

Dental Amalgam Separator Update

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- In April 1997, a milestone was set — The Great Lakes Basin Bi-National Toxics Strategy called for virtual elimination of mercury.
- One year later — The New England Governors & Eastern Canadian Premiers adopted a Regional Mercury Action Plan and signed an agreement with the goal of “virtual elimination of the discharge of mercury into the environment.”
- 1998 Mercury Reduction Plan launched mercury reduction efforts in the Northeast.

MWRA

Massachusetts Water Resource Authority

- Adopted a prohibition on Mercury
- Local limit is enforced at 1 ppb
- ~ 350 MGD
- >250 SIUs
- 13% of the mercury loading to headworks was from dentists compared to the 3% regulated industrial contribution.

MWRA Hg Reductions

- The industrial source mercury loading primarily consists of permitted medical facilities, but due to the success of the pretreatment program and MWRA's Mercury Control Program, there has been a 91% decrease in the average concentration of mercury discharges from medical facilities from 1994 to 1999, 22 to 2 ppb, respectively.

2008 Enforcement Penalties

- Tufts New England Medical Center - \$75K
- Tufts University – \$95k
- Cambridge Health Alliance - \$75k
- Brigham and Womens Hospital - \$68k
- St. Elizabeth Medical Center - \$148k

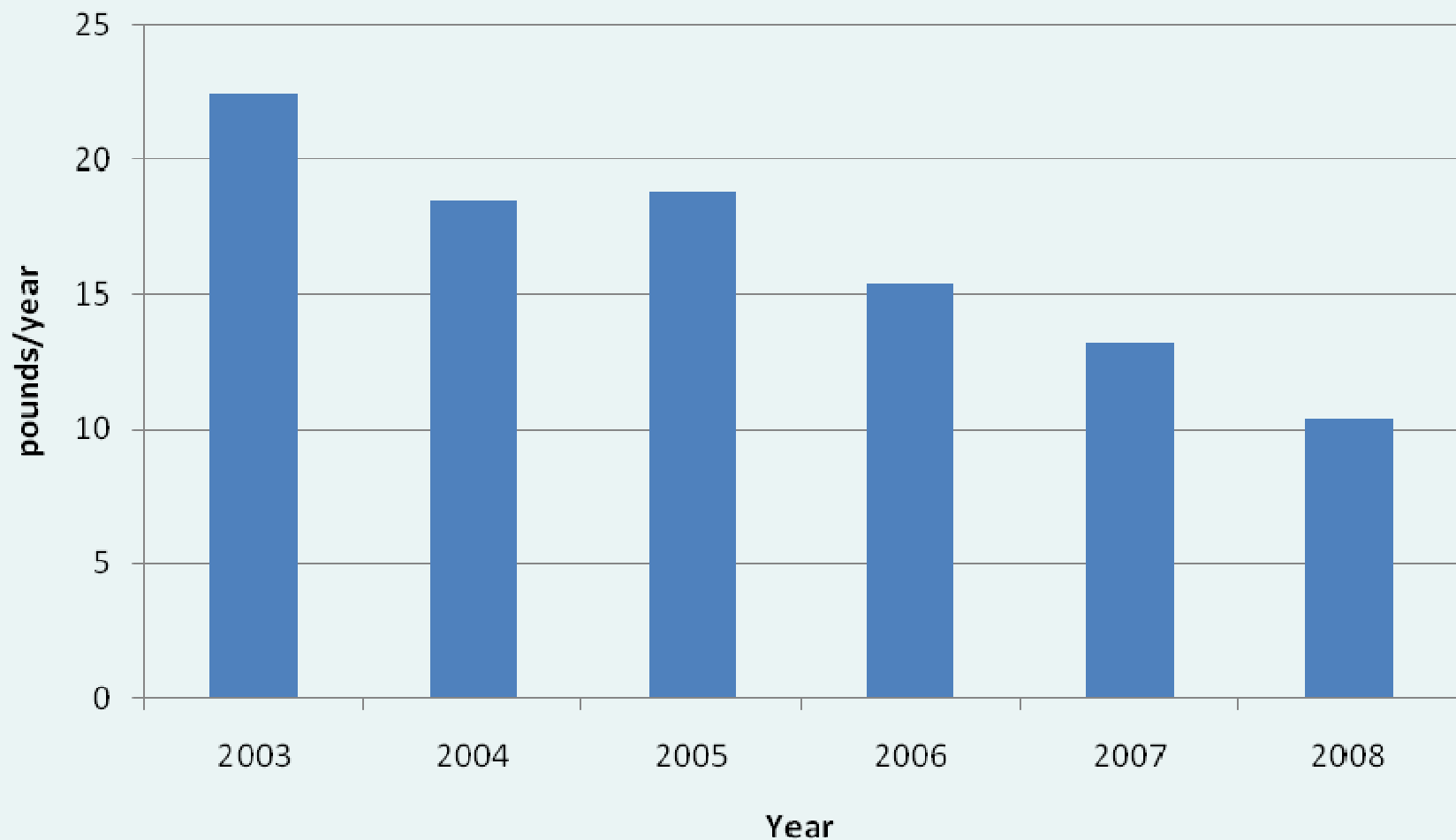
Recent Penalties assessed

- Massachusetts General Hospital - \$48k
- Forsyth Dental Institute - \$77k

Region 1 Local Limits

- * Region 1 average mercury local limit is 0.0368 mg/l or 36.8 ppb
- * Without the highest value - regional average is 22 ppb

Field's Point & Bucklin Point WWTFs Influent Mercury Loading



States Requiring Separators

- Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New York, New Jersey, Oregon and Michigan
- 6 of those 10 States are located in Region 1

➤ **Connecticut**

➤ http://www.dep.state.ct.us/wst/mercury/dental_bmp.htm

➤ **Massachusetts**

➤ <http://www.mass.gov/dep/service/dentists.htm>

➤ **Maine**

➤ <http://www.state.me.us/dep/blwq/topic/amalgamseparator/dentist.htm>

➤ **New Hampshire**

➤ <http://www.des.state.nh.us/nhppp/dental/default.asp?link=leg>

➤ **Rhode Island**

➤ <http://www.rilin.state.ri.us/Billtext/BillText06/HouseText06/H7812Aaa.pdf>

➤ **Vermont**

➤ <http://www.anr.state.vt.us/dec/ead/mercury/dental/DentalSelfCertForm091206.doc>

State Legislation



Massachusetts

- <http://www.mass.gov/dep/service/about08.htm>).
- Prior to March 1, 2005, were exempted from Mass DEP amalgam separation system installation, operation, maintenance and upgrade regulations, and related fees, until February 1, 2010. Dentists who submitted voluntary certifications after February 28, 2005, but before February 1, 2006, were exempted from additional amalgam separator rules and fees until February 1, 2007.
- This program was very successful. Over the 2-year voluntary compliance program (2004-2005), over 74% of MA dentists complied.

MA (cont'd)

- <http://mass.gov/dep/service/regulations/310cmr73.pdf>
- These regulations specifically require dental practices and facilities to certify to Mass DEP every five years that they:
 - • Have installed an amalgam separator system that serves every dental chair in the practice or facility where waste amalgam is generated. The system must be one that has been demonstrated to remove at least 98 percent of the amalgam waste containing mercury using the ISO 11143 test protocol. Facilities that participated in the voluntary program are allowed to continue using their 95 percent efficient amalgam separators.

MA Compliance

- 98% certified in compliance with the mandate
- 97% required to install a separator have done so
- 65 Dentists have been issued a Reporting Penalty Assessment Notice for \$500

MA POTW Results

- Since the MA dental sector initiatives were begun in 2004, mercury levels in treated wastewater sludge at the state's largest public POTW (which services about 42% of MA's population) have decreased by about 48%.
- Based on the amount of sludge generated and the fact that all of MWRA's sludge is reused as a soil amendment/fertilizer, this equates to a reduction in environmental releases of mercury of about 136 pounds per year for this POTW alone

Region 1 Compliance

- >90% of all Region 1 dentists have certified they are compliance with the Rule
- Of all dentists required to install a separator ~95% have achieved that requirement

Final 2008 Effluent Guidelines Program Plan:

- An ADA-funded study showed that approximately 50% of mercury entering POTWs is from dental offices
- EPA estimates that dentists discharge approximately 3.7 tons of mercury each year to POTWs
- Amalgam separators increase the amount of amalgam that is recycled (amalgam separators are at least 95% efficient).
- Use of amalgam separators generally results in reductions in POTW influent and biosolids concentrations.
- 29-50% reduction in biosolids have been reported

Dental MOU

- Signed by NACWA, American Dental Association (ADA), and EPA

MOU Purpose

- To promote the use of Best Management Practices (BMPs) adopted by the ADA by dentists, thereby increasing recycling and reducing the discharge of amalgam into POTWs from dental offices that currently handle amalgam wastewater.

MOU Goal

- Goal of the Voluntary Dental Amalgam Discharge Reduction Program is to have dental offices follow the ADA BMPs, which includes, among other things, installation of an amalgam separator, proper maintenance of such separators, and recycling of all amalgam waste collected in dental offices.

EPA Responsibilities

- EPA resolves to promote to dentists and NACWA members the benefits of dentists voluntarily adopting the ADA BMPs.

MOU Intentions

- To be used as a vehicle for examining the % of dentists using amalgam separators and their effectiveness at recovering dental amalgam and reducing mercury discharges to POTWs
- After such examination, EPA may re-evaluate its view not to initiate an effluent guidelines rulemaking for the dental sector

Limitations

- The MOU and/or adherence to the ADA BMPs does not relieve dental offices from their responsibilities to understand and comply with any local POTW requirements relating to the control of mercury discharges from their practices. The signatories recognize that mandatory separator programs or other such local POTW requirements beyond voluntary adherence to the ADA BMPs may be appropriate based on locale-specific circumstances or considerations.

Just do it!

