

Bioremediation solves long-standing maritime challenge and SAVES \$12 million dollars!

Maersk Line, Limited and Military Sealift Command have saved millions of dollars by managing a common maritime problem utilizing NavalKleen.

Both organizations have found a less expensive, cleaner, more effective way to handle oil contamination in ballast tanks, bilge water and oil-water separators. They have turned to **bioremediation using NavalKleen, a microbial-action product produced by EnviroLogic, Inc., a leading global manufacturer of environmental biotechnology products.**

NavalKleen is a blend of naturally occurring micro-organisms that metabolize oil waste and other hydrocarbons. The **organisms simply digest the majority of hydrocarbons present in bilges, oily waste tanks and oil water separators with little disruption to surrounding, non-contaminated areas.** The by-product is water that meets environmental regulations and is ready for disposal. **NavalKleen is specially formulated to be easy to use, environmentally safe and cost-effective.**

That cost-effectiveness was demonstrated when Maersk had a merchant vessel with a highly contaminated ballast water tank and decided to try a different way to clean up the situation.

Jeff Phelps, Vessel Manager for Maersk Line, Limited recalls when M/V SL Atlantic suffered a crack in the steel deck between a heavy fuel oil tank and a double bottom ballast water tank. The damage resulted in large-scale contamination of the ballast water. Even after the crack was repaired, the contaminated water offloaded and the ballast tank mechanically cleaned, Maersk wasn't comfortable that all the oil had been removed.

"During repair and recovery operations, we investigated various marine tank cleaning products. However, most resulted in a tank full of cleaning slops, and we wanted to avoid the cost of disposing these slops," Phelps said.

A colleague recalled using an environmentally-friendly bioremediation product on a similar ballast tank contamination. So Phelps contacted John Papparone, President of Environmental Solution, Inc a NavalKleen distributor, who helped Maersk come up with a better way to attack the problem. Maersk refilled the M/V SL Atlantic's ballast tank using NavalKleen concentrate and seawater. **NavalKleen was allowed to work through several trans-Atlantic voyages and contamination levels dropped dramatically.** Lab tests showed **hydrocarbon content in the ballast water declining from 13 mg/L to 2.4 mg/L in just three months.**

"In our experience, NavalKleen has proven to be...the preferred product for mitigating oil contamination of ballast tanks," says Phelps.

NavalKleen enables bioremediation in difficult or inaccessible areas and results in 60 to 70% cost savings with little or no investment in capital equipment or training. This natural way of solving contamination problems uses no volatile chemicals – eliminating air quality concerns and health and safety risks to crew and workers.

Military Sealift Command has **a history of more than eight years with positive results from NavalKleen.** *"Our experience with NavalKleen is that it breaks up the emulsions in the oily water mixtures so that the oily water separators can process the water out of the waste stream and minimize the amount of oil being processed ashore," says Rene Fry, Chemical and Fuel Programs Manager.*

"We believe this occurs because the bacteria used by NavalKleen attack the detergents and surfactants that are in today's lubricant and fuel oil. *Releasing the hydrocarbons from the water provides excellent separation and the waste stream can then be processed by the oil waste system.*" Fry goes on to say that, **"We rarely see our oil content monitor read anything above 5 ppm ever since we have used this product." That beats IMO guidelines of 15 ppm in treated water.**

The Sealift executive noted the cost savings of **NavalKleen: It is "by far our single most popular cleaner onboard Sealift Command's 106 ships"** in the removal of grease and oil from the surface of equipment, bilges and in oil water systems. **NavalKleen has contributed to Military Sealift Command's waste oil bill dropping from \$19 million over 8 years ago to now below \$7 million.**

Part of that savings comes from improved operational efficiency using NavalKleen. Since ships can treat the oily waste water anywhere on the seas, they don't lose operational time disposing of and treating contaminated water ashore. **Bioremediation treatment is a self-activating and natural process, requiring very little time or labor from ship-board crews. And it reduces the need for maintenance on oil-water separators and other equipment, saving man-hours and scheduling headaches.**

"Our products require no special solutions, no special mixing and no waiting period before application, unlike other remediation products," notes distributor Paparone. "NavalKleen uses the innovative technology of bio-remediation to tackle traditional maritime problems."



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EnviroLogic's web site @ www.spillaway.com

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