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Guidance for Documenting Compliance with the 1ppb Limit on Mercury in Industrial Wastewater Discharges to Sewers

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Revised Massachusetts regulations (http://www.mass.gov/dep/service/regulations/314cmr07.pdf) governing the discharge of industrial wastewater into sewers, which took effect in January 2007, included a provision limiting the concentration of mercury in these discharges to 1 part per billion ("ppb"). The limit on mercury took effect on May 1, 2009. While mercury is a naturally occurring element, it is toxic to people and wildlife. When mercury, as an element, in solution, as a contaminant to another industrial ingredient, or in equipment (e.g., broken thermometers or automobile switches), is introduced into the sewer, it can be transformed along the way into methyl mercury, a much more bio-available form. When mercury is washed down a drain, mercury cycles through the environment, polluting air and water, and accumulating in fish.

Facilities that discharge industrial wastewater to sewers must be able to demonstrate that they are complying with this limit. This demonstration can be made on the basis of knowledge of the facility's processes, or by direct sampling of wastewater before it is discharged to a sewer.

When MassDEP staff conducts a compliance inspection at your facility, you will be asked to document that your facility's wastewater discharge complies with the mercury limit. This guidance describes how your facility can document its compliance with this mercury limit.

How to Document Compliance with the Mercury Discharge Limit

Step 1. Review all chemicals used at your facility (in processes, maintenance, and cleaning) to identify those that contain mercury. You may need to consult the Material Safety Data Sheets for products used in your facility. If your facility has already developed an inventory of the chemicals used, skip to Step 2. If your facility does not use any products containing mercury, you do not need to take any additional steps. In either case, you will need to maintain documentation to demonstrate how you established your status.

Step 2. Identify the ways in which products containing mercury are used in your processes and operations (including maintenance and cleaning), to determine whether mercury is entirely incorporated into the facility's product(s) or whether mercury can be discharged to a sewer with the facility's industrial wastewater. You will need to document your work. These records will need to be maintained at the facility, so that they can be provided to a MassDEP inspector upon request. If your analysis shows that some or all of the mercury used in your facility can potentially be discharged to a sewer with industrial wastewater, proceed to Step 3 below.

Step 3. Sample the facility's industrial wastewater and have the samples analyzed by a MassDEP-certified laboratory:

- Take samples of your facility's wastewater discharge just before it enters the sewer, following accepted sampling protocols and instructions from the MassDEP-certified laboratory that you employ to analyze the samples (e.g., the laboratory may provide clean graded containers for each sample). You will need to take enough samples to represent your facility's full range of operations. If the facility's operation (and wastewater discharge) is consistent over time, fewer samples will be needed to develop a representative profile. However, if the facility's operation varies over time, you will need more samples to develop a representative profile.

- Have the samples analyzed by a MassDEP-certified laboratory (List of laboratories is available at: http://www.mass.gov/dep/service/compliance/wespub02.htm), using U.S. EPA-approved analytical methods 245.1, 245.2, 245.7, or 1631E.

- The analytical method employed by the laboratory to determine the concentration of mercury in the samples from your facility must have a detection limit that is lower than 1 ppb of mercury.

Please keep your documentation current. If there is a change in your facility's operation, then you should check to ensure that your documentation is still accurate.

For More Information

- Certified laboratories:
  http://www.mass.gov/dep/water/drinking/certifie.htm

- MassDEP mercury-related programs:
  http://www.mass.gov/dep/toxics/stypes/hgres.htm

- Possible sources of mercury in your operation
  Massachusetts Water Resources Authority (MWRA) Toxic Reduction and Control Program:
  http://www.mwra.com/03sewer/html/trac.htm

- Mercury sources and alternatives
  Wisconsin Department of Natural Resources:
  http://www.dnr.state.wi.us/org/caer/cea/mercury/sources.htm