

Graywater Discharge Summary

Description of Discharge

How is this discharge generated? Section 312(a)(11) of the CWA defines graywater as “galley, bath, and shower water.” Recognizing the physical constraints of Armed Forces vessels and the manner in which wastewater is handled on these vessels, graywater is more broadly defined for the purposes of UNDS. For the purposes of this proposed regulation, the graywater discharge consists of graywater as defined in CWA section 312(a)(11), as well as drainage from laundries, interior deck drains, water fountains and miscellaneous shop sinks.

Which vessels generate this discharge? All ships, and some small boats, of the Armed Forces generate graywater on an intermittent basis.

How often and where is this discharge generated? Graywater discharges occur both within and beyond 12 n.m. from shore. Most Armed Forces vessels collect graywater and transfer it to shore treatment facilities while pierside. Some vessel types, however, have minimal or no graywater collection or holding capability and discharge the graywater directly overboard while pierside. Less than half of all graywater discharged within 12 n.m. occurs pierside from vessels lacking graywater collection holding capability. The remainder of the discharge in coastal waters occurs during transit within 12 n.m. from shore.

Preliminary Analysis

Nature of Discharge: Present in the discharge are several priority pollutants including mercury, which is a known bioaccumulative chemical of concern. Graywater also contains conventional and nonconventional pollutants, such as total suspended solids, biochemical oxygen demand, chemical oxygen demand, oil, grease, ammonia, nitrogen, and phosphates. Ammonia as nitrogen, copper, lead, mercury, nickel, silver, and zinc were detected in concentrations that exceed acute Federal criteria and State acute water quality criteria. The table below lists the concentration of constituents that exceeded acute Federal criteria and/or State water quality criteria and the resulting annual mass loadings.

Constituent	Concentration (µg/L)	Annual Mass Loading (lbs)
Copper	250 - 3,404	304
Lead	42 - 1,559	80.3
Mercury*	0.2 - 9.5	0.423
Nickel	25 - 113	13.7
Silver	7 - 12	2.6
Zinc	194 - 2,363	163
Ammonia as nitrogen	102000	33180

* Denotes a bioaccumulator

Discussion and Preliminary Discharge Determination

Discussion: Due to the large volume of graywater generated each year, the mass loadings of these constituents may be significant. The use of containment systems to transfer graywater to shore treatment facilities demonstrates the availability of controls to mitigate adverse impacts on the environment.

Preliminary Determination: A marine pollution control device is required.

Note

The analysis presented in this summary is based on information currently available. As such, this analysis is preliminary in nature, and is subject to change as additional information becomes available. Likewise, the determination presented in this summary is preliminary in nature and may change prior to final rulemaking.