

Welldeck Discharges Summary

Description of Discharge

How is this discharge generated? This discharge is the water that accumulates from the seawater flooding of the docking well (welldeck) of a vessel used to transport, load, and unload amphibious vessels, and from the maintenance and freshwater washings of the welldeck and equipment and vessels stored in the welldeck.

Amphibious operations by the Armed Forces require transport of vehicles, equipment, and personnel between ship and shore on landing craft. The landing craft are stored in a docking well, or welldeck, of some classes of amphibious warfare ships. To load or unload landing craft, amphibious warfare ships may need to flood the welldeck by taking on ballast water and sinking the aft (rear) end of the ship. Water that washes out of the welldeck contains residual materials that were on the welldeck prior to flooding. Other welldeck discharges are created by routine operations such as washing equipment and vehicles with potable water, washing the gas turbine engines of air-cushion landing craft (LCACs) in the welldeck with mild detergents, and graywater from stored utility landing craft (LCUs). Additionally, the U.S. Department of Agriculture (USDA) requires washing welldecks, vehicle storage areas, and equipment upon return from overseas locations. The washing is required to ensure that there is no inadvertent transport of nonindigenous species to land. USDA-required washes of welldecks and vehicle storage areas occur pierside, while vehicles and equipment are washed onshore in a USDA-designated area. Effluent from such shipboard activities drain to unflooded welldecks and are discharged directly overboard.

Which vessels generate this discharge? The Navy is the only branch of the Armed Forces with ships having welldecks. Thirty-three amphibious warfare ships produce this discharge.

How often and where is this discharge generated? This discharge is released both within and beyond 12 n.m. from shore.

Analysis

Nature of Discharge: Depending upon the specific activities conducted, welldeck discharges contain a variety of residual constituents, including oil and grease, ethylene glycol (antifreeze), chlorine, detergents/cleaners, metals, solvents, and sea-salt residues. The volume of welldeck washout varies depending upon the type of landing craft to be loaded or unloaded. The greatest volume of welldeck discharge occurs when LCUs are being loaded into, or unloaded from the welldeck. Loading and unloading of LCACs does not require the welldeck to be flooded. Instead, a small “surge” of water enters the ship during these operations. Constituent concentrations in welldeck washout are expected to be low due to dilution in the large volume of water discharged, and because of general housekeeping procedures that require containment and cleanup of materials spilled on the welldeck.

Other discharges from the welldeck include vehicle and craft washwater, gas turbine engine washes, and USDA washes. Constituents of these discharges are expected to be identical to those in welldeck washout. Of the various welldeck discharges, gas turbine water washes and USDA washes may result in hydrocarbon, or metal concentrations that exceed acute water quality criteria. In addition, there is a potential for nonindigenous species to be introduced from USDA-required welldeck washes, although it should be noted that the viability of any species introduced is questionable since they generally would have been exposed to air for extended periods of time prior to their introduction into U.S. coastal waters (i.e., for the most part, these species would have been removed from vehicles and deck surfaces and thus it would not be a water-to-water transfer, in contrast to species transfers from ballast water systems).

Discussion and Discharge Determination

Discussion: Existing practices for containment and cleanup of welldeck spills demonstrate the availability of controls to reduce contamination of welldeck discharges and the potential for causing adverse environmental impacts (e.g., oil sheens).

Determination: A marine pollution control device is required.