger boats. Turning heavy machinery on portable containment systems will often result in tearing (Figures 2 and 3).

Pros and cons	
👍	Less expensive
👍	Portable
👍	Easy to use
👍	Can be stored out of the way
👎	Less durable
👎	Site preparation
👎	Storm water management



The containment system should:

- Be at least 80 mil thick, UV stabilized LLD polyethylene.
- Have drive over sides that provide a water tight system when set up.
- Have a thick geo textile pad underneath the collection system to prevent abrasion from the surface below.
- Be set up on a firm surface free of significant hazards.
- Be set in an area that is pitched to channel wash water toward one location for pumping.
- Be cleaned carefully prior to storage.

There are a number of suppliers and manufacturers of PC systems.

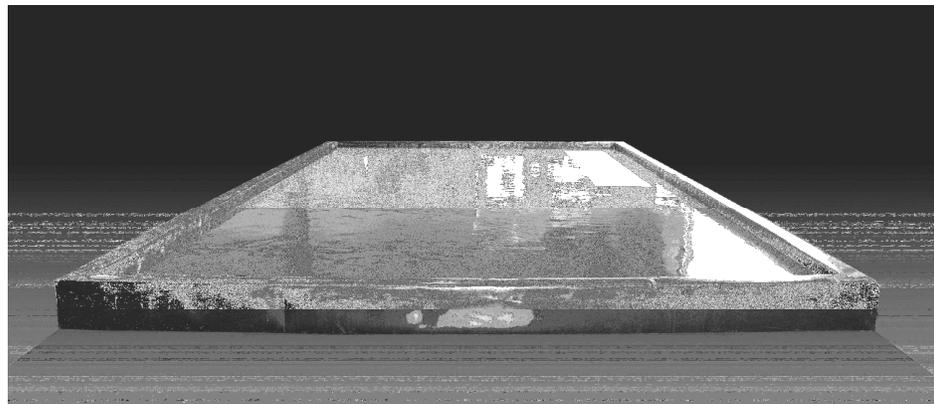


Figure 2. Foam edged portable containment system. Photo courtesy of GSE



Figure 3. Flexible stayed portable containment system. Photo courtesy of Husky products.



Once the wash water is collected it must flow by gravity or be pumped to the treatment system, holding tank or sewer connection. When the boat washing pad is not in use, clean, specifically removing paint residues, and disconnect the treatment system or the connection to the sewer to exclude rainwater. When not in use, direct any rainwater discharge from the collection system to the surface water or to a storm water management area like a vegetated swale or a buffer. When PC is no longer needed for the season, clean, roll up, and store in a protected location.

Marine Railways

Yards with marine railways where the boat remains on the rail for service must collect as much wash water as possible understanding that wash water hitting the rails and running down them may not be able to be collected. Partial length or full length collection trays that fit beside the rails and underneath the car are one option. The trays may be temporary or semi-permanent, partial length trays must either be moveable or be positioned so the vessel can be moved over them while being washed. The trays should be constructed of a material appropriate for the practices at the particular yard and should be easy to clean and maintain. The trays should be able capture most of the wash water and have sump or be fitted with discharge line that enable them to be pumped up to the next phase of treatment. If located in the intertidal area, the trays must also allow for sea water to be drained off when not in use.

Yards may also rig tarps to direct the wash water to a single collection tank that then can be pumped to the next phase.

STEP 2: TREATMENT

Treatment Systems

Yards that will be discharging back to the surface water under the general permit, some discharging to a sewer system that requires pretreatment, and those that would like to recycle the wash water must provide various levels of treatment. Yards collecting wash water and holding it for disposal are not generally required to provide treatment.

The treatment system must be constructed in any manner that will ensure that all the wash water is treated and cannot overflow and bypass the treatment system. The treatment systems do not need to be permanent structures, but must be available for use at any time that wash water is generated. Treatment systems may be installed in a new building (see permitting sections), an existing building, or constructed on a trailer or on a skid for easy storage during the off season. All treatment should include a coarse screen or filter to catch large debris that is easily cleaned and the final filter that achieves the specified discharge limits.



Option AA – Yard / Marina made treatment system

This system is essentially a settling and mechanical filter system made with readily sourced materials designed and constructed by the yard or marina. Each yard can design a system specific to their needs or situation. For those facilities under the general permit, the DEP has determined that basic settling and filtration to 1 micron will constitute “Best Practicable Treatment” for the first year of operation. Should testing reveal that settling and 1 micron filtration does not meet discharge limits a portion of the system may need to be replaced or a component added. Because of the relatively low cost of the Yard / Marina made system, it is a reasonable first effort for wash water treatment and is all that is needed for the first year. However, the facility is ultimately responsible for meeting all appropriate standards and additional treatment may be needed in the future to meet the discharge standards.

The system shall provide the following:

- Large solids removal; will occur on the pad on in collection basin. Following collection the wash water (effluent) flows by gravity or is pumped to the treatment system.
- Settling; where settleable solids in the effluent drop out of suspension.
- Initial filtration; where suspended solids larger than 50 microns are removed (optional).
- Final filtration; where solids larger than 1 micron are removed.

The system should be sized so there is adequate capacity at the top of the system to handle the largest volume of wash water the facility may generate at peak use and enable the wash water to settle for at least 6 hours before the next phase.

The final filtration will require an additional pump to push the effluent through a commercial bag filter equipped with a 1 micron single or combination filter bag or cartridge. The effluent may then be discharged to a holding tank for recycling or to the surface water as authorized by a waste discharge permit.

Those facilities providing treatment for recycling or pretreatment for the municipal treatment system must determine the level of filtration necessary to meet the needed standards.

Option BB - Commercial Treatment Systems

There are a number of commercially available self-contained wash water treatment and/or recycling systems. These systems use a number of different processes including but not limited to mechanical filtration, chemical flocculation, electrical flocculation, and biological treatment. A number of these systems claim to filter the water to a very high degree and often allow you to recycle the treated water, reducing water use significantly. The material filtered from the water over time may have a high concentration of contaminants and must be handled as special waste, and may require testing



before disposal. The recycled wash water may be hauled off by a waste water disposal company, including regular septic tank servicing companies, but must be informed of the nature of the waste water.

STEP 3: DISPOSAL

Once collected, there are several effluent disposal options that may or may not include treatment.

Discharge to Sewer

If your facility is served by the local sewer, you may be able to discharge the effluent to the sewer with the sewer department's permission. The sewer department may require treatment prior to discharge. The DEP will require written authorization from the sewer district and a signed "No Discharge Certification".

Discharge to Surface Water

If your facility cannot discharge to a sewer but is located in a coastal location like a harbor or certain rivers you may be able to discharge to the water body, after treatment, in accordance with the Antifouling Paint Contaminated Wash Water General Permit (GP). Please refer to the text of the GP, or to the "Quick Reference Checklist" to determine whether your facility is eligible for coverage by the GP. For information on the GP, including the permit, issue profile, fact sheet and quick reference guide go to the Maine DEP web site http://www.maine.gov/dep/blwq/docstand/wd/antifouling_paint/index.htm

Hold or Recycle

If your facility is located inland, not serviced by the local sewer, is not eligible for coverage by the general permit or an individual permit, or you choose not to discharge your facility will have to hold the wash water and recycle and/or have it hauled off by an industrial waste water hauler. The DEP will require a signed "No Discharge Certification".

CLEAN-UP

Any debris generated during bottom washing should be collected and separated according to the type of material. Small quantities of waste marine life removed from the bottom should be allowed to dry and disposed of properly (see waste section). Large quantities should be sent to a composting facility. Paint chips, filter solids, and spent filters should be collected, and disposed of as special waste along with other painting debris. Your waste hauler may require testing of the paint waste prior to disposal. If the analysis reveals the waste is hazardous, it must be handled appropriately (see waste section).



PERMITTING

Construction of a permanent collection system within 125' of the shore may require a permit from the town due to shoreland zoning. However, shoreland zoning setbacks requirements vary by town and by zone, developed commercial zones often have smaller setbacks than other zones. Further, construction of the pad, associated tanks and piping can be considered a “water dependent use” and accessory to existing structure so may be exempt from local permitting all together. Consult with the local Code Enforcement Officer and the DEP if you have questions.

Soil disturbance and construction 25'-75' of the shore will probably require Natural Resources Protection Act (NRPA) permit by rule (PBR). Construction within 25' of the shore may require a full NRPA permit and should be avoided where possible. Installation of a discharge pipe from a DEP licensed waste water discharge is exempt from permitting but the PBR standards for soil disturbance must be met. Refer to the “Docks, Piers and Floats” section (pp 2-79 to 2-85) of the Brightwork manual for more information and consult with the local Code Enforcement Officer and the DEP if you have questions.

If you are planning to discharge treated wash water back to the surface water, you must be authorized to do so through the Antifouling Paint Contaminated Wash Water General Permit, approved October 14, 2009 or by an individual wash discharge permit. For more information about the general permit, please consult the DEP's website
http://www.maine.gov/dep/blwq/docstand/wd/antifouling_paint/index.htm

CUSTOMER RELATIONS

It is in your interest to clearly communicate the proper management practices to boat owners who work on their own boat through written agreements and/or clear signage. The agreements may specify certain **practices**, recommend the use of certain products, prohibit the use of hazardous materials, and should clearly state clean-up and disposal requirements. Remember, boatyards and marinas are ultimately responsible for all activities that take place at the yard, including work done on the boats by the boat owners.

LEGAL REQUIREMENTS

The following summaries of Federal and State laws and regulations are for general reference only and do not represent the laws fully. For a complete review of the pertinent laws and regulations use the references below to find either the complete text of the law or regulation or a detailed and complete summary in Section 2.

Generally

Discharge of Pollutants to Water - 38 M.R.S.A § Section 413

Section 413 prohibits discharging (spilling, leaking, dumping) of pollutants into state waters without a license from the Department of Environmental Protection.



For additional information: Bureau of Land and Water Quality, Maine Department of Environmental Protection, 17 State House Station, Augusta, ME 04333, phone # (207) 287-2111.

<http://janus.state.me.us/legis/statutes/38/title38sec413.html>

Disposal of Waste Paint Dust and Debris

Hazardous Wastes Regulations - Maine Hazardous Waste Management Rules Chapters 850-857.

These rules are the State's equivalent to the Federal Resource Conservation and Recovery Act (RCRA) and provide for "cradle to grave" management of hazardous waste. All facilities that generate hazardous wastes (see glossary) must manage any waste identified as "hazardous" in accordance with the rules and standards.

In addition to the dry paint wastes that may be hazardous for TCLP metals, most cleaners and solvents associated with painting are identified as hazardous either by characteristic, primarily ignitability, or because they are an "F" listed hazardous waste including acetone, toluene, xylene, Methyl Ethyl Ketone (MEK), and ethylbenzene. Waste generated from cleanup after painting, including rags, will be hazardous if they are contaminated with a listed waste or are saturated with another ignitable compound. However, if the rags are not contaminated with listed hazardous waste, and are not saturated with an ignitable compound they would be considered to be non-hazardous, assuming no other characteristic is exhibited.

For additional information: Bureau of Remediation and Waste Management, Maine Department of Environmental Protection, 17 State House Station, Augusta, ME 04333, phone # (207) 287-2651

Natural Resource Protection Act (NRPA) 38 M.R.S.A. §480-C

The Natural Resources Protection Act (NRPA) regulates activities in, on, over, or adjacent to protected natural resources: coastal wetlands; sand dunes; freshwater wetlands; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat that may cause material or soil to be washed into those resources.

Generally, a permit is required if work disturbs soil within 75 feet of a protected natural resource. If you are unsure about whether or not an NRPA permit is required for your project, contact the appropriate DEP office and arrange for a staff visit.

Activities that may be regulated include:

dredging, bulldozing, removing, or displacing soil, sand, vegetation, or other materials;

draining or otherwise dewatering;

filling; and

constructing, repairing or altering any permanent structure (permanent structure is one placed or constructed in a fixed location for a period exceeding 7 months of the year).

For additional information: Bureau of Land and Water Quality, Maine Department of Environmental Protection, 17 State House Station, Augusta, ME 04333, phone #



(207) 287-2111, Portland – 312 Canco Road, Portland, ME 04103 (207) 822-6300, Bangor – 106 Hogan Road, Bangor, ME 04401 (207) 491-4570.

Mandatory Shoreland Zoning Act - 38 M.R.S.A. §435-449, C.M.R. Chapter 1000 and Local Ordinances

The Mandatory Shoreland Zoning Act requires all municipalities to establish zoning ordinances for land within 250 feet of great ponds, rivers, tidal areas, and freshwater and coastal wetlands. Within the shoreland zone, permits are required from the municipality (usually the planning board) for any new marina or expansion (including new structures).

Marinas are considered to be water-dependent uses and, therefore, in most cases are not subject to the same setback standards as those for non water-dependent uses. Most local ordinances have no minimum water setback standard for marina structures. However, boat storage is not considered a water dependent use.

Most shoreland zoning ordinances also regulate structures and activities which extend into and over the water. This would include boat ramps, piers, docks, and floats. Again, most ordinances have limited construction standards for piers, docks and floats.

For additional information: Bureau of Land and Water Quality, Maine Department of Environmental Protection, 17 State House Station, Augusta, ME 04333, phone # (207) 287-2111. Or your local Code Enforcement Officer

Antifouling Paint Labels FIFRA Section 12 (a)(2)(G) 7 MRSA § 606 (2)(B)

Because all antifouling paints are pesticides, their container labels are enforceable legal documents that require general and specific management practices for preparing surfaces, application, storage and disposal of the paint.

Solid Waste Regulations – CMR Chapter 400 (1) III, Hhh, Nnn, and CcCc,

The Solid Waste Regulations classify non-hazardous waste materials and specify their appropriate disposal. Waste materials that are not identified as “hazardous” must be disposed of properly as either special or solid waste. Most wastes resulting from boatyard or marina activity can be classified as solid waste. However, non-liquid paint waste (dust and debris) is specifically identified as special waste.

For additional information: Bureau of Remediation and Waste Management, Maine Department of Maine Department of Environmental Protection, 17 State House Station, Augusta, ME 04333, phone # (207) 287-2651.