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Water Docket

Environmental Protection Agency

1200 Pennsylvania Ave., NW

Washington, DC 20460-0001

Submitted via: www.regulations.gov

Dear Sir or Madam:

These comments are submitted on behalf of the National Association of Clean Water Agencies (NACWA) regarding the *Preliminary 2008 Effluent Guidelines Program Plan*. NACWA represents the interests of nearly 300 publicly owned wastewater treatment works (POTWs) nationwide. NACWA's members serve the majority of the sewered population in the United States, and collectively treat and reclaim more than 18 billion gallons of wastewater each day.

NACWA's comments address the detailed study that EPA is conducting for the Health Services Industry, which is focusing on dental mercury and unused pharmaceuticals. While NACWA members themselves are not the sources of mercury, pharmaceuticals, or hundreds of other pollutants, they are committed to preventing the discharge to wastewater of as many pollutants as is feasible, or to removing as much of these pollutants as is feasible from the wastewater. NACWA's members have been actively exploring options for reducing the quantities of mercury and pharmaceuticals that are discharged into the sewer system. Although NACWA supports national efforts to address mercury and pharmaceutical discharges, establishing effluent guidelines for the Health Services Industry is not a practical way to address the large number of dischargers in the category and would not result in substantial water quality improvements. The comments below detail NACWA's reasons for recommending options other than national pretreatment standards for controlling mercury and unused pharmaceutical discharges into the sewer system.

Dental Mercury

NACWA's Mercury Workgroup was formed more than a decade ago to work on the issue of mercury in municipal wastewater effluent and biosolids. With over 60 members from the municipal wastewater community across the country, this Workgroup has since developed several critical resources on the subject and continues its dedicated work to assist POTWs in controlling mercury discharges.

For example, in 2006, the Workgroup released NACWA's white paper, *Controlling Mercury in Wastewater Discharges from Dental Clinics* (attached). This paper was designed to educate communities and states considering their options for controlling mercury discharges from dental clinics, the single largest source of mercury in wastewater, and focused on the various control options available. NACWA's members have learned a great deal through actual implementation of best management practices, numeric limits, and separator requirements for dentists, and the paper enables other POTWs to learn from these experiences.

NACWA's comments below are intended to provide EPA, as it considers mercury discharges from the Health Services Category, with additional insight into efforts of the nation's POTWs to identify sources and reduce releases of mercury into the environment. While NACWA believes that an overall national strategy on mercury is needed, the Association does not believe that national pretreatment standards for dental clinics, whether best management practices, mandatory amalgam separator installation, or numeric limits, are necessary or appropriate. Local efforts that are tailored to specific community and water quality needs are already having tremendous success at reducing the controllable sources of mercury.

NACWA Mercury Study

The NACWA Mercury Workgroup's most recent effort was designed to examine the effectiveness of practical and reasonable measures of controlling mercury discharged to the POTW collection system, such as dental amalgam separator installation, on the ability of POTWs to meet strict effluent mercury limits. NACWA is pleased to provide EPA with the Draft Final Report from that effort. For this study, the influent, effluent, and biosolids mercury concentrations from twelve U.S. and Canadian POTWs that were in various stages of requiring dental facilities to install amalgam separators were measured on a monthly basis from July 2003 through July 2006 to evaluate the impact of separator installation and other potential factors. Information on other source control efforts and operational activities at the sampled POTWs was also collected in an effort to shed light on numerous issues related to controlling mercury releases by POTWs to the environment.

The results from the study are briefly summarized in the Executive Summary:

According to the results, separator installation does not generally appear, at least within the timeframe of this study, to significantly reduce effluent mercury concentrations. However, amalgam separator installation does generally appear to result in reductions in biosolids mercury concentrations. Therefore, despite the variability and uncertainties described in this report, the data strongly support a conclusion that the use of separators can decrease the amount of particulate mercury entering POTWs, thereby decreasing the amount of mercury that would be removed by plant processes and deposited in the biosolids.

Overall, the results of the study indicate that many factors, not just amalgam separator installation, influence mercury concentrations at POTWS. Factors including legacy contributions of mercury from historic discharges will make it difficult for a facility to predict with certainty that amalgam separators will decrease mercury concentrations without also exploring the other potential contributors to current mercury levels. Though the study results indicate that even POTWs with demonstrably successful amalgam separator programs may not be able to consistently meet current or imminent effluent limits (e.g., 1.3 nanograms per liter in the Great Lakes), these local efforts do appear to be having a measurable effect on the quantity of mercury being discharged to POTWs.

NACWA encourages EPA to examine the entire report and appendices, which include numerous observations regarding the complexities of assessing mercury levels in POTW influent and effluent that will be relevant for any assessment of the Health Services Category.

Targeted, Water Quality-Based Source Control Efforts

Treating effluent to remove mercury is extremely challenging and can cost on the order of \$21 million per pound of mercury removed, yet result in minimal environmental benefit considering the relative magnitude of the reductions. POTWs across the country have therefore focused on source control efforts to reduce the mercury entering their treatment plants. Using their authority under the Clean Water Act to control industrial and commercial discharges to their plants, POTWs have developed a wide range of programs to address mercury discharges from dental clinics, hospitals, and other sources. These programs range from voluntary best management practices (BMPs) to mandatory installation of amalgam separators to issuance of discharge permits with numeric limits for mercury dischargers. These efforts have been very effective at reducing the amount of mercury entering wastewater treatment plants.

The number of these local programs designed to control mercury discharges to POTWs has increased dramatically since the Mercury Workgroup was formed. Driven first by the need to meet extremely low mercury effluent limits in the Great Lakes region, local efforts are now being designed and implemented across the country to best meet the needs of the community and water quality. In 2006, NACWA developed a brochure (attached) highlighting some of these successful mercury control programs from around the country.

As the number of local and state level efforts has grown, NACWA and its members have increasingly worked in cooperation with the American Dental Association (ADA) and its members. The two national organizations have coordinated their work on several mercury-related studies and several new state and local-level programs have been developed where POTW and dental organization have worked together to find a program that works effectively for everyone. Whether collaborative or more regulatory in nature, these targeted source control efforts will continue to work to best address the needs of each community as well as protect water quality.

More National Leadership, Not Pretreatment Standards Needed

While NACWA has worked to preserve this successful, local-driven approach to using the water quality based elements of the Clean Water Act to address specific water quality needs, the Association has also advocated for a coordinated national approach to addressing all mercury issues. Legacy issues such as abandoned mine discharges, as well as air deposition of mercury and other diffuse sources of mercury, continue to be the major contributors of mercury in the environment. National Effluent Guidelines clearly play a critical role for water quality for some industries, but history has shown us that for a category as large and diverse as the health services category, local approaches work best.

While dental clinics are the major source of mercury for most POTWs, and the number of programs designed to address this source is increasing rapidly, it is often the uncontrollable sources of mercury that prevent POTWs from meeting stringent effluent limits. In fact, in at least one case, a POTW has demonstrated that it would not be able to meet the Great Lakes mercury limits even if it eliminated all dental clinic discharges. NACWA examined the ability of POTWs to meet increasingly stringent effluent limits in two earlier studies, *Evaluation of Domestic Sources of Mercury* (August 2000), and a report prepared under cooperative agreement from EPA to evaluate the effectiveness of pollution prevention programs at controlling mercury discharges to wastewater treatment plants, *Mercury Source Control and Pollution Prevention Program Evaluation* (March 2002). NACWA has

provided both of these reports to EPA in the past, but is transmitting them again with these comments to ensure they are considered during the review of the Health Services Category.

The major findings from the domestic sources report are still relevant today:

- Significant amounts of mercury at the average concentration of 138 parts per trillion were consistently found in strictly domestic wastewater in various parts of the country. This was wastewater that contained no industrial or commercial inputs, including dental offices. POTWs typically remove 97 percent of mercury that is discharged into sewage systems.
- Several common household and toiletry items were found to contain substantial concentrations of mercury when examined using sensitive analytical techniques. Although these products individually do not contribute significantly to a total concentration in wastewater, their cumulative effect accounts for approximately 15 percent of the mercury concentration in domestic wastewater.
- Although several sources contributing to the domestic mercury concentrations have been identified, human wastes (feces and urine) from individuals with dental amalgam fillings are believed to be the most significant source – greater than 80 percent. These results were corroborated by the results from chemical toilet and septic wastes that showed that a significant portion of the mercury in domestic wastewater is from uncontrollable sources such as dental amalgam fillings.
- While controlling human waste is impractical, the long-term outlook is promising inasmuch as the trend in dental health is for fewer cavities, resulting in shrinking populations of individuals with significant amounts of dental amalgam over time. (Dental health practitioners are also now increasingly relying on alternatives to amalgam, e.g., composite resins.)
- Based on this information, domestic waste contributes appreciable concentrations of mercury to POTW influent wastestreams and must be considered when addressing mercury control strategies and the likelihood of virtual elimination of mercury. Background mercury concentrations averaging more than 100 parts per trillion can be expected in POTW wastewater influents, even if complete elimination of industrial point source discharges is accomplished.

The March 2002 report found that domestic sources significantly contributed to mercury entering POTWs, and that without addressing those contributions, POTWs would likely not be able to meet some of the more stringent effluent mercury limits. State governments in many cases have enacted laws designed to phase out products containing mercury, to foster pollution prevention programs intended to keep mercury from entering the environment, and to address other sources of mercury, but there has been no coordinated leadership at the federal level to devise a plan for addressing the broader issue of mercury pollution.

Clearly, the biggest challenge to achieving meaningful reductions of mercury in the nation's waters is presented by the air deposition of mercury from coal-fired utilities and other sources in this country and worldwide. Contributions of mercury from POTWs nationwide to the water environment are dwarfed by the massive quantities of mercury entering via air deposition. EPA's own total maximum daily load (TMDL) program has

recognized this fact and has established special procedures for handling mercury TMDLs. Special listing categories and consideration for *de minimis* contributions of mercury recognize that the nation's mercury-contaminated waters will only improve when non-water related programs begin to address the bigger problem.

This multi-state and even global issue cannot be solved through the current patchwork of controls. Rather, there needs to be a broad, innovative strategy at the national level that focuses on source control and moves beyond traditional pollution controls.

Next Steps

Much of the valuable information NACWA has to offer on the subject of mercury discharges from the Health Services Category resides in the expertise of the Association's Mercury Workgroup. NACWA would like to facilitate a discussion among EPA's effluent guidelines staff and members of its Workgroup to ensure that this information is fully utilized as EPA continues its review of the category.

Unused Pharmaceuticals

NACWA's Emerging Contaminants Workgroup is examining the issue of pharmaceuticals in wastewater and providing the NACWA membership with information and resources to assist their source control efforts. As with most contaminants, keeping pharmaceuticals out of the sewer system is more effective than removing them at the wastewater treatment facility. Many pharmaceuticals pass through wastewater treatment plants and are discharged with the effluent into the receiving waters. Although the effects of pharmaceuticals in the environment on human health are still being determined, evidence indicates that endocrine-disrupting compounds from pharmaceuticals and other sources can affect aquatic life. Efforts to reduce pharmaceuticals entering the sewer system and the environment are, therefore, vital.

EPA reports in the *2008 Preliminary Effluent Guidelines Plan* that there are over 475,000 facilities in the Health Services Industry. Establishing effluent guidelines for such a large number of facilities would create a tremendous burden on POTW pretreatment programs, which would also face technical challenges implementing the guidelines. Analytical methods for measuring pharmaceuticals in POTW influent, effluent, and sludge have not been perfected yet. EPA's Office of Science and Technology has experienced this challenge as it seeks to measure contaminants of emerging concern (CECs) as part of its ongoing POTW study. EPA found it necessary to develop methods for 74 pharmaceuticals and, in its fact sheet on the POTW study, states that "the key technical challenge is to accurately identify CECs when they occur in the presence of so many other physical objects and chemicals found in sanitary sewage." Also, it is currently impossible to separate the amount of pharmaceuticals that are disposed into wastewater from the amount that is excreted by humans using the pharmaceuticals at those same sources. Measuring pharmaceutical disposal from health care facilities would therefore be extremely difficult, and pretreatment programs would need to rely on disposal reports from the facilities, making verification difficult or impossible.

Rather than establishing effluent guidelines to reduce the amount of unused pharmaceuticals entering the wastewater stream, EPA should work with other federal agencies to develop clear, consistent guidelines or best management practices for disposal of unused pharmaceuticals. Flushing unused pharmaceuticals down the toilet was long a recommended practice, and many health care facilities continue to follow this practice. In 2006, a NACWA member surveyed the nursing homes and long-term care facilities in its service area on their

pharmaceutical practices. From the 45 responses, 67 percent of the unused pharmaceuticals were disposed of into sewer system, 27 percent went into the garbage, and 6 percent were returned to pharmacies. Many hospice programs also still recommend flushing of all unused prescription drugs after the death of a patient. Changing these behaviors is critical, but national pretreatment standards are not the best tool for doing so.

No information is available yet on whether federal guidelines issued by the White House Office of National Drug Control Policy (ONDCP) in February 2007 have influenced the disposal practices for unused pharmaceuticals in the Health Services Industry. These guidelines recommend disposing of unused, unneeded, or expired prescription drugs in the trash, but also advise that certain drugs still be flushed down the toilet, including a list of 13 specific drugs and any other drugs with patient information that gives instructions for this type of disposal. While the guidelines were developed by ONDCP in partnership with EPA and the Department of Health and Human Services (HHS), the recommendation to flush certain drugs is at odds with EPA's goals of reducing pharmaceuticals in the environment. NACWA is also concerned that the guidelines send a mixed message to health care facilities, hospice programs, and consumers, and that flushing will still be considered the easiest method of disposal for all drugs.

EPA should continue to work with the ONDCP, HHS, and the Drug Enforcement Agency (DEA) to develop alternative methods for drug disposal, including drug take-back programs. Pharmaceutical take-back programs have been instituted on a local and regional basis in many areas, and many NACWA members have spent thousands of dollars to establish and support these programs and ensure that these drugs do not end up in the environment. Take-back programs have not been possible in many areas, however, because of requirements for the handling of controlled substances under current DEA regulations, which prohibit anyone other than the person that the drugs were prescribed for to possess the drugs for any reason. For drug take-back programs, these regulations mean that local law enforcement must be present at collection sites to prevent violation of federal law, making take-back programs unfeasible in many areas. EPA should work with other federal agencies to change these guidelines for controlled substances and establish national guidelines to enable local drug take-back programs and other source control efforts to succeed. This coordination and additional, consistent federal guidance is what communities need, not new pretreatment standards.

If you have any questions, please contact me at 202/296-9836 or cfinley@nacwa.org.

Sincerely,



Cynthia A. Finley
Director, Regulatory Affairs

Attachments:

2006 NACWA white paper, *Controlling Mercury in Wastewater Discharges from Dental Clinics*
2007 draft final report of NACWA Dental Amalgam Study
2006 NACWA brochure on successful mercury control programs
2000 report, *Evaluation of Domestic Sources of Mercury*
2002 report, *Mercury Source Control and Pollution Prevention Program Evaluation*