CONNEAUT WWTP MERCURY REDUCTION PROJECT

Council Meeting – April 12, 2021

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your trusted advisor c o n s u l t a n t s architects planners

Why do we need a Mercury Reduction Program?

- 1. The WWTP is having trouble meeting their effluent limit for mercury.
- 2. Pollution prevention is less expensive than end-of-pipe treatment for mercury. EPA estimates an excess <u>\$10,000,000 per pound of mercury</u> removed.
- 3. Mercury does not break down. Once it enters the environment, it stays there.

Mercury in the Environment

- Mercury reaches a WWTP from many sources.
 - Industries
 - Hospitals
 - Dental Practices
 - Schools
 - Homes
 - Automotive Body Shops



- As mercury persists in the environment, it converts to methylmercury, a toxic compound that builds up in the tissues of animals and humans.
- Exposure to methylmercury can have long-lasting health effects, especially on fetal development during pregnancy.

Mercury-Containing Products

- Batteries
- Fluorescent Light Bulbs
- Thermostats
- Thermometers
- Tilt Switches
- Relay Switches

- Preservatives
- Dental Amalgam
- Pigments
- Fungicides/Pesticides
- Pharmaceuticals
- Fireworks

What are our goals?

Identify all sources of mercury within the collection system.

Reduce mercury within the community through partnerships and public education.

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Consistently meet NPDES 3PD0002*OD mercury discharge limitation.

EPA Method 1631

• On June 22, 1999 USEPA approved new method for measuring low level concentrations on mercury.





City of Conneaut WWTP Mercury Variance

- The WWTP is not able comply with the monthly average water quality based effluent limit of 1.3 ng/L
- The WWTP is able to achieve an annual average mercury effluent concentration of 12 ng/L.
- WWTP NPDES discharge limitation for mercury is 3.6 ng/L.
- WWTP is required to make reasonable progress towards attaining a mercury effluent of 1.3 ng/L and is required to implement a pollutant minimization program (PMP) for mercury.

WWTP Current PMP Efforts

- Continuous collection system sampling.
- Identify and regulate sources of mercury from significant industrial users (SIUs).
- Keep and annually update an inventory of potential sources of mercury.
- Collect mercury waste at the plant for proper disposal.
- Confirmed dental offices have installed amalgam separators.



Sampling Equipment







2016-20 Mercury Data - Rolling 12-Month Average



2016-20 Conneaut WWTP Mercury Effluent Data

Current Efforts



Reduce mercury within the community through partnerships and public education.



Identify sources of mercury within the collection system:

- Send out a mercury inventory and survey to commercial and industrial sewer users.
- Mercury Inventory:
 - List all sources and potential sources of mercury. A list of known sources of mercury will be included with the letters.
- Mercury Survey Example Questions:
 - Has your facility established a mercury policy statement that includes the reduction or virtual elimination of mercury?
 - Has your facility developed a plan to phase-out mercury containing devices?
 - Has your facility implemented a program to recycle fluorescent lamps?

What's Next?

Identify all sources of mercury within the collection system.

Reduce mercury within the community through partnerships and public education.

Consistently meet NPDES 3PD0002*OD mercury discharge limitation.

Q & A

WASTEWATER TREATMENT PLANT MERCURY REDUCTION PROJECT

April 12, 2021

