

Narragansett Bay Commission, Rhode Island

In 2004, the NBC gave dental facilities the option to either install an amalgam separator or meet a discharge limit. Regardless of the option chosen, dental facilities must also follow mandatory best management practices (BMPs) for facility cleaning and disposal of wastes. These BMPs have been used by the state of Rhode Island as a model for its statewide program, and a bill was recently passed requiring all dental facilities in the state to install amalgam separators.

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Northeast Ohio Regional Sewer District, Ohio

The NEORSD has been addressing mercury issues for more than a decade and is developing and implementing a pollutant minimization program for mercury. A numeric local limit to achieve the 1.3 parts-per-trillion water quality criterion for mercury in NEORSD treated effluent is infeasible, and a narrative local limit was instead adopted. This narrative local limit requires dischargers of mercury into the sewerage system to implement BMPs to minimize the amount of mercury discharged. Mercury sources identified as significant, initially including 518 dental clinics and 14 hospitals, have been required to develop, submit, and implement BMP plans. The NEORSD has also conducted several waste mercury collections and thermometer exchanges and has prepared a brochure for the general public titled *Household Mercury*.

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Green Bay Metropolitan Sewerage District, Wisconsin

The GBMSD has been actively involved in the management and reduction of mercury at its wastewater treatment facility and in the collection system for more than a decade. Through partnerships and collections, GBMSD has prevented thousands of pounds of mercury from entering the local sewerage system and the county landfills. GBMSD's current discharge permit requires the preparation of a Pollutant Minimization Program. This plan will contain guidance for monitoring and outreach for four sectors: medical, dental, schools, and industrial.

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Milwaukee Metropolitan Sewerage District, Wisconsin

The MMSD has been a leader in mercury reduction since 1997, when it produced a Mercury Source Sector Assessment for the Greater Milwaukee Area. Mercury collection programs occurred in 1998, 2000, and 2001. In 1998 and 1999, the District promoted a curriculum package for middle and high school students titled: Mercury in Your Community and the Environment. A thermostat recycling initiative occurred in 1999, along with a workshop for hospitals. In 2000 and 2001, Mercury in Schools Clean Sweeps provided rewards to schools for eliminating thermometers, barometers, blood pressure gauges, and bulk mercury. In 2004, Milwaukee became the first community in the United States on the Great Lakes to require dental offices to both implement BMPs and install amalgam separators.

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Who is NACWA?

The National Association of Clean Water Agencies (NACWA) is the leading advocate for responsible national policies that advance clean water and a healthy environment. NACWA represents the interests of America's clean water utilities - dedicated public servants and true environmental champions.

For over 35 years, NACWA has been the clean water community's voice in Congress, at the U.S. Environmental Protection Agency, in the media and in the courts in the pursuit of scientifically-based, technically sound, cost-effective laws and regulations.

What is NACWA's Mercury Workgroup?

Through the efforts of NACWA's Mercury Workgroup, the Association is actively involved in the national dialogue on mercury and continues to explore effective and reasonable approaches to controlling mercury discharges to the nation's waters. One of the initial tasks of the Mercury Workgroup, which consists of 62 members representing 31 public agencies, was to gather information about mercury discharges into publicly-owned treatment works (POTWs) in order to assist such agencies in the development of effective mercury control programs.



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Mercury Control Program Case Studies



The following are examples of mercury control efforts in several NACWA member communities and one community in British Columbia, Canada.

[City of Boise, Idaho](#)

In 2002, the City of Boise's Pollution Prevention Strategy identified mercury as a high priority. To control mercury in wastewater the Idaho State Dental Association developed and adopted statewide Best Management Practice (BMP) guidelines for dental care providers. Boise is now evaluating all human-caused sources of mercury to the environment to develop local mercury minimization goals, plans, and actions to reduce mercury releases. Over the next few years, the city anticipates implementing several new mercury pollution prevention initiatives to complement existing programs. The objective is to promote the proper management of all mercury generated by the community and reduce the contribution to the local, regional, national, and global mercury load.

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[East Bay Municipal Utility District, California](#)

EBMUD was the first large wastewater agency in California to require dental facilities to install amalgam separators. An innovative dental plumbing cleaning project indicated that dental facilities are a source of legacy mercury. EBMUD partnered with the University of California to develop a mercury reduction program for educational institutions, leading to the collection of over 1,200 pounds of mercury waste and a template for other agencies to use. Data indicate a 30% reduction of mercury loading to EBMUD's wastewater treatment plant as a result of these efforts.

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[Sacramento Regional County Sanitation District, California](#)

Through "Be Mercury Free," an educational outreach program aimed at reducing mercury sources found in households, schools and universities, hospitals and dental offices, the SRCSD and its regional partners strive to protect the environment and residents of the Sacramento region by reducing mercury pollution in the local watershed. SRCSD, in cooperation with the local and state regulatory agencies, is leading the nation in investigating the feasibility of a new mercury regulatory compliance tool, mercury offsets. SRCSD staff has developed numerous tools to educate the public regarding proper methods of mercury disposal, including educational brochures, an informative Web site, www.bemercuryfree.net, and an interactive "Be Mercury Free" exhibit for use at thermometer exchange and other public events.

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[City of San Francisco, California](#)

The City of San Francisco utilizes a combination of outreach/education and enforcement/compliance in order to reduce the amount of mercury pollution entering the San Francisco Bay and Pacific Ocean. The City supports three major mercury reduction programs. Dental Mercury Reduction requires all City dental offices to implement BMPs and install amalgam separators. Recovery of Mercury Containing Products and Equipment includes Fluorescent Light Tube Recycling, a Mercury Thermometer Recovery Program, and other mercury-containing recovery programs. The City has also adopted an Environmentally Preferable Purchasing Ordinance, referred to as EP3, with the goal of minimizing the purchasing of products and equipment made by City departments that are environmentally problematic, such as those containing mercury.

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[City of San Jose, California](#)

In addition to comprehensive stormwater and wastewater mercury pollution reduction programs, the City is conducting a study of the fate and transport of mercury through the San Jose/Santa Clara Water Pollution Control Plant. Sampling for total and filtered total mercury, methylmercury, and ancillary parameters at selected treatment steps began in October 2004. Total and methylmercury are removed with approximately 99% and 98% efficiencies respectively. Total mercury in plant effluent averages about 2 ppt. Dissolved mercury is removed with 53% efficiency. Flows and concentrations of mercury in sludge appear to be sufficient to account for the mercury removed. There is no evidence of methylation at any treatment step, even biological treatment under anoxic and anaerobic conditions.

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[Western Lake Superior Sanitary District, Minnesota](#)

In 1993, the WLSSD determined that end-of-pipe control for mercury was cost-prohibitive and therefore began intensive source identification and reduction activities to eliminate sources of mercury to the wastewater treatment plant and incinerator. Mercury sources identified include scrubber water from the incinerator and industrial customers contaminated by mercury. At this same time, WLSSD also began working with dental clinics which led to the development of BMPs and the installation of amalgam separators. WLSSD also provides programs for the public to minimize their potential mercury release to the environment by providing household hazardous waste collection, a small business collection, fever thermometer exchanges and a mercury-free schools program.

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[City of Wichita, Kansas](#)

Extensive monitoring and research conducted by the City of Wichita has indicated that wastewater discharges from dental clinics are a significant source of mercury. In April of 2000, the city initiated the Silver and Mercury Code of Management Practices. This voluntary program was designed to decrease silver and mercury levels entering the POTW by implementing BMPs. Since implementation of this program, the amount of silver and mercury entering the sewage treatment plant has been reduced by 70 to 74 percent. This reduction illustrates the environmental stewardship these small businesses have exhibited.

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[Capital Regional District, British Columbia, Canada](#)

While not a member of NACWA, the CRD has been active with NACWA in its mercury reduction efforts. CRD began mercury reduction activities in 1995 following introduction of a new sewer use by-law. A code of practice for dental facilities, requiring installation of amalgam separators, was adopted in November 2000. Current levels of compliance with this code are at least 95%. A code of practice for laboratories was introduced in December 2003. Hospitals were recently issued waste discharge permits specifying compliance with both the dental and laboratory codes of practice. Trend analysis indicates significant reductions in sewage effluent mercury over the period 1996 to 2003 and in biosolids mercury over the past five years.

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