Portable Damage Control Drain Pump Wet Exhaust Discharge Summary

Description of Discharge

How is this discharge generated? This periodic discharge is seawater that has mixed and been discharged with portable damage control drain pump exhaust gases to cool the exhaust and quiet the engine.

Portable, engine-driven pumps provide seawater for shipboard firefighting in the event water is unavailable from the firemain. Two models of these portable damage control (DC) drain pumps are used: P-250 and P-100. The P-250 pumps operate on gasoline injected with oil-based lubricants. Part of the seawater output from these pumps is used to cool the engine and quiet the exhaust. This discharge, termed wet exhaust, is typically routed overboard through a separate exhaust hose and does not include the main discharge of the pump which is classified separately as Portable Damage Control Drain Pump Discharge.

Fuel residuals, lubricants, or their combustion byproducts are present in P-250 engine exhaust gases, condense in the cooling water stream, and are discharged as wet exhaust. The P-100 model operates on diesel fuel. Although the engine that drives the P-100 pump is air-cooled and no water is injected into the exhaust of the pump, a small amount of water contacts the engine during pump priming. Up to one-seventh of a gallon of water may be discharged during each priming event. This water discharged during P-100 priming is considered part of the portable DC drain pump wet exhaust.

Which vessels generate this discharge? The Navy operates approximately 910 drain pumps, the MSC approximately 140 drain pumps, and the Coast Guard approximately 370 drain pumps.

How often and where is this discharge generated? Portable DC drain pump wet exhaust discharges occur during training and monthly planned maintenance activities both within and beyond 12 n.m. from shore. During monthly maintenance activities, the pumps are run for approximately 10 to 30 minutes. The use of portable DC drain pumps during onboard emergencies is not incidental to normal operations, and therefore not within the scope of this rule.

Analysis

Nature of Discharge: Based on data in the administrative record to the rule, the wet exhaust discharge is likely to include metals, oil and grease, and volatile and semi-volatile organic compounds. The concentrations of copper, lead, nickel, silver, and zinc in portable DC drain pump wet exhaust can exceed acute Federal criteria and State acute water quality criteria. Concentrations of oil and grease, benzene, toluene, ethylbenzene, and napthalene can exceed State acute water quality criteria.

Portable Damage Control Drain Pump Wet Exhaust Discharge Summary (continued)

Analysis (continued)

The following table summarizes the concentrations of constituents and mass loadings for constituents that can exceed acute Federal criteria or State acute water quality criteria:

Constituent	Concentration (mg/L)	Annual Mass Loading (lbs)
P-250 Model		
Benzene	52.4	131
Toluene	159.2	397
Ethylbenzene	37.4	93.3
Naphthalene	26.2	65.4
Oil & Grease	6	15
Copper	0.23	0.574
Lead	0.85	2.12
Nickel	0.21	0.524
Silver	0.01	0.0249
Zinc	3.9	9.73
P-100 Model		
Oil & Grease	5	0.065

Discussion and Discharge Determination

Discussion: Concentrations of these constituents in receiving waters are not expected to exceed water quality criteria because they will dissipate quickly since the mass loadings per discharge event are small and the discharge locations are dispersed fleetwide. The discharge from each of the 500 P-250 pumps occurs separately at different discharge locations. On average, each P-250 pump discharges less than 0.3 pounds of pollutants per discharge event. The duration of each discharge is short, averaging less than 30 minutes. These factors allow the pollutants to dissipate rapidly. Based on this information, the portable DC drain pump wet exhaust is expected to have a low potential for exhibiting adverse environmental impacts on the marine environment. Therefore, EPA and DOD determined it is not reasonable and practicable to require a MPCD to mitigate adverse impacts on the marine environment for this discharge.

Determination: A marine pollution control device is not required.