Industrial Wastewater Treatment Sources

Proposed Rule: Mandatory Reporting of Greenhouse Gases

Under the proposed Mandatory Reporting of Greenhouse Gases (GHGs) rule, owners or operators of facilities that contain an industrial wastewater treatment process and that emit 25,000 metric tons of GHGs per year or more (expressed as carbon dioxide equivalents) from stationary combustion, miscellaneous use of carbonates, and other source categories (see information sheet on General Provisions) would report emissions from all source categories located at the facility for which emission calculation methods are defined in the rule. Owners or operators would collect emission data; calculate GHG emissions; and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

How Is This Source Category Defined?

Under the proposal, this source category consists of:

- Anaerobic wastewater treatment systems at industrial facilities
- Oil/water separators at petroleum refineries

Wastewater treatment refers to the processes used to treat or remove contaminates (such as soluble organic matter, suspended solids, pathogenic organisms, and chemicals) from industrial waters that are released into the environment.

The types of facilities that contain wastewater treatment systems that could be subject to this reporting rule include, but are not limited to, the following:

- Pulp and paper mills
- Food processing plants
- Ethanol production plants
- Petrochemical facilities
- Petroleum refining facilities

This source category does not include centralized domestic wastewater treatment plants.

What GHGs Would Be Reported?

For all wastewater treatment systems, the proposal calls for facilities to report annual methane (CH_4) emissions.

For systems with anaerobic digesters, facilities would also report CH_4 destroyed at the digester.

For flares using supplemental fuels, facilities would report carbon dioxide (CO_2), CH_4, and nitrous oxide (N_2O) emissions from those fuels, using the calculation methods specified in 40 CFR part 98, subpart C (General Stationary Combustion Sources). The information sheet on general stationary fuel combustion sources summarizes the proposal for calculating and reporting emissions from these units.

Petroleum refineries would also report annual CO_2 emissions from oil/water separators.

In addition, each facility would report GHG emissions for any other source categories for which calculation methods are provided in other subparts of the rule.

How Would GHG Emissions Be Calculated?

For anaerobic wastewater treatment systems other than digesters, the proposal calls for CH_4 emissions to be estimated using monitored influent flow rate and monthly average values of chemical oxygen demand (COD). The monthly COD values would be based on weekly samples.

For digesters, estimate CH_4 emissions and the annual mass of CH_4 destroyed at the combustion device based on continuous monitoring of methane concentration, flow rate, temperature, and pressure of the digester gas. Methane destruction efficiency would be based on the manufacturer's specified efficiency or 99 percent, whichever is less.

For oil/water separators at petroleum refining facilities, estimate annual CO_2 mass emissions using measured values for the volume of wastewater treated and default values for emission factors by separator type.

What Information Would Be Reported?

In addition to the information required by the General Provisions at 40 CFR 98.3(c), the proposal calls for each facility to report the following:

- For anaerobic wastewater treatment systems, facilities would report:
  - Annual CH_4 emissions
  - Percent of wastewater treated at each system component, as well as COD, influent flow rate, and the maximum CH_4-producing potential of the wastewater treated
- For anaerobic digesters, facilities would report:
  - CH_4 destroyed
  - Total volumetric flow of digester gas
  - CH_4 concentration of digester gas
  - Temperature and pressure at which gas flow is measured
  - Destruction efficiency of any combustion devices used
  - Fugitive methane emissions
- Petroleum refineries would report:
  - CO_2 emssions
  - Type of oil/water separator used
  - Emission factor used for each type of separator
  - Carbon fraction in non-CH_4 volatile organic compounds

For More Information

This series of information sheets is intended to assist reporting facilities/owners in understanding key provisions of the proposed rule. However, these information sheets are not intended to be a substitution for the rule. Visit EPA's Web site (www.epa.gov/climatechange/emissions/ghgrulemaking.html) for more information, including the proposed preamble and rule and additional information sheets on specific industries, or go to <www.regulations.gov> to access the rulemaking docket (EPA-HQ OAR-2008-0508). For questions that cannot be answered through the Web site or docket, call 1-877-GHG-1188.