



Department of Toxic  
Substances Control



Doc. No.

# Pressure Washing

Pollution Prevention for Marine Vessel and Service Repair Facility

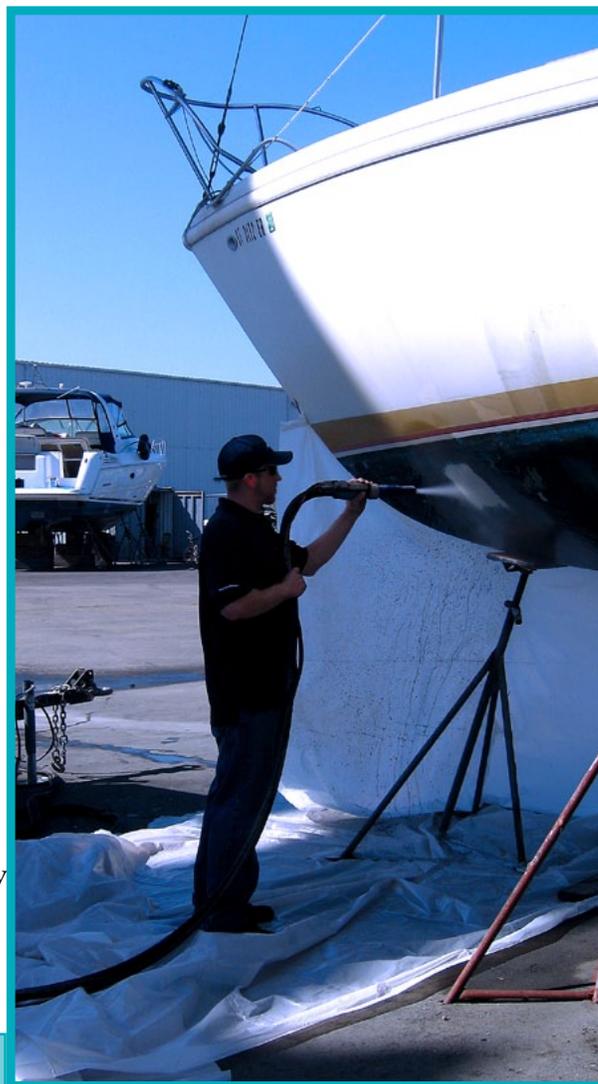
## Pressure Washing

Marine Vessel and Service Repair (MVSR) facilities use pressure washing to remove bottom growth from boat hulls. They may also use it to keep their work areas and docks clean.

Pressure washing uses a stream or spray of very highly pressurized water across the surface being cleaned. It is an excellent solution for removing attached sediment, marine growth, and barnacles from boat bottoms. Pressure washers are electric or gas powered, and have varying levels of PSI and GPM (pounds per inch and gallons per minute) for greater or lesser power.

## Environmental Concerns:

Most MVSR facilities are located close to open bodies of water. Pressure washing can potentially add pollutants and bottom marine growth. Additionally, pressure washing and hand scrubbing of boat hulls to remove chipped antifouling bottom paint can release toxic metals (i.e., arsenic, copper, lead, zinc, and tin) into the nearby surface water, and thereby degrade the quality of water. Salt and exotic organisms, or “invasive species”, are associated with ballast water.



\*vessel refers to a small craft

## Targeted Pollutants:

- Bacteria (bottom growth)
- Invasive species (bottom growth)
- Oils, organic constituents
- Metals (paint chips)
- Sediment
- Trash and Debris

## Regulatory Requirements

1. State Water Quality Control Board <sup>i</sup>([www.swrcb.ca.gov](http://www.swrcb.ca.gov)):
  - National Pollutant Discharge Elimination System <sup>ii</sup>(NPDES Permit)
  - Publicly Owned Treatment Work <sup>iii</sup> (POTW}
2. Department of Toxic Substances Control <sup>iv</sup>([www.dtsc.ca.gov](http://www.dtsc.ca.gov)):
  - <sup>v</sup>[Treatment Permit](#)
3. California Air Resources Board (ARB) <sup>vi</sup>([www.arb.ca.gov](http://www.arb.ca.gov))
  - Small Gas Powered Engine Regulation <sup>vii</sup>([Gas Engines](#))
  - Portable Engine Registration Program <sup>viii</sup>([PERP Diesel Engines](#))
4. California Division of Occupational Safety and Health <sup>ix</sup>([CAL/OSHA](#))
  - Personal Protective Equipment <sup>x</sup>([PPE](#))



### Recommended Practices (RPs) for Pressure Washing:

1. **Designated area:** Pressure wash area should be located as far from the shore as possible to lessen the risk of contaminated wash water reaching the surrounding body of water.
  - Provide clearly marked work areas for pressure washing
  - Pressure washing should not be allowed outside the designated area
  - Pressure washing should be done over a bermed impermeable surface
  - The floor must be sloped so wash water can be captured and filtered for proper pretreatment or disposal
  - Capture pollutants such as paint chips and marine growth, from pressure washing by using tarps, booms and filter cloth.
  - Use a primary filter in the catch basin to separate the yard sediment
  - The collected sediment should be tested to determine if it is <sup>xi</sup>[hazardous waste](#), if the test is positive then it must be disposed off as hazardous waste by a <sup>xiii</sup>[licensed hauler](#)
2. \***Process Water** or the wash water should be **recycled** if and when it is cost-effective to recycle.
  - Wash and rinse water should be collected for recycling and reuse or proper disposal
  - Install filters fitted to the wash water in-let for the clarifier, in order to remove particulates and ensure efficient performance of the pre-treatment system
  - Collect wash water for discharge to a <sup>xiii</sup>[local waste water treatment facility](#). (See Fact Sheet Wastewater Management.)
3. Most **organic debris** (i.e. grass/seaweed, barnacles and mussels) removed by bottom washing should be collected and disposed of as solid waste - UNLESS -
  - when tested to determine if it is <sup>xi</sup>[hazardous waste](#), tests positive; then dispose as hazardous waste by a <sup>xiii</sup>[licensed hauler](#)
  - If mixed with pressure-washing waste water or sludge, this material should be pre-treated as hazardous waste and disposed of at the local hazardous waste facility. Best practice is not to mix the two matters.
4. The **spread of invasive species** can be minimized through proper boat cleaning practices.
  - Thoroughly clean boats removed from waters known to be inhabited by exotic or invasive species
  - Provide educational fliers and fact sheets on <sup>xiv</sup>[known invasive species](#)
5. **Train employees** on proper pressure washing techniques and wash water disposal procedures.
  - Safety concerns should be emphasized during operational on the job training
  - Provide and encourage staff to use personal protective equipment (PPE)
  - Perform updated training on a regular basis
  - Provide educational materials and signage in both English and Spanish, and/or other foreign languages commonly used in your area

<sup>i</sup>**Process Water** – – most simply “any water” that is not storm water or rain water; is defined as process water.

Examples of process water include wash water from pressure washing boats, water that comes in direct contact with debris from industrial processes, etc.

**References and other Resources:**

- i. [www.swrcb.ca.gov](http://www.swrcb.ca.gov)
- ii. [http://www.swrcb.ca.gov/water\\_issues/programs/npdes/](http://www.swrcb.ca.gov/water_issues/programs/npdes/)
- iii. [http://www.swrcb.ca.gov/water\\_issues/programs/npdes/pretreat.shtml](http://www.swrcb.ca.gov/water_issues/programs/npdes/pretreat.shtml)
- iv. [www.dtsc.ca.gov](http://www.dtsc.ca.gov)
- v. [http://www.dtsc.ca.gov/HazardousWaste/Tiered\\_Permit\\_Guidance.cfm](http://www.dtsc.ca.gov/HazardousWaste/Tiered_Permit_Guidance.cfm)
- vi. [www.arb.ca.gov](http://www.arb.ca.gov)
- vii. <http://www.egr.msu.edu/erl/emiss/emiss.htm>
- viii. <http://www.arb.ca.gov/portable/portable.htm>
- ix. <http://www.dir.ca.gov/dosh/puborder.asp>
- x. [http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9777](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9777)
- xi. [http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP\\_DefiningHW11.pdf](http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP_DefiningHW11.pdf)
- xii. <http://www.dtsc.ca.gov/database/Transporters/Trans000.cfm>
- xiii. Contact local wastewater treatment authority for permission to discharge wash water to the sanitary sewer
- xiv. [http://ucanr.org/sites/coast/Aquatic\\_Invasive\\_Species/](http://ucanr.org/sites/coast/Aquatic_Invasive_Species/)
- xv. <http://www.protectyourwaters.net/>
- xvi. Stormwater Management - [http://water.epa.gov/lawsregs/lawguidance/cwa/tmdl/stormwater\\_index.cfm](http://water.epa.gov/lawsregs/lawguidance/cwa/tmdl/stormwater_index.cfm)
- xvii. <http://www.dfg.ca.gov/mlpa/>

**For additional information on auto body and paint shop pollution prevention practices and a list of available publications contact:**

Department of Toxic Substances Control (DTSC)  
Office of Pollution Prevention and Green Technology  
P.O. Box 806  
Sacramento, CA 95812-0806  
(916) 322-3670  
(800) 700-5854  
<http://www.dtsc.ca.gov/PollutionPrevention/index.cfm>

Environmental Boating Program Coordinator  
California Department of Boating & Waterways  
California Coastal Commission  
45 Fremont Street, Suite 1900  
San Francisco, CA 94105  
[www.BoatingCleanandGreen.com](http://www.BoatingCleanandGreen.com)  
(415) 904-6905

