

paint develops, shift to a softer brush or less abrasive cleaning technique. A plume or cloud of paint can be noted by the presence of discoloration or other visible indication that is distinguishable from hull growth or sediment removal. Production of a plume or cloud of sediment or hull growth is normal in some cases during vessel hull cleaning, but this plume or cloud must be substantially paint free (e.g., paint should not be clearly identifiable in the plume or cloud). When feasible, attempts must be made to minimize the release of fouling organisms and antifouling systems (including copper-based coatings) into surrounding waters.

Vessels that use copper-based anti-fouling paint must not clean the hull in copper-impaired waters within the first 365 days after paint application unless there is a significant visible indication of hull fouling. EPA maintains a list of copper-impaired waters on its webpage at www.epa.gov/npdes/vessels. If you clean before 365 days after paint application in copper-impaired waters, you must document in your recordkeeping documentation why this early cleaning was necessary.

2.2.24 Weldeck Discharges

Weldeck discharges that contain graywater from smaller vessels should not be discharged within waters subject to this permit except in cases of emergency. Weldeck discharges from washdown of gas turbine engines may not be discharged within waters subject to this permit. Weldeck discharges from equipment and vehicle washdowns must be free from garbage and must not contain oil in quantities that may be harmful as defined in 40 CFR Part 110.

2.2.25 Graywater Mixed with Sewage from Vessels

The commingled discharge of graywater mixed with sewage from vessels must comply with the effluent limits for graywater discharge in Part 2.2.15 or Part 5 of this permit if applicable. Though not a requirement of this permit, vessel owner/operators are advised that all discharges commingled with sewage must meet the requirements set forth in section 312 of the CWA and its implementing regulations found at 40 CFR Part 140 and 33 CFR Part 159. Hence, discharges of graywater mixed with sewage must meet both standards to be in compliance with the CWA.

2.2.26 Exhaust Gas Scrubber Washwater Discharge

Exhaust gas scrubber washwater discharge must not contain oil, including oily mixtures, in quantities that may be harmful as determined in accordance with 40 CFR Part 110. Sludge or residues generated in treating exhaust gas scrubber washwater discharge must not be discharged in waters subject to this permit and must be delivered ashore to adequate reception facilities.

In addition, owner/operators of vessels with exhaust gas cleaning systems that result in washwater discharges must meet the numeric effluent limits found in Part 2.2.26.1 and the monitoring requirements found in Part 2.2.26.2 this permit. These limits are consistent with the IMO washwater guidelines set forth in section 10 for Exhaust Gas Cleaning (EGC) Systems (resolution MEPC.184(59)). Among other things, these guidelines recommend the establishment of limits for concentrations of pollutants in the effluent.

2.2.26.1 Exhaust Gas Scrubber Washwater Discharge Standards

2.2.26.1.1 pH

The discharge of washwater from the exhaust gas scrubber treatment system must have a pH of no less than 6.0 measured at the ship’s overboard discharge, with the exception that during maneuvering and transit, the maximum difference between inlet and outlet of 2.0 pH units is allowed. This difference is to be measured at the ship’s inlet and overboard discharge.

2.2.26.1.2 PAHs (Polycyclic Aromatic Hydrocarbons)

The maximum continuous PAH concentration in the washwater must not be greater than 50 µg/L PAH_{phe} (phenanthrene equivalence) above the inlet water PAH concentration for washwater flow rates normalized to 45 t/MWh. MWh refers to the maximum continuous rating (MCR) or 80 percent of the power rating of the fuel oil combustion unit. For the purposes of this criterion, the PAH concentration in the washwater must be measured downstream of the water treatment equipment, but upstream of any washwater dilution or other reactant dosing unit, if used, prior to discharge.

The 50-µg/L limit is adjusted upward for lower washwater flow rates per MWh, and vice-versa, and the applicable permit limits are contained in Table 7.

Table 7: PAH Permit Limits in Exhaust Gas Scrubber Discharge

Flow Rate (t/MWh)	Discharge Concentration Limit (µg/L PAH_{phe} equivalents)	Measurement Technology
0 - 1	2,250	Ultraviolet Light
2.5	900	Ultraviolet Light
5	450	Fluorescence ²
11.25	200	Fluorescence
22.5	100	Fluorescence
45	50	Fluorescence
90	25	Fluorescence

For a 15-minute period in any 12-hour period, the continuous PAH concentration limit may exceed the limit described above by 100 percent. This is to allow for an abnormal start up of the exhaust gas scrubber unit.

2.2.26.1.3 Turbidity

The washwater treatment system must be designed to minimize suspended particulate matter, including heavy metals and ash. The maximum turbidity (monitored continuously) in washwater must not be greater than 25 FNU (formazin nephelometric units) or 25 NTU (nephelometric turbidity units) or equivalent units, above the inlet water turbidity. However, during periods of

²For any flow rate greater than 2.5 t/MWh fluorescence technology should be used.

high inlet turbidity, the precision of the measurement device and the time lapse between inlet measurement and outlet measurement are such that the use of a difference limit is unreliable. Therefore, all turbidity difference readings must be a rolling average over a 15-minute period to a maximum of 25 FNU or NTU. For the purposes of this criterion, the turbidity in the washwater must be measured downstream of the water treatment equipment but upstream of washwater dilution (or other reactant dosing) prior to discharge. For a maximum of one 15-minute period within any 12-hour period, the continuous turbidity discharge limit may be exceeded by 20 percent.

2.2.26.1.4 Nitrates +Nitrites

The washwater treatment system must prevent the discharge of nitrates, plus nitrites beyond that associated with a 12 percent removal of NO_x from the exhaust, or beyond 60 mg/l normalized for washwater discharge rate of 45 tons/MWh, whichever is greater. MWh refers to the MCR or 80 percent of the power rating of the fuel oil combustion unit. For the purposes of this criterion, the nitrate concentration in the washwater must be measured downstream of the water treatment equipment, but upstream of any washwater dilution or other reactant dosing unit, if used, prior to discharge.

The 60-mg/L limit is adjusted upward for lower washwater flow rates per MWh, and vice-versa, and the applicable permit limits are contained in Table 8.

Table 8: Nitrates + Nitrites Permit Limits in Exhaust Gas Scrubber Discharge

Flow Rate (t/MWH)	Discharge Concentration Limit (mg/L nitrate + nitrite)
0 - 1	2,700
2.5	1,080
5	640
11.25	240
22.5	120
45	60
90	30

2.2.26.2 Exhaust Gas Scrubber Analytical Monitoring Requirements

2.2.26.2.1 Continuous Monitoring

The data recording system must comply with the guidelines in sections 7 and 8 of MEPC.184(59) and must continuously record pH, PAH (as available), and turbidity. The vessel owner/operator must continuously monitor for PAH discharges where continuous monitoring technologies (e.g., probes/analyzers) are available (availability should include the technology’s robustness, reliability and ability to perform over for a minimum of two years). When the EGC system is operated in waters subject to this permit, the washwater monitoring and recording must be continuous. The values monitored and recorded must include pH, PAH (as available), turbidity, and temperature.

The pH electrode and pH meter must have a resolution of 0.1 pH units and temperature compensation. The electrode must comply with the requirements defined in BS 2586 or of equivalent or better performance and the meter should meet or exceed BS EN ISO 60746-2:2003.

The PAH monitoring equipment must be capable of monitoring PAH in water in a range of at least twice the discharge concentration limit given in the table above. A demonstration must be made that the equipment operates correctly and does not deviate more than 5 percent in washwater with turbidity within the working range of the application. For those applications discharging at lower flow rates and higher PAH concentrations, ultraviolet light monitoring technology or equivalent should be used due to its reliable operating range.

The turbidity monitoring equipment must meet requirements defined in ISO 7027:1999 or USEPA 180.1.

All continuous monitoring equipment must be calibrated as recommended by probe manufacturers or Exhaust Gas scrubber manufacturers. At a minimum, all probes must be calibrated at least annually. EPA expects many probe types (e.g., turbidity probes) will need to be calibrated on a more frequent basis.

2.2.26.2.2 Analytical Monitoring

In addition to the continuous monitoring found in Part 2.2.26.2.1 of this permit, vessel owner/operators must collect and analyze two samples in the first year of permit coverage or system operation, whichever is first, for each of the constituents analyzed in Part 2.2.26.2.3 to demonstrate treatment equipment maintenance, probe accuracy, and compliance with this permit. Samples must not be collected within 14 days of each other. Samples must be collected for inlet water (for background), water after the scrubber (but before any treatment system), and discharge water. For all vessels, one of those samples may be conducted as part a vessel's annual or other survey, and during the first year, one of those sampling events may be conducted as part of the installation of the system to ensure it is functioning properly.

After the first year, samples must be collected at least once per calendar year for inlet water (for background), water after the scrubber (but before any treatment system), and discharge water, and may be collected as part of the vessel's annual survey as appropriate. Records of the sampling and testing results must be retained onboard for a period of 3 years in the vessel's recordkeeping documentation consistent with Part 4.2.

2.2.26.2.3 Analytes for Analytical Monitoring

Vessels conducting monitoring as required by Part 2.2.26.2.2 must monitor for the following parameters, choosing either sufficiently sensitive EPA Part 136 methods or other methods if specifically allowed:

- Dissolved and Total Metals, including, Arsenic, Cadmium, Chromium, Copper, Lead, , Nickel, Selenium, Thallium, Vanadium, and Zinc (recommend using EPA Methods 200.8 or 200.9. Because matrix interference is a known issue for arsenic and selenium in saltwater samples, the Agency strongly recommends operators

using Octopole Reaction Cell ICP-MS, Dynamic Reaction Cell ICP-MS, hydride generation with a graphite furnace, or other appropriate approach consistent with 200.8 or 200.9 to minimize this interference);

- PAHs including Acenaphthylene, Acenaphthene, Anthracene Benz[*a*]anthracene, Benzo[*ghi*]perylene, Benzo[*a*]pyrene, Benzo[*b*]fluoranthene +, benzo[*k*]fluoranthene, Chrysene, Dibenz[*a,h*]anthracene, Fluoranthene, Fluorene, Indeno[1,2,3,*c,d*]pyrene, Naphthalene, Phenanthrene, and Pyrene (recommend using EPA Methods 550.1, 610, 625, 8100, 8270c, 8310);
- Nitrate-Nitrite (recommend using EPA Method 353.2);
- pH (using Standard Methods (SM) 4500-H B);

2.2.26.2.4 Monitoring Reporting

Vessel owners/operators must submit all monitoring data to EPA electronically, unless exempted from electronic reporting consistent with Part 1.14 of this permit. Monitoring data must be submitted at least once per calendar year no later than February 28 of the following year on the vessel annual report. Data must be submitted on or attached to the exhaust gas scrubber DMR available in Appendix H of this permit or submitted to EPA electronically. The system is scheduled to be available at www.epa.gov/vessels/eNOI. Data may be submitted as part of the vessel's annual report.

2.2.27 Fish Hold Effluent

All reasonable steps must be taken to prevent the discharge of excess fish hold water and ice while the vessel is stationary at the pier. If large solid pieces of fish waste are contained in the fish hold effluent (e.g., fish heads, internal organs) the fish hold effluent may not be discharged while the vessel is pierside and stationary, unless a physical separation method is used (e.g., ½ inch coarse screens or smaller, a screened hose having ½ inch screen openings or smaller, filters, or other methods to remove large solids).

Solid fish waste must be disposed of shoreside on land or at sea (but outside of harbors or other protected and enclosed coastal waters, and other areas where EPA has found that such deposits could endanger health, the environment, or ecological systems in a specific location under the Marine Protection, Research and Sanctuaries Act, 33 U.S.C 1412(d)).

Except for discharges from holding tanks for the sole purpose of keeping the catch alive during transit by pumping continuous “once through” ambient water into and through the tank prior to immediate discharge (e.g., crabbing/lobster vessels), if you are unloading your catch at a shore-based seafood processor or other pier and a shore-based discharge facility is available and economically achievable, you must discharge your effluent (including dirty ice) to that shore-based facility instead of discharging to surrounding waters if:

- Its use is economically achievable, and
- The facility has a valid NPDES permit, or
- That facility discharges to an NPDES-permitted sewage treatment facility.