

Motor Gasoline Compensating Overboard Discharge Summary

Description of Discharge

How is this discharge generated? This intermittent discharge consists of seawater taken into, and discharged from, motor gasoline tanks. Motor gasoline (MOGAS) is used to operate vehicles and equipment stored or transported on some Navy amphibious vessels. MOGAS is stored in a compensating fuel tank system in which seawater is automatically added to fuel tanks as the gasoline is consumed in order to eliminate free space where vapors could accumulate. The compensating system is used for MOGAS to provide supply pressure for the gasoline and to keep the tank full to prevent potentially explosive gasoline vapors from forming. During refueling, gasoline displaces seawater from the tanks, and the displaced seawater is discharged directly overboard.

Which vessels generate this discharge? The Navy has two classes of vessels with MOGAS storage tanks. Eleven of these vessels are homeported in the U.S.

How often and where is this discharge generated? Based on operational practices, vessels with MOGAS storage tanks typically refuel once per year, and the refuelings are always conducted in port. Therefore, all discharges from the MOGAS compensating system occur in port.

Analysis

Nature of Discharge: Seawater in the MOGAS compensating system is in contact with the gasoline for long periods of time. MOGAS discharges are expected to contain components of gasoline, including benzene, ethylbenzene, toluene, phenols, and naphthalenes at concentrations that exceed acute water quality criteria. The following table lists the concentrations of the constituents and the resulting annual fleet-wide mass loading of the constituents that are expected to exceed acute Federal criteria or State acute water quality criteria.

Constituent	Concentration (mg/L)	Annual Mass Loading (lbs)
Benzene	29.5	45
Ethylbenzene	2.4	4
Naphthalenes	1.2	2
Phenols	1.2	2
Toluene	42.6	65

Discussion and Discharge Determination

Discussion: Specific operating procedures are followed when refueling MOGAS tanks to reduce the potential for discharging gasoline. These procedures require MOGAS tanks to be filled slowly and prohibit filling the tanks beyond 80 percent of the total tank capacity. Containment is placed around hose connections to contain any releases of gasoline, and containment booms are placed in the water around the vessel being refueled. Diffusers are used within the tanks to prevent entraining fuel into the discharged compensating water. These management practices demonstrate the availability of controls to mitigate potential adverse impacts to the environment.

Determination: A marine pollution control device is required.