

Best Management Practices (BMP's) For the Charleston Shipyard



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INTRODUCTION

This document discusses Best Management Practices (BMP's) for minimizing water quality impacts. Operations and maintenance activities at Shipyards are potential sources of a wide range of pollutants including sediments, heavy metals, antifoulants, hydrocarbons, solvents, antifreeze, acids and alkalis, surfactants, nutrients, bacteria, floatables and plastics. Some of these pollutants – particularly heavy metals, solvents and hydrocarbons – may be toxic to aquatic life at low concentrations.

It is the responsibility of the Charleston Harbormaster to enforce the contents of this document.

Environmental Concerns:

Operations and maintenance activities at the Charleston Shipyard facility include vessel maintenance and repair, vessel storage, waste disposal, fuel handling, solid waste handling, structural maintenance, vessel work areas and storm water management. These activities are potential sources of a wide range of pollutants. It is the intent of Port staff to operate this facility under Best Management Practices (BMP's) and in an environmentally responsible manner. It is the responsibility of every user of the Charleston Shipyard facility to comply with published operating BMP's.

BMP 1.0 Vessel Maintenance and Repair – General (Including Engines):

The purpose of this BMP is to govern potential discharges of contaminants associated with the routine maintenance of vessels, including engine maintenance and repair.

- 1) The following activities may be conducted on board vessels while in the water:
 - Routine engine tune-ups, oil changes and other minor servicing and repair;
 - Routine care and cleaning of rigging and fittings, interior surfaces, and “bright work”, providing these activities do not produce waste water;
 - Painting and maintenance of sanitary waste water facilities;
 - Bilge pump repair;
 - Removal and replacement of an engine, when such activities are conducted so as to contain any discharges or spills of engine fluids; and
 - Similar activities for which an accidental spill can be contained on deck or within the vessel.

- 2) The following activities should be conducted with the vessel out of the water and as appropriate, within an area specifically designed for the following purposes:
 - Repairs requiring the disassembly of the outboard or lower drive unit;
 - Bilge repairs requiring opening or penetrating the hull;
 - Scraping, sandblasting or painting the hull exterior or drive units;
 - Interior or on-deck painting or similar activity involving aerosol application with a risk of overspray or drippage beyond the confines of the vessel;

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- Cleaning of the hull exterior with cleaning agents other than fresh water or natural seawater. Wastewater from such cleaning should be collected and treated or discharged into a community sewage system. Discharge from wash water into waters of the State is prohibited; and
- Any other activities involving the potential risk of an uncontained discharge of oil, chemical, nutrients or other contaminants to waters of the State.

BMP 1.1 Vessel Cleaning:

The purpose of this BMP is to minimize the risk of a discharge of cleaning compounds, paint and varnish. The only two authorized sites at the Charleston Shipyard for vessel pressure washing are Giddings ways and the travel lift site. All other boat washing on Shipyard property is prohibited.

At the travel lift site, pressure washing of vessels will be conducted by Port staff only.

Avoid the use of heavy duty detergents containing ammonia, sodium hypochlorite, chlorinated solvents, petroleum distillates, acids or lye.

In water hull cleaning by divers is not permitted.

Do not discharge liquid wastes, including solvents, detergents and rinse water onto the ground, or allow them to enter the storm drains.

Do not dispose of liquid wastes, including solvents, detergents and rinse water onto the ground, or allow them to enter the storm drains.

Do not dispose of liquid wastes in dumpsters.

Hydro blast (high pressure washing) operations should be conducted in accordance with the following practices:

- Hydro blast waste water must be contained by directing it to a holding tank or treatment unit. This prevents paint chips and oil from being discharged to State waters;
- Cleaning processes that use chemical additions such as solvents or degreasers must be conducted in self-contained systems that prevent any discharge to storm drains or sanitary sewers;
- Permission will be required to discharge these wastes to local municipal sanitary sewer systems. Pre-treatment is required.

BMP 1.2 – Scraping and Sandblasting:

The purpose of this BMP is to minimize the risk of discharge of paint or varnish residues and contaminated blast grit to the environment, either by direct discharge to water, conveyance via storm water or conveyance by air.

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Giddings Ways is the only authorized designated area at the Charleston Shipyard for sandblasting. Sandblasting at any other location on the premises is prohibited.

Sandblasting may only occur when shrouds are in place to contain material. No sandblasting should occur on windy days when spent grit and dust can not be contained. The sandblast area should be cleaned of spent grit and waste at the end of each operation.

Scraping and vessel sanding should only be conducted in designated vessel work areas.

Vessels in gravel work areas must sit on a tarp to prevent dust, paint chips and other materials from accumulation in the soil or sand.

Hand sanding is allowable, but all power sanders must have a dust collection unit attached.

Work areas must be kept clean of debris and grit from scraping, sanding and sandblast operations so that runoff and wind will not carry any waste into the water.

Tarps and sheeting should be used in the gravel lot to collect debris and spent materials for appropriate disposal. All vessel work areas must be cleaned at the end of each work day.

As new, environmentally safe products become available which minimize the need for scraping and sanding, their use will be encouraged.

Spent sandblast grit, scrapings and debris should be stored under cover in a manner that minimizes contact with processed water or storm water. Spent sandblast grit and scrapings may be classed as a special waste or hazardous waste if soluble metals or antifoulant chemicals are present in large amounts.

BMP 1.3 – Vessel Painting:

The purpose of this BMP is to minimize the risk of a discharge of paint, solvents, and associated materials to the environment by either airborne or waterborne mechanisms.

The use of non-toxic, high bonding, easily cleaned hull coatings should be encouraged, more alternative coatings are anticipated to become available as the state of the art advances.

Painting and varnishing of vessels in water should be generally limited to the interior surfaces and to “bright work”, where paint materials and spills can be contained and prevented from entering the water.

Painting using aerosols or spray equipment should not be conducted in the open where overspray can fall or be blown into the water. These activities should be limited to the following locations, in order of preference:

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- a) Inside commercial Shipyard facilities which are designed for this activity;
- b) Inside designated structures, with ventilation and filter systems designed for this activity; and
- c) At designated shore side locations away from open water, with temporary structures or plastic sheeting provided to minimize the spreading of overspray.

If spray painting outdoors (with protective sheeting), avoid working on windy days when control of the protective covering and paint spray is difficult.

The bottom edges of tarpaulins and plastic sheeting should be weighted to keep them in place.

A spray booth should be used whenever possible to capture overspray.

Drip pans, tarps, and sheeting should be used to contain droppings and spilled material.

The mixing of paints and solvents should be carried out in locations and under conditions such that no spill enters State waters.

Drip pans or other protective devices should be used for all paint mixing, solvent transfer, or equipment clean up operations unless the operations are conducted in controlled areas away from storm drains, surface waters, shorelines, piers, docks or floats.

Paint and solvent mixing, brush cleaning and similar activities should not be conducted on open floats or on structures over water, but should be done in an on-shore work area. Paints mixed in a separate work area and transferred to an outdoor work area for application should be carried in a tightly covered container and re-opened at the work site.

When painting open floats or lighters, paints should be kept in cans of one gallon or less. Paint cans should be kept in drip pans with drop cloths or tarps underneath the drip pans.

All materials in the drip pan should be properly disposed.

Do not discharge paints, solvents, or other related materials onto the ground or allow them to enter storm drains.

Do not dispose of liquid waste in dumpsters.

Paint and solvent spills present a threat to waters of the State and, therefore, must be prevented from reaching storm drains or deck drains and subsequent discharge into waters.

BMP 2.0 – Vessel Storage:

The purpose of this BMP is to govern potential discharge of contaminants associated with vessel storage.

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Do not perform other vessel maintenance and repair activities in dry storage areas unless the other management measures are fully implemented.

Bilges should be inspected and cleaned prior to extended vessel storage. All water, oil or foreign materials found in the bilge shall be cleaned utilizing approved absorbent materials to remove contaminated bilge water. Used absorbents should be disposed of properly. Contaminated bilge water must not be allowed to enter waters of the State.

Fuel tanks should be emptied and purged as required for storage.

Tarps shall be placed under the footprint of each stored vessel.

BMP 3.0 – Fuel Handling:

This BMP deals with operation and maintenance practices for fuel handling. Its purpose is to minimize the potential for a release of petroleum products to the environment and to deal with spills if they occur.

Fuel delivery, storage and dispensing all pose a potential for accidental releases. Each operator is responsible for the prompt containment and clean-up of any spills or releases of hazardous materials. Any spill or release must be reported immediately to the Oregon Emergency Response System (OERS) at 1-800-452-0311; or the National Response Center at 1-800-424-8802.

All containment berms or devices should be inspected weekly for their physical integrity and maintained in good condition. Signs of leakage or spillage of contained material should be investigated and cleaned up immediately.

Fueling facilities and storage areas must be secured when not in use by appropriate shut down devices or security locks.

Only licensed operators are allowed to fuel vessels at the three cement docks in the Shipyard.

Appropriate containment and control materials should be stored in a clearly marked location, readily accessible to work and storage areas, emergency phone numbers should be posted in a conspicuous location.

BMP 4.0 – Storage, Handling & Disposal of Hazardous Materials and Waste:

The purpose of this BMP is to govern the storage, handling and disposal of hazardous materials and waste at the Charleston Shipyard.

Re-use or recycle anti-freeze, storing of waste anti-freeze should be in a container clearly marked “Waste Anti-Freeze Only”.

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A number of substances used in Shipyard operations may be considered “hazardous materials” or “hazardous waste” and subject to “cradle to grave” management measures specified under Federal and State statutes and regulations.

The water generator, bet it the Port, vessel owner, or Port lessee, is responsible for determining whether materials handled at the facility are subject to regulated management and for complying with applicable regulations for handling, storage, transportation and ultimate disposal of these materials, including any manifesting and reporting requirements.

In addition to the above requirements, and unless suspended by the above requirements, this BMP identifies some housekeeping practices for outdoor hazardous materials storage from the point of view of non-point source control.

The BMP addresses substances that fall within the definitions of hazardous materials or hazardous waste under State and Federal statutes. Always check with the local Department of Environmental Quality (DEQ) office with questions concerning information or hazardous materials or hazardous waste.

Where feasible, minimize the use and storage of hazardous materials on-site.

Solid chemicals, chemical solutions and waste materials, including used batteries, when stored outside, should be stored in a manner which will prevent in the inadvertent entry of these materials into receiving waters, including ground waters. Storage should be in a manner that will prevent spillage by overfilling, tipping or rupture. In addition, the following practices should be followed:

- a) All hazardous liquid products stored outside should be stored on durable impervious surfaces and within berms or impoundments. Impoundments should contain capacity equal to 110 percent volume of the largest tank or container.
- b) Waste liquids should be stored under cover in closed containers.
- c) Incompatible or reactive materials should be segregated and securely stored in separate areas and closed containers that prevent mixing of chemicals.
- d) Concentrated waste or spilled chemicals must be transported off-site, in accordance with State law. These materials must not be discharged to any sewer or State waters.

Storage of the above listed materials must be done in accordance with State regulations, local codes and fire regulations.

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Paints and solvents should be prevented from entering waterways by use of drip pans, drop cloths or tarpaulins. Wherever possible, paints and solvents should be mixed in bermed areas, away from storm drains, surface waters, shorelines and piers. Only one gallon or less of paint should be opened at one time when working on floats and should be contained within drip pans or tarpaulins. Paint and solvent spills should be prevented from reaching storm or deck drains, cleaned up and disposed of properly. Clean up materials soaked with solvent or paint must be handled as hazardous waste.

In the event that a spill occurs, the following steps should be performed as quickly as possible:

- a) Stop the source of the spill if possible.
- b) Contain the spill.
- c) Cover the spill with absorbent material, such as kitty litter, sawdust or oil absorbent pads. Do not use straw.
- d) For small spills of flammable liquids, the absorbent can be aired out; check with the local fire department. When dry, put in dumpster. Keep area well ventilated.
- e) Deploy containment booms, if any spill may reach the water.
- f) Comply with State and Federal regulations to contain and clean up the spill and dispose of materials at an approved facility.

BMP 5.0 Solid Waste Handling, Disposal and Recycling:

This BMP applies to routine disposal of non-hazardous solid waste at Shipyard sites.

Encourage the use of recyclable materials and provide for collection of recyclables.

Waste disposals and/or collection bins, dumpsters and containers should be clearly marked and accessible to patrons.

Signs should be posted directing patrons to solid waste disposal areas.

Solid waste disposal areas should have signs clearly spelling out rules and regulations for disposal, including materials which are not acceptable for disposal.

The area surrounding solid waste collection facilities should be inspected daily or more frequently by Shipyard personnel and any waste should be cleaned up immediately.

Dumpsters containing solid waste from repair areas should be covered.

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Waste disposal areas should be conveniently located with respect to repair and maintenance areas.

Any waste receptacles placed on docks or near waters edge should be secured.

Disposal of liquid waste in solid waste receptacles will not be permitted.

Provide separation of solid and liquid waste for recycling. Furnish containers for separation of glass, recyclable plastics, scrap metal, aluminum, wood pallets, papers, cardboard and other recyclables in clearly marked, accessible locations. Post notices to inform users of required separation practices.

Appropriate receptacles for waste oil and antifreeze should be provided.

Use tarps and vacuums to contain and collect paint chips, sandings and other debris from boat maintenance areas. Dispose of non-hazardous solids in a covered dumpster or other covered solid waste receptacle. Dispose of hazardous wastes in accordance with BMP 4.0.

Dustless sanders are the approved method for sanding during boat work.

After the contents of a drum or container are used, it should be flattened and made unusable. If possible, re-use or recycle empty drums rather than dispose as solid waste.

Cleaning must be done to prevent debris from falling into the water and to prevent the accumulation of waste materials that may get blown onto surface water. Cleaning with a vacuum is the preferred method for collecting sandings and trash. Sandblasting debris should be collected and stored with spent grit and removed frequently. Hosing of decks and docks should not be done when it might cause debris to be washed into the drains or directly into receiving waters.

Shipyards are responsible for the contents of their dumpsters and hazardous waste should never be put in them. Dumpsters may be locked to prevent "midnight dumping".

BMP 6.0 Stormwater Management:

The purpose of this BMP is to address stormwater management.

Stormwater runoff from parking lots as well as other facility areas represents a significant mode of transportation of contaminants from land-based Shipyards facilities and activities to Shipyards waters. The runoff water quality constitutes from parking areas and other impervious surfaces include pollutants typical of urban runoff (e.g. nutrients, metals, suspended solids, hydrocarbons, bacteria, etc.). However, depending upon the nature of specific activities with the Shipyards, (boat scrapings and painting, boat cleaning, fueling, engine repair, commercial fisheries, etc.) runoff may contain higher concentrations of some pollutants. Pollutants generated from these activities may, in some cases, not be adequately treated in stormwater treatment devices without design modifications.

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All areas of the Charleston Shipyard should be cleaned on a regular basis to prevent oils, paints, dust, grinding residues and other materials from being washed into surface waters, storm drains, ditches, swales, sloughs and other water courses.

Sandblasting debris require adequate containment and cleanup to prevent grit, paint chips, oils and other materials removed from boat hulls from getting into any receiving waters. These wastes may be toxic to the environment.

Cleanup of Shipyard areas should be accomplished by mechanical or manual methods to sweep up or collect debris. Sandblasting grit, dust and other debris in work areas should not be allowed to accumulate and should be cleaned up after each job.

Dispose of material in accordance with BMP 4.0 Hazardous Waste, or BMP 5.0 Solid Waste.

BMP 6.1 Stormwater Runoff Quality Management: Maintenance of Oil and Sediment Trapping Devices.

The purpose of this BMP is to address stormwater management as it relates to maintenance of oil and sediment trapping devices.

Structural measures may be employed at Shipyards to direct stormwater runoff from parking lots, roofs, and other facility areas to oil/grit separation devices and other sediment trapping facilities. Rinse water from boat washing operations should be directed into an oil and silt trapping device as part of the treatment system, but not into a common device.

To maximize the performance of these devices, this BMP deals with the maintenance and cleaning of oil/grit separator devices, catch basins and other sediment traps.

All sediment traps and oil/grit separators in the stormwater drainage system should be inspected on a monthly basis and after each major storm event, and cleaned as necessary to ensure the interception and retention of oils and solids entering the drainage system. At a minimum, stormwater cartridges will be replaced annually as records of those replacements are maintained.

Sediment and grit traps associated with pressure washing should be inspected after each use to ensure the retention of solids.

Inspections can be done visually. Clean out can be done manually, or by using a vacuum device. Wastes should be disposed of appropriately as solid waste after de-watering. If material collected from traps is predominately spent sandblasting grit with bottom paint, the material requires handling as a hazardous waste.

Oil may be removed by a skimming device and disposed as waste oil or by using absorbent pads and disposed as a solid waste.

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BMP 7.0 Maintenance of Physical Structures:

Physical structures within the Shipyard may contribute pollutants to the marine environment as materials degrade or through leaching. Maintenance activities for these structures can be a source of pollution. The purpose of this BMP is to minimize these potential sources through the selection of suitable repair or replacement materials as well as through appropriate maintenance practices. This BMP deals with maintenance and repair practices for waterfront and in-water structures, as well as shore-side structures.

This BMP addresses pollutants deriving from the following sources:

- 1) Treated timber used for waterfront and in-water structures.
- 2) Paints, solvents, paint chips and related materials from scraping, sanding and painting operations.
- 3) Floatable debris from deteriorating waterfront structures, such as broken and degraded styrofoam from floats.

Source Reduction:

- Natural vegetation should be used for shoreline stabilization whenever feasible and maintained in a good condition by prompt repair and reseeded of washouts and other losses of vegetation.
- Riprap reventments are generally encouraged over vertical bulkheads, because sloping rip rapped embankments provide greater habitat and reduce wave reflections. Permits are required through the Oregon Division of State Lands and the U.S. Army Corps of Engineers.
- Timber which has been pressure treated with a preservative such as chromated copper arsenate (CCA) is generally preferred over creosote treated materials for construction and replacement. Where appropriate, steel piling should be used.
- Scraping and sandblasting of in-water structures and land-side structures should be conducted according to the same management principles as for vessels. Refer to BMP 1.2.
- Painting of structures should be conducted according to the same management principles as for vessels, refer to BMP 1.3.
- Where feasible, floating structures should be removed to shore. Line facilities for scraping, painting and major repairs.
- All styrofoam floats must be encapsulated.

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