

Assessment of BAT for Underwater Hull Cleaning

US Department of Transportation – Maritime Administration



*wastewater treatment system **design**
compliance with USEPA permit
hull wastewater **filtration**
sample system design and **construction**
sensitive waterbody
multiple **agency** interaction
best available technology evaluation*

Terraphase designed a wastewater treatment system and devised and conducted a mixing zone study in San Francisco Bay for the US Department of Transportation – Maritime Administration (MARAD).

The wastewater treatment system was developed to treat wastewater that was generated from testing in-water hull cleaning operations. In-water ship hull cleaning, treatment, and discharge were conducted to evaluate the best available economically feasible technology (BAT) requirement of the Regional Water Quality Control Board. Terraphase provided treatment design recommendations and installed specific filtration media for increased dissolved metals removal.

Terraphase specially designed and constructed a sampling system that allowed for multiple surface water samples to be collected from 20 sampling points. An innovative anchored sample point allowed surface water samples to be collected 10 feet below the water’s surface. These samples were collected through tidal fluctuations over the course of a day.

Terraphase evaluated the performance of the treatment system and surface water sampling data. This information was used to determine the proper mixing zone to meet the RWQCB’s discharge requirements for wastewater generated during in-water ship hull cleaning. Terraphase is currently evaluating contaminant capture, treatment, and discharge to allow MARAD to discharge treated water to California waters under a general NPDES discharge permit.