



**Targeted Constituents**

<input checked="" type="radio"/> Significant Benefit		<input checked="" type="radio"/> Partial Benefit		<input type="radio"/> Low or Unknown Benefit	
<input type="radio"/> Sediment	<input checked="" type="radio"/> Heavy Metals	<input checked="" type="radio"/> Floatable Materials	<input checked="" type="radio"/> Oxygen Demanding Substances	<input type="radio"/> Construction Wastes	
<input checked="" type="radio"/> Nutrients	<input checked="" type="radio"/> Toxic Materials	<input checked="" type="radio"/> Oil & Grease	<input checked="" type="radio"/> Bacteria & Viruses	<input type="radio"/> Construction Wastes	

**Description** Prevent or reduce the discharge of pollutants to rivers, lakes and streams by proper disposal of wastes, minimizing repairs and maintenance, cleaning up spills and wastes immediately, and improved boating equipment and methods. Protect our natural resources and environment by following guidelines from the National Clean Boating Campaign. Use common sense to protect water quality of Knoxville lakes and rivers.

**Approach** Federal, state and municipal regulations prohibit the discharge of any waste or litter into Fort Loudoun Lake, Tennessee River, Holston River, French Broad River or any of the various tributaries. Therefore, polluters may be penalized or arrested by any government entity authorized to enforce federal, state or municipal laws. **It is illegal to discharge raw sewage from a vessel within U.S. territorial waters.**

In addition to government agencies and authorities, fishing organizations and tournaments promote responsible boating and care for the environment. Public education is supported by the Tennessee Valley Authority (TVA) through participation in the National Clean Boating Campaign. Brochures and fact sheets for sewage pumpout, fueling, bilge water, litter and boat maintenance are available at <http://www.cleanboating.com/research/boatingpublic.html>.

Marina owners and operators are encouraged to join TVA’s Clean Marina Initiative by meeting the minimum standards of the Tennessee Valley Clean Marina Guidebook (reference 198); see <http://www.tva.com/environment/water/boating.htm> for this document. Marinas which are in compliance with TVA’s voluntary program can display the Clean Marina logo and flag. Some marinas are eligible to receive public funds in order to construct pumpout stations for use by the general public.

**Boating Activities**

**Boat Sewage and Pumpouts**

- Properly dispose of domestic and sanitary wastewater by using holding tanks. Empty holding tanks at approved wastewater collection facilities at marinas and boatyards. Verify ballast water is clean before discharging to natural body of water. Remove or permanently lock Y-valve on holding tanks to prevent accidental discharge of untreated sewage to lakes, rivers and streams. Comply with all laws regarding use and maintenance of a marine sanitation device (MSD). Guidelines and regulations are summarized on a Coast Guard website (<http://www.uscg.mil/hq/g-m/mse/msd.htm>).

- In general, the use of onshore restrooms is preferable to using restrooms on a boat. Minimize the use of onboard facilities by using onshore restrooms when docked. Make restroom stops every few hours as needed. Plan for restroom stops at marinas, fueling stations, waterfront restaurants and public parks.
- Comply with all federal and state laws for MSD equipment. MSD equipment is regulated and certified by the U.S. Coast Guard to meet certain treatment standards. Type I and Type II MSD equipment is usually a combination of physical treatment (grinder) and chemical treatment (chlorinator) prior to discharge. Post operating instructions near the MSD, and keep MSD maintenance guide and user’s manual on the boat.

<u>MSD</u>	<u>Fecal coliform limits</u>	<u>Discharge criteria</u>
Type I	< 1000 / 100 ml	No visible floating solids
Type II	< 200 / 100 ml	Suspended solids < 150 mg/l
Type III	-----	No discharge (holding tank)

- Do not use boat toilets for disposal of fats, solvents, oil, emulsifiers, paint, poison, disposable diapers or sanitary napkins. As a general rule, keep a supply of bags and containers ready for disposal of any conceivable item. Whenever possible, buy fast-dissolving marine toilet tissue for use in MSD equipment.
- Portable toilets shall not be discharged into U.S. territorial waters, which includes all lakes, rivers and streams within Tennessee. Empty portable toilets at shoreside dump stations or at home.
- Use a pumpout station to empty holding tanks (and also MSD Type III equipment). Encourage marina owners to construct more pumpouts and dump stations by thanking marina owners and supporting their businesses.

***Fuel and Oil***

- Prevent fuel and oil from being discharged into the water or into the bilge by every means available. Use oil-absorbent pads and booms to contain any spilled fuel or oil. Boats with inboard engines should have oil absorption pads in bilge areas. The pads should be changed at least once a year or as needed. Do not pump bilge water if it is oily or has a sheen.
- Fuel, fluids and oil should be kept in secure containers. Recycle used fuels in properly labeled containers. Inspect and repair engine valves, pipes, hoses as necessary. Use drip pans when conducting maintenance and repair.
- Keep engine and other equipment in good operating condition. Inspect engine prior to each use. Follow manufacturer’s recommendations for maintenance and tuneups. Use drip pans and funnels when performing minor engine repairs.
- Avoid filling the fuel tank to the top. Watch and listen when filling the fuel tank. Use fuel stations with automatic shut-off nozzles whenever possible.
- Notify TDEC and the City of Knoxville in the event of major leaks and spills (as described in AM-07, Spill Prevention and Control). Use oil-absorbent pads and booms to contain the spill. Do not use any detergent, soap, cleaner or emulsifier on a fuel spill, oil spill or bilge water. These substances temporarily dissolve oil and grease, but does not actually remove the pollution from the water.

***Litter and Fish Waste***

- Do not discharge anything into the water, including excess food. Place all litter and waste into trash bags for disposal onshore. Retrieve any trash which falls overboard.
- In general, reduce the amount of unnecessary wrapping and packaging used on the boat. Reusable containers, cups and dishes will reduce the amount of trash generated. Recycle whenever possible (aluminum cans, plastics, glass).
- Do not throw cigarettes (or other smoking materials) overboard. Use an ashtray when smoking. Do not spit chewing tobacco overboard.
- Do not discharge fish waste overboard. Place fish waste into trash bags for disposal onshore, or use a fish cleaning station onshore. Small amounts of fish parts may be used for bait or chum. Fish wastes should not be recycled in any dead-end lagoons or other poorly flushed areas. Restaurants are specifically prohibited from discharging fish wastes into the water; see IC-06 (Over-Water Operations) for additional regulations for industrial and commercial facilities.
- People participating in fishing tournaments and other authorized events should follow guidelines presented by the sponsors. Follow all rules and regulations issued by the Tennessee Wildlife Resources Agency.

***Boat Cleaning and Maintenance***

- Plan all cleaning and maintenance activities beforehand. Use the proper equipment to perform the activity efficiently and swiftly, while minimizing pollution. Use phosphate-free and biodegradable detergents for hull washing. Limit the amount of detergents used by first scrubbing and cleaning with water.
  - Perform all hull scraping, sanding, chemical stripping and painting onshore. Place boat over a drop cloth, and prevent the discharge of any chemicals or particles. Properly dispose of surface chips, used blasting sand, residual paints, and other materials. Use temporary storage containment that is not exposed to rain. Sweep drydocks each day or after maintenance is completed.
  - Limit over-water hull surface maintenance to minor sanding and minor painting using hand tools and a small can of paint or other surface agent. In general, conduct most boat repair and maintenance items by removing the boat from the water into an organized maintenance area.
  - Painting should be limited to spot work. In marinas, tenant maintenance over water should be such as to not require opening more than a pint-size paint can. Paint mixing should not occur on the dock. Use secondary containment on paint cans. Have available spill containment and cleanup materials. Use tarps, ground cloths or plastic sheeting when sandblasting or painting boats on land. Spray applicators may be used when painting on land.
  - Immediately clean up spills on docks or boats using absorbent materials. Keep ample supply of spill cleanup materials on hand and conspicuously marked. Dispose of cleanup materials properly. Consult AM-07 (Spill Prevention and Control) for emergency telephone numbers.
- Marina Operations**
- Marina owners and operators are encouraged to join TVA's Clean Marina Initiative by meeting minimum standards of the Tennessee Valley Clean Marina Guidebook (reference 198, <http://www.tva.com/environment/water/boating.htm>). Marinas in compliance with TVA's voluntary program can display the Clean Marina logo and

flag.

- Provide adequate waste containers, trash cans and dumpsters. Clean and maintain waste disposal areas in order to encourage patrons to not litter. Use responsible waste disposal contractors who are licensed to haul waste materials.
- Educate visitors and employees on spill prevention and cleanup. Include appropriate language in tenant and user contracts that indicates their responsibilities to guard against spills, properly dispose waste materials, and limit practices that may pollute stormwater.
- Clean catch basins and storm drains at regular intervals. Post signs to indicate proper use and disposal of residual paints, rags, used oil, and other engine fluids.
- Marinas must provide wastewater disposal facilities on site or close by. Wastewater facilities typically consist of either dockside lines or a pumpout station. Marinas should post signs at the entrance and through the facility indicating maintenance rules and reminders.

**Limitations**

- Private tenants at marinas may resist restrictions on shipboard painting and maintenance. Existing contracts with tenants should be updated to require that tenants abide by new rules that benefit water quality.
- Even small amounts of biodegradable cleaning agents have been found to be toxic to fish. Disposal of small amounts of cleaning agents should be done through the sanitary sewer system.

**References**

**33, 95, 135, 192, 198** (see BMP Manual Chapter 10 for list)

U.S. Coast Guard

<http://www.uscg.mil/hq/g-m/mse/msd.htm>

National Clean Boating Campaign

<http://www.cleanboating.com/research/boatingpublic.html>

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<http://cleanboating.org/bibliography/index.html>