



Navy Environmental Quality Fact Sheet



Do you dispose of or treat oily wastewater from ship bilges?

Would you like to improve this process in the following areas?

- **Meet environmental compliance regulations.** Reduce oily wastewater disposal and meet installation pretreatment discharge requirements by eliminating the pollutants from bilge water. Media area is wastewater.
- **Improve workers' safety and health.** No change from current operations.
- **Increase productivity.** No change from current operations.
- **Save money.** Reduce costs associated with bilge and oily wastewater disposal or treatment.



Bilge and Oily Wastewater Treatment System

The Bilge and Oily Wastewater Treatment System (BOWTS) provides a cost-effective method for treating bilge and other oily wastewater from Navy ships. Navy ships produce millions of gallons of bilge water each year, comprising one of the Navy's largest waste streams. The main pollutants found in bilge water are free and emulsified oils and greases, dissolved heavy metals – such as copper, nickel, lead and zinc – and suspended solids. BOWTS is an integrated system of off-the-shelf components which provides state of the art and highly effective removal of these pollutants, permitting direct discharge of the remaining water fraction to a publicly owned treatment work or sanitary sewer system. The system consists of a modified oil water separator with chemical injection ports and mixers along with chemical metering systems, an air flotation unit, slop oil tanks, sludge tanks, and a filter press. Automated controls and sensors are integrated into the system to simplify operations and to prevent spillage due to equipment failures. Minimal operator attention is required. This technology is being used successfully at several naval shipyards and naval stations.

How can you achieve these improvements?

Use a Bilge and Oily Wastewater Treatment System (BOWTS).

How does this equipment work?

BOWTS is an integrated treatment system complete with all process components and control systems required to remove the major contaminants found in ship's bilge water.

How will this equipment save you money?

BOWTS can treat bilge and oily wastewater at a cost of one to three cents per gallon and reduce the amount of bilge water disposed at a site as much as 99%. The cost to implement varies from approximately \$1 million to \$1.5 million, depending on treatment capacity. The equipment usually pays for itself in less than a year. For a complete economic analysis, refer to Joint Service P2 Opportunity Handbook Datasheet Number 9-IV-1.



How can this technology eliminate or reduce pollution?

This technology provides state of the art and highly effective removal of oils and other pollutants from bilge water and other oily wastewater. Implementation will result in the following pollution reductions:

- Dramatic volume reduction of wastewater requiring disposal or treatment.
- Reduction in the amount of bilge water disposed of at the site by up to 99%.

Which processes can benefit most from this technology?

This technology can be used in all processes that capture ship's bilge water for treatment or disposal.

How can this technology reduce regulatory compliance concerns?

This technology provides an environmentally compliant method to remove the major contaminants found in ship's bilge water to acceptable discharge limits. Implementation of this technology will result in the following regulatory compliance benefits:

- May help minimize wastewater discharges prohibited by the Clean Water Act and 40 CFR 110.
- Helps facilities meet pretreatment standards for discharges of wastewater into a publically owned treatment works (POTW) (40 CFR 403).
- Helps facilities meet the pretreatment and effluent limits of a NPDES permit (40 CFR 122).



Achieving Environmental Compliance Through Pollution Prevention

Every day the Navy faces the challenge of operating and maintaining the fleet while complying with environmental regulations. This burden can be reduced by using pollution prevention technologies and methods to reduce compliance requirements. This fact sheet is one in a series designed to encourage activities to use pollution prevention technologies and methods. The overall goal of this series is to promote sustained environmental compliance at the lowest life-cycle cost.

For additional information, contact:

Joint Service P2 Opportunity Handbook Datasheet Number 9-IV-1 (http://p2library.nfesc.navy.mil/P2_Opportunity_Handbook/9-IV-1.html).

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