

MERCURY GREEN TIER CHARTER 2008 SUMMARY REPORT

This report is a summary of mercury reduction activities conducted under the “Mercury Green Tier Charter for Environmental Performance” (Mercury Charter) during calendar year 2008. This report is required by Section VI.3.A. of the Charter, “Responsibilities of the Department of Natural Resources”, and was prepared by Randy Case, Community Mercury Reduction Coordinator, DNR Bureau of Cooperative Environmental Assistance.

I. INTRODUCTION

A. Goals of the Mercury Green Tier Charter

To reduce local mercury discharges to wastewater through a program of mercury source identification, public education, and mercury reduction in the municipality’s community.

To work collaboratively with DNR and partner municipalities to reduce mercury discharges more efficiently with others and more consistently across Wisconsin.

To reduce mercury discharges earlier than required by WPDES permit, but consistent with DNR guidance that would be used by WPDES permit at a later date, if necessary.

B. Signing of Mercury Charter and Participating Municipalities

The Mercury Green Tier Charter was signed on February 28, 2008 in Madison, WI following public notice and a public hearing pursuant to s. 299.83 Wis. Stats. The Charter was signed by both the Wisconsin Department of Natural Resources (WDNR) and the Municipal Environmental Group-Wastewater Division (MEG), a non-profit organization of Wisconsin municipal wastewater utilities. Within the initial subscription period ending June 30, 2008, the Mercury Charter was signed by fifteen municipalities:

Burlington	Marshfield	Sun Prairie
Cedarburg	Medford	Superior
Fort Atkinson	Plover	Western Racine County Sew Dist
Jackson	Rice Lake	Whitewater
Janesville	Sparta	Wisconsin Rapids

C. Guidance on Mercury Reduction Activities

Mercury reduction activities conducted by the municipalities subscribing to the Charter, and reports on those activities to the WDNR, followed DNR PUB-WT-831 2006, “*Mercury Pollutant Minimization Program – Guidance Manual for Municipalities*”. The Guidance Manual was supplemented with template mercury outreach letters to key sectors of the local community, examples of sewer use ordinance mercury management amendments, and other materials.

An introductory meeting with WDNR, MEG, and the participating municipalities occurred in May/June/July 2008, with subsequent collective meetings on September 9, 2008 and January 27, 2009. Both of the latter meetings occurred in Plover, in central Wisconsin. Another meeting is scheduled for May 5, 2009 in Burlington, in southeast Wisconsin, to discuss calendar year 2008 progress under the Charter.

Discussion of general mercury reduction activities occurred in these group meetings. Comments on individual municipal mercury reduction program plans and individual municipal mercury reduction progress reports occurred through plan and report review by WDNR. Note: In the future, representatives from municipalities tributary to metropolitan sewerage districts, e.g., Western Racine County, will be invited to group meetings.

D. WDNR Single-Point-of-Contact

Guidance on mercury reduction activities, and review of plans and reports, was provided by the WDNR single-point-of-contact for the Mercury Charter, Randy Case, of the Bureau of Cooperative Environmental Assistance in Madison. Mr. Case also updated the appropriate Department regional wastewater management staff on individual municipal mercury reduction progress, and advised the Wisconsin Dental Association on municipal actions requiring the installation of amalgam separators in local dental offices.

II. RESULTS

A. Municipal Mercury Reduction Activities

The fifteen individual municipal mercury reduction program plans were mailed to Randy Case in July and August of 2008. The plans identified outreach to local medical, dental, school, and industrial facilities in order to assess their implementation of the appropriate mercury best-management-practices, and in the case of dental offices to encourage or require the installation of amalgam separators in wastewater lines. All of the municipal plans were reviewed and approved by Mr. Case in the Fall of 2008.

Municipal outreach to local facilities in the targeted community sectors occurred during the Fall of 2008. A progress report identifying the mercury best-management-practices being implemented by tributary facilities, and plans for mercury reduction activities in 2009, were mailed to Mr. Case in February of 2009 as required by the Mercury Charter. All of the progress reports were reviewed and approved, with comments on planned 2009 activities, in the Spring of 2009.

The Mercury Charter municipalities reported spending nearly 1200 hours, and \$60,000 in staff and materials costs, in carrying out their 2008 mercury reduction activities. The most common methods of mercury product recycling were commercial waste vendors for hospitals, dental offices, and schools, and Clean Sweep programs for the general public. An increasing number of retail facilities also take back the most common mercury-containing products for recycling, e.g., fluorescent bulbs.

B. Sectors Implementing Mercury Best-Management-Practices

Nearly all medical facilities and schools in the fifteen Charter municipalities report that they have already implemented the appropriate mercury best-management-practices, which for these sectors means mercury product elimination in patient, laboratory, and classrooms. Mercury reduction outreach to industrial facilities was primarily for educational purposes as few industrial facilities are significant users of mercury products that could impact wastewaters. All municipal wastewater treatment plants participating in the Mercury Charter program report that they themselves have implemented mercury best-management-practices at their plants.

64 of the 102 (63%) of dental offices and clinics in the Mercury Charter communities have installed amalgam separators in their wastewater vacuum systems. Many of the remaining offices will install separators in 2009. Several of the Mercury Charter municipalities have adopted, or will adopt, sewer use ordinance amendments requiring separator installation, separator maintenance, and other mercury best-management-practices appropriate for waste dental amalgam. Waste amalgam is likely to be the only continuing mercury waste stream to most sanitary sewer collection systems.

A majority of the Mercury Charter communities reported that there had been some mercury product collection and recycling programs for the general public in their communities prior to their participation in the Charter, often by other municipal or county agencies. And a few reported participation in mercury programs that extended outside the jurisdictional boundaries of their wastewater collection systems. But targeted mercury reduction outreach to medical facilities, dental offices, schools, and industries was new in most of the Mercury Charter communities.

C. Mercury Analytical Data

Hundreds of wastewater treatment plant influent, effluent, and biosolids mercury data points were reported by the Mercury Charter municipalities. Using 2006-2007 data as a baseline for pre-mercury reduction programs (earlier data was less widely available) and 2008 data as the first year of mercury reduction program implementation, the data show the following:

With each municipal average weighted equally, 2006-2007 effluent mercury averaged 2.34 ng/l. 2008 effluent mercury averaged 1.37 ng/l, a decrease of -41%.

Two-thirds of the Mercury Charter municipalities had their 2008 effluent mercury data averaging less than their 2006-2007 effluent mercury data. One-third had approximately the same 2008 and 2006-2007 effluent mercury averages. None had 2008 effluent mercury averages exceeding 2006-2007 averages.

In 2006-2007, four municipalities had effluent mercury averages less than the water quality standard of 1.3 ng/l. In 2008, eight municipalities had effluent averages less than 1.3 ng/l, an increase of +100%.

It is still early to state with certainty the effluent mercury improvement resulting from the mercury reduction activities of the Charter municipalities. Effluent mercury data for 2009 will likely decline further relative to 2008 and 2006-2007 because a significant number of amalgam separator installations in dental offices will still occur in 2009. For other mercury products replacement with non-mercury alternative products, as has already occurred, is generally permanent. The data trend so far is very promising. Note: No data points were excluded from the above analysis, even those that were occasionally uncharacteristically high or low for a given municipality.

III. 2009 ACTIVITIES

A. Dental Offices

The primary remaining mercury reduction work for the Mercury Charter municipalities is to ensure that the remainder (about one-third) of their tributary dental offices install amalgam separators in their wastewater vacuum systems. This is almost certainly the largest remaining source of mercury influent to their municipal wastewater treatment plants. A secondary objective is to make sure that dental offices that have installed separators are removing settled amalgam for recycling at the frequency recommended by the individual separator manufacturer. Some of the Charter municipalities have, or will, adopt sewer use ordinance amendments to help ensure good waste amalgam management into the future.

B. University Campuses

An unexpected finding from this first year of the Mercury Charter is the considerable variability among the University of Wisconsin and Wisconsin Technical College campuses on their mercury awareness, reduction, and management programs. This is in part because these are complex facilities with multiple laboratories, and also because mercury products may be viewed as integral to certain academic coursework. While the Charter municipalities were all encouraged to continue their mercury reduction dialogue with their tributary college campuses, it seems prudent that the Wisconsin Department of Natural Resources initiate a conversation on mercury reduction with the university and technical college central administration in Madison.

IV. CONCLUSION

There was good engagement between the Mercury Charter municipalities and the sectors of their community who are the primary stakeholders in mercury reduction. Similarly there was good engagement between the Mercury Charter municipalities and the WDNR single-point-of-contact on planning and reviewing mercury reduction activities. Finally, the activities and communication fostered by the Mercury Charter is believed to have produced the positive environmental benefit of mercury reduction to wastewaters that had been hoped for by all parties to the Charter agreement. Improvements in 2008 mercury data should be confirmed with data available in 2009. Randy Case March 31, 2009